

On hold -> Halton TSR – Swirl diffuser

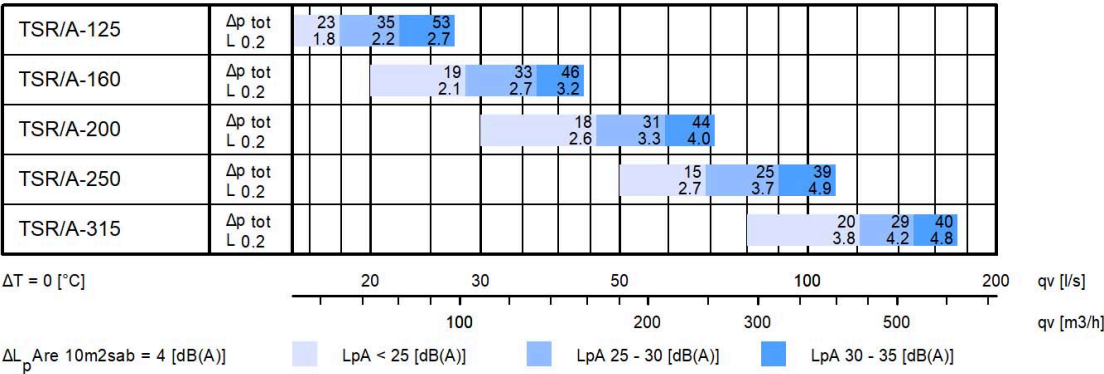
Overview

- Horizontal air supply
- Air velocity is effectively reduced due to high mixing effect

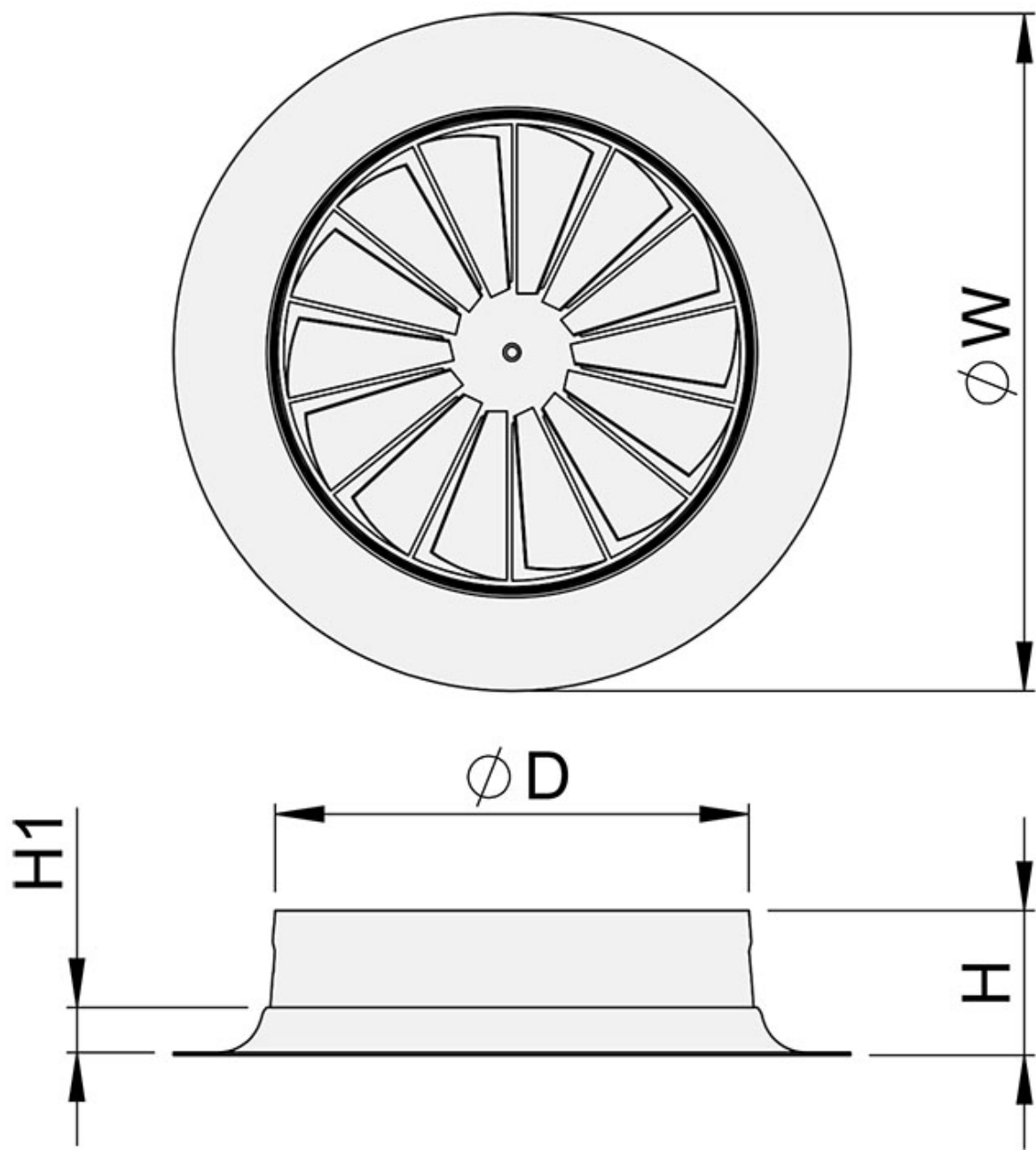
Accessories

- Balancing plenum with measurement and adjustment functions
- Mounting bracket for plenum installation

Quick selection

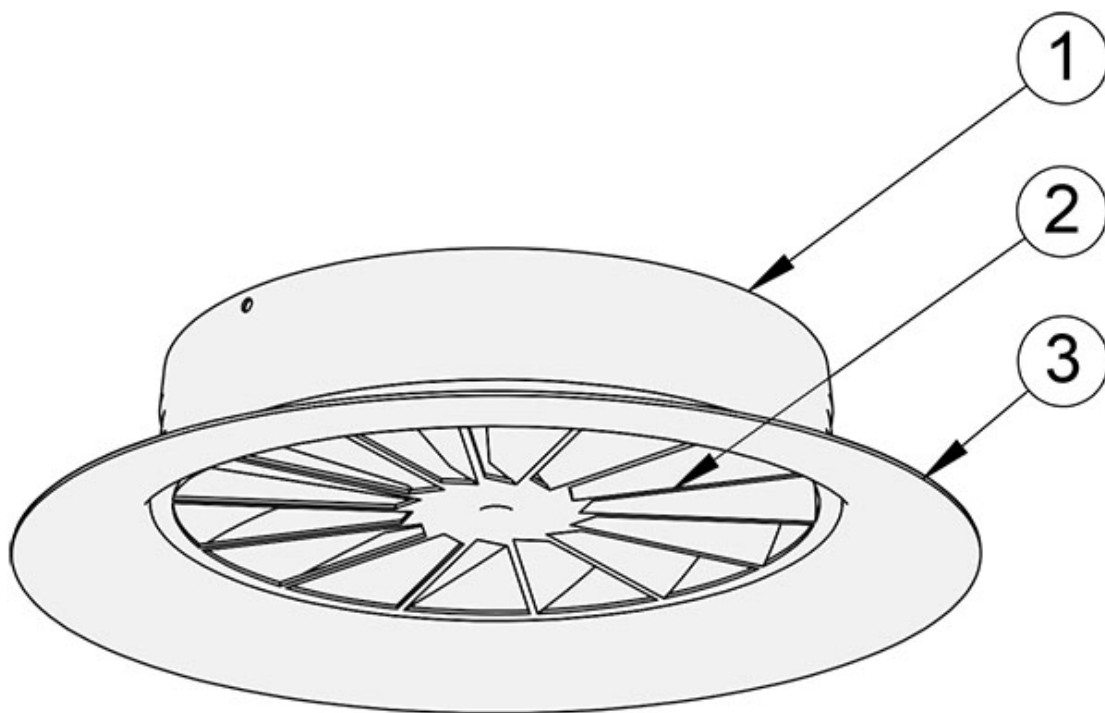


Dimensions



NS	$\varnothing W$	H	H1	$\varnothing D$
125	200	56	28	123
160	250	66	35	158
200	300	75	43	198
250	350	75	43	248
315	450	90	50	313

Structure and material



Nr	Part	Material	Note
1	Coupling sleeve	Steel	Epoxy-painted, white (RAL 9003) Special colours available on request
2	Front vane panel	Steel	Epoxy-painted, white (RAL 9003) Special colours available on request
3	Casing	Steel	Epoxy-painted, white (RAL 9003) Special colours available on request

Accessories

Accessory	Code	Description
Balancing plenum	TRI	For balancing and equalising the airflow and attenuating the duct noise (Fig.1.)
Plenum box	TRH	For balancing and equalising the airflow and attenuating the duct noise (Fig.2.)
Mounting bracket	BR	Bracket for plenum installation (Fig.3.)



Fig.1. Halton TRI

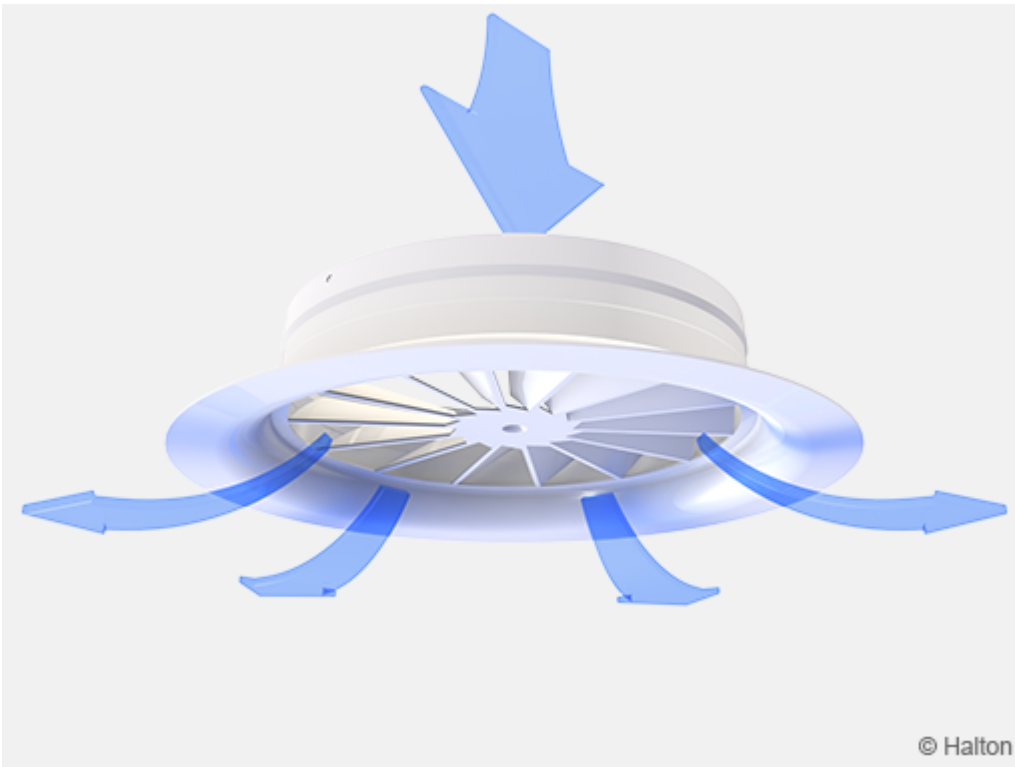


Fig.2. Halton TRH



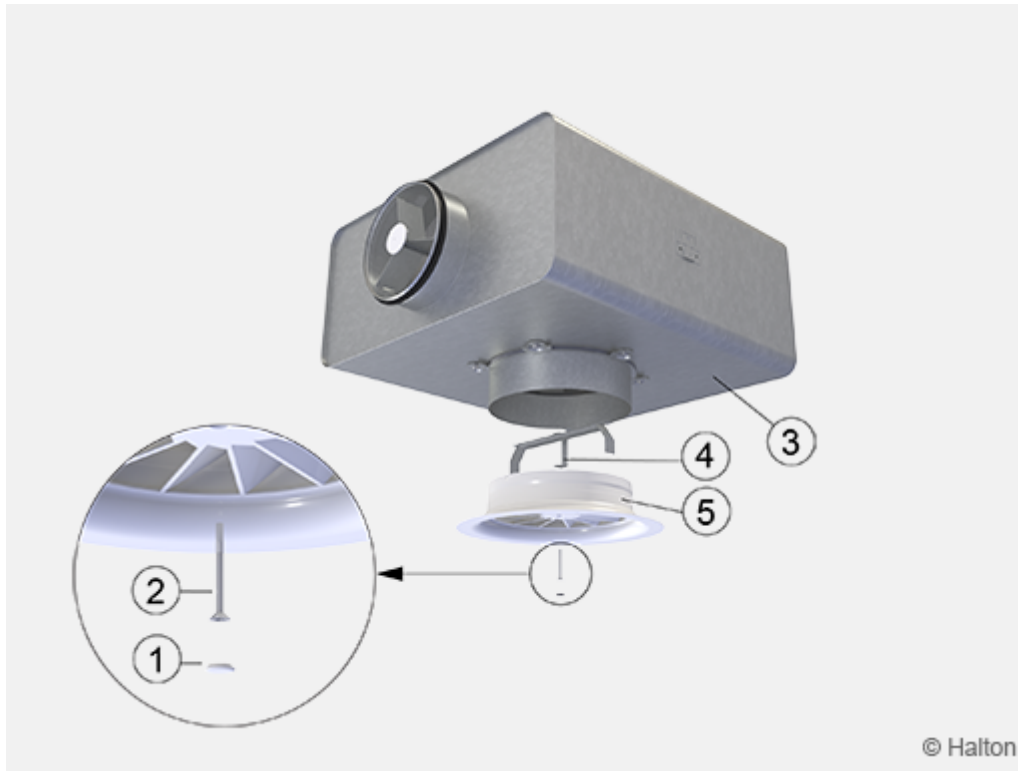
Fig.3. Mounting bracket

Function



- Horizontal radial swirl jet is supplied into the space through the profiled spiral blades of the diffuser.
- Supply air jet velocity is efficiently reduced due to the high mixing effect.

Installation



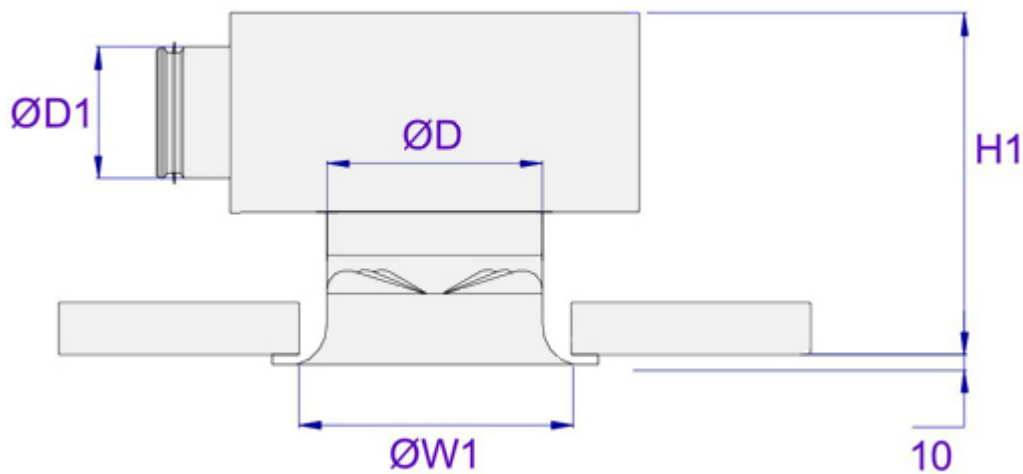
Key

1. Plastic plug
2. Central fixing screw
3. Halton TSR diffuser
4. Mounting bracket
5. Halton TRI plenum

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

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

Installation with plenum Halton TRI



The mounting bracket should be used for installing Halton TSR to TRI plenum to allow easy diffuser removal.

The collar of Halton TRI plenum can be installed either internally in the plenum or externally on the bottom of the plenum. The height of the unit for the external installation is presented in the table below. When the collar is installed internally, the total height H1 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.

ØD	ØD1	TRI	H1	W1
125	100	TRI-100-125	246-276	170
125	125	TRI-125-125	276-306	170
160	125	TRI-125-160	276-305	210
160	160	TRI-160-160	316-346	210
200	160	TRI-160-200	316-346	250
200	200	TRI-200-200	366-396	250
250	250	TRI-250-250	366-396	300
250	250	TRI-250-250	430-460	300
315	250	TRI-250-315	430-460	390
315	315	TRI-315-315	476-506	390

Adjustment

The Halton TSR itself has no means for airflow adjustment.

In order to enable airflow adjustment and measurement of airflow rate it is recommended to connect the diffuser to the Halton TRI balancing plenum. The supply flow rate is determined by using the measurement and adjustment module MSM.

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

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

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.

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

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	–

Servicing

Wipe the diffuser with a damp cloth.

Option with balancing plenum

Detach the diffuser from the retaining mounting bracket. Remove the measurement and adjustment module by gently pulling the shaft (not from 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 unit meets the stopper. Replace the diffuser.

Specification

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

Alternative 1: No balancing plenum

The diffuser has a steel casing and front vane panel.

Alternative 2: Option with balancing plenum

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

The diffuser is detachable 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

TSR/S-D; CO-ZT

S = Model

A Standard

D = Duct connection size (mm)

125, 160, 200, 250, 315

Other options and accessories

CO = Colour

SW Signal white (RAL 9003)

ZT = Tailored product

N No

Y Yes (ETO)

Sub products

TRI Plenum
TRH Plenum

Code example

TSR/A-125, CO=SW, ZT=N