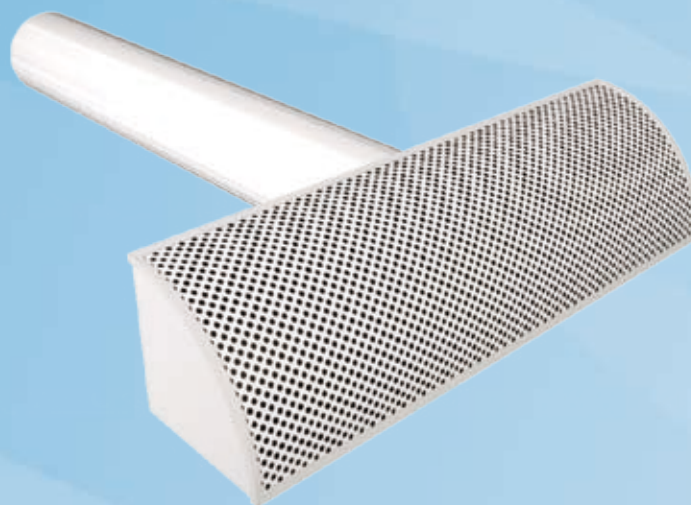


# TRC

## Auditorium Diffuser



- Low velocity under-seat air supply in auditoriums, theatres, concert halls etc.
- Comfortable thermal and good acoustic conditions
- Connection either to under-floor plenum with positive pressure or to ductwork
- Air flow adjustment by self-balancing enabled by the pressure drop of the diffuser

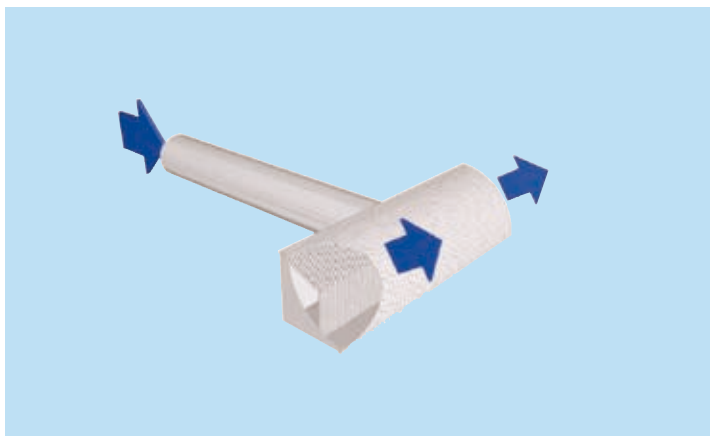
- Circular duct connection
- Detachable front panel enables cleaning of the diffuser

### Product models

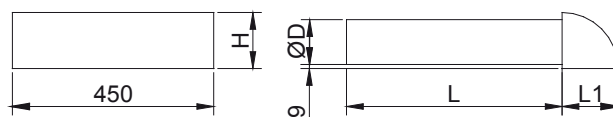
- Model with connection to under-floor plenum chamber with positive pressure
- Model with connection to ductwork

### MATERIAL AND FINISHING

PART	MATERIAL	NOTE
Casing	Galvanised steel	
Front panel	Perforated galvanised steel	
Flow equalisation element	Perforated galvanised steel	
Installation sleeve	Epoxy-painted/White RAL 9010	Special colours available



## DIMENSIONS



NS	L (TRC/F)	L (TRC/K)	L1	H	ØD
100	482	65	125	125	100
125	482	65	150	150	125

## Function

Supply air is supplied with low velocity below the seats.

The supply air flows into the occupied zone without causing a draught until it rises up due to the convection of the occupants of the auditorium.

## Product models

TRC/F: Plenum chamber installation

TRC/K: Duct installation

## QUICK SELECTION

qv	l/s m³/h	12	14	16	18	20	22	24
		43	50	58	65	72	79	86
TRC/F-100	LpA	14	15	16	19	21	24	26
	ΔPst	18	24	32	40	49	60	71
	ΔPtot	19	26	34	43	53	64	77
TRC/F-125	LpA	12	14	17	20	23	26	28
	ΔPst	19	25	33	42	52	63	75
	ΔPtot	19	26	34	43	54	65	77

qv	l/s m³/h	12	14	16	18	20	22	24	26	28	30	32
		43	50	58	65	72	79	86	94	101	108	115
TRC/K-100	LpA	< 10	12	15	19	23	26					
	ΔPst	6	8	10	13	16	20					
	ΔPtot	7	10	13	16	20	25					
TRC/K-125	LpA					11	13	16	18	21	24	27
	ΔPst					7	9	10	12	14	16	18
	ΔPtot					9	11	13	15	17	20	23

LpA values presented with room attenuation 4 dB (red 10m² - sab).  
When using room attenuation 8 dB (red 25m² - sab): LpA - 4dB.

LpA A-weighted sound pressure level, reduced by total equivalent absorption surface of 10m², dB(A) red 10m² - sab  
ΔPst Static pressure drop, Pa  
ΔPtot Total pressure drop, Pa

## Floor supply design

The TRC auditorium diffuser is designed for installation within the step riser in auditoriums, theatres, concert halls, where good indoor climate conditions are required.

Supply air velocity should be very low to avoid draught in the near zone of the diffuser.

The recommended supply air temperature is less than 3°C below the ambient temperature.

The supply airflow rate is up to 18 l/s per unit.

Where requirements for comfort are perceived to be less important, higher airflow rates can be used, resulting in increased velocities close to the diffusers.

In such cases diffusers should be installed further away from continuously occupied areas

## Connection of the diffusers

The TRC/F is suitable for installations without connection to ductwork (Figure 1).

The space beneath the raised floor is used as a distribution plenum chamber.

The TRC/F diffuser causes sufficient pressure loss in order to provide self-balancing of the system and adjustment of airflow rates.

The airflow rate of each diffuser is adjusted by the setting the plenum chamber static pressure.

The recommended pressure level of the plenum chamber is 20 ... 40 Pa.

For plenum chambers with larger volumes, multiple air inlets are recommended. (Figure 1).

The TRC/K auditorium diffuser is also suitable for connection to the supply ductwork (Figure 2).

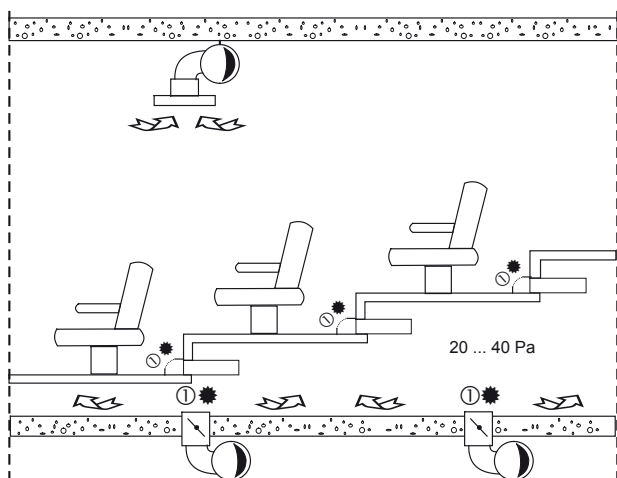


Figure 1

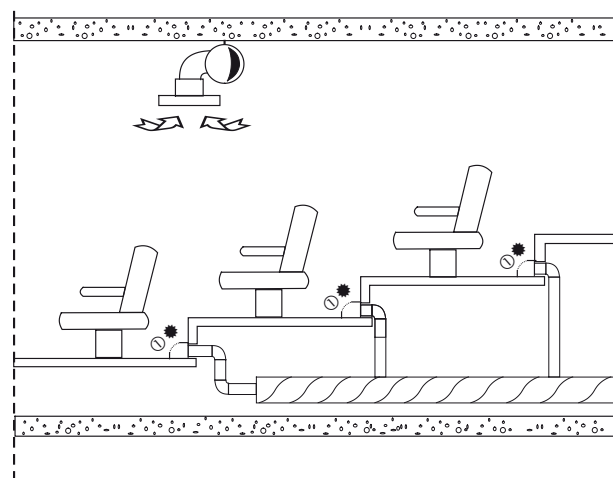


Figure 2

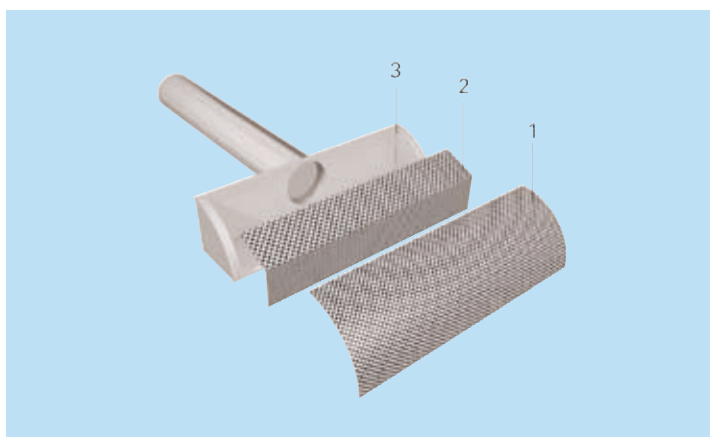
## Installation

The TRC/F is fixed in a plenum chamber installation.

The TRC/K is connected to the supply duct.

## Dimensions of installation hole

SIZE	DIAMETER
100	105
125	130



## Servicing

### CODE DESCRIPTION

1	Front panel
2	Flow equalisation element
3	Casing

The front panel can be detached for cleaning. Wipe the parts with a damp cloth.

## Suggested Specifications

The TRC auditorium diffuser shall be made of hot galvanised steel, with white (RAL 9010) as the standard colour.

Air shall be supplied draught-free into the occupied zone with low velocity below the seats.

Sufficient pressure loss shall be created by the diffuser in order to provide self-balancing and airflow adjustment for a plenum chamber installation.

## Alternative

The diffuser shall be connected directly to ductwork.

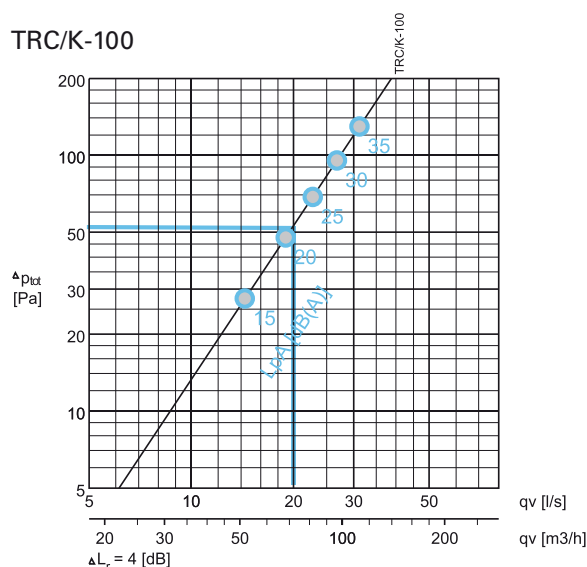
## SOUND LEVEL DATA

	qv		$\Delta P_{st}$ (Pa)	$\Delta P_{tot}$ (Pa)	F (Hz)								LpA [dB(A)]	NR	NC
	(l/s)	(m³/h)			63	125	250	500	1000	2000	4000	8000			
TRC/K-100	14	50	26	28	10	14	22	14	10	10	10	10	15	14	10
	19	68	44	48	10	18	31	18	10	10	10	10	20	16	13
	23	83	64	69	10	20	37	20	10	10	10	10	25	23	20
	27	97	88	95	10	22	43	22	10	10	10	10	30	29	26
	31	112	120	129	10	24	48	24	10	10	10	10	35	34	32

LpA values presented with room attenuation 4 dB (red 10m² - sab). When using room attenuation 8 dB (red 25m² - sab): LpA - 4dB.  
NR/NC noise criteria

## Pressure drop and sound data

### TRC/K-100



Selection example :

Requirements :  $qv = 20 \text{ l/s}$   
 $LpA < 25 \text{ dB(A)}$

Selection : TRC/K-100  
 $\Delta P_{tot} = 53 \text{ Pa}$   
 $LpA < 21 \text{ dB(A)}$

## Product Code

### TRC/S-D

S = Construction

F Plenum installation  
K Duct installation

D = Diameter of duct connection  
100, 125

Specifics and accessories

CO = Colour

W White  
X Special colour

Code example

TRC/F-100, CO=W