



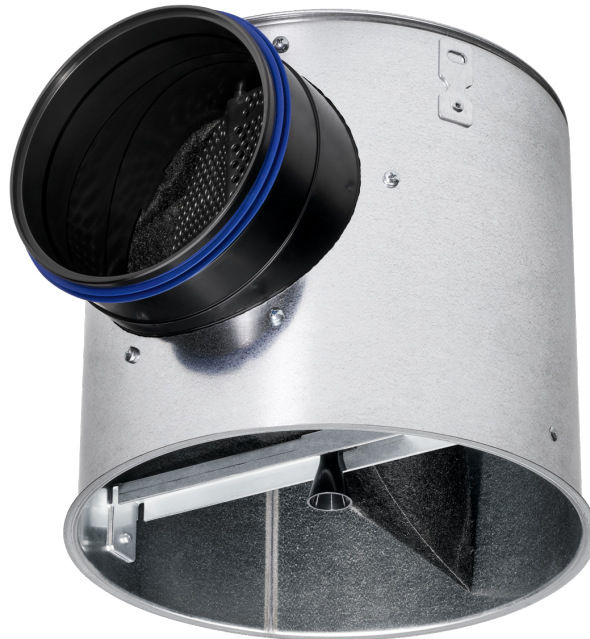
Circular plenum box with equalising element, for supply air



Circular plenum box without equalising element, for extract air

Plenum boxes

AKR



Circular plenum box for universal connection of swirl diffusers type VDW, FD, TDF, AIRNAMIC and XARTO

Standard plenum box for supply air and extract air for circular diffuser faces and for the XARTO type

- Plenum box made of galvanised sheet steel with plastic spigot and equalising element made of polyester fleece
- Mounting aid for faster and tool-free assembly of the diffuser face
- 3 suspension lugs for fixing, alternatively a central single-point suspension can be used
- For all types of ceiling systems
- Equalising element for optimum and therefore quieter flow through the diffuser face with supply air
- For comfort zones and industrial zones
- Very airtight casing

Optional equipment and accessories

- Spigot with damper unit for volume flow rate balancing and lip seal
- Internal lining
- Powder coating, RAL CLASSIC colour

General information	2	Order code	6
Function	3	Dimensions and weight	7
Quick sizing	4	Product details	8
Specification text	5	Nomenclature	9

General information

Application

- Plenum boxes for connecting type VDW, FD, TDF, AIRNAMIC and XARTO air terminal devices
- Standard plenum box for circular diffuser faces and type XARTO
- No tools required to assemble the central fixing screw
- For supply and extract air in comfort and industrial zones
- For connection to circular ducts according to EN 1506 or EN 13180
- For variable and constant volume flows
- For all types of ceiling systems

Special features

- Fast and tool-free assembly of the diffuser face thanks to the integrated assembly aid
- Shorter assembly time due to the reduction to 3 fixing points, central suspension with a threaded rod can be performed by others
- Very airtight casing
- Easily accessible, therefore easy to clean and no "dirt corners" exist

Variants

- AKR-Z-H: Plenum box with equalising element, for supply air
- AKR-A-H: Plenum box without equalising element, for extract air

The circular plenum box is optionally available with damper unit and lip seal (DS).

The circular plenum box with internal lining (D) is available as an option.

Parts and characteristics

- The polyester fleece equalising element improves air distribution so that the diffuser face receives an even airflow. Depending on the diffuser face, lower sound power levels are achieved due to the improved airflow
- Cross bar with mounting aid for fixing the diffuser face without tools

Attachments

- Spigot optionally with damper unit and lip seal for easier volume flow rate balancing and better sealing to the duct system

Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Equalising element detachable and exchangeable

Materials and surfaces

- Casing, cross bar and fixing tab made of galvanised sheet steel
- Spigot and mounting aid for central screw fixing made of ABS UL94-V-0, flame retardant
- Polyester fleece equalising element, compliant with VDI 6022
- Internal lining made of approx. 6 mm thick closed-cell vinyl foam
- Lip seal made of Evoprene

Maintenance

- Low-maintenance as construction and materials are not subject to wear
- If necessary or in case of contamination, it is possible to replace the equalising element.
- Inspection and cleaning to VDI 6022

Function

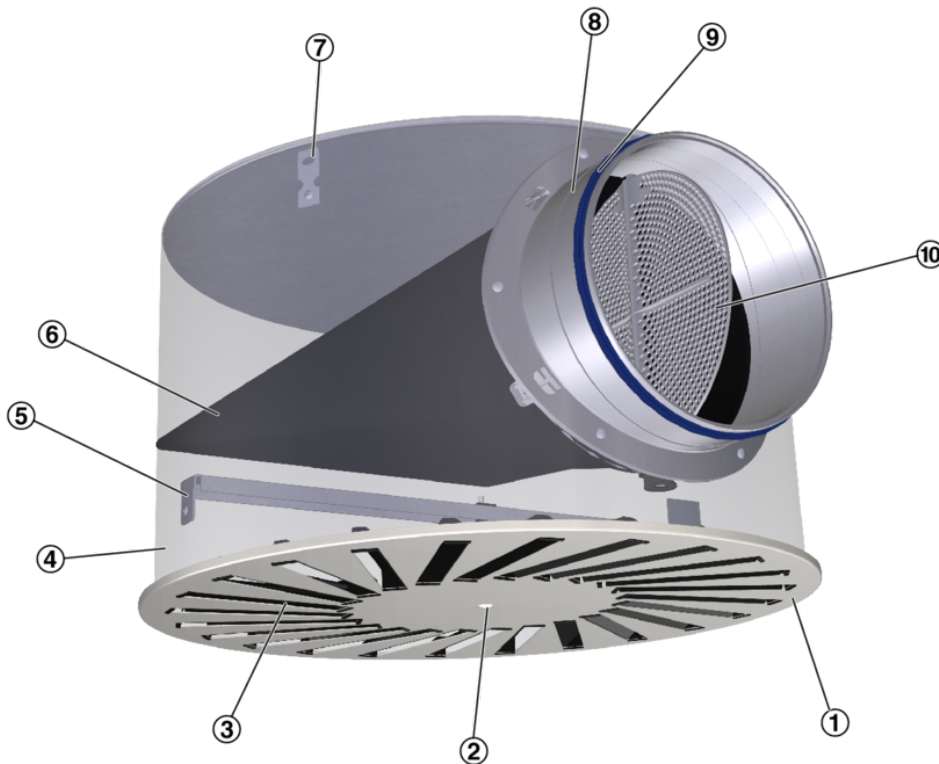
Plenum boxes are used to connect air terminal devices to circular ducts and to fix the diffuser face.

Type AKR plenum boxes are fitted with an equalising element (for supply air) that ensures an even airflow through the diffuser face.

Depending on the diffuser face, lower sound power levels are achieved due to the improved airflow.

The spigot with optionally available damper unit and lip seal simplifies the volume flow rate balancing for commissioning.

Schematic illustration of VDW-R with circular plenum box and side entry spigot



- ① Diffuser face
- ② Central fixing screw
- ③ Adjustable air control blade
- ④ Plenum box
- ⑤ Cross bar
- ⑥ Equalising element
- ⑦ Suspension lug
- ⑧ Spigot
- Optional
- ⑨ Lip seal
- ⑩ Damper blade for volume flow rate balancing



Quick sizing

Quick sizing tables provide a good overview of the volume flow rates and corresponding sound power levels and differential pressures. The minimum volume flow rates apply to a supply air to room air temperature difference of -6 K. The maximum volume flow rates apply to a sound power level of approx. 50 dB (A) with damper blade position 0°. Exact values for all parameters can be determined with our Easy Product Finder design program.

Type	AIRNAMIC-R	VDW-R	FD-R	TDF-R	XARTO R/C/Q
01		300 × 8	300	300	
02	400	400 × 16	400	400	
03		500 × 24	500	500	
04					600 625
05	600	600 × 24 600 × 48 625 × 24	600 625	600 625	

Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design program.

Type AKR circular plenum boxes for the connection of diffuser faces to circular ducts, suitable for supply air or extract air applications. Supply air plenum boxes are fitted with an equalising element that ensures an even airflow through the diffuser face. The ready-to-install component consisting of the plenum box, the horizontally arranged spigot, with equalising element for supply air, cross bar including quick-fit kit for fixing the diffuser face into place. The diffuser face is fixed to the cross bar by means of a central fixing screw, and the diffuser face can be installed without tools. Spigot suitable for ducts according to EN 1506 or EN 13180.

Special features

- Fast and tool-free assembly of the diffuser face thanks to the integrated assembly aid
- Shorter assembly time due to the reduction to 3 fixing points, central suspension with a threaded rod can be performed by others
- Very airtight casing
- Easily accessible, therefore easy to clean and no "dirt corners" exist

Materials and surfaces

- Casing, cross bar and fixing tab made of galvanised sheet steel
- Spigot and mounting aid for central screw fixing made of ABS UL94-V-0, flame retardant
- Polyester fleece equalising element, compliant with VDI 6022
- Internal lining made of approx. 6 mm thick closed-cell vinyl foam
- Lip seal made of Evoprene



Order code

AKR - Z - H - DS - D / 1 / P1
| | | | | | |
1 2 3 4 5 6 7

1 Type AKR Circular plenum box

2 System

Z Supply air

A Extract air

3 Spigot

H Spigot horizontal

4 Damper blade and lip seal

No entry required: None

DS With damper unit and lip seal

5 Internal lining (insulation)

No entry required: None

D With internal lining

6 Box type

01

02

03

04

05

7 Surface

No entry required: Raw, galvanised steel

P1 Powder-coated, specify RAL CLASSIC colour

Order example: AKR-Z-H-DS-.../05/...

Air conditioning system

Supply air

Connector

Spigot horizontal

Damper blade and lip seal

With

Lining (insulation)

Without

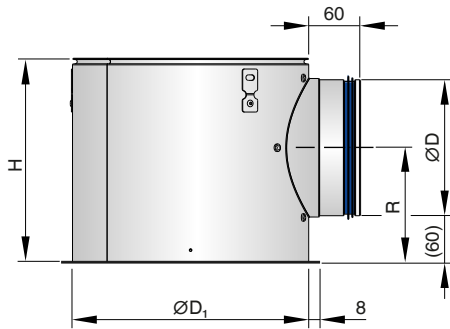
Box type

05

User interface

Raw, galvanised steel

Dimensions and weight



Type	$\text{Ø}D$	H	$\text{Ø}D_1$	R	Weight
	mm				kg
01	158	243	273	139	1.6
02	198	290	362	166	2.4
03	198	290	460	166	3.1
04	248	344	460	195	3.5
05	248	344	573	195	4.4

Product details

Volume flow rate balancing/commissioning

When several diffusers are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

- Circular plenum boxes with damper unit and lip seal (-DS) have a damper unit that can be adjusted in 15° steps
- Adjustment is via a manual lever which is freely accessible when the diffuser face is removed
- Adjustment range is 0° - 90° in 15° steps

Nomenclature

R [mm]

Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling

ØD [mm]

Outer diameter of the spigot

ØD₁

Outer diameter of a circular plenum box

H [mm]

Height of plenum box

m [kg]

Weight

q_v [m³/h]; [l/s]

Volume flow rate

Lengths

Lengths are given in [mm] unless stated otherwise.