Round Duct System

Model RR-Complete

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Round Duct System RR-COMPLETE

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Round Duct System RR-COMPLETE

Description

In modern architecture, sheet metal and spiral ducts of air-conditioning systems are often incorporated in the design of the room. Emphasis is often placed deliberately on parts of the supply system. For this visible installation of the ventilation ducts, it is a good idea to integrate volumetric flow controllers, duct silencers and air diffusers into the ducts.
In order to be able to offer planners a technically outstanding system, which can also be well integrated into modern architectural concepts, we have developed the **round duct system type RR-Complete**.
Its modular design allows architects and planners to construct freely visible ventilation systems on the highest esthetic level. They thus provide a room with visual highlights.
The system can be used in laboratories, schools, kindergartens, swimming pools, offices, showrooms, seminar rooms, restaurants, gymnasiums, multi-purpose halls and even in residential buildings, in theory almost anywhere.
Apart from its versatile geometric options, the round duct system harmonises with its environment also in terms of colour.
The technical aspects of the round duct system impress with their wide range of components. Volumetric flow controllers, measuring cross/damper combinations and, last but not least, supply air and return air diffusers - vertical or horizontal mounting possible - can be combined to form a complete system. All components up to NW500 can be manufactured to the **same diameters** and to a uniform duct design.
In addition to electric volumetric flow controllers, as an alternative, a manually operated combination of measuring cross and damper for regulation of the volumetric flow can also be used.
The round duct system is already designed in the planning stage at SCHAKO and supplied to the customer as CAD drawing. This guarantees that all components are optimally tuned to one another.
For maintenance, service, retrofitting, etc., inspection openings in sufficient number and size must be provided on site.
The different components are connected by using connecting sockets.

Advantages:

- **complete:** Implementation of a complete and adjustable system: integrated supply and return air diffusers, controllable volumes.
- **aesthetic**: All components can be manufactured to the same diameters and to a uniform duct design.
- **flexible:** Any geometry is possible thanks to the combination of dummy pipes, bends, arc segments and connecting pieces.
- **adaptable:** The sheet steel model is available in all RAL colours.
- **easy to mount:** Pre-mounted suspension devices reduce the assembly time.
- **CAD-supported:** Technical design by SCHAKO, the customers gets finished CAD drawings.
- **design:** The technical design of the duct system is only possible by means of the SCHAKO layout program.

Component overview

- Volumetric flow controller VRARR (page 6)
- Volumetric flow restrictor DKARR (page 10)
- Duct silencer RSRR (page 13)
- RR diffuser components (page 15)
- Round duct diffuser DBBRR (page 16)
- Round Duct Grille KGRR (page 18)
- Round duct nozzle jet diffuser DSARR (page 21)
- Long throw nozzle grille with integrated round duct WGARR (page 23)
- Round Duct System Accessories (page 25)

Round Duct System RR-COMPLETE

Quick selection of components and sizes

Volumetric flow controller VRARR

NW	P	L
200	20	575
224	32	575
250	45	575
280	40	660
315	45	705
355	52,5	760
400	42,5	885
450	47,5	975
500	50	1115

Volumetric flow meter DKARR

NW	P	L
200	20	575
224	32	575
250	45	575
280	40	660
315	45	705
355	52,5	760
400	42,5	885
450	47,5	975
500	50	1115

P (mm) = Packing thickness
L (mm) = Length

Duct silencer RSRR

NW	P	L	
200	20	1-part	500 750 1000
224	32		
250	45		
280	40		
315	45	2-part	1500 1750 2000
355	52,5		
400	42,5		
450	47,5		
500	50		

Round duct diffuser DBBRR

NW	Number of slots along circumference						
	2	4	6	8	10	12	14
200	x	x	-	-	-	-	-
224	x	x	-	-	-	-	-
250	x	x	-	-	-	-	-
280	x	x	x	-	-	-	-
315	x	x	x	-	-	-	-
355	x	x	x	x	-	-	-
400	x	x	x	x	-	-	-
450	x	x	x	x	-	-	-
500	x	x	x	x	x	x	x

L	
1-part	500 750 1000
2-part	1500 1750 2000

Round duct grille KGRR

NW	Height H			
	65	115	215	315
200	x	x	-	-
224	x	x	-	-
250	x	x	x	-
280	x	x	x	-
315	x	x	x	-
355	x	x	x	x
400	x	x	x	x
450	x	x	x	x
500	x	x	x	x

L	
1-part	500 750 1000
2-part	1500 1750 2000

Round duct nozzle jet diffuser DSARR

NW	Nozzle rows		
	1	2	4
200	x	x	-
224	x	x	-
250	x	x	-
280	x	x	-
315	x	x	-
355	x	x	-
400	x	x	x
450	x	x	x
500	x	x	x

L	
1-part	500 750 1000
2-part	1500 1750 2000

Long throw nozzle grille with integrated round duct WGARR

NW	Nozzle rows	
	1	2
200	x	-
224	x	-
250	x	-
280	x	-
315	x	-
355	x	-
400	x	x
450	x	x
500	x	x

L	
1-part	500 750 1000
2-part	1500 1750 2000

Fastening methods

- Fastening hole (-B0 / -BB)
  - without fastening hole (-B0)
  - With fastening hole ø11.5 (-BB, standard)Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Round Duct System RR-COMPLETE

Volumetric flow controller VRARR

Description

A volumetric flow controller is used for pressure-independent volumetric flow regulation in ventilation and air-conditioning systems. It is used to keep the volumetric flow constant (CAV) within specified limits or to control it variably (VAV) as a function of a command variable, for example a room temperature controller, DDC or bus system. For constant volumetric flows, the operating stages CLOSED/V_{min}/V_{mid}/V_{max}/OPEN are available in stage operation, controlled via relays or switches. The housing, measuring sensor, control flap, PI controller with pressure sensor and actuator form a closed control loop with feedback, allowing demand-dependent, energy-saving air-conditioning of the single rooms or areas of air-conditioning systems. When suitable electrical controller types are used, room or duct pressure regulation can be achieved.

The first adjustment of the V_{min}, V_{max} and V_{nenn} operating volumetric flows is done prior to delivery ex works in accordance with specific customer requirements, although V_{min} and V_{max} can be easily changed at any time with the controller already mounted by means of the handheld control device or the PC-Tool software. When these values are set, the functions of all volumetric flow controllers are also checked. The operating point V_{max} can be set in the range 20 (30)...100% of the nominal volumetric flow of the box, while the operating point V_{min} is set in the range 0...100%, relative to V_{max} or V_{nenn} (depending on the controller types). The maximum deviation of the volumetric flows is +/- 5%, relative to the nominal volumetric flow V_{nenn}, based on a calibration curve of 12 m/sec. At lower flow rates, the deviation in percent may increase.

For the calibration of the controllers, a curve with a flow rate of 12 m/ sec is available. For constant-volume volumetric flow controllers, the V_{min} value will be set to the desired constant-volume value.
If the calibration curve must be changed on site, the controllers must either be recalibrated ex-factory or the calibration curve must be changed on site by the customer service of Schako.

For the measurement of the differential pressure, SCHAKO is using its measuring principle by means of a double measuring cross made of extruded aluminium profile, to which 12 measuring points have been attached on the pressure and suction side, respectively, by the median line method, in order to determine average values. In comparison with measuring rods or measuring orifices having fewer measuring points, this gives higher accuracy, allowing the inflow area required in front of the volumetric flow controller to be minimised (see page 7 - Installation Information).

When using the controllers in systems with heavy dust contamination, suitable filters must be used. For contaminated or aggressive air or air containing fluffy material, only those controller types must be used that incorporate a differential pressure sensor. Since the membrane zero point must not be changed in static sensors, the mounting instructions documented by the manufacturer must be adhered to. The volumetric flow controllers type VRARR are not suitable for air containing sticky and greasy particles (e.g. kitchen exhaust air).

Housing leakage according to DIN EN 1751, class B, at a duct pressure of up to 1000 Pa.
Leakage with closed damper blade according to DIN EN 1751, class 3, at a duct pressure of max. 1000 Pa.
Higher requirements upon request.

The volumetric flow controller VRA has been tested successfully by TÜV SÜD in accordance with the following regulations:

- **VDI 6022, Sheet 1**: Hygienic requirements of ventilation and air-conditioning systems
- **VDI 6022, Sheet 2**: Hygienic requirements of ventilation and air-conditioning systems - Measurement methods and investigations during hygienic controls and hygienic inspections
- **DIN 1946, Sheet 2**: Air-conditioning technology - Health requirements

For maintenance, service, retrofitting, etc., inspection openings in sufficient number and size must be provided on site.

Field of application

- for supply and return air systems
- for constant CAV or variable VAV installations
- for positive control V_{min}, V_{mid}, V_{max}, "OPEN" or "CLOSED"
- For volumetric flow and linear pressure control
- in the differential pressure range 50 - 1,000 Pascal
- at ambient temperatures 0 ...+...50°C, requirement: measuring air 0...+ 50°C/5...95% rH, non-condensing
- with command signal 0...10V DC, 2...10V DC, via MP bus (Belimo), digital LonWorks or Modbus
- with supply voltage 24 V AC (19.2..28.8 V) or 24 V DC (21.6..28.8 V)
- with DD varnish coating for aggressive media
- for regulating the air velocity in the duct in the range 1..12 m/s (electric).
- can also be used with vertical axis

When connecting SCHAKO components to customer installations, any compatibility problems are beyond our scope of responsibility and must be solved on site.

Round Duct System RR-COMPLETE

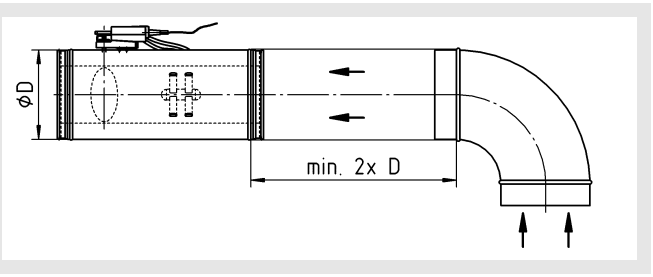
Installation

Installation information

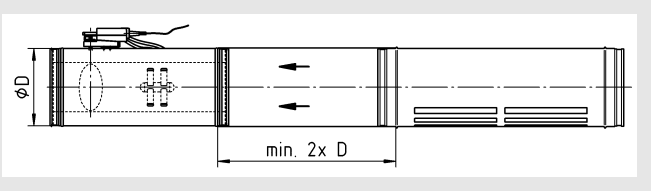
To avoid unnecessary controller errors, the min. distances according to the following table / drawings must be observed. All volumetric flow controllers can be assembled with horizontal or vertical damper axis.

Distance to:	VRARR
Connection piece:	2 x diameter
Diffuser:	2 x diameter

Installation information for VRARR (round)
Distance to a connection piece



Distance to the diffuser



Mounting position, see page 56.

Construction

Housing (outer tube / end cover)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to the RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Inner tube and damper blade
- Galvanised sheet steel

Insulation
- integrated acoustic cladding with non-flammable mineral wool filling to DIN 4102 A2

Damper leaf seal
- made of PUR, silicone-free
- for airtight sealing design to DIN EN 1751

Damper bearing
- Brass

Measuring cross
- Extruded aluminium profile

Measuring cross support
- Plastic (PA6)

Model

VRARR	- with electric controller. - Control voltage 24 V AC 50/60 Hz. - alternatively with spring return actuator zero-current "CLOSED" or zero-current "OPEN" (at an extra charge). - alternatively with high-speed actuator running time 3-5 sec. for 90° angle of rotation (at an extra charge).
VRARR-...-3U-...	- Electric controller position: on the right-hand side in the air flow direction (3 o'clock, standard).
VRARR-...-6U-...	Electric controller position: at the bottom in the air flow direction (6 o'clock).
VRARR-...-9U-...	- Electric controller position: on the left-hand side in the air flow direction (9 o'clock).
VRARR-...-0U-...	- Electric controller position: at the top in the air flow direction (12 o'clock).

Accessories

Rubber lip seal (-GD0 / -GD1)
- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

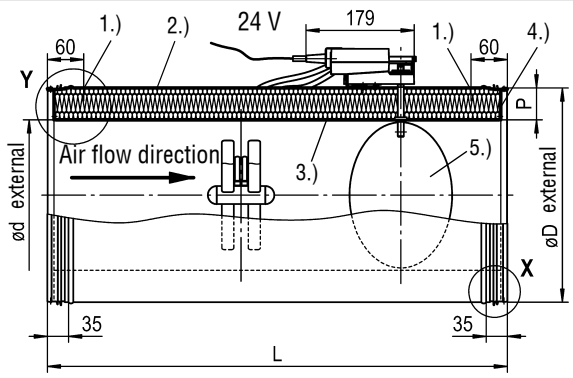
Fastening methods

Fastening hole (-B0 / -BB)
- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Dimensions

VRARR-...-0U-...



1.) Fastening hole ø11.5 mm (standard)
2.) Outer tube
3.) Inner tube
4.) End cover
5.) Damper blade

Available sizes VRARR-...

NW	øD	ød	P	L
200	198	158	20	575
224	222	158	32	575
250	248	158	45	575
280	278	198	40	660
315	313	223	45	705
355	353	248	52,5	760
400	398	313	42,5	885
450	448	353	47,5	975
500	498	398	50	1115

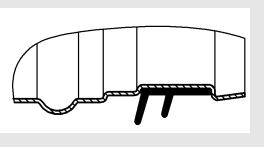
Sealing airtight to DIN EN 1751 (class 3).
P (mm) = packing thickness

Accessories

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



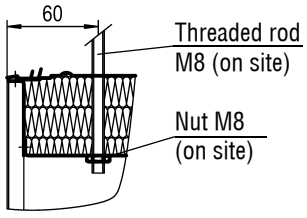
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y



Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Standard controllers and drives

Type	VRARR
Size	ø200 - ø500
Attachment assembly	A001
Actuator	Compact
Make	Belimo

Technical data

Quick selection

for total air volumes of the duct system per branch duct

NW (mm)	øD (mm)	ød (mm)	V	Belimo Compact / Gruner (on request) v_{min} (1 m/s)	Belimo Compact / Gruner (on request) v_{max} (12 m/s)
200	198	158	m³/h	69	836
			l/s	19	232
224	222	158	m³/h	69	836
			l/s	19	232
250	248	158	m³/h	69	836
			l/s	19	232
280	278	198	m³/h	110	1317
			l/s	31	366
315	313	223	m³/h	139	1672
			l/s	39	464
355	353	248	m³/h	172	2070
			l/s	48	575
400	398	313	m³/h	275	3303
			l/s	76	918
450	448	353	m³/h	350	4204
			l/s	97	1168
500	498	398	m³/h	446	5348
			l/s	124	1486

Round Duct System RR-COMPLETE

Attention, the following specifications are important for the programming of the volumetric flow controllers:

- this table merely specifies the complete measuring range of the controller (volumetric flow range)
- If the customer absolutely wants a calibration curve different from 12 m/s, it must be specified!
- When the air volume drops below the V_{min} shown in the chart, the correct functioning of the volumetric flow controller is no longer guaranteed!
- If only one air volume is specified in the order (as V_{max} value), the volumetric flow controller will be delivered as variable volumetric flow controller. The V_{min} value will be set to the value specified in the catalogue.
- If only one air volume is specified in the order (as V_{min} or $V_{konstant}$ value or without value specification), then the volumetric flow controller will be delivered as a constant volumetric flow controller. The volume specified in the order is set to the V_{min} value, and the V_{max} value is set to 100%.
- The air volumes can be changed using setting devices specific of the controller make, depending on the calibration curve set ex works.
- For the parameter setting of the control components (all controllers), an air density of 1.2 kg/m³ has been taken into account.
- Belimo compact controllers are height-compensated. They are calibrated ex works to the system height in question of the specified installation site.
- If no system height is given in the order, the controllers will be set to the elevation of the delivery address.
- If the customer does not specify whether the "Parallel" or "Master/Slave" operating mode is desired, the controller is set for the parallel operation (Master/Slave mode only upon customer request).

Technical data

For further technical data (e.g. static minimum pressure difference, sound values, etc.), the technical data of the controller (circuit diagrams, etc.) as well as assembly and maintenance instructions, refer to documentation volumetric flow controller VRA, register 08, catalogue 2 or the SCHAKO design programme.

Controller selection

A001	LMV-D3-MP-F1 - Compact, dynamic, slow - Belimo (standard)
A140	LMV-D3-MOD-F - Compact, dynamic, slow, MOD - Belimo
A141	LMV-D3-KNX-F - Compact, dynamic, slow, KNX - Belimo
A160	327VM-024-05-MB - Compact, dynamic, slow - Gruner - Modbus
A163	327VM-024-05-DS4-MB - Compact, static, slow - Gruner - Modbus

Alternative attachment assemblies are available upon request.

Accessories:
S1A/S2A, limit switch make Belimo, to fit all new compact controllers and actuators of make Belimo.
ZTH-EU/PC-Tool for Belimo...
GUIV3-S for Gruner

Legend, see page 28.
Order details, see page 29.
Specification text, see page 46.

Round Duct System RR-COMPLETE

Volumetric flow restrictor DKARR

Description

For quick, easy control of the supply air volume, the DKARR was especially developed for the round duct system RR-COMPLETE.
The **round, manually adjustable** volumetric flow restrictor DKARR is suitable for installation in round **supply air and return air ducts** according to DIN 24145 or 24146. It is used for regulating the volumetric flows in air-conditioning installations. The integrated volumetric flow controller measuring cross type is mainly used for measuring the air volumetric flow downstream of the central unit or fan or for adjusting branch ducts or in ventilation and air-conditioning installations of large shopping centres having several tenants, for determining the share in energy costs of the ventilation and air-conditioning installation.

The hand-adjustable device **with integrated position indicator** allows an exact setting of the damper blade, without tools, between 0° and 90°. The housing is dimensionally stable due to standard double beads.
The throttle damper can be used at temperatures between 0°C and +50°C.
Maximum duct pressure 500 Pa.

The measuring cross substantially facilitates the measurement of the air volumetric flow, compared with the previous cost- and time-intensive measuring method, in which many individual points have to be measured.
The measuring deviation of the volumetric flow measuring cross is + 5% at 100 % V_{max}.
The measuring cross is largely insensitive to the intake flow, since 12 measuring points are distributed on this measuring cross according to the median line method. In comparison with measuring rods having only 4 measuring points or measuring orifices, this gives optimum measurement results. In order to exclude any unnecessary sources of errors, please observe to the assembly method for VRARR on page 7.
The differential pressure determined at the measuring cross can be measured with a (static or dynamic) pressure measuring device.
When using the measuring crosses in systems with heavy dust contamination, suitable filters must be connected upstream. The measuring crosses are not suitable for air with greasy and sticky particles.

For maintenance, service, retrofitting, etc., inspection openings in sufficient number and size must be provided on site.

Advantages:
- stable design.
- easy to regulate.
- easy to install.
- can be fitted position-independently.

Field of application:
- for supply and return air systems
- for constant or variable volumetric flows
- Differential pressure range from 50 to 1000 Pa.
- for ambient temperatures from 0 to 55°C.

Construction

Housing (outer tube / end cover)
- Galvanised sheet steel (-SV-0000)
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Inner tube, damper blade and manual adjusting device
- Galvanised sheet steel

Insulation
- integrated acoustic cladding with non-flammable mineral wool filling to DIN 4102 A2

Damper leaf seal
- made of PUR, silicone-free
- for airtight sealing design to DIN EN 1751, class 3

Damper bearing
- Brass

Measuring cross
- Extruded aluminium profile

Measuring cross support
- Plastic (PA6)

Model

DKARR	-	with manual adjusting device.
DKARR-...-3U-...	-	Manual adjustment position: on the right-hand side in the air flow direction (3 o'clock, standard).
DKARR-...-6U-...	-	Manual adjustment position: at the bottom in the air flow direction (6 o'clock).
DKARR-...-9U-...	-	Manual adjustment position: on the left-hand side in the air flow direction (9 o'clock).
DKARR-...-0U-...		Electric controller position: at the top in the air flow direction (12 o'clock).

Accessories

Rubber lip seal (-GD0 / -GD1)
- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Fastening methods

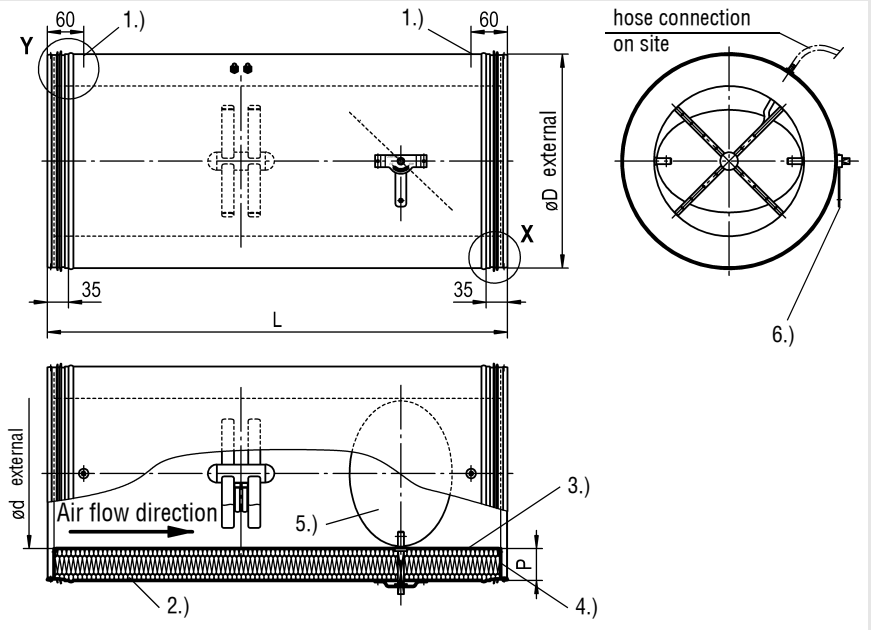
Fastening hole (-B0 / -BB)
- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Mounting position, see page 56.

Round Duct System RR-COMPLETE

Dimensions

DKARR-…-3U-…



Available sizes DKARR-…

NW	øD	ød	P	L
200	198	158	20	575
224	222	158	32	575
250	248	158	45	575
280	278	198	40	660
315	313	223	45	705
355	353	248	52,5	760
400	398	313	42,5	885
450	448	353	47,5	975
500	498	398	50	1115

Sealing airtight to DIN EN 1751 (class 3).
Manual adjustment: available at the bottom or on the side
P (mm) = packing thickness

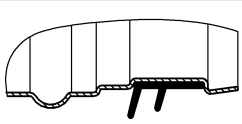
1.) Fastening hole ø11.5 mm (standard)
2.) Outer tube
3.) Inner tube
4.) End cover
5.) Damper blade
6.) Manual adjustment

Accessories

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



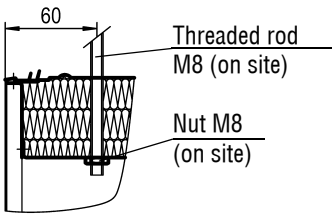
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y

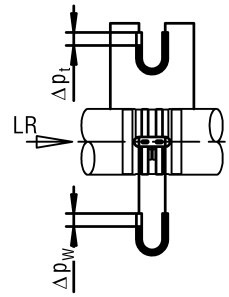


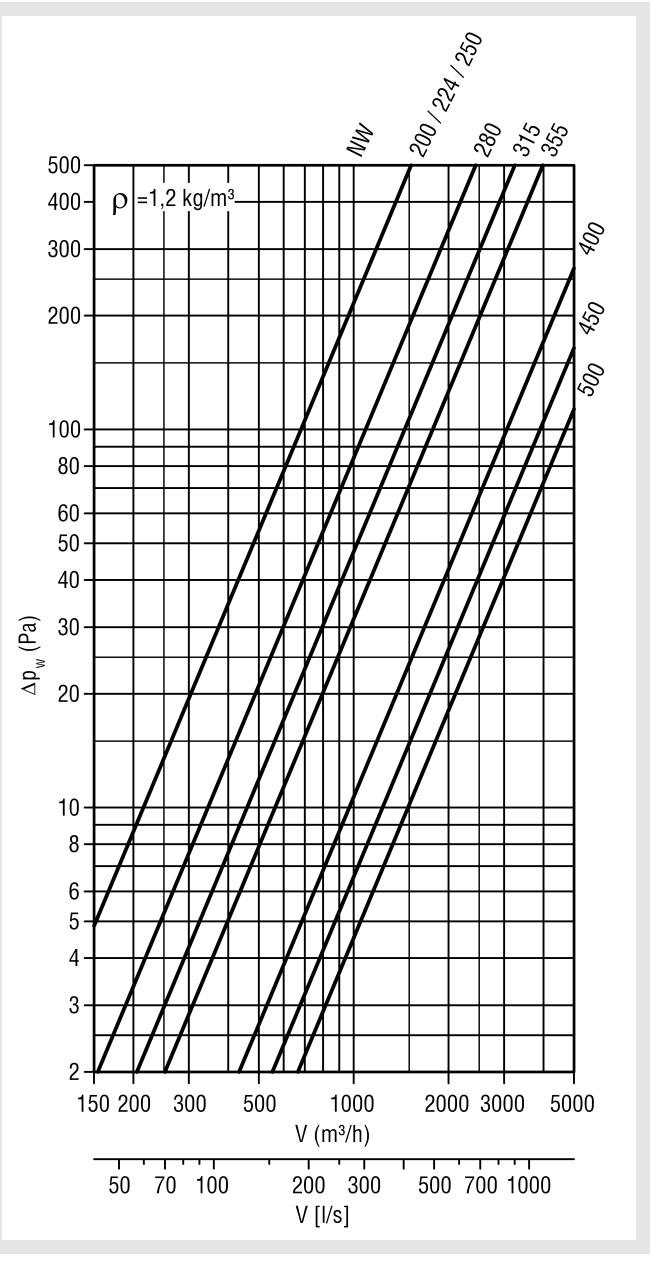
Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Round Duct System RR-COMPLETE

Technical data

Differential pressure diagram





Legend, see page 28.
Order details, see page 31.
Specification text, see page 47.

Round Duct System RR-COMPLETE

Duct silencer RSRR

Description

Silencing of the duct silencer type RSRR in accordance with the absorption principle is done by means of an annular chamber filled with mineral wool according to DIN 4102 A2 non-flammable, mineral wool with glass silk cover. Specially designed for the round duct system RR-COMPLETE with the same duct diameter, the duct silencer is adapted optically to the remaining components.
For maintenance, service, retrofitting, etc., inspection openings in sufficient number and size must be provided on site.

Attention:
The use of the RSRR is not only designed for minimising the flow-generated noise of volumetric flow controllers, but also for preventing the cross-talk sound transmission from room to room!

Construction

Housing (outer tube / end cover)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Inner tube
- Galvanised sheet steel

Model

RSRR - Annular chamber with mineral wool filling

Accessories

Rubber lip seal (-GD0 / -GD1)
- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Fastening methods

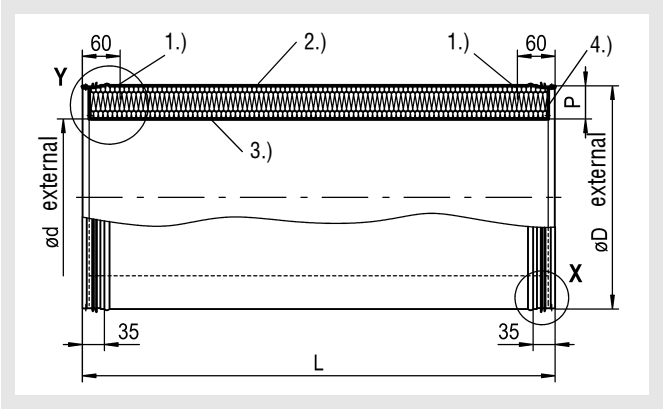
Fastening hole (-B0 / -BB)
- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Mounting position, see page 56.

Technical data
For the technical data, please refer to the SCHAKO layout program

Dimensions

RSRR



1.) Fastening hole ø11.5 mm (standard)
2.) Outer tube
3.) Inner tube
4.) End cover

Available sizes RSRR-...

NW	øD mm	ød mm	P mm
200	198	158	20
224	222	158	32
250	248	158	45
280	278	198	40
315	313	223	45
355	353	248	52,5
400	398	313	42,5
450	448	353	47,5
500	498	398	50

L mm	
1-part	500 750 1000
2-part	1500 1750 2000

P (mm) = packing thickness

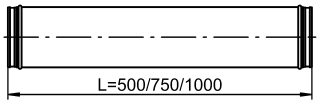
For rubber lip seal accessories, detail X, see page 14.
For fastening methods, detail Y, see page 14.

Round Duct System RR-COMPLETE

Division of length RSRR

1-part

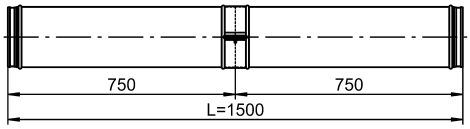
Lengths 500/750/1000



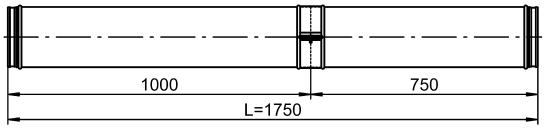
Legend, see page 28.
Order details, see page 32.
Specification text, see page 47.

2-part

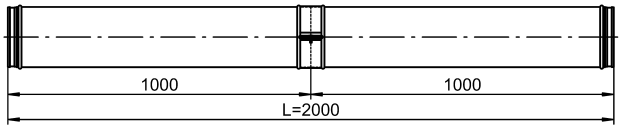
Length 1500



Length 1750



Length 2000

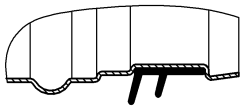


Accessories

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



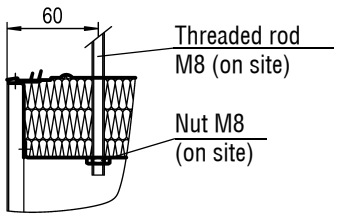
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y



Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Round Duct System RR-COMPLETE

RR diffuser components

(DBBRR / KGRR / DSARR / WGARR)

Function

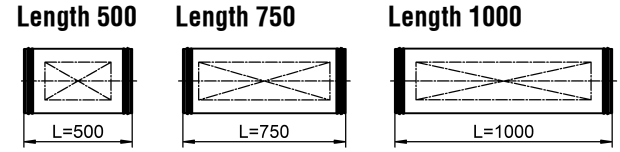
In modern architecture, sheet metal and spiral ducts of air-conditioning systems are often incorporated in the design of the room. Emphasis is often placed deliberately on parts of the supply system. In this visible installation of the ventilation ducts, it is a good idea to integrate the air diffusers into the ducts.
In order to be able to offer planners a technically advanced air diffuser, which can also be well integrated into modern architectural concepts, we have developed our round duct diffusers DBBRR, KGRR, DSARR and WGARR.
The RR diffusers consist of a round duct with integrated blades (DBBRR / KGRR) or integrated nozzles (DSARR / WGARR).

Advantages:

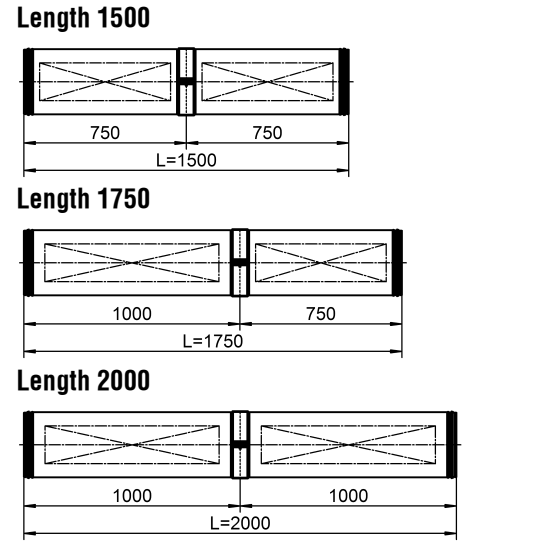
- Noise level and pressure loss in all blade or nozzle positions remain the same when changing the air flow direction.
- Dimensionally stable smooth duct is easy to clean.

Length of sections RR diffuser components

1-part:



2-part:



RR diffuser components with a length of > 1000 mm are produced in two parts and joined in-factory with a connection sleeve. The dimensions of the dummy pipe are the same as those of the RR diffuser components DBBRR / KGRR / DSARR / WGARR.
A different division of length is possible on special request. However, the maximum length for a middle or end piece is 1000 mm.

Round Duct System RR-COMPLETE

Round duct diffuser DBBRR

Description

The round duct diffuser DBBRR consists of a round duct with integrated, linear blades, which can also be adjusted subsequently by hand, with integrated hit-and-miss damper, which allows the air to be blown absolutely uniformly over the entire diffuser area. The centrally arranged blades in support profile sections ensure that the free cross-section at every blade is the same. As a result, the noise level and pressure are not affected by changing the blade position. In heating mode, this allows a large penetration depth, thus providing an effective, cost-saving heating phase. In cooling mode, the maximum end velocity of jet and temperature difference are reduced to such an extent that no draughts are produced in the occupied zone.
During the installation, the round duct diffuser must be mounted in accordance with the desired air flow direction. The blades and the hit-and-miss damper are positioned on the round duct at 3 o'clock (-3U), 6 o'clock (-6U, standard), 9 o'clock (-9U) or 12 o'clock (0U).
This uniform admission allows the round duct diffuser DBBRR to be installed at any point along the duct system.

Construction

Round duct

- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Blades

- Without blades (-00000, available only for return air).
- With blades of plastic material:
  similar to RAL colour 9005 (black) (-L9005).
  Similar to RAL colour 9010 (white) (-L9010).
- With blades made of aluminium painted to a freely selectable RAL colour (same colour as round duct) (-Axxxx, always with 4 digits).
  (Painted blades cannot be adjusted subsequently.)

Hit-and-miss damper (-SS / -SN)

- Without hit-and-miss damper (-SN).
- With hit-and-miss damper (-SS, standard) made of galvanised sheet steel, for simple air volume and ductwork regulation.

Model

DBBRR-Z	-	Supply air model with air deflection blades.
DBBRR-A	-	Return air model without air deflection blades.
DBBRR-...-3U	-	Horizontal throw to the right (3 o'clock).
DBBRR-...-6U	-	Vertical throw downward (6 o'clock) (standard).
DBBRR-...-9U	-	Horizontal throw to the left (9 o'clock).
DBBRR-...-0U	-	Vertical throw upward (12 o'clock).
DBBRR-...-02-...	-	2-slot
DBBRR-...-04-...	-	4-slot
DBBRR-...-06-...	-	6-slot (possible from NW 280 upwards)
DBBRR-...-08-...	-	8-slot (possible from NW 355 upwards)
DBBRR-...-10-...	-	10-slot (possible for NW 500)
DBBRR-...-12-...	-	12-slot (possible for NW 500)
DBBRR-...-14-...	-	14-slot (possible for NW 500)

Accessories

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Fastening methods

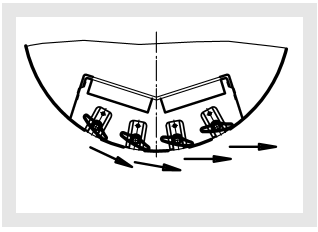
Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

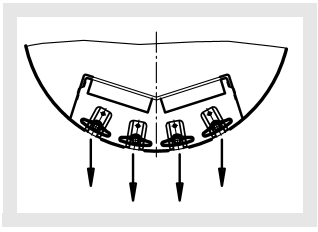
Air throw pattern

Throw directions (blade position 6 o'clock)

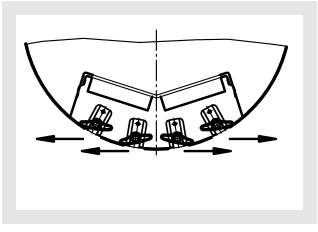
one-way horizontal (-E)



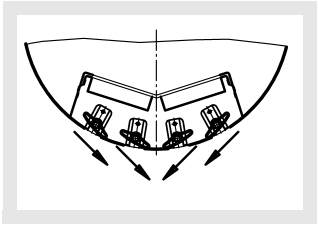
vertical (-V)



two-way horizontal (-B) (standard)



crosswise (-K)



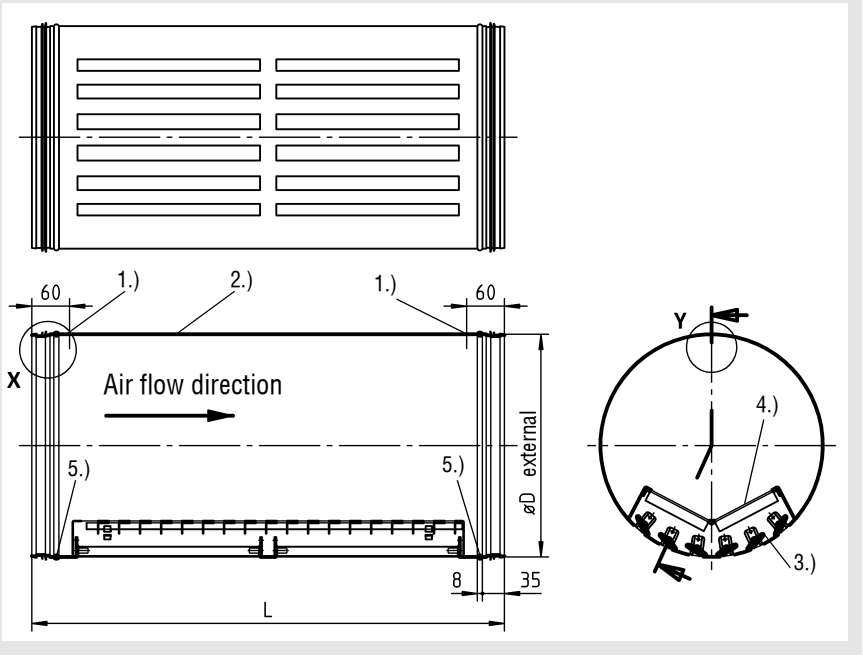
Return air without blades (-0)

Mounting position, see page 56.

Round Duct System RR-COMPLETE

Dimensions

DBBRR-6U



1.) Fastening hole ø11.5 mm (standard)
2.) Round duct
3.) Blades
4.) Hit-and-miss damper
5.) Banding for size 500

Available sizes DBBRR-...

NW	øD	Number of slots along circumference						
		2	4	6	8	10	12	14
200	198	x	x	-	-	-	-	-
224	222	x	x	-	-	-	-	-
250	248	x	x	-	-	-	-	-
280	278	x	x	x	-	-	-	-
315	313	x	x	x	-	-	-	-
355	353	x	x	x	x	-	-	-
400	398	x	x	x	x	-	-	-
450	448	x	x	x	x	-	-	-
500	498	x	x	x	x	x	x	x

x = available / - = not available
All combined lengths and nominal widths available!

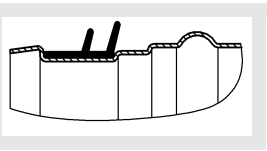
Length L		Number of slots lengthwise
1-part	**500**	1
	750	2
	1000	3
2-part	**1500**	4
	1750	5
	2000	6

Accessories

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



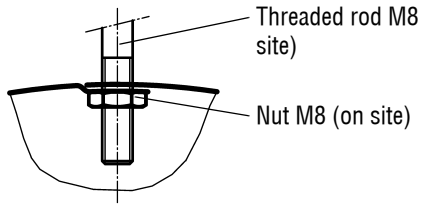
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y



Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Technical data

For the technical data, please refer to the SCHAKO layout program or the technical documentation Round duct diffuser DBBRR, register 01, catalogue 1.
According to the technical documentation of the round duct diffuser DBBRR, the nominal widths 560 and 630 are not possible in combination with RR-Complete or round duct system accessories.

Division of length: see page 15.
Legend, see page 28.
Order details, see page 33.
Specification text, see page 48.

Round Duct System RR-COMPLETE

Round duct grille KGRR

Description

The round duct grille type KGRR is suitable for installation in supply or return air systems. The air volume throughput can be regulated by using an integrated hit-and-miss damper. The integrated hit-and-miss damper ensures a uniform distribution of supply air along the whole length of the grille.
The round duct grille can be installed at any point of the duct system. The front side horizontal and vertical blades can be adjusted. A divergent air throw pattern can be set. This widens the air jet, supplying a larger area of the occupied zone with fresh air.
During the installation, the round duct grille must be mounted in accordance with the desired air direction.
The blades and the hit-and-miss damper are positioned on the round duct at 3 o'clock (-3U), 6 o'clock (-6U, standard), 9 o'clock (-9U) or 12 o'clock (0U).

Construction

Round duct and blades

- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Hit-and-miss damper

- Made of galvanised sheet steel, for simple air volume and ductwork regulation.

Model

KGRR-08	- With horizontal, pivoting air deflection blades (adjustable at the front) and hit-and-miss damper.
KGRR-15	- With vertical, pivoting air deflection blades (adjustable at the front) and hit-and-miss damper.
KGRR-...-3U	- Horizontal throw to the right (3 o'clock).
KGRR-...-6U	- Vertical throw downward (6 o'clock) (standard).
KGRR-...-9U	- Horizontal throw to the left (9 o'clock).
KGRR-...-0U	- Vertical throw upward (12 o'clock).
KGRR-...-L000-....	- Blade position straight (standard).
KGRR-...-L00R-....	- Horizontal blade position, one-way right.
KGRR-...-L00L-.....	- Horizontal blade position, one-way left.
KGRR-...-L044-....	- Blade position 44° diverging.
KGRR-...-L084-....	- Blade position 84° diverging.
KGRR-...-LGEG-....	- Blade position opposite to one another.

Accessories

Rubber lip seal (-GD0/ -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

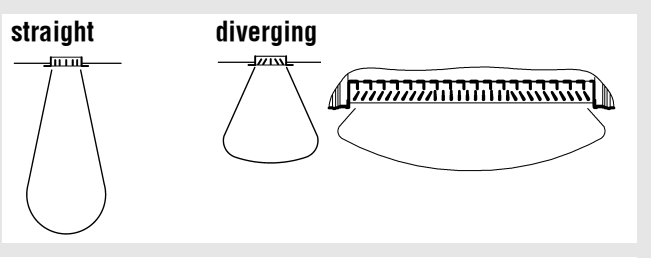
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Air throw pattern



Correction factor (for scattered air jet)

with or without coanda effect

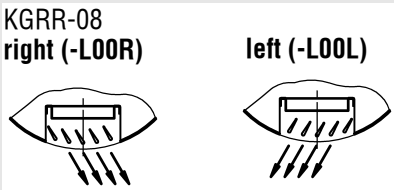
Blade position	44°	84°
End velocity of jet	v_{max} (m/s) × 0.65	v_{max} (m/s) × 0.5
$TV = \Delta T_x / \Delta T_0$	× 0.65	× 0.5
Induction ratio	i × 1.3	i × 2
Jet drop - Jet rise	y × 1.3	y × 2
Grille distance z (m)>	x × 0.20	x × 0.25

Blade adjustment options

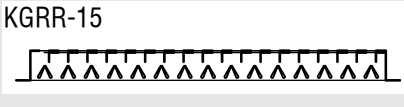
Throw directions (mounting position 6 o'clock)

KGRR-08 horizontal air deflection blades

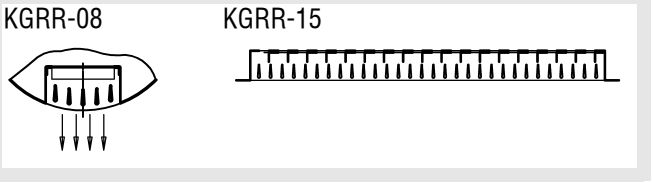
one-way horizontal (only KGRR-08-…)



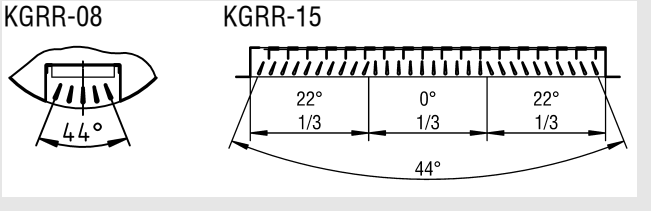
opposite to one another (-LGEG, only KGRR-15)



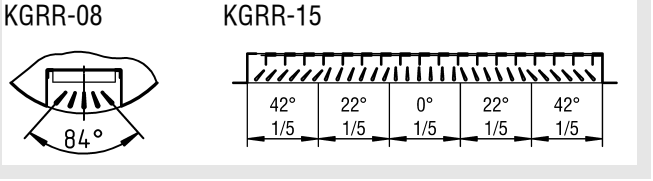
vertical straight (-L000)



divergent 44° (-L044) (scattered air jet)



divergent 84° (-L084) (scattered air jet)



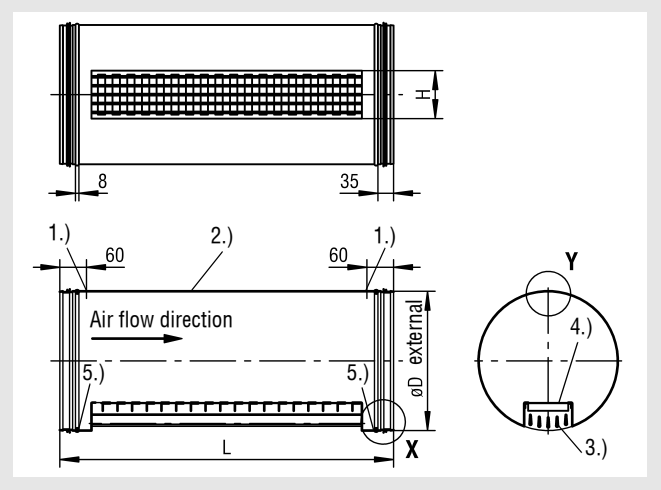
The angle of propagation of the air jet and thus the length of throw can be affected by adjusting the vertical air deflection blades.

Mounting position, see page 56.

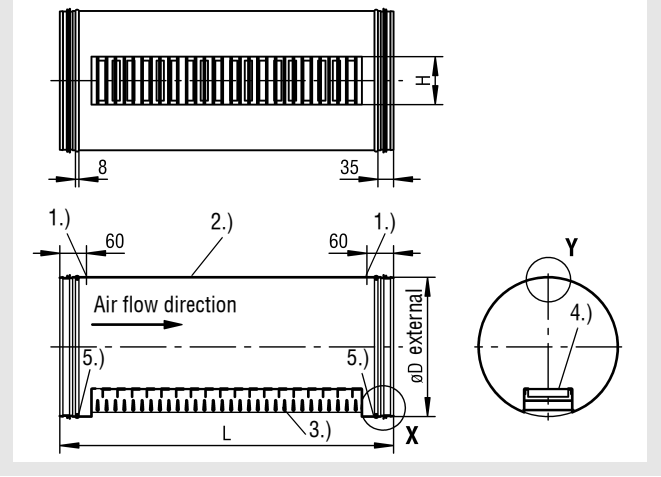
Round Duct System RR-COMPLETE

Dimensions

KGRR-08-6U



KGRR-15-6U



1.) Fastening hole ø11.5 mm (standard)
2.) Round duct
3.) Blades
4.) Hit-and-miss damper
5.) Banding for size 500

Available sizes KGRR-...

NW	øD	Height H			
		65	115	215	315
200	198	x	x	-	-
224	222	x	x	-	-
250	248	x	x	x	-
280	278	x	x	x	-
315	313	x	x	x	-
355	353	x	x	x	x
400	398	x	x	x	x
450	448	x	x	x	x
500	598	x	x	x	x

Length L	
1-part	500
	750
	1000
2-part	1500
	1750
	2000

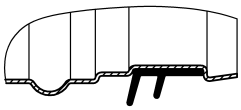
x = available / - = not available
All combined lengths and nominal widths available!

Accessories

Rubber lip seal (-GD0/ -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



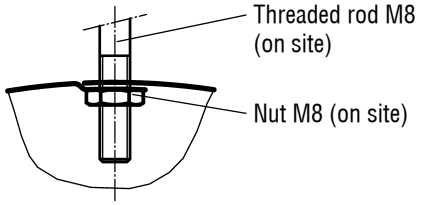
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y



Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Technical data

For the technical data, please refer to the SCHAKO layout program or the technical documentation Round duct diffuser KGRR, register 01, catalogue 1.
According to the technical documentation of the round duct diffuser KGRR, the nominal widths 560 and 630 are not possible in combination with RR-Complete or round duct system accessories.

Division of length: see page 15.
Legend, see page 28.
Order details, see page 35.
Specification text, see page 49.

Round Duct System RR-COMPLETE

Round duct nozzle jet diffuser DSARR

Description

The round duct nozzle jet diffuser type DSARR is suitable for installation in supply air systems. The integrated nozzles of the DSARR-F version are not adjustable, those of the DSARR-V version are adjustable manually and individually.
During the installation, the round duct nozzle jet diffuser must be mounted in accordance with the desired air flow direction. The nozzles and the hit-and-miss damper are positioned on the round duct at 3 o'clock (-3U), 6 o'clock (-6U, standard), 9 o'clock (-9U) or 12 o'clock (0U).
A hit-and-miss damper, which ensures that the supply air is blown uniformly across the whole diffuser area, can be integrated into the diffuser. Because of the uniform admission, the round duct nozzle jet diffuser type DSARR can be integrated at any point along the duct system.

Construction

Round duct

- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

nozzles

- Plastic:
  - Similar to RAL colour 9010 (white) (-DW).
  - Similar to RAL colour 9005 (black, standard) (-DS).

Model

DSARR-F	- With fixed nozzles (standard).
DSARR-V	- With individually and manually adjustable nozzles.
DSARR-...-1-...	- 1 row of nozzles (standard).
DSARR-...-2-...	- 2 rows of nozzles.
DSARR-...-4-...	- 4 rows of nozzles (possible from NW400).
DSARR-...-3U-...	- Horizontal throw to the right (3 o'clock).
DSARR-...-6U-...	- Vertical throw downward (6 o'clock) (standard).
DSARR-...-9U-...	- Horizontal throw to the left (9 o'clock).
DSARR-...-0U-...	- Vertical throw upward (12 o'clock).

Accessories

Hit-and-miss damper (-SS / -SN)

- Without hit-and-miss damper (-SN, standard).
- With hit-and-miss damper (-SS) made of galvanised sheet steel, for simple air volume and ductwork regulation.

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Fastening methods

Fastening hole (-B0 / -BB)

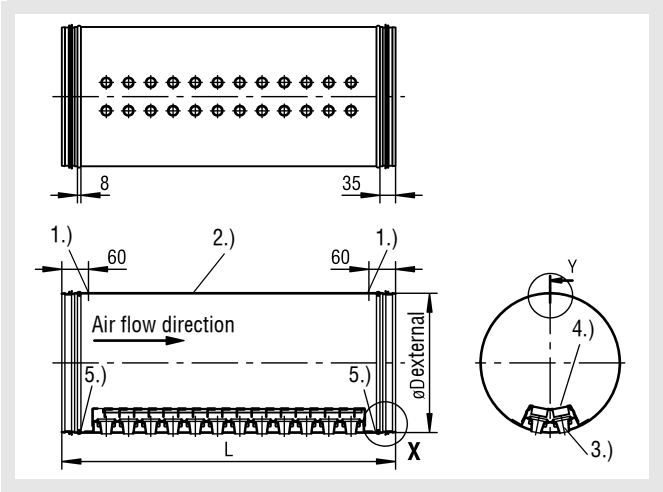
- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Mounting position, see page 56.

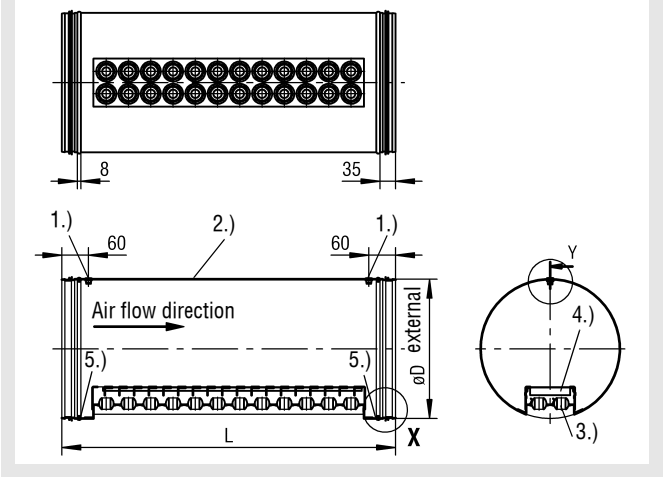
Round Duct System RR-COMPLETE

Dimensions

DSARR-F-6U



DSARR-V-6U



1.) Fastening hole ø11.5 mm (standard)
2.) Round duct
3.) nozzles
4.) Hit-and-miss damper
5.) Banding for size 500

Available sizes DSARR-...

NW	øD	Nozzle rows		
		1	2	4
200	198	x	x	-
224	222	x	x	-
250	248	x	x	-
280	278	x	x	-
315	313	x	x	-
355	353	x	x	-
400	398	x	x	x
450	448	x	x	x
500	498	x	x	x

x = available / - = not available
All combined lengths and nominal widths available!

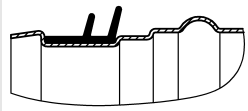
	Length L	Number of nozzles / rows
1-part	**500**	6
	750	12
	1000	16
2-part	**1500**	2x12
	1750	1x12 + 1x16
	2000	2x16

Accessories

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



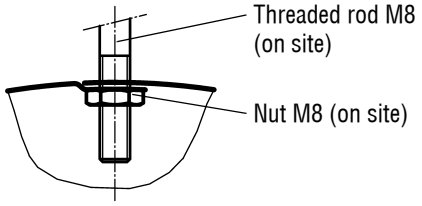
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y



Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Technical data

For the technical data, please refer to the SCHAKO layout program nozzle jet diffusers DSA. Technical documentation Round Duct Nozzle Jet Diffuser DSARR, register 01, catalogue 1.
According to the technical documentation of the round duct diffuser DSARR, the nominal widths 560 and 630 are not possible in combination with RR-Complete or round duct system accessories.

Division of length: see page 15.
Legend, see page 28.
Order details, see page 36.
Specification text, see page 50.

Round Duct System RR-COMPLETE

Long throw nozzle grille with integrated round duct WGARR

Description

The long throw nozzle with integrated round duct type WGARR is suitable for installation in supply air systems. The diffuser WGARR consists of a round duct with integrated, linear long range nozzles which can also be adjusted subsequently by hand. The pivot angle is 45°.
During the installation, the long-throw nozzle grille with integrated round duct must be mounted in accordance with the desired air direction. The nozzles and the hit-and-miss damper are positioned on the round duct at 3 o'clock (-3U), 6 o'clock (-6U, standard), 9 o'clock (-9U) or 12 o'clock (0U).
A hit-and-miss damper, which ensures that the supply air is blown uniformly across the whole diffuser area, can be integrated into the diffuser. Therefore, the long throw nozzle grille with integrated round duct WGARR can be installed at any point along the duct system.

Construction

Round duct

- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

nozzles

- Plastic:
  - Similar to RAL colour 9006 (white aluminium) (-DA).
  - Similar to RAL colour 9007 (grey aluminium) (-DG).
  - Similar to RAL colour 9005 (black, standard) (-DS).
  - Similar to RAL colour 9010 (white) (-DW).

Model

WGARR	- With individually and manually adjustable nozzles.
WGARR-...-1-...	- 1 row of nozzles.
WGARR-...-2-...	- 2 rows of nozzles (possible from NW 400).
WGARR-3U-...	- Horizontal throw to the right (3 o'clock).
WGARR-6U-...	- Vertical throw downward (6 o'clock) (standard).
WGARR-9U-...	- Horizontal throw to the left (9 o'clock).
WGARR-0U-...	- Vertical throw upward (12 o'clock).

Accessories

Hit-and-miss damper (-SS / -SN)

- Without hit-and-miss damper (-SN, standard).
- With hit-and-miss damper (-SS) made of galvanised sheet steel, for simple air volume and ductwork regulation.

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Fastening methods

Fastening hole (-B0 / -BB)

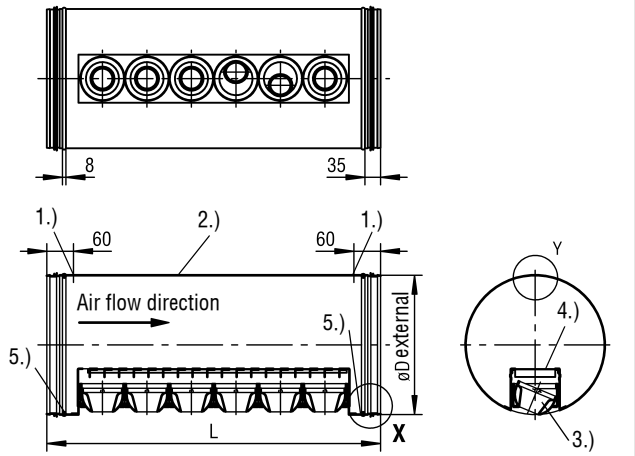
- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Mounting position, see page 56.

Round Duct System RR-COMPLETE

Dimensions

WGARR-6U



1.) Fastening hole ø11.5 mm (standard)
2.) Round duct
3.) nozzles
4.) Hit-and-miss damper
5.) Banding for size 500

Available sizes WGARR-...

NW	øD	Nozzle rows	
		1	2
200	198	x	-
224	222	x	-
250	248	x	-
280	278	x	-
315	313	x	-
355	353	x	-
400	398	x	x
450	448	x	x
500	498	x	x

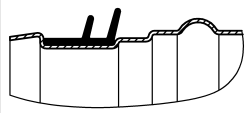
	Length L	Number of nozzles / rows
1-part	**500**	3
	750	6
	1000	8
2-part	**1500**	2 x 6
	1750	1 x 6 + 1 x 8
	2000	2 x 8

x = available / - = not available
All combined lengths and nominal widths available!

Accessories

Rubber lip seal (-GD0 / -GD1)
- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



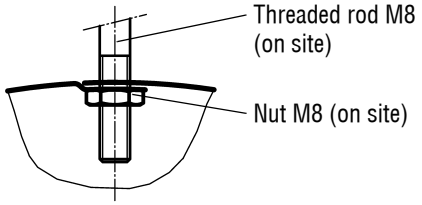
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y



Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

Technical data

For the technical data, please refer to the SCHAKO layout program for long throw nozzle grille with integrated round duct WGARR. Technical documentation for long throw nozzle grille with integrated round duct WGARR , register 01, catalogue 1. According to the technical documentation of the round duct diffuser WGARR, the nominal widths 560 and 630 are not possible in combination with RR-Complete or round duct system accessories.

Division of length: see page 15.
Legend, see page 28.
Order details, see page 37.
Specification text, see page 51.

Round Duct System RR-COMPLETE

Accessories for round duct system RR-COMPLETE

Description

In modern architecture, sheet metal and spiral ducts of air-conditioning systems are often incorporated in the design of the room. Emphasis is often placed deliberately on parts of the supply system. For this visible installation of the ventilation ducts, a logical option is to integrate volumetric flow controllers, duct silencers and air diffusers into the ducts.
Accessories, such as dummy pipes, end covers and connecting sleeves complete the range for the round duct system RR-COMPLETE.

Construction

Dummy pipe (-BLR)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Pressed bend (-BGE)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).
- available up to ø 315 mm

Bent segment (-BSE)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).
- available from ø 355 mm

Asymmetric reduction piece (-UAE)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Symmetric reduction piece (-USE)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

T-piece 90° (-ATE)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Push-on rosette (-SRO)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Straight end cover (-EG)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Connection sleeve (-MUF)
- Galvanised sheet steel (-SV-0000).
- Sheet steel (-SB-...):
  - Painted to RAL colour 9010 (white, standard) (-9010).
  - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Accessories

Rubber lip seal (-GD0 / -GD1)
for BLR / BGE / BSE / UAE / USE / ATE only
- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

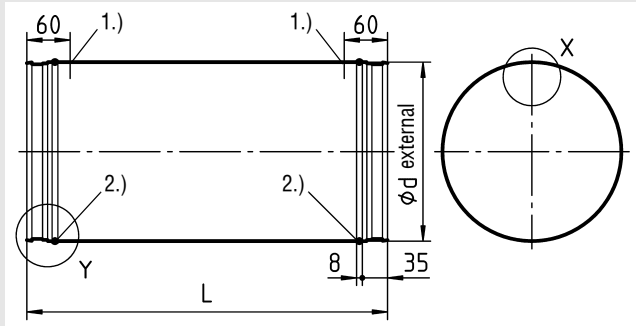
Fastening methods

Fastening hole (-B0 / -BB) (for BLR only)
- Without fastening hole (-B0).
- With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Dimensions

- Dummy pipe (-BLR)



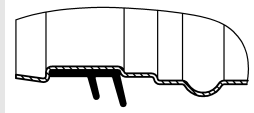
1.) Fastening hole ø11.5 mm (standard)
2.) Banding for size 500

Accessories

Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X



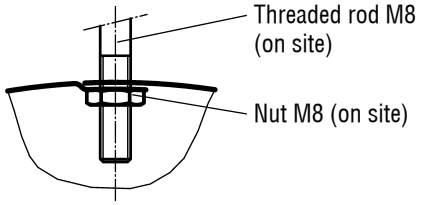
Fastening methods

Fastening hole (-B0 / -BB)

- Without fastening hole (-B0).
- With fastening hole ø11.5 mm (-BB, standard).

Suspension on site

Detail Y

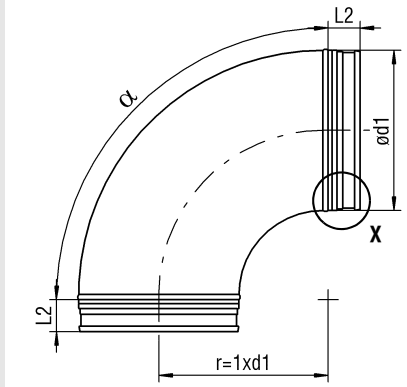


Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.

- Pressed bend (-BGE)

as per DIN EN 1506

α = 30° / 45° / 90°, available up to ø315 mm (ød1)

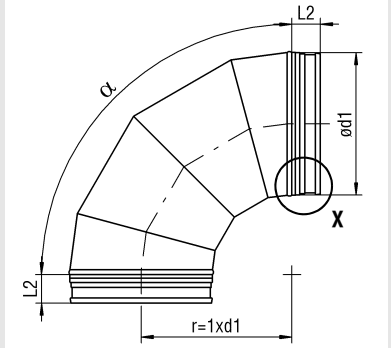


Bends with different degree figures (α) are not available.

- Bent segment (-BSE)

as per DIN EN 1506

α = 15° / 30° / 45° / 60° / 90°, available from ø355 mm (ød1)



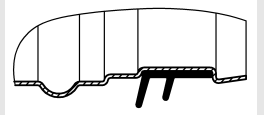
Bends with different degree figures (α) are not available.

Accessories BGE / BSE

Rubber lip seal (-GD0 / -GD1)

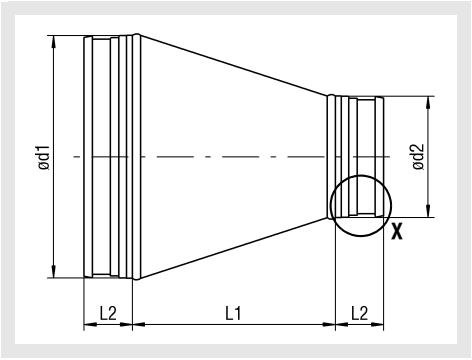
- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

Detail X

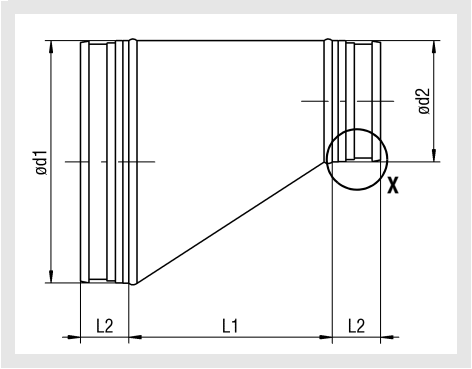


Round Duct System RR-COMPLETE

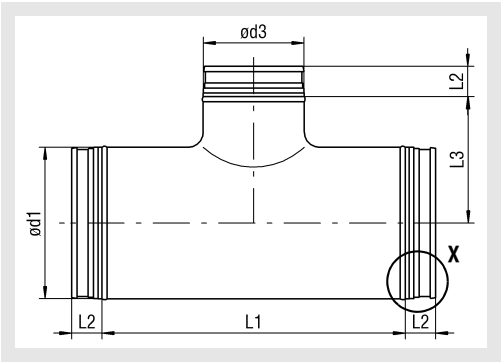
- Symmetric reduction piece (-USE)
as per DIN EN1506



- Asymmetric reduction piece (-UAE)
as per DIN EN 1506



- T-piece 90° (-ATE)
as per DIN EN 1506

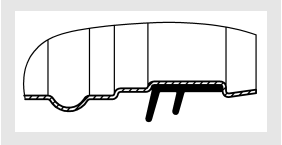


Accessories USE / UAE / ATE

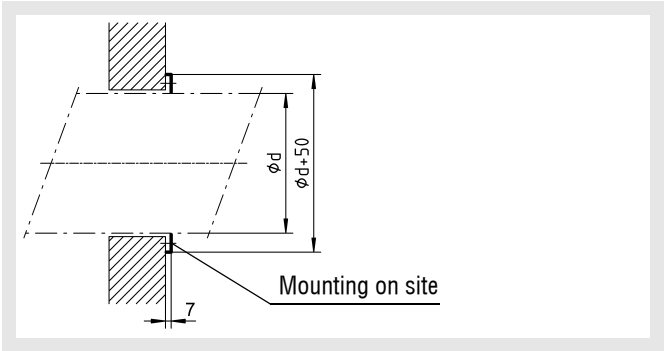
Rubber lip seal (-GD0 / -GD1)

- Without rubber lip seal (-GD0) (standard).
- With rubber lip seal (-GD1), on both sides, made of EPDM.

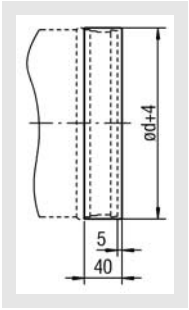
Detail X



- Push-on rosette (-SRO)

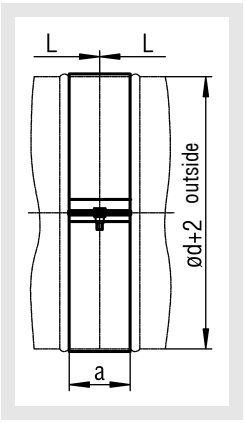


- Straight end cover (-EG)



End piece for mounting to round duct diffusers, dummy pipes and connecting pieces.

- Connection sleeve (-MUF)



- For connection of round pipe/dummy pipe with round pipe/dummy pipe:
  - a = 70 mm (standard)
- For connection of round pipe/dummy pipe with connecting piece:
  - øD = 200-224: a = 75 mm
  - øD = 250-355: a = 95 mm
  - øD = 400-500: a = 115 mm
- For connection of connecting piece with connecting piece:
  - øD = 200-224: a = 80 mm
  - øD = 250-355: a = 120 mm
  - øD = 400-500: a = 160 mm

- When ordering, the a dimension must be specified. Unless stated otherwise in the order, the connection sleeves will be delivered with the standard a dimension of 70 mm.
- The connection sleeve is not an airtight connection of the pipes. In order to achieve an airtight connection, sealing must take place on-site or a rubber lip seal (-GD1) at the round duct must be ordered at an extra charge.

Technical data

For technical data and available sizes, please refer to the technical documentation "Accessories round duct system RR accessories", register 01, catalogue 1.

Legend, see page 28.
Order details, see page 38-45.
Specification text, see page 52-55.

Round Duct System RR-COMPLETE

Legend

V	(m^3/h)	= Air volume
V	[l/s]	= Air volume
NW	(mm)	= Nominal width
v_{min}	(m/s)	= min. velocity
v_{max}	(m/s)	= max. velocity
P	(mm)	= Packing thickness
L	(mm)	= Length
NW	(mm)	= Nominal width
ρ	(kg/m^3)	= Density
Δp_W	(Pa)	= Differential pressure

Round Duct System RR-COMPLETE

Order code VRARR

01	02	03	04	05	06
Type	Nominal width	Material	Paint	Attachment assembly	Mode
Example					
VRARR	-200	-SB	-9010	-A001	-2

07	08	9	10	11	12
Volumetric flow V_{min} / V_{kon}	Volumetric flow V_{max}	Rubber lip seal	Damper position	Position controller	Fastening methods
-0150	-0600	-GD1	-NA	-3U	-BB

All fields must be filled when ordering

Sample
VRARR-200-SB-9010-A001-2-0150-0600-GD1-NA-3U-BB

Volumetric flow controller VRARR | NW 200 | Sheet steel | Painted to RAL colour 9010 (white) | With LMV-D3-MP-F1 | 2-10V | V_{min} = 150 m³/h | V_{max} = 600 m³/h | With rubber lip seal | No spring return | Controller position 3 o'clock | With fastening hole ø11.5 mm

ORDER DETAILS

01 - Type

VRARR = Volumetric flow controller VRARR

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

04 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

05 - Attachment assembly
- with electric controller -

A001 = LMV-D3-MP-F1 - Compact, dynamic, slow - Belimo (standard)
A140 = LMV-D3-MOD-F - Compact, dynamic, slow, MOD - Belimo
A141 = LMV-D3-KNX-F - Compact, dynamic, slow, KNX - Belimo
A160 = 327VM-024-05-MB - Compact, dynamic, slow – Gruner - Modbus
A163 = 327VM-024-05-DS4-MB - Compact, static, slow – Gruner - Modbus

Alternative attachment assemblies are available upon request.

06 - Mode

0 = 0-10 V.
2 = 2-10 V (standard).

07 - Volumetric flow $V_{min/con}$

0000 = ex-works, according to table (standard).
xxxx = 4-digit value in m³/h.

08 - Volumetric flow V_{max}

0000 = ex-works, according to table (standard).
xxxx = 4-digit value in m³/h.

09 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

10 - Damper position

NA = no spring return (standard).
NO = currentless OPEN - normally open.
NC = currentless CLOSED - normally closed.

11 - Mounting position (controller position)

3U = Controller on the right-hand side (3 o'clock, standard).
6U = Controller at the bottom (6 o'clock).
9U = Controller on the left-hand side (9 o'clock).
0U = Controller at the top (12 o'clock).

12 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code DKARR

01	02	03	04	05	06	07
Type	Nominal width	Material	Paint	Rubber lip seal	Position manual adjust-ment	Fastening methods
Example						
DKARR	-200	-SB	-9010	-GD1	-3U	-BB

All fields must be filled when ordering

Sample
DKARR-200-SB-9010-GD1-3U-BB

Volumetric flow restrictor DKARR | NW 200 | Sheet steel | Painted to RAL colour 9010 (white) | With rubber lip seal | Manual adjustment device on the right-hand side (3 o'clock) | With fastening hole ø11.5 mm

ORDER DETAILS

01 - Type

DKARR = Volumetric flow restrictor DKARR

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

04 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

05 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

06 - Mounting position (manual adjustment position, in the air flow direction)

3U = Manual adjustment on the right-hand side (3 o'clock, standard).
6U = Manual adjustment at the bottom (6 o'clock).
9U = Manual adjustment on the left-hand side (9 o'clock).
0U = Manual adjustment at the top (12 o'clock).

07 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code RSRR

01	02	03	04	05	06	07
Type	Length	Nominal width	Material	Paint	Rubber lip seal	Fastening methods
Example						
RSRR	-1000	-200	-SB	-9010	-GD1	-BB

All fields must be filled when ordering

Sample
RSRR-1000-200-SB-9010-GD1-BB

Rigid duct silencer RSRR | Length 1000 mm | NW 200 | Sheet steel | Painted to RAL colour 9010 (white) | With rubber lip seal | With fastening hole ø11.5 mm

ORDER DETAILS

01 - Type

RSRR = Rigid duct silencer RSRR

02 - Length

0500 = Length 500 mm (1-part)
0750 = Length 0750 mm (1-part)
1000 = Length 1000 mm (1-part)
1500 = Length 1500 mm (2-part)
1750 = Length 1750 mm (2-part)
2000 = Length 2000 mm (2-part)

03 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

04 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

05 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

06 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

07 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code DBBRR

01	02	03	04	05	06	07
Type	Air throw	Nominal width	Length	Air throw pattern	Material	Paint
Example						
DBBRR	-Z	200	-1000	-B	-SB	-9010

08	09	10	11	12	13
Blade colour	Number of slots	Mounting position	Hit-and-miss damper	Rubber lip seal	Fastening methods
-L9005	-04	-6U	-SS	-GD0	-BB

All fields must be filled when ordering.

Sample
DBBRR-Z-200-1000-B-SB-9010-L9005-04-6U-SS-GD0-BB

Round duct blade diffuser DBBRR | Supply air | NW 200 | Length 1000 mm | Two-way horizontal throw | Sheet steel | Painted to RAL colour 9010 (white) | Blade colour black similar to RAL colour 9005 | 4-slot | 6 o'clock | With hit-and-miss damper | Without rubber lip seal | With fastening hole ø11.5 mm

Order details

01 - Type

DBBRR = Round duct blade diffuser DBBRR

02 - Air throw

Z = Supply air
A = return air

03 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

04 - Length

0500 = Length 500 mm (1-part)
0750 = Length 750 mm (1-part)
1000 = Length 1000 mm (1-part)
1500 = Length 1500 mm (2-part)
1750 = Length 1750 mm (2-part)
2000 = Length 2000 mm (2-part)

05 - Air throw pattern

E = One-way horizontal throw.
B = Two-way horizontal throw (standard).
V = Vertical throw.
K = Crosswise throw.
O = Return air without blades.

06 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

07 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

08 - Blade colour

L9005 = Blades made of plastic material, colour similar to RAL 9005 (black, standard).
L9010 = Blades made of plastic material, colour similar to RAL 9010 (white).
Axxxx = Blades made of aluminium painted to a freely selectable RAL colour (same colour as round duct) (always with 4 digits).
(Painted blades cannot be adjusted subsequently.)
00000 = Without blades (available only for return air).

09 - Number of slots

02 = 2-slot.
04 = 4-slot.
06 = 6-slot (possible from NW 280 upwards).
08 = 8-slot (possible from NW 355 upwards).
10 = 10-slot (possible for NW 500).
12 = 12-slot (possible for NW 500).
14 = 14-slot (possible for NW 500).

Round Duct System RR-COMPLETE

10 - Mounting position

3U = Horizontal throw to the right (3 o'clock).
6U = Vertical throw downward (6 o'clock) (standard).
9U = Horizontal throw to the left (9 o'clock).
0U = Vertical throw upward (12 o'clock).

11 - Hit-and-miss damper

SN = Without-hit-and miss damper.
SS = With hit-and-miss damper (standard).

12 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

13 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code KGRR

01	02	03	04	05
Type	Blades	Nominal width	Length	Height
Example				
KGRR	-08	200	-1000	-115

06	07	08	09	10	11
Air throw pattern	Material	Paint	Mounting position	Rubber lip seal	Fastening methods
-L000	-SB	-9010	-6U	-GD0	-EM

All fields must be filled when ordering.

Sample
KGRR-08-200-1000-115-L000-SB-9010-6U-GD0-BB

Round duct compact grille KGRR | With front-side horizontal, pivoting air deflection blades and hit-and-miss damper | NW 200 | Length 1000 mm | Grille height 115 mm | Blade position straight | Sheet steel | Painted to RAL colour 9010 (white) | Mounting position 6 o'clock | Without rubber lip seal | With fastening hole ø11.5 mm

ORDER DETAILS

01 - Type

KGRR = Round duct compact grille KGRR

02 - Blades

08 = With horizontal, pivoting air deflection blades (adjustable at the front) and hit-and-miss damper.
15 = With vertical, pivoting air deflection blades (adjustable at the front) and hit-and-miss damper.

03 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

04 - Length

0500 = Length 500 mm (1-part)
0750 = Length 750 mm (1-part)
1000 = Length 1000 mm (1-part)
1500 = Length 1500 mm (2-part)
1750 = Length 1750 mm (2-part)
2000 = Length 2000 mm (2-part)

05 - Height

065 = Grille height 65 mm
115 = Grille height 115 mm
215 = Grille height 215 mm
315 = Grille height 315 mm

06 - Air throw pattern

L000 = Blade position straight (standard).
L00R = horizontal blade position, one-way right (KGRR-08-... only).
L00L = horizontal blade position, one-way left (KGRR-08-... only).
L044 = Blade position 44° diverging.
L084 = Blade position 84° diverging.
LGEG = Blade position opposite to one another.

07 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

08 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

09 - Mounting position

3U = Horizontal throw to the right (3 o'clock).
6U = Vertical throw downward (6 o'clock) (standard).
9U = Horizontal throw to the left (9 o'clock).
0U = Vertical throw upward (12 o'clock).

10 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

11 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code DSARR

01	02	03	04	05	06
Type	Model	Nominal width	Length	Material	Paint
Example					
DSARR	-F	200	-1000	-SB	-9010

07	08	09	10	11	12
Nozzle colour	Nozzle row	Mounting position	Hit-and-miss damper	Rubber lip seal	Fastening methods
-DS	-1	-6U	-SN	-GD0	-BB

All fields must be filled when ordering.

Sample
DSARR-V-200-1000-SB-9010-DS-1-6U-SN-GD0-BB

Round duct nozzle jet diffuser DSARR | With fixed nozzles | NW 200 | Length 1000 mm | Sheet steel | Painted to RAL colour 9010 (white) | Plastic nozzles painted in black similar to RAL 9005 | One row of nozzles | Mounting position 6 o'clock | Without hit-and-miss damper | Without rubber lip seal | With fastening hole ø11.5

Order details

01 - Type

DSARR = Round Duct Nozzle Jet Diffuser DSARR

02 - Model

F = With fixed nozzles (standard).
V = With individually and manually adjustable nozzles.

03 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

04 - Length

0500 = Length 500 mm (1-part)
0750 = Length 750 mm (1-part)
1000 = Length 1000 mm (1-part)
1500 = Length 1500 mm (2-part)
1750 = Length 1750 mm (2-part)
2000 = Length 2000 mm (2-part)

05 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

06 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

07 - Nozzle colour

DS = Plastic similar to RAL colour 9005 (black, standard).
DW = Plastic similar to RAL colour 9010 (white).

08 - Nozzle row

1 = 1 row of nozzles (standard).
2 = 2 rows of nozzles.
4 = 4 rows of nozzles (possible from NW400).

09 - Mounting position

3U = Horizontal throw to the right (3 o'clock).
6U = Vertical throw downward (6 o'clock) (standard).
9U = Horizontal throw to the left (9 o'clock).
0U = Vertical throw upward (12 o'clock).

10 - Hit-and-miss damper

SN = Without hit-and-miss damper (standard).
SS = With hit-and-miss damper.

11 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

12 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code WGARR

01	02	03	04	05	06
Type	Nominal width	Length	Material	Paint	Nozzle colour
Example					
WGARR	-200	-1000	-SB	-9010	-DS

07	08	09	10	11
Nozzle row	Mounting position	Hit-and-miss damper	Rubber lip seal	Fastening methods
-1	-6U	-SN	-GD0	-BB

All fields must be filled when ordering.

Sample
WGARR-200-1000-SB-9010-DS-1-6U-SN-GD0-BB

Long throw nozzle grille with integrated round duct WGARR | NW 200 | Length 1000 mm | Sheet steel | Painted to RAL colour 9010 (white) | Plastic nozzles painted in black similar to RAL colour 9005 | One row of nozzles | 6 o'clock | Without hit-and-miss damper | Without rubber lip seal | With fastening hole ø11.5 mm

Order details

01 - Type

WGARR = Long throw nozzle grille with integrated round duct WGARR

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03 - Length

0500 = Length 500 mm (1-part)
0750 = Length 750 mm (1-part)
1000 = Length 1000 mm (1-part)
1500 = Length 1500 mm (2-part)
1750 = Length 1750 mm (2-part)
2000 = Length 2000 mm (2-part)

04 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

05 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

06 - Nozzle colour

DA = Plastic similar to RAL 9006 (white aluminium).
DG = Plastic similar to RAL colour 9007 (grey aluminium).
DS = Plastic similar to RAL colour 9005 (black, standard).
DW = Plastic similar to RAL colour 9010 (white).

07 - Nozzle row

1 = 1 row of nozzles.
2 = 2 rows of nozzles (possible from NW 400).

08 - Mounting position

3U = Horizontal throw to the right (3 o'clock).
6U = Vertical throw downward (6 o'clock) (standard).
9U = Horizontal throw to the left (9 o'clock).
0U = Vertical throw upward (12 o'clock).

09 - Hit-and-miss damper

SN = Without hit-and-miss damper (standard).
SS = With hit-and-miss damper.

10 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

11 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code accessories for round duct system RR-Complete

Order code BLR

01	02	03	04	05	06	07
Type	Nominal width	Length	Material	Paint	Rubber lip seal	Fastening methods
Example						
BLR	-200	-1000	-SB	-9010	-GD0	-BB

All fields must be filled when ordering.

Sample
BLR-200-1000-SB-9010-GD0-BB

Dummy pipe BLR | NW 200 | Length 1000 mm | Sheet steel | Painted to RAL colour 9010 (white) | Without rubber lip seal | With fastening hole ø11.5 mm

Order details

01 - Type

BLR = Dummy pipe BLR

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03 - Length

0500 = Length 500 mm (1-part)
0750 = Length 750 mm (1-part)
1000 = Length 1000 mm (1-part)
1500 = Length 1500 mm (2-part)
1750 = Length 1750 mm (2-part)
2000 = Length 2000 mm (2-part)

04 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

05 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

06 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

07 - Fastening methods

B0 = Without fastening hole.
BB = With fastening hole ø11.5 mm (standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Round Duct System RR-COMPLETE

Order code BGE

01	02	03	04	05	06
Type	Nominal width	Angle a	Material	Paint	Rubber lip seal
Example					
BGE	-200	-30	-SB	-9010	-GD0

All fields must be filled when ordering.

Sample
BGE-200-30-SB-9010-GD0

Pressed bend BGE | NW 200 | 30° angle | Sheet steel | Painted to RAL colour 9010 (white) | Without rubber lip seal

Order details

01 - Type

BGE = Pressed bend BGE

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315

03- Angle α

30 = 30° angle
45 = 45° angle
90 = 90° angle

Bends with different degree figures (α) are not available.

04 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

05 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

06 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

Round Duct System RR-COMPLETE

Order code BSE

01	02	03	04	05	06
Type	Nominal width	Angle a	Material	Paint	Rubber lip seal
Example					
BSE	-400	-30	-SB	-9010	-GD0

All fields must be filled when ordering.

Sample
BSE-400-30-SB-9010-GD0

Segmented bend BSE | NW 400 | 30° angle | Sheet steel | Painted to RAL colour 9010 (white) | Without rubber lip seal

Order details

01 - Type

BSE = Segmented bend BSE

02 - Nominal width

355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03- Angle α

15 = 15° angle
30 = 30° angle
45 = 45° angle
60 = 60° angle
90 = 90° angle

Bends with different degree figures (α) are not available.

04 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

05 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

06 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

Round Duct System RR-COMPLETE

Order code USE

01	02	03	04	05
Type	Nominal width	Material	Paint	Rubber lip seal
Example				
USE	-250-160	-SB	-9010	-GD0

All fields must be filled when ordering.

Sample
USE-250-160-SB-9010-GD0

Symmetric reduction piece USE | NW 250-160 | Sheet steel | Painted to RAL colour 9010 (white) | Without rubber lip seal

Order details

01 - Type

USE = Symmetric reduction piece USE

02 - Nominal width

224-200 = NW 224-200
250-200 = NW 250-200
280-200 = NW 280-200
315-200 = NW 315-200
315-250 = NW 315-250
355-250 = NW 355-250
400-250 = NW 400-250
400-315 = NW 400-315
450-280 = NW 450-280
450-315 = NW 450-315
500-315 = NW 500-315
500-400 = NW 500-400

03 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

04 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

05 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

Round Duct System RR-COMPLETE

Order code UAE

01	02	03	04	05
Type	Nominal width	Material	Paint	Rubber lip seal
Example				
UAE	-250-160	-SB	-9010	-GD0

All fields must be filled when ordering.

Sample
UAE-250-160-SB-9010-GD0

Asymmetric reduction piece USE | NW 250-160 | Sheet steel | Painted to RAL colour 9010 (white) | Without rubber lip seal

Order details

01 - Type

UAE = Asymmetric reduction piece UAE

02 - Nominal width

224-200 = NW 224-200
250-200 = NW 250-200
280-200 = NW 280-200
315-200 = NW 315-200
315-250 = NW 315-250
355-250 = NW 355-250
400-250 = NW 400-250
400-315 = NW 400-315
450-280 = NW 450-280
450-315 = NW 450-315
500-315 = NW 500-315
500-400 = NW 500-400

03 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

04 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

05 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

Round Duct System RR-COMPLETE

Order code ATE

01	02	03	04	05
Type	Nominal width	Material	Paint	Rubber lip seal
Example				
ATE	-250-160	-SB	-9010	-GD0

All fields must be filled when ordering.

Sample
ATE-250-160-SB-9010-GD0

T-piece ATE | NW 250-160 | Sheet steel | Painted to RAL colour 9010 (white) | Without rubber lip seal

Order details

01 - Type

ATE = T-piece ATE

02 - Nominal width

200-200 = NW 200-200
200-250 = NW 200-250
200-315 = NW 200-315
224-224 = NW 224-224
224-250 = NW 224-250
224-315 = NW 224-315
250-200 = NW 250-200
250-250 = NW 250-250
250-315 = NW 250-315
250-400 = NW 250-400
280-200 = NW 280-200
280-280 = NW 280-280
280-400 = NW 280-400
315-200 = NW 315-200
315-250 = NW 315-250
315-315 = NW 315-315
315-400 = NW 315-400
315-500 = NW 315-500
355-200 = NW 355-200
355-250 = NW 355-250
355-315 = NW 355-315
355-355 = NW 355-355
355-500 = NW 355-500
400-200 = NW 400-200
400-250 = NW 400-250
400-315 = NW 400-315
400-400 = NW 400-400
400-500 = NW 400-500
450-250 = NW 450-250
450-315 = NW 450-315
450-450 = NW 450-450
450-500 = NW 450-500
500-200 = NW 500-200
500-250 = NW 500-250
500-315 = NW 500-315
500-400 = NW 500-400
500-500 = NW 500-500

03 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

04 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

05 - Rubber lip seal

GD0 = Without rubber lip seal (standard).
GD1 = With rubber lip seal.

Round Duct System RR-COMPLETE

Order code SRO

01	02	03	04
Type	Nominal width	Material	Paint
Example			
SRO	-200	-SB	-9010

All fields must be filled when ordering.

Sample
SRO-200-SB-9010

Push-on rosette SRO | NW 200 | Sheet steel | Painted to RAL colour 9010 (white)

Order details

01 - Type

SRO = Push-on rosette SRO

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

04 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

Order code EG

01	02	03	04
Type	Nominal width	Material	Paint
Example			
EG	-200	-SB	-9010

All fields must be filled when ordering.

Sample
EG-200-SB-9010

Straight end cover EG | NW 200 | Sheet steel | Painted to RAL colour 9010 (white)

Order details

01 - Type

EG = Straight end cover EG

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

04 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

Round Duct System RR-COMPLETE

Order code MUF

01	02	03	04	05
Type	Nominal width	Width	Material	Paint
Example				
MUF	-200	-070	-SB	-9010

All fields must be filled when ordering.

Sample
MUF-200-70-SB-9010

Connection sleeve | NW 200 | Width 70 mm | Sheet steel | Painted to RAL colour 9010 (white)

Order details

01 - Type

MUF = Connection sleeve MUF

02 - Nominal width

200 = NW 200
224 = NW 224
250 = NW 250
280 = NW 280
315 = NW 315
355 = NW 355
400 = NW 400
450 = NW 450
500 = NW 500

03 - Width

070 = 70 mm (connecting round duct/round duct, dummy pipe/dummy pipe).
075 = 75 mm (connecting round duct/dummy pipe with connecting piece d200-d224).
080 = 80 mm (connecting connecting piece/connecting piece d200-d224).
095 = 95 mm (connecting round duct/dummy pipe with connecting piece d250-d355).
115 = 115 mm (connecting round duct/dummy pipe with connecting piece d400-d500).
120 = 120 mm (connecting connecting piece/connecting piece d250-d355).
160 = 160 mm (connecting connecting piece/connecting piece d400-d500).

04 - Material

SB = Sheet steel (standard with paint).
SV = Galvanised sheet steel

05 - Paint

0000 = Without paint (only possible for -SV).
9010 = Painted to the RAL colour 9010 (white, standard).
xxxx = Painted to a freely selectable RAL colour (always with 4 digits).

Round Duct System RR-COMPLETE

Specification text

VRARR

Volumetric flow controller VRARR for the round duct system RR-COMPLETE, with electrically adjustable round damper with integrated acoustic cladding, for spiral duct connection. For use in supply/return air systems for constant or variable volume flow, room or duct pressure control. With positive control V_{min}, V_{max} or "CLOSED". Allowed pressure difference range: 50-1000 Pa, allowed ambient temperature 0-55°C. Suitable for use with duct velocities of 2-12 m/s. It is possible to subsequently adjust the operating volumetric flows set ex works. The output signal can be used for master/slave or parallel operation of several controllers or for actual value display 2-10 V DC (0-10 V DC), which corresponds to 0-100 % of the set V_{max} in DDC/ZLT systems.
Housing consisting of 1.0 to 1.5 mm-strong outer tube, optionally with rubber seal lip made of EPDM and inner tube. With integrated acoustic cladding with mineral wool filling to DIN 4102 A2 (non-flammable). With cover on both ends. Silicone-free damper blade seal made of PUR for airtight sealing (design to DIN EN 1751). Measuring cross made of extruded aluminium profile, measuring cross support made of plastic (PA6), damper bearing made of brass. Inner tube and damper blade made of galvanised sheet steel. With electric controller, control voltage 24 V AC, 50 / 60 Hz, temperature compensation 10-40 °C, wired and adjusted in factory. TÜV inspected according to **VDI 6022 Sheets 1+2.**
Product: SCHAKO **type VRARR**

- Housing leakage according to DIN EN 1751, class B, at a duct pressure of up to 1000 Pa.
- Leakage with closed damper blade according to DIN EN 1751 Class 3 at a duct pressure of up to 1000 Pa.
  Higher requirements upon request.

- **Nominal width**:
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Material and paint** (housing) [outer tube / end cover]) made of:
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Attachment assembly**:
  - With electric actuator.
    - A001 (standard)
    - A140
    - A141
    - A160
    - A163

Alternative attachment assemblies are available upon request. For controller selection (attachment assembly), see Controller selection on page 9.

- **Mode:**
  - 0-10 V (-0).
  - 2-10 V (standard) (-2).

- **Volumetric flow $V_{min/con}$:**
  - ex-works, according to table (standard) (-0000).
  - 4-digit value in m³/h (-xxxx).

- **Volumetric flow V_{max} :**
  - ex-works, according to table (standard) (-0000).
  - 4-digit value in m³/h (-xxxx).

- **Damper position:**
  - No spring return (standard) (-NA).
  - Currentless OPEN - normally open (-NO).
  - Currentless CLOSED - normally closed (-NC).

- **Mounting position** (controller position)**:**
  - Controller on the right-hand side, 3 o'clock (standard) (-3U).
  - Controller at the bottom, 6 o'clock (-6U).
  - Controller on the left-hand side, 9 o'clock (-9U).
  - Controller at the top 12 o'clock (-0U).

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):
- Rubber lip seal (duct connection):
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

DKARR

Volumetric flow restrictor DKARR, for the round duct system RR-COMPLETE, with manually adjustable round damper with integrated acoustic cladding, for spiral duct connection. For use in supply and return air systems, for constant or variable volumetric flows. Allowed differential pressure range: 50-1000 Pa. Allowed ambient temperatures: 0 - 55°C
Housing consisting of 1.0 to 1.5 mm-strong outer tube, optionally with rubber seal lip made of EPDM and inner tube. With integrated acoustic cladding with mineral wool filling to DIN 4102 A2 (non-flammable). With cover on both ends. Silicone-free damper blade seal made of PUR for airtight sealing (design to DIN EN 1751). Inner tube, damper blade and manual adjusting device made of galvanised sheet steel. Measuring cross made of extruded aluminium profile, measuring cross support made of plastic (PA6), damper bearing made of brass.
Product: SCHAKO **type DKARR**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Material and paint** (housing) [outer tube / end cover]) made of:
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Mounting position** (manual adjustment position, in the air flow direction)**:**
  - Manual adjustment on the right-hand side, 3 o'clock (standard) (-3U).
  - Manual adjustment at the bottom, 6 o'clock (-6U).
  - Manual adjustment on the left-hand side, 9 o'clock (-9U).
  - Manual adjustment at the top, 12 o'clock (-0U).

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):
- Rubber lip seal
  - Without rubber lip seal (-GD0).
  - with rubber lip seal (-GD1), on both sides, made of EPDM

RSRR

Duct silencer RSRR, for the round duct system RR-COMPLETE. With sound absorption according to the absorption principle, by means of an annular chamber filled with mineral wool according to DIN 4102 A2 non-flammable.
Housing consisting of 1.0 to 1.5 mm-strong outer tub, optionally with rubber seal lip made of EPDM and inner tube made of perforated sheet covered abrasion-resistant toward the air flow direction. Inner tube made of galvanised sheet steel. With integrated acoustic cladding with mineral wool filling to DIN 4102 A2 (non-flammable). With end cover on both sides.
Product: SCHAKO **type RSRR**

- **Length:**
  - 1-part:
    500 mm / 750 mm / 1000 mm (-0500 / -0750 / -1000).
  - 2-part:
    1500 mm / 1750 mm / 2000 mm (-1500 / -1750 / -2000).

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Material and paint** (housing) [outer tube / end cover]) made of:
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):
- Rubber lip seal
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

DBBRR

Round duct blade diffuser DBBRR-Z-..., for supply air, suitable for connection to DIN ducts. With integrated, manually adjustable air deflection blades. Sound power level and pressure loss remain constant in all blade positions.
Product: SCHAKO **type DBBRR-Z-...**

- for return air, without air deflection blades
  Product: SCHAKO **type DBBRR-A-...**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Length:**
  - 1-part:
    500 mm / 750 mm / 1000 mm (-0500/-0750/-1000).
  - 2-part:
    1500 mm / 1750 mm / 2000 mm (-1500/-1750/-2000).

- **Air throw pattern:**
  - one-way horizontal throw (-E).
  - two-way horizontal throw (-B, standard).
  - vertical throw (-V).
  - crosswise throw (-K).
  - Return air without blades (-O).

- **Material and paint** (round duct):
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Blade colour:**
  - Without blades (-00000, available only for return air).
  - With blades of plastic material:
    - Similar to RAL colour 9005 (black, standard) (-L9005).
    - Similar to RAL colour 9010 (white) (-L9010).
  - Blades made of aluminium painted to a freely selectable RAL colour (same colour as round duct) (-Axxxx, always with 4 digits).
    (Painted blades cannot be adjusted subsequently.)

- **Number of slots:**
  - 2-slot (-02)
  - 4-slot (-04)
  - 6-slot (possible from NW 280 upwards) (-06)
  - 8-slot (possible from NW 355 upwards) (-08)
  - 10-slot (possible for NW 500) (-10)
  - 12-slot (possible for NW 500) (-12)
  - 14-slot (possible for NW 500) (-14)

- **Mounting position:**
  - Horizontal throw to the right (3 o'clock) (-3U).
  - Vertical throw downward (6 o'clock) (standard) (-6U).
  - Horizontal throw to the left (9 o'clock) (-9U).
  - Vertical throw upward (12 o'clock) (-0U).

- **Hit-and-miss damper:**
  - Without hit-and-miss damper (-SN).
  - With integrated hit-and-miss damper (-SS, standard) made of galvanised sheet steel, for simple air volume and ductwork regulation.

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):
- Rubber lip seal
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

KGRR

Round duct compact grille KGRR, for supply and return air, suitable for connection to DIN ducts. With integrated, manually adjustable hit-and-miss damper made of galvanised sheet steel, for simple air volume and ductwork regulation.

- With horizontal, pivoting air deflection blades (adjustable at the front) and hit-and-miss damper.
  Product: SCHAKO **type KGRR-08-…**

- With vertical, pivoting air deflection blades (adjustable at the front) and hit-and-miss damper.
  Product: SCHAKO **type KGRR-15-…**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Length:**
  - 1-part:
    500 mm / 750 mm / 1000 mm (-0500 / -0750 / -1000).
  - 2-part:
    1500 mm / 1750 mm / 2000 mm (-1500 / -1750 / -2000).

- **Height:**
  - Grille height 65 mm (-065)
  - Grille height 115 mm (-115)
  - Grille height 215 mm (-215)
  - Grille height 315 mm (-315)

- **Air throw pattern:**
  - Blade position straight (-L000) (standard).
  - Horizontal blade position, one-way right (-L00R) (KGRR-08-... only).
  - Horizontal blade position, one-way left (-L00L) (KGRR-08-... only).
  - Blade position 44° diverging (-L044).
  - Blade position 84° diverging (-L084).
  - Blade position opposite to one another (-LGEG).

- **Material and paint** (round duct):
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Mounting position:**
  - Horizontal throw to the right (3 o'clock) (-3U).
  - Vertical throw downward (6 o'clock) (standard) (-6U).
  - Horizontal throw to the left (9 o'clock) (-9U).
  - Vertical throw upward (12 o'clock) (-0U).

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):

- Rubber lip seal (-GD0 / -GD1)
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

For more accessories, please refer to the separate brochure available upon request.

Round Duct System RR-COMPLETE

DSARR

Round duct nozzle jet diffuser DSARR-..., for supply air, suitable for connection to DIN ducts.

- With fixed nozzles.
  Product: SCHAKO **type DSARR-F-…**

- With individually manually adjustable nozzles.
  Product: SCHAKO **type DSARR-V-…**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Length:**
  - 1-part:
    500 mm / 750 mm / 1000 mm (-0500 / -0750 / -1000).
  - 2-part:
    1500 mm / 1750 mm / 2000 mm (-1500 / -1750 / -2000).

- **Material and paint** (round duct):
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Nozzle colour:**
  - Plastic similar to RAL colour 9005 (black, standard) (-DS).
  - Plastic similar to RAL colour 9010 (white).

- **Nozzle rows:**
  - 1 row of nozzles (-1, standard).
  - 2 rows of nozzles (-2).
  - 4 rows of nozzles (-4) (possible from NW 400).

- **Mounting position:**
  - Horizontal throw to the right (3 o'clock) (-3U).
  - Vertical throw downward (6 o'clock) (standard) (-6U).
  - Horizontal throw to the left (9 o'clock) (-9U).
  - Vertical throw upward (12 o'clock) (-0U).

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):

- Hit-and-miss damper:
  - Without hit-and-miss damper (standard) (-SN).
  - With integrated hit-and-miss damper (-SS) made of galvanised sheet steel, for simple air volume and ductwork regulation.

- Rubber lip seal
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

WGARR

Long throw nozzle grille with integrated round duct WGARR for supply air, suitable for connection to DIN ducts. With integrated, individually and manually adjustable nozzles, pivoting range 45°.
Product: SCHAKO **type WGARR**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Length:**
  - 1-part:
    500 mm / 750 mm / 1000 mm (-0500 / -0750 / -1000).
  - 2-part:
    1500 mm / 1750 mm / 2000 mm (-1500 / -1750 / -2000).

- **Material and paint** (round duct):
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Nozzle colour:**
  - Plastic similar to RAL colour 9006 (white aluminium) (-DA).
  - Plastic similar to RAL colour 9007 (grey aluminium) (-DG).
  - Plastic similar to RAL colour 9005 (black, standard) (-DS).
  - Plastic similar to RAL colour 9010 (white) (-DW).

- **Nozzle rows:**
  - 1 row of nozzles (-1).
  - 2 rows of nozzles (possible from NW 400) (-2).

- **Mounting position:**
  - Horizontal throw to the right (3 o'clock) (-3U).
  - Vertical throw downward (6 o'clock) (standard) (-6U).
  - Horizontal throw to the left (9 o'clock) (-9U).
  - Vertical throw upward (12 o'clock) (-0U).

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):

- Hit-and-miss damper
  - Without hit-and-miss damper (standard) (-SN).
  - With integrated hit-and-miss damper (-SS) made of galvanised sheet steel, for simple air volume and ductwork regulation.

- Rubber lip seal:
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

Accessories for round duct system RR-COMPLETE

- Dummy pipe (-BLR)
- Pressed bend (-BGE)
- Bent segment (-BSE)
- Symmetric reduction piece (-USE)
- Asymmetric reduction piece (-UAE)
- T-piece 90° (-ATE)
- Push-on rosette (SRO)
- Straight end cover (-EG)
- Connection sleeve (-MUF)

Dummy pipe BLR according to DIN EN1506, suitable for connection to DIN ducts.
Product: SCHAKO **type BLR-…**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Length:**
  - 1-part:
    500 mm / 750 mm / 1000 mm (-0500 / -0750 / -1000).
  - 2-part:
    1500 mm / 1750 mm / 2000 mm (-1500 / -1750 / -2000).

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

- **Fastening methods:**
  - Without fastening hole (-B0).
  - With fastening hole ø11.5 (-BB, standard). (Prepared for suspended installation by using an M8 threaded rod and an M8 nut to be provided on site.)

Accessories (at an extra charge):
- Rubber lip seal:
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Pressed bend BGE, according to DIN EN1506, suitable for connection to DIN ducts.
Product: SCHAKO **type BGE-…**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)

- **Angle:**
  - Angle 30° (-30).
  - Angle 45° (-45).
  - Angle 90° (-90).

  Bends with different degree figures (α) are not available.

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Accessories (at an extra charge):
- Rubber lip seal:
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

Segment bend BSE, according to DIN EN1506, suitable for connection to DIN ducts.
Product: SCHAKO **type BSE-...**

- **Nominal width:**
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Angle:**
  - Angle 15° (-15).
  - Angle 30° (-30).
  - Angle 45° (-45).
  - Angle 60° (-60).
  - Angle 90° (-90).

  Bends with different degree figures (α) are not available.

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Accessories (at an extra charge):
- Rubber lip seal:
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Symmetric reduction piece USE, according to DIN EN1506, suitable for connection to DIN ducts.
Product: SCHAKO **type USE-...**

- **Nominal width:**
  - NW 224-200 (-224-200)
  - NW 250-200 (-250-200)
  - NW 280-200 (-280-200)
  - NW 315-200 (-315-200)
  - NW 315-250 (-315-250)
  - NW 355-250 (-355-250)
  - NW 400-250 (-400-250)
  - NW 400-315 (-400-315)
  - NW 450-280 (-450-280)
  - NW 450-315 (-450-315)
  - NW 500-315 (-500-315)
  - NW 500-400 (-500-400)

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Accessories (at an extra charge):
- Rubber lip seal:
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

Asymmetric reduction piece UAE, according to DIN EN1506, suitable for connection to DIN ducts.
Product: SCHAKO **type UAE-...**

- **Nominal width:**
  - NW 224-200 (-224-200)
  - NW 250-200 (-250-200)
  - NW 280-200 (-280-200)
  - NW 315-200 (-315-200)
  - NW 315-250 (-315-250)
  - NW 355-250 (-355-250)
  - NW 400-250 (-400-250)
  - NW 400-315 (-400-315)
  - NW 450-280 (-450-280)
  - NW 450-315 (-450-315)
  - NW 500-315 (-500-315)
  - NW 500-400 (-500-400)

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Accessories (at an extra charge):
- Rubber lip seal:
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

T-piece ATE, according to DIN EN1506, suitable for connection to DIN ducts.
Product: SCHAKO **type ATE-...**

- **Nominal width:**
  - NW 200-200 (-200-200)
  - NW 200-250 (-200-250)
  - NW 200-315 (-200-315)
  - NW 224-224 (-224-224)
  - NW 224-250 (-224-250)
  - NW 224-315 (-224-315)
  - NW 250-200 (-250-200)
  - NW 250-250 (-250-250)
  - NW 250-315 (-250-315)
  - NW 250-400 (-250-400)
  - NW 280-200 (-280-200)
  - NW 280-280 (-280-280)
  - NW 280-400 (-280-400)
  - NW 315-200 (-315-200)
  - NW 315-250 (-315-250)
  - NW 315-315 (-315-315)
  - NW 315-400 (-315-400)
  - NW 315-500 (-315-500)
  - NW 355-200 (-355-200)
  - NW 355-250 (-355-250)
  - NW 355-315 (-355-315)
  - NW 355-355 (-355-355)
  - NW 355-500 (-355-500)
  - NW 400-200 (-400-200)
  - NW 400-250 (-400-250)
  - NW 400-315 (-400-315)
  - NW 400-400 (-400-400)
  - NW 400-500 (-400-500)
  - NW 450-250 (-450-250)
  - NW 450-315 (-450-315)
  - NW 450-450 (-450-450)
  - NW 450-500 (-450-500)
  - NW 500-200 (-500-200)
  - NW 500-250 (-500-250)
  - NW 500-315 (-500-315)
  - NW 500-400 (-500-400)
  - NW 500-500 (-500-500)

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Accessories (at an extra charge):
- Rubber lip seal:
  - Without rubber lip seal (-GD0) (standard).
  - With rubber lip seal (-GD1), on both sides, made of EPDM.

Round Duct System RR-COMPLETE

Push-on rosette SRO, suitable for connection to DIN ducts.
Product: SCHAKO **type SRO-...**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Straight end cover EG, suitable for connection to DIN ducts.
Product: SCHAKO **type EG-...**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Connection sleeve MUF, suitable for connection to DIN ducts.
Product: SCHAKO **type MUF-...**

- **Nominal width:**
  - NW 200 (-200)
  - NW 224 (-224)
  - NW 250 (-250)
  - NW 280 (-280)
  - NW 315 (-315)
  - NW 355 (-355)
  - NW 400 (-400)
  - NW 450 (-450)
  - NW 500 (-500)

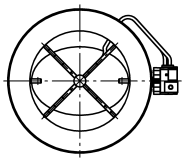
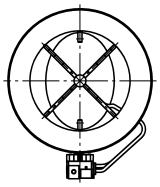
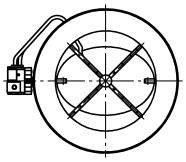
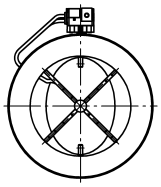
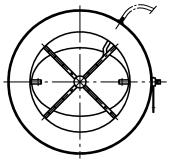
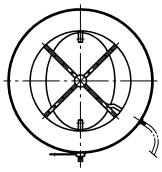
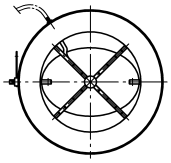
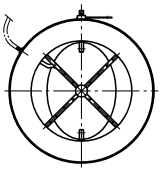
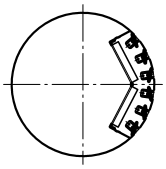
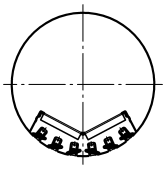
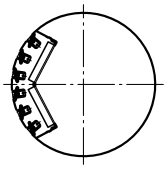
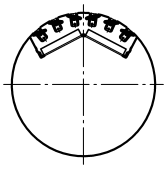
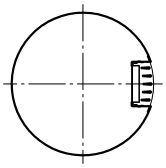
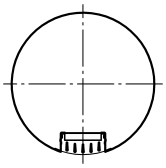
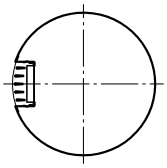
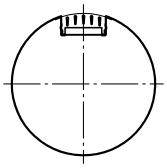
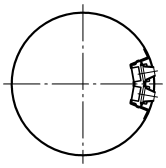
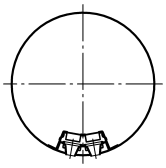
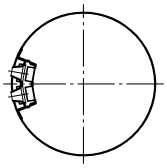
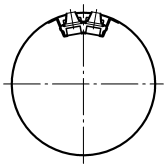
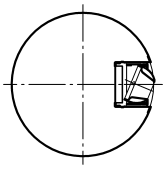
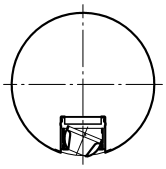
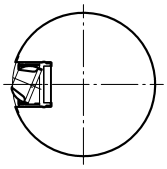
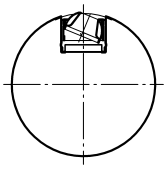
- **Width:**
  - 70 mm (-070) (connecting round duct/round duct, dummy pipe/dummy pipe).
  - 75 mm (-075) (connecting round duct/dummy pipe with connecting piece d200-d224).
  - 80 mm (-080) (connecting connecting piece/connecting piece d200-d224).
  - 95 mm (-095) (connecting round duct/dummy pipe with connecting piece d250-d355).
  - 115 mm (-115) (connecting round duct/dummy pipe with connecting piece d400-d500).
  - 120 mm (-120) (connecting connecting piece/connecting piece d250-d355).
  - 160 mm (-160) (connecting connecting piece/connecting piece d400-d500).

- **Material and paint:**
  - Galvanised sheet steel (-SV-000) (at an extra charge).
  - Sheet steel (-SB-...):
    - Painted to the RAL colour 9010 (white, standard) (-9010).
    - Painted to a freely selectable RAL colour (-xxxx, always with 4 digits).

Round Duct System RR-COMPLETE

Installation, Mounting and Maintenance

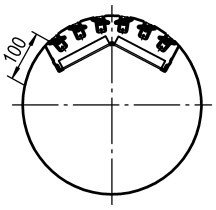
Mounting position in air flow direction

	3 o'clock (-3U)	6 o'clock (-6U)	9 o'clock (-9U)	12 o'clock (-0U)
VRARR	 Standard			
DKARR	 Standard			
DBBRR		 Standard		
KGRR		 Standard		
DSARR		 Standard		
WGARR		 Standard		

The duct silencer RSRR can be used independently of the installation situation.

Installation position

Please note that for the vertical throw a distance of at least 100 mm is necessary between the weld seam and the diffuser. This means that the weld seam must be offset accordingly.



Installation of VRARR
See SCHAKO technical documentation VRA

Mounting

The duct system must be mounted by skilled personnel using suitable and approved suspension material.

Maintenance

Maintenance can be carried out by removing individual duct segments.