

Bill of Materials

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1 octopus air distribution system

1.1 Easy-Flex hose



Part-No.	Description
528005240	Easy-Flex hose DN 75
Outer diameter:	75 mm
Inner diameter:	63 mm
Weight per running meter:	0.33 Kg/m
Running meter:	50 m
Weight per roll:	17 kg
Height of roll:	0.32 m
Roll diameter:	1.32 m
Material:	pure HDPE
Minimum bending radius:	1D
permissible operating temperature:	-25 to 60 °C

Flexible and resistant hose, corrugated outside, plane inside, gas-tight acc. to DIN EN 60529. The Easy-Flex hose can easily be set in concrete, laid directly in the ground or installed in ductworks and false ceilings.

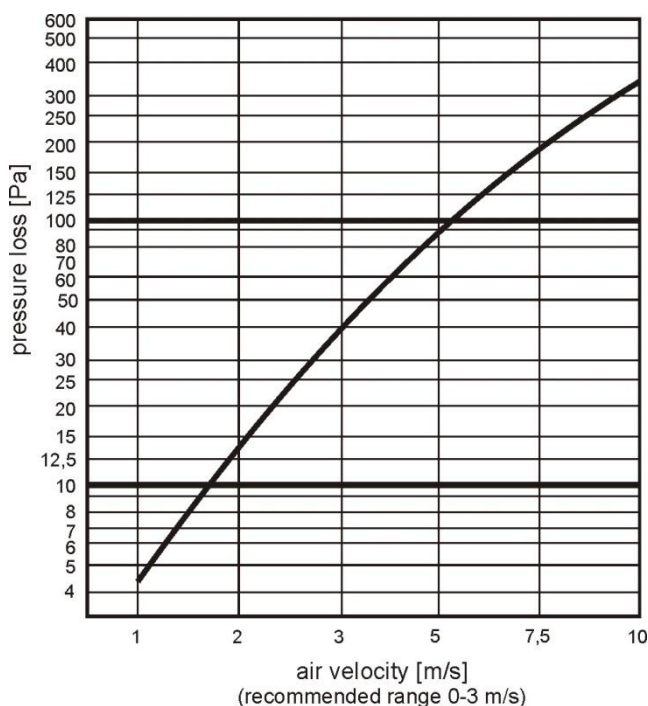
Advantages:

- quick installation
- plane inside
- easy to clean
- high tightness
- easy handling
- robust hose (hoop strength > 8 kN/m²)
- 100 % purity of material
- Little weight
- non-corroding

Do not store outside without protective plastic sheeting!

Purchase quantity: 50 m (roll)

Approximate values for pressure loss in 10 m Easy-Flex hose



Volume flow in Easy-Flex hose

Air velocity [m/s]	0.5	1.0	1.5	2.0	2.5	3.0	4.0	5.0
Volume flow rate [m ³ /h]	5.3	10.5	15.8	21.0	26.3	31.5	42.1	52.6

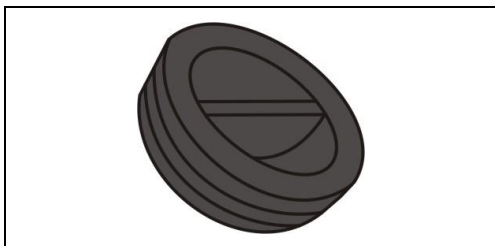
1.2 Connecting sleeve



Part-No.	Description
528005250	Connecting sleeve for Easy-Flex hose DN 75

For easy connection of Easy-Flex hoses, sealing realized with two sealing rings.

1.3 Screw cap



Part-No.	Description
528005260	Screw cap for Easy-Flex hose DN 75

Reusable screw cap for sealing and protecting Easy-Flex hoses
Colour: black
Quantity: 10 pcs.

1.4 Sealing ring

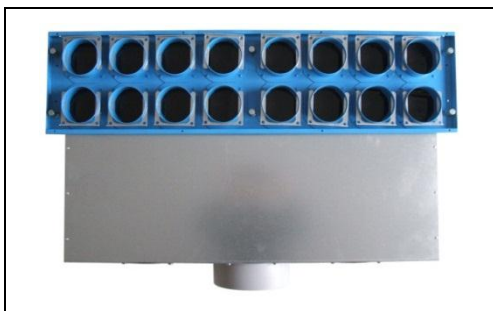


Part-No.	Description
528005270	Sealing ring DN 75 for sleeve sealing

Sealing ring suitable for connecting sleeve, connection plates and valve casing
Quantity: 10 pcs.

Please note:
lubricate sealing ring
(e.g. with dishwashing liquid) before insertion

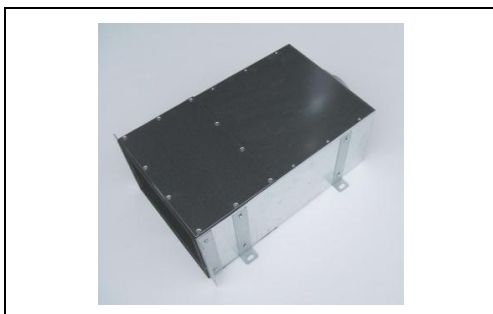
1.5 Air distribution box with mounting plate



Air distribution box DN 180



Air distribution box DN 160



Air distribution box DN 125

Sound-insulating surface-mounted distribution box made of galvanized sheet metal, with maintenance lid and hold-down bracket.

The tail piece with pipe connection is displaceable, so the distribution box can be used as straight- or 90° distributor.

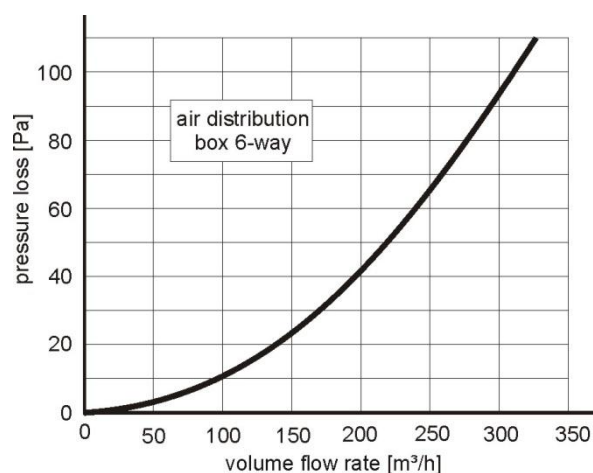
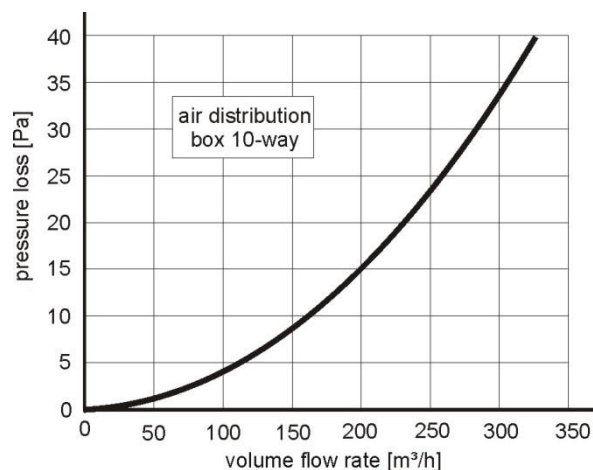
Can be set it concrete or surface-mounted. Installation of Easy-Flex hoses via hold-down bracket and cable ties.

Dimensions and sound values: see next page

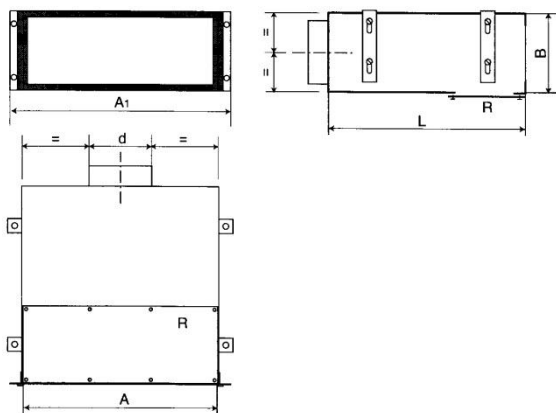
Sound values: see next page

Part-No.	Description
528006400	Sound-insulated air distribution box with DN 180 connection on mounting plate, 16-way displaceable on front; DN 75 mm (surface mounting) with maintenance lid
528005330	Sound-insulated air distribution box with DN 160 connection on mounting plate, 10-way displaceable on front; DN 75 mm (surface mounting) with maintenance lid
528006930	Sound-insulated air distribution box with DN 125 connection on mounting plate, 6-way displaceable on front; DN 75 mm (surface mounting) with maintenance lid

Please note: order air distribution box and mounting plate separately



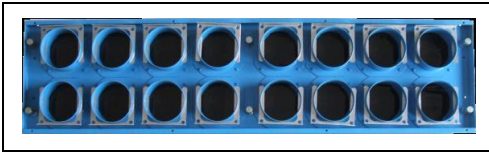
Dimensions:



	A [mm]	A1 [mm]	B [mm]	L [mm]	d [mm]	R
528006400	830	890	200	500	180	Maintenance lid
528005330	500	560	200	500	160	
528006930	310	370	200	500	125	

Sound values:

	Octave band [Hz]	63	125	250	500	1000	2000	4000	Gesamt
distribution box DN 160	unit sound-insulation [dB(A)]	10	4	5	21	32	22	25	19
	transmitted sound-insulation [dB(A)]	18	19	22	24	24	30	27	23
distribution box DN 125	unit sound-insulation [dB(A)]	16	6	13	16	24	29	33	22
	transmitted sound-insulation [dB(A)]	22	18	18	22	24	29	27	22



10-way mounting plate

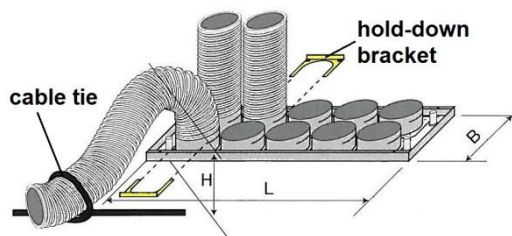


10-way mounting plate



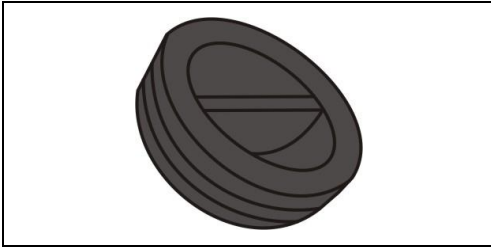
6-way mounting plate

Dimensions:



Part-No.	Description
528006410	16-way mounting plate DN 75, H (min) x L x W = (130 x 903 x 225) mm
528005320	10-way mounting plate DN 75, H (min) x L x W = (130 x 570 x 225) mm
528005860	6-way mounting plate DN 75, H (min) x L x W = (130 x 375 x 225) mm

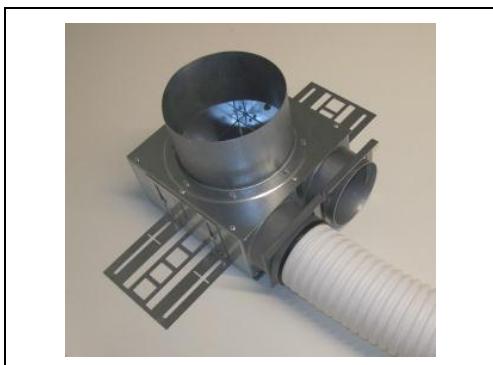
1.6 Protective cap



Protective cap for sealing unused pipe connections for valve casing and mounting plate
Colour: black
Quantity: 10 pcs.

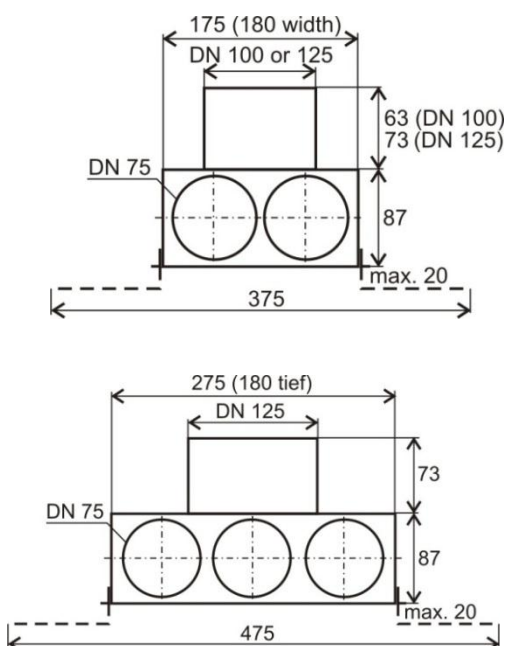
Part-No.	Description
528005980	Protective cap for valve casing, galvanized and mounting plate

1.7 Valve casing, galvanized



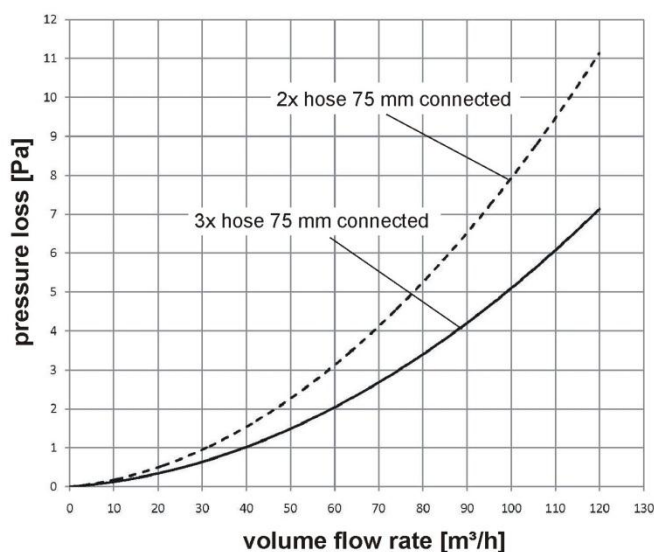
Valve casing, galvanized for support of a DN 100 or DN 125 valve with 2 or 3 pipe connections for connection Easy-Flex hoses with sealing ring, without lip seal, sleeve dimension, mounting brackets in order to fix the Easy-Flex hose in pipe connection, screw cap DN 100 or DN 125 for protection against pollution during the construction period

Dimensions:



Part-No.	Description
528005410	Valve casing, galvanized DN 100 to 2x DN 75 without lip seal, sleeve dimension
528005430	Valve casing, galvanized DN 125 to 2x DN 75 without lip seal, sleeve dimension
528006630	Valve casing, galvanized DN 125 to 3x DN 75 without lip seal, sleeve dimension

pressure loss valve casing 3x 75 - DN 125



1.8 Valve casing, plastic



Art.-Nr.	Bezeichnung
528007390	octopus valve casing DN 100 to 2x DN 75, sleeve dimension, HDPE
528007400	octopus valve casing DN 125 to 2x DN 75, sleeve dimension, HDPE
528007410	octopus valve casing DN 125 to 3x DN 75, sleeve dimension, HDPE

octopus valve casing DN 100 to 2x DN 75



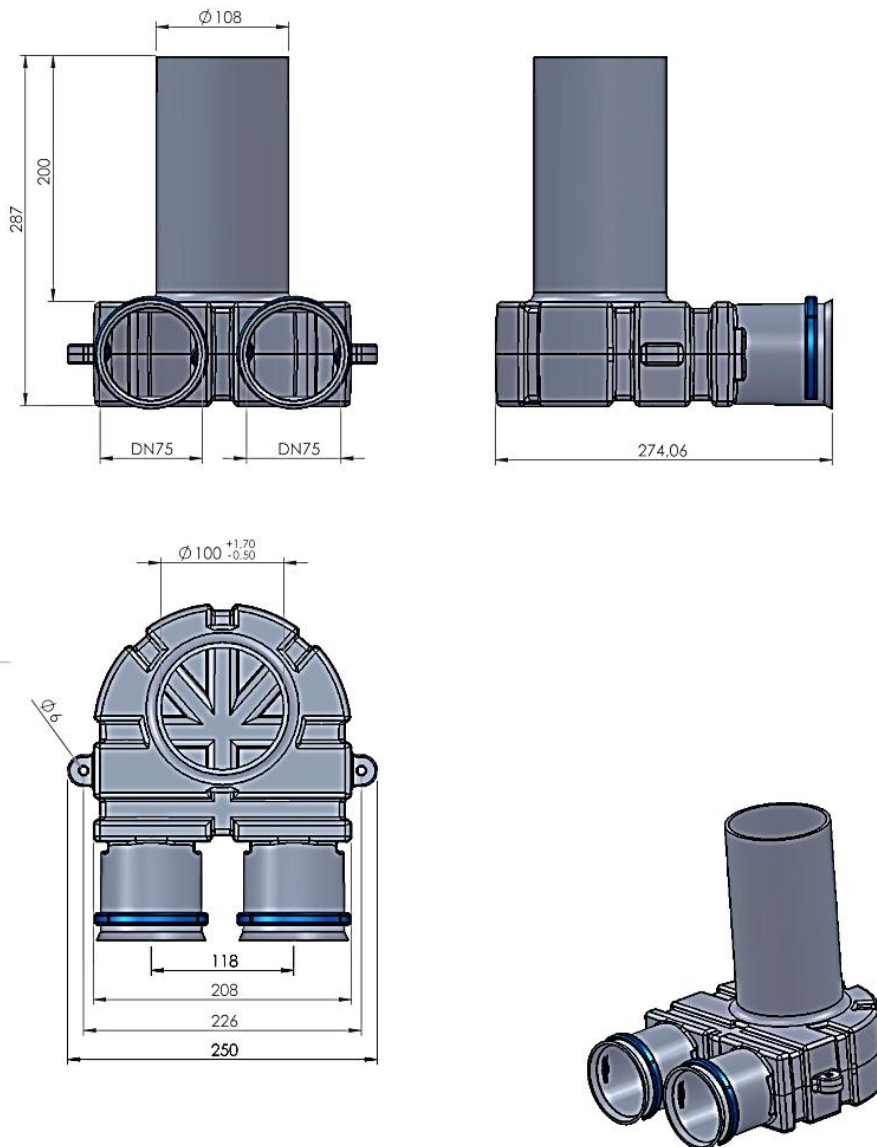
octopus valve casing DN 125 to 2x DN 75



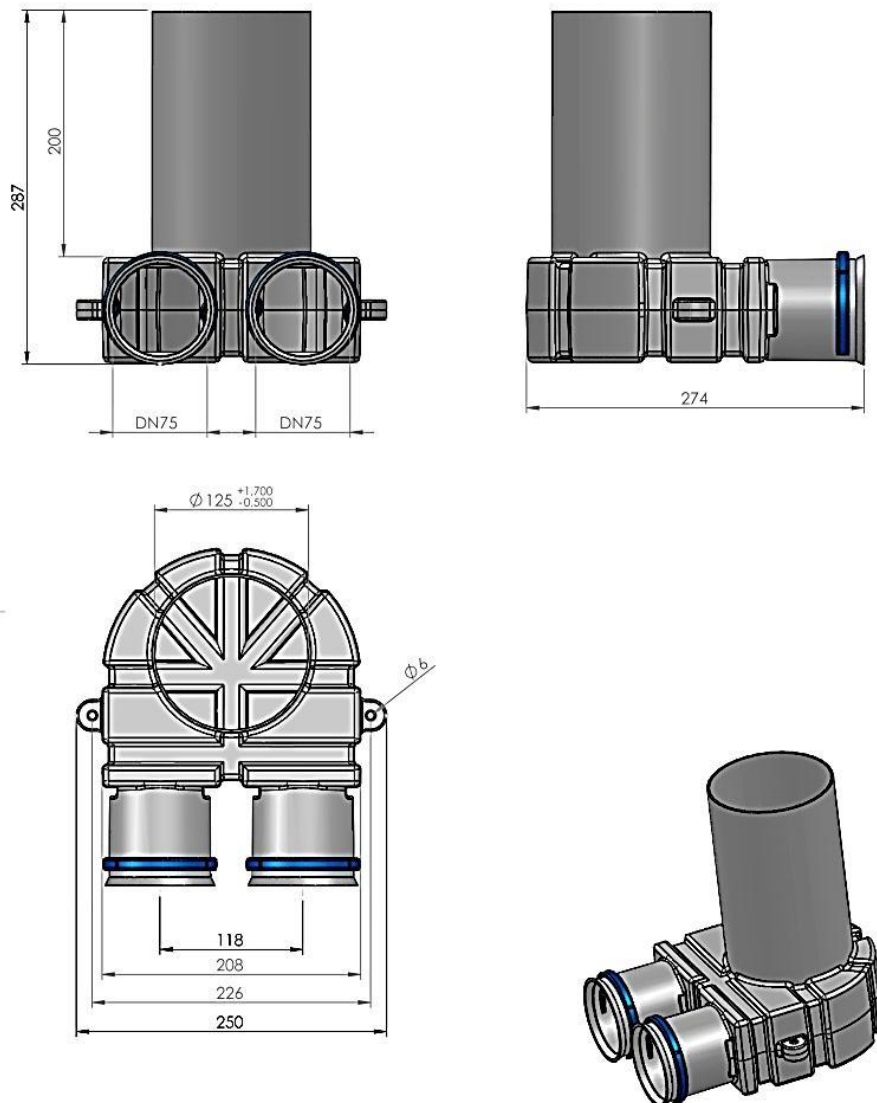
octopus valve casing DN 125 to 3x DN 75

octopus valve casing for support of a DN 100 or DN 125 valve with 2 or 3 pipe connections for connection Easy-Flex hoses with sealing ring, sleeve dimension, made of plastic (HDPE), mounting brackets in order to fix the Easy-Flex hose in pipe connection, screw cap DN 100 or DN 125 for protection against pollution during the construction period

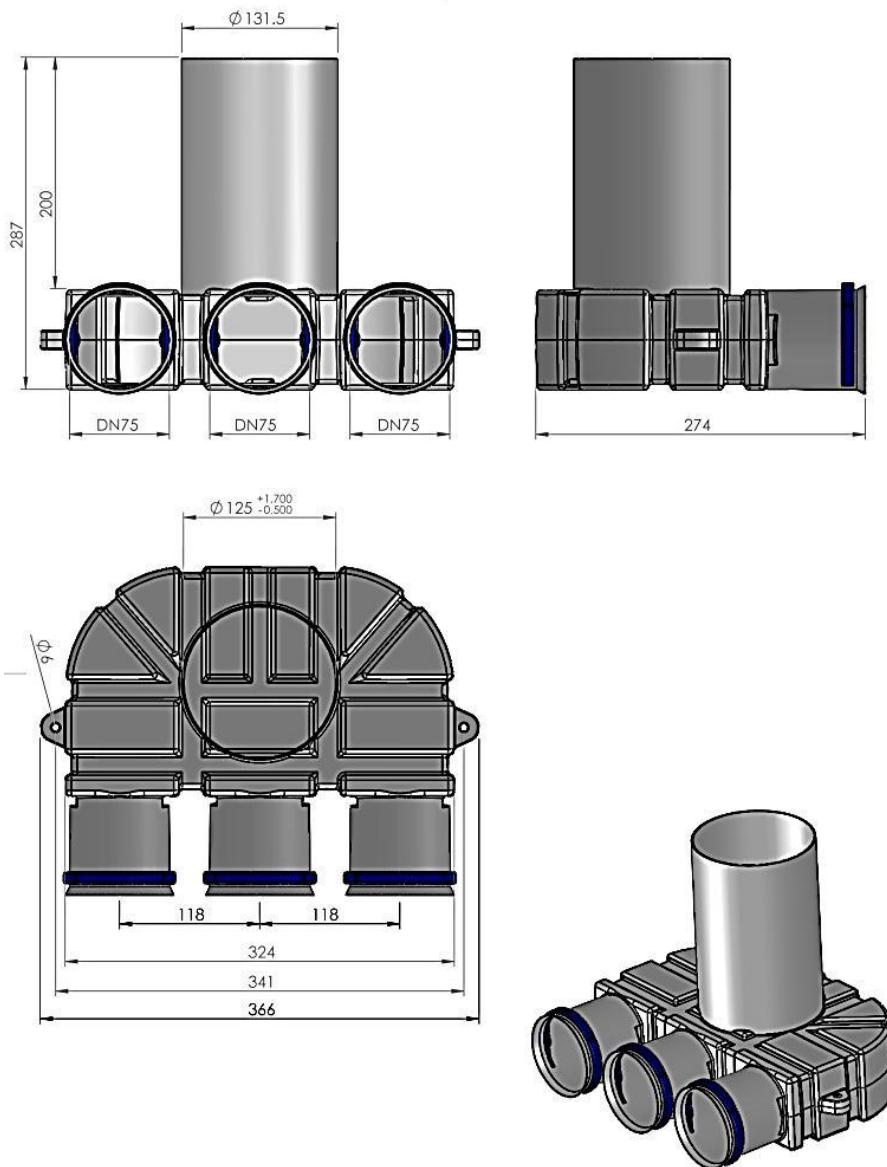
Dimensions:



octopus valve casing DN 100 auf 2x DN 75



octopus valve casing DN 125 auf 2x DN 75



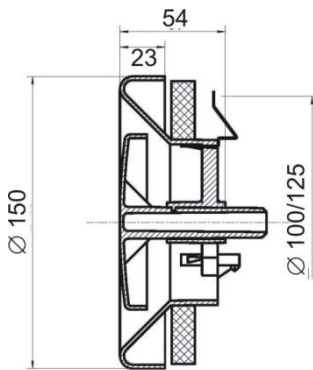
octopus valve casing DN 125 auf 3x DN 75

1.9 Extract air disk valve



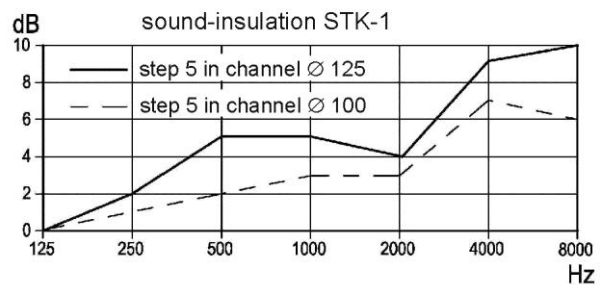
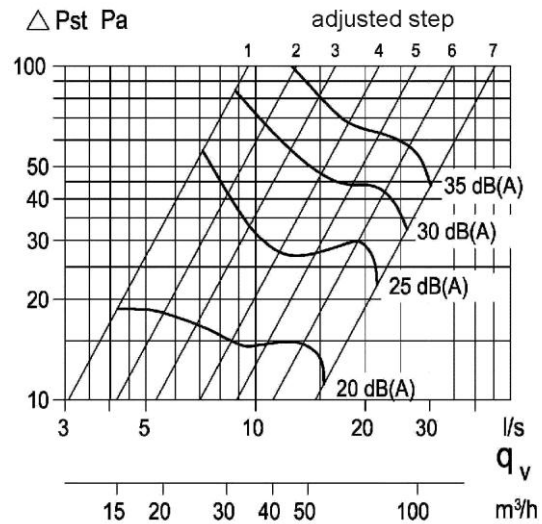
Extract air disk valve made of plastic
STK 1-100/125
adjustable for DN 100 or DN 125

Dimensions:



please see chapter 6 of the bill of materials for
more inlets and outlets

Part-No.	Description
528005390	Extract air disk valve DN 100/125

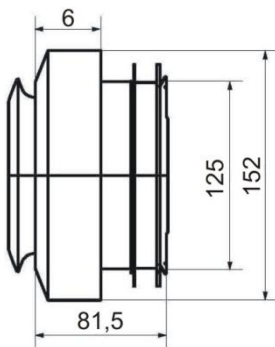


1.10 Supply air disk valve



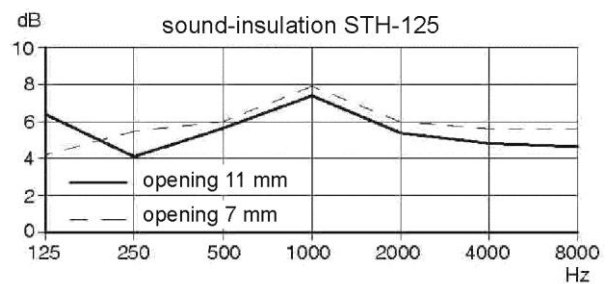
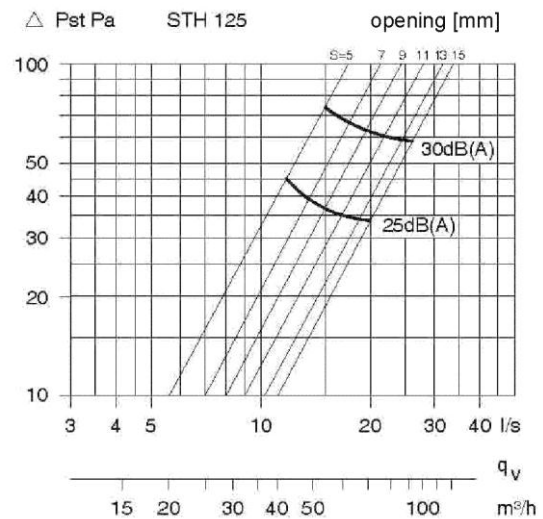
Supply air disk valve made of plastic STH 1-125 short, discharge angle 360°

Dimensions:

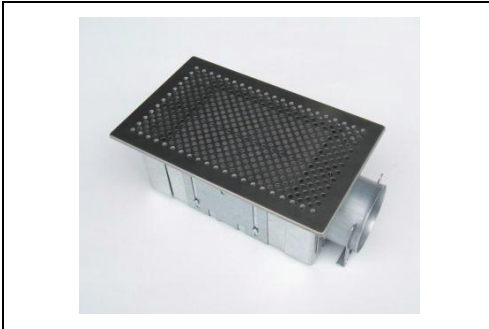


please see chapter 6 of the bill of materials for more inlets and outlets

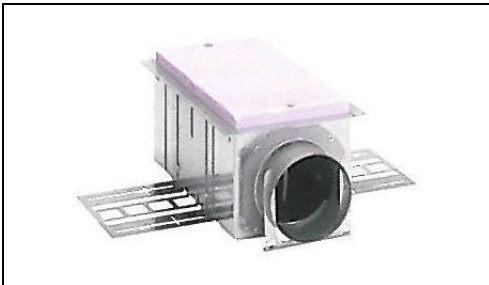
Part-No.	Description
528005400	Supply air disk valve DN 125



1.11 Air passage



Air passage box with design covering grille, stainless steel or white coating



Air passage box with 1 connection DN 75, on front, max. air volume: 30 m³/h

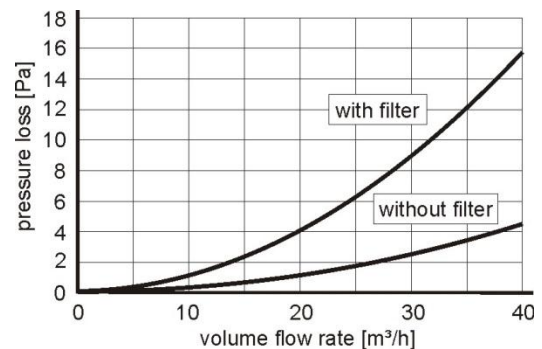


Air passage box with 1 connection DN 75, at the side, max. air volume: 30 m³/h

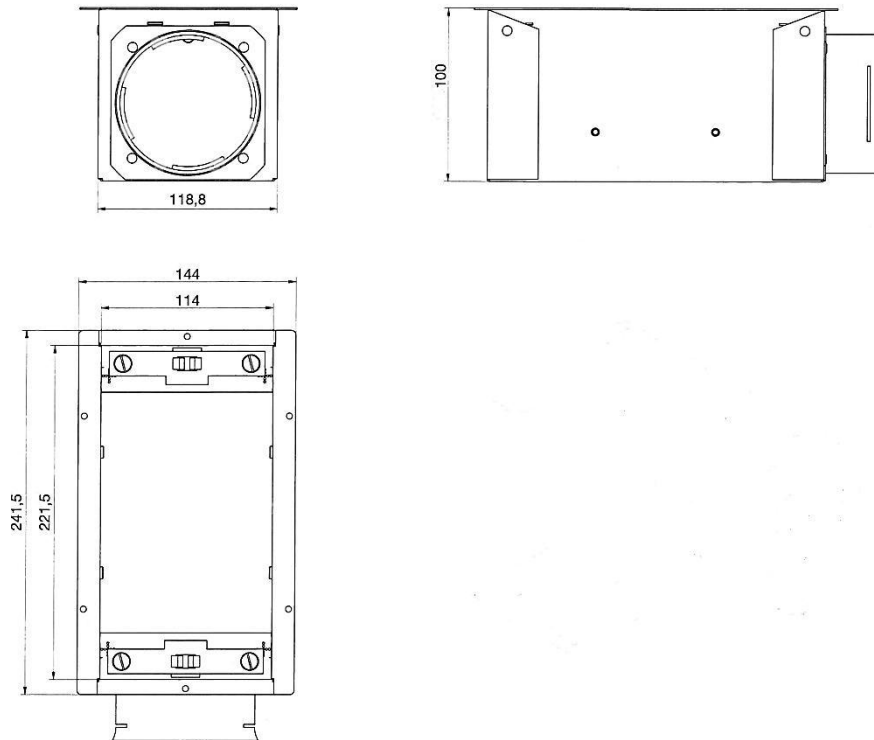


Telescopic frame for air passage box for ground installation, max. air volume: 30 m³/h consists of
1 mounting frame, 1 sliding frame,
1 load distribution element, 1 flush-frame with grille retaining clips and cover plate,
4 distance screws

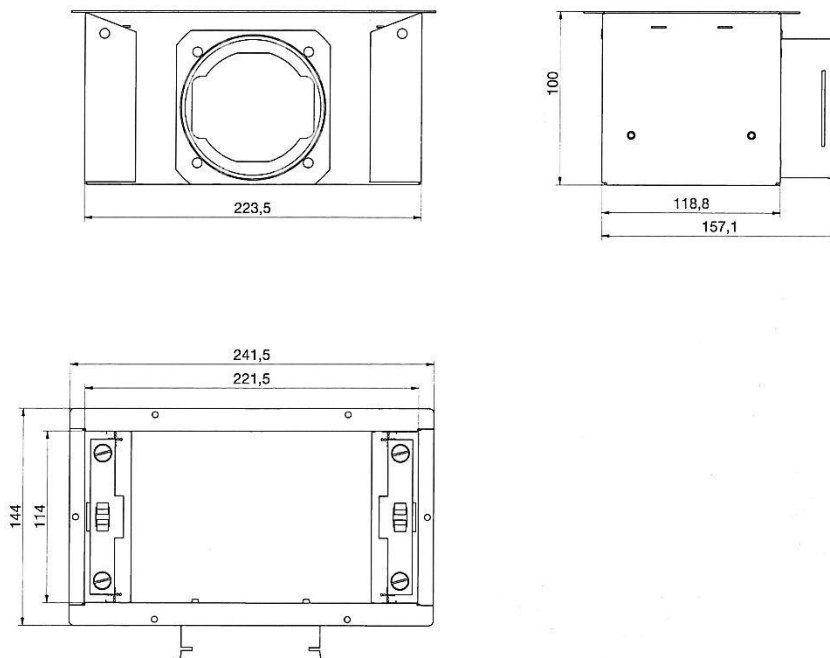
Part-No.	Description
528006790	Air passage box, 1x DN 75 on front, sleeve dimension, H = 100 mm
528007310	Air passage box, 1x DN 75 at the side, sleeve dimension, H = 100 mm
528006770	Design grille, stainless steel (260 x 160) mm (suitable as ground grille)
528006780	Design grille, white, (260 x 160) mm (not suitable as ground grille)
528006800	Telescopic frame for ground installation, H = 60-95 mm
528007320	Telescopic frame for ground installation, H = 90-160 mm
528006830	Additional filter for air passage box, 10 pcs.



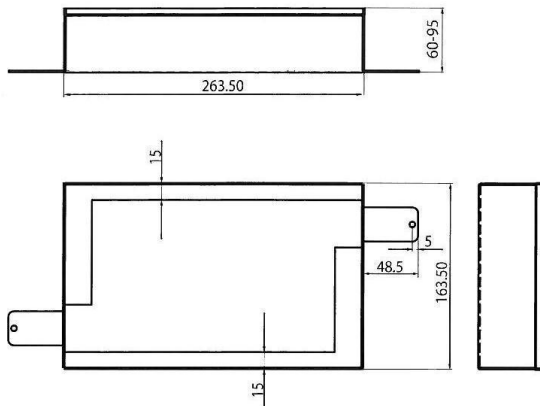
Dimensions:



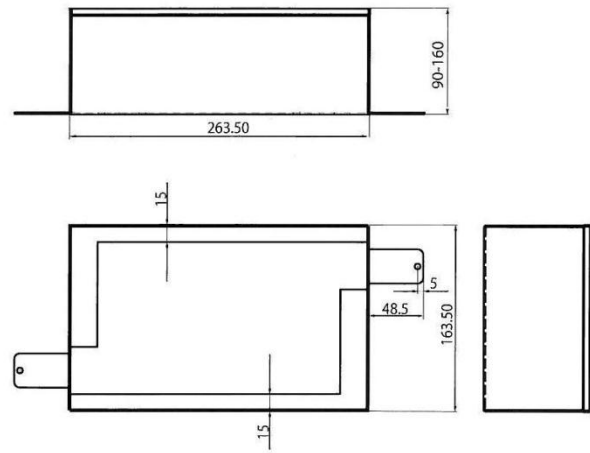
Air passage box, 1x DN 75 on front



Air passage box, 1x DN 75 at the side

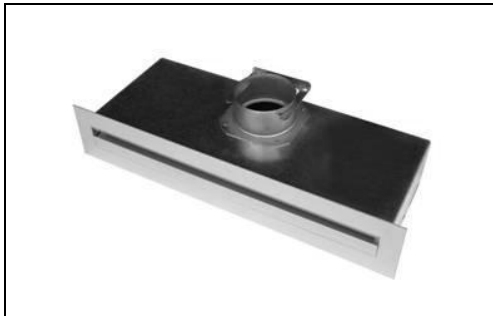


Telescopic frame for ground installation H = 60-95 mm



Telescopic frame for ground installation H = 90-160 mm

1.12 Slotted air passage



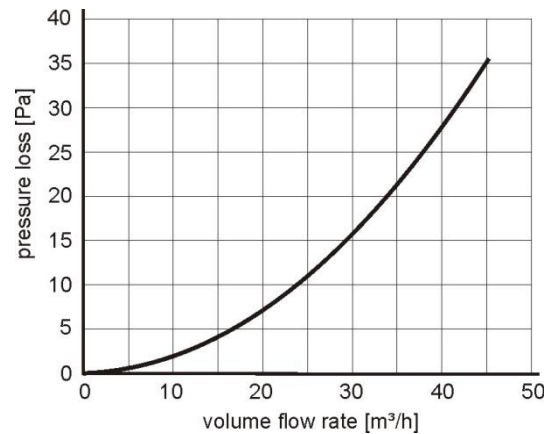
Slotted air passage with mounting box
for supply air and mounting box with 1 x DN 75
connection
max. air volume: 40 m³/h

Part-No.

528006810
528006820

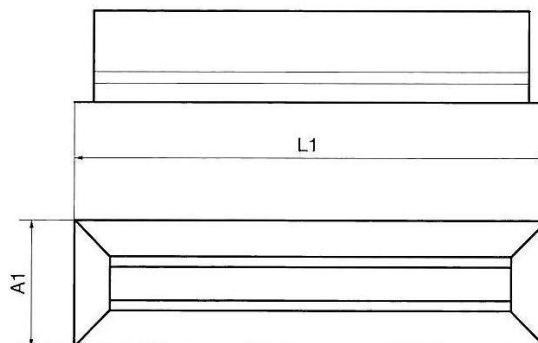
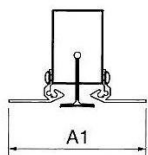
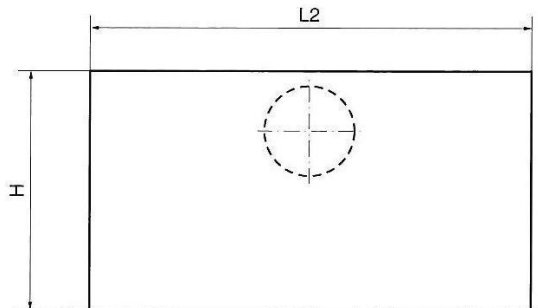
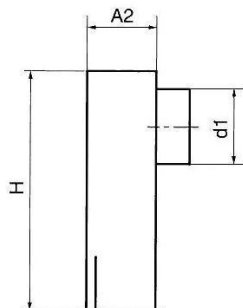
Description

Mounting box for slotted air passage
Slotted air passage



Dimensions in mm:

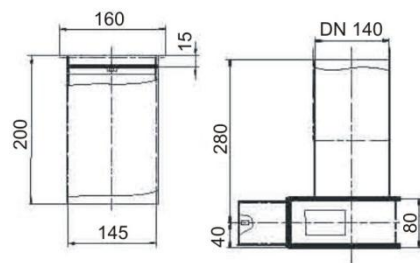
A1	L1	A2	L2	d1	H
83	434	59	410	75	165



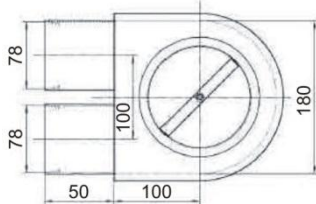
1.13 Ground outlet



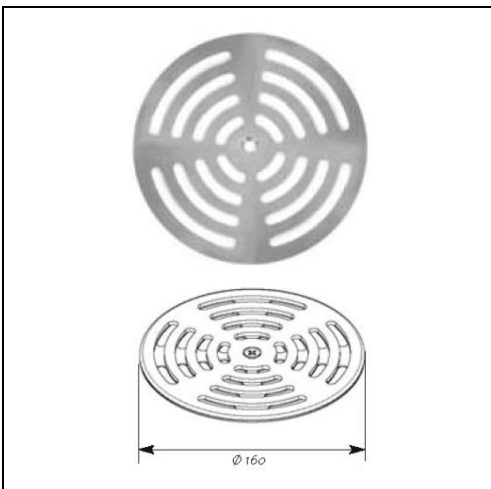
Dimensions:



Seitenansicht



Draufsicht



Ground outlet with stainless steel grille, possible to walk on 2 x DN 75 connection, air volume control via adjustment dial or air volume choke (see item 1.17)

Part-No.

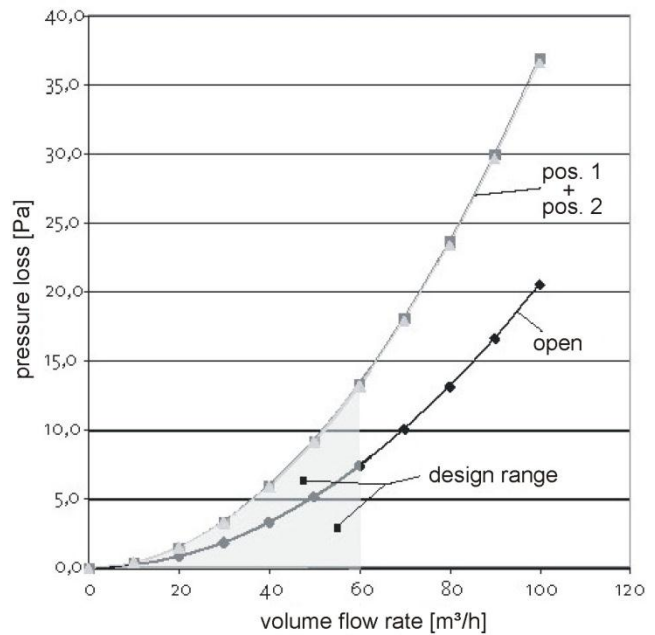
Description

528005450

Connection box for ground outlet grille DN 160

528005460

Ground outlet grille DN 160



adjustment dial



pos. 1



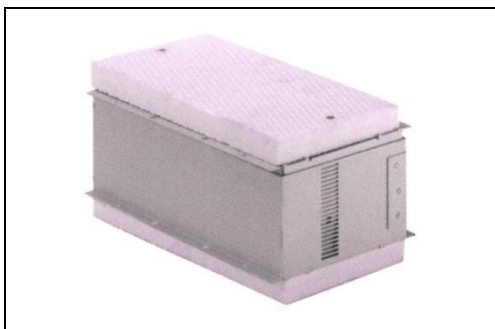
pos. 2



open

Design range valid for ground outlet with 2x DN 75 connection; for 1x DN 75 connection, multiply pressure loss with factor 1.8

1.14 Overflow element



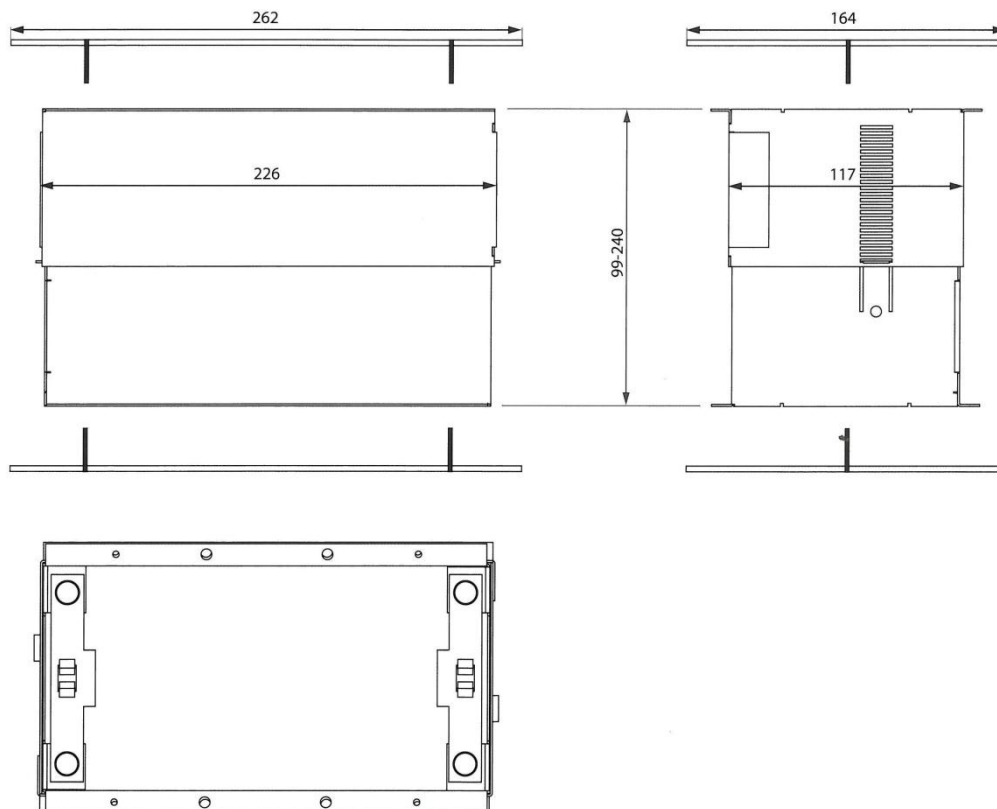
Part-No.	Description
528007340	Sound insulating overflow element, wall thickness 80-140 mm
528007350	Sound insulating overflow element, wall thickness 140-260 mm
528006770	Design grille, stainless steel (260 x 160) mm (suitable as ground grille)
528006780	Design grille, white, (260 x 160) mm (not suitable as ground grille)

Sound insulating overflow element with galvanized steel housing and plastic backdrops, max. air flow: 30 m³/h, the same grilles like for the air distribution grill are fitting also for the overflow element

Advantages:

- high sound absorption
- no light incidence
- no dust dispersion in passages
- good space throughflow
- easy and fast installation
- easy cleaning

Dimensions:



1.15 Elbow for Easy-Flex hose



Part-No.	Description
528005280	90° elbow for Easy-Flex hose DN 75

PE elbow for Easy-Flex hose – order sealing ring separately

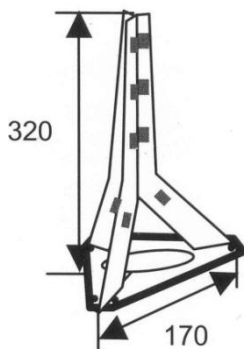
1.16 Deflection piece



Part-No.	Description
528005340	Deflection piece for up to three hoses

Deflection piece for 90° deflection of up to three Easy-Flex hoses (horizontal - vertical)

Dimensions:

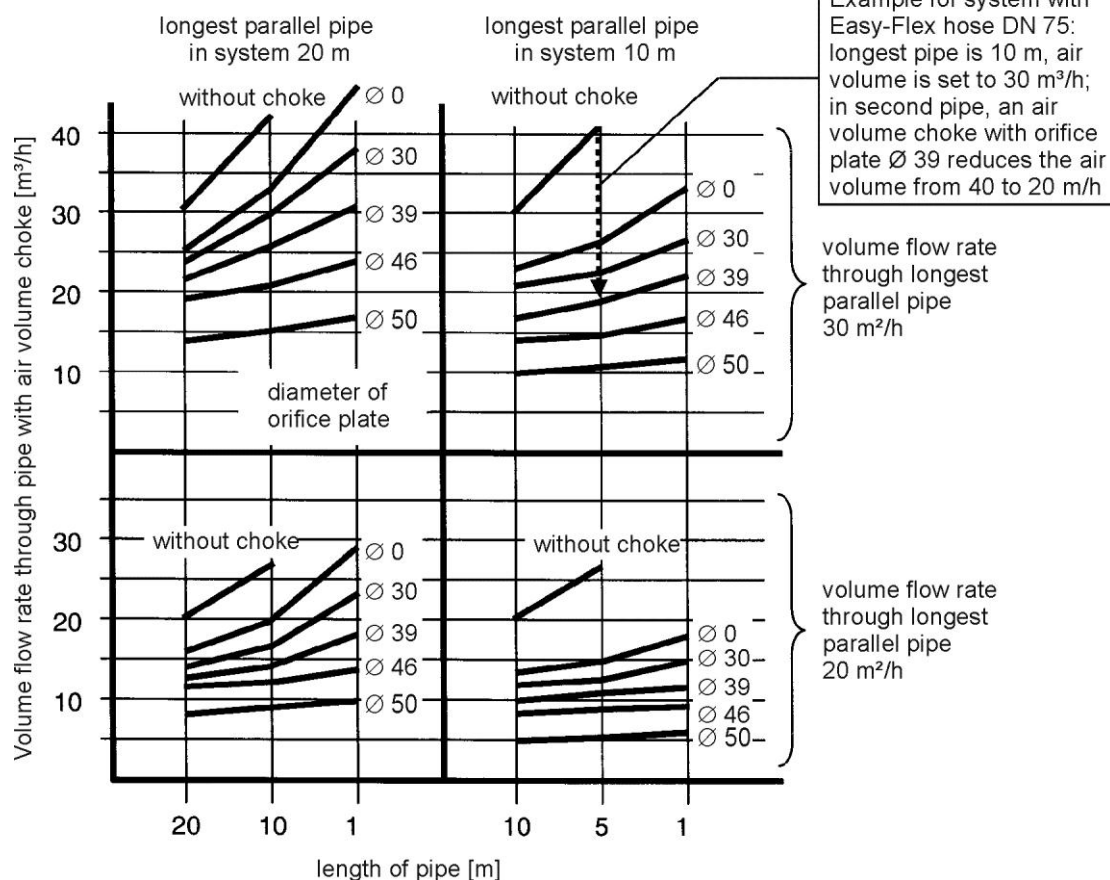
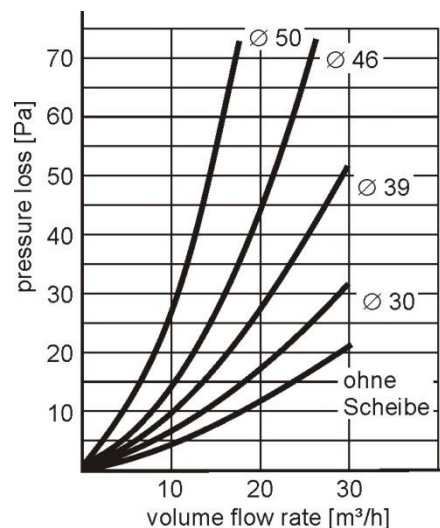


1.17 Air volume choke



For noiseless choking of air volumes,
can also be used as silencer,
Adjustment done by using various orifice plates
(diameters: 30, 39, 46 or 50 mm)
Insertion into Easy-Flex hose , e.g. at distribution
box (item 1.5) or valve casing (item 1.6)
Patented component!

Part-No.	Description
528005310	Air volume choke for Easy-Flex hose DN 75



1.18 Filigree ceiling ring



Part-No.	Description
528007330	Filigree ceiling ring for concrete installation DN 130

The filigree ceiling ring for the limitation of the filigree ceiling slot made of stainless steel is grouted into the filigree ceiling. Therewith an accurately fitting slot for the future installation of the valve housing is ensured.

1.19 Cable ties



Part-No.	Description
528005290	Cable ties for Easy-Flex hose DN 75

For fixing the Easy-Flex hose to the lower reinforcement (at intervals of about 100 cm)

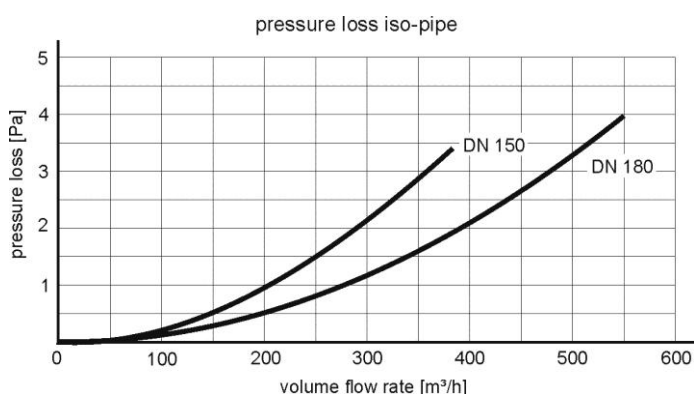
Delivered quantity: 100 pcs.

2 iso pipe

2.1 iso pipe



Part-No.	Description
528006940	iso pipe DN 125, L = 500 mm
528006950	iso pipe DN 125, L = 1000 mm
528005580	iso pipe DN 150, L = 500 mm
528005590	iso pipe DN 150, L = 1000 mm
528006990	iso pipe DN 180, L = 500 mm
528007000	iso pipe DN 180, L = 1000 mm



Insulated ventilation pipe made of steam-proof EPP

Thickness:	15 mm
Heat conduction:	0.042 W/mK
Heat transfer coefficient:	1.8 W/m²K
Operation limits:	-25 °C to 80 °C
Flexibility:	30 %
Weight:	350 g/m

Notes:

all elements are pluggable and can be cut to length on request

Advantages:

- Condensateless installation of intake and exhaust air ducts
- Quick and easy installation
- Little weight
- Heat insulation

Length: L = 500 mm and 1000 mm

2.2 iso pipe elbow, 90°



90° elbow for iso pipe, steam-proof EPP,
Thickness: 15 mm

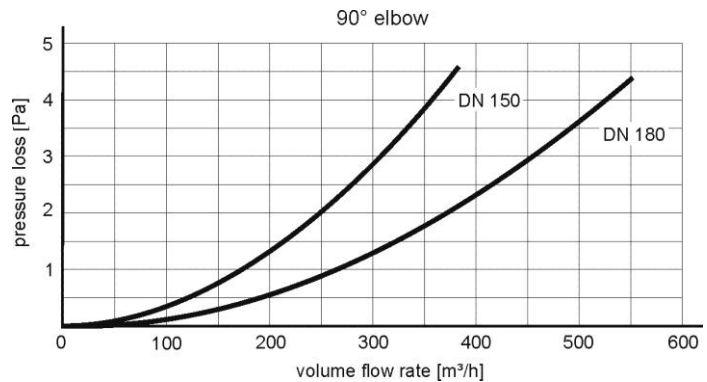
Notes:

all elements are pluggable and can be cut to length on request

Advantages:

- Condensateless installation of intake and exhaust air ducts
- Quick and easy installation
- Little weight
- Heat insulation

Part-No.	Description
528006960	iso pipe elbow 90° DN 125
528005600	iso pipe elbow 90° DN 150
528007010	iso pipe elbow 90° DN 180



2.3 iso pipe elbow, 45°



45° elbow for iso pipe, steam-proof EPP,
Thickness: 15 mm

Notes:

all elements are pluggable and can be cut to length on request

Advantages:

- Condensateless installation of intake and exhaust air ducts
- Quick and easy installation
- Little weight
- Heat insulation

Part-No.	Description
528006970	iso pipe elbow 45° DN 125
528005610	iso pipe elbow 45° DN 150
528007020	iso pipe elbow 45° DN 180

Pressure loss:

For elbow 45 ° the values of elbow 90 ° are used

2.4 Connector iso pipe



Connector for iso pipe, made of plastic
Thickness: 15 mm

Notes:

all elements are pluggable and can be cut to length on request

Advantages:

- Condensateless installation of intake and exhaust air ducts
- Quick and easy installation
- Little weight
- Heat insulation

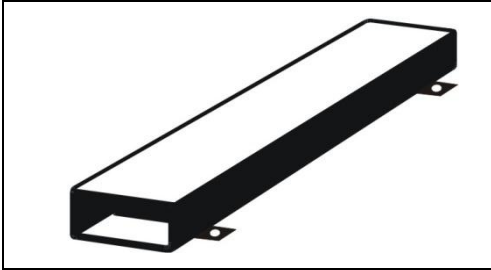
Part-No.	Description
528006980	Connector iso pipe DN 125
528005630	Connector iso pipe DN 150
528007030	Connector iso pipe DN 180

dimensions, weights:

Part-No.	DN [mm]	Inner diameter [mm]	Outer diameter [mm]
528006980	125	155	185
528005630	150	180	210
528007030	180	210	240

3 Metal flat air duct

3.1 Metal flat air duct



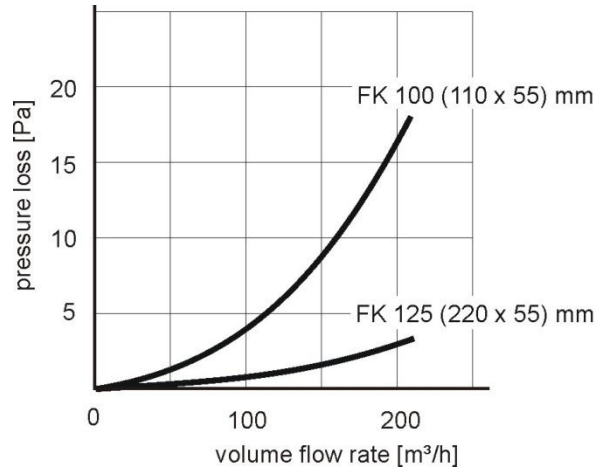
Metal flat air duct
with mounting straps
Length: L = 1 m

Part-No.

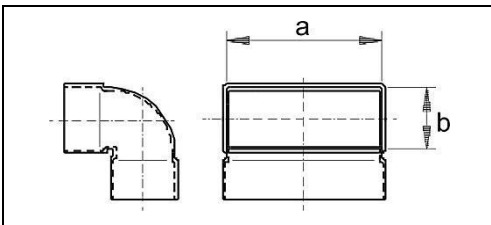
Description

528001700
528001710

Metal flat air duct FK 100 (110 x 55 mm)
Metal flat air duct FK 125 (220 x 55 mm)



3.2 Flat air duct elbow, vertical, short



Part-No.

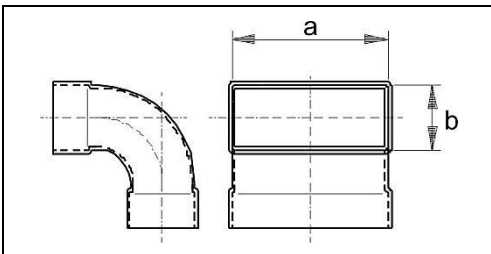
Description

528001790
528001810

Flat air duct elbow FK 100 (110 x 55) mm, 90°
vertical, short made of metal
Flat air duct elbow FK 125 (220 x 55) mm, 90°
vertical, short made of metal

Elbow fits in flat air duct

3.3 Flat air duct elbow, vertical, long



Part-No.

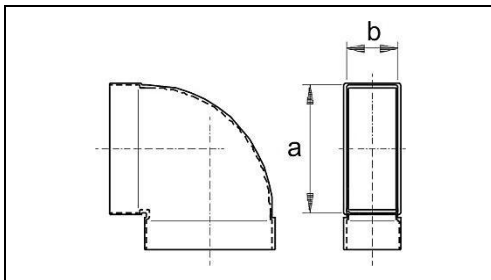
Description

528001820
528001830

Flat air duct elbow FK 100 (110 x 55) mm, 90°
vertical, long made of metal
Flat air duct elbow FK 125 (220 x 55) mm, 90°
vertical, long made of metal

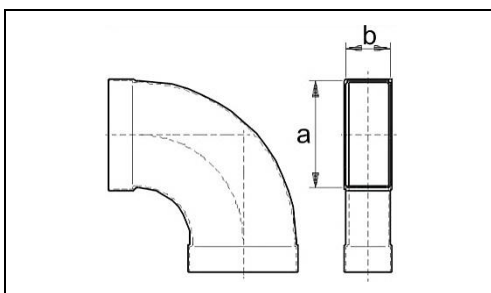
Elbow fits in flat air duct

3.4 Flat air duct elbow, horizontal, short



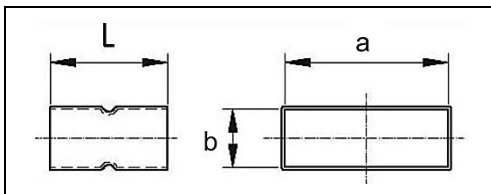
Part-No.	Description
528001850	Flat air duct elbow FK 100 (110 x 55) mm, 90° horizontal, short made of metal
528001870	Flat air duct elbow FK 125 (220 x 55) mm, 90° horizontal, short made of metal
Elbow fits in flat air duct	

3.5 Flat air duct elbow, horizontal, long



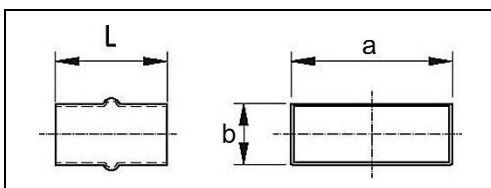
Part-No.	Description
528001880	Flat air duct elbow FK 100 (110 x 55) mm, 90° horizontal, long made of metal
528001890	Flat air duct elbow FK 125 (220 x 55) mm, 90° horizontal, long made of metal
Elbow fits in flat air duct	

3.6 Plug-in sleeve



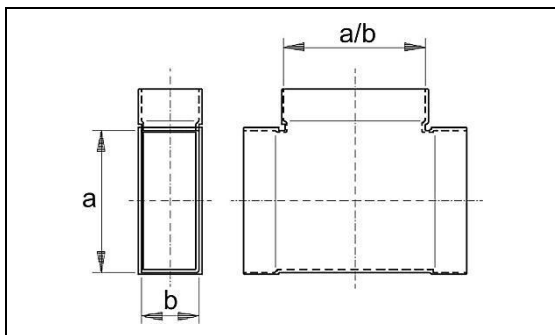
Part-No.	Description
528001900	Plug-in sleeve for metal flat air duct FK 100 (110 x 55) mm
528001910	Plug-in sleeve for metal flat air duct FK 125 (220 x 55) mm
Fits in flat air duct	

3.7 Connector



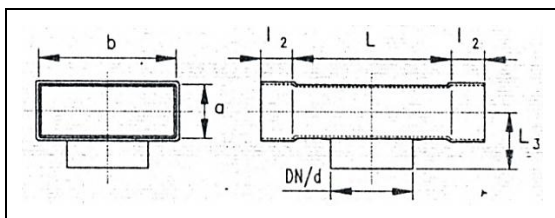
Part-No.	Description
528001920	Connector fitting for metal flat air duct FK 100 (110 x 55) mm
528001930	Connector fitting for metal flat air duct FK 125 (220 x 55) mm
Fits in fitting	

3.8 T-piece, 90° horizontal



Part-No.	Description
528001990	T-piece, 90° horizontal, for metal flat air duct FK 100 (110 x 55) mm
528002000	T-piece, 90° horizontal, for metal flat air duct FK 125 (220 x 55) mm
	Fits in flat air duct

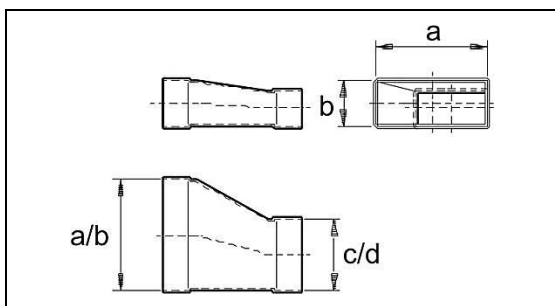
3.9 Branch, 90° vertical, angular/round



Length $L = 250$ mm
Length $L_3 = 70$ mm

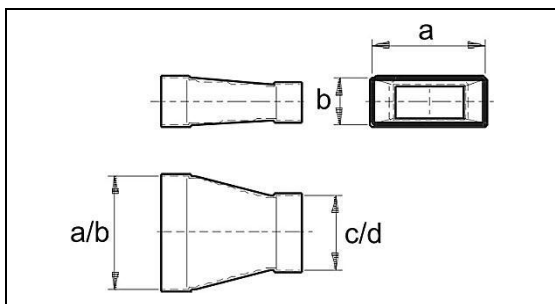
Part-No.	Description
528001720	Branch, 90° vertical, for metal flat air duct FK 100 (110 x 55) mm to DN 100
528001740	Branch, 90° vertical, for metal flat air duct FK 125 (220 x 55) mm to DN 100
528001750	Branch, 90° vertical, for metal flat air duct FK 125 (220 x 55) mm to DN 125
	Fits in flat air duct

3.10 Reducer, angular, asymmetric



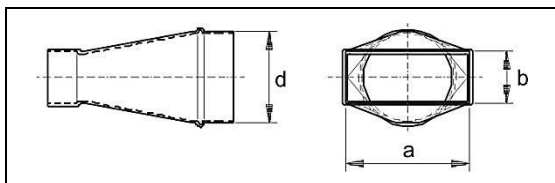
Part-No.	Description
528002010	Reducer FK 125 (220 x 55) mm to FK 100 (110 x 55) mm, angular, asymmetric made of metal
	Fits in flat air duct

3.11 Reducer, angular, symmetric



Part-No.	Description
528002020	Reducer FK 125 (220 x 55) mm to FK 100 (110 x 55) mm, angular, symmetric made of metal
	Fits in flat air duct

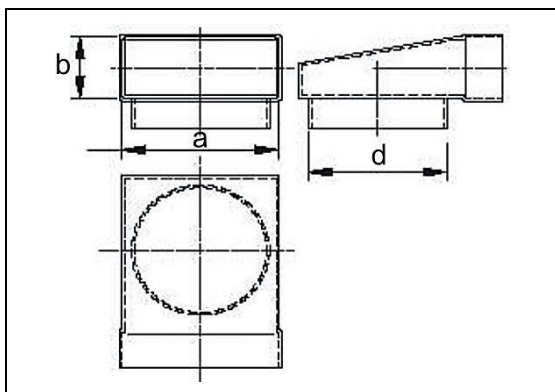
3.12 Reducer, angular/round, symmetric



Part-No.	Description
528002050	Reducer FK 100 (110 x 55 mm) to DN 100, symmetric made of metal
528002060	Reducer FK 125 (220 x 55 mm) to DN 100, symmetric made of metal
528002070	Reducer FK 125 (220 x 55 mm) to DN 125, symmetric made of metal

Fits in flat air duct
Round duct connection fits in duct

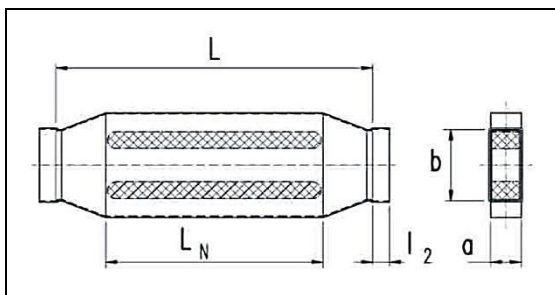
3.13 Elbow, 90° angular/round, symmetric



Part-No.	Description
528002080	Elbow 90° for connection of FK 100 (110 x 55) mm with DN 100, round, symmetric made of metal
528002090	Elbow 90° for connection of FK 125 (220 x 55) mm with DN 100, round, symmetric made of metal
528002100	Elbow 90° for connection of FK 125 (220 x 55) mm with DN 125, round, symmetric made of metal

Fits in flat air duct
Round duct connection fits in duct

3.14 Duct splitter silencer, without coating



Part-No.	Description
528001950	Duct splitter silencer (110 x 55) mm, without coating
528001970	Duct splitter silencer (220 x 55) mm, without coating

without coating, made of metal,
Splitter 40 mm

Part-No.	a [mm]	b [mm]	L _N [mm]	L [mm]	Insulating compound D _e in dB at:						
					125	250	500	1000	2000	4000	8000
528001950	55	110	500	740	3	4	7	14	23	14	10
528001970	55	220	500	740	3	3	6	13	21	13	10

Values in octave center frequency in (Hz)

Pressure loss: Zeta 0,5

4 Flexible hose

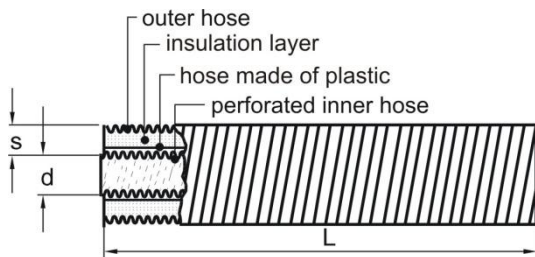
4.1 Flexible hose, round, with sound insulation (plastic, aluminum coated)



Flexible hose made of perforated 3-ply aluminium-laminated-inner hose, acoustically and thermal isolated with a glass wool layer, fiberglass reinforced outer casing, delivery compressed, packed in carton

Insulation thickness: 25 mm
 Temperature resistance: -30 bis +140 °C
 Max. permissible pressure: 2500 Pa
 Application length: 10 m

Dimensions:

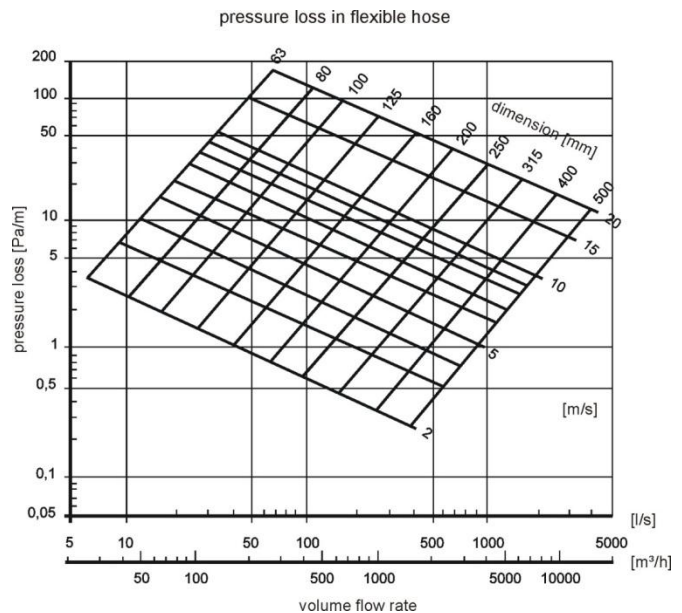


$D = d + 50 \text{ mm}$, $s = 25 \text{ mm}$

Notes:

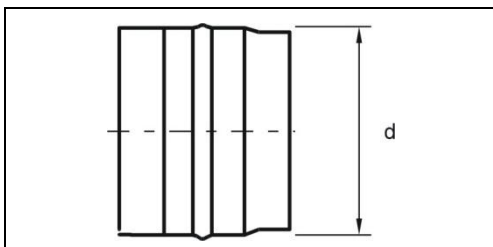
Please see chapter 12 of the bill of materials for more silencers

Part-No.	Description
528002560	Sound-insulated flexible hose DN 125
528002570	Sound-insulated flexible hose DN 160
528007420	Sound-insulated flexible hose DN 180



5 Moulded parts

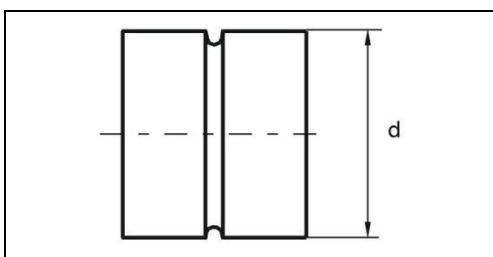
5.1 Fitting



Fitting made of galvanized sheet steel
with lip seal on both sides

Part-No.	Description
528003300	Fitting DN 100
528003310	Fitting DN 125
528003320	Fitting DN 160

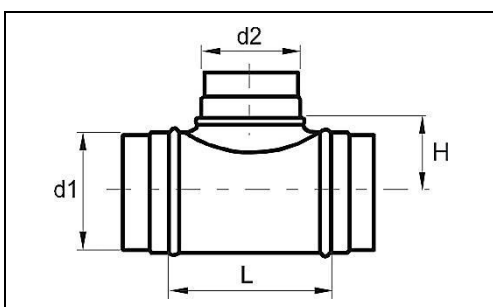
5.2 Sleeve



Sleeve made of galvanized sheet steel,
sleeve dimension

Part-No.	Description
528003890	Sleeve DN 100
528003900	Sleeve DN 125
528003910	Sleeve DN 160
528003920	Sleeve DN 200
528003930	Sleeve DN 250

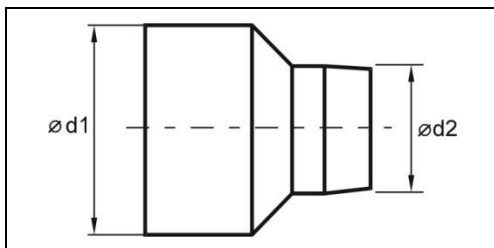
5.3 T-piece



T-piece made of galvanized sheet steel
with lip seal

Part-No.	Description	L [mm]	H [mm]
528003740	T-piece DN 125-125	184	83
528003760	T-piece DN 160-125	229	100
528003770	T-piece DN 160-160	229	105

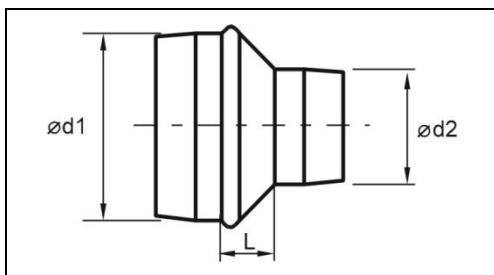
5.4 Reducer, symmetric, sleeve dimension



Reducer made of galvanized sheet steel
Single-sided lip seal
d1 – sleeve dimension, mountable over fittings
d2 – fitting dimension

Part-No.	Description
528003650	Reducer sym. DN 160-125
528007040	Reducer sym. DN 180-160
528006710	Reducer sym. DN 200-150
528003680	Reducer sym. DN 200-160
528007080	Reducer sym. DN 200-180
528003700	Reducer sym. DN 250-160
528007060	Reducer sym. DN 250-180
528003710	Reducer sym. DN 250-200

5.5 Reducer, symmetric, short

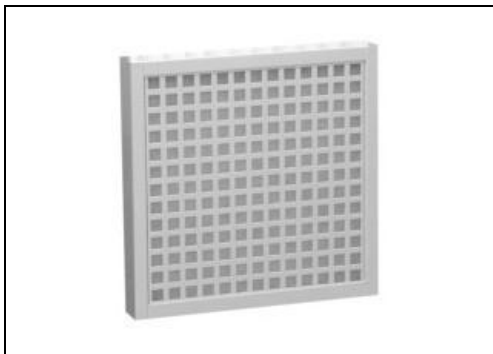


Reducer, symmetric, short
made of galvanized sheet steel
with lip seal on both sides

Part-No.	Description	Length [mm]
528003500	Reducer sym. DN 160-125	35
528005020	Reducer sym. DN 160-150	22
528007070	Reducer sym. DN 180-160	20

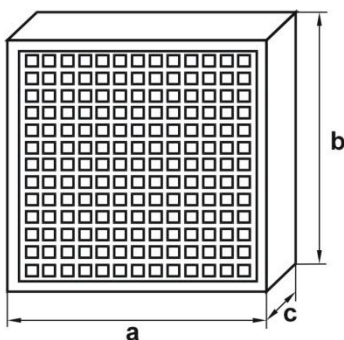
6 Inlets and outlets

6.1 Pre-filter for disk valve

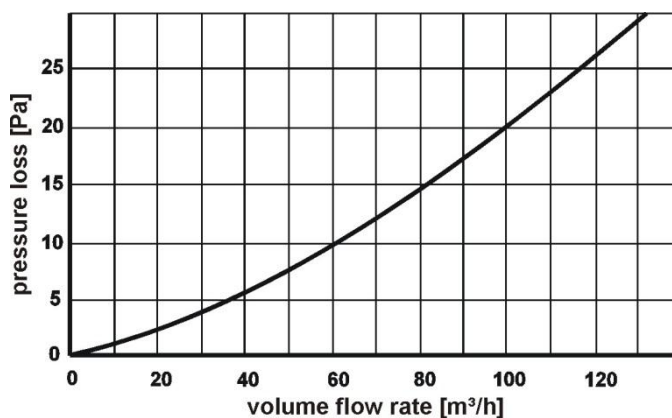


Pre-filter for extract air disk valve
Housing made of powder coated sheet steel, white
Filter element made of synthetic non-woven fabric,
Filter class G3, filter is washable

Dimensions:



Part-No.	Description
528001270	Pre-filter (220 x 220 x 30) mm, installation depth up to 20 mm
528001280	Pre-filter (220 x 220 x 50) mm, installation depth up to 40 mm



Notes:

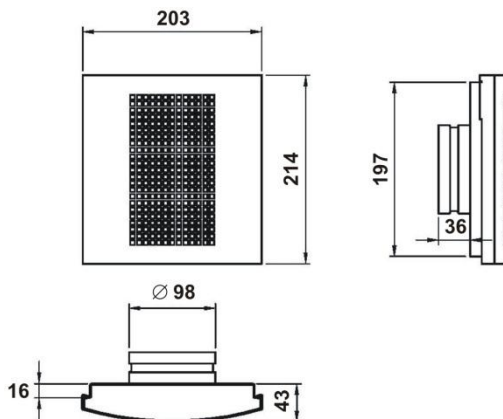
Values with clean filter

6.2 Pre-filter stainless steel or RAL white



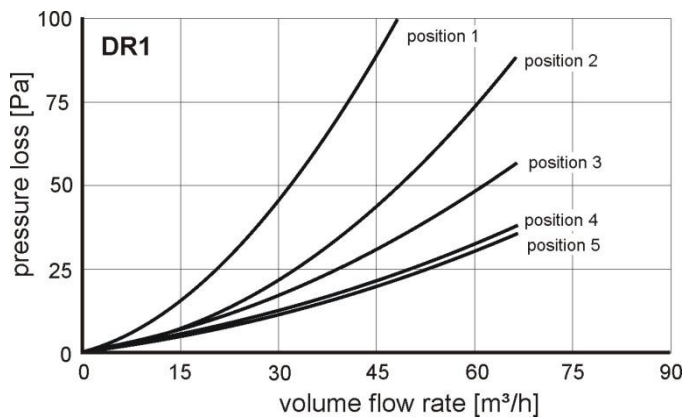
Extract air filter with integrated choke for wall mounting
Filter frame made of stainless sheet steel, powder coated RAL 9010 matt (pure white)
perfectly designed, curved screen, which is put over the filter frame
Filter element made of synthetic non-woven fabric,
Filter class G3, easy to change and wash, filter surface 400 cm²

Dimensions:



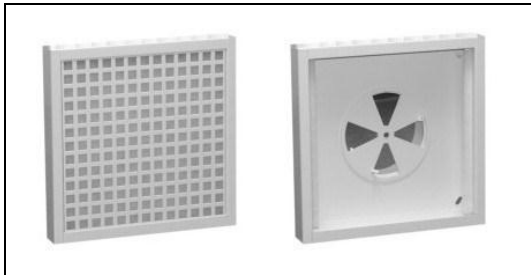
Part-No.	Description
528001340	Pre-filter (203 x 214 x 36) mm, screen made of brushed stainless sheet steel
528001350	Pre-filter (203 x 214 x 36) mm, Screen powder coated, RAL 9010 (white)

Filter with integrated choke

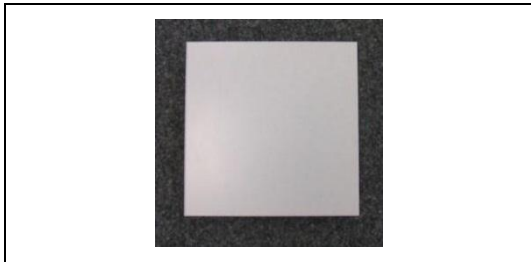


Notes:
Values with clean filter

6.3 Extract air filter for wall mounting, with choke

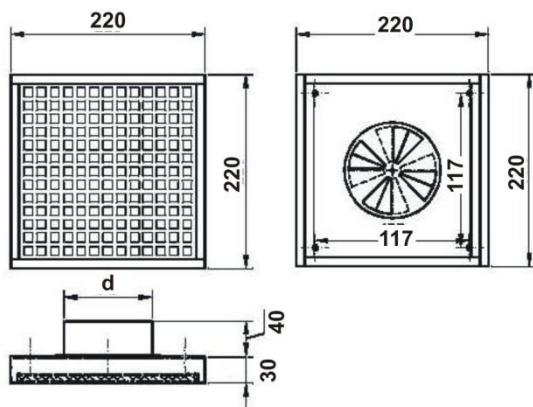


Extract air filter with pipe connection and integrated choke for regulation of volume flow rate
Filter frame and choke made of stainless steel, powder coated RAL 9010 (pure white)
Filter element made of non-woven fabric, Filter class G3, easy to change and wash
large filter surface

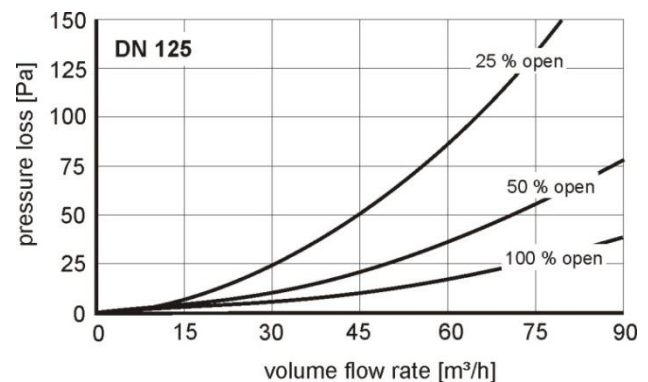
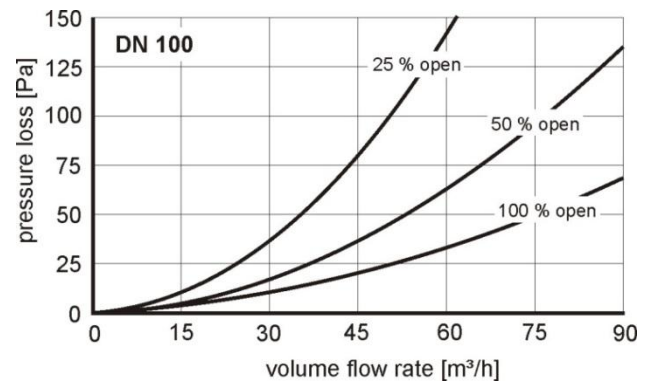


Design trim to hook into the exhaust filter

Dimensions:

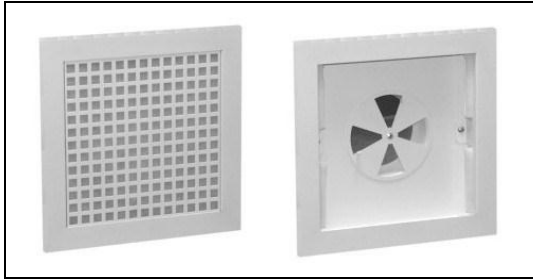


Part-No.	Description
528001400	Extract air filter (220 x 220 x 30) mm, DN 100 for wall mounting
528001410	Extract air filter (220 x 220 x 30) mm, DN 125 for wall mounting
528007690	Design trim (215 x 215) mm

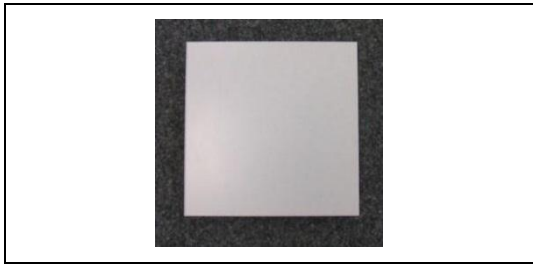


Notes:
Values with clean filter

6.4 Extract air filter for in-wall mounting, with choke

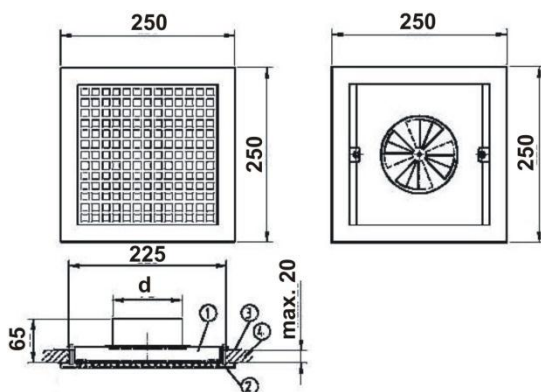


Extract air filter with pipe connection and integrated choke for regulation of volume flow rate
In-wall mounting frame, screen frame and choke made of stainless steel, powder coated RAL 9010 (pure white)
Filter element made of non-woven fabric, Filter class G3, easy to change and wash
large filter surface
Installation of in-wall mounting frame with rotary lever lock



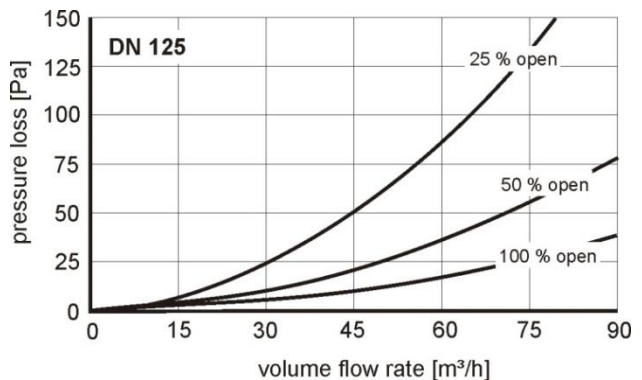
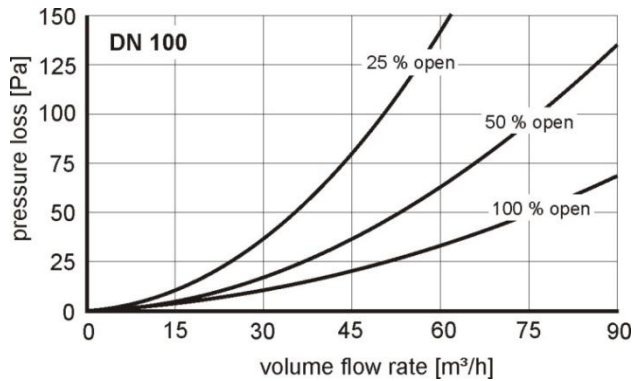
Design trim to hook into the exhaust filter

Dimensions:



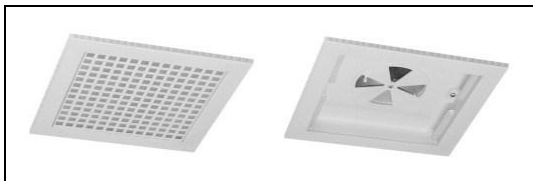
- 1 flush-mounting frame
- 2 frame
- 3 fixing bolt
- 4 drywall panel or masonry (cut-out 225 x 225 mm)

Part-No.	Description
528001420	Extract air filter (250 x 250 x 65) mm, DN 100 for in-wall mounting
528001430	Extract air filter (250 x 250 x 65) mm, DN 125 for in-wall mounting
528007690	Design trim (215 x 215) mm

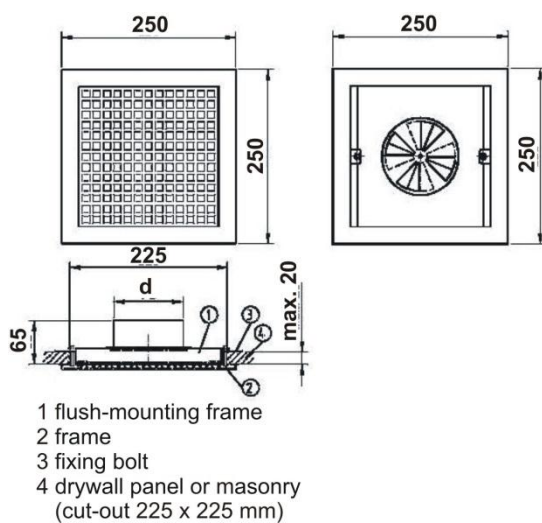


Notes:
Values with clean filter

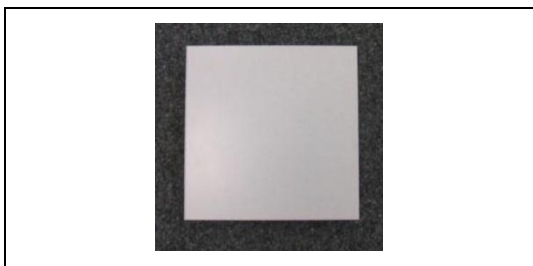
6.5 Extract air filter for ceiling mounting, with choke



Dimensions:

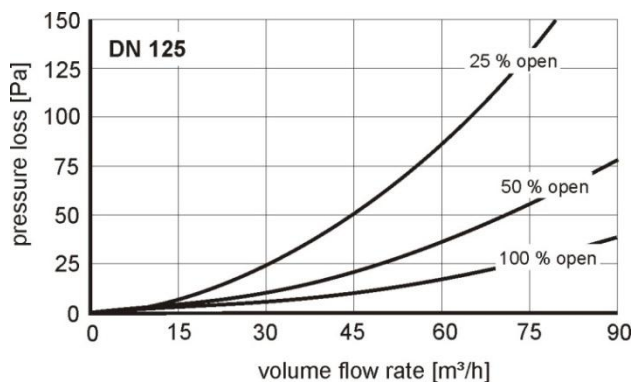
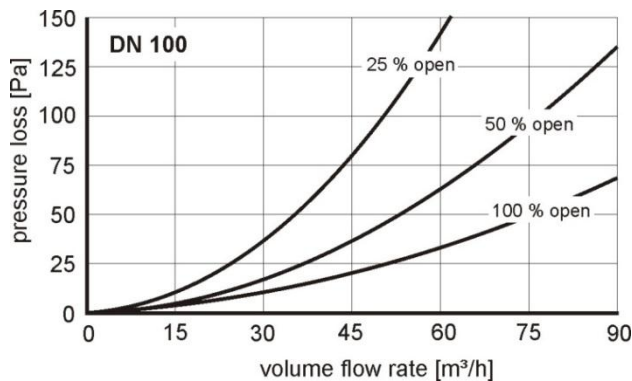


Extract air filter with pipe connection and integrated choke for regulation of volume flow rate
In-wall mounting frame, screen frame and choke made of stainless steel, powder coated RAL 9010 (pure white)
Filter element made of non-woven fabric, Filter class G3, easy to change and wash
large filter surface
Installation of in-wall mounting frame with rotary lever lock



Design trim to hook into the exhaust filter

Part-No.	Description
528001380	Extract air filter (250 x 250 x 65) mm, DN 100 for ceiling mounting
528001390	Extract air filter (250 x 250 x 65) mm, DN 125 for ceiling mounting
528007690	Design trim (215 x 215) mm



Notes:
Values with clean filter

6.6 Extract air disk valve with mounting frame



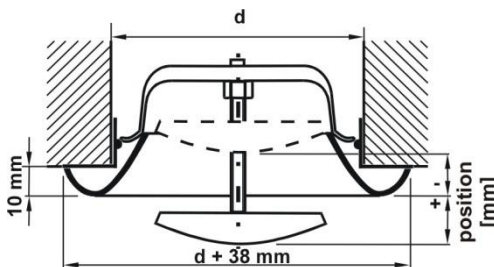
Part-No.	Description
528001130	Extract air disk valve DN 100 with mounting frame
528001150	Extract air disk valve DN 125 with mounting frame
528001160	Extract air disk valve DN 160 with mounting frame

Extract air disk valve made of steel,
baked enamel finish, RAL 9010 (white)
Mounting frame with bayonet lock

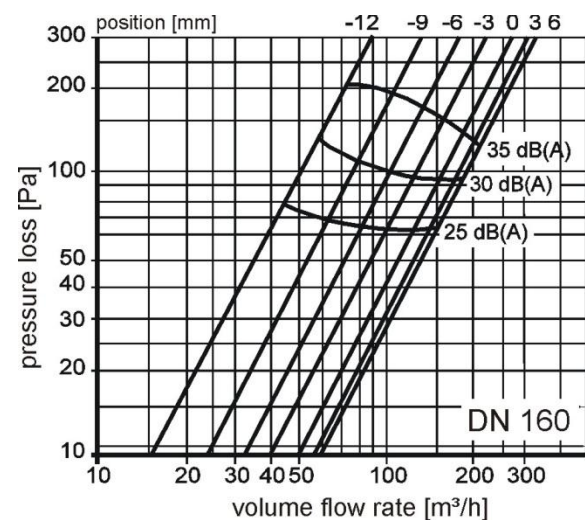
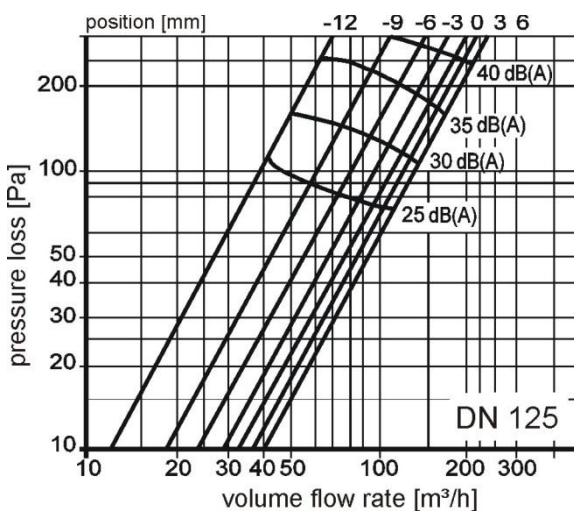
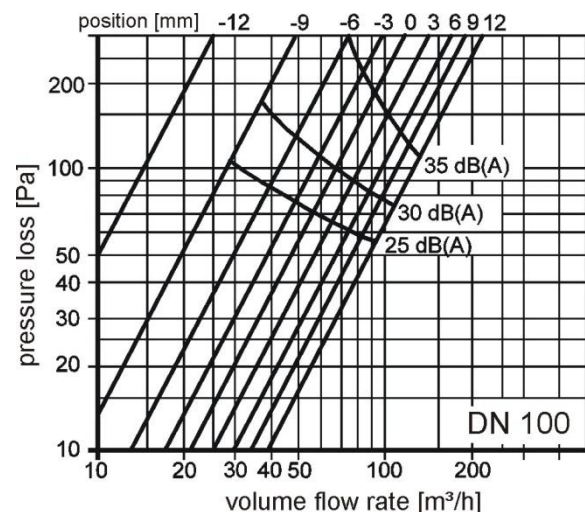
Notes:

1. acc. to DIN 1946-6 item 9.2.5.4, extract air passages in kitchens have to be equipped with filters. In all other rooms (bathroom, toilet), filters should be used.
see pre-filter and extract air filter
2. An additional extract air disk valve (made of plastic) can be found under item 1.9 in this bill of materials.

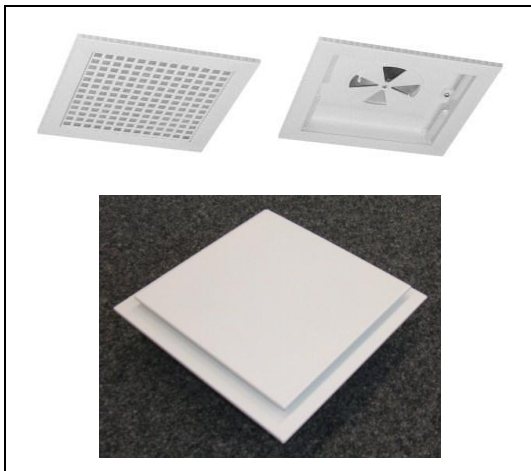
Dimensions:



LW - acoustic power level - [dB(A)]



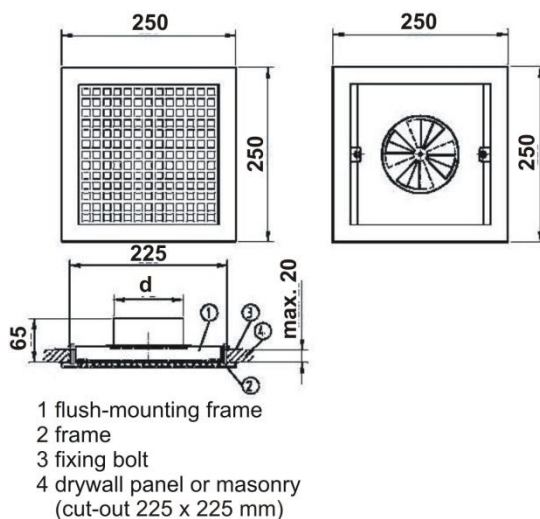
6.7 Supply air outlet with design trim for ceiling installation



Part-No.	Description
527003030	Supply air outlet with design trim for ceiling installation

Supply air outlet with design trim for ceiling installation with pipe socket and integrated throttle element for air flow regulation, ceiling installation frame, blind frame, throttle element and stainless steel design trim, powder coated RAL 9010 (white), filter made of a fibrous web, filter class G3 is easily replaceable and washable, big filter surface installation of the ceiling installation frame with rotating bolt fixing

Dimensions:



6.8 Supply air outlet, white



Supply air outlet made of galvanized sheet steel, white (RAL 9010, gloss level 70), powder coated, wall mounting near the ceiling, round pipe connection with rubber lip seal in valve body

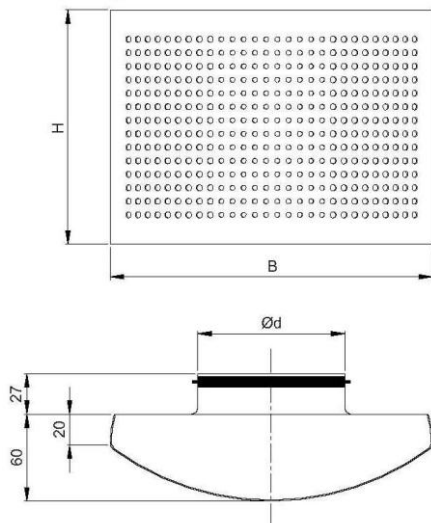
Characteristics:

- low sound level
- draft-free air distribution
- fast and easy installation
- airtight installation through integrated rubber lip seal
- free arrangement on walls
- measuring and adjustment of air volume flow as well as cleaning of air duct through easy removable front screen

Installation:

- The supply air outlet is installed directly into the duct (no additional mounting frames needed).
- The supply air outlet can either be attached to the wall using the valve body or fixed on the duct using blind rivets.
- The front screen is fixed to the valve body using springs

Dimensions:



Part-No.

Description

528001520

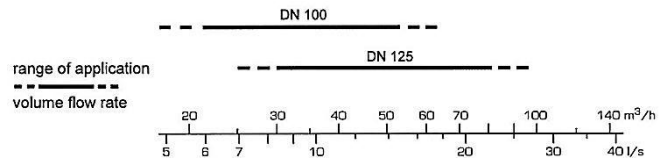
Supply air outlet DN 100, white

528001530

Supply air outlet DN 125, white

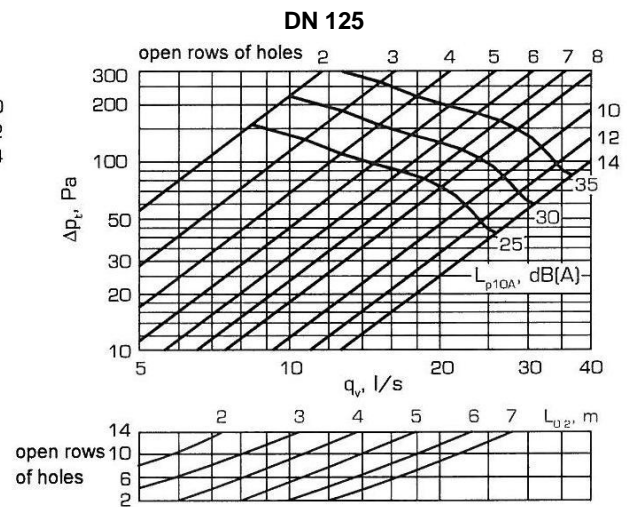
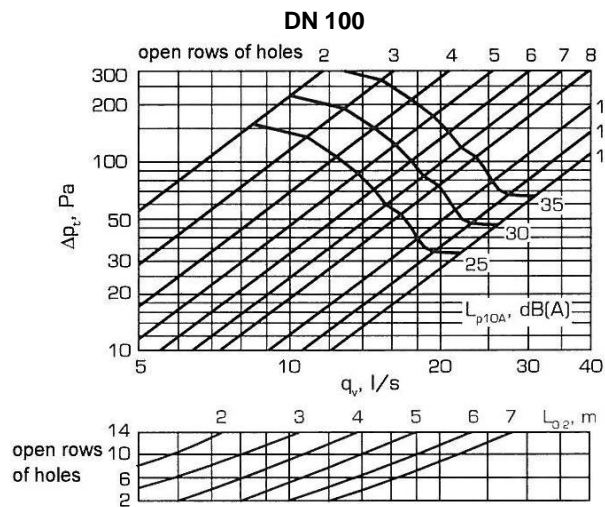
Range of application

Air volume flow q_v



Size	d [mm]	W x H [mm]	Weight [kg]
DN 100	98	218 x 156	0.66
DN 125	123	218 x 156	0.65

Inlets and outlets

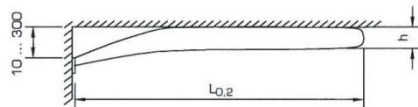


Flow pattern

top view



side view



$L_{0.2}$ - length of throw, where air velocity = 0.2 m/s

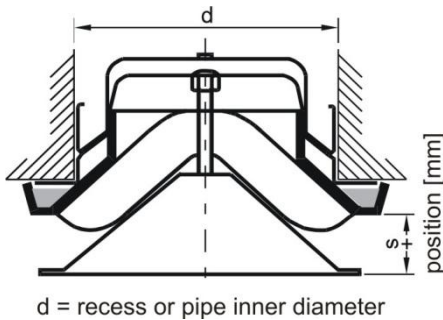
6.9 Supply air disk valve with air baffle



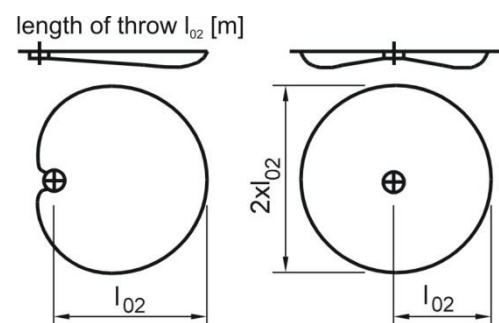
Disk valve made of steel, baked enamel finish, RAL 9010 (white), mounting frame with bayonet lock and air baffle

L_{02} - length of throw, where air velocity = 0.2 m/s

Dimensions:



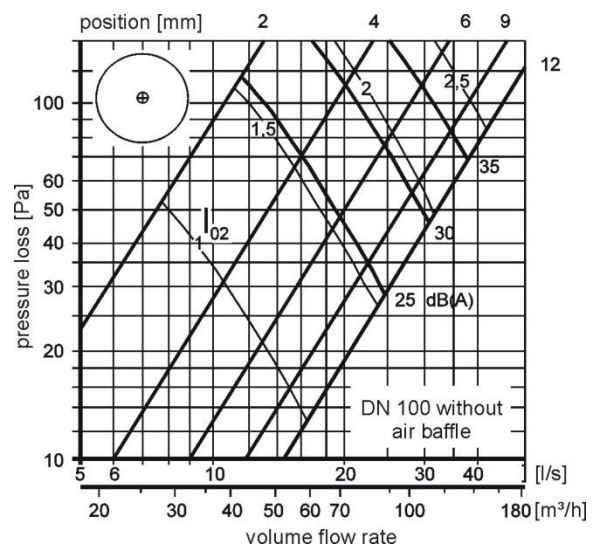
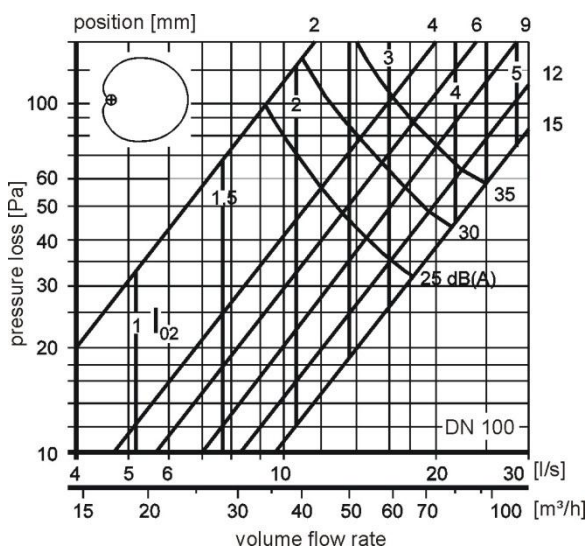
Part-No.	Description
528001240	Supply air disk valve DN 100 with mounting frame
528001250	Supply air disk valve DN 125 with mounting frame
528001260	Supply air disk valve DN 160 with mounting frame



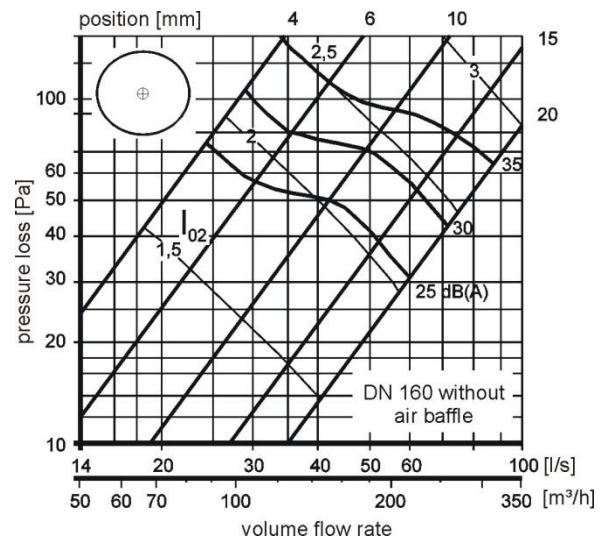
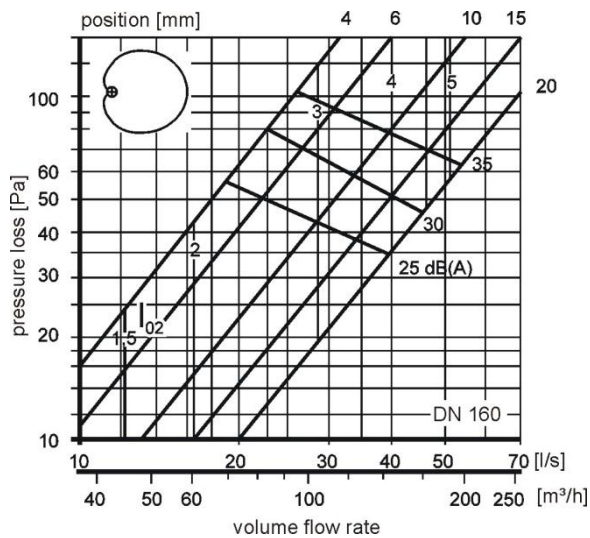
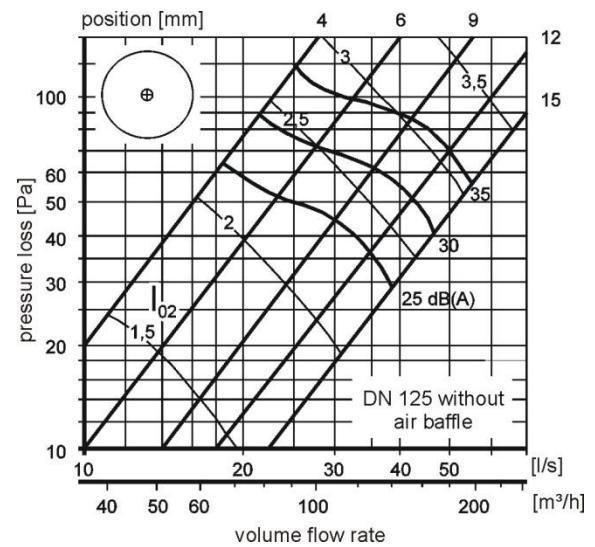
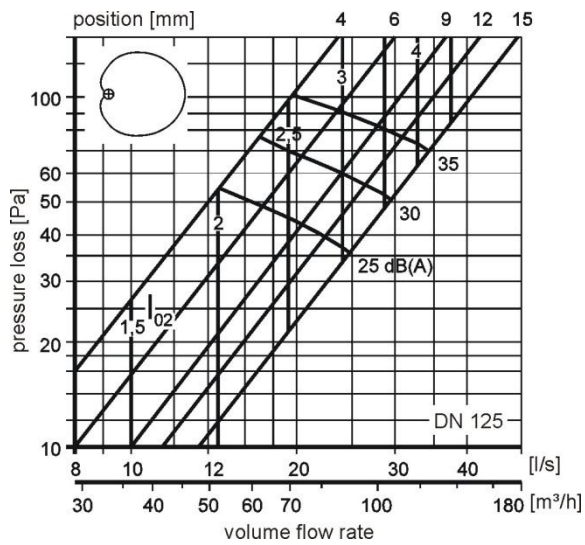
Notes:

An additional extract air disk valve (made of plastic) can be found under item 1.10 in this bill of materials.

LW - acoustic power level - [dB(A)]



Inlets and outlets



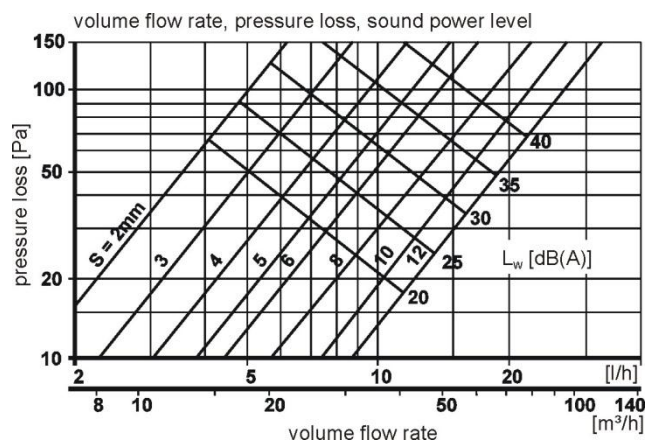
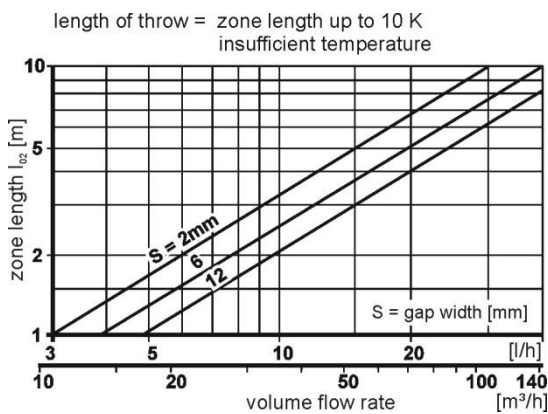
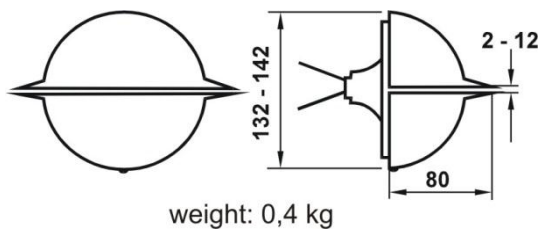
6.10 Lip nozzle



Part-No.	Description
528001120	Lip nozzle DN 100 with mounting ring

Lip nozzle, wall mounting possible,
made of galvanized sheet steel,
powder coated, white (RAL 9010),
Volume flow control via adjustment of air outlet
nozzle, lip nozzle with mounting ring, fitting
dimension

Dimensions:



6.11 Supply air passage for in-wall mounting



Air passage made of galvanized sheet steel and plastic, white finish, RAL 9010

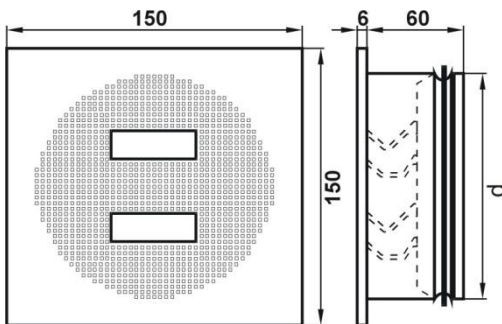
Throwing nozzle

Connection with lip seal, fitting dimension

It is possible to change the arrangement of the nozzles when using air passages **without** choke (see fig. below).

When using air passages **with** choke, only position AU is possible.

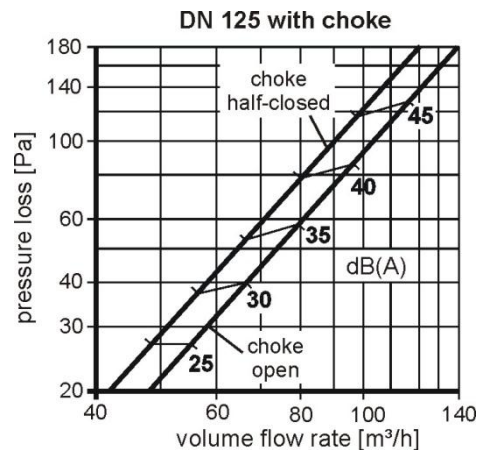
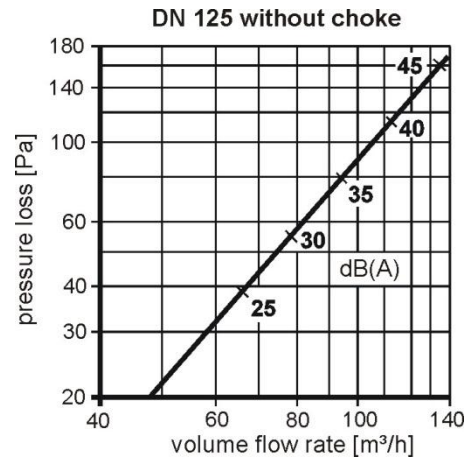
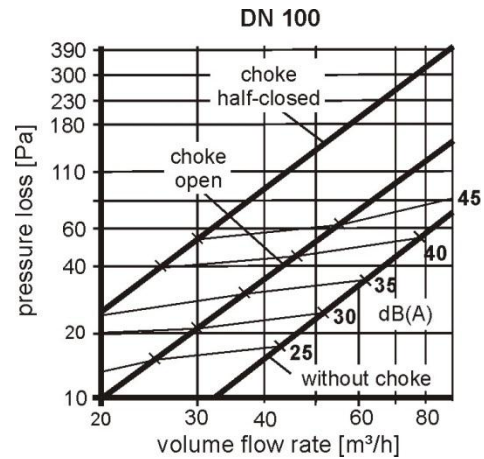
Dimensions:



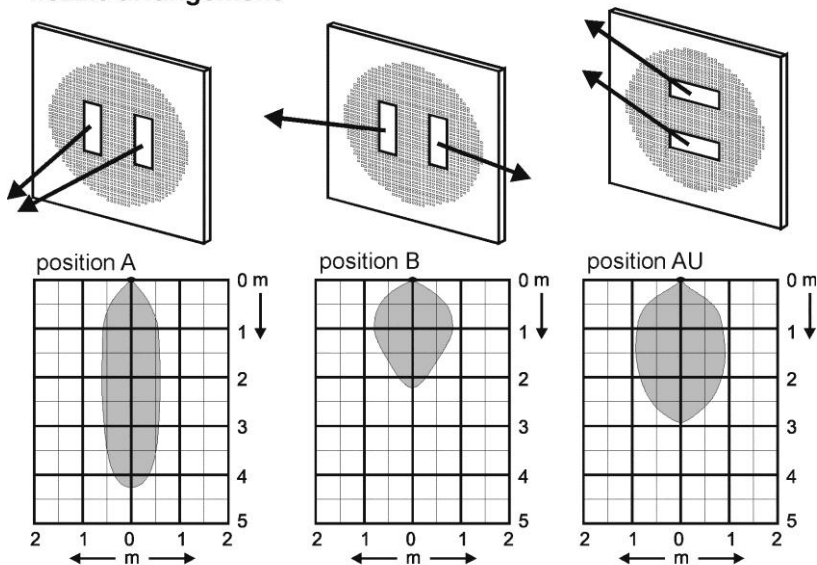
Part-No.

Description

528001540	Supply air passage DN 100 without choke
528001550	Supply air passage DN 125 without choke
528001560	Supply air passage DN 100 with choke
528001570	Supply air passage DN 125 with choke

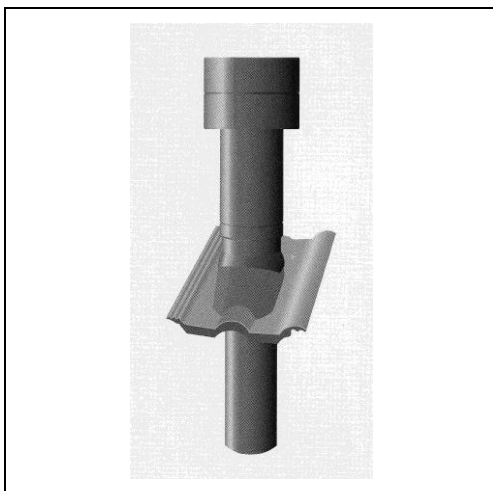


nozzle arrangement



Isovels ($\Delta\theta = 0$ K, $\dot{V} = 60$ m³/h, 50 mm under ceiling, $\bar{v} = 0,2$ m/s
air flow 200 mm below ceiling (in indicated throwing area)

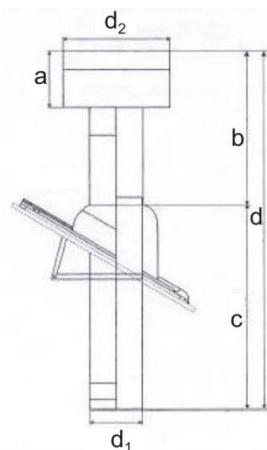
6.12 Roof hood



Roof hood, made of polypropylene
Especially for ventilation units
No static pressure loss
Condensation drain only possible to outside
Rain and bird proof exhaust hood
Roof pitch 25-45°
Colour: natural red or black

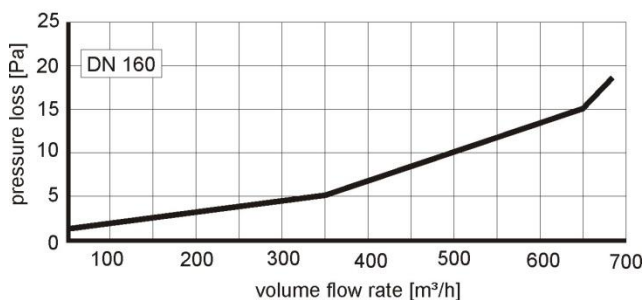
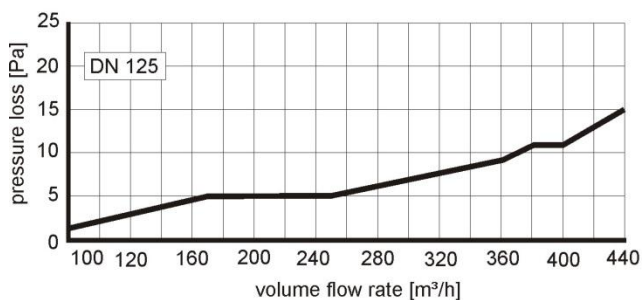
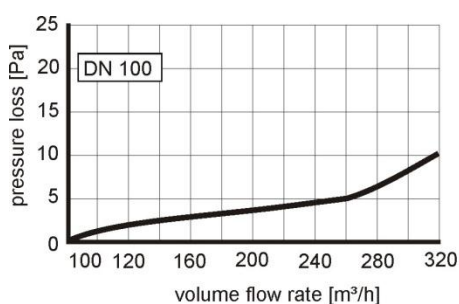
Additional pantile (item 6.12) needed.

Dimensions:

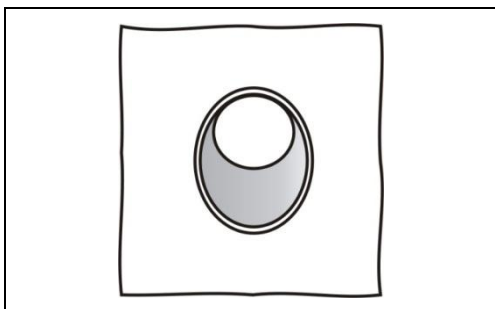


	d ₁	d ₂	a	b	c	d
	[mm]					
528000580	100	170	120	345	445	790
528000600	125	210	130	350	480	830
528000620	160	265	165	500	665	1165

Part-No.	Description
528000600	Roof hood DN 125, natural red, Connection to DN 125 under roof
528007450	Roof hood DN 125, black, Connection to DN 125 under roof
528000620	Roof hood DN 160, natural red, Connection to DN 160 under roof
528007470	Roof hood DN 160, black, Connection to DN 160 under roof



6.13 Pantile for roof hood



Part-No.	Description
528000610	Pantile DN 125 for roof hood DN 125, natural red
528007460	Pantile DN 125 for roof hood DN 125, black
528000630	Pantile DN 160 for roof hood DN 160, natural red
528007480	Pantile DN 160 for roof hood DN 160, black

Colored lead pantile

Lead does not wash out, no more traces of lead on the pantiles

Suitable for almost all kinds of pantiles

Consists of:

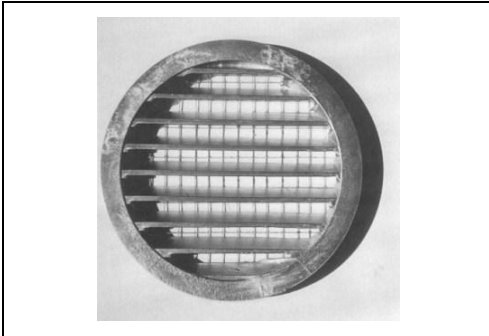
Lead plate, 1 mm thick, (500 x 500) mm

with plastic calotte

Colour: natural red or black

d	A	B	C	F	G
125	124	200	250	500	400
160	135	248	300	500	400

6.14 Fresh air/exhaust air grille, round

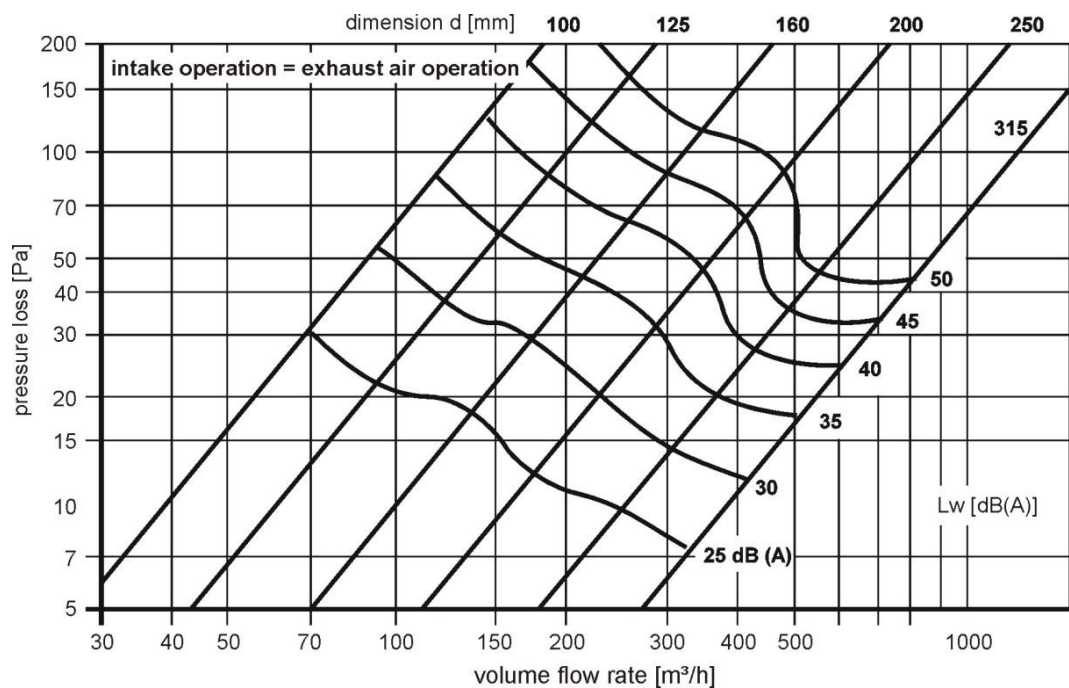
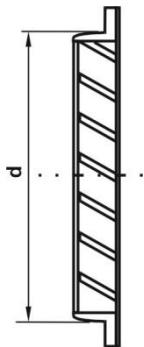


Part-No.	Description
528000690	Fresh air/exhaust air grille DN 100
528000700	Fresh air/exhaust air grille DN 125
528000710	Fresh air/exhaust air grille DN 160
528000720	Fresh air/exhaust air grille DN 200
528000730	Fresh air/exhaust air grille DN 250

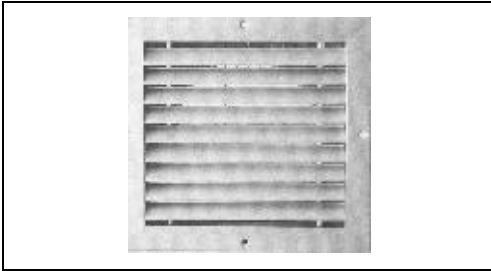
Fresh air/ exhaust air grille made of die cast aluminum, with bird proof grille, mesh size 10 mm

Connection has fitting dimension

Dimensions:

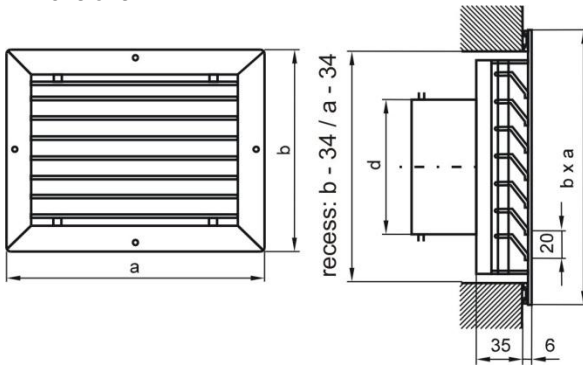


6.15 Fresh air/exhaust air grille, angular

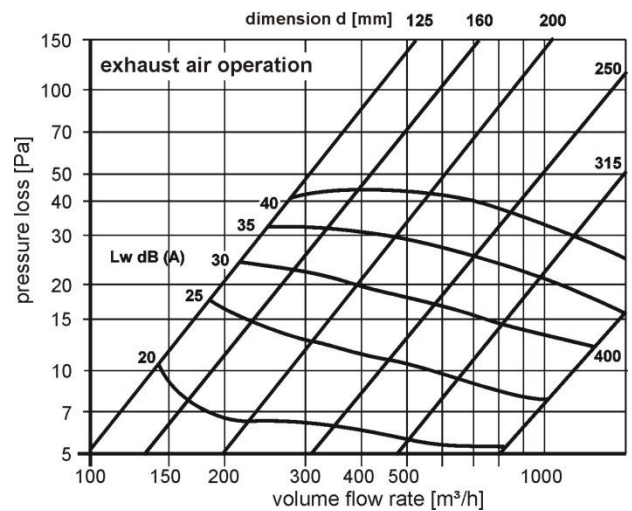
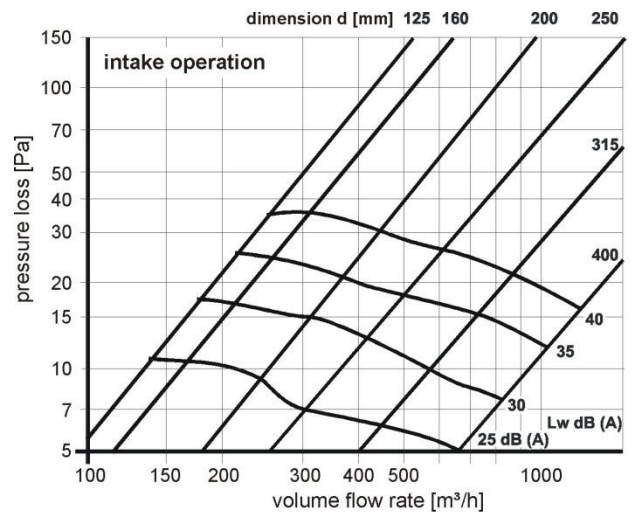


Fresh air/exhaust air grille made of aluminum, anodized silver
Angular Grille with bird proof grille
Mesh size bird proof grille: 10 mm
Connection has fitting dimension

Dimensions:



Part-No.	Description
528000670	Fresh air/exhaust air grille $a \times b = (260 \times 240)$ mm, Connection DN 125
528000680	Fresh air/exhaust air grille $a \times b = (260 \times 240)$ mm, Connection DN 160



7 Heating elements

7.1 Electric backup duct heater, round

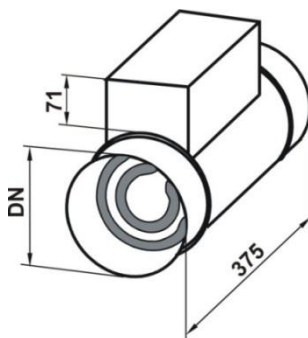


Electric backup duct heater consisting of tubular casing (galvanized sheet steel) with terminal box and integrated temperature and safety temperature limiter (STB).

Round pipe connections with fitting dimension

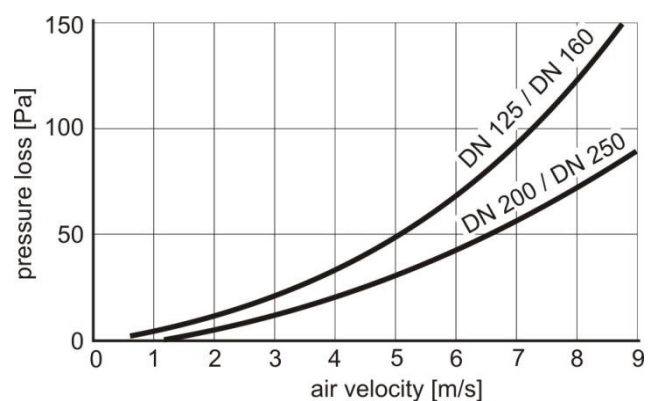
For electric backup duct heaters DN 200 and DN 250, an additional safety unit, consisting of two temperature limiters, one flow indicator and one duct temperature sensor (see item 11.8), has to be installed in the supply air duct.

Dimensions:



Part-No.	Description
528000840	Electric backup duct heater DN 125
528000850	Electric backup duct heater DN 160
528000860	Electric backup duct heater DN 200
528000870	Electric backup duct heater DN 250

Terminal box has to be at the side when installing the electric backup duct heater horizontally



Part-No.	Pipe connection DN	Heating capacity ¹⁾	Mains voltage	Minimum volume flow
	[mm]	[W]	[VAC]	[m³/h]
528000840	125	1200	230	70
528000850	160	2100	230	110
528000860	200	5000	2/400	170
528000870	250	6000	2/400	270

¹⁾ lower volume flow rates result in a lower heating capacity

Please note that thermal loss of downstream pipe system can occur when using heating elements.

Control possibilities:

- Control of electric backup duct heater directly (up to 2.1 kW) or with contactor (provided by customer) via PAUL automatic control with safety unit
- Control of electric backup duct heater via room thermostat, PAUL universal thermostat and flow indicator (see items 11.5 to 11.7) for PAUL units with manual control or via other control units for ventilation units with enabling signal* and safety unit

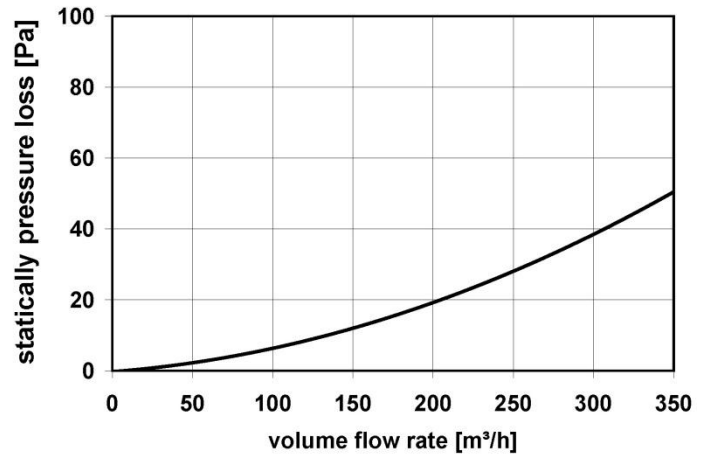
* All Paul ventilation units with manual control are equipped with an enabling signal

Please pay attention to our MVHR order forms, which can be obtained from PAUL Wärmerückgewinnung GmbH or authorized dealers.

7.2 iso backup duct heater



Part-No.	Description
527001760	iso backup duct heater DN 160



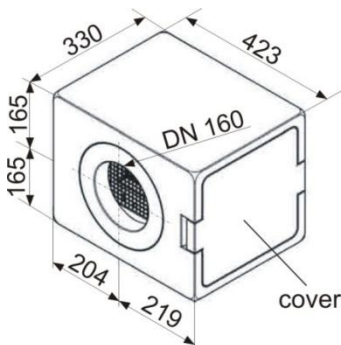
iso backup duct heater
iso box made of fully foamed PP with PTC
heating register

Can be integrated into supply air duct for reheating the supply air.
The self-regulating PTC-heater adjusts the power consumption to the power output, which is necessary to reheat the supply air. The PTC-heater switches itself on or off, depending on hysteresis and indoor air set temperature.
The iso box is self insulating and has no thermal bridges.
Easy maintenance access by simply opening the cover.

Please note that thermal loss of downstream pipe system can occur when using heating elements.

The fully foamed PP box is patent pending.

Dimensions:



Heating capacity:	max 2000 W
Volume flow rate:	max. 350 m³/h
Air duct connection:	DN 160, sleeve dimension on both sides
Electrical connection:	230 VAC, cable (3 m) with wire end sleeves
Safety components:	2-fold thermo switch, integrated PTC heating register circuit
Weight:	3 kg

Possible control options:

- PAUL automatic control: Control of PTC heating register directly via PAUL MVHR automatic control
- Independent control: Control of PTC heating register via room thermostat and PAUL universal thermostat (see items 11.5 and 11.6) for Paul units with manual control or via other control units for ventilation units with enabling contact
- Enabling contact can be: switch, flow indicator, upstream I&C system or enabling signal*
- * All Paul ventilation units with manual control are equipped with an enabling signal

Please pay attention to our MVHR order forms, which can be obtained from PAUL Wärmerückgewinnung GmbH or authorized dealers.

7.3 Hot water backup duct heater, round connection



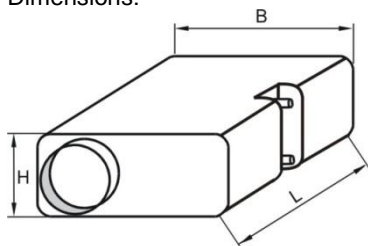
Part-No.	Description
528000890	Hot water backup duct heater DN 125, 2 tube rows
528000900	Hot water backup duct heater DN 160, 2 tube rows
528000910	Hot water backup duct heater DN 200, 2 tube rows
528000920	Hot water backup duct heater DN 250, 2 tube rows

Heating register, hot water operation,
Sound and heat insulated,
Housing made of galvanized sheet steel,
Hot water duct made of Cu with Al fins,
Pipe connection with lip seal

max. operating pressure: 1.6 MPa

max. operating temperature: 150 °C

Dimensions:



Please note that thermal loss of downstream pipe system can occur when using heating elements.

Part-No.	Air volume flow \dot{V}_1 [m³/h]	Water volume flow \dot{V}_2 [l/h]	Connection dia.		Dimensions L x W x H [mm]	Heating capacity ¹⁾ at flow temperature	
			Air [mm]	Water [mm]		50 °C [kW]	70 °C [kW]
528000890	72	180	125	15	500 x 360 x 230	0.76	1.22
	125					1.16	1.86
	145					1.26	2.03
528000900	145	180	160	15	500 x 410 x 230	1.32	2.12
	215					1.71	2.74
	290					2.00	3.21
528000910	260	220	200	15	500 x 460 x 270	2.00	3.22
	380					2.48	3.98
	440					2.66	4.27
528000920	395	220	250	15	500 x 510 x 320	2.79	4.48
	595					3.34	5.37
	880					3.55	5.70

¹⁾ when inlet air temperature = 17 °C

7.4 Frost protection thermostat for hot water backup duct heater

Part-No.	Description
521003800	5-E frost protection thermostat IP 40 230 V, -10 to 55 °C, capillary tube length 6 m

8 Defroster units

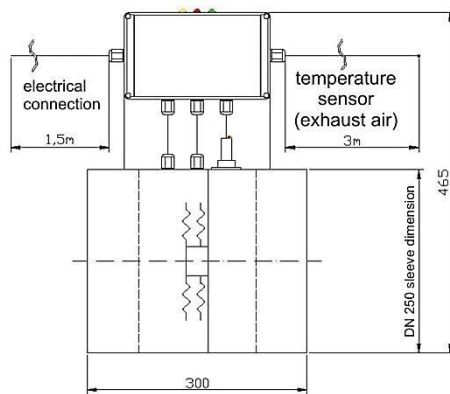
8.1 Electric defroster heater



Part-No.	Description
527000760	Defroster heater 2 kW DN 250 with independent control system
527000790	Defroster heater 2 kW DN 250 without control system

Defroster heater 2 kW DN 250 without reduction

Dimensions:



Defroster:

- a) with independent control system (unit with manual control)
- b) without control system: the control system for the defroster heater is integrated in PAUL MVHR units with automatic control

Connection dimensions: DN 250 on both sides, sleeve dimension

Pipe length (without transitions): 300 mm

Electrical connection: 230 VAC 50 Hz via mains plug

Safety components: two independent safety temperature limiters for thermal overload protection

Monitoring equipment: flow sensor for volume flow monitoring

Please pay attention to our MVHR order forms, which can be obtained from PAUL Wärmerückgewinnung GmbH or authorized dealers.

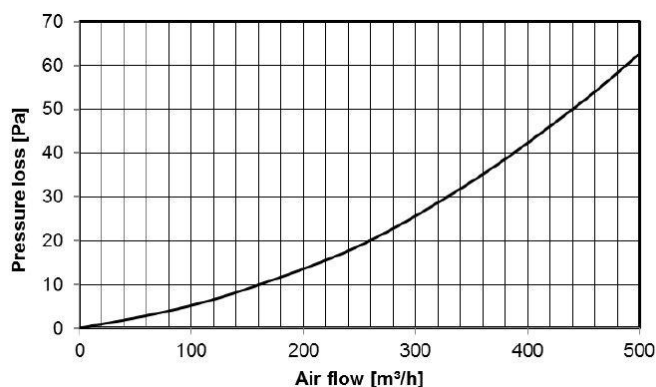
8.2 iso defroster heater



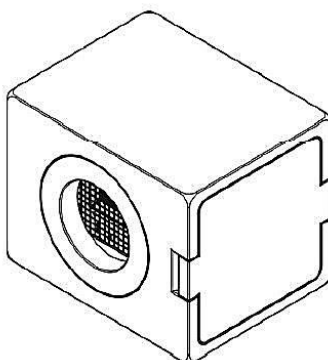
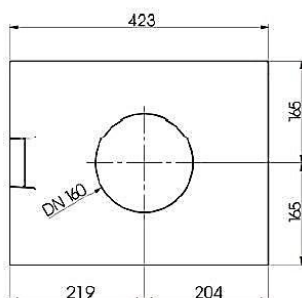
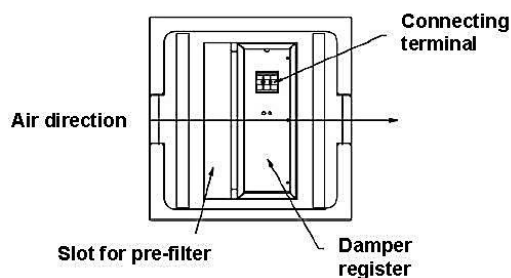
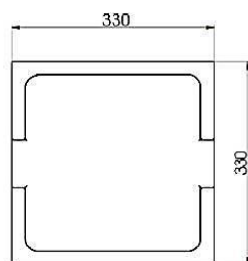
iso defroster heater

Part-No.	Description
527001360	iso defroster heater DN 160

Curve iso-defroster heater with PTC-heating element and G3-filter:



Dimensions:



The iso-box made of PP-full foam with PTC-damper register and pre-filter G3 is an air pre-heater capable of being integrated into the outside air pipe of the ventilation system which safeguards the heat exchanger of the ventilation system against freezing condensate. The iso-defroster heater is only to use as a defroster. The selfregulating PTC-heating elements adapt the input to the output which is necessary for the freeze protection. The control of the PTC-damper register can be done by the PAUL-automatic control, the PAUL-universal control or by an autonomously control module like the PAUL-universal thermostat. For the pollution protection of the PTC-damping register is preceded by an G3 filter element. The isobox is free of thermal bridges and self-isolating. The exchange of the filter and if necessary a revision of the PTC-damping register is enabled by a simply removing of the cover. Before removing the cover the device has to be disconnected from the mains voltage. The electric connection has to be made to a circuit equipped with a ground fault circuit interrupter.

The fully foamed PP box, used as defroster heater, is patent pending.

Control possibilities:

- Activation directly by the PAUL-automatic control
- Activation by BUS-thermostat for heat recovery with PAUL-Universal control
- Activation by universal thermostat for PAUL-devices with manual control or by other ventilation equipment controls with release contact

Possibilities for release contact: switch, flow controller, superior control system or release signal of ventilation device*

* All PAUL-ventilation devices with manual control are equipped with an release signal

Electrical connection: 110...240 VAC, 50/60 Hz; 3 m cable with bonded wire ends
 Heating capacity: max 2000 W
 Anlaufstrom: max 10 A
 Safety components: 2 times over-temperature protection switch, integrated in the circuit of the PTC-damper register
 Volume flow rate: max 500 m³/h
 Air pipes connection: DN 160, both sides socket dimension
 Filter: G3
 Weight: 4,5 kg

Please pay attention to our MVHR order forms, which can be obtained from PAUL Wärmerückgewinnung GmbH or authorized dealers.

Energy consumption values: (calculated for Frankfurt on the Main)

Air flow rate [m³/h]	100	150	200	250	300	400	500
Energy consumption [kWh/a]	94,5	141,7	188,9	236,1	283,4	377,8	472,5
Energy costs [€/a]	22,68	34,00	45,34	56,66	8,02	90,67	113,4

Hypothesis: Heating of the outside air to 0 °C, electricity price 0,24 €/kWh

Note: The energy costs can differ from the above illustrated example depending on climate zone, fluctuations in weather conditions, system configuration and electricity price of the respective energy provider.

Criteria iso-defroster used as antifreeze for HRU novus (F) 450:

	HRU-type	Frost protection mode	Maximum air volume flow [m³/h]		
			350	400	450
Minimum outside temperature [°C]	novus 450	secure	-17	-15	-13
		eco	-19	-17	-15
	novus F 450	secure	-24	-22	-20
		eco	-27	-25	-23

8.3 Brine-defroster



Part-No.	Description
528007090	Brine-defroster SD 350
528007100	Brine-defroster SD 550
528007110	Mounting frame for SD 350
528007120	Mounting frame for SD 550

Brine-defroster SD 350 (optional with mounting frame)

Brine defroster for preconditioning the intake air ground heat exchanger, which heats the intake air in winter and cools it in summer and it is especially used as frost protection component of a ventilation unit, a brine-driven geothermal heat collector, which consists of PE pipes, absorbs the soil's temperature and convects it to the intake air, the brine-defroster as a whole (heat exchanger with pumps and safety unit in an insulated housing) is activated by the temperature controlled switch on of the brine pump, protected against contamination by an integrated pre-filter with easy to replace filter element

Installation:

- wall-mounted using a mounting channel or
- vertical on mounting frame (optional)

Control of brine circulation pump via:

- PAUL automatic control
- BUS thermostat for MVHR-units with PAUL universal control
- Universal thermostat as independent control module

Please pay attention to our MVHR order forms, which can be obtained from PAUL Wärmerückgewinnung GmbH or authorized dealers.

Operating data:

Housing dimensions (L x W x H):	(476 x 551 x 760) mm
Weight:	42 kg (empty)
Inlet air duct connection (fitting dimension):	DN 180
Outlet air duct connection (fitting dimension):	DN 160 (SD 350) DN 180 (SD 550)
Filter class:	G4 (F7 optionally)
Operating range outdoor temperature:	-22 °C to 45 °C
Class:	IP 44
Mains voltage:	220/230 VAC, 50/60 Hz, 1 phase
Power consumption: maximum:	0,58 A
nominal:	0,20 A
Energy consumption: maximum:	70 W
nominal:	46 W
lowest step:	5 W
Heating capacity:	1800 W (SD 350) 2500 W (SD 550)
Cooling capacity:	2000 W (SD 350) 3000 W (SD 550)
Maximum sound level:	40 dB(A)
Brine connection:	¾ inch tapered external thread
Energy efficiency class of the brine pump:	A
Max. pump head of the brine pump:	7 m
Condensate drain connection:	1¼ inch tapered external thread
Color:	RAL 7035

Recommendation for geothermal heat collector:

Collector pipe:

25/20.4 PE 32/26.2 PE

Pipe length (depending on soil type):

65 m to 130 m (SD 350)

100 m to 200 m (SD 550)

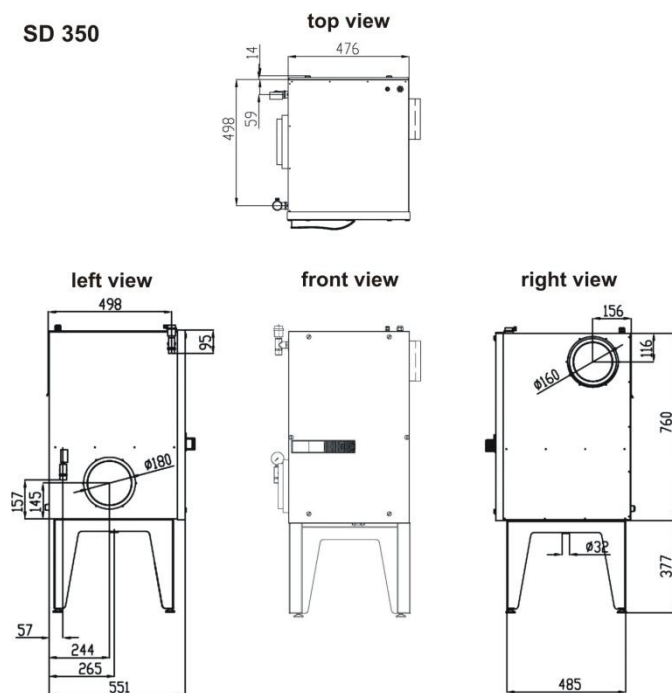
Capacity per 10 m:

3,3 l (SD 350)

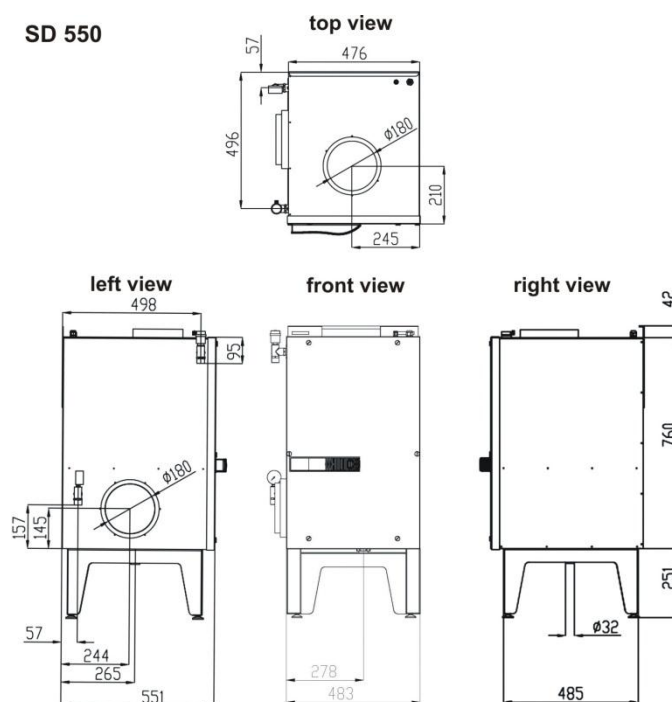
5,5 l (SD 550)

Dimensions:

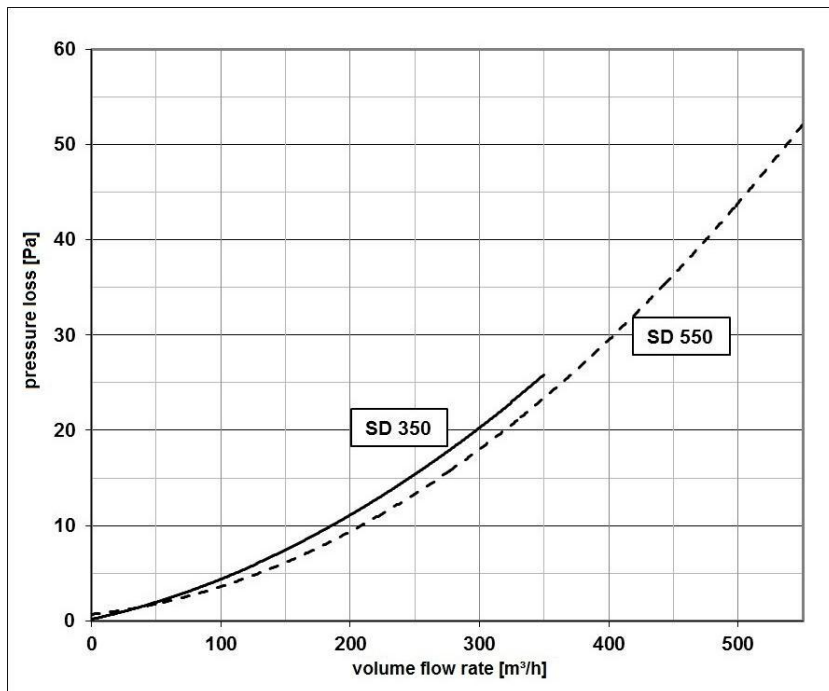
SD 350



SD 550



Defroster units



9 Filter elements

9.1 iso filter box



Part-No.	Description
527001260	iso filter box DN 160 with pre-filter G3
527001270	iso filter box DN 160 with filter G4
527001280	iso filter box DN 160 with pollen filter F7
527001690	iso filter box DN 160 with filter H10
527001290	iso filter box DN 160 with carbon filter AK
527001700	iso filter box DN 160 with carbon filter AL

iso filter box

iso filter box made of fully foamed PP, no thermal bridges, self-insulating and condensate protected,
filter change by removing cover,
pipe connection with lip seal, sleeve dimension on both sides

There are two different-sized slots inside the iso filter box:

narrow: for pre-filter G3 and filter cartridge with filter AK or AL

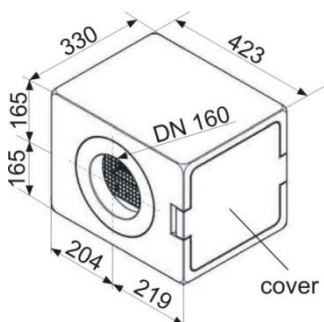
wide: for filter cartridge with filter G4, F7 or H10

Carbon filter cartridge **AK** suitable for aromatic and aliphatic hydrocarbons, such as heptanes, octanes, xylenes, benzene, naphthalene and ozone (e.g. cooking smells, exhaust fumes, painting smells)

Carbon filter cartridge **AL** suitable for easy boiling substances, e.g. methane, ethane, formaldehyde, ammonia, hydrogen (e.g. slurry, manure)

Filter class **H10** for very fine filtering

Dimensions:

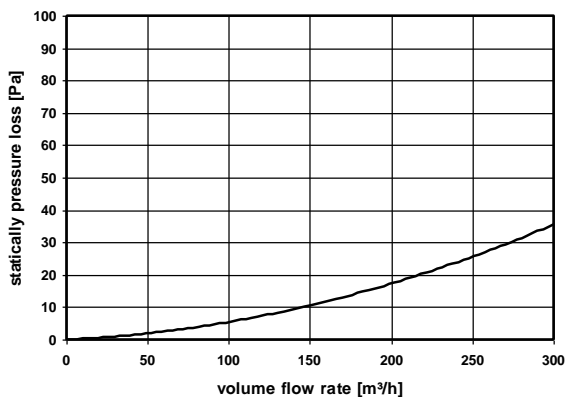


pressure loss curve: see next page

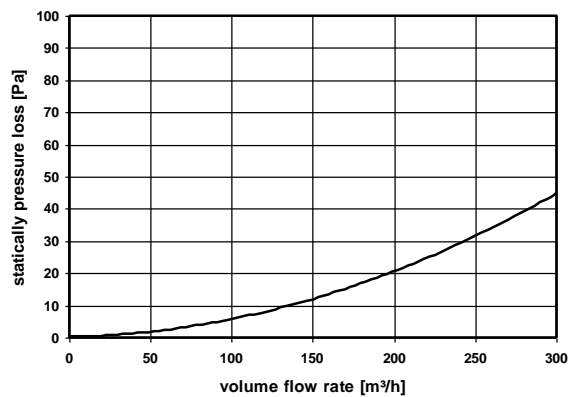
Note:

pressure loss curve when filter is clean

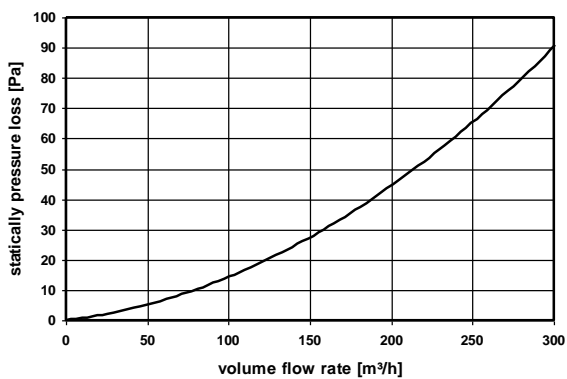
filter cartridge G3



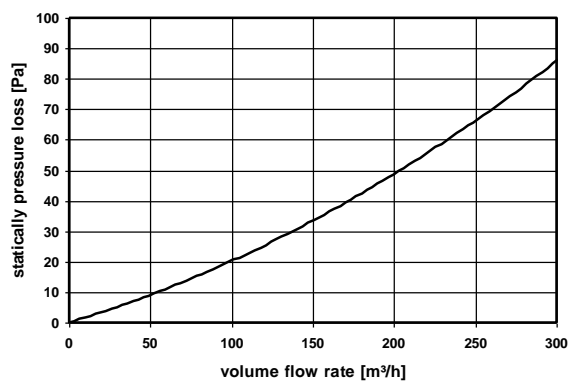
filter cartridge G4



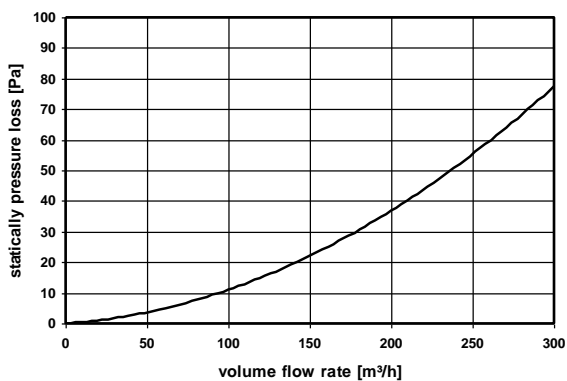
filter cartridge F7



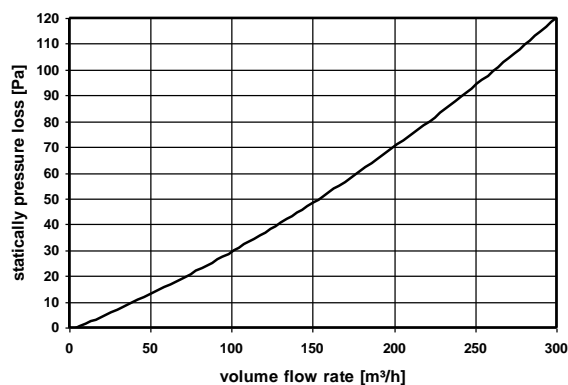
filter cartridge H10



Carbon filter cartridge AK und AL



Carbon filter cartridge und filter cartridge F7



9.2 Air filter box with accessories

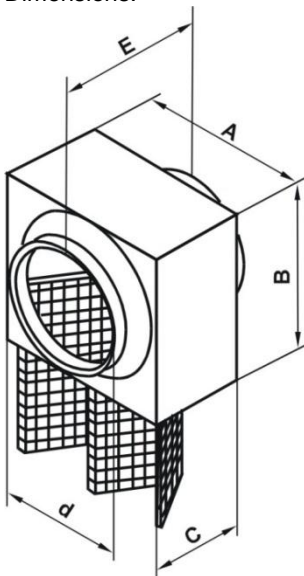


Part-No.	Description
528000780	Air filter box DN 200 with filter G4
528000790	Air filter box DN 250 with filter G4

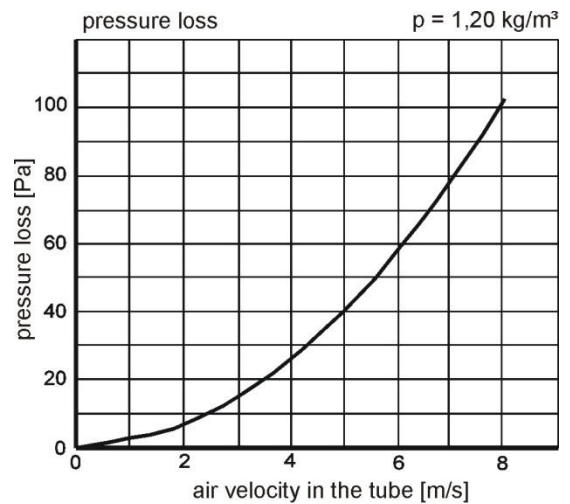
Filter box

Housing made of galvanized sheet steel
Filter medium made of chemical fibers, washable
Round duct connections with twin lip seal, fitting dimension

Dimensions:



A [mm]	B [mm]	C [mm]	d [mm]	E [mm]
300	295	160	200	250
345	325	250	250	375



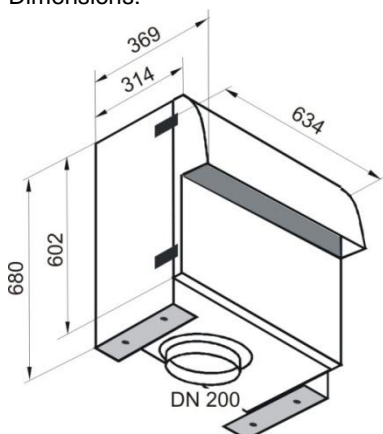
Note:
pressure loss curve when filter is clean

9.3 Intake air filter box for ground heat exchanger (GHX)

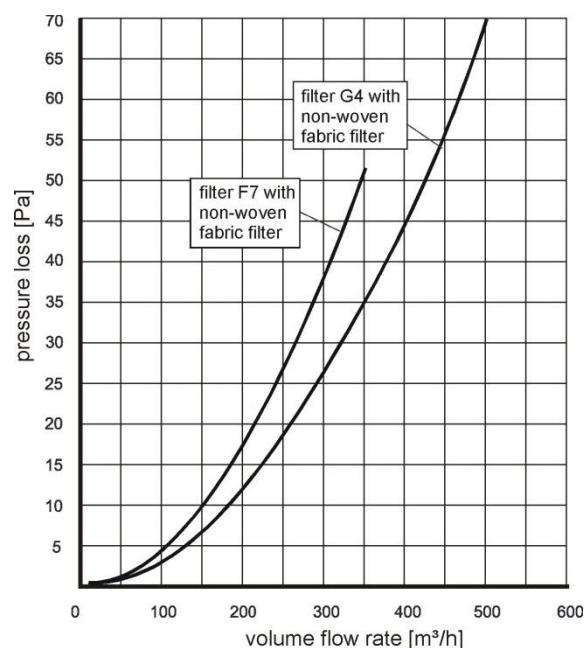


GHX intake air filter box, type E
with non-woven fabric filter G2 (washable) and filter G4
with antibacterial effect or F7 (optionally)
Housing made of powder coated galvanized sheet steel,
RAL 6005 (moss green) or RAL 9006 (aluminum white)
Round connection fits in pipe sleeve KRKG-200 (KG-
pipe),
Filter removable by opening spring locks

Dimensions:



Part-No.	Description
527000100	Intake air filter box type E DN 200, with non-woven fabric filter G2 and filter G4, RAL 6005
527000110	Intake air filter box type E DN 200, with non-woven fabric filter G2 and filter G4, RAL 9006



Note:
pressure loss curve when filter is clean

9.4 Air intake tower



Part-No.

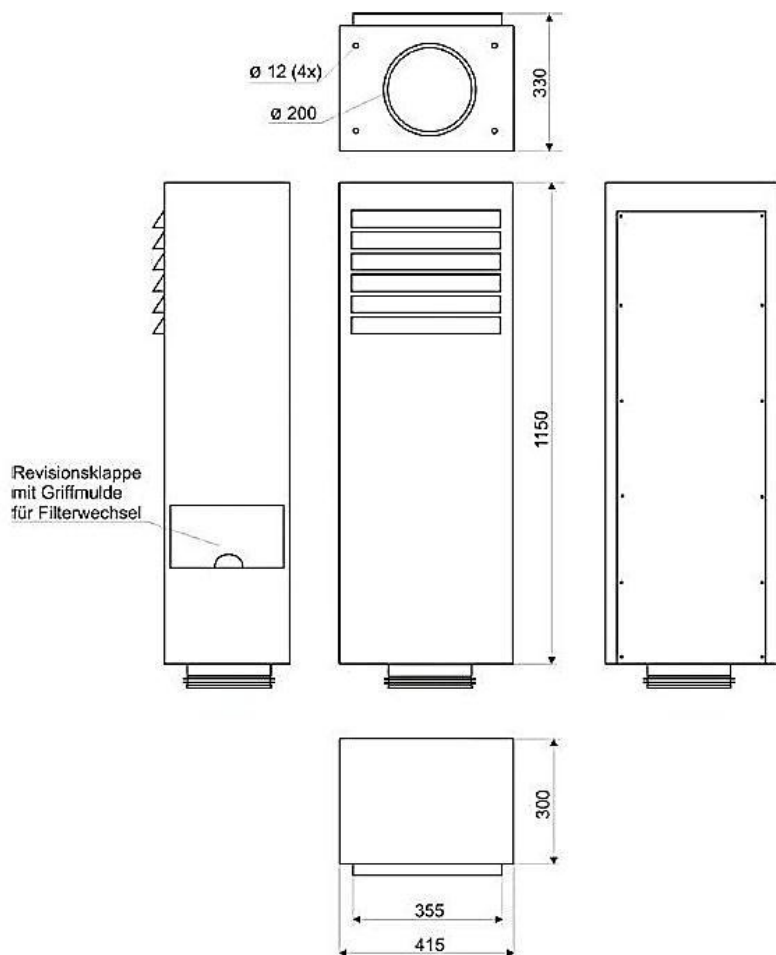
527002610

Description

Air intake tower 300 **Fehler! Textmarke nicht definiert.** with filter G4

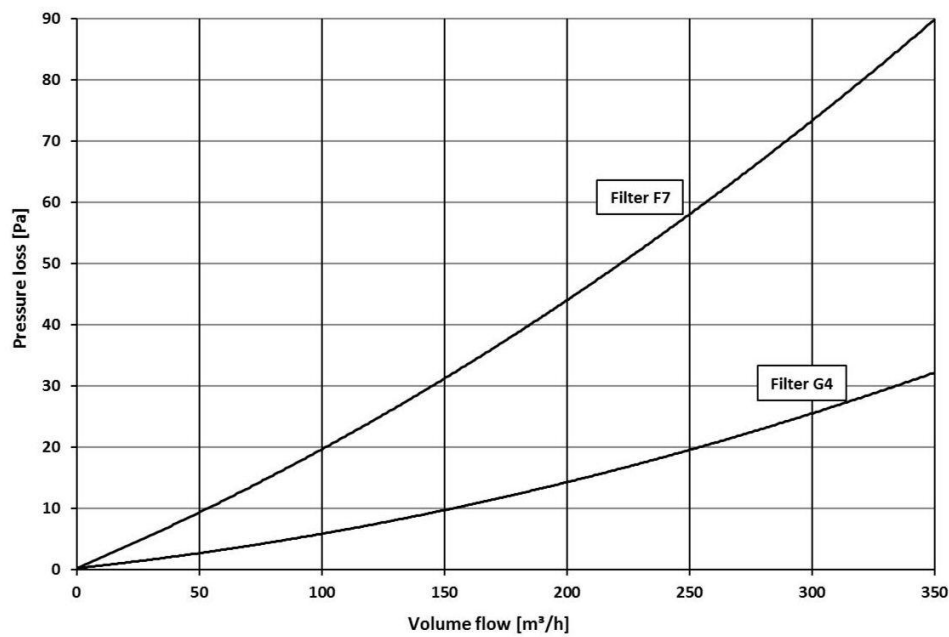
Air intake tower 300
for air-side end of a earth pipe heat exchanger
and filtration,
with suction lamellae protected against driving
rain with a protective grid for birds mounted
behind them,
air flow range up to 300 m³/h ,
Filter replacement can be carried out without tools

Dimensions:



Filter elements

Housing:	of powder-coated stainless steel DB 703 (dark grey)
Dimensions (W x H x D):	(415 x 1150 x 330) mm
Filter:	Filter of class G4 or F7 (optionally)
Air leitungs anschluss:	Cored hole with spigot DN 200 with rupper lip seal, fits in pipe sleeve KRKG-200 (KG-pipe)
Weight:	28 kg
Installation:	perpendicular to the foundation, 4 holes \varnothing 12 mm in base plate for fixation by means of mittels mounting means (such as anchor bolts M10x30)
Filter replacement:	by opening the side access panel with screwless locking



10 Additional filter

10.1 Air filters for MVHR units (current models)

Air filters for ventos 50 DC

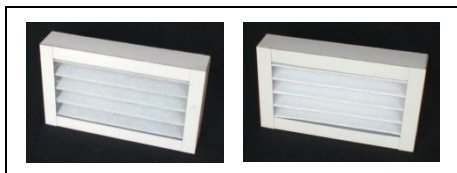


Filter G4

Filter F7

Art.-Nr.	Bezeichnung
524000030	Filter, filter class G4, (200 x 150 x 46) mm
524000020	Pollen filter, filter class F7, (200 x 150 x 46) mm

Air filters for climos 150 DC



Filter G4

Filter F7

Art.-Nr.	Bezeichnung
524000010	Filter, filter class G4, (250 x 150 x 45) mm
524000000	Pollen filter, filter class F7, (250 x 150 x 45) mm

Air filters for multi 150 DC

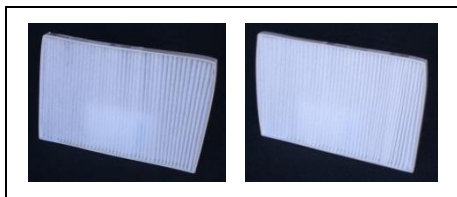


Filter G4

Filter F7

Art.-Nr.	Bezeichnung
524000040	Filter, filter class G4, (250 x 200 x 45) mm
524000060	Pollen filter, filter class F7, (250 x 200 x 47) mm

Air filters for focus 200 / focus F 200



Filter G4

Filter F7

Art.-Nr.	Bezeichnung
521010280	Filter, filter class G4, (275 x 187 x 20) mm
521010290	Pollen filter, filter class F7, (275 x 187 x 20) mm

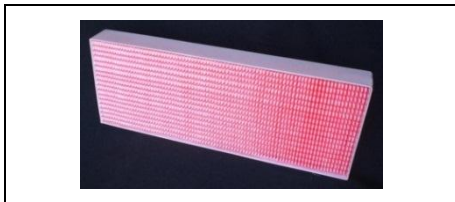
Additional filter

Air filters for novus 300 / novus F 300 / novus 450 / novus F 450



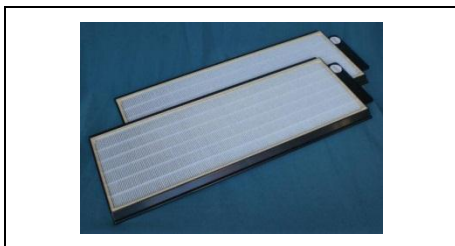
Filter G4

Art.-Nr.	Bezeichnung
521010260	Filter, filter class G4, (475 x 180 x 50) mm
521010270	Pollen filter, filter class F7, (475 x 180 x 50) mm



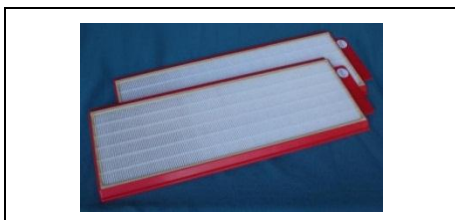
Filter F7

Air filters for santos 370 DC / santos F 370 DC / santos 570 DC / santos F 570 DC / santos 570 DC cool / santos F 570 DC cool

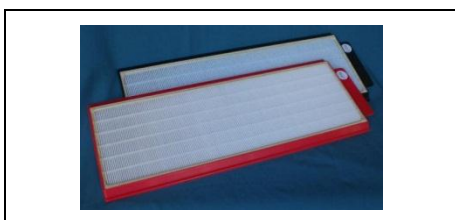


Filterset G4

Art.-Nr.	Bezeichnung
528006160	Filter set, 2 pcs. filter class G4, (520 x 200 x 15) mm
528006170	Filter set, 2 pcs. filter class F7, (520 x 200 x 15) mm
528006180	Filter set, 1 pc. filter class G4 and F7 each, (520 x 200 x 15) mm



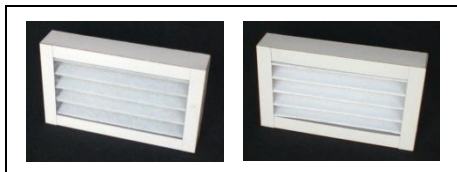
Filterset F7



Filterset G4 / F7

10.2 Air filters for MVHR units (previous models)

Air filters for climos 100 DC

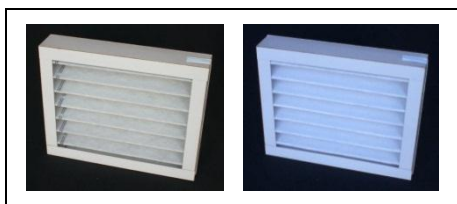


Filter G4

Filter F7

Art.-Nr.	Bezeichnung
524000010	Filter, filter class G4, (250 x 150 x 45) mm
524000000	Pollen filter, filter class F7, (250 x 150 x 45) mm

Air filters for multi 100 DC



Filter G4

Filter F7

Art.-Nr.	Bezeichnung
524000040	Filter, filter class G4, (250 x 200 x 45) mm
524000060	Pollen filter, filter class F7, (250 x 200 x 47) mm

Air filters for atmos 175 DC (model BF 1 bis BF 3)



Filter G4

Filter F7

Art.-Nr.	Bezeichnung
524000100	Filter, filter class G4, (350 x 250 x 94) mm (intake air for all models and extract air for BF 1)
524000090	Pollen filter, filter class F7, (350 x 250 x 94) mm (for all models)
521007380	Ersatzvlies für Luftfilterbox rund DN 160 Filterklasse G4 (extract air for BF 2)
524000340	Ersatzvlies, Filterklasse G3 (extract air for BF 3), (350 x 210) mm

Air filters for thermos 200 DC / thermos 300 DC



Filter G4

Filter F7

Art.-Nr.	Bezeichnung
524000100	Filter, filter class G4, (350 x 250 x 94) mm
524000090	Pollen filter, filter class F7, (350 x 250 x 94) mm

Air filters for santos 250 DC / santos F 250 DC

Art.-Nr.	Bezeichnung
521007420	Filter set, 2 pcs. filter class G3

Additional filter

Air filters for campus 500 DC



Filter G4

Filter F7

Art.-Nr.

Bezeichnung

524000150

Filter, filter class G4, (500 x 350 x 96) mm

524000140

Pollen filter, filter class F7, (500 x 350 x 96) mm

Air filters for kompakt 350 DC



Filter G4 (extract air) Filter G4 (intake air)

Art.-Nr.

Bezeichnung

524000100

Filter, filter class G4, (350 x 250 x 94) mm
(for extract air)

524000150

Filter, filter class G4, (500 x 350 x 96) mm
(for intake air)

524000140

Pollen filter, filter class F7, (500 x 350 x 96) mm



Filter F7

Air filters for kompakt 360 DC



Filter F7

Art.-Nr.

Bezeichnung

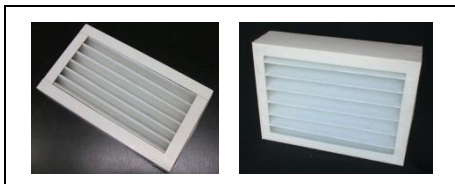
528006140

Filter, filter class G4

528006150

Pollen filter, filter class F7

Air filters for zentral



Filter G4

Filter G4

(built until 08/1996) (built 09/1996 and later)

Art.-Nr.

Bezeichnung

524000070

Filter, filter class G4, (350 x 200 x 45) mm
(built until 08/1996)

524000100

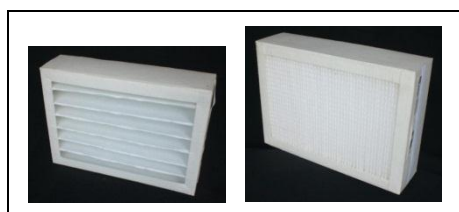
Filter, filter class G4, (350 x 250 x 94) mm
(built 09/1996 and later)

10.3 Additional filter for iso filter box



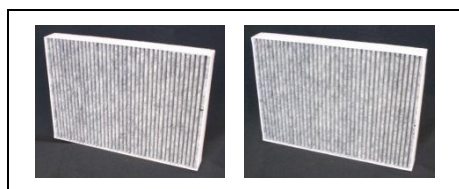
Filter G3

Filter G4



Filter F7

Filter H10



Filter AK

Filter AL

Part-No.	Description
524000810	Additional filter G3 for iso filter box DN 160, (350 x 250 x 40) mm
524000100	Additional filter G4 for iso filter box DN 160, (350 x 250 x 94) mm
524000090	Additional filter F7 for iso filter box DN 160, (350 x 250 x 94) mm
524000910	Additional filter H10 for iso filter box DN 160, (350 x 250 x 96) mm
524000080	Additional filter AK for iso filter box DN 160, (350 x 250 x 40) mm
524000920	Additional filter AL for iso filter box DN 160, (350 x 250 x 40) mm

10.4 Additional filter for air filter box

Part-No.	Description
521007390	Non-woven fabric G4 for air filter box DN 200
521007400	Non-woven fabric G4 for air filter box DN 250

10.5 Additional filter for intake air filter box



Filter G4

Filter F7

Part-No.	Description
524000180	Additional filter G4 and G2 for intake air filter box type E, (592 x 592 x 100) mm
524000170	Additional filter F7 and G2 for intake air filter box type E, (592 x 592 x 100) mm
521007350	Additional filter G2

10.6 Additional filter for air intake tower



Filter G4

Filter F7

Part-No.	Description
524000100	Additional filter G4, for air intake tower 300, (250 x 350 x 94) mm
524000090	Additional filter F7, for air intake tower 300, (250 x 350 x 94) mm

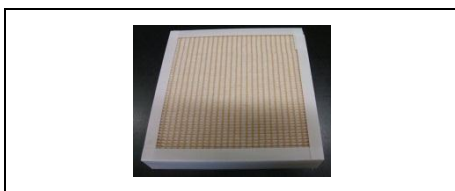
10.7 Additional filter for iso defroster heater



Filter G3

Part-No.	Description
524000810	Additional G3 filter for iso defroster heater, (350 x 250 x 40) mm

10.8 Additional filter for brine-defroster

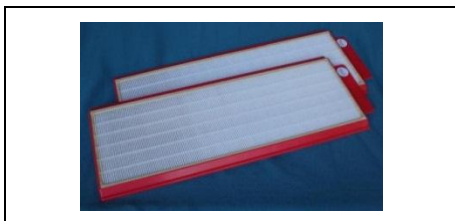


Filter G4
(for SD 250 / SD 500)

Part-No.	Description
521008230	Additional filter G4, for brine-defroster SD 250 and SD 500, (285 x 285 x 50) mm
528006160	Additional filter set (2 pieces) G4, for brine-defroster SD 350 and SD 550, (520 x 200 x 15) mm
528006170	Additional filter set (2 pieces) F7, for brine-defroster SD 350 and SD 550, (520 x 200 x 15) mm



Filterset G4
(for SD 350 / SD 550)



Filterset F7
(for SD 350 / SD 550)

10.9 Additional filter elements for inlets and outlets

Part-No.	Description
521007410	Additional filter element G3 (200 x 200) mm suitable for <ul style="list-style-type: none"> • pre-filter for disk valve • pre-filter • extract air filter with choke for wall mounting, in-wall mounting and ceiling mounting • supply air outlet with design trim for ceiling installation

11 Accessories

11.1 Drywall access panel

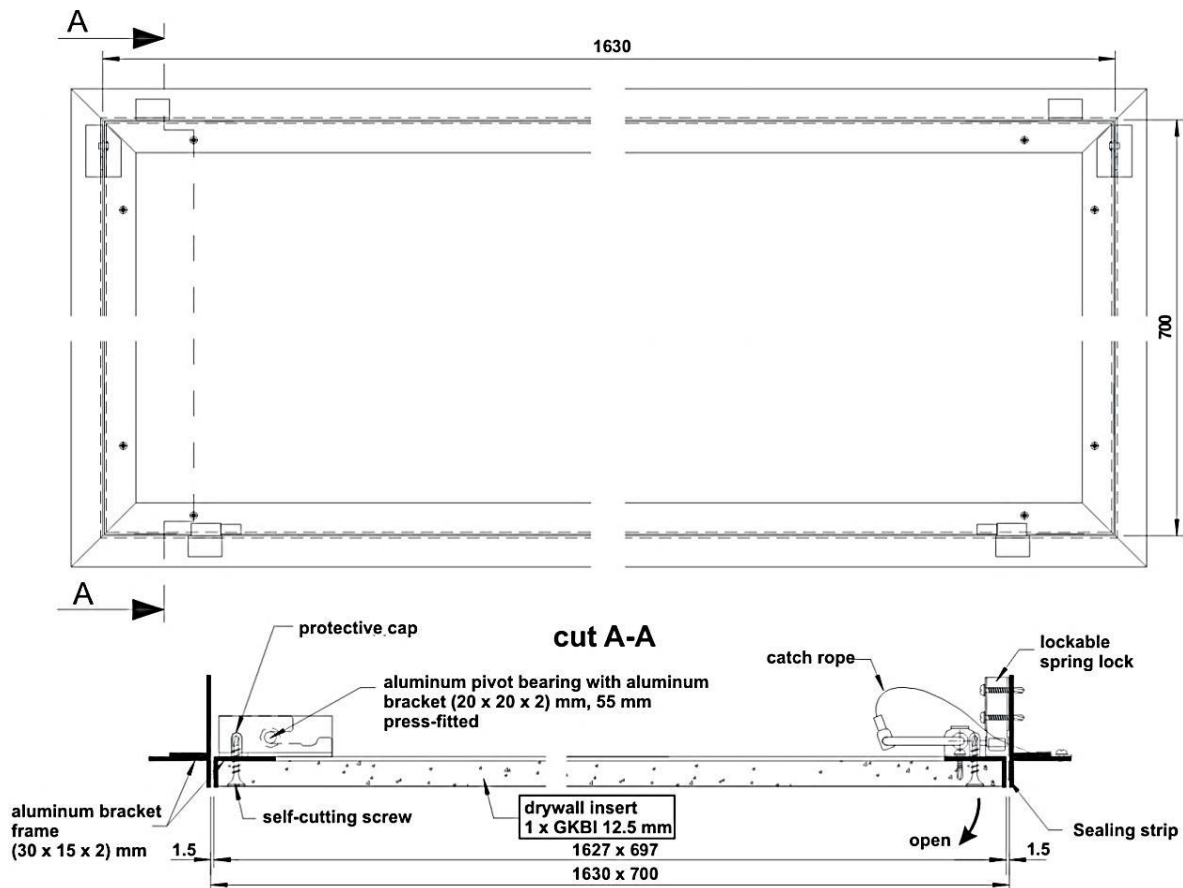


Part-No.	Description
528004830	Drywall access panel

Customized access panel for integration of climos MVHR unit into a drywall ceiling, mounting frame with circumferential aluminum angle section, suspension points can freely be chosen, 90° fold-out panel, 2 aluminum pivot bearings in rake adjustment range, 4 click-stop locks (with springs) on the opposite site, 2 catch-ropes with spring hook, lockable using a square wrench, panel covering made of 12.5 mm drywall, ceiling panels with identical thickness can be inserted the frame (aluminum angle section), circumferential sealing strip on front of the panel for additional sound insulation.

Weight: 10 kg

Dimensions:



11.2 Dry siphon



Part-No.	Description
528004060	Dry siphon

Dry siphon for condensate drain in ventilation units with heat recovery, for brine-defroster (summer operation) and condensate in contaminated air ducts.

Material: PVC hard

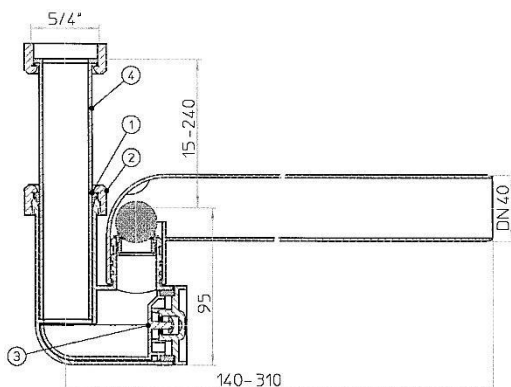
Weight: 230 g

Connections:

air side: 5/4"

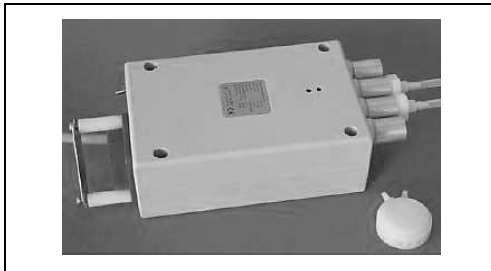
condensate water side: DN 40

Dimensions:



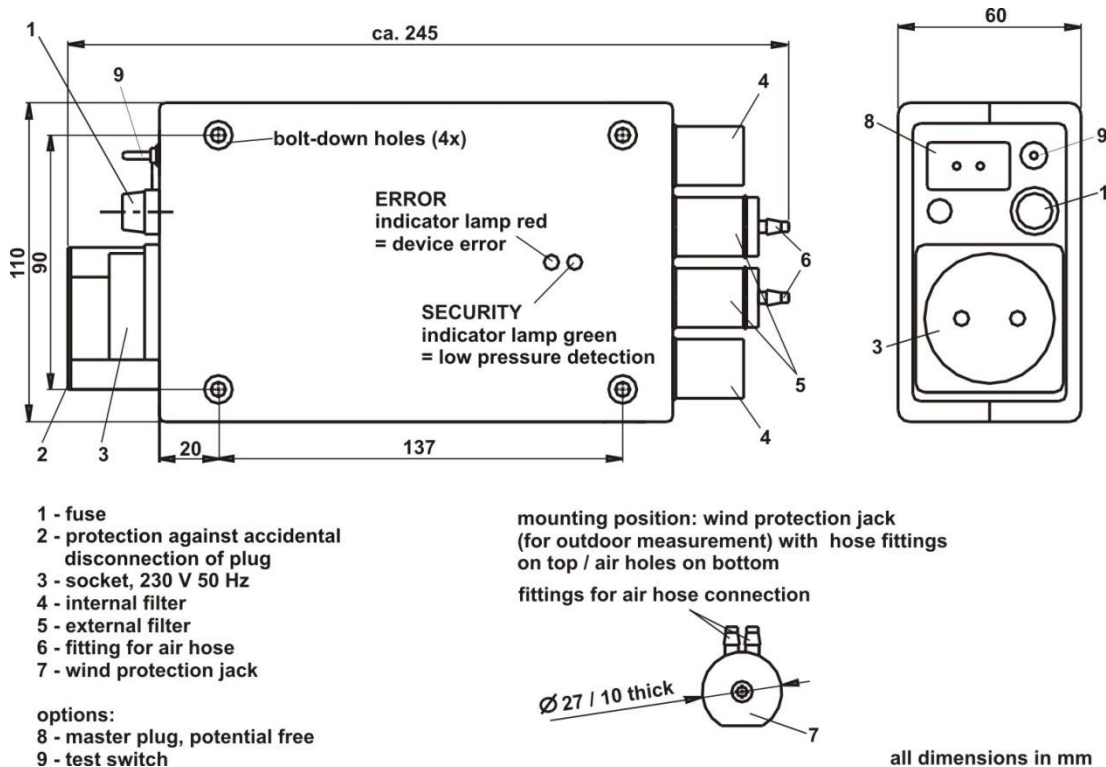
- (1) - wedge seal T30
- (2) - nut 5/4"
- (3) - Cleaning element, complete
- (4) - dip pipe DN 30x5/4"

11.3 Differential pressure sensor



Part-No.	Description
521008170	Differential pressure sensor standard with air hose
521008180	Differential pressure sensor with signal output/ test switch with air hose (without connecting cable for signal output)

Dimensions:



Operating Data:

Electrical connection: 230 V / 50 Hz
 Power consumption: 2 W
 Switching capacity: 400 W
 Fuse: T3, 15A / 250 V
 Protection class: II
 Air hose: Length: 2 x 3 m
 Outer diameter: 6 mm

TÜV-certified acc. to DVGW-VP 121, CE mark

Note: please ask Paul Wärmerückgewinnung GmbH for technical data or visit www.paul-lueftung.de

11.4 Accessories for differential pressure sensor

Part-No.	Description
521008190	Elbow for air hose
521008200	Grommet for air hose
521008210	Connecting cable for signal output (1.5 m)
521008220	Wind protection jack

11.5 Universal thermostat



Part-No.	Description
521008820	Universal thermostat

Stand-alone control unit for the components

- Brine-defroster / GHX regulating flap,
- defroster heater or
- electric backup duct heater

Two programmable and independent switching points (Temp 1 and Temp 2) with adjustable hysteresis.

Depending on the application the temperature sensor is used as

- outside air sensor (for control of brine-defroster / motorized flap GHX)
- as exhaust air sensor (for frost protection heater) or
- inlet air sensor (for backup duct heater)

The relevant mode is set by using a DIP switch.

The control for electrical consumer is performed by an electronic relay, parallel to this a floating changeover is available.

Releasing and inhibiting of the control can be performed by an external enabling contact.

The programmed temperature values as well as the temperature at the sensor are shown by a 7-segment display display. The display is visible through the transparent lid of the existing plastic humidifier suitable housing. Housing made of plastic, wet room installation possible

Housing dimensions: W x D x H = (160 x 120 x 90) mm

The operating data can be found in the technical data.

11.6 Room thermostat

Part-No.	Description
521003870	Room thermostat

11.7 Flow indicator

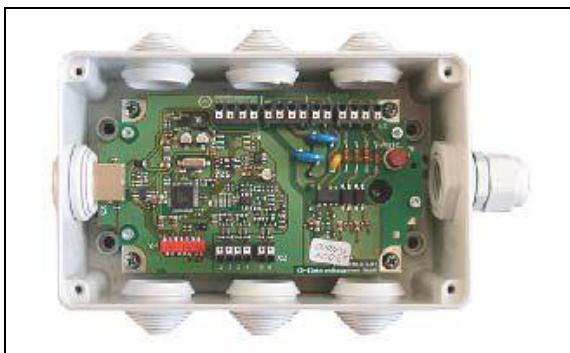
Part-No.	Description
521003960	Flow indicator 230 V with switching contact

11.8 Safety unit

Safety unit for electric duct heater DN 200 and DN 250 consisting of
2 safety temperature cut-outs,
1 flow indicator and
1 duct temperature sensor

Part-No.	Description
527000940	Safety unit

11.9 BUS thermostat



Part-No.	Description
527002400	BUS thermostat
527002410	Extension for 2. BUS thermostat

The BUS thermostat is used as control unit of the universal control for the following components:

Defroster

- Electric defroster heater (with PTC heating element, with resistance heating element)
- Brine-defroster

Backup duct heater

- Electric backup duct heater (with PTC heating element, with resistance heating element)
- Hot water backup duct heater

Diverter valve actuator (e.g. bypass valve for ground heat exchanger - ground pipe diverter valve)

- freely configurable temperature conditions for opening and closing the ground pipe diverter valve

The BUS thermostat is equipped with a pulse packet controlled or direct power output. The central communication control / monitoring including the 24 VDC power supply of the controller is realized via the RS485 BUS. The operating mode for the respective modules is configured using the DIP switch S2.

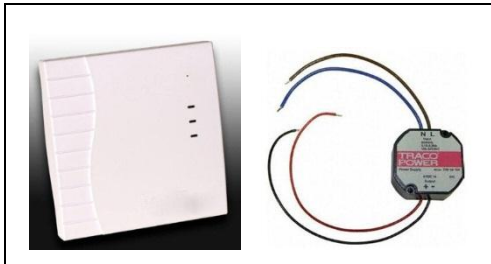
Housing dimensions: L x W x H = (210 x 130 x 80) mm

The extension for 2. BUS thermostat is required in addition for connection of two components.

Please pay attention to our Universalthermostat / BUS-Thermostat order form, which can be obtained from PAUL Wärmerückgewinnung GmbH or authorized dealers.

The operating data can be found in the technical data.

11.10 CO₂ room module



CO₂ room sensor

UP-PSU

Art.-Nr.	Bezeichnung
528007280	CO ₂ room module consisting of - CO ₂ room sensor and - 12 V UP-PSU
528007290	Extension for CO ₂ room module consisting of - CO ₂ maximum value module - CO ₂ room sensor and - 12 V UP-PSU



CO₂ maximum value module

The self-calibrating microprocessor controlled CO₂ room sensor measures the concentration of CO₂ in the air in an area of 0 ... 2000 ppm CO₂. The CO₂ content of air is determined by a NDIR sensor (non-dispersive infrared technology). The detection range of the CO₂ sensor is calibrated for standard applications for rooms, e.g. living rooms. The measured signals of the CO₂ transmitter are converted into 0 - 10 V standard signals, which supply either the air handling unit directly or are launched to a maximum value module for the creation of a maximum value out of several CO₂ room sensor signals. In addition, the current CO₂ content of air is visually indicated by LED on the sensor housing in three areas.

green: 0 - 800 ppm
yellow: >800 - 1200 ppm
red: >1200 - >1600 ppm

The housing consists of white plastics. The base with 4-hole mounting is designed for installation on vertically or horizontally installed flush - mounted switch boxes, with predetermined breaking point for on-wall cable. The power supply is given by an UP-PSU which can be mounted in the flush switch socket of the CO₂ room sensor.

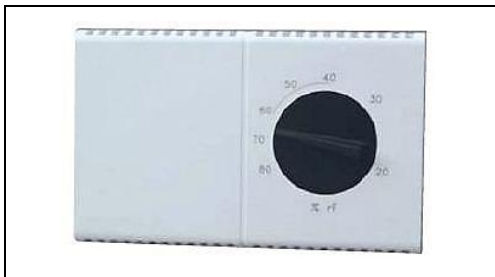
Rooms which are ventilated by a ventilation system do have different values of CO₂ because of different usage characteristics. An optimal CO₂-controlled ventilation system therefore requires information about the CO₂ content of several rooms.

The CO₂ maximum value module eliminates the maximum value out of max. 6 input signals from CO₂ sensors from the respective reference areas. The highest CO₂ value (maximum value) is provided at the output of the CO₂ maximum value module as reference for the control of the outdoor air quantity of the ventilation system.

The CO₂ maximum value module is mounted on a hat rail in the control cabinet or in a distributor housing. The 8-pin terminal block with screw terminals is provided for cable of max. 2.5 mm² conductor cross-section. It must be noted that at complete input assignment a total of six ground wires of the sensors has to be clamped to terminal 8 of the CO₂ maximum value module. The ground potential of connected sensors must be the same!

The operating data can be found in the technical data.

11.11 Room hygrostat



Art.-Nr.	Bezeichnung
528006510	Room hygrostat

Room hygrostat
for the moisture-dependent control of one or more fans

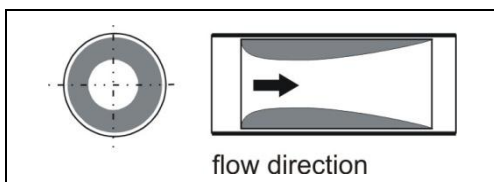
- AC 230 V, 50 Hz
- potential free alternating contact, load up to 5 A (inductive)
- temperature 10 – 50°C
- range 20 – 80% rel. Humidity
- switching difference: approx. 4% relative humidity
- on-wall installation
- protection class II
- protection IP 30

Dimensions:

B x H x T = (130 x 82 x 47) mm

12 Silencer

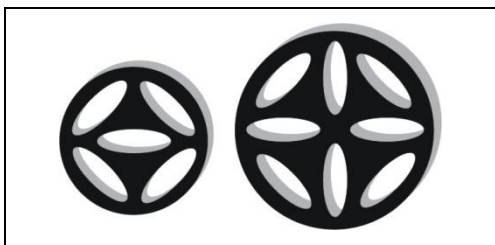
12.1 Plug-in silencer



Part-No.	Description
528000640	Plug-in silencer DN 100
528000650	Plug-in silencer DN 125

Plug-in silencer made of foamed plastic
locks in tube

12.2 Foamed choke element

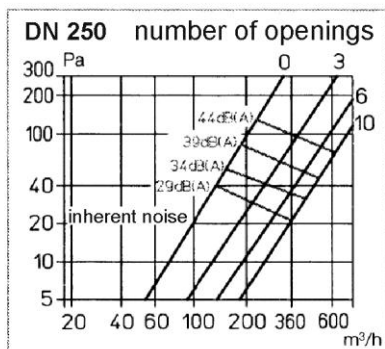
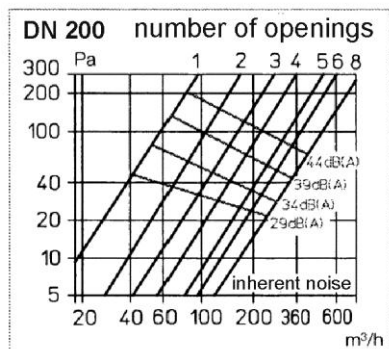
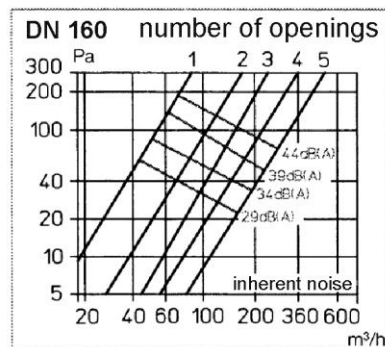
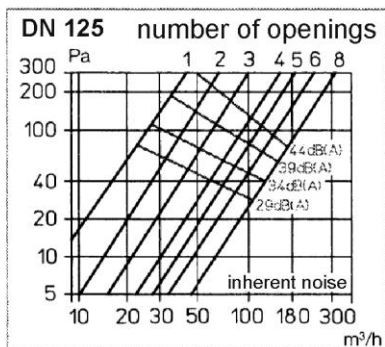
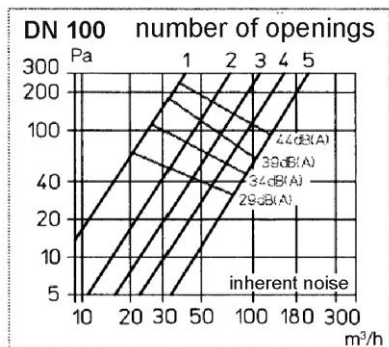


Part-No.	Description
528001460	Foamed choke element DN 100 in tube
528001470	Foamed choke element DN 125 in tube
528001480	Foamed choke element DN 160 in tube
528001490	Foamed choke element DN 200 in tube

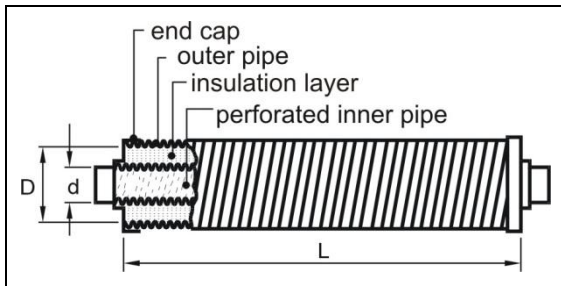
- Silencer with short installation depth, reduces flow noise and transmitted sound
- The insulation rate almost doubles when two elements are connected in series
- Efficient solution for adjusting and limiting the air flow rate and sound insulation
- Perfect for later installation, e.g. for correction of air volume lows in several zones
- Adjustment of air volume flow by removing the perforations acc. to the chart on page 82
- Antibacterial foam, mould resistant and rot-proof, equates emission class M 1
- Fire classification B, no release of harmful smoke and poison gases
- Elements can be inserted in all ducts and fittings (± 5 mm) listed below

Part-No.	DN [mm]	Thickness [mm]	Weight [g]	Openings	Wave band, insulation standard D_e dB at Hz						
					125	250	500	1000	2000	4000	8000
528001460	100	50	60	1	7.0	4.0	9.5	12.5	16.0	17.5	22.0
				3	3.5	2.5	5.5	8.5	8.5	14.5	19.0
				5	2.5	1.5	3.5	6.0	6.5	12.0	16.5
528001470	125	50	70	2	6.0	5.0	5.0	12.0	12.5	19.0	21.0
				5	2.0	2.5	3.0	8.5	8.0	13.5	19.0
				8	1.5	1.5	2.5	6.0	5.0	11.0	17.5
528001480	160	50	140	1	7.0	4.0	9.5	12.5	16.0	17.5	22.0
				3	3.5	2.5	5.5	8.5	8.5	14.5	19.5
				5	2.5	1.5	3.5	6.0	6.0	12.0	16.5
528001490	200	50	190	2	6.5	2.5	5.5	13.0	14.0	18.0	15.5
				5	3.0	1.5	2.5	9.5	8.5	14.0	14.5
				8	2.0	1.0	1.5	7.0	7.0	13.0	13.5

* Minimum volume flow guaranteed by lateral recesses

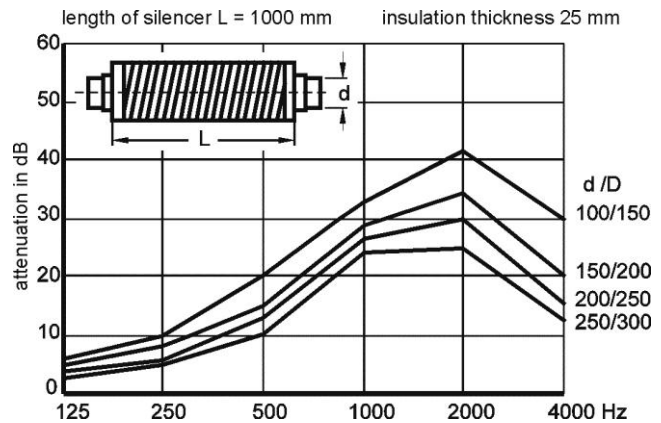


12.3 Transmitted sound silencer, flexible, round



Transmitted sound silencer consisting of flexible aluminum tubes, inner tube is perforated and flexible, Length 1000 mm
Sound insulating material between inner and outer tubing (resinoid-bonded mineral fiber mat), 25 mm thick, $D = d + 50$ mm
Aluminum caps on both sides of the silencer,
Pipe connection has fitting dimension

Part-No.	Description
528001180	Transmitted sound silencer DN 100
528001190	Transmitted sound silencer DN 125
528001200	Transmitted sound silencer DN 160
528001210	Transmitted sound silencer DN 200
528001220	Transmitted sound silencer DN 250

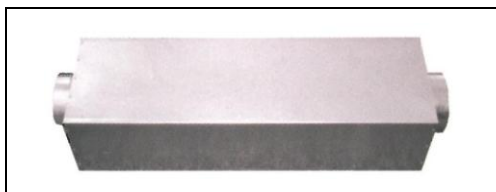


12.4 Duct splitter silencer, without coating

see item 3.14

Case silencer
Case silencer

12.5 Case silencer



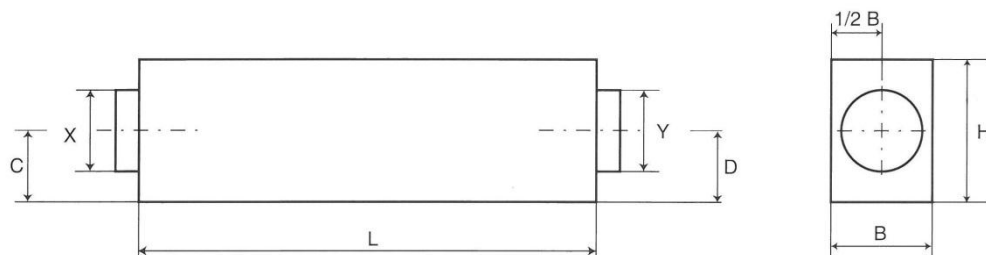
Part-No.	Description
528007360	Case silencer MSD 350, DN 160 centric
528007370	Case silencer MSD 550, DN 180 eccentric
528007380	Case silencer MSD 550, DN 180 centric

Rectangular silencer with highly efficient special sound absorbing material
max. air volume: 350 - 550 m³/h,
Housing made of galvanized sheet metal
Sound absorbing material is abrasion resistant

Advantages:

- very good sound absorbing
- compact in installation

Dimensions:



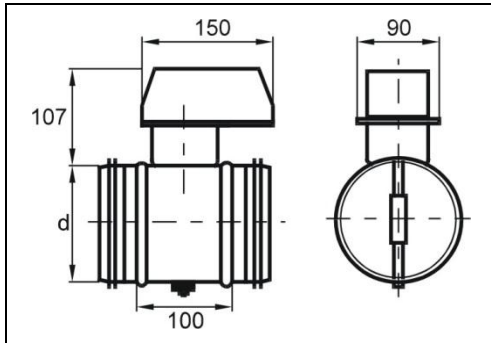
Part-No.	H [mm]	B [mm]	L [mm]	C [mm]	D [mm]	X [mm]	Y [mm]
528007350	280	200	900	140	140	DN 160	DN 160
528007360	350	250	900	175	230	DN 180	DN 180
528007370	350	250	900	175	175	DN 180	DN 180

Sound values:

Part-No.		Frequenz [Hz]								Pa	V [m ³ /h]
		63	125	250	500	1000	2000	4000	8000		
528007350	[dB]	10	16	29	43	45	47	42	36	2	100
528007350	[dB]	10	16	29	43	45	47	42	36	3	150
528007350	[dB]	10	16	29	43	45	47	42	36	4	200
528007350	[dB]	10	16	29	43	45	47	42	36	5	250
528007360 528007370	[dB]	9	14	25	38	42	43	40	32	25	500

13 Flaps

13.1 Isolating flap, tight, motor-driven



Part-No.	Description
528000370	Isolating flap DN 125, ~230 V
528000380	Isolating flap DN 160, ~230 V

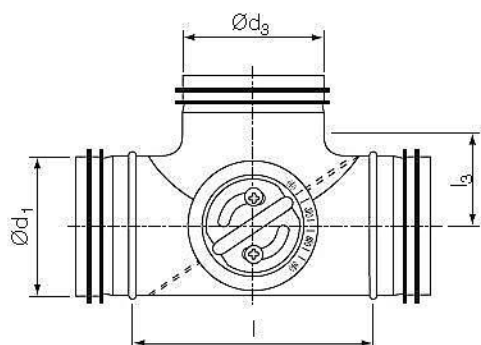
Tight isolating flaps, flaps can be used for complete air volume flow cut-off
 Blade with rubber sealing ring
 Isolating flap made of galvanized sheet steel
 Twin lip seal on both sides
 Blade is motor-driven
 Servomotors available with ~230 V

13.2 Bypass flap, manually operated



Bypass flap usable as two-way flap,
Blade with rubber sealing ring,
Housing made of galvanized sheet steel
(T-piece),
All connections with twin lip seal
(for T-piece dimensions ref. to item 5.3)

Dimensions:



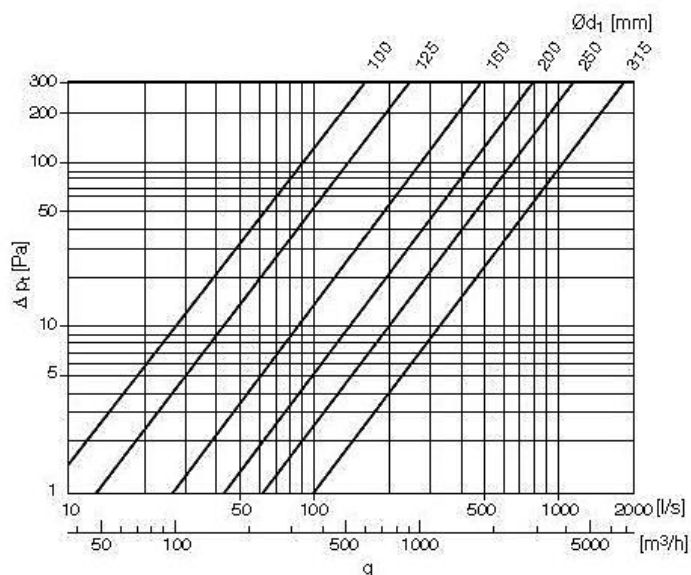
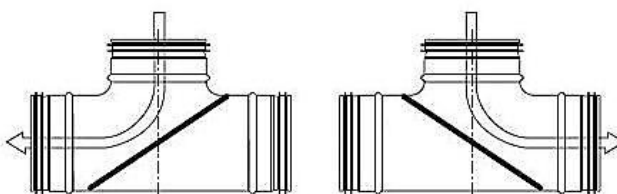
Ø d ₁ DN	Ø d ₂ DN	l [mm]	l ₃ [mm]
125	125	165	83
160	160	209	105
200	200	249	125

Part-No.

528000460
528000470

Description

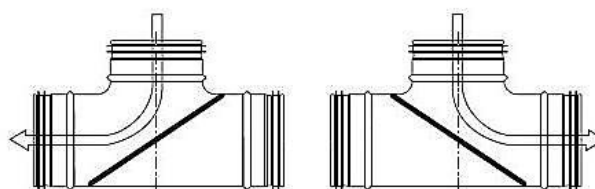
Bypass flap DN 125, manually operated
Bypass flap DN 160, manually operated



13.3 Bypass flap, motor-driven

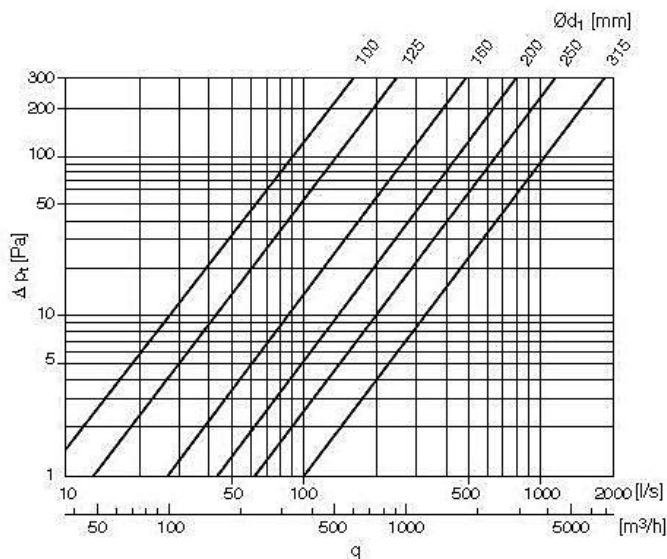
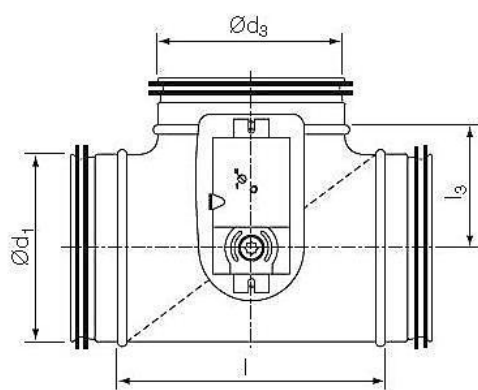


Part-No.	Description
528000510	Bypass flap DN 125, ~230 V
528000520	Bypass flap DN 160, ~230 V



Bypass flap usable as two-way flap,
Blade with rubber sealing ring,
Housing made of galvanized sheet steel (T-piece),
All connections with twin lip seal,
Blade is motor-driven,
Servomotors available with ~230 V

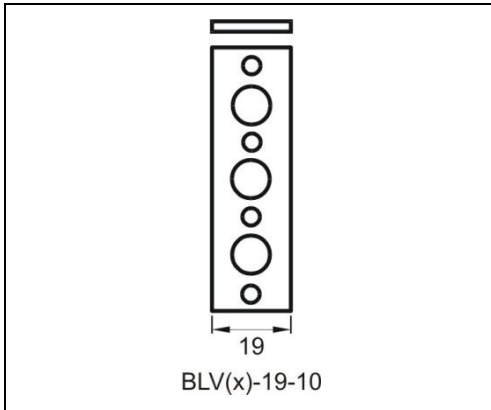
Dimensions:



$\text{Ø} d_1$ DN	$\text{Ø} d_2$ DN	l [mm]	l_3 [mm]
125	125	165	83
160	160	209	105
200	200	249	125
250	250	296	150

14 Mounting hardware

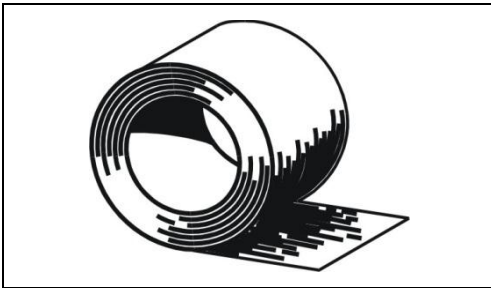
14.1 Perforated steel strip, galvanized



Part-No.	Description
528000160	Perforated steel strip, galvanized, width 19 mm, length 10 m

Perforated steel strip, galvanized or plastic-coated

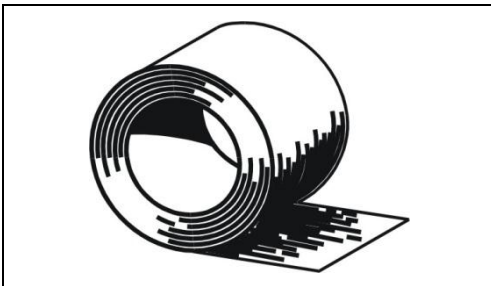
14.2 Sealing strip, white



Part-No.	Description
528000070	Sealing strip, white, width 50 mm, length 50 m
528000050	Sealing strip, silver, width 50 mm, length 50 m

Sealing strip, self-adhesive with textile fabric, white or silver, for masking duct and round tube connections

14.3 Aluminum adhesive tape, silver



Part-No.	Description
528000020	Aluminum adhesive tape, silver, width 50 mm, 24 µm, length 45 m

Aluminum adhesive tape, self-adhesive silver

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