

■ Technical data

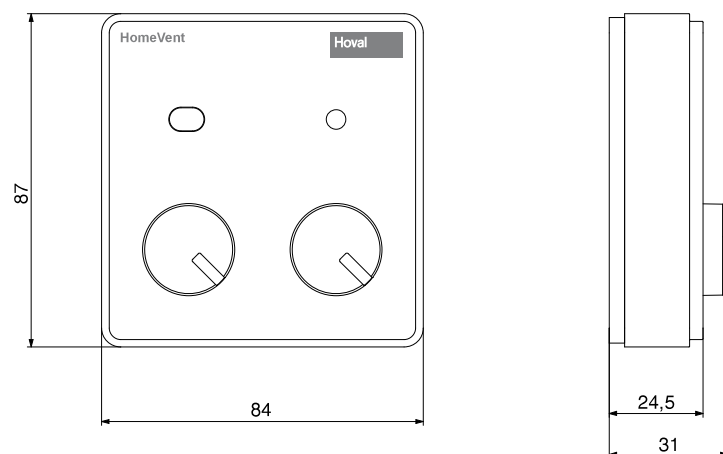
Operator terminals BG02, BG02 E and BG03

Connection for RJ 45 plug
CAT5 patch (8-pin) connection cable
(parallel, not crossed)

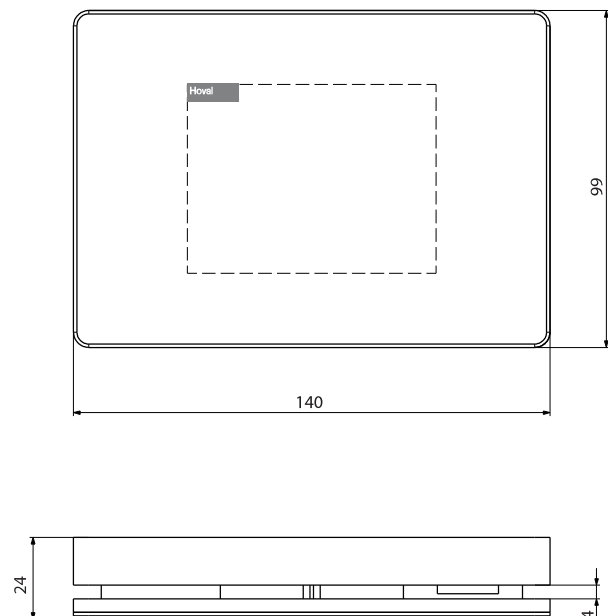
| | |
|---|---------------|
| Electrical connection | |
| • Voltage (DC) | 24 V |
| Type of protection | IP 20 |
| <i>Placement in the reference room (BG02 and BG03 only)</i> | |
| Application limits | |
| 3K3 as per EN 50090-2-2, residential rooms, office | |
| • Temperature range | 15...40 °C |
| • Humidity range | 5...85 % r.h. |

■ Dimensions

HomeVent® standard operator terminal BG02, BG02 E on-wall

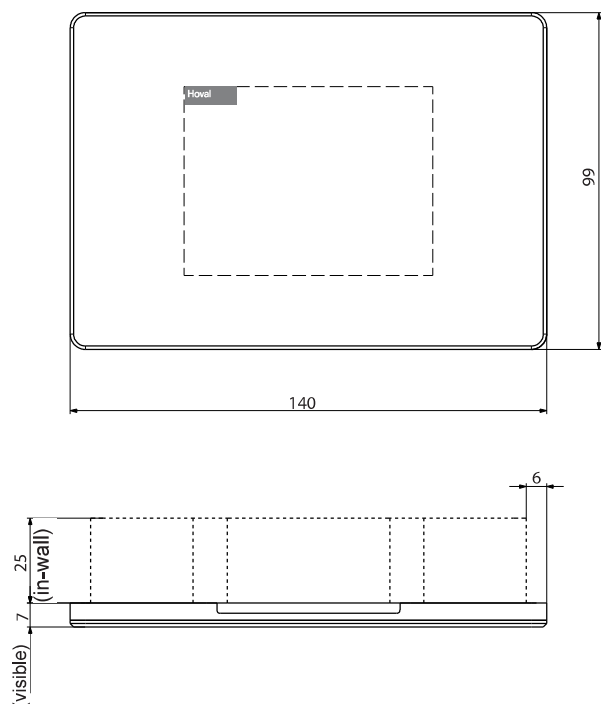


HomeVent® design operator terminal BG03, on-wall



■ Technical data

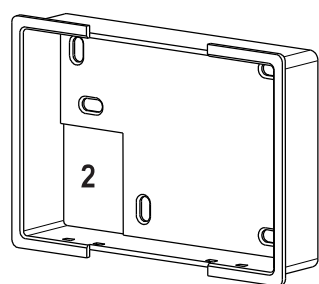
HomeVent® design operator terminal BG03, in-wall



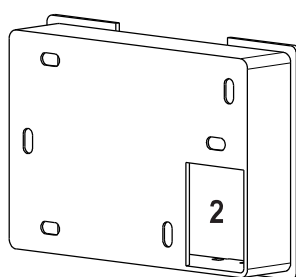
Detail of flush socket box

(included with in-wall design operator terminal BG03)

Front view



Rear view



- 1 Flush socket box (see also detail)
- 2 Positioning of connection cable

The insert block can be used as placeholder
for easier in-wall installation.

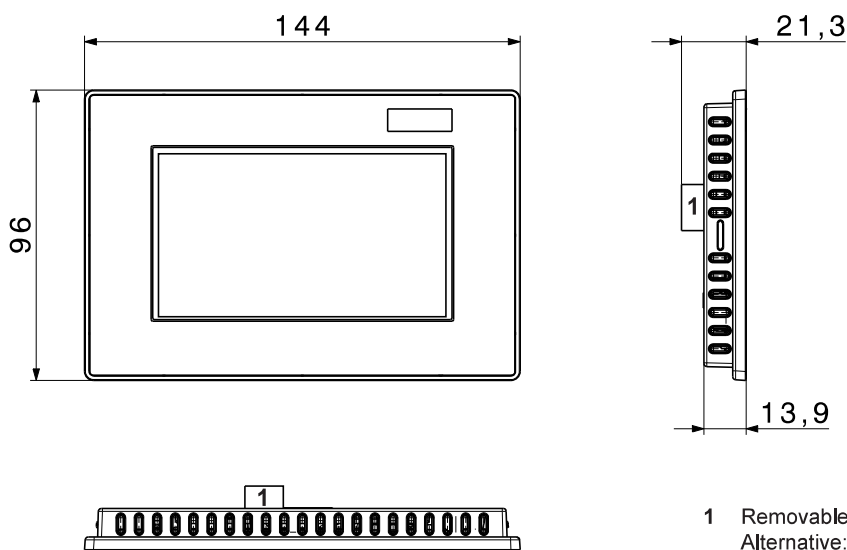
■ Technical data

TopTronic® E Room control module comfort plus

- Connection to the Hoval bus system via RJ45 plug connection or plug terminals (max. 0.75 mm²)
- Resolution: 480 x 320
- Voltage: 12 V DC 100 mA
- Humidity (in operation): 20...80 % RH, non-condensing

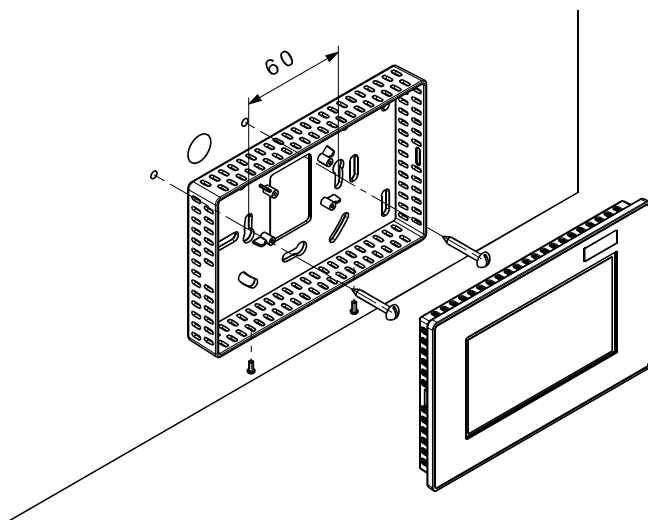
■ Dimensions

(Dimensions in mm)



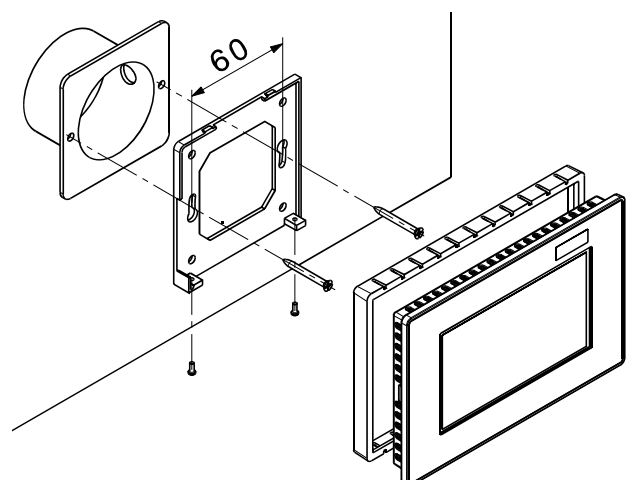
- 1 Removable RJ45 plug connection
Alternative: plug terminal (max. 0.75 mm²)

Wall mounting with surface-mounting frame (On-wall mounted frame is included in the scope of delivery)

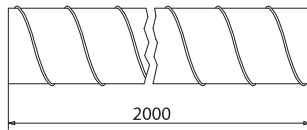


Wall mounting with wall mounting plate with concealed sockets (Wall-mounting plate is included in the scope of delivery)

- Connection to the Hoval bus system via RJ45 plug connection or plug terminals (max. 0.75 mm²)

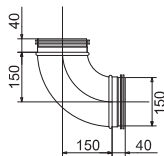


■ Part No.


**Pipe system DN 150
of sheet steel**
Part No.

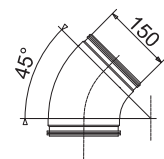
Spiral-seam tube WFR-150
of galvanised sheet steel
DN 150, length: 2 m

2045 240



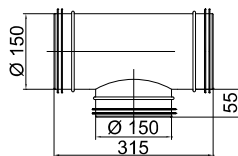
Pipe bend BU-150-90
90° bend of galvanised sheet steel
with double lip seal
DN 150

2015 667



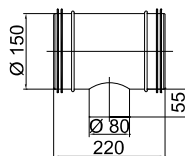
Pipe bend BU-150-45
45° bend of galvanised sheet steel
with double lip seal
DN 150

2022 208



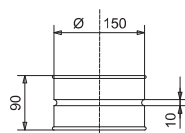
T-piece TCPU-150-150
of galvanised sheet steel
with double lip seal
DN 150/ DN 150/ DN 150

2024 255



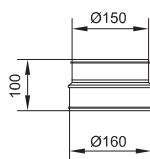
T-piece TCPU-150-80
of galvanised sheet steel
with double lip seal
DN 150/ DN 80/ DN 150

2024 257



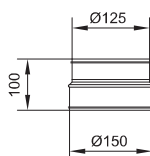
Sleeve MF-150
of galvanised sheet steel
DN 150

2015 668



Reduction/extension RCU-160-150
of galvanised sheet steel
with double lip seal
DN 160 nipple/ DN 150 nipple

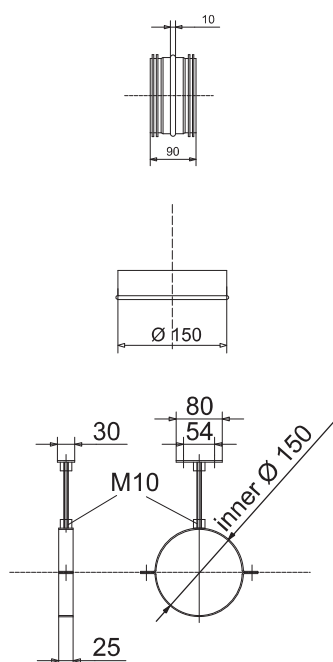
2024 260



Reduction/extension RCFU-150-125
of galvanised sheet steel
with double lip seal
DN 150 sleeve/ DN 125 nipple

2040 384

■ Part No.


**Pipe system DN 150
of sheet steel**
Part No.

Nipple NPU-150
of galvanised sheet steel
with double lip seal
DN150

2015 669

End cover ED-150
of galvanised sheet steel DN150

2023 569

Pipe clamp ROS-150
of galvanised steel
2-section pipe clamp with insulation
insert, threaded rod 0.2 m and
ground plate.
DN 150

6008 428

Thermal insulation DN 150
Caution:

Comply with the regional regulations with
regard to thermal insulation.



Thermal insulation tube IS-150-25
for spiral-seam tube WFR-150
made of steam-tight EPDM
3 tubes of 2 m each
Insulation thickness: 25 mm

2023 559



Thermal insulation IB-150-90
for pipe bend BU-150-90
made of steam-tight EPDM
Insulation thickness: 25 mm

2023 560



Thermal insulation IB-150-45
for pipe bend BU-150-45
made of steam-tight EPDM
Insulation thickness: 25 mm

2023 561



Adhesive IK
for thermal insulation
ready-to-use adhesive with brush
0.25 litre can

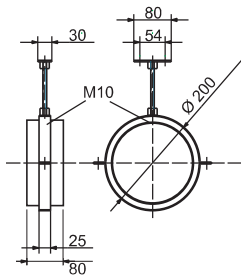
2023 562



Adhesive tape IKB
for thermal insulation
made of EPDM
Thickness: 3 mm, width: 50 mm, roll:
15 m

2023 563

■ Part No.


Thermal insulation DN 150
Part No.

Pipe clamp ROSI-200
with thermal insulation sleeve
for spiral-seam tube DN 150
of galvanised steel
2-section pipe clamp with insulation
insert and insulation sleeve, threaded
rod 0.2 m and ground plate.
DN 200

6013 043

Pipe system DN 150
IsiPipe made of EPP

Only as supply air and extract air line within
the heated building envelope.

Caution:
Comply with the regional regulations with
regard to thermal insulation.



IsiPipe tubing EPP-150-500
made of steam-tight EPP
incl. EPP sleeve
DN 150, material thickness: 15 mm,
Length: 0.5 m

2045 739



IsiPipe tubing EPP-150-1000
made of steam-tight EPP
incl. EPP sleeve
DN 150, material thickness: 15 mm,
length: 1 m

2045 740



IsiPipe pipe bend EPP-150-90
Bend 90°, made of steam-tight EPP
incl. EPP sleeve
DN 150, material thickness: 15 mm

2045 741



IsiPipe pipe bend EPP-150-45
Bend 45°, made of steam-tight EPP
incl. EPP sleeve
DN 150, material thickness: 15 mm

2045 742



IsiPipe sleeve EPP-150
made of steam-tight EPP
DN 150, material thickness: 15 mm

2045 743



Pipe clamp ROS-X
for IsiPipe
of galvanised steel
semicircular pipe clamp, cable tie and
threaded rod 0.6 m

2045 744

■ Part No.

| | IsiPipe Plus pipe system made of EPP | Part No. |
|---|---|----------|
|  | IsiPipe Plus pipeline EPP-160-1000 Thermally insulated pipe Material: EPP, wall thickness 43 mm Inner Ø 160 mm, outer Ø 246 mm Length: 1000 mm incl. sleeve (60mm) | 2065 110 |
|  | IsiPipe Plus pipeline EPP-200-1000 Thermally insulated pipe Material: EPP, wall thickness 43 mm Inner Ø 200 mm, outer Ø 286 mm Length: 1000 mm incl. sleeve (60mm) | 2065 111 |
|  | IsiPipe Plus pipe bend EPP-160-45° Thermally insulated pipe bend 45° Material: EPP, wall thickness 43 mm Inner Ø 160 mm, outer Ø 246 mm | 2065 112 |
|  | IsiPipe Plus pipe bend EPP-200-45° Thermally insulated pipe bend 45° Material: EPP, wall thickness 43 mm Inner Ø 200 mm, outer Ø 286 mm | 2065 113 |
|  | IsiPipe Plus sleeve EPP-160 Thermally insulated sleeve Material: EPP, wall thickness 43 mm l: 80 mm Inner Ø 160 mm, outer Ø 286 mm | 2065 124 |
|  | IsiPipe Plus sleeve EPP-200 Thermally insulated sleeve Material: EPP, wall thickness 43 mm l: 80 mm Inner Ø 200 mm, outer Ø 326 mm | 2065 125 |
|  | IsiPipe Plus ecc. adapter EPP-150-160 Thermally insulated ecc. adapter Material: EPP, eccentric 38 mm l: 250 mm Inner Ø 150 mm on IsiPipe Plus 160 | 2065 126 |
|  | IsiPipe Plus ecc. adapter EPP-160-160 Thermally insulated ecc. adapter Material: EPP, eccentric 38 mm l: 250 mm Inner Ø 160 mm on IsiPipe Plus 160/200 | 2065 127 |
|  | IsiPipe Plus ecc. adapter EPP-180-200 Thermally insulated ecc. adapter Material: EPP, eccentric 48 mm l: 250 mm Inner Ø 180 mm on IsiPipe Plus 200 | 2065 128 |
|  | Pipe clamp ROS 160-200 to IsiPipe plus Semi-circular pipe clip from galvanized steel including cable tie. Hanger bolt 60 mm including anchor | 2069 624 |

■ Part No.


Accessories DN 150
Part No.

Komfort Plus CB-150-3
for tubing DN 150
guarantees a supply air temperature of 17°C at an outside temperature below -15°C.
Equipped with overheating protection.
On-site: flow switch
Pipe connection: DN 150
Not suitable for IsiPipe

2045 698



Control unit UVR 61-3LT
for Komfort Plus CB-150-3
for control of Komfort Plus
with 2 temperature sensors
With input for on-site flow
monitor signal

2045 700



Cowl HA-250
for spiral-seam tube DN 150
for outside and exhaust air
of galvanised sheet steel DN150

2016 219



Front

Rear

Weatherproof grille WG-150
for spiral-seam tube DN 150
for outside and exhaust air
of aluminium with rain lug, can be
painted
with double lip seal,
pipe nozzle DN 150

6013 045



Stainless steel cowl AAS-150
for spiral-seam tube DN 150,
galvanic isolation of the connection
for outside and exhaust air
of stainless steel, lamella cowl,
1 pipe DN 150, length: 0.5 m,
2 pipes DN 150, length: 1 m
and 2 wall mountings

6010 185



**Stainless steel segment pipe bend
CRB-150-90**
for spiral-seam tube DN 150,
galvanic isolation of the connection
90° bend of stainless steel DN 150

2040 722

■ Part No.

Accessories DN 150

Part No.



Sound absorber SD-150-500
for spiral-seam tube DN 150
rectangular casing
of galvanised sheet steel,
with double lip seal
DN 150, dimensions: 290 x 215 mm,
Length: 0.5 m

2016 224



Exhaust air nozzle FST-150
for spiral-seam tube DN 150
of galvanised sheet steel
with bird protection grille
DN 150
for horizontal installation

2029 384



Shut-off damper DTU-150
for spiral-seam tube DN 150
sealed shut-off damper
for manual operation
of galvanised steel sheet DN 150

2024 261



Cold-shrink tape
for sealing air ducts,
heat and cold resistant
width: 50 mm, roll: 15 m

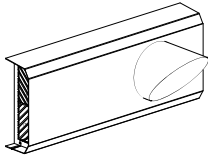
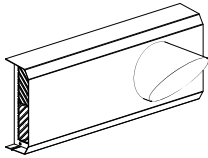
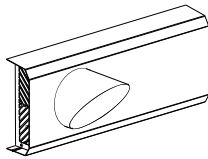
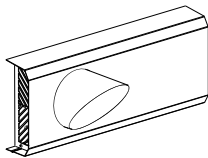
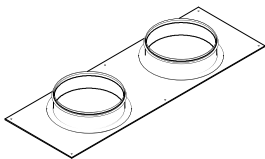
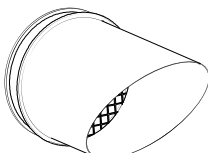
2021 796



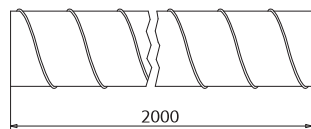
Ventilation silicone
for sealing air ducts,
heat and cold resistant
odourless

3000 009

■ Part No.

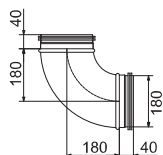
| | Accessories DN 160 | Part No. |
|---|--|----------|
|  | Wall outlet right for Ø160, exhaust air on the right side made of galvanised sheet metal | 6045 328 |
|  | Wall outlet right, white for Ø160, exhaust air on the right side made of galvanised sheet metal white coated (RAL 9016) | 6045 327 |
|  | Wall outlet left for Ø160, exhaust air on the left side made of galvanised sheet metal | 6045 330 |
|  | Wall outlet left, white for Ø160, exhaust air on the left side made of galvanised sheet metal white coated (RAL 9016) | 6045 329 |
|  | Plywood for wall outlet, for Ø160 | 6045 349 |
|  | Exhaust air nozzle FST-160 for spiral-seam pipe DN 160 of galvanised sheet steel with bird protection grille, for horizontal installation | 2070 412 |

■ Part No.


Pipe system DN 180
Part No.

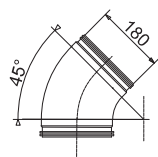
Spiral-seam tube WFR-180
of galvanised sheet steel
DN 180, 2 m long

2057 030



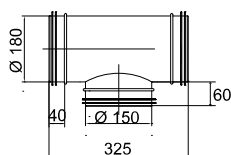
Pipe bend BU-180-90
90° bend of galvanised sheet steel
with double lip seal
DN 180

2057 047



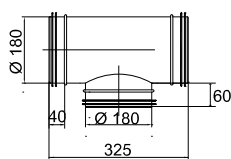
Pipe bend BU-180-45
45° bend of galvanised sheet steel
with double lip seal
DN 180

2057 048



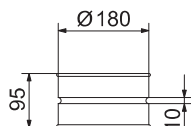
T-piece TCPU-180-150-180
of galvanised sheet steel
with double lip seal
DN 180/ DN 150/ DN 180

2057 050



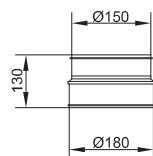
T-piece TCPU-180-180-180
of galvanised sheet steel
with double lip seal
DN 180/ DN 180/ DN 180

2057 049



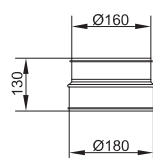
Sleeve MF-180
of galvanised sheet steel
DN 180

2057 051



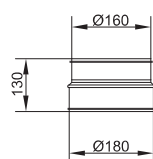
Reduction/extension RCU-180-150
of galvanised sheet steel
with double lip seal
DN 180 nipple/ DN 150 nipple

2057 052



Reduction/extension RCU-180-160
made of galvanised sheet steel
with double lip seal
DN 180 nipple / DN 160 nipple

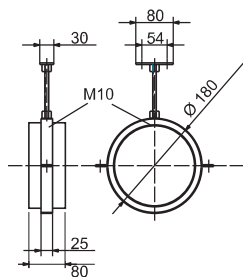
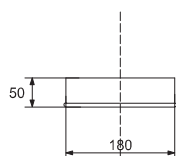
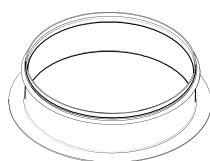
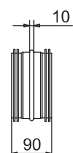
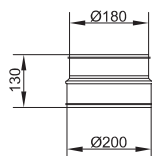
2070 976



Reduction/extension RCFU-180-160
made of galvanised sheet steel
with double lip seal
DN 180 sleeve / DN 160 nipple

2070 975

■ Part No.



Pipe system DN 180

Part No.

Reduction/extension RCU-200-180
of galvanised sheet steel
with double lip seal
DN 200 nipple/ DN 180 nipple

2057 053

Nipple NPU-180
of galvanised sheet steel
with double lip seal
DN 180

2057 064

Spigot ILX 180 x 40 mm
with flange and lip seal

2070 895

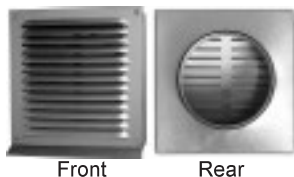
End cover ED-180
of galvanised sheet steel
DN 180

2057 065

Pipe clamp ROS-180
of galvanised sheet steel
2-section pipe clamp with insulation
insert, threaded rod 0.2 m and
ground plate.
DN 180

6034 767

■ Part No.



Accessories DN 180

Part No.

Weatherproof grille WG-180
for spiral-seam tube DN 180
for outside and exhaust air
of aluminium with rain lug, can be
painted, with double lip seal,
pipe nozzle DN 180

2057 068



Fresh air suction set AAS-180
for spiral-seam tube DN 180
galvanic isolation of the connection
for outside and exhaust air
of stainless steel, lamella cowl,
1 tube DN 180, length: 0.5 m,
2 tubes DN 180, length: 1 m and
2 wall fastenings

6034 766



Stainless steel pipe bend CRB-180-90
for spiral-seam tube DN 180,
galvanic isolation of the connection
90° bend of stainless steel
DN 180

2057 066



Exhaust air nozzle FST-180
for spiral-seam tube DN 180
of galvanised sheet steel
with bird protection grille
DN 180
for horizontal installation

2057 069



Silencer FSR-180-750
for spiral-seam tube DN 180
rectangular casing made of galvanised
sheet steel,
with double lip seal, DN 180,
Dimensions: 480 x 250 mm, length: 0.75 m

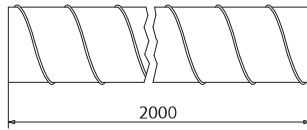
2057 874



Silencer FLSDA-180-1000
for spiral-seam tube DN 180
Silencer outside manufactured from
flexible aluminium envelope tube,
inside from perforated aluminium tube,
with double lip seal, DN 180,
packing thickness 50 mm, length: 1 m

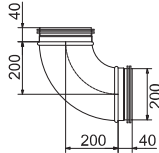
2057 875

■ Part No.


Pipe system DN 200
Part No.

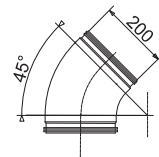
Spiral-seam tube WFR-200
of galvanised sheet steel
DN 200, length: 2 m

2045 707



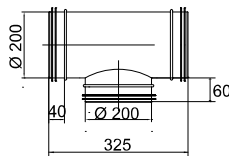
Pipe bend BU-200-90
90° bend of galvanised sheet steel
with double lip seal
DN 200

2040 734



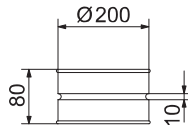
Pipe bend BU-200-45
45° bend of galvanised sheet steel
with double lip seal
DN 200

2040 735



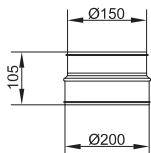
T-piece TCPU-200-200
of galvanised sheet steel
with double lip seal
DN 200/ DN 200/ DN 200

2040 736



Sleeve MF-200
of galvanised sheet steel
DN 200

2040 737



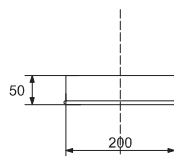
Reduction/extension RCU-200-150
of galvanised sheet steel
with double lip seal
DN 200 nipple/DN 150 nipple

2040 738



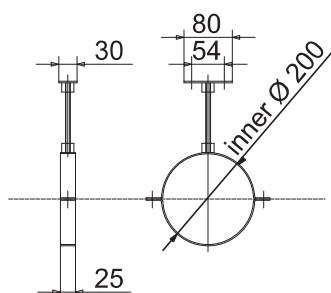
Nipple NPU-200
of galvanised sheet steel
with double lip seal
DN 200

2040 739



End cover ED-200
of galvanised sheet steel DN 200

2040 740



Pipe clamp ROS-200
of galvanised steel
2-section pipe clamp with insulation
insert, threaded rod 0.2 m and
ground plate.
DN 200

6025 970

■ Part No.



Front

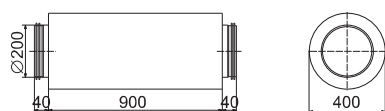
Rear

Accessories DN 200

Part No.

Weatherproof grille WG-200
for spiral-seam tube DN 200
for outside and exhaust air
of aluminium with rain lug, can be
painted
with double lip seal,
pipe nozzle DN 200

2040 742



Silencer SD-200-1000
for spiral-seam tube DN 200
round casing of galvanised sheet steel,
with double lip seal,
DN 200, outer diameter: 400 mm,
length: 0.9 m

2040 743



Stainless steel cowl AAS-200
for spiral-seam tube DN 200,
galvanic isolation of the connection
for outside and exhaust air
of stainless steel, lamella cowl,
1 pipe DN 200, length: 0.5 m,
2 pipes DN 200, length: 1 m and
2 wall mountings

6031 914



**Stainless steel segment pipe bend
CRB-200-90**
for spiral-seam tube DN 200,
galvanic isolation of the connection
90° bend of stainless steel DN 200

2054 221



Exhaust air nozzle FST-200
for spiral-seam tube DN 200
of galvanised sheet steel
with bird protection grille
DN 200
for horizontal installation

2054 220

■ Part No.



Flex pipe system DN 75

Part No.

Flexible pipe FR-75
of polyethylene PE-HD
smooth inside surface,
ribbed outside surface,
antistatic coating
DN 75, inside diameter: 62 mm,
Roll: 50 m

2016 225



Sealing ring DI-75 black
for flexible pipe DN 75
DN 75

2016 227



Sealing ring DI-75 signal yellow
for flexible pipe DN 75
DN 75

5035 763

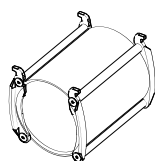


Sealing ring DI-75 signal blue
for flexible pipe DN 75
DN 75

5035 764

Accessories DN 75

Order the sealing rings for the accessories separately. For quick and simple installation, all accessories are equipped with snap-on clip for attachment of the flexible pipe.



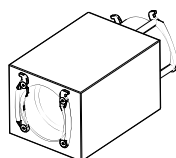
Double sleeve DM-75
for flexible pipe DN 75
for connecting flexible pipes DN 75

6022 896



Plug ST-75
for flexible pipe DN 75
for flexible pipe ending

2016 229



Helmholtz silencer HSD-75
for flexible pipe DN 75
for acoustically sensitive rooms
attenuates low frequencies (500 Hz)
DN 75

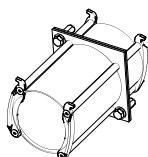
6020 756

■ Part No.

Accessories DN 75

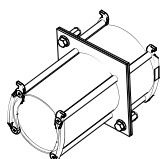
Part No.

Order the sealing rings for the accessories separately. For quick and simple installation, all accessories are equipped with snap-on clip for attachment of the flexible pipe.



Formwork coupling SK-75
for flexible pipe DN 75 for extending a flexible pipe through the ceiling or the floor without damaging the boarding DN 75

6013 047



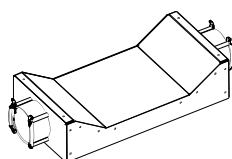
Formwork coupling SK-75/90
for flexible pipe DN 75 and 90 for extending a flexible pipe through the ceiling or the floor and extension from DN 75 to DN 90 without damaging the boarding.

6030 820



Pipe bend RB-75
for flexible pipe DN 75 for connecting flexible pipes at an angle of 90° DN 75

6022 967



Flexible pipe crossing FRK-75
for flexible pipe DN 75 for crossing two flexible pipes DN 75 with reduced construction height (100 mm). For one crossing 2 pieces are necessary.

6031 011



Cable tie: 4.8 x 302 mm
As additional protection of the snap clip of the accessories for flex pipe with increased load.
100 pcs./package
Colour: natural

2057 027



Cable tie: 7.6 x 380 mm
For attaching flex pipes to the reinforcement.
100 pcs./package
Colour: natural

2057 028



Cable tie: 9.0 x 610 mm
For attaching flex pipes to the reinforcement.
50 pcs./package
Colour: natural

2057 029

■ Part No.



Flex pipe system DN 90

Part No.

Flexible pipe FR-90
of polyethylene PE-HD
smooth inside surface, ribbed outside
surface
antistatic coating
DN 90, inner diameter: 75 mm,
roll: 50 m

2037 295

Sealing ring DI-90 black
for flexible pipe DN 90
DN 90

5031 311

Sealing ring DI-90 signal yellow
for flexible pipe DN 90
DN 90

5035 765

Sealing ring DI-90 signal blue
for flexible pipe DN 90
DN 90

5035 766

■ Part No.

Accessories DN 90

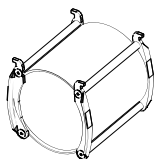
Part No.

Order the sealing rings for the accessories separately. For quick and simple installation, all accessories are equipped with snap-on clip for attachment of the flexible pipe.



Pipe elbow RB-90/90°
for flexible pipe DN 90
for connecting flexible pipes
at an angle of 90°

6043 275



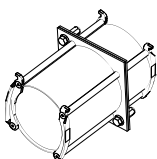
Double sleeve DM-90
for flexible pipe DN 90
for connecting flexible pipes DN 90

6022 494



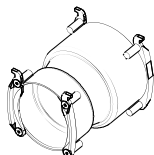
Plug ST-90
for flexible pipe DN 90
for flexible pipe ending

2037 296



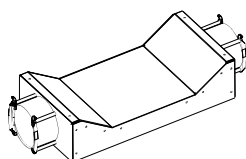
Formwork coupling SK-90
for flexible pipe DN 90 for extending a
flexible pipe through the ceiling or the
floor without damaging the boarding
DN 90

6022 495



Reduction/extension RCFU-90-75
for connecting flexible pipe DN 90 with
flexible pipe DN 75
of plastic

6022 514

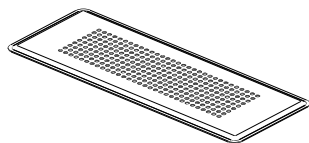


Flexible pipe crossing FRK-90
for flexible pipe DN 90
for crossing two flexible pipes DN 90
with reduced construction height
(100 mm).
For one crossing 2 pieces are necessary.

6031 012

Cable ties can be found under "Flexible pipe DN 75".

■ Part No.

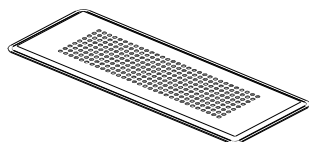


Flat channel system

Part No.

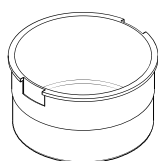
Floor grille inox
for flat channel system 100 and 140
Dimensions: 350 x 130 mm

2070 930



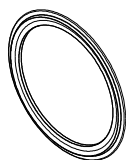
Floor grille white
for flat channel system 100 and 140
Dimensions: 350 x 130 mm

2070 931



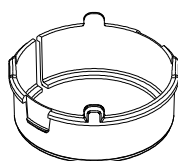
Stopper 75
sealing plug for
outlet 90° lateral 125-2 x 75

2070 932



Sealing ring for flexible pipe DN 75
in connection with click ring

2070 994



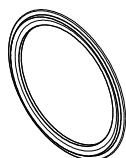
Click ring DN 75

2070 996



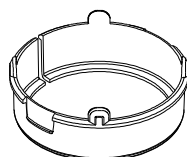
Outlet round 90° lateral 125-2 x 75
made of plastic 2 x 75/125 mm
Usable length 325 mm

2070 997



Sealing ring for flexible pipe DN 90
in connection with click ring


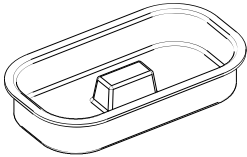
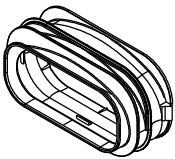
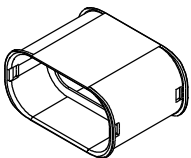
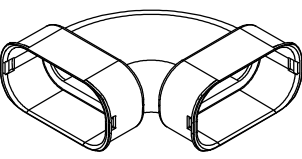
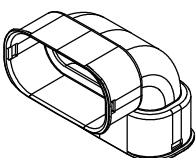
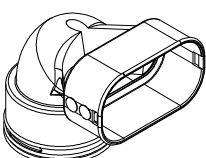
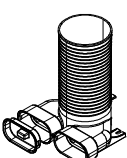

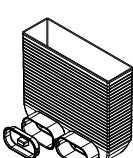
2070 998




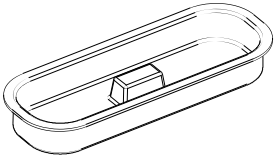
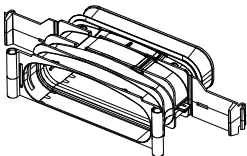
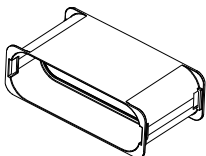
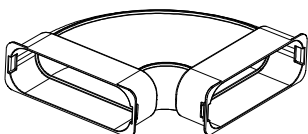
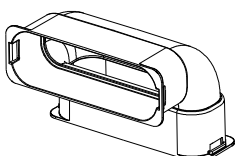
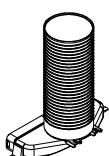
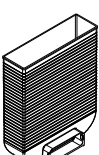

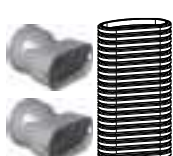
Click ring DN 90

2071 000

■ Part No.

| | Flat channel system DN 100 | Part No. |
|---|--|----------|
|  | Flat channel 100 Flexible ventilation pipe 102 x 49 mm Roll length 50 m | 2071 003 |
|  | Stopper flat 100 for flat channel system 100 | 2071 004 |
|  | Seal flat 100 for flat channel 100 | 2071 005 |
|  | Sleeve 100 for flat channel 100 | 2071 006 |
|  | Arch horizontal flat 100 for flat channel 100 | 2071 007 |
|  | Arch vertical flat 100 for flat channel 100 | 2071 008 |
|  | Arch vertical flat to round 100-75 Transition 90° round to flat | 2071 009 |
|  | Outlet round, lateral 90° 125-2 x 100 for flat channel 100 incl. mounting bracket | 2071 010 |
|  | Outlet round, front 125-2 x 100 for flat channel 100 incl. mounting bracket | 2071 011 |
|  | Floor exhaust flat 2 x 100 309 x 86,5 mm interior 2 flat channel 100 connections | 2071 012 |

■ Part No.

| | Flat channel system DN 140 | Part No. |
|---|--|----------|
|  | Flat channel 140 Flexible ventilation pipe 142 x 49 mm Roll length 20 m | 2071 013 |
|  | Stopper flat 140 for flat channel system 140 | 2071 014 |
|  | Seal flat 140 for flat channel 140 | 2071 015 |
|  | Sleeve 140 for flat channel 140 | 2071 016 |
|  | Arch horizontal flat 140 for flat channel 140 | 2071 017 |
|  | Arch vertical flat 140 for flat channel 140 | 2071 018 |
|  | Outlet round, lateral 90° 125-2 x 140 for flat channel 140 incl. mounting bracket | 2071 019 |
|  | Floor exhaust flat 1 x 140 309 x 85 mm interior 1 flat channel 140 connection | 2071 020 |
|  | Adapter flat to round 140-90, made of plastic | 2071 001 |
|  | Flat channel intersection 140-90 Consisting of: 1 metre flat channel 140 2 adapters flat to round 140-90 2 seals 140 2 click rings DN 90 2 seals 90 | 2071 002 |

■ Part No.

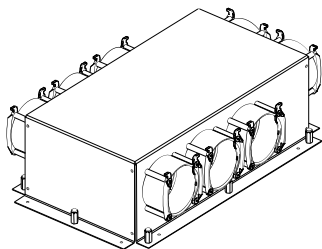
Distribution cases DN 150

Part No.

Application:
Preferably concrete installation
(mass concrete)

The **distribution case VKA** is used in combination with the **connection plate AP**.

- The connection plate AP is mounted in the ceiling, in the floor or in the wall (set in concrete).
- The distribution case VKA is then flanged directly on to the connection plate AP when the building shell is completed.

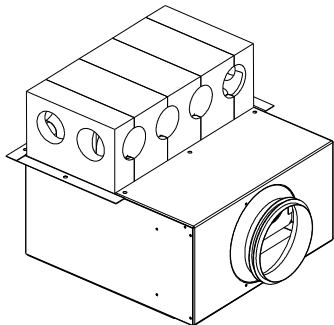


Connection plate AP to distribution case VKA

Casing of aluzinc sheet with x connection nozzles for flexible pipes Ø 75 mm.

| Type | Connections |
|----------|-------------|
| AP-75x6 | 6 |
| AP-75x8 | 8 |
| AP-75x10 | 10 |

6012 359
6012 360
6012 361



Distribution case VKA to connection plates AP

Casing of aluzinc sheet with 1 connection nozzle Ø 150 mm for the main duct and flange for connecting with the AP connection plate. PU sound absorption block inside with washable outer skin, access panel and baffles for adjusting the air flow for each flexible pipe Ø 75 mm.

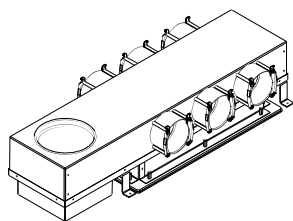
| Type | Connections |
|---------------|-------------|
| VKA-150-75x6 | 6 |
| VKA-150-75x8 | 8 |
| VKA-150-75x10 | 10 |

6012 356
6012 357
6012 358

■ Part No.

Distribution cases DN 150

Part No.



Access panel on bottom

Application:
Concrete installation
(Mass concrete, filigree concrete floors)

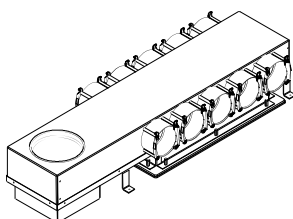
In-wall distribution case 6 x Ø X

Distribution case of aluzinc sheet for encasing in concrete. With one connection nozzle Ø 150 (upwards and downwards) and 2 x 3 nozzles Ø 90 or Ø 75 (lateral), incl. 2 end covers, 1 spigot Ø 150, inside lining of sound insulation material, access panel paintable on-site and baffles for adjusting the air flow for each flexible pipe Ø 75 mm/90 mm.

Type

UPVK 6 x Ø 75
UPVK 6 x Ø 90

6033 915
6033 917



Access panel on bottom

In-wall distribution case 10 x Ø X

Distribution case of aluzinc sheet for encasing in concrete. With one connection nozzle Ø 150 (upwards and downwards) and 2 x 5 nozzles Ø 90 and Ø 75 (lateral), incl. 4 end covers, 1 spigot Ø 150, inside lining of sound insulation material and access panel paintable on-site and baffles for adjusting the air flow for each flexible pipe Ø 75 mm/90 mm

Type

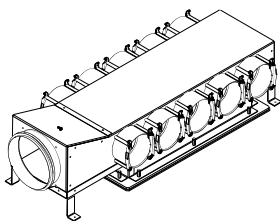
UPVK 10 x Ø 75
UPVK 10 x Ø 90

6022 677
6022 498

■ Part No.

Distribution cases DN 150

Part No.



Access panel on bottom

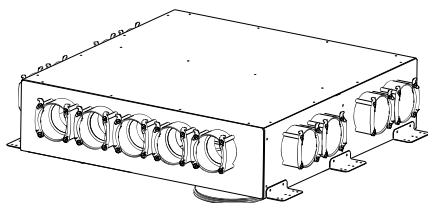
Application:
Preferably concrete installation
(mass concrete, filigree concrete)

In-wall distribution case UPVKS 10 x Ø X
Distribution case of aluzinc sheet for encasing in concrete. With one connection nozzle Ø 150 (on face) and 2 x 5 nozzles Ø 90 and Ø 75 (lateral), incl. 4 end covers, 1 spigot Ø 150, inside lining of sound insulation material and access panel paintable on-site and baffles for adjusting the air flow for each flexible pipe Ø 75 mm/90 mm

Type

UPVKS 10 x Ø 75
UPVKS 10 x Ø 90

6024 106
6024 105



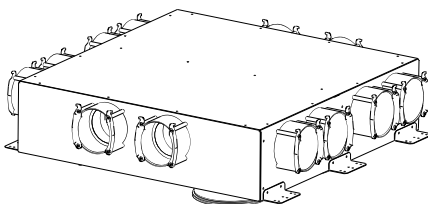
Access panel on bottom

Distribution box VTB-150
Air distribution box from Al/Zn sheet with access panel (can be painted on site). Interior lined with sound insulation material.
Connection nozzle:
2x DN 150 (downward)
ZUL 9x75 resp. ABL 9x75
ZUL 6x90 resp. ABL 6x90
Consisting of:
Box, 6 connection brackets, 4 resp. 2 end caps, orifices for setting the air quantity per flex pipe DN 75 resp. DN 90

Type

VTB-150 9x 75
VTB-150 6x 90

6034 486
6034 487



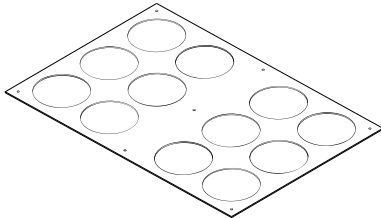
Access panel on bottom

■ Part No.

Distribution cases DN 150

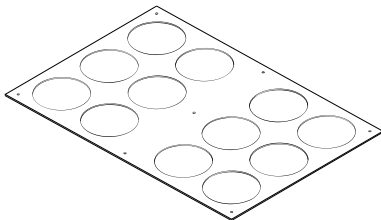
Part No.

Application:
Preferably concrete installation
(mass concrete, filigree concrete)



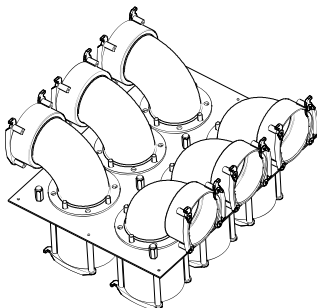
Control damper RP 12 x 75
for flexible pipe DN 75
Template made from galvanised
sheet steel, for flexible pipes
DN 75

5037 864



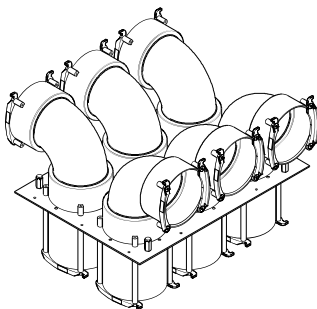
Control damper RP 12 x 90
for flexible pipe DN 90
Template made from galvanised
sheet steel, for flexible pipes

5042 170



Section distributor SV-6 x 75
for flexible pipe DN 75
for space-saving laying of
6 flexible pipes in the ceiling.
Option of 6 x 90° bends or 3
straight connecting pieces. Each 90°
elbow can be turned at 45° increments.
6 x DN 75
One section distributor required for
each supply and exhaust air source.

6042 706



Section distributor SV-6 x 90
for flexible pipes DN 90
for space-saving laying of
6 flexible pipes in the ceiling.
Option of 6 x 90° bends or 3 straight
connecting pieces. Each 90° elbow can be
turned at 45° increments. 6 x DN 90
One section distributor required for
each supply and exhaust air source

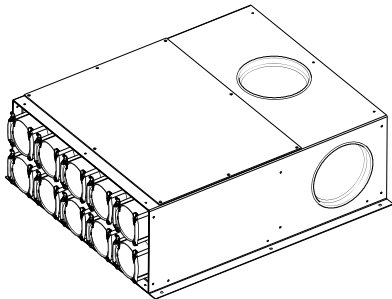
6044 775

■ Part No.

Distribution cases DN 150

Part No.

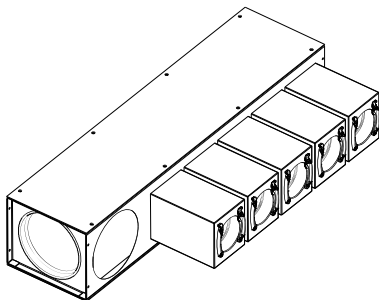
Application:
On-wall installation



Distribution case VK

Casing of aluzinc sheet with 1 connection nozzle Ø 150 mm (included separately), can be mounted on the front, at the top or laterally on the left or on the right (on site) and x connection nozzles for flexible pipe Ø 75 mm. PU sound absorption block inside with washable outer skin and an access panel. Baffles for adjusting the air flow for each flexible pipe Ø 75 mm.

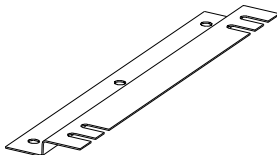
| Type | Connections | |
|--------------|-------------|----------|
| VK-150-75x6 | 6 | 6033 963 |
| VK-150-75x8 | 8 | 6033 964 |
| VK-150-75x10 | 10 | 6034 035 |



Storey distributor GVT-X

for connecting X flexible tubes Ø 75 mm. Casing of galvanised sheet steel with sound absorbing mat, connection possibilities Ø 150 mm, incl. 2 nozzles Ø 150 mm with double lip seal. Flexible installation possible due to access panel on both sides. Baffles for adjusting the air flow for each flexible pipe Ø 75 mm.

| Type | Connections | |
|-------|-------------|----------|
| GVT-3 | 3 | 6027 743 |
| GVT-4 | 4 | 6027 744 |
| GVT-5 | 5 | 6027 745 |
| GVT-6 | 6 | 6027 746 |



Mounting holder MH

for storey distributor GVT-X from galvanised steel sheet
Length: 0.3 m
Two angle rails recommended per storey distributor.

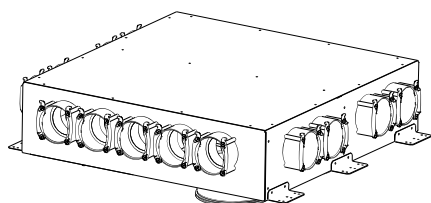
5032 853

■ Part No.

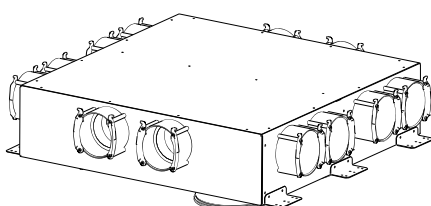
Distribution cases DN 180

Part No.

Application:
Preferably concrete installation
(mass concrete)



Access panel on bottom



Access panel on bottom

Distribution box VTB-180

Air distribution case of aluzinc sheet with access panel (can be painted on site). Lined on the inside with sound absorbing material.

Connection nozzle:

2x DN 180 (downward)

Supply air 9x DN 75 resp. 6x DN 90 (5x resp. 2x side/ 2x front and rear each)

Extract air 9x DN 75 resp. 6x DN 90 (5x resp. 2x side/ 2x front and rear each)

Consisting of:

Box, 6 connection brackets, 4 resp. 2 end caps, orifices for setting the air quantity per flex pipe DN 75 resp. DN 90

Type

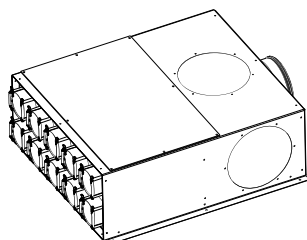
VTB-180 9x 75

VTB-180 6x 90

6037 584

6037 585

Application:
On-wall installation



Distribution case VK

Casing of aluzinc sheet with 1 connection nozzle Ø 180 mm (supplied loose), on end, top or left-side mounting (on site) and x connection nozzles for flex pipes Ø 75 resp. 90 mm. PU sound absorption block inside with washable outer skin and an access panel. orifices for setting the air quantity per flex pipe Ø 75 resp. 90 mm.

Type Connections

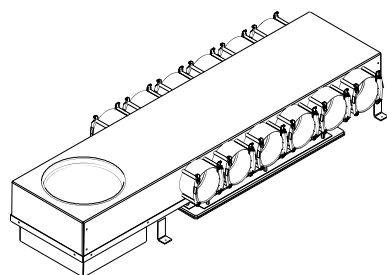
| | | |
|--------------|----|----------|
| VK-180-75x6 | 6 | 6036 603 |
| VK-180-75x8 | 8 | 6031 881 |
| VK-180-75x10 | 10 | 6035 673 |
| VK-180-75x12 | 12 | 6035 674 |
| VK-180-90x6 | 6 | 6036 143 |
| VK-180-90x8 | 8 | 6031 880 |
| VK-180-90x10 | 10 | 6035 675 |
| VK-180-90x12 | 12 | 6035 711 |

■ Part No.

Distribution cases DN 200

Part No.

Application:
Preferably concrete installation
(mass concrete)



Access panel on bottom

In-wall distribution case UPVK 200-90x12

6030 953

Air distribution case of aluzinc sheet
with access panel

(can be painted on site).

Lined on the inside with sound
absorbing material.

Connection nozzles

2x DN 200 (downwards/upwards),

12 (2 x 6) DN 90 (sideways)

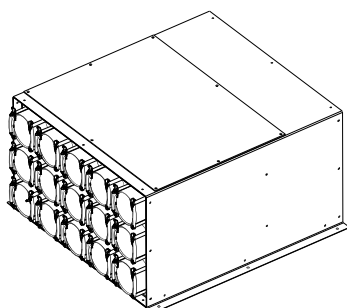
Consisting of:

distributor unit, 6 end covers,

1 spigot DN 200

baffles for adjusting the air flow for
each flexible pipe DN 90.

Application:
On-wall installation


Distribution case VK200-75x15

6030 966

Air distribution case of aluzinc sheet
with access panel.

Inside with sound absorption block.

Connection nozzles:

1 x DN 200 (on the back)

15 x (3x5) DN 75 (on the front)

Consisting of: distribution case, baffles
for adjusting the air flow
for each flexible pipe DN 75.

■ Part No.



Distribution case accessories

Part No.

Control damper RK-80
for flexible pipe DN 75
sealing control damper
for adjustment of the air flow.
Of galvanised sheet steel
DN 80

6013 654



Air flow rate control valve DN 90

2070 534



End cover ED-75
for closing off the connections
which are not used.
DN 75

2018 804



End cover ED-90
for closing off the connections
which are not used.
DN 90

2063 033

Air grilles - floor

Application:
**In the floor structure (finished floor, only
supply air)**



Floor grille BD-30-75
perforated grille made from stainless
steel in an adjustable casing
Inner component of stainless
steel with 3 contact points
Outer component of aluzinc sheet with
2 fastening catches and one connection
nozzle for flexible pipe DN 75
Supply air up to 30 m³/h
Height: 130 to 180 mm

6015 304



Floor grille BD-30-90
perforated grille made from stainless
steel in an adjustable casing.
Inner component of stainless
steel with 3 contact points,
outer component of Al/Zn sheet with
2 fastening catches and one connection
nozzle for flexible pipe DN 90.
Supply air up to 40 m³/h
Height: 130 to 180 mm

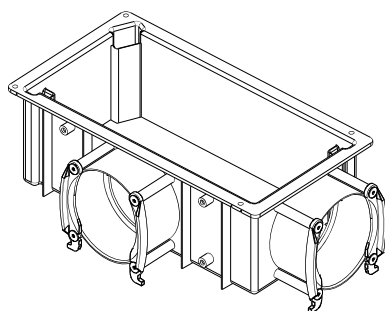
6022 513

■ Part No.

Air grilles - wall/ceiling

Part No.

Application:
Mass concrete, masonry walls and light-weight walls



Connection housing AG-60
for supply and extract air in combination with design grilles. Casing allows precise grille alignment (swivelling) after mounting.

Plastic casing with 2 connection nozzles DN 75, fastening bracket, end cover, sound insulating mat and insert block as building protection cover and plastering aid.

Supply air:

1 x DN 75 up to 30 m³/h

2 x DN 75 for 40 m³/h

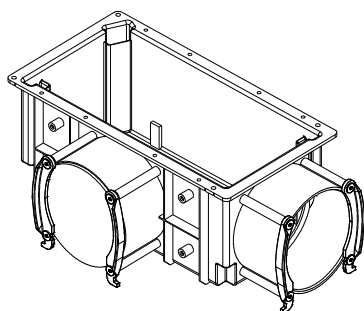
Exhaust air:

1 x DN 75 up to 30 m³/h

2 x DN 75 up to 60 m³/h

For installation in solid concrete, masonry and plasterboard walls.

6034 355



Connection housing AG-90
for supply and extract air in combination with design grilles. Casing allows precise grille alignment (swivelling) after mounting.

Plastic casing with 2 connection nozzles DN 90, fastening bracket, end cover, sound insulating mat and insert block as building protection cover and plastering aid.

Supply air:

1 x DN 90 up to 40 m³/h

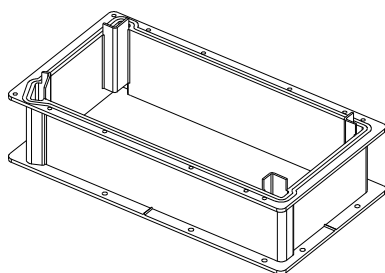
Exhaust air:

1 x DN 90 up to 60 m³/h

For installation in solid concrete, masonry and plasterboard walls.

6034 357

Application:
Mass concrete



Extension VAG-60/90
for connection housing AG-60 and AG-90 for raising above the lower reinforcement for solid concrete ceilings.

Raising height: 60 mm

Extension permits precise grille alignment after installation.

6034 360

■ Part No.


Connection casing accessories
Part No.
Sound insulation insert

6034 398

for connection housing AG-60, AG-90, AGV-60 and AGV-90
retrofitable sound insulation insert for acoustically sensitive rooms. Cannot be combined with extract air filter AGF-60/90.

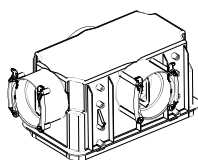

Extract air filter AGF-60/90

5033 121

for connection housing AG-60, AG-90, AGV-60 and AGV-90
of cleanable, fine-mesh polyamide net with plastic frame. Cannot be combined with sound insulation insert.

Air grilles - wall/ceiling

Application:
Mass concrete


Connection housing quick 75

6046 302

for supply and extract air in combination with design grilles. Housing allows precise alignment of grilles after mounting. Plastic housing with 2 connection nozzles DN 75. Very easy to mount, no nails in concrete after stripping.

Supply air:

1 x DN 75 up to 30 m³/h

2 x DN 75 up to 40 m³/h

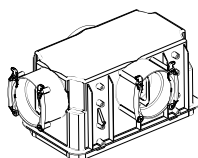
Extract air:

1 x DN 75 up to 30 m³/h

2 x DN 75 up to 60 m³/h

Suitable for installation in solid concrete

Available starting June 2018


Connection housing quick 90

6046 296

for supply and extract air in combination with design grilles. Housing allows precise alignment of grilles after mounting. Plastic housing with 2 connection nozzles DN 90. Very easy to mount, no nails in concrete after stripping.

Supply air:

1 x DN 90 up to 40 m³/h

Extract air:

1 x DN 90 up to 60 m³/h

Suitable for installation in solid concrete

Available starting June 2018

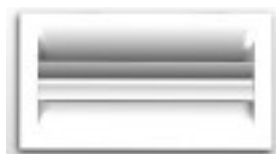
■ Part No.

Air grilles - wall/ceiling

Part No.

Plastic supply air/extract air grille

The alignment of the grilles can be slightly corrected after installation.


Design grille Pacific

6034 056

for connection housing AG-60, AG-90, AGV-60 and AGV-90

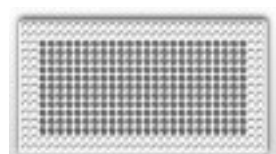
Of plastic (white RAL 9016) with plug connection.

Suitable for:

supply air up to 40 m³/h

extract air up to 60 m³/h

can be painted on site.


Design grille Adria

6034 057

for connection housing AG-60, AG-90, AGV-60 and AGV-90

Of plastic (white RAL 9016)

with plug connection.

Suitable for:

supply air up to 40 m³/h

extract air up to 60 m³/h

can be painted on site.


Design grille Atlantic

6034 058

for connection housing AG-60, AG-90, AGV-60 and AGV-90

Of plastic (white RAL 9016)

with plug connection.

Suitable for:

supply air up to 40 m³/h

extract air up to 60 m³/h

can be painted on site.

■ Part No.

Air grilles - wall/ceiling

Part No.

Metal supply air/extract air grille

The alignment of the grilles can be slightly corrected after installation.



Design grille Pizol
for connection housing AG-60, AG-90,
AGV-60 and AGV-90
Of brushed stainless steel
with plug connection.
Suitable for:
supply air up to 40 m³/h
extract air up to 60 m³/h

6028 142



Design grille Pizol
for connection housing AG-60, AG-90,
AGV-60 and AGV-90
Steel, white stove-enamelled RAL 9016
with plug connection.
Suitable for:
supply air up to 40 m³/h
extract air up to 60 m³/h

6028 155



Design grille Alvier
for connection housing AG-60, AG-90,
AGV-60 and AGV-90
Of brushed stainless steel
with plug connection.
Suitable for:
supply air up to 40 m³/h
extract air up to 60 m³/h

6028 153



Design grille Alvier
for connection housing AG-60, AG-90,
AGV-60 and AGV-90
Steel, white stove-enamelled RAL 9016
with plug connection.
Suitable for:
supply air up to 40 m³/h
extract air up to 60 m³/h

6028 156



Design grille Sántis
for connection housing AG-60, AG-90,
AGV-60 and AGV-90
Of brushed stainless steel
with plug connection.
Suitable for:
supply air up to 40 m³/h
extract air up to 60 m³/h

6028 154



Design grille Sántis
for connection housing AG-60, AG-90,
AGV-60 and AGV-90
Steel, white stove-enamelled RAL 9016
with plug connection.
Suitable for:
supply air up to 40 m³/h
extract air up to 60 m³/h

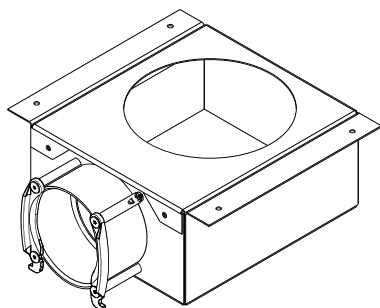
6028 157

■ Part No.

Air grilles - wall/ceiling

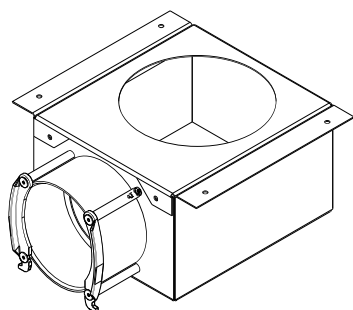
Part No.

Application:
Masonry walls, lightweight walls



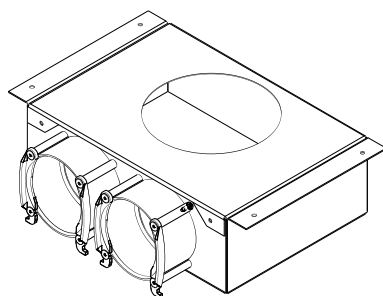
In-wall connection box UPK-30
for disc valve supply air TVZ-125 and
disc valve extract air TVA-125
made from galvanised sheet steel
with 1 connection DN 75,
building protection cover
Supply air:
1 x DN 75 up to 30 m³/h
Extract air:
1 x DN 75 up to 30 m³/h

6022 148



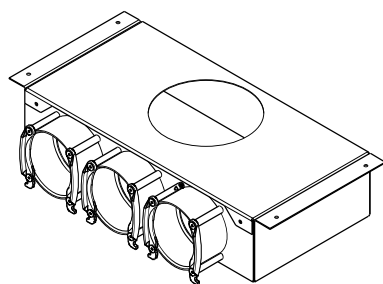
In-wall connection box UPK-90
for disc valve supply air TVZ-125 and
disc valve extract air TVA-125
made from galvanised sheet steel
with 1 connection DN 90,
building protection cover
Supply air:
1 x DN 90 up to 40 m³/h
Extract air:
1 x DN 90 up to 60 m³/h

6022 500



In-wall connection box UPK-60
for disc valve supply air TVZ-125 and
disc valve extract air TVA-125
made from galvanised sheet steel
with connections DN 75,
building protection cover
Supply air:
1 x DN 75 up to 30 m³/h
2 x DN 75 up to 40 m³/h
Extract air:
1 x DN 75 up to 30 m³/h
2 x DN 75 up to 60 m³/h

6022 963



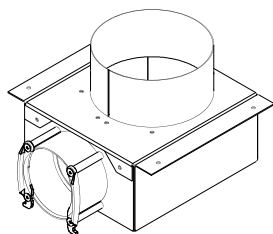
In-wall connection box UPK-80
for disc valve waste air TVA-125
or disc valve TVZ-125
made of galvanized sheet steel
with connections DN 75,
building protection cover
Supply air:
1 x DN 75 to 30 m³/h
2 x DN 75 to 40 m³/h
3 x DN 75 to 50 m³/h
Extract air:
1 x DN 75 to 30 m³/h
2 x DN 75 to 60 m³/h
3 x DN 75 to 70 m³/h

6036 893

■ Part No.

Air grilles - wall/ceiling

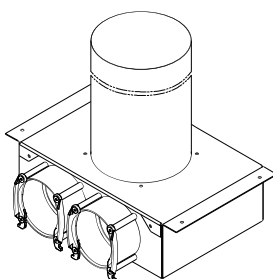
Part No.


Application:
Filigree blankets

Filigree ceiling set FDS-125
for disc valve supply air TVZ-125 and
disc valve extract air TVA-125
made from galvanised sheet steel
with 1 resp. 2 connections DN 75,
special DN 125
collar for filigree ceiling lead-through,
building protection cover
Supply air:
1 x DN 75 up to 30 m³/h
2 x DN 75 up to 40 m³/h
Extract air:
1 x DN 75 up to 30 m³/h
2 x DN 75 up to 60 m³/h

Type

| | |
|---------------|----------|
| FDS-125 1x 75 | 6022 682 |
| FDS-125 2x 75 | 6035 983 |
| FDS-125 3x75 | 6044 585 |


Special application


In-wall connection box
UPK-125 X x75 LN
For extract air disc valve TVA-125
or supply air disc valve TVZ-125
made from galvanised sheet steel
with spiral-seam tube DN 125, L = 400 mm
with 1,2 or 3 connections DN 75, building
protection cover
Supply air:
1 x DN 75 up to 30 m³/h
2 x DN 75 up to 40 m³/h
3 x DN 75 up to 50 m³/h
Extract air:
1 x DN 75 up to 30 m³/h
2 x DN 75 up to 60 m³/h
3 x DN 75 up to 70 m³/h

Type

| | |
|------------------|----------|
| UPK-125 1x 75 LN | 6036 493 |
| UPK-125 2x 75 LN | 6037 034 |
| UPK-125 3x 75 LN | 6035 468 |

■ Part No.

| Air grilles - wall/ceiling | | Part No. |
|---|---|----------|
| Supply air/extract air disc valve | | |
|  | Disc valve extract air TVZ-125 for connection box UPK and FDS of sheet steel (white RAL 9016) with inst. frame DN 125, height: 45 mm supply air up to 40 m³/h | 2056 417 |
| | Disc valve extract air TVA-125 for connection box UPK and FDS of sheet steel (white RAL 9016) with inst. frame DN 125, height: 45 mm extract air up to 60 m³/h | 2056 416 |
| | Spigot DN 125 for connection box UPK-60, UPK-90 and UPK-30 of galvanised sheet steel DN 125, height: 40 mm | 2024 180 |

■ Part No.

Air grille set - wall/ceiling

Part No.

Application:
Masonry walls, lightweight construction


Intake air set ZUL-Set-125-75

6034 429

Connection box UPK-30 with connection nozzle DN 75 and building protection cover, disc valve TVZ-125 with installation frame, T-piece TCPU-150-80 and sleeve MF-150.
Supply air up to 30 m³/h

Extract air set ABL-Set-125-75

6034 053

Connection box UPK-30 with connection nozzle DN 75 and building protection cover, disc valve TVA-125 with installation frame, T-piece TCPU-150-80 and sleeve MF-150.
Extract air up to 30 m³/h

Application:
Mass concrete


Supply air set BZK-125-75

6034 430

for concrete installation
Connection box UPK-30 with connection nozzle DN 75 and building protection cover, spigot and installation frame, disc valve TVZ-125.
Supply air up to 30 m³/h

Extract air set BAK-125-75

6034 054

for concrete installation
Connection box UPK-30 with connection nozzle DN 75 and building protection cover, spigot and installation frame, disc valve TVA-125.
Extract air up to 30 m³/h

Supply air set BZK-125-90

6034 431

for concrete installation
Connection box UPK-90 with connection nozzle DN 90 and building protection cover, spigot and installation frame, disc valve TVZ-125.
Supply air up to 40 m³/h

Extract air set BAK-125-90

6034 055

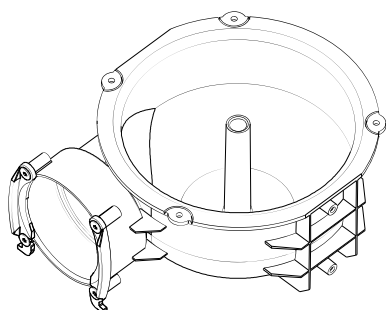
for concrete installation
Connection box UPK-90 with connection nozzle DN 90 and building protection cover, spigot and installation frame, disc valve TVA-125.
Extract air up to 60 m³/h

■ Part No.

Air grilles - wall/ceiling

Part No.

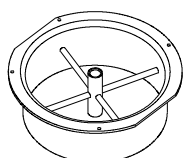
Application:
Mass concrete, masonry walls, light-weight construction



Tangential casing TG-30
for supply and extract air
in combination with tangential
design grille.
Casing of plastic with connection nozzle
DN 75, fixing angles and building
protection cover.
Supply air:
1 x DN 75 up to 30 m³/h
Extract air:
1 x DN 75 up to 30 m³/h

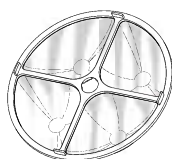
6023 060

Connection casing accessories



Tangential extension TGA
for tangential casing TG-30
for connecting design grille
for connection extension which is
required for lightweight walls
and filigree concrete.

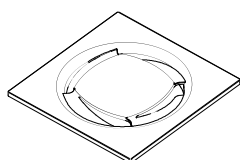
6022 965



Extract air filter ATG-30
for tangential casing TG-30 and
tangential extension TGA
of cleanable, fine-mesh polyamide net
with plastic frame.

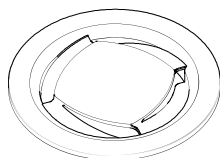
5020 632

Grilles - supply air/extract air



Tangential design grille
for tangential casing TG-30 and
tangential extension TGA
of plastic (white RAL 9016)
with plug connection
Suitable for
supply air up to 30 m³/h
extract air up to 30 m³/h
can be painted on site.

6034 059



Tangential design grille TR-30
for tangential casing TG-30 and
tangential extension TGA
of plastic (white RAL 9016)
with plug connection
Suitable for
supply air up to 30 m³/h
extract air up to 30 m³/h
can be painted on site.

6039 998

Application:
Concrete installation (in-situ concrete)












Design slit grille SD-X
With connection box for encasing in concrete.
For linear air distribution, consisting of grille of
anodised aluminium and the connection box
of galvanised steel with 1 connection nozzle
Ø X mm.
SD-75 air flow up to 30 m³/h
SD-90 air flow up to 40 m³/h
SD-500

6022 617

6022 543

2037 000

■ Part No.

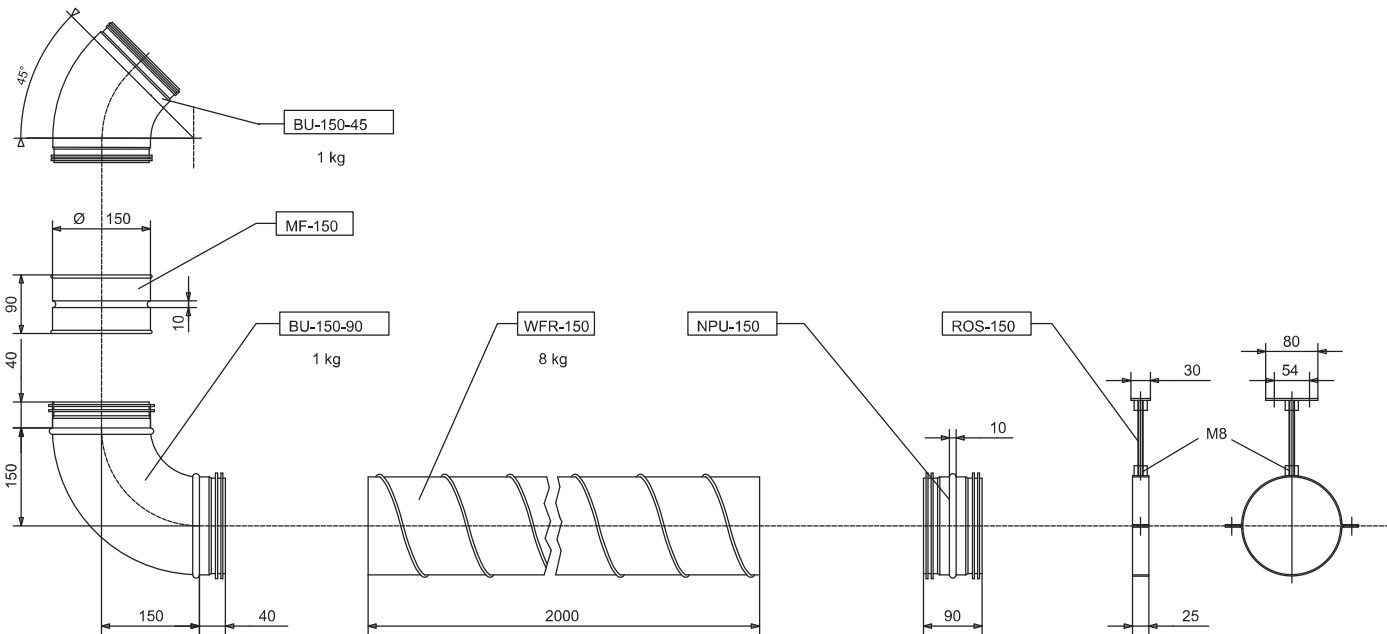
| | HomeVent® comfort filters, predecessor models | Part No. |
|---|---|----------|
|  | Supply air filter (180) for HomeVent® RS-180, comfort FR (180), FRS (180) pollen/fine particulate cassette filter filter class F7 | 5014 966 |
|  | Supply air activated carbon filter (180) for HomeVent® RS-180 comfort FR (180), FRS (180) High-capacity Z-filter with high efficiency against particles (pollen, fine dust, etc.) and against gaseous pollutants and odours. Filter class F7 alternative to supply air filter (180) | 5033 325 |
|  | Extract air filter (180) for HomeVent® RS-180, comfort FR (180), FRS (180) coarse particulate cassette filter filter class G4 | 5014 967 |
|  | Supply air filter (250) for HomeVent® RS-250, comfort FR (250) pollen/fine particulate cassette filter filter class F7 | 5007 451 |
|  | Supply air activated carbon filter (250) for HomeVent® RS-250, comfort FR (250) High-capacity Z-filter with high efficiency against particles (pollen, fine dust etc.) and against gaseous pollutants and odours. Filter class F7 As an alternative to supply air filter (250) | 6020 844 |
|  | Extract air filter (250) for HomeVent® RS-250, comfort FR (250) coarse particulate cassette filter filter class G4 | 5007 452 |
|  | Supply air filter (300, 360) for HomeVent® comfort FR (300, 360) pollen fine dust Z-filter filter class F7 | 5033 323 |
|  | Supply air activated carbon filter (300, 360) for HomeVent® comfort FR (300, 360) High-capacity Z-filter F7 against particles (pollen, fine dust, etc.) and against gaseous pollutants and odours. Filter class F7 alternative to supply air filter (300, 360) | 5033 324 |
|  | Extract air filter (300, 360) for HomeVent® comfort FR (300, 360) coarse dust Z-filter filter class G4 | 5033 322 |

■ Technical data

Pipe system DN 150

The pipe system consists of galvanised steel with double lip seal.
Pipe as per DIN 24145; 0.6 mm thick.

| Volume flow [m³/h] | [Pa/m] Pipe | Pressure drop [Pa] 90° elbow | [Pa] 45° elbow |
|-----------------------|----------------|---------------------------------|-------------------|
| 100 | 0.3 | 0.7 | 0.5 |
| 150 | 0.6 | 1.5 | 1.0 |
| 200 | 1.0 | 2.5 | 1.5 |
| 250 | 1.5 | 4.0 | 2.0 |



Thermal insulation for main duct
DN 150

The insulation consists of synthetic rubber (closed-cell EPDM with resistant outside skin), insulation thickness 25 mm, black.
Thermal conductance λ at 0 °C is 0.032 W/mK
Steam diffusion resistance ≥ 7000
Fire class 5.3 or B1



Thermal insulation tube: for spiral-seam tube DN 150 mm, case contains 3 tubes, each with a length of 2 m

Adhesive: ready-to-use adhesive with brush 0.25 l

Adhesive tape: of synthetic rubber, 50 mm wide, 15-meter roll

Thermal insulation for pipe elbow: Thermal insulation mat cut to length for pipe elbow (2-part)

Pipe clamp with thermal insulation sleeve: For installation of pipes without thermal bridges

Attention: Comply with regional regulations on thermal insulation.

■ Technical data

IsiPipe and IsiPipe Plus pipe system EPP

Piping consists of diffusion-tight EPP,

Wall thickness: 15 mm, grey or 43 mm, black

Thermal conductance: $\lambda = 0.037 \text{ W/mK}$ or $\lambda = 0.035 \text{ W/mK}$



| D1 Pipe | d | L1 | D2 | D3 | D4 |
|------------|----|------|-----|-----|-----|
| 150 | 15 | 500 | 180 | 180 | 210 |
| 150 | 15 | 1000 | 180 | 180 | 210 |
| 160 | 43 | 500 | 246 | 203 | |
| 160 | 43 | 1000 | 246 | 203 | |
| 200 | 43 | 500 | 286 | 243 | |
| 200 | 43 | 1000 | 286 | 243 | |

Sleeve

| D1 | d | L1 | D2 | D3 | D4 |
|-----|----|-----|-----|-----|-----|
| 150 | 15 | 85 | 180 | 210 | 210 |
| 160 | 43 | 140 | 246 | 203 | 286 |
| 200 | 43 | 140 | 286 | 243 | 326 |

d = thickness of material in mm

Heat conductivity 0.035 W/mK

Dimensions in mm

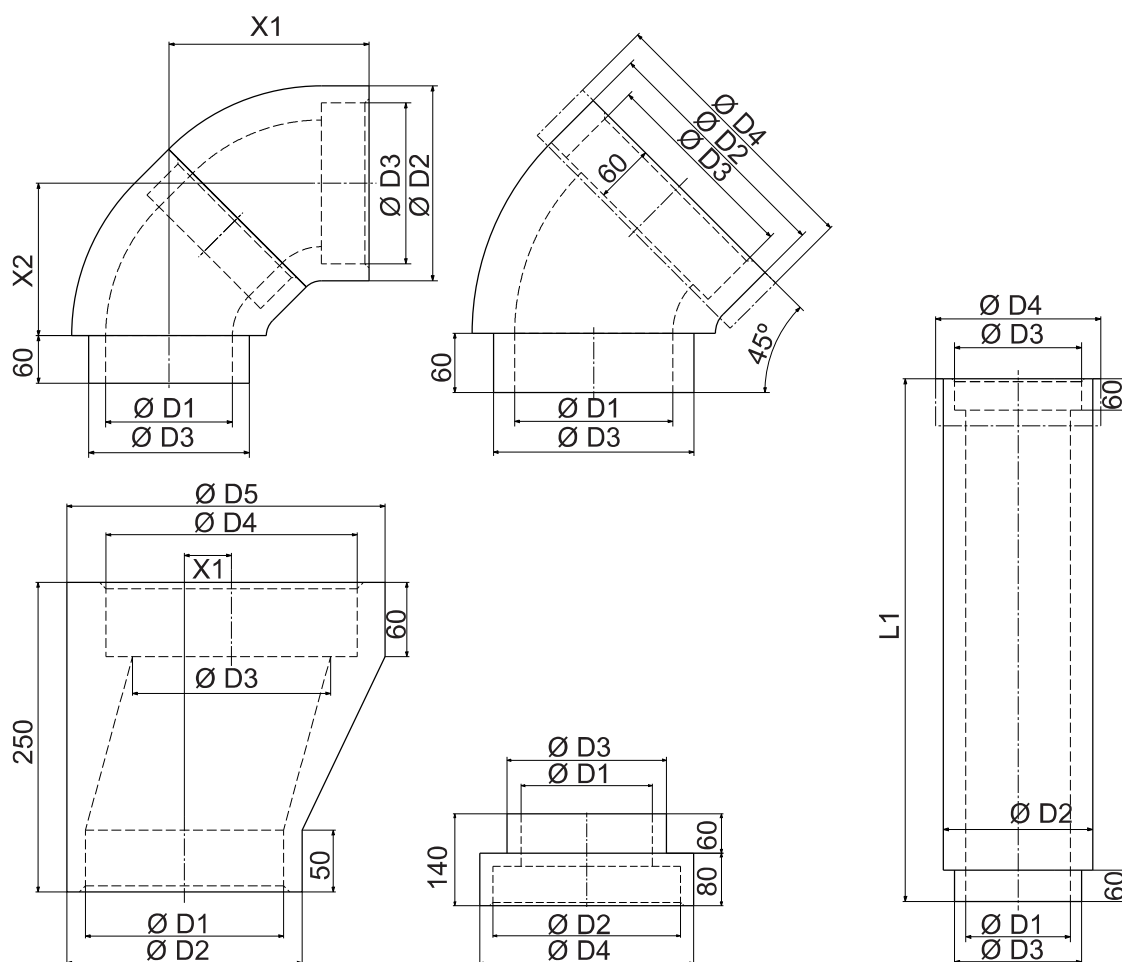
| D1 | d | D2 | D3 | D4 | D5 | X1 | X2 |
|-----------------------|----|-----|-----|-----|----|----|----|
| Elbow bend 45° | | | | | | | |
| 150 | 15 | 180 | 180 | 210 | | | |
| 160 | 43 | 246 | 203 | | | | |
| 200 | 43 | 286 | 243 | | | | |

Elbow bend 90°

| D1 | d | D2 | D3 | D4 | D5 | X1 | X2 |
|-----|----|-----|-----|-----|----|-----|-----|
| 150 | 15 | 180 | 180 | 210 | | 245 | |
| 160 | 43 | 246 | 203 | | | 252 | 192 |
| 200 | 43 | 286 | 243 | | | 272 | 212 |

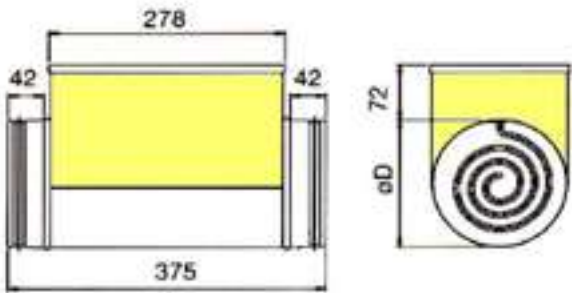
Eccentric adapter

| D1 | d | D2 | D3 | D4 | D5 | X1 | X2 |
|---------|----|-----|-----|-----|-----|----|----|
| 150/160 | 43 | 180 | 160 | 203 | 257 | 38 | |
| 160/160 | 43 | 190 | 160 | 203 | 257 | 38 | |
| 180/200 | 43 | 210 | 200 | 243 | 290 | 48 | |

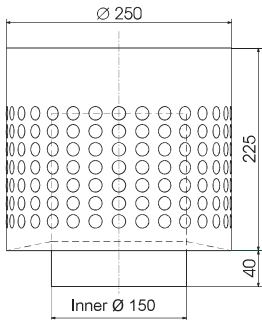


■ Technical data

Komfort Plus CB-150-3
for tubing DN 150 (Supply air duct)
guarantees a supply air temperature of 17°C at
an outside temperature below -15°C. Equipped
with overheating protection.
On site: flow monitor
Pipe connection: DN 150
Heat output up to a maximum of 600 W.
Weight: 3.2 kg
Not suitable for IsiPipe pipeline.

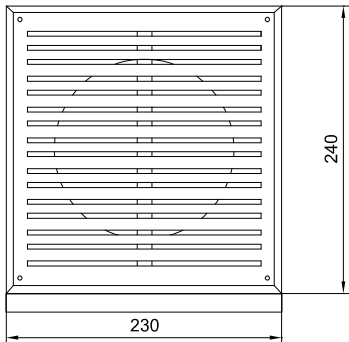
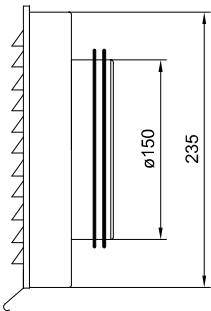


Cowl HA-250
for spiral-seam tube DN 150
for outside and exhaust air
of galvanised sheet steel
Installation position: vertical

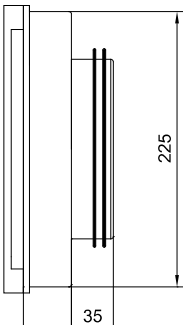


| Volume flow [m³/h] | Pressure drop Outside air [Pa] | Pressure drop Exhaust air [Pa] |
|-----------------------|--------------------------------------|--------------------------------------|
| 150 | 10 | 5 |
| 200 | 18 | 9 |
| 250 | 28 | 15 |

Weatherproof grille WG-150
for spiral-seam tube DN 150
for outside and exhaust air
of aluminium with rain lug, can be
painted
with double lip seal,
pipe nozzle DN 150



| Volume flow [m³/h] | Pressure drop Outside air [Pa] | Pressure drop Exhaust air [Pa] |
|-----------------------|--------------------------------------|--------------------------------------|
| 150 | 7 | 7 |
| 200 | 12 | 15 |
| 250 | 18 | 24 |

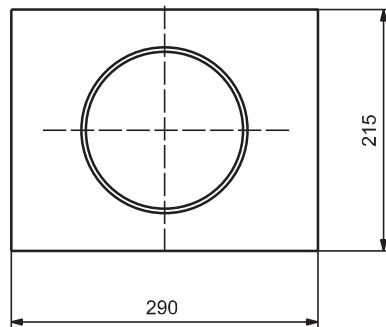
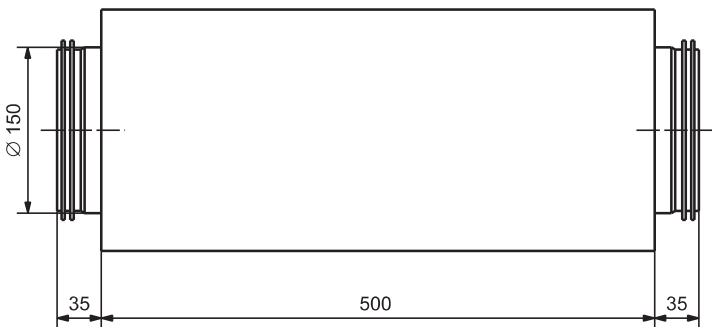


■ Technical data

Silencer SD-150-500

The silencer consists of a rectangular casing of galvanised steel with connection nozzles on both sides. The housing is lined on the inside with highly effective sound absorbing material. The unit can be cleaned through the pipe nozzle.

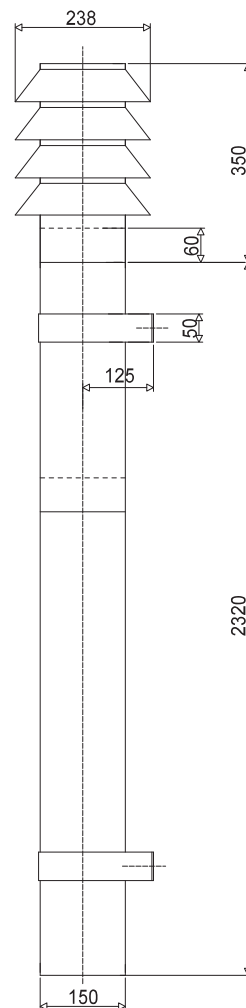
| Frequency [Hz] | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|-----|-----|-----|------|------|------|------|
| Damping [dB] | 6 | 10 | 19 | 23 | 32 | 25 | 16 |



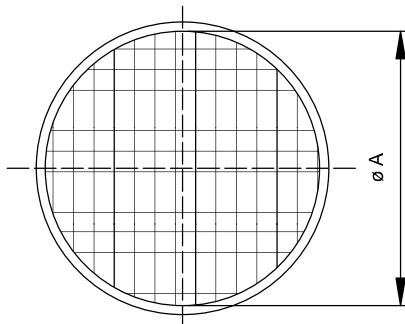
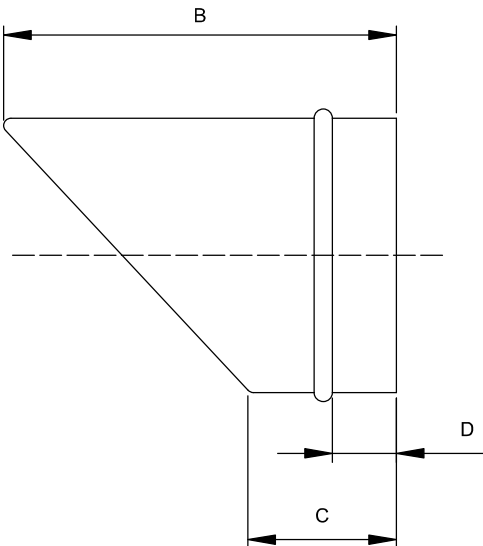
Outside air intake set AAS-150

for spiral-seam tube DN 150,
galvanic isolation of the connection
for outside and exhaust air
of stainless steel, lamella cowl,
1 pipe DN 150, length: 0.5 m,
2 pipes DN 150, length: 1 m and
2 wall mountings

| Volume flow [m³/h] | Pressure drop of cowl [Pa] |
|-----------------------|-------------------------------|
| 100 | 3 |
| 150 | 5 |
| 200 | 8 |
| 250 | 12 |



Exhaust air nozzle FST
for spiral-seam tube DN 150
of galvanised sheet steel
with bird protection grille DN 150
for horizontal installation

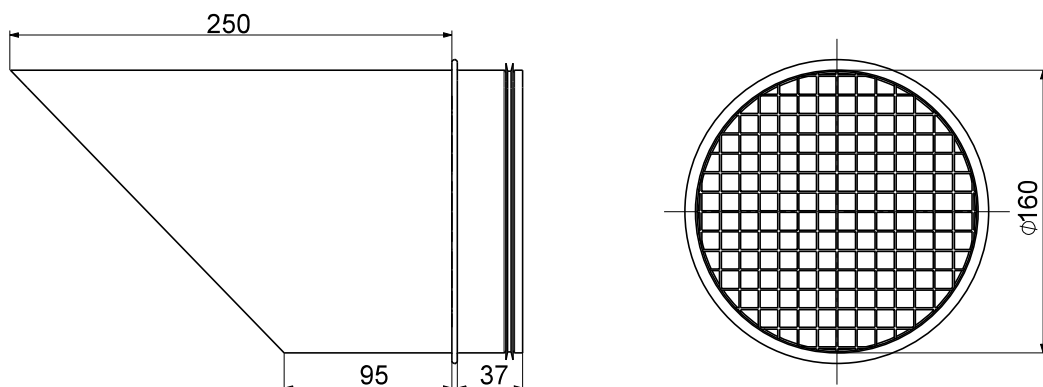


| | A | B | C | D |
|---------|-----|-----|----|----|
| FST-150 | 150 | 190 | 40 | 45 |
| FST-180 | 180 | 270 | 90 | 45 |
| FST-200 | 200 | 245 | 45 | 45 |

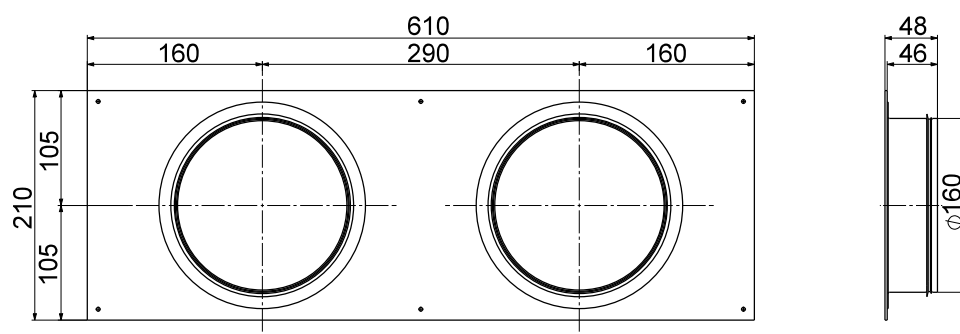
■ Technical data

Exhaust air nozzle FST-160

for spiral-seam tube DN 160 made of galvanised sheet steel with bird protection grille, for horizontal installation



Plywood
for wall outlet, Ø160

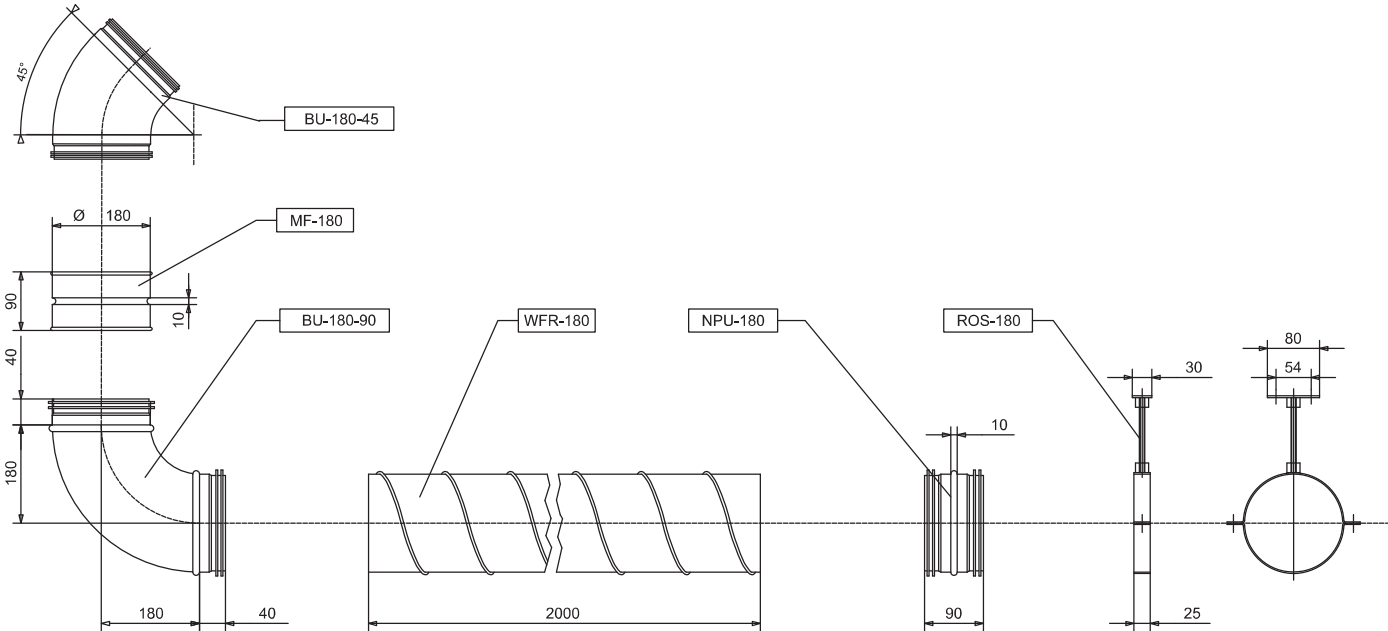


■ Technical data

Pipe system DN 180

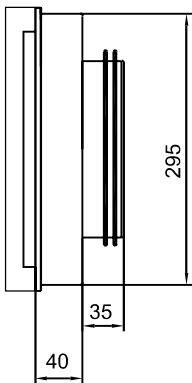
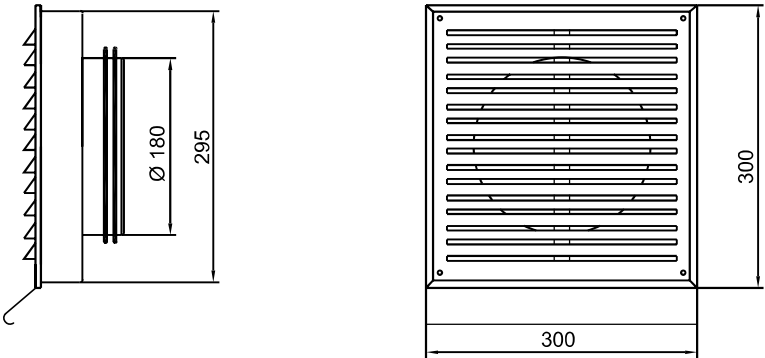
The pipe system consists of galvanised steel with double lip seal.
Pipe 0.5 mm thick.

| Volume flow [m³/h] | [Pa/m] Pipe | Pressure drop [Pa] 90° elbow | [Pa] 45° elbow |
|-----------------------|----------------|---------------------------------|-------------------|
| 150 | 0.4 | 0.8 | 0.5 |
| 250 | 0.6 | 2.0 | 1.0 |
| 350 | 1.0 | 4.0 | 2.0 |



Weatherproof grille WG-180

for spiral-seam tube DN 180
for outside and exhaust air
of aluminium with rain lug, can be
painted
with double lip seal,
pipe nozzle DN 180



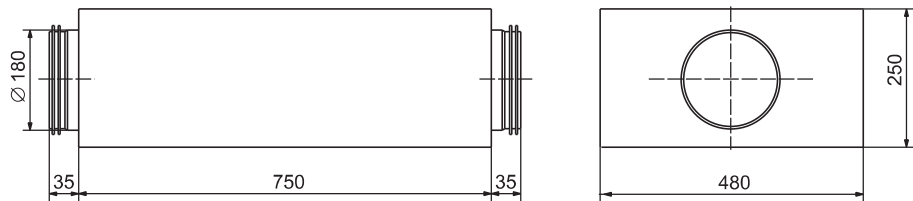
| Volume flow [m³/h] | Pressure drop [Pa] |
|-----------------------|-----------------------|
| 150 | 6 |
| 250 | 9 |
| 350 | 13 |

■ Technical data

Silencer FSR-180-750

The silencer consists of a rectangular casing of galvanised steel with connection nozzles on both sides. The housing is lined on the inside with highly effective sound absorbing material. The unit can be cleaned through the pipe nozzle.

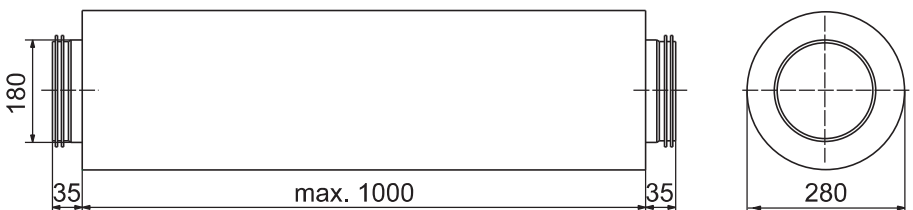
| Frequency [Hz] | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---------------------|-----|-----|-----|------|------|------|------|
| Simple damping [dB] | 4 | 11 | 12 | 12 | 12 | 7 | 3 |



Silencer FLSDA-180-1000

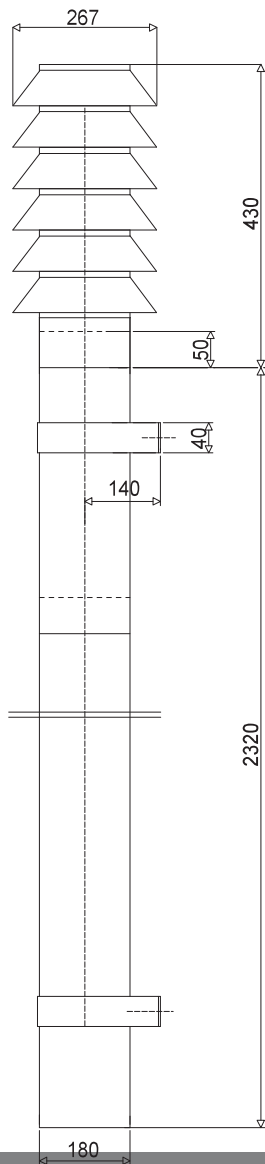
The silencer consists of a flexible aluminium envelope tube, inside from perforated aluminium tube with connection nozzles on both sides with double lip seal.

| Frequency [Hz] | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---------------------|-----|-----|-----|------|------|------|------|
| Simple damping [dB] | 5 | 13 | 30 | 42 | 34 | 24 | 13 |



Stainless steel cowl AAS-180

for spiral-seam tube DN 180
galvanic isolation of the connection
for outside and exhaust air
of stainless steel, lamella cowl,
1 pipe DN 180, length: 0.5 m,
2 pipes DN 180, length: 1 m and
2 wall mountings

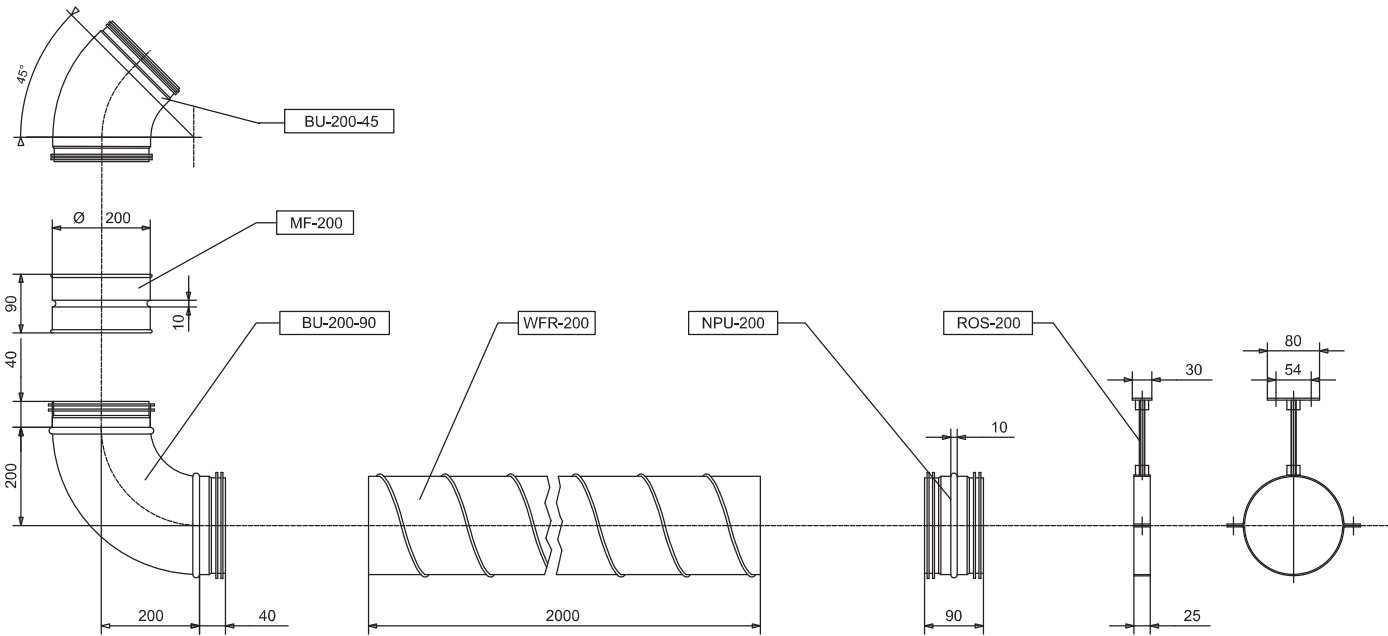


■ Technical data

Pipe system DN 200

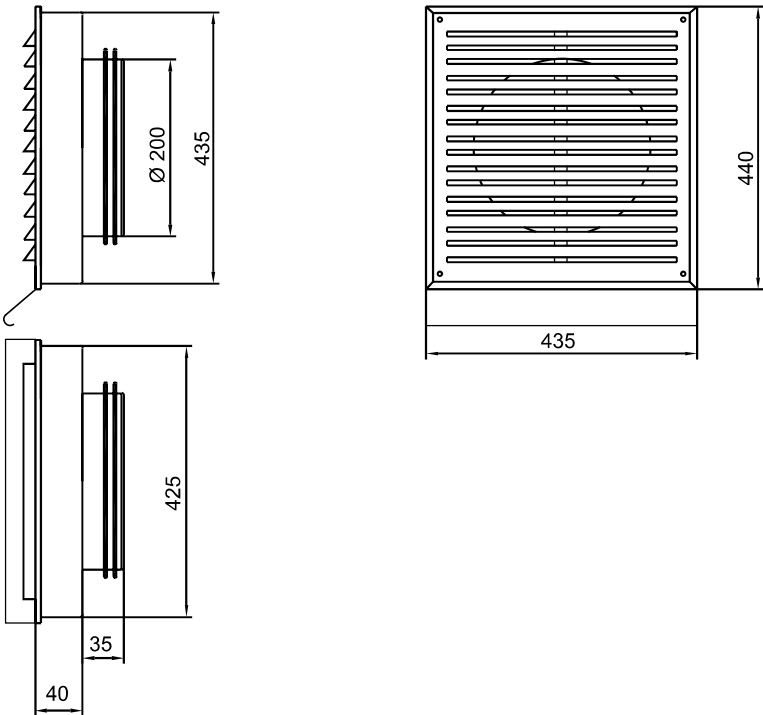
The pipe system consists of galvanised steel with double lip seal.
Pipe as per DIN 24145; 0.6 mm thick.

| Volume flow [m³/h] | [Pa/m] Pipe | Pressure drop [Pa] 90° elbow | [Pa] 45° elbow |
|-----------------------|----------------|---------------------------------|-------------------|
| 150 | 0.3 | 0.7 | 0.5 |
| 350 | 0.7 | 1.6 | 1.0 |
| 500 | 1.5 | 4.0 | 2.0 |



Weatherproof grille WG-200

for spiral-seam tube DN 200
for outside and exhaust air
of aluminium with rain lug, can be
painted
with double lip seal,
pipe nozzle DN 200



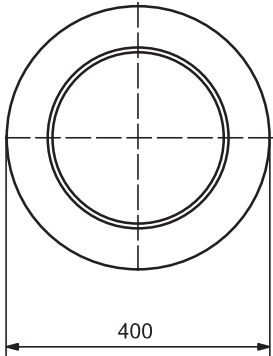
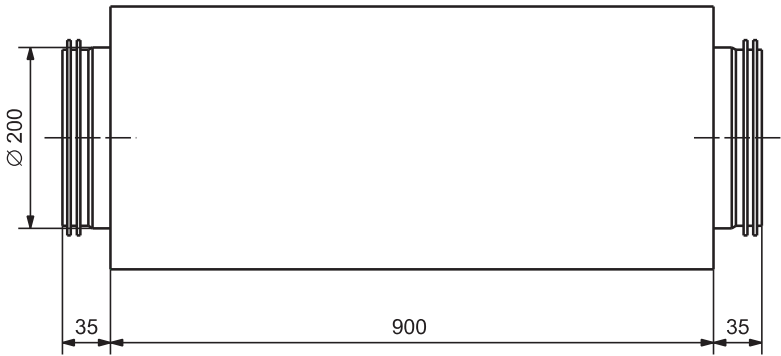
| Volume flow [m³/h] | Pressure drop [Pa] |
|-----------------------|-----------------------|
| 150 | 4 |
| 350 | 8 |
| 500 | 12 |

■ Technical data

Silencer SD-200-1000

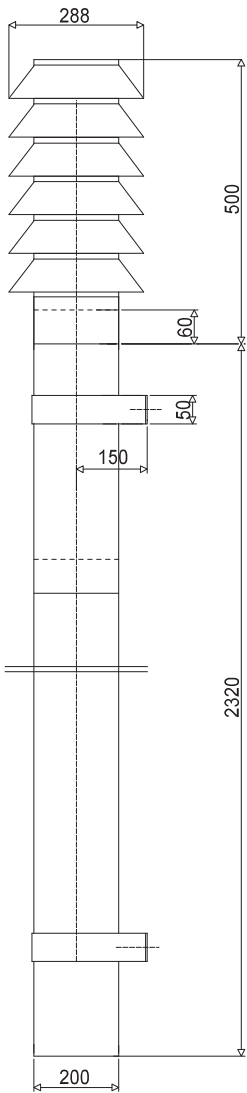
The silencer consists of a round casing of gal-
vanised steel with connection nozzles on both
sides. The housing is lined on the inside with
highly effective sound absorbing material.
The unit can be cleaned through the pipe
nozzle.

| Frequency [Hz] | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|-----|-----|-----|------|------|------|------|
| Damping [dB] | 5 | 15 | 26 | 26 | 19 | 10 | 5 |



Stainless steel cowl AAS-200

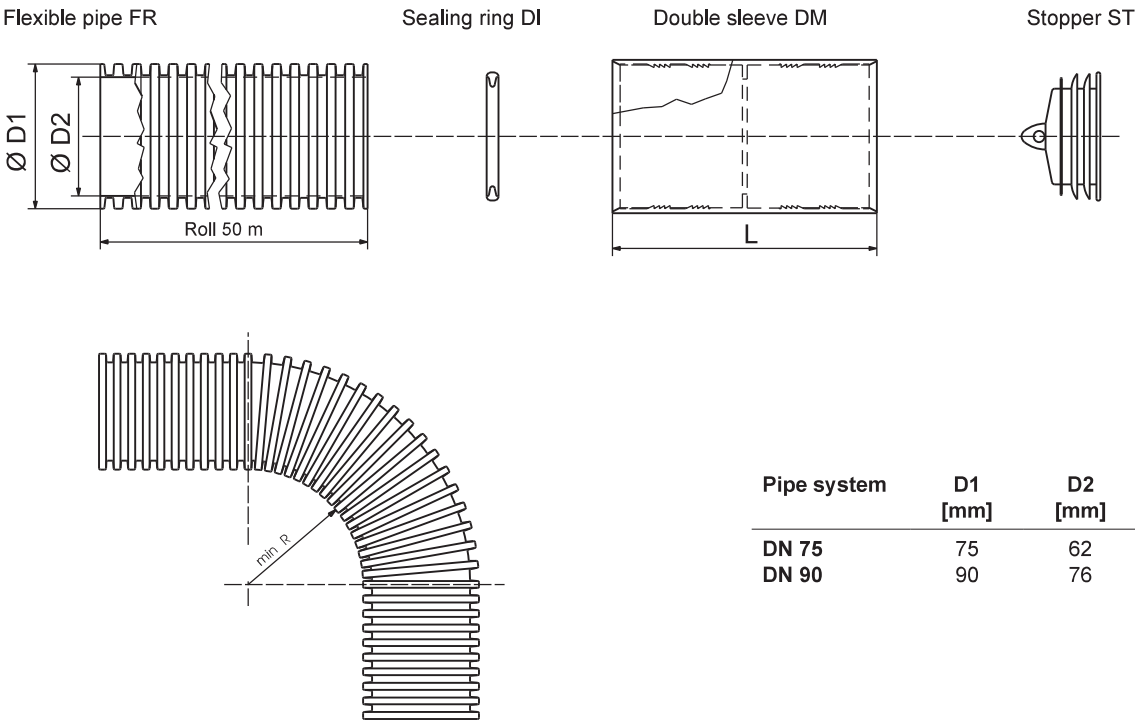
for spiral-seam tube DN 200
galvanic isolation of the connection
for outside and exhaust air
of stainless steel, lamella cowl,
1 pipe DN 200, length: 0.5 m,
2 pipes DN 200, length: 1 m and
2 wall mountings



■ Technical data

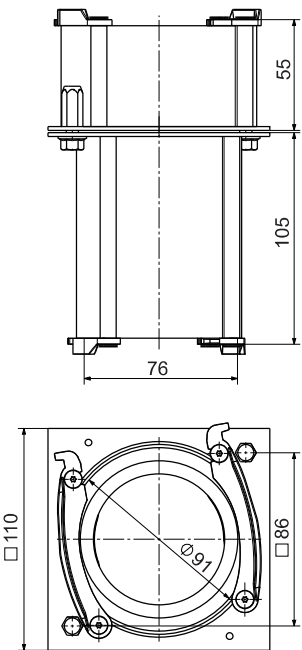
Pipe system distribution duct DN 75 and DN 90
The distribution duct is a flexible pipe of polyethylene PE-HD with a smooth inside wall, ribbed on the outside.
Antistatic coating
Weight 0.33 kg/m
Application limit: Air and ambient temperature -25...60 °C

| Pipe system | Volume flow [m³/h] | Pressure drop straight pipe [Pa/m] | Press loss pipe elbow 90° (r = 2D) [Pa] |
|-------------|-----------------------|--|---|
| DN 75 | 10 | 0.3 | 0.1 |
| DN 75 | 20 | 1.1 | 0.4 |
| DN 75 | 30 | 2.5 | 1.0 |
| DN 90 | 20 | 0.6 | 0.2 |
| DN 90 | 30 | 1.2 | 0.4 |
| DN 90 | 40 | 2.2 | 0.8 |



| Pipe system | D1 [mm] | D2 [mm] | L [mm] | R |
|-------------|------------|------------|-----------|----|
| DN 75 | 75 | 62 | 100 | 75 |
| DN 90 | 90 | 76 | 100 | 90 |

Formwork coupling SK-75/90
for flexible pipe DN 75 and 90
for extending a flexible pipe through the ceiling or the floor and extension from DN 75 to DN 90 without damaging the boarding.

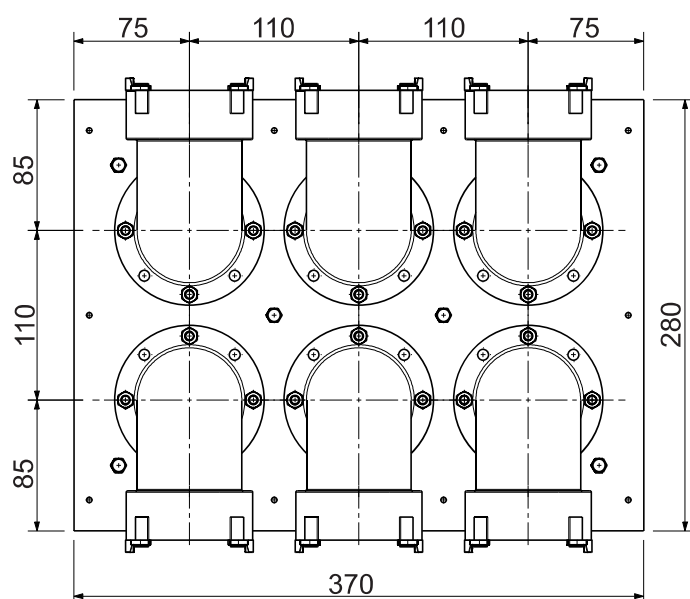
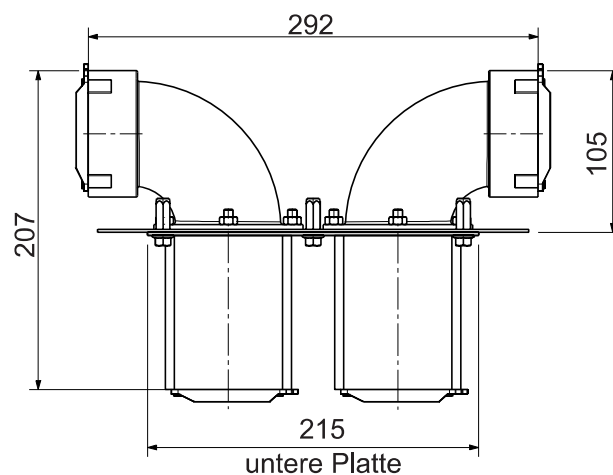
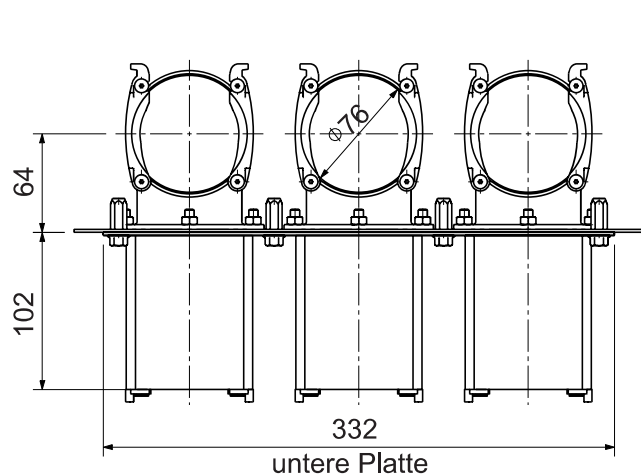


■ Technical data

Section distributor SV-6x75

For quick, space-saving installation of flexible pipes FR-75 in ceilings/floors and walls. Each 90° connection can be rotated in increments of 45°.

After completion of the building shell, the lower distributor plate is fitted and the flexible pipes FR-75 are simply connected up. The inside of the 90° nozzles is rounded to allow easy cleaning of the ducts.

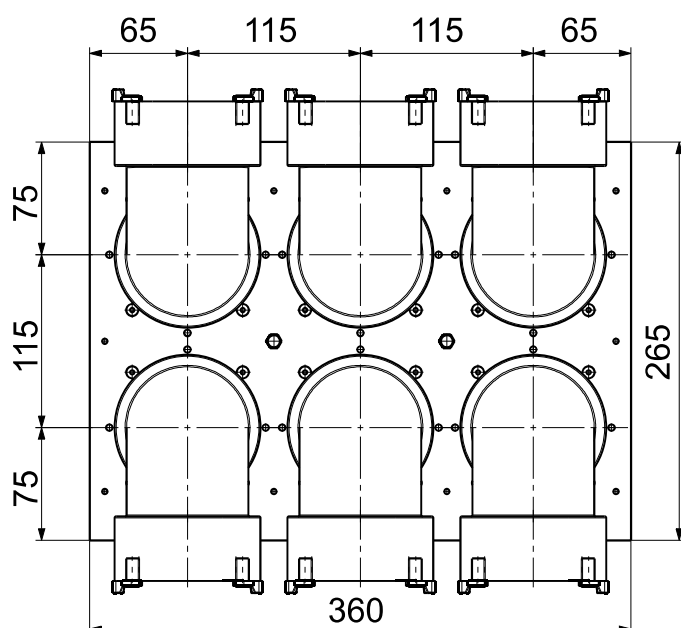
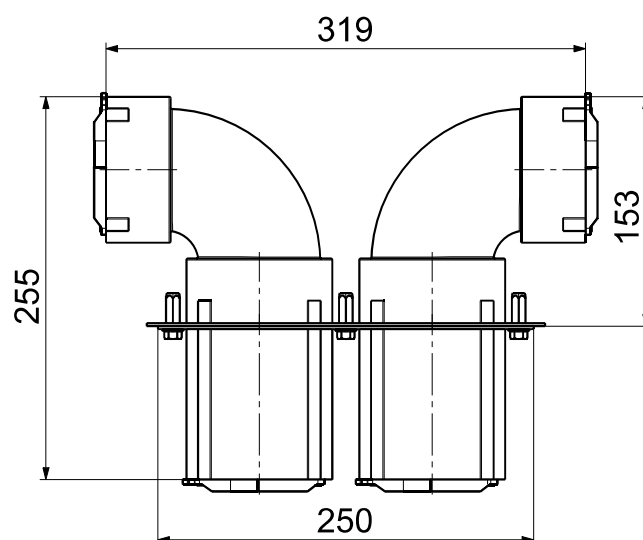
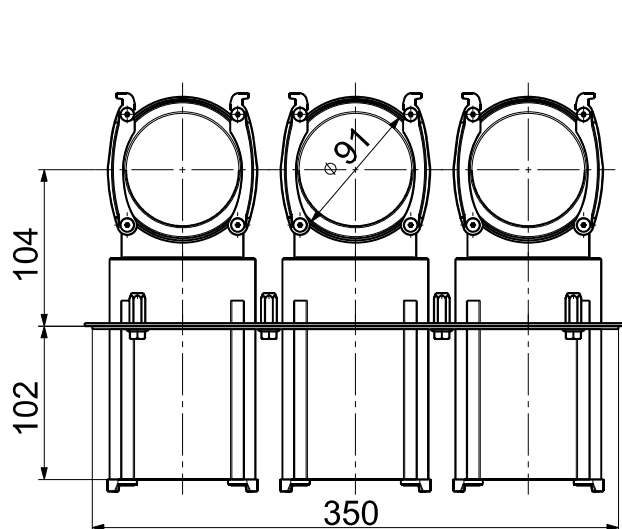


■ Technical data

Section distributor SV-6x90

For quick, space-saving installation of flexible pipes FR-75 in ceilings/floors and walls. Each 90° connection can be rotated in increments of 45°.

After completion of the building shell, the lower distributor plate is fitted and the flexible pipes FR-75 are simply connected up. The inside of the 90° nozzles is rounded to allow easy cleaning of the ducts.



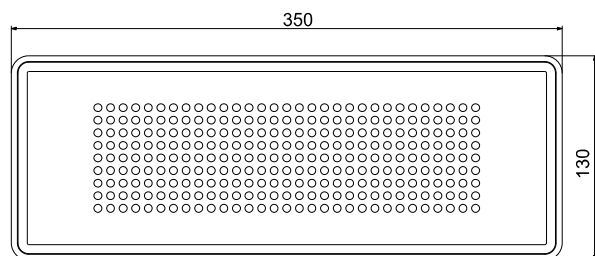
■ Technical data

Floor grille 100, 140

inox or white colour

for flat channel system 100 and 140

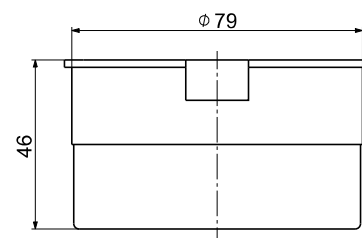
Dimensions: 350 x 130 mm



Stopper flat 75

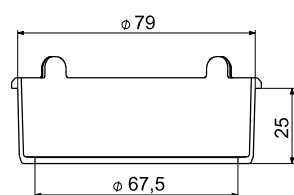
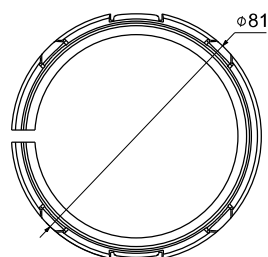
sealing plug for outlet 90°

lateral 125 - 2 x 75



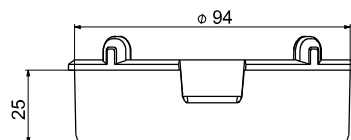
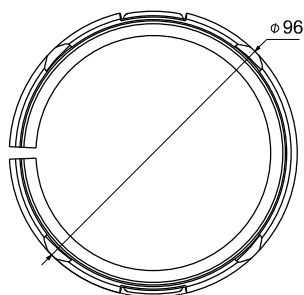
Click ring 75

for outlet 90° lateral 125 - 2 x 75



Click ring 90

for outlet 90° lateral 125 - 2 x 90

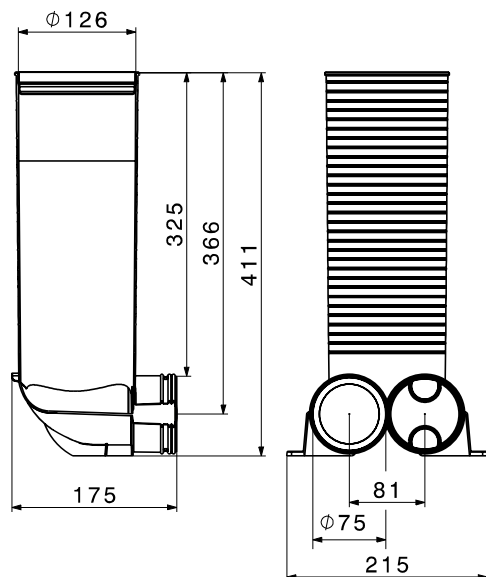


Outlet flat 90 125-75

Outlet round 90° lateral 125 - 2 x 75

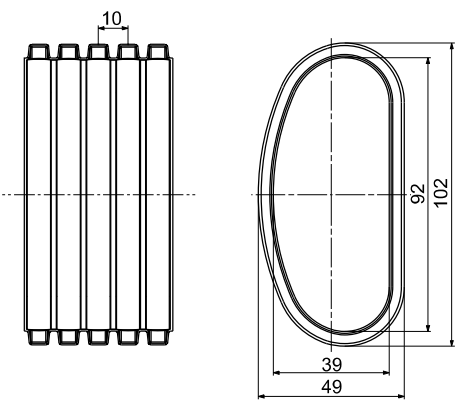
made of plastic 2 x 75/125 mm

Usable length 325 mm

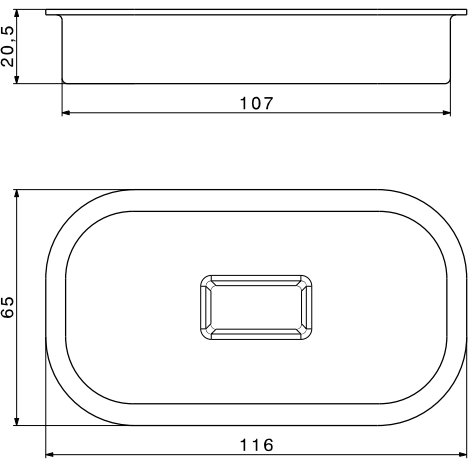


■ Technical data

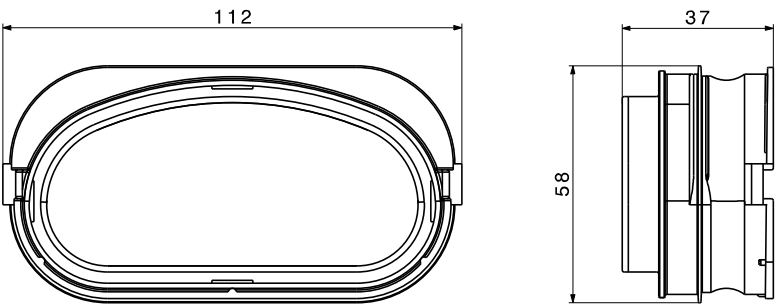
Flat channel 100
Flexible ventilation pipe 102 x 49 mm
Roll length 50 m



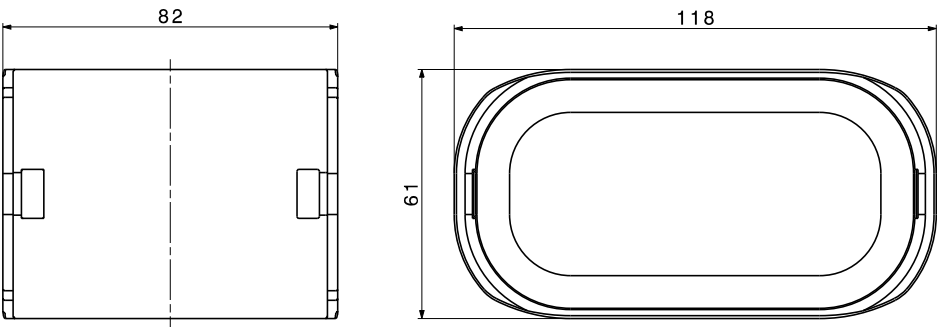
Stopper flat 100
for flat channel system 100 connections



Seal flat 100
for flat channel 100

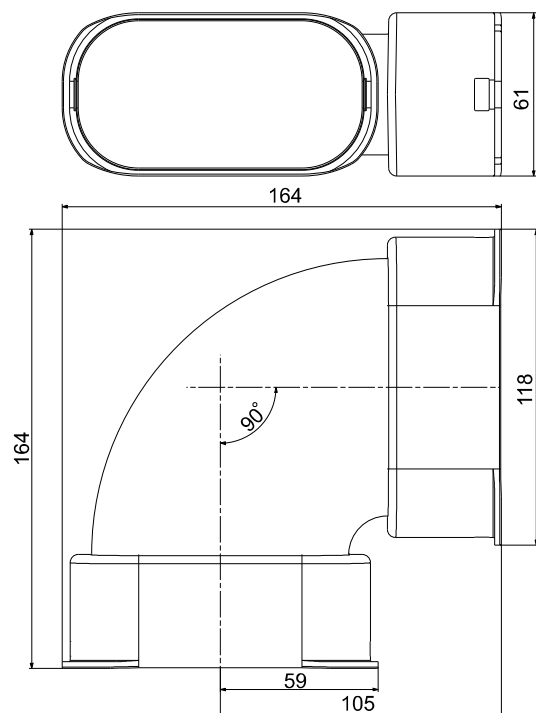


Sleeve 100
for flat channel 100

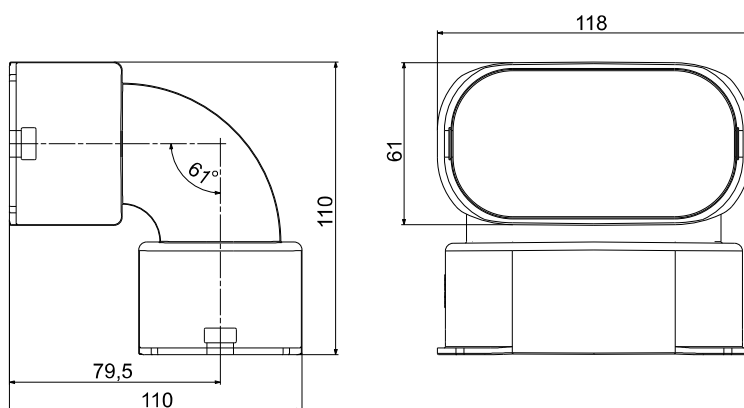


■ Technical data

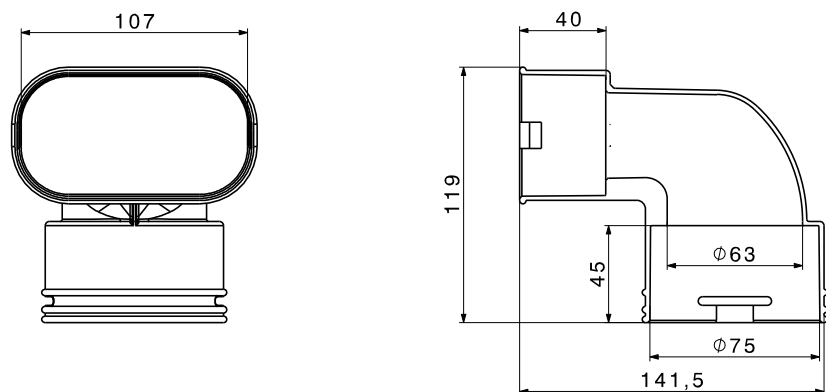
Arch horizontal flat 100 for flat channel 100



Arch vertical flat 100 for flat channel 100

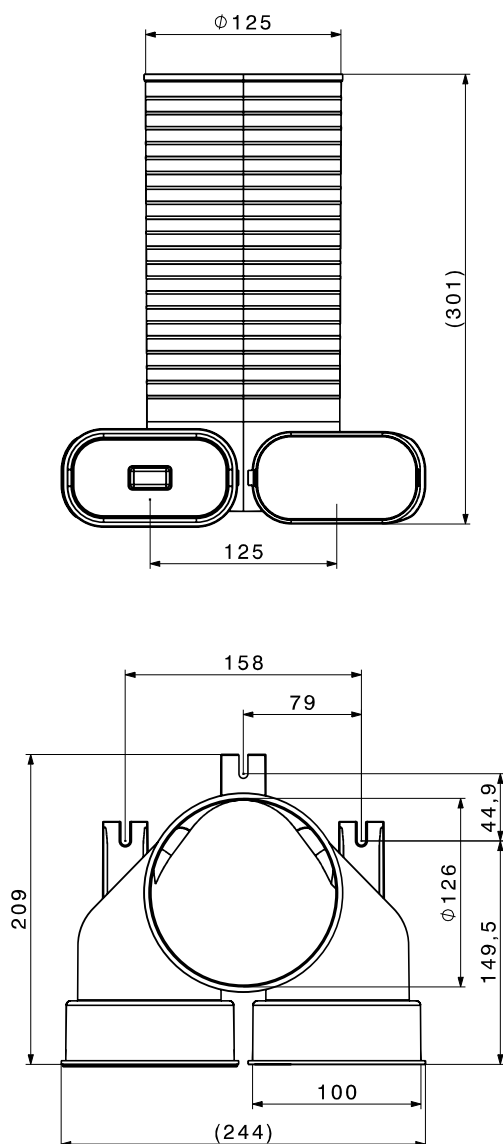


Arch vertical flat to round 100-75 Transition 90° round to flat

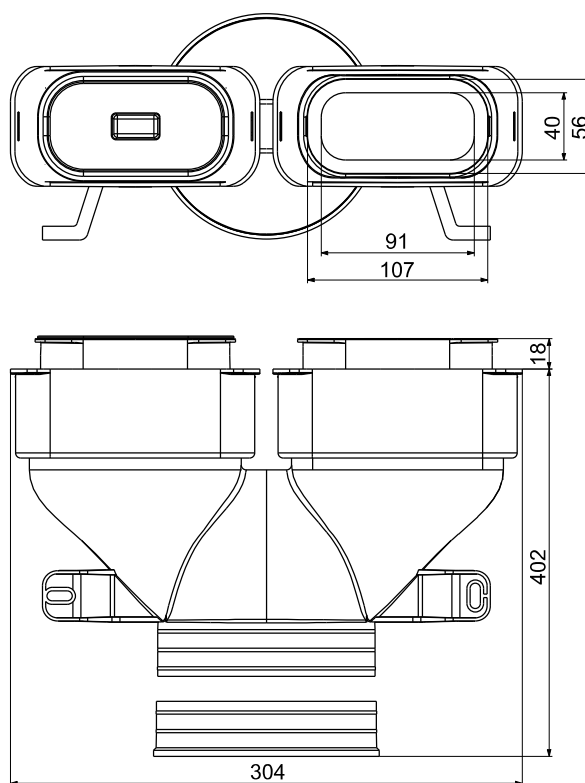


Technical data

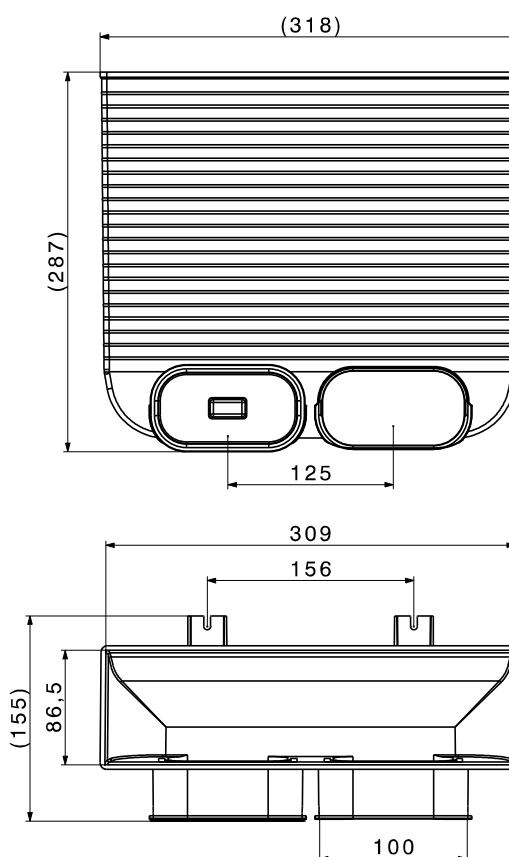
Outlet round, lateral 90° 125 - 2 x 100
for flat channel 100
incl. mounting bracket



Outlet round, front 125 - 2 x 100
for flat channel 100
incl. mounting bracket



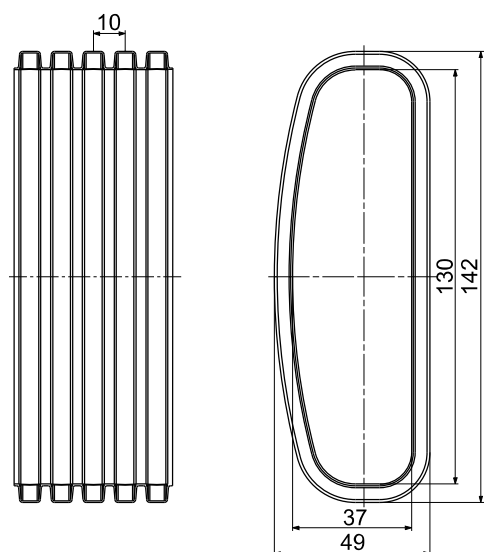
Floor exhaust flat 2 x 100
309 x 86.5 mm interior
2 flat channel 100 connections



■ Technical data

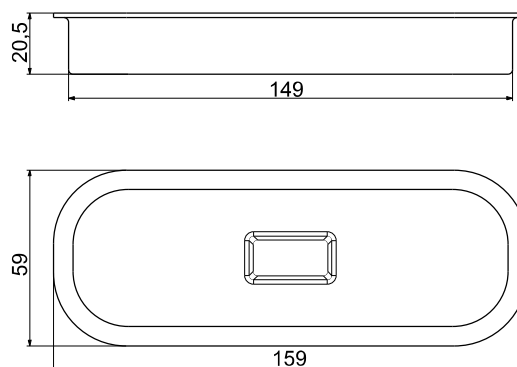
Flat channel 140

Flexible ventilation pipe 142 x 49 mm
Roll length 20 m



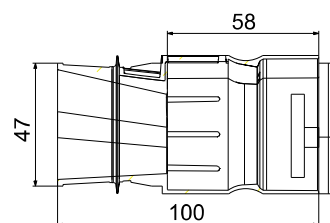
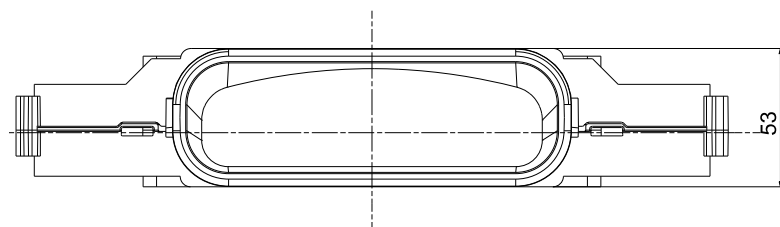
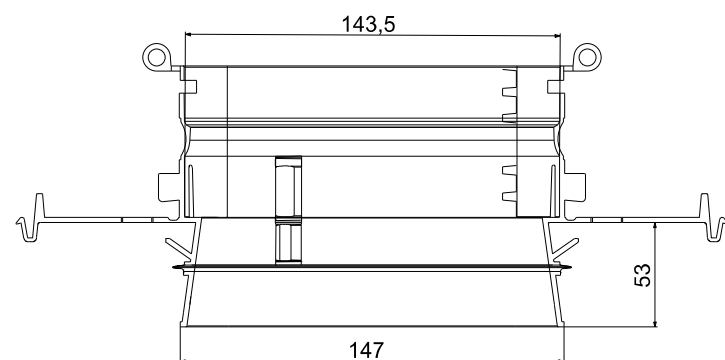
Stopper flat 140

for flat channel system 140 connections



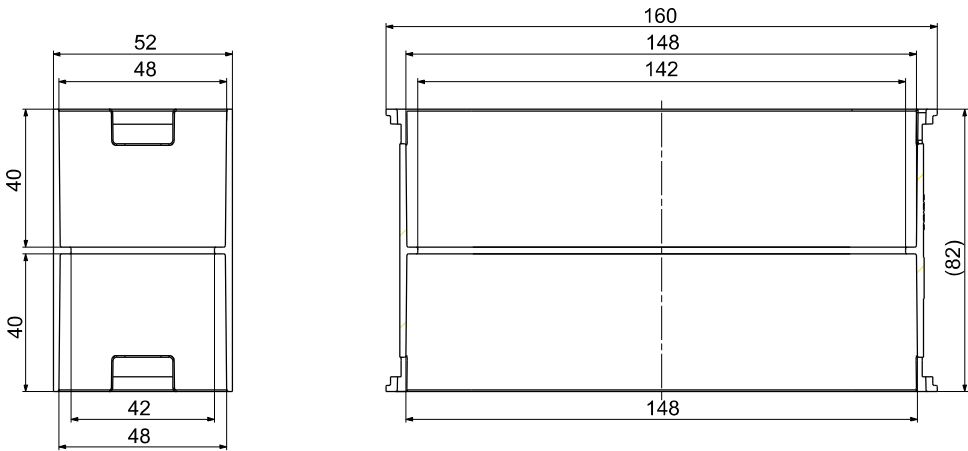
Seal flat 140

for flat channel 140

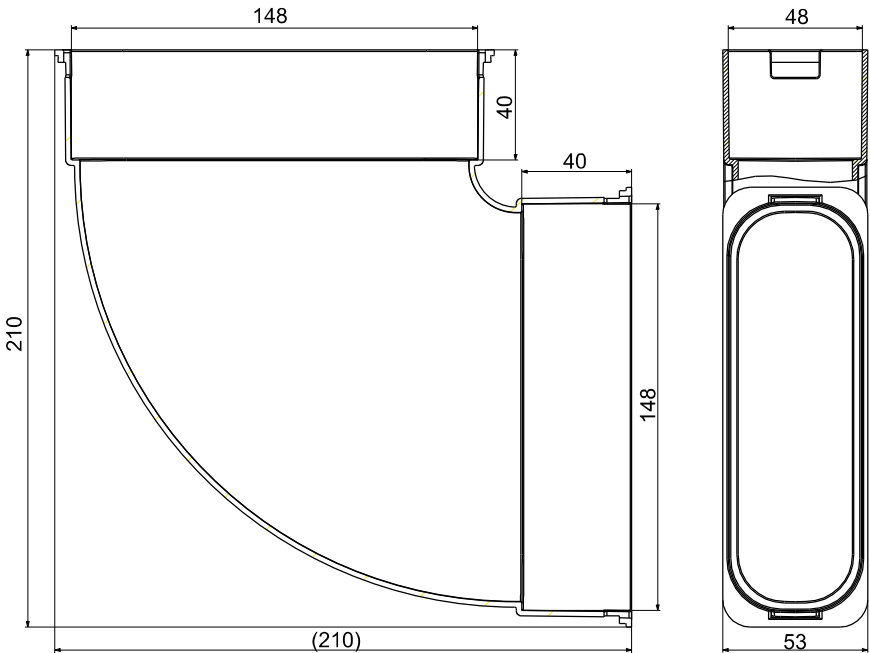


■ Technical data

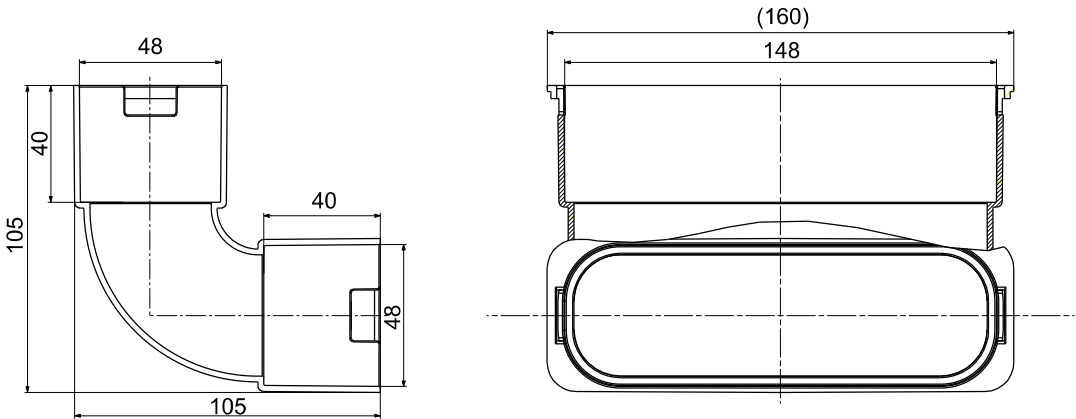
Sleeve 140
for flat channel 140



Arch horizontal flat 140
for flat channel 140



Arch vertical flat 140
for flat channel 140

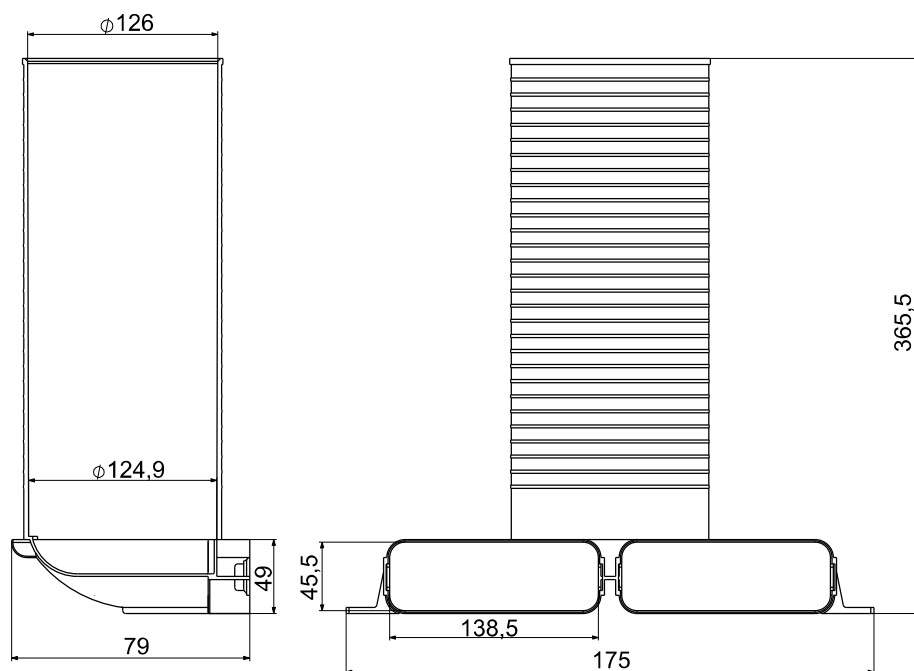


■ Technical data

Outlet round, lateral 90° 125 - 2 x 140

for flat channel 140

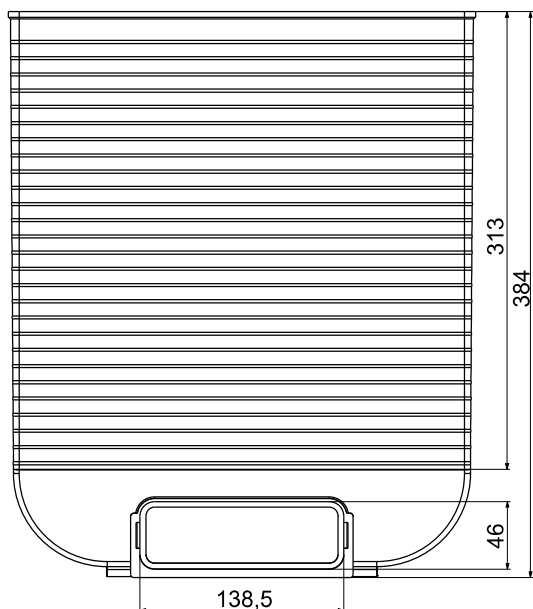
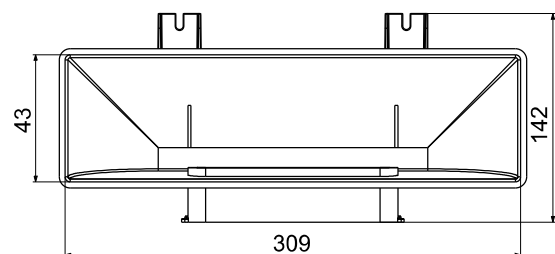
incl. mounting bracket



Floor exhaust flat 1 x 140

309 x 85 mm interior

1 flat channel 140 connection



■ Technical data

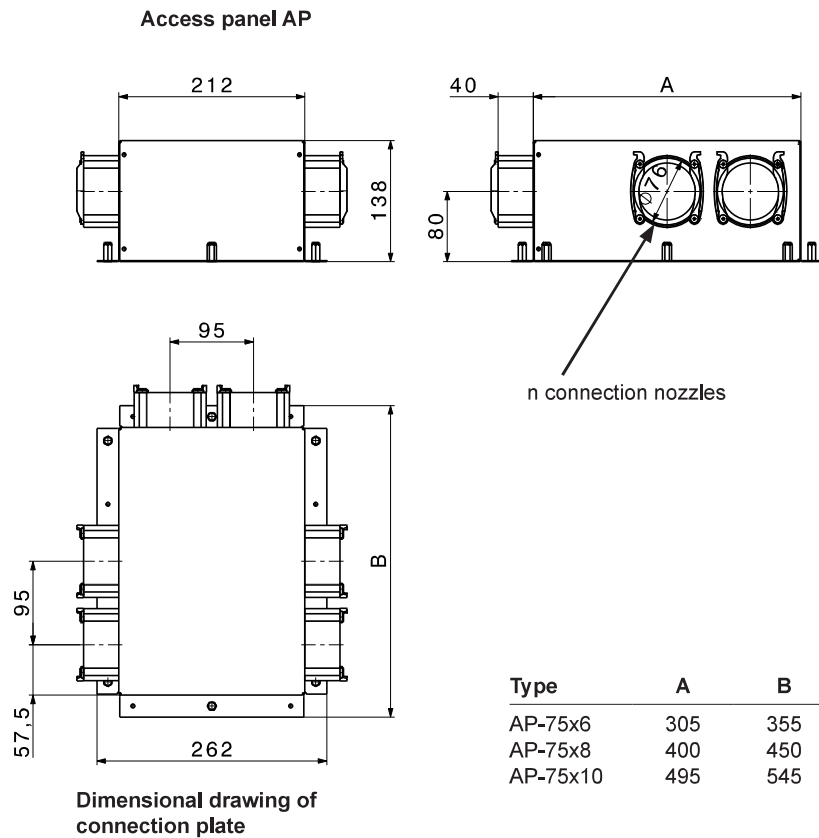
Distribution cases DN 150

Distribution case for 6, 8 or 10 connections **VKA-150-75-X with AP-75-X**

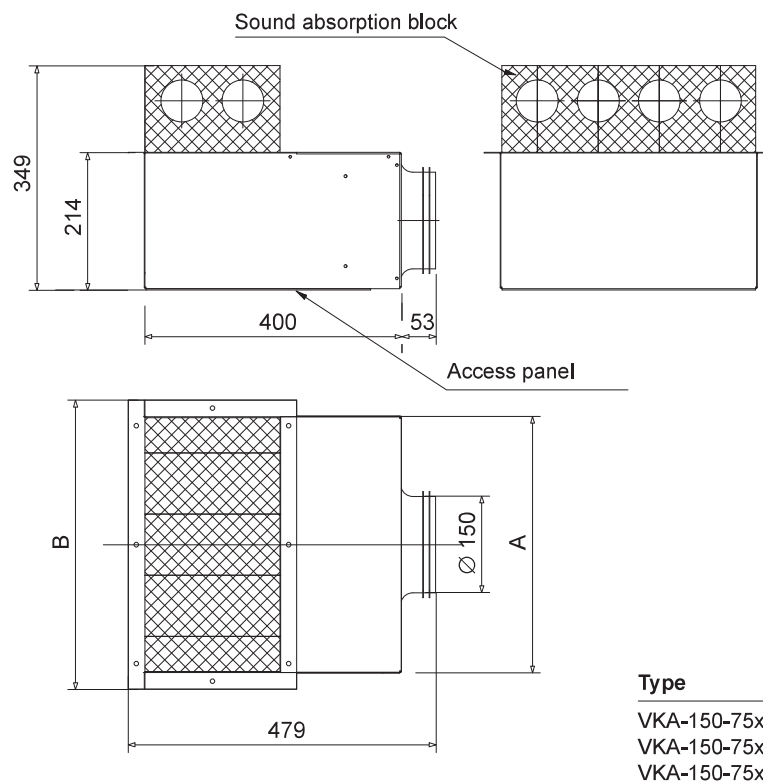
This distribution case with an integrated silencer is used if the pipes can be arranged and laid centrally.

Orifices for setting the air quantity per flex pipe DN 75 or DN 90 (included in the scope of delivery).

Type VKA is used in combination with the connection plate AP. The connection plate is mounted in the ceiling, in the floor or in the wall (inside masonry). The distribution case is flanged onto this connection plate after the building shell is completed.



Distribution case VKA-150



■ Technical data

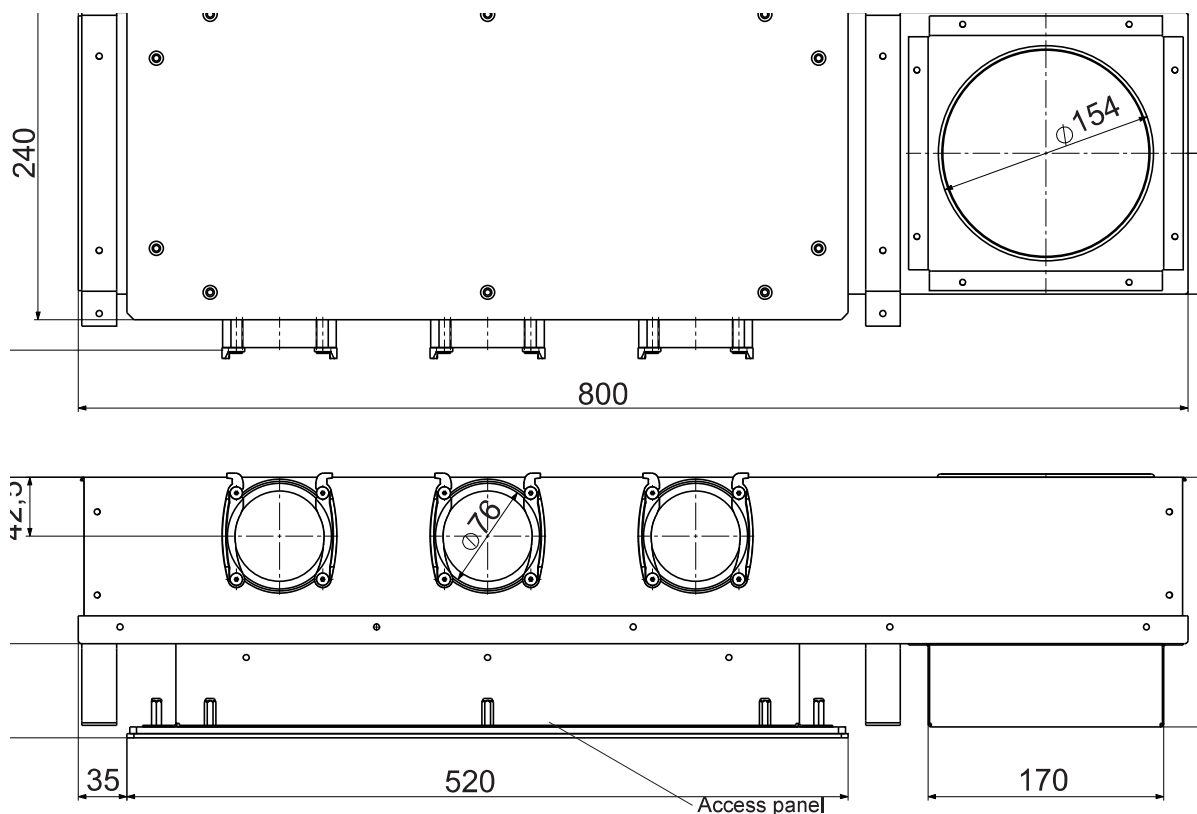
Distribution cases DN 150

In-wall distribution case 6 x DN X

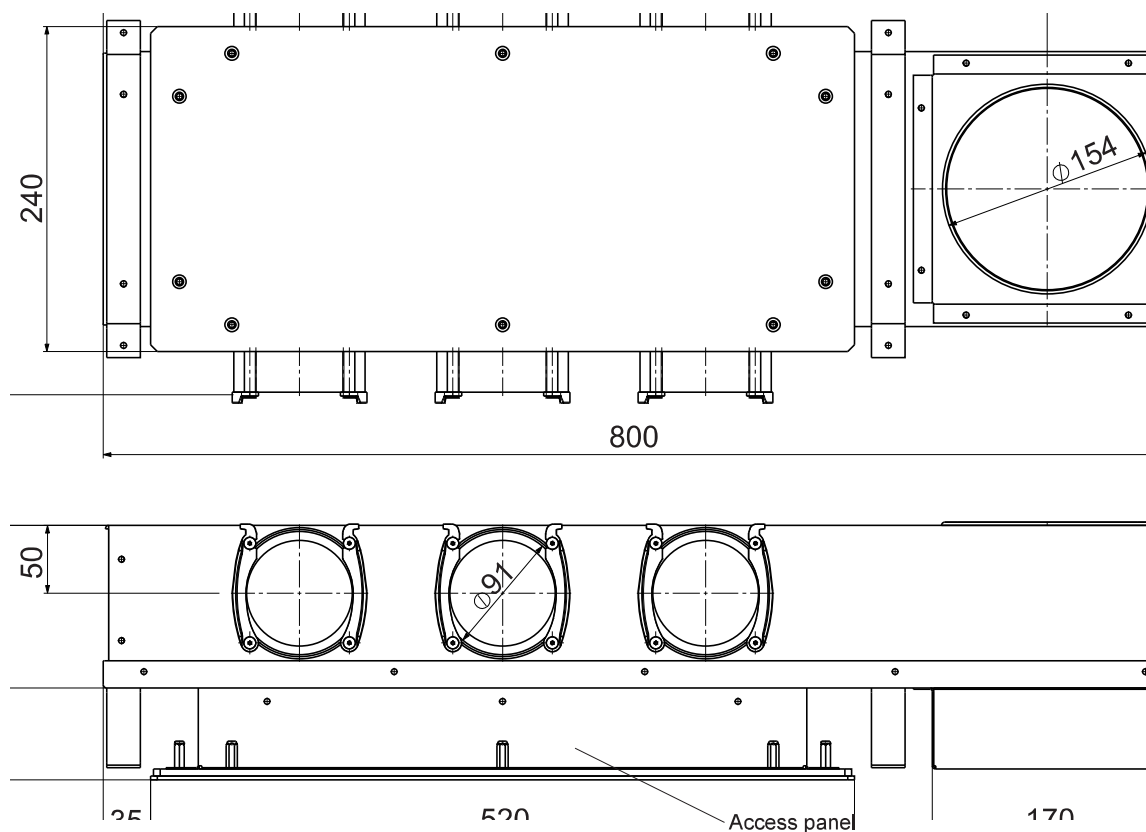
for concrete installation

Distribution case of aluzinc sheet. With one connection nozzle DN 150 (upwards and downwards) and 2 x 3 nozzles DN 90 and DN 75 (lateral), incl. 2 end covers, 1 spigot DN 150, inside lining of sound insulation material, access panel paintable on-site and orifices for setting the air quantity per flexible pipe DN 75 or DN 90 (included in the scope of delivery).

UPVK 6 x 75



UPVK 6 x 90



■ Technical data

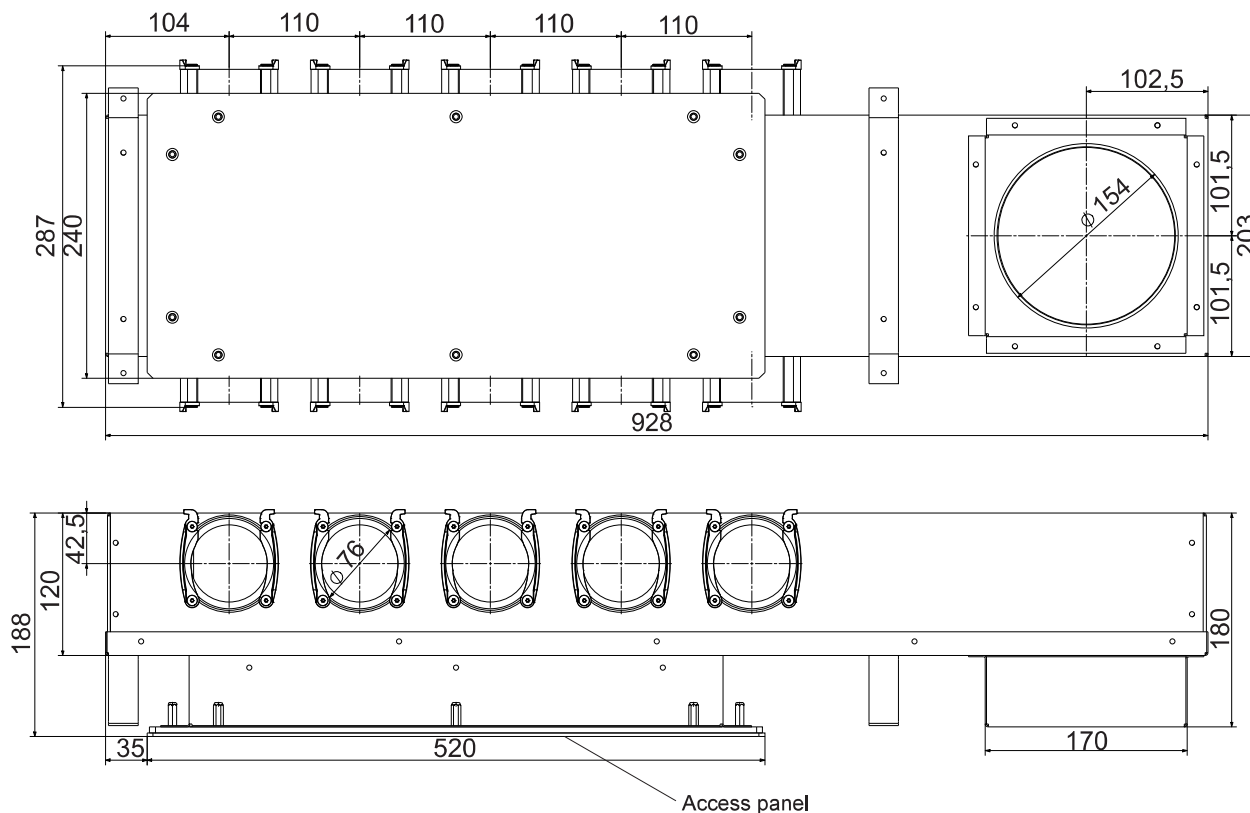
Distribution cases DN 150

In-wall distribution case 10 x DN X

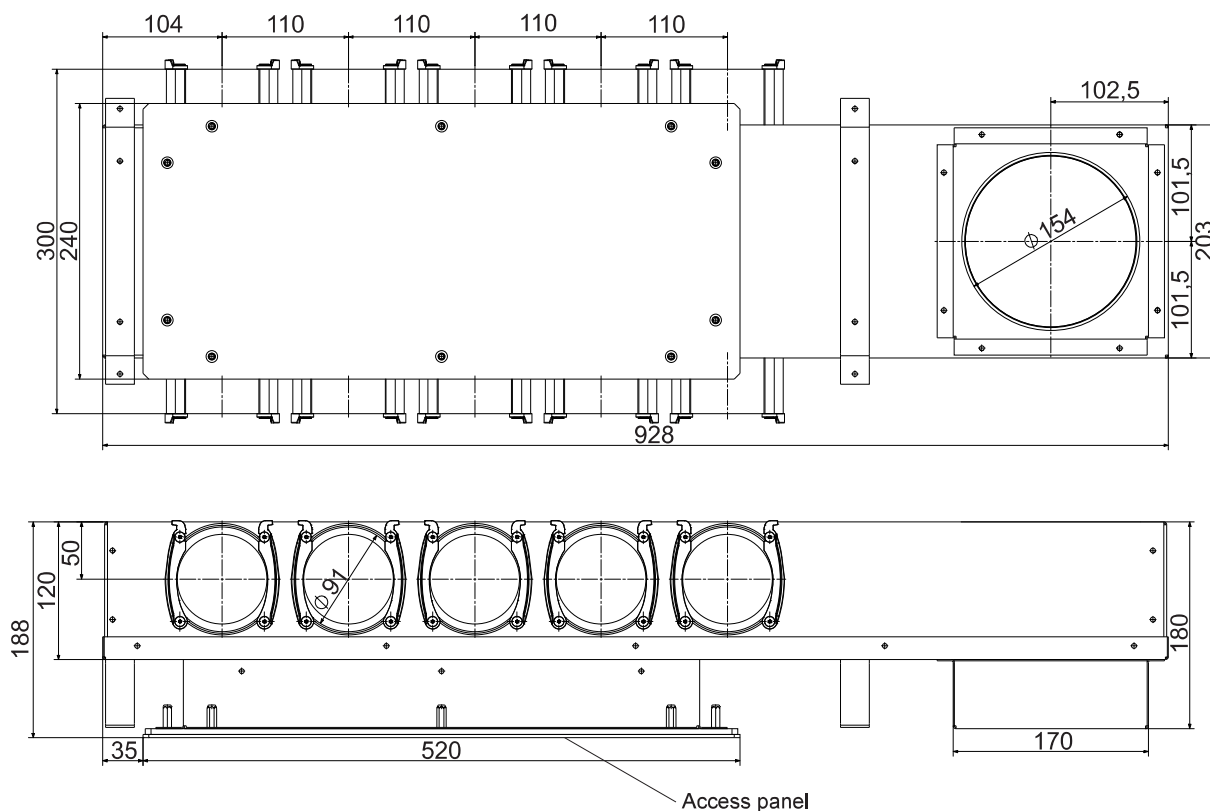
for concrete installation

Distribution case of aluzinc sheet for encasing in concrete. With one connection nozzle DN 150 (upwards and downwards) and 2 x 5 nozzles DN 90 and DN 75 (lateral), incl. 4 end covers, 1 spigot DN 150, inside lining of sound insulation material and access panel paintable on site. Orifices for setting the air quantity per flexible pipe DN 75 or DN 90 (included in the scope of delivery).

UPVK 10 x 75



UPVK 10 x 90



■ Technical data

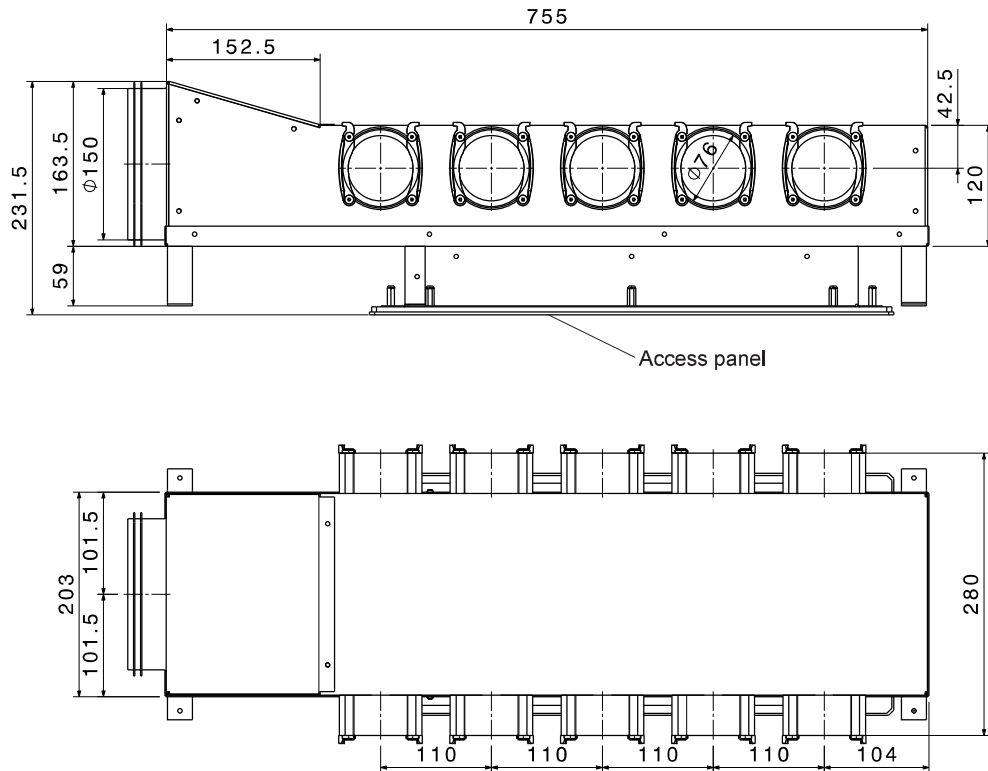
Distribution cases DN 150

In-wall distribution case UPVKS 10 x DN X

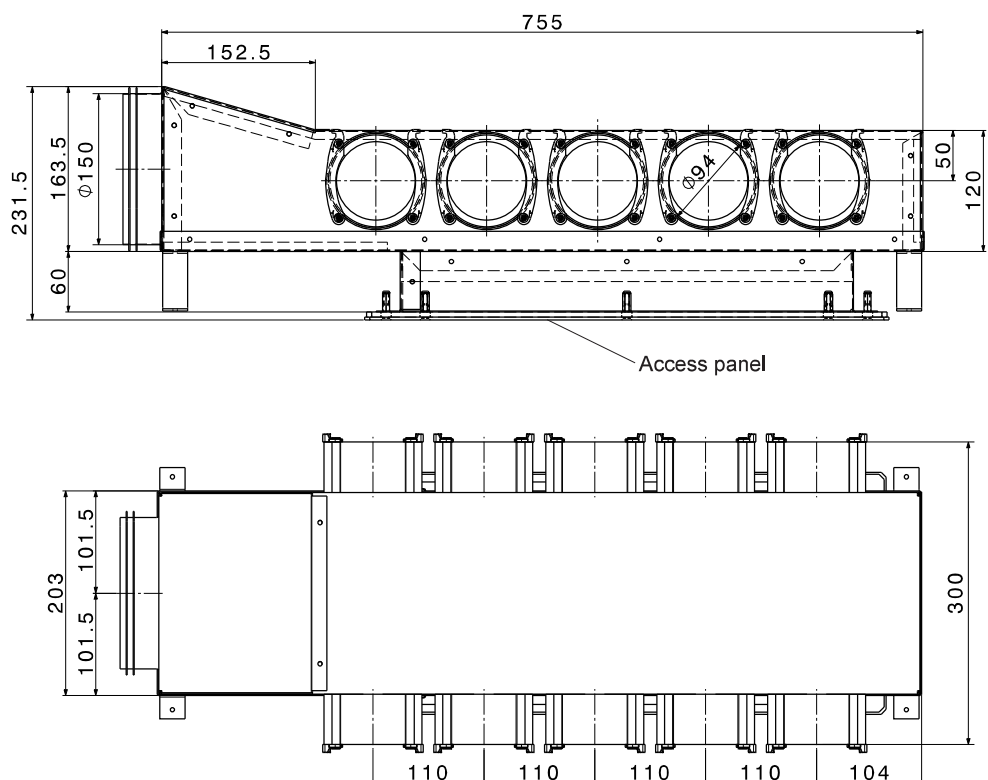
for concrete installation

Distribution case of aluzinc sheet for encasing in concrete. With one connection nozzle DN 150 (on face) and 2 x 5 nozzles DN 90 and DN 75 (lateral), incl. 4 end covers, 1 spigot DN 150, inside lining of sound insulation material and access panel paintable on site. Orifices for setting the air quantity per flexible pipe DN 75 or DN 90 (included in the scope of delivery).

In-wall distribution case UPVKS 10 x 75



In-wall distribution case UPVKS 10 x 90



■ Technical data

Distribution cases DN 150

Distribution box VTB-150 9x75 resp. 6x90

for concrete installation

Air distribution box of aluzinc sheet with access panel (can be painted on site). Lined on the inside with sound absorbing material.

Connection nozzle:

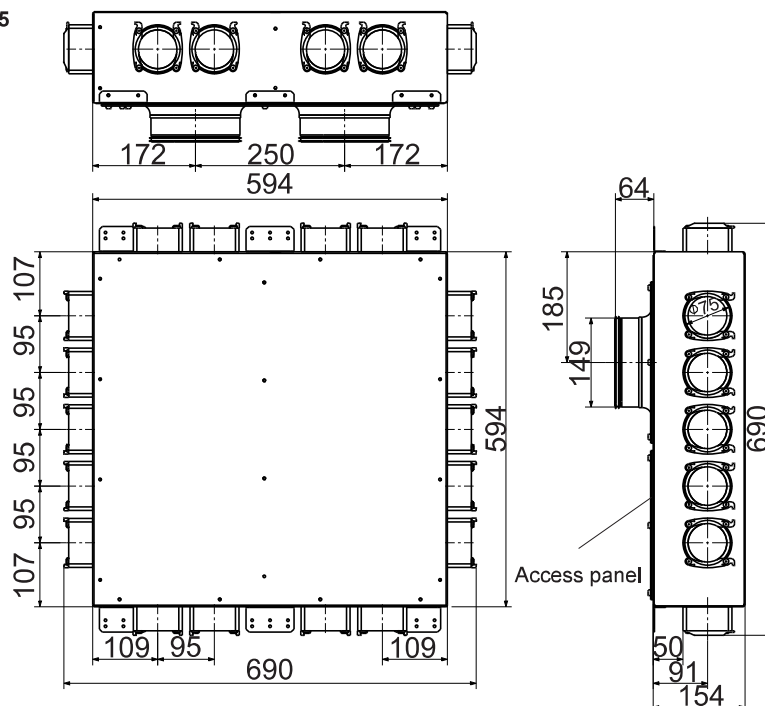
2x DN 150 (downward)

Supply air 9x DN 75 resp. 6x DN 90 (5x resp. 2x side/ 2x front and rear each)

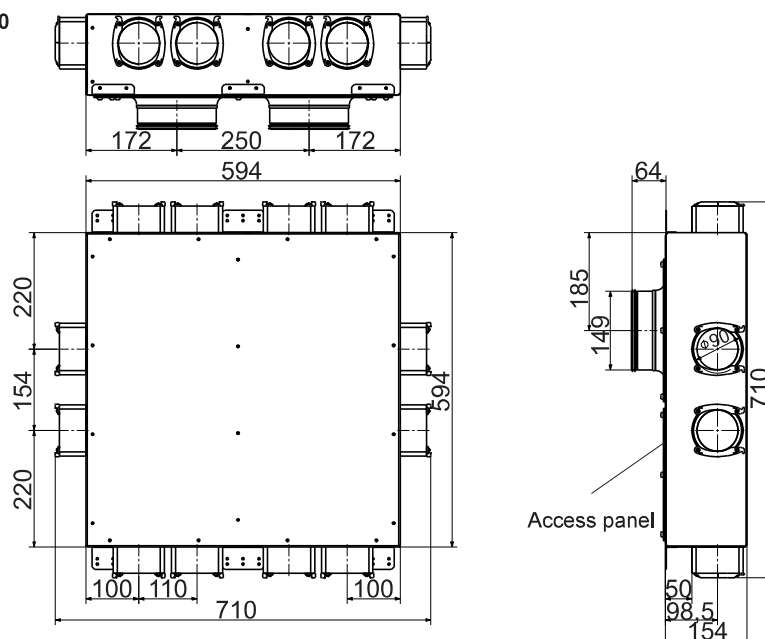
Extract air 9x DN 75 resp. 6x DN 90 (5x resp. 2x side/ 2x front and rear each)

Consisting of: box, 6 connection brackets, 4 resp. 2 end caps, orifices for setting the air quantity per flex pipe DN 75 resp. DN 90 (included in the scope of delivery).

Distribution box VTB-150 9x75



Distribution box VTB-150 6x90

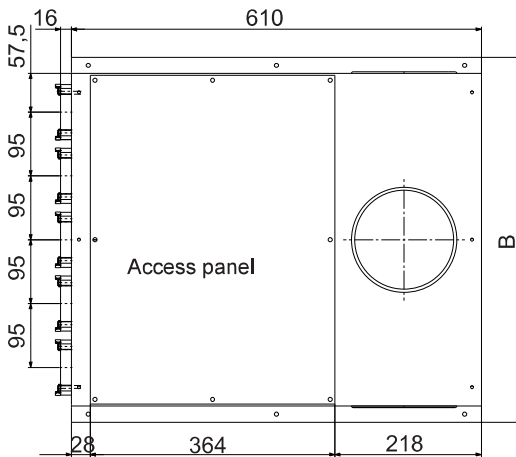
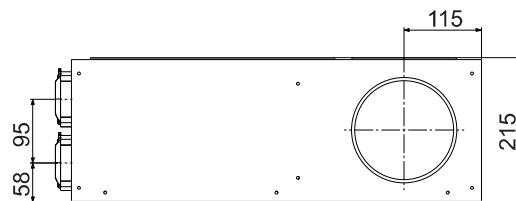
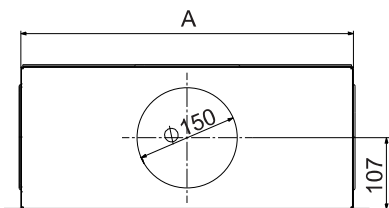


■ Technical data

Distribution cases DN 150

Distribution case for 6, 8 or 10 connections VK-150-75

This distribution case with an integrated silencer is used if the pipes can be arranged and laid centrally. Orifices for setting the air quantity per flexible pipe DN 75 (included in the scope of delivery). In type VK, the DN 75 connections are on the end; the connection nozzle DN 150 is supplied and can be installed on the end, top or on the left or right side. The distribution case is suitable for on-wall installation.



Dimensional drawing of distribution case VK-150-75x..

| Type | A | B | n |
|--------------|-----|-----|----|
| VK-150-75x6 | 305 | 355 | 6 |
| VK-150-75x8 | 400 | 450 | 8 |
| VK-150-75x10 | 495 | 545 | 10 |

■ Technical data

Distribution cases DN 150

Storey distributor GVT-3 ... GVT-6

Storey distributor with 4 connection options for the main duct,
incl. 2 connection nozzles DN 150,
incl. 3 sealing caps DN 150.

Flexible installation and easy cleaning of the
pipes via the access panels on both sides.

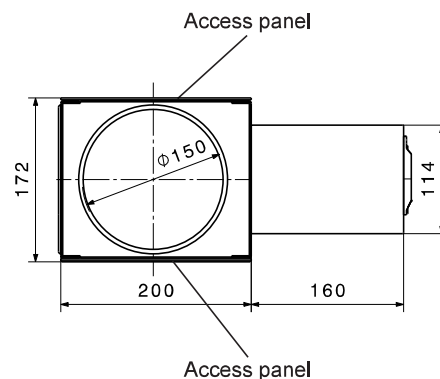
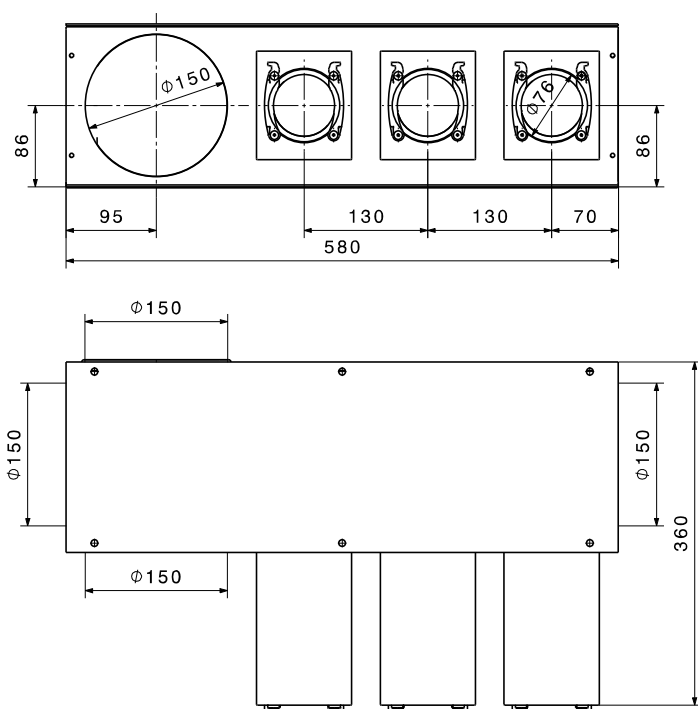
Orifices for setting the air quantity per flexible
pipe DN 75 or DN 90 (included in the scope of
delivery). Resonators for sound insulation.

Material: Galvanised steel

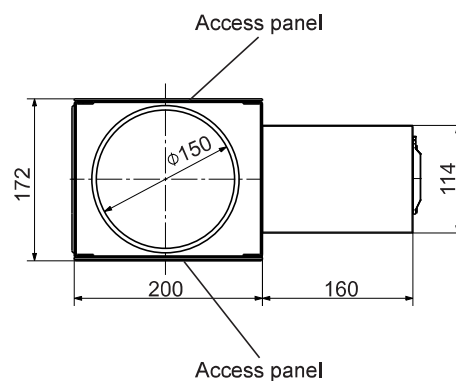
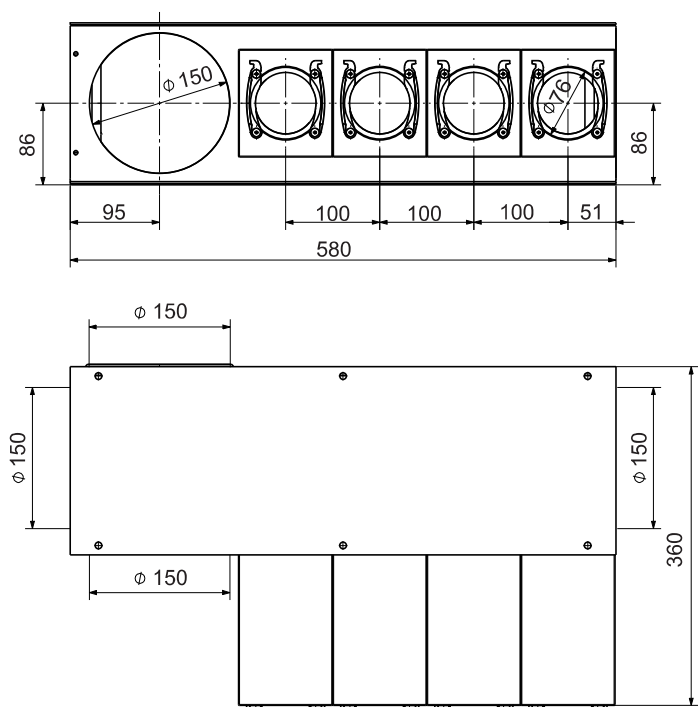
Inside lining: Sound absorbing mat

The mounting holder MH for floor distributor GVT-3 ... GVT-6 must be ordered separately.

Storey distributor GVT-3

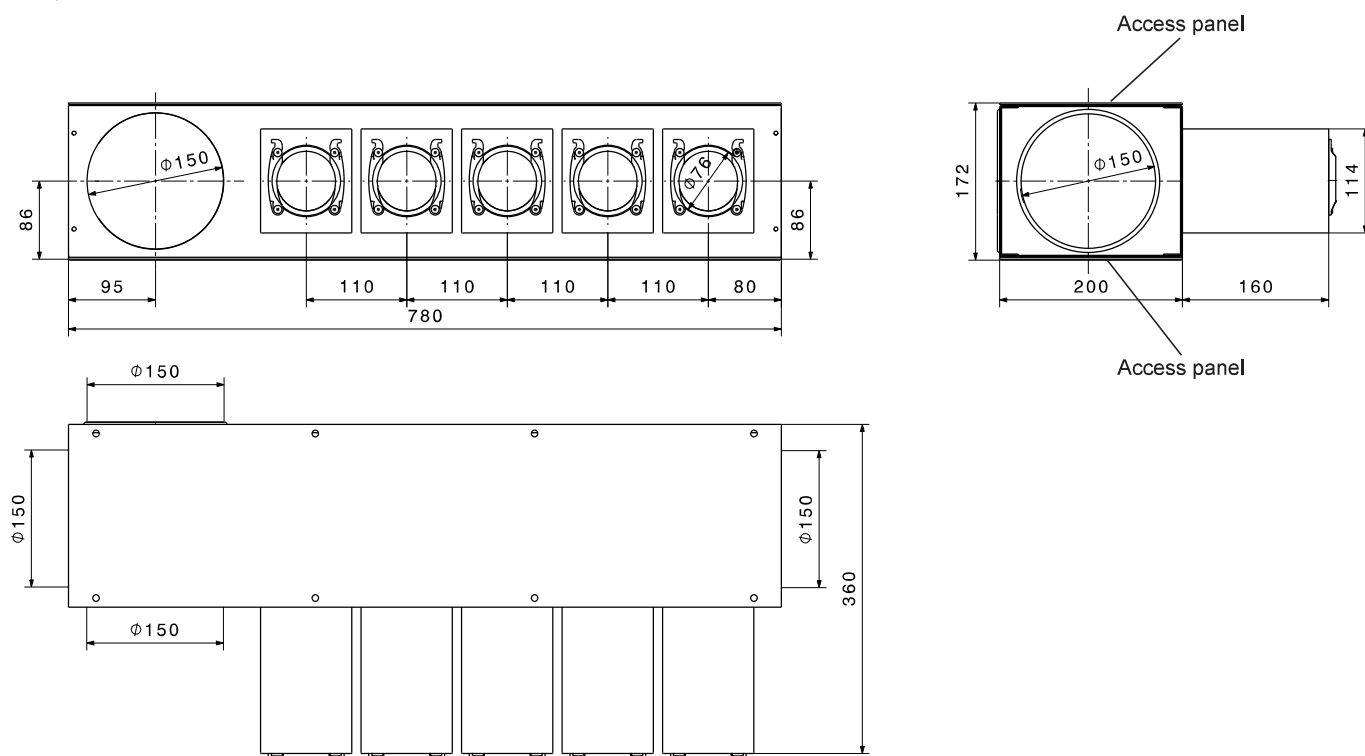


Storey distributor GVT-4

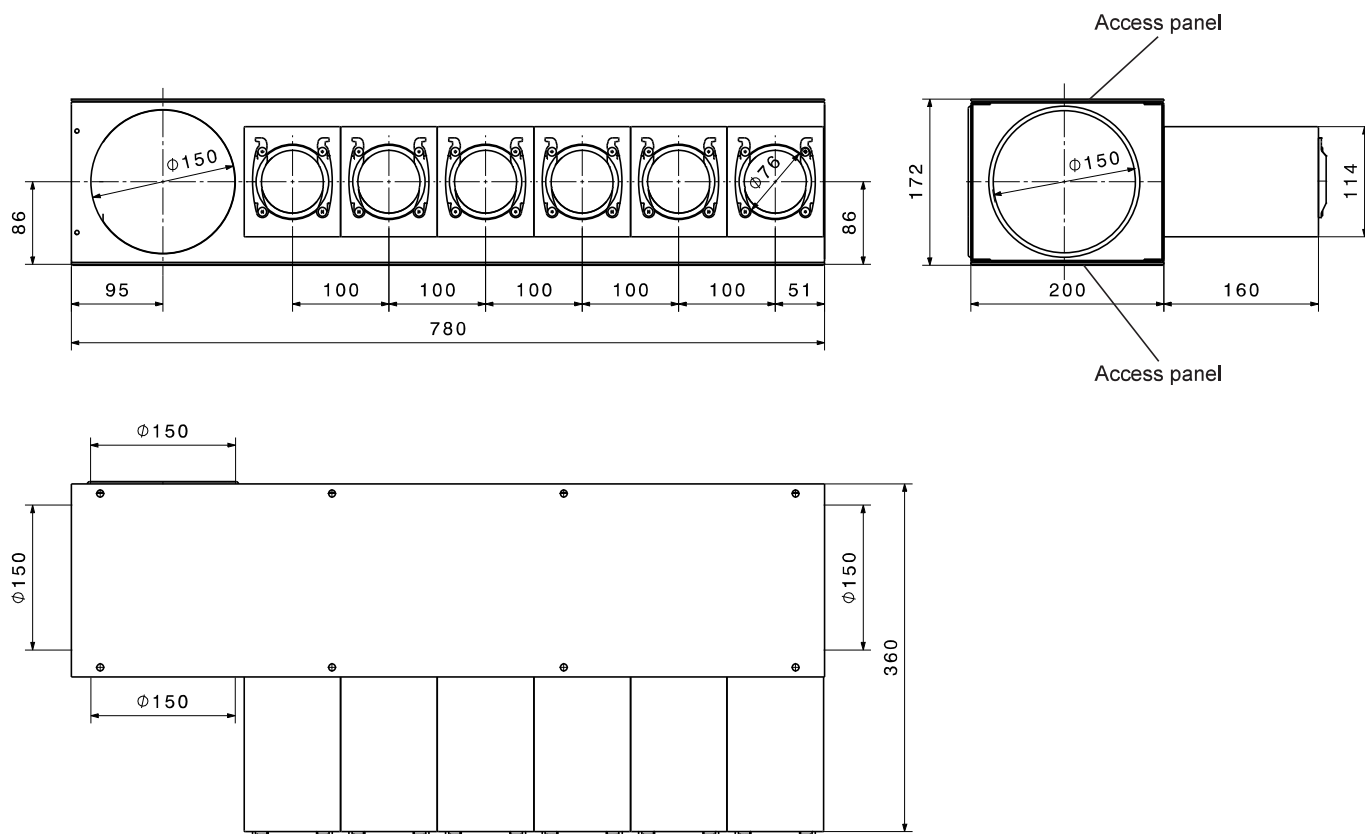


■ Technical data

Storey distributor GVT-5



Storey distributor GVT-6



■ Technical data

Distribution cases DN 180

Distribution box VTB-180 9x75 resp. 6x90

for concrete installation

Air distribution box of aluzinc sheet with access panel (can be painted on site). Lined on the inside with sound absorbing material.

Connection nozzle:

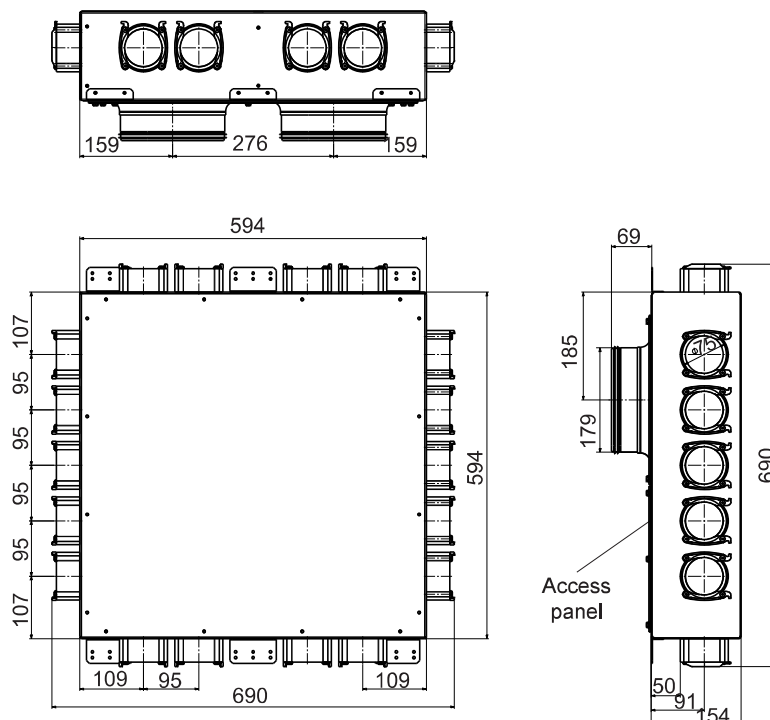
2x DN 180 (downward)

Supply air 9x DN 75 resp. 6x DN 90 (5x resp. 2x side/ 2x front and rear each)

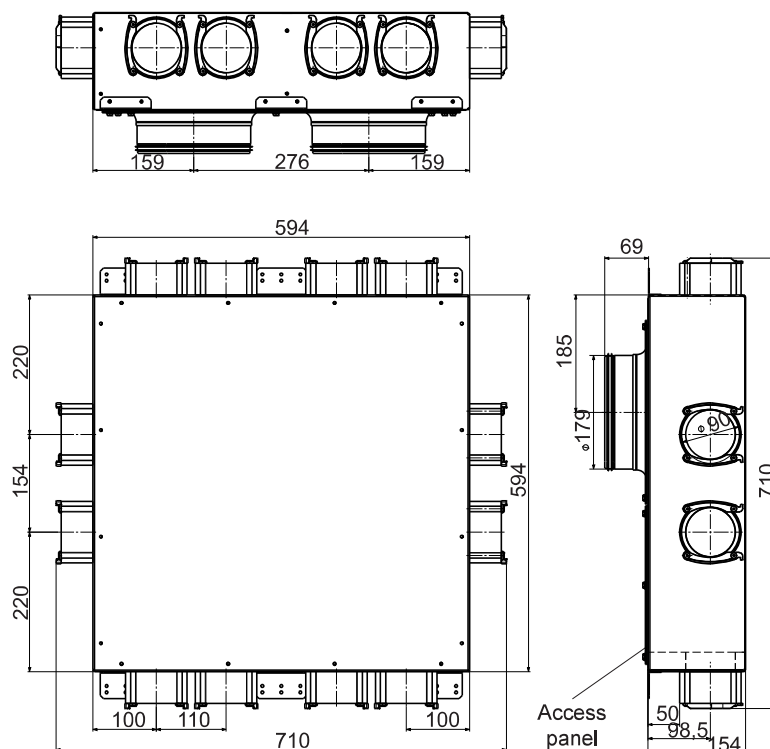
Extract air 9x DN 75 resp. 6x DN 90 (5x resp. 2x side/ 2x front and rear each)

Consisting of: box, 6 connection brackets, 4 resp. 2 end caps, orifices for setting the air quantity per flex pipe DN 75 resp. DN 90 (included in the scope of delivery).

Distribution box VTB-180 9x75



Distribution box VTB-180 6x90



■ Technical data

Distribution cases DN 180

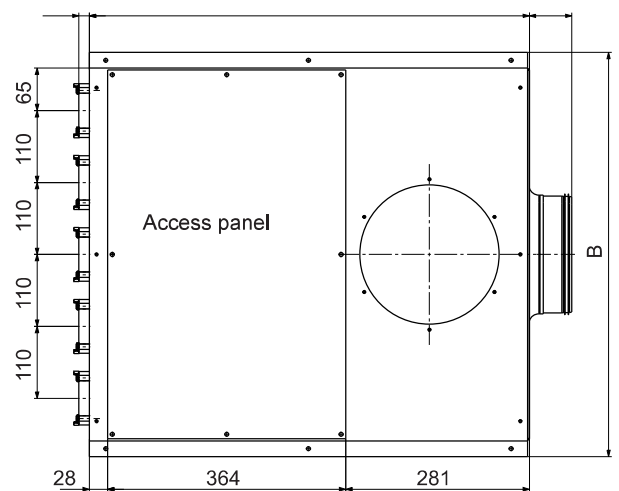
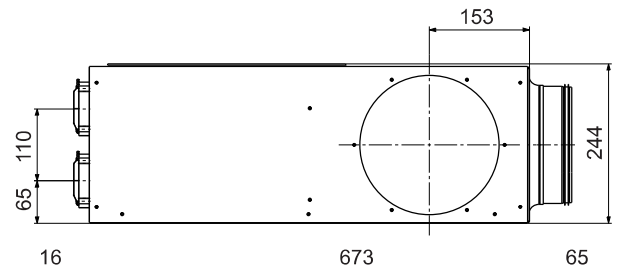
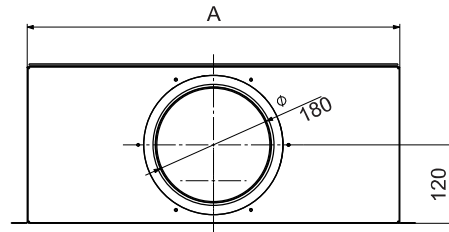
Distribution case for 6, 8 or 10 connections

VK-180-75 resp. VK-180-90

This distribution case with an integrated silencer is used if the pipes can be arranged and laid centrally. Orifices for setting the air quantity per flexible pipe DN 75 or DN 90 (included in the scope of delivery).

In type VK, the DN 75 resp. DN 90 connections are on the end; the connection nozzle DN 180 is supplied and can be installed on the end, top or on the left or right side. The distribution case is suitable for on-wall installation.

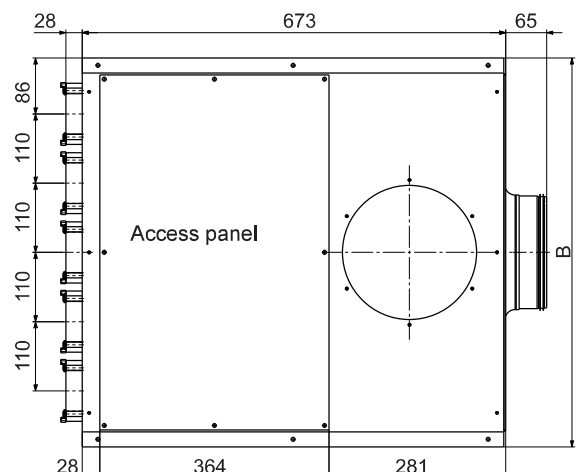
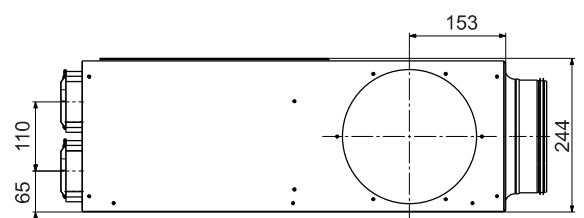
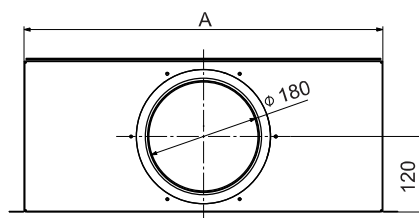
Distribution case VK-180-75



Dimensions distribution case VK-180-75x..

| Type | A | B | n |
|--------------|-----|-----|----|
| VK-180-75x6 | 350 | 398 | 6 |
| VK-180-75x8 | 460 | 508 | 8 |
| VK-180-75x10 | 570 | 618 | 10 |
| VK-180-75x12 | 680 | 728 | 12 |

Distribution case VK-180-90



Dimensions distribution case VK-180-90x..

| Type | A | B | n |
|--------------|-----|-----|----|
| VK-180-90x6 | 350 | 398 | 6 |
| VK-180-90x8 | 460 | 508 | 8 |
| VK-180-90x10 | 570 | 618 | 10 |
| VK-180-90x12 | 680 | 728 | 12 |

■ Technical data

Distribution cases DN 200

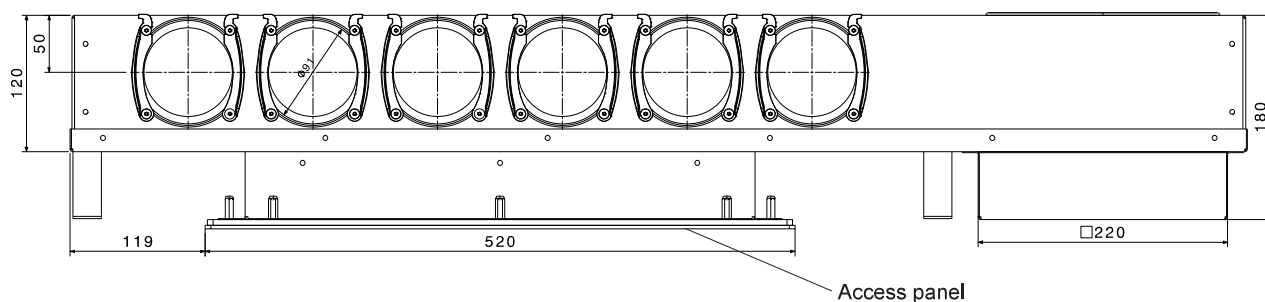
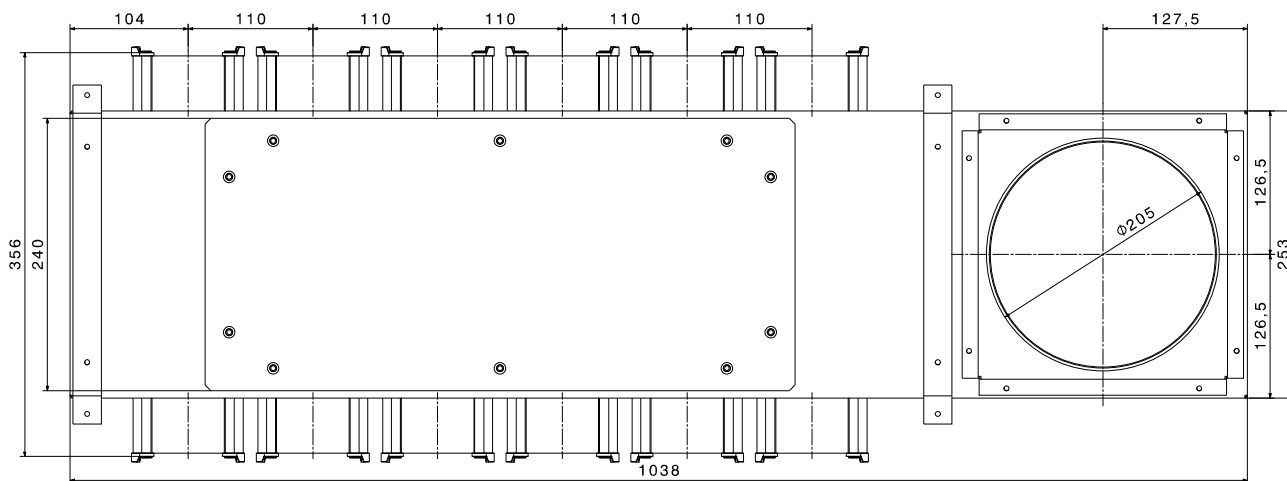
In-wall distribution cases UPVK 200-90x12

for concrete installation

Air distribution case of aluzinc sheet with access panel (can be painted on site). Lined on the inside with sound absorbing material.

Connection nozzles 2x DN 200 (downwards/upwards), 12 (2 x 6) DN 90 (sideways).

Consisting of: distribution case, 6 end covers, 1 connection nozzle DN 200, orifices for setting the air quantity per flexible pipe DN 90 (included in the scope of delivery).



Distribution case VK200-75x15

Air distribution case of aluzinc sheet with access panel.

Inside with sound absorption block.

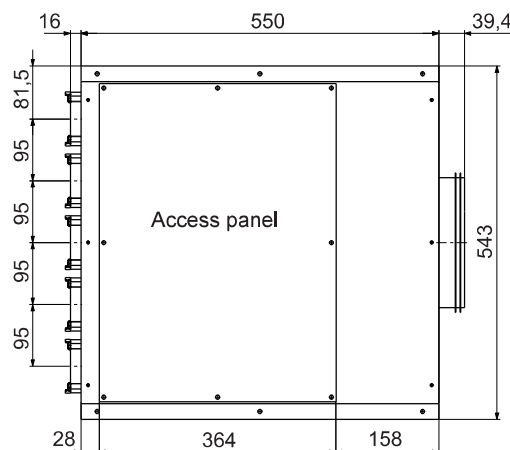
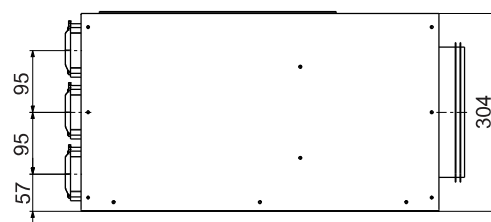
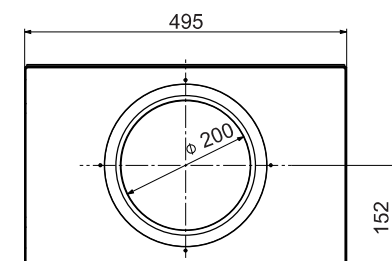
Connection nozzles:

1 x DN 200 (on the back)

15 x (3x5) DN 75 (on the front)

Consisting of:

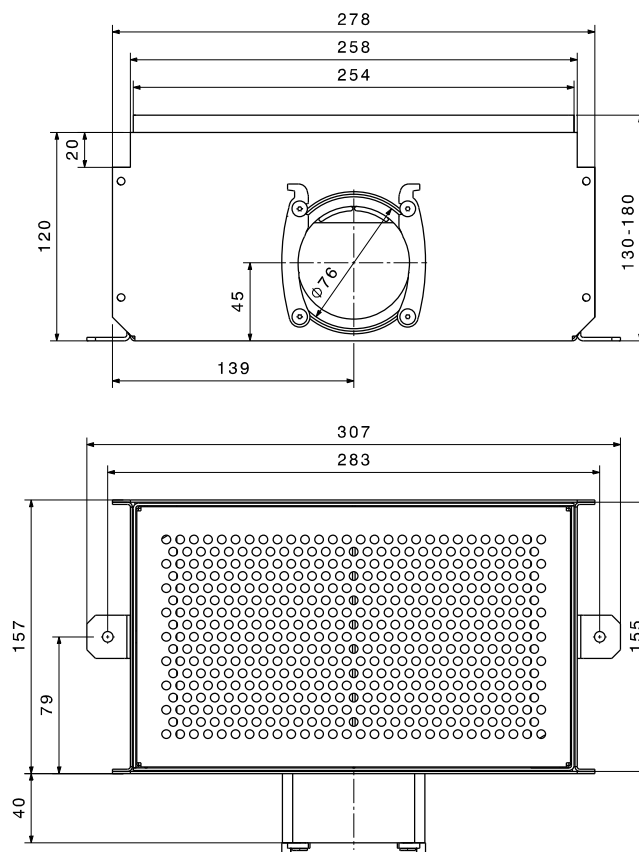
distribution case, baffles for adjusting the air flow for each flexible pipe DN 75 (included in the scope of delivery).



■ Technical data

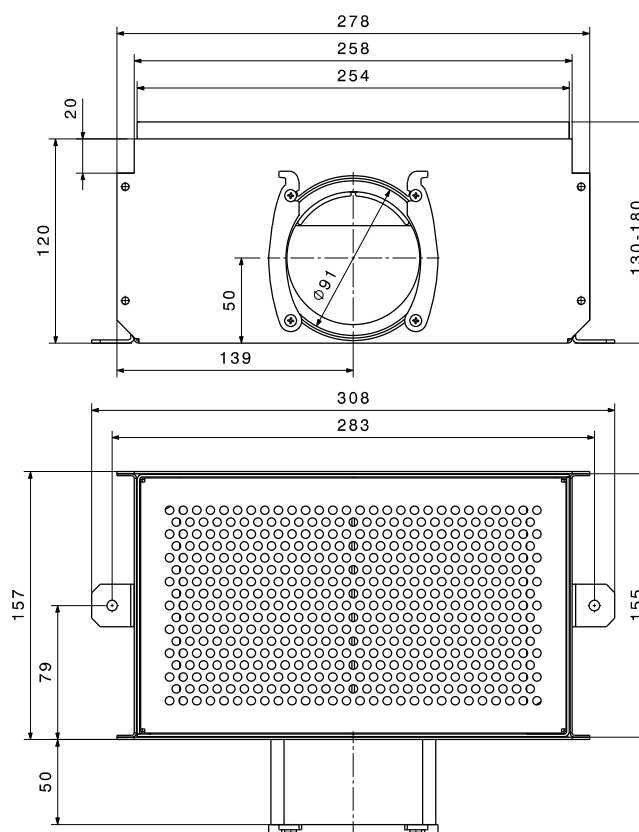
Floor grille BD-30-75

For installation in the floor structure, supply air volume flow 30 m³/h. Perforated stainless steel grille in an adjustable casing, height 130-180 mm, inner component of stainless steel with 3 contact points, outer component of aluzinc sheet with 2 fastening catches and one connection nozzle for flexible pipe FR-75. Only suitable for supply air.



Floor grille BD-30-90

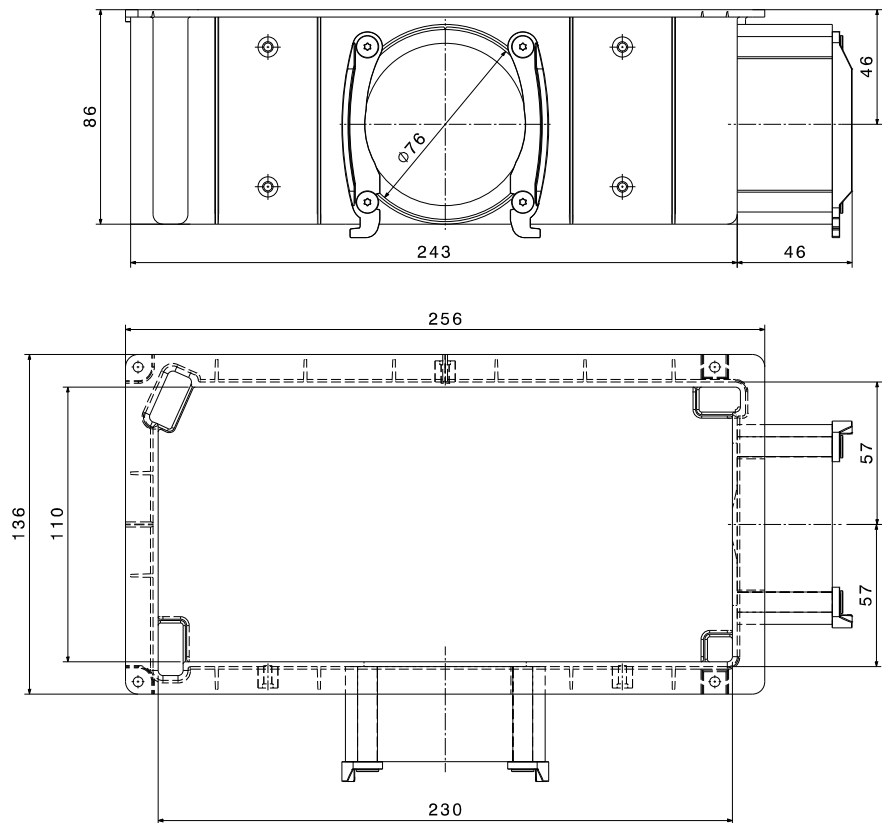
For installation in the floor structure, supply air volume flow 40 m³/h. Perforated stainless steel grille in an adjustable casing, height 130-180 mm, inner component of stainless steel with 3 contact points, outer component of aluzinc sheet with 2 fastening catches and one connection nozzle for flexible pipe FR-90. Only suitable for supply air.



■ Technical data

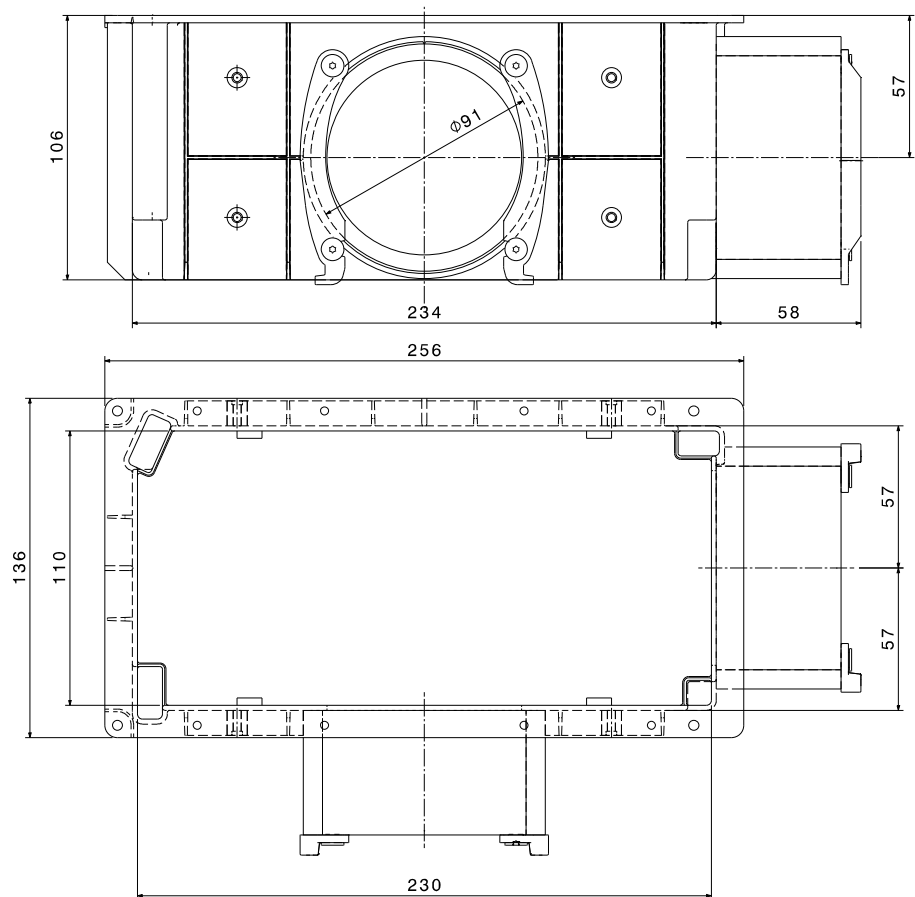
Connection housing AG-60

In combination with the design grilles.
The extension allows fine adjustment of the grille (rotating) after installation.
Suitable for installation in mass concrete, masonry walls or lightweight construction.
Of plastic with 2 connection nozzles DN 75.
Incl. fixing angles, sound absorbing mat and insert block as building protection cover and plastering aid.
Accessory: extract air filter AGF-60/90.
Suitable for supply air or extract air.



Connection housing AG-90

In combination with the design grilles.
The housing allows fine adjustment of the grille (rotating) after installation.
Suitable for installation in mass concrete, masonry walls or lightweight construction.
Of plastic with 2 connection nozzles DN 90.
Incl. fixing angles, sound insulation mat and insert block as building protection cover and plastering aid.
Suitable for supply air or extract air.



Extract air filter AGF-60/90

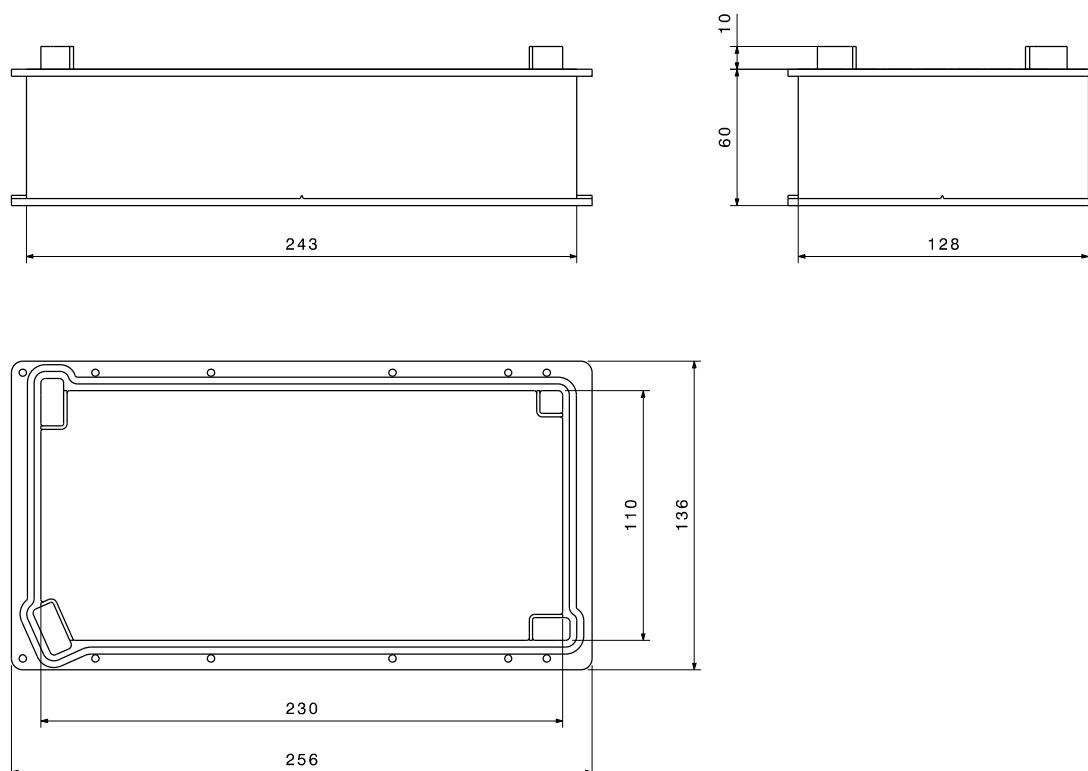
Consisting of a washable, fine-mesh net made from polyamide with a plastic frame for connection housing AG-60, AG-90, AGV-60 or AGV-90.

| Type | Dimensions mm | Pressure drop Pa |
|-----------|------------------|---------------------|
| AGF-60/90 | 235x110x10 | 7 |

■ Technical data

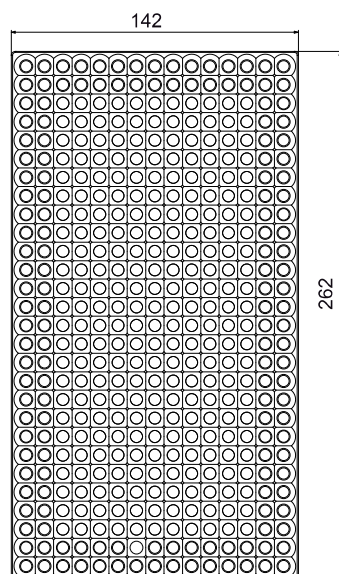
Extension AG-60/AG-90

For installation of AG-60 and AG-90 on the formwork panel.
The housing allows fine adjustment of the grille (rotating) after installation.



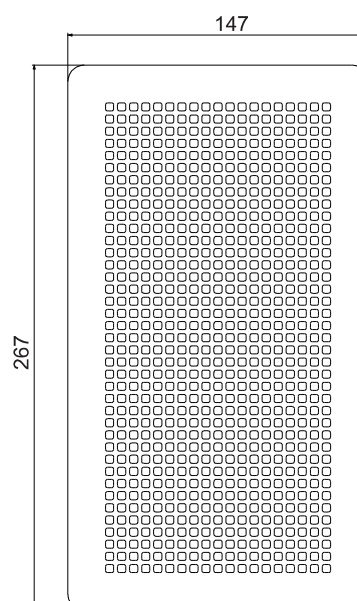
Design grille made of plastic

The grille is mounted on the connection housing AG-60, AG-90, AGV-60 or AGV-90. There are three grille designs (Pazific, Adriatic Sea, Atlantic). The outside dimensions are identical for all grilles. The wall/ceiling plaster must not exceed 30 mm.



Design grille made of metal

The grille is mounted on the connection housing AG-60, AG-90, AGV-60 or AGV-90. There are three grille designs (Alvier, Sântis, Pizol). The outside dimensions are identical for all grilles. The wall/ceiling plaster must not exceed 30 mm.

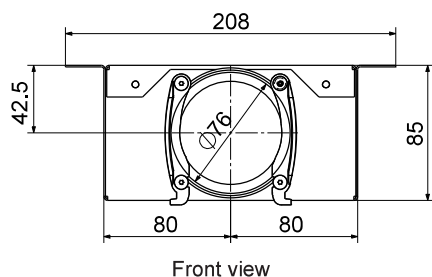


■ Technical data

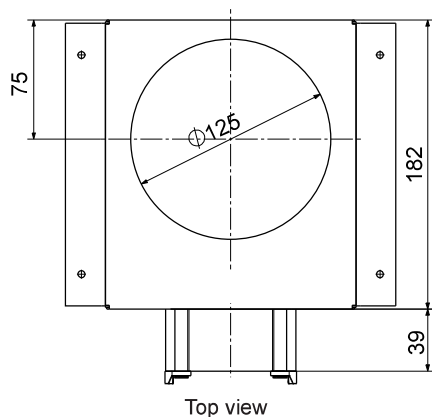
In-wall unit UPK-30

The connection box is used in combination with a disc valve for supply air or extract air. It consists of a galvanised sheet metal casing with frontal nozzles. The housing floor is lined with a sound absorbing mat.

A building protection cover is included to protect the in-wall unit against dirt before it is taken into service.



Front view

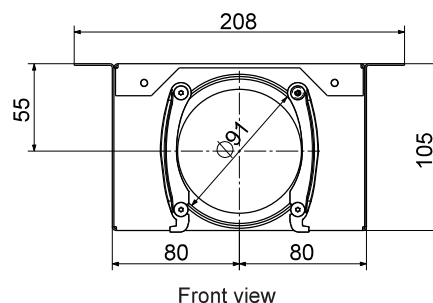


Top view

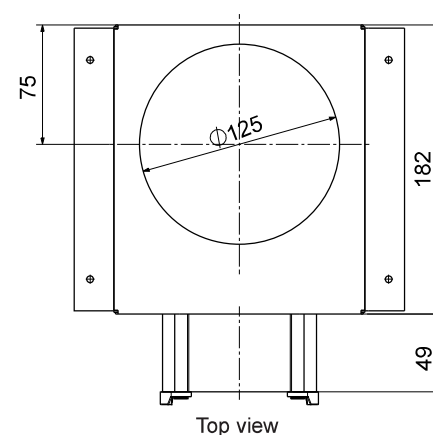
In-wall unit UPK-90

The connection box is used in combination with a disc valve for supply air or extract air. It consists of a galvanised sheet metal casing with frontal nozzles. The housing floor is lined with a sound absorbing mat.

A building protection cover is included to protect the in-wall unit against dirt before it is taken into service.



Front view

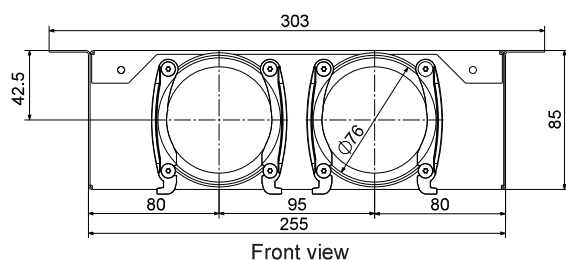


Top view

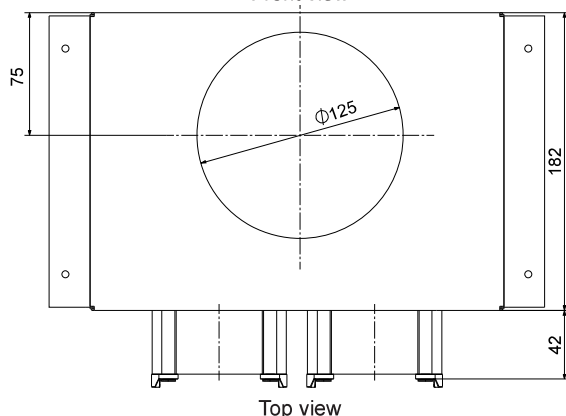
In-wall unit UPK-60

The connection box is used in combination with a disc valve for supply air or extract air. It consists of a galvanised sheet metal casing with frontal nozzles. The housing floor is lined with a sound absorbing mat.

A building protection cover is included to protect the in-wall unit against dirt before it is taken into service.



Front view

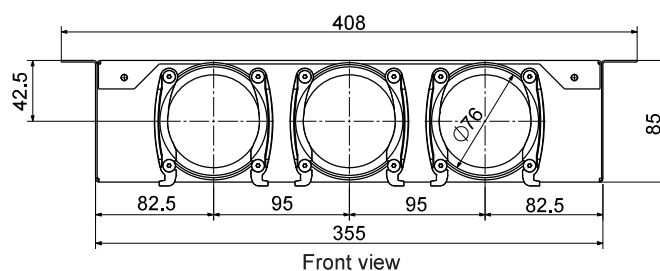


Top view

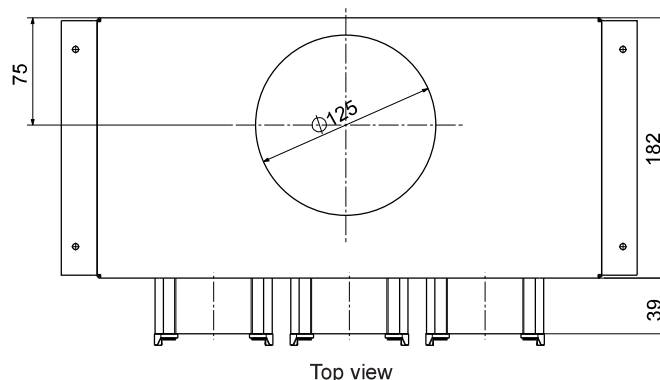
In-wall unit UPK-80

The connection box is used in combination with a disc valve for supply air or extract air. It consists of a galvanised sheet metal casing with frontal nozzles. The housing floor is lined with a sound absorbing mat.

A building protection cover is included to protect the in-wall unit against dirt before it is taken into service.



Front view



Top view

■ Technical data

Filigree ceiling set FDS-125 X x75

for disc valve supply air TVZ-125 and
disc valve extract air TVA-125
made from galvanised sheet steel
with 1 resp. 2 connections DN 75, special
DN 125 collar for filigree ceiling lead-through,
building protection cover

Supply air:

1 x DN 75 up to 30 m³/h

2 x DN 75 up to 40 m³/h

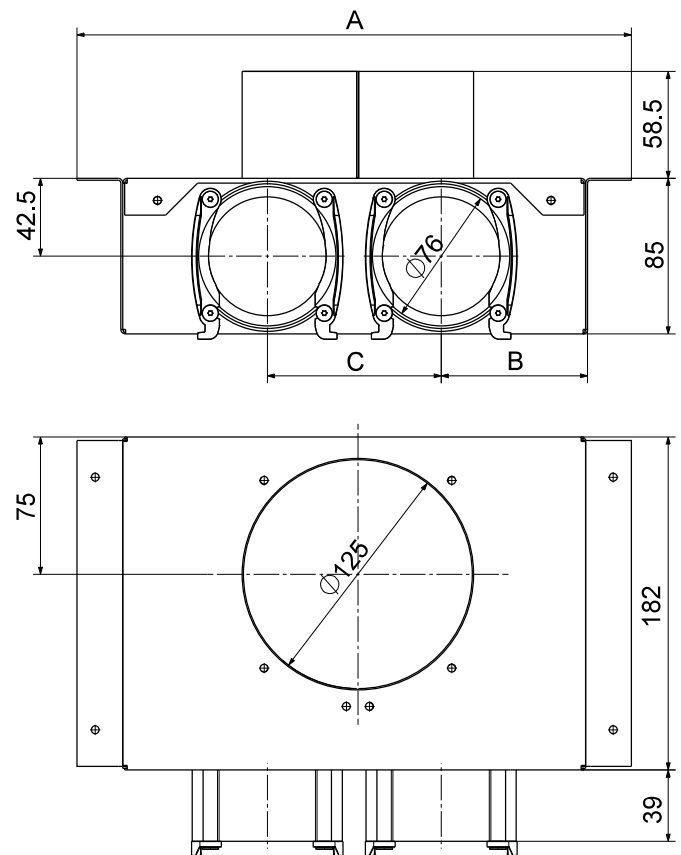
Extract air:

1 x DN 75 up to 30 m³/h

2 x DN 75 up to 60 m³/h

Filigree ceiling set FDS-125 X x75

| Type | A | B | C |
|-------------|-----|------|----|
| FDS125-1x75 | 208 | 80 | - |
| FDS125-2x75 | 303 | 80 | 95 |
| FDS125-3x75 | 403 | 82,5 | 95 |



In-wall connection box

UPK-125 X x75 LN

For extract air disc valve TVA-125
or supply air disc valve TVZ-125
made from galvanised sheet steel
with spiral-seam tube DN 125, L = 400 mm
with 1, 2 or 3 connections DN 75, building
protection cover

Supply air:

1 x DN 75 up to 30 m³/h

2 x DN 75 up to 40 m³/h

3 x DN 75 up to 40 m³/h

Extract air:

1 x DN 75 up to 30 m³/h

2 x DN 75 up to 60 m³/h

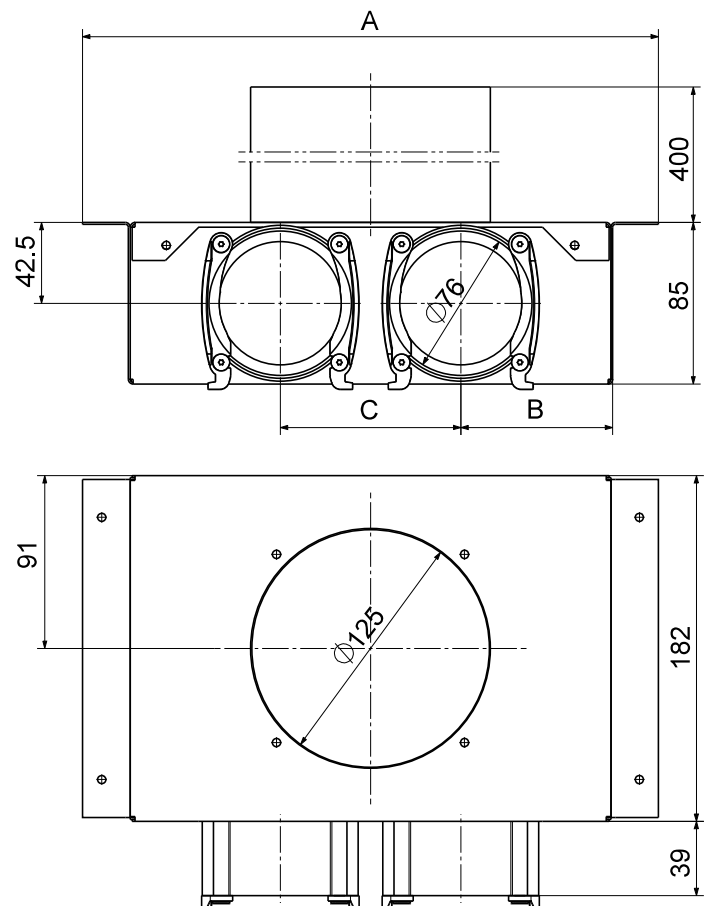
3 x DN 75 up to 60 m³/h

For special applications.

In-wall connection box

UPK-125-X x 75 LN

| Type | A | B | C |
|-----------------|-----|----|----|
| UPK-125 1x75 LN | 208 | 80 | - |
| UPK-125 2x75 LN | 303 | 80 | 95 |
| UPK-125 3x75 LN | 403 | 80 | 95 |



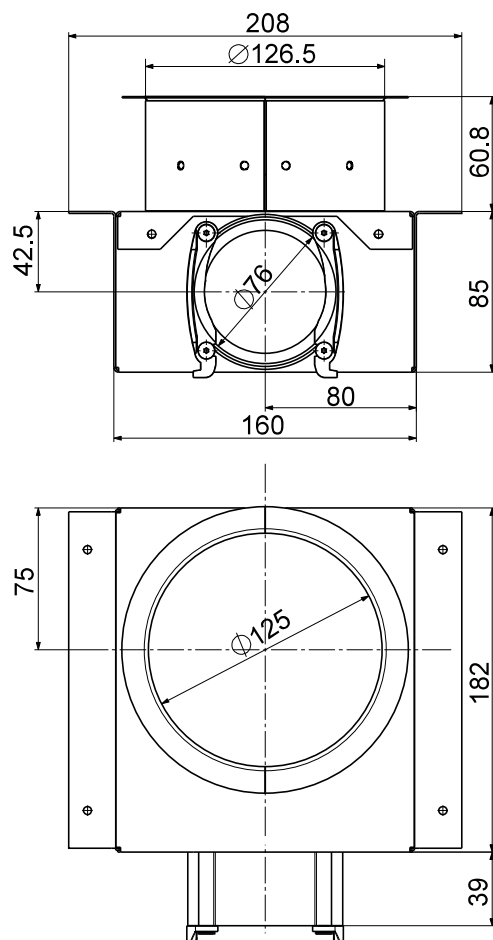
■ Technical data

Extract air set BAK-125-75 resp. supply air set BZK 125-75 for concrete installation

Connection box UPK-30-(DN 75) with pre-assembled spigot and installation frame, disc valve TVA-125 (extract air) resp. TVZ-125 (supply air), incl. building protection cover.

Ceiling must not be lined or plastered.

For spackled ceilings or béton brut.

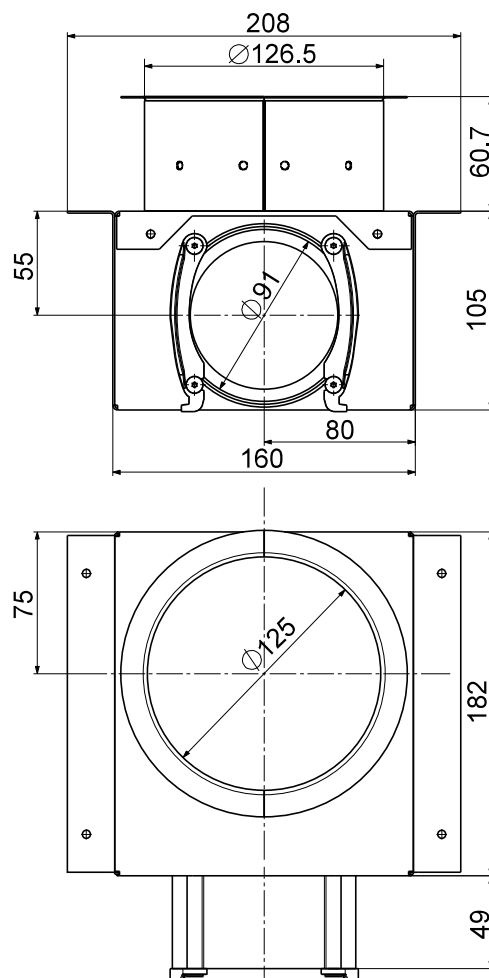


Extract air set BAK-125-90 resp. supply air set BZK 125-90 for concrete installation

Connection box UPK-30-(DN 90) with pre-assembled spigot and installation frame, disc valve TVA-125 (extract air) resp. TVZ-125 (supply air), incl. building protection cover.

Ceiling must not be lined or plastered.

For spackled ceilings or béton brut.



■ Technical data

Tangential casing TG-30

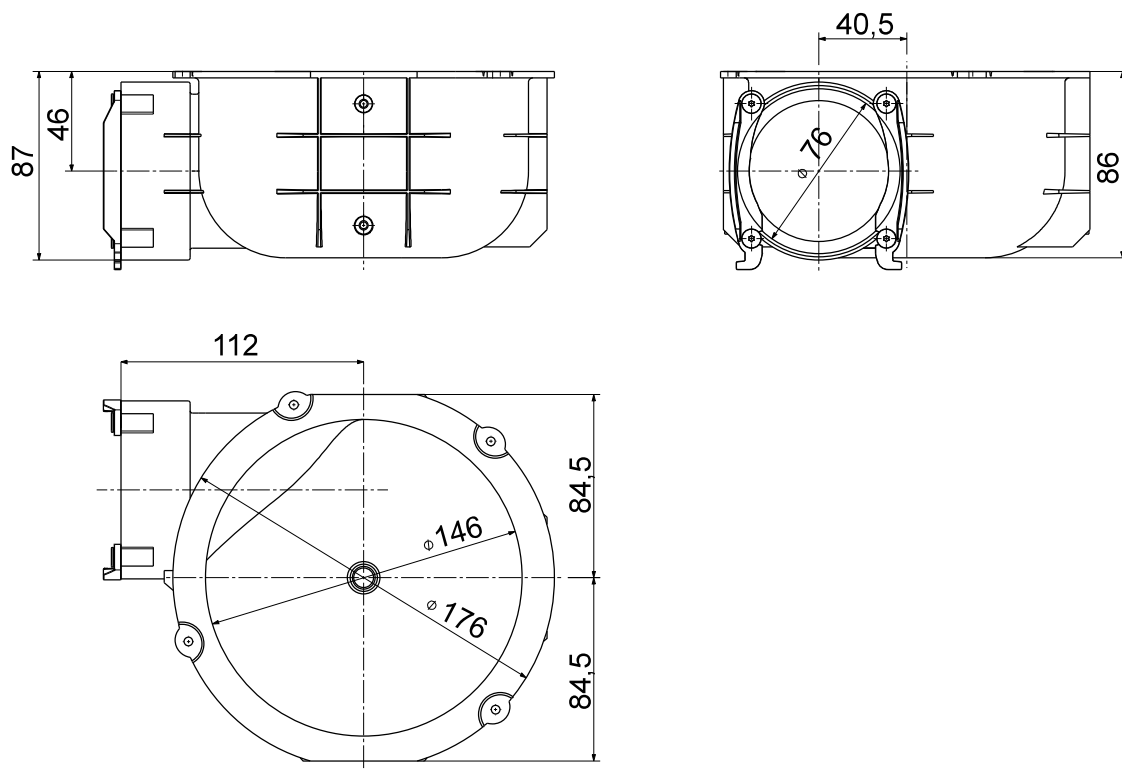
For supply air or extract air in combination with the tangential design grille.

Suitable for installation in mass concrete, masonry walls or lightweight construction.

Of plastic with 1 connection nozzle DN 75 incl. fixing angles, building protection cover.

Supply air up to 30 m³/h

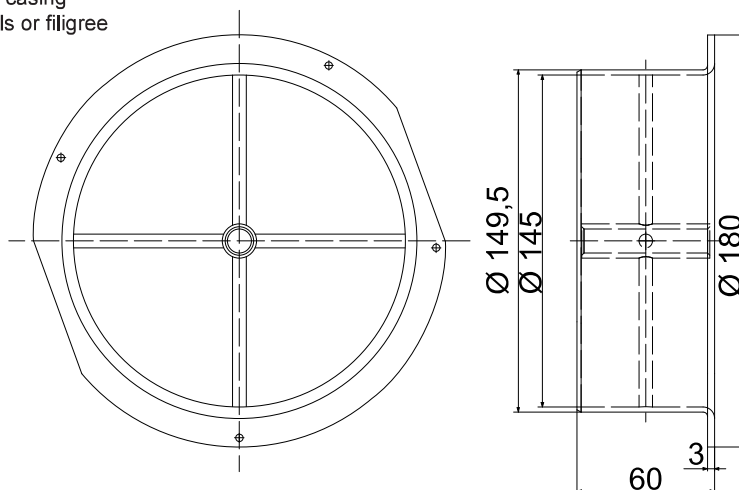
Extract air up to 30 m³/h



Tangential extension TGA

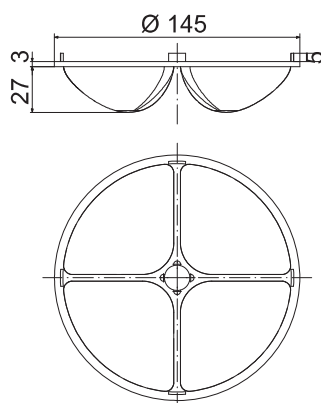
For the connection of the tangential design grille with the tangential casing

TG-30. A connection extension which is required for lightweight walls or filigree concrete.



Extract air filter ATG-30

for tangential casing TG-30 and tangential extension TGA
of cleanable, fine-mesh polyamide net with plastic frame.



■ Technical data

Tangential design grille

Of high quality ABS plastic,
colour white.

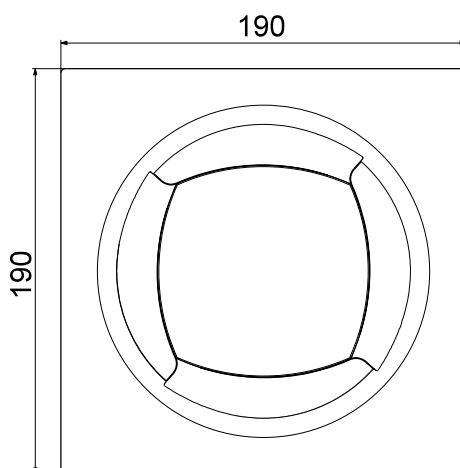
Suitable for:

Supply air up to 30 m³/h

Extract air up to 30 m³/h

Plug connection for tangential casing TG-30

The design grille is washable and can be
painted on site.



Tangential design grille TR-30

of high-quality ABS plastic,
colour white.

Suitable for:

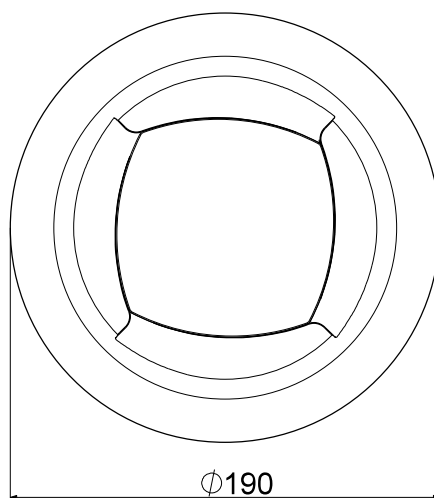
Supply air up to 30 m³/h

Extract air up to 30 m³/h

Plug connection for

tangential casing TG-30

The design grille is washable and can be
painted on site.



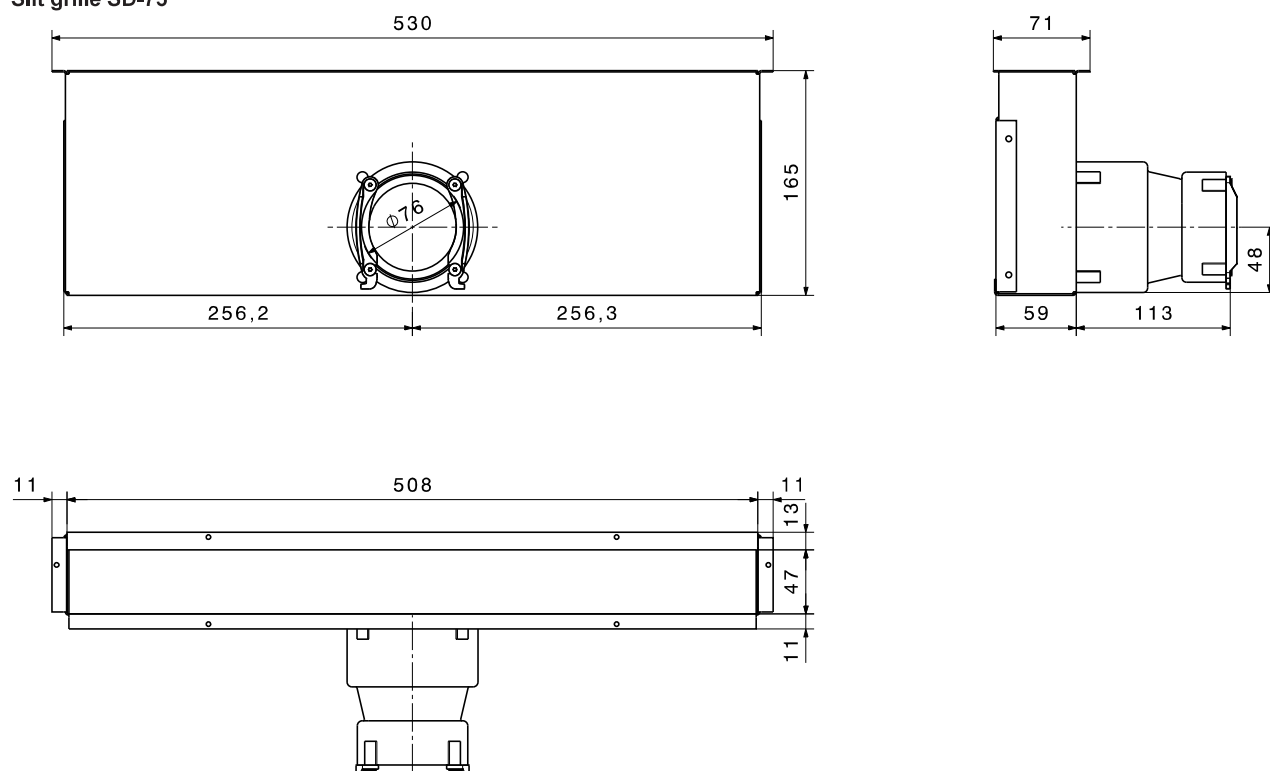
■ Technical data

Slit grille SD-75 and SD-90

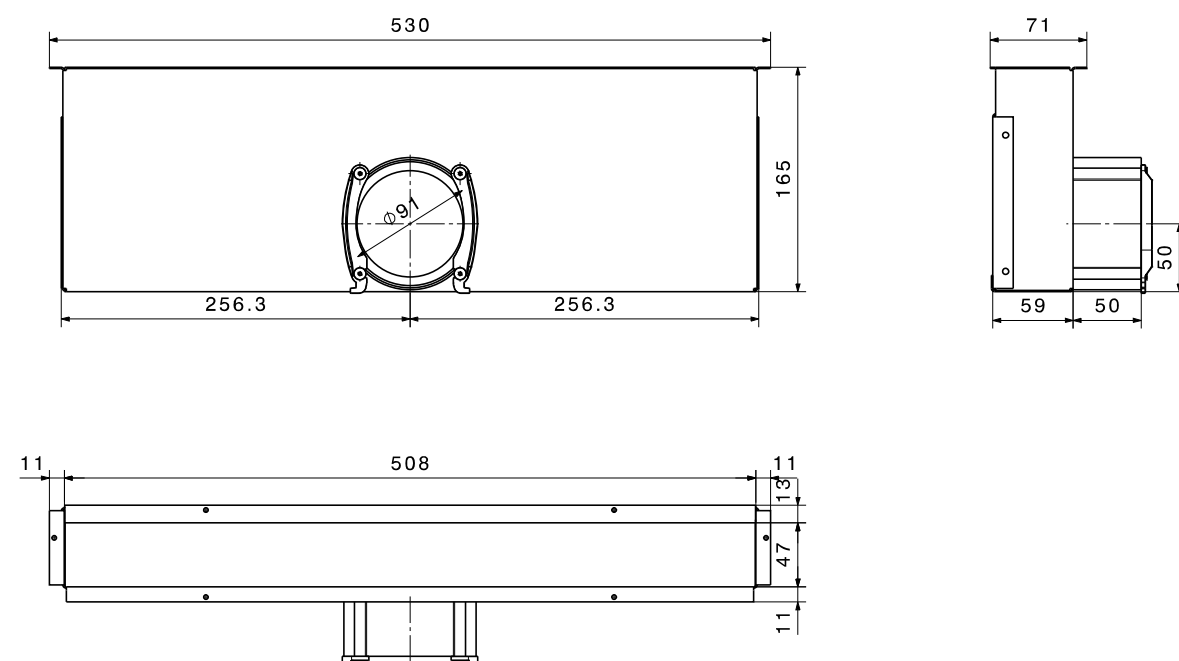
The slit grille is used for linear supply air distribution. It can be set to one or two outlet sides when taken into service, as required (preset to two sides).

The scope of delivery includes the elegant slit grille of anodised aluminium and the connection box of galvanised steel. The volume flow is set in the distribution case.

Slit grille SD-75



Slit grille SD-90



■ Engineering

Relevant standards and regulations (incomplete)

- DIN 1946-T6: Controlled mechanical supply and extract air handling for apartments with heat recovery
- DIN 4109: Sound insulation in structural engineering
- DIN EN 779:2012 Particulate air filters for general ventilation – determination of the filtration performance
- DIN 18017-T3: Ventilation of bathrooms and WCs without outside windows
- Energy Conservation Ordinance EnEV
- Ventilation System Guideline LÜAR

General

The following information is required for planning the comfort ventilation:

- Type, number, surface area and utilisation of the rooms included in the ventilation
- Floor plans and clear room heights
- Possible locations for routing distribution lines and outlets (ceiling, floor structure, outside wall, etc.)

One comfort ventilation device is only allowed to be used for one utilisation unit. The application limits must be complied with.

Fire protection requirements must be clarified with the responsible specialist. Normally (model building code), there are no special fire protection requirements within usage units with max. 2 dwelling units comprising in total less than 400 m² surface area and less than 7 m height.

Terms

Depending on the use to which they are put, rooms are divided into supply air, overflow and extract air areas (table 1). Rooms are only equipped with both supply and extract air ports in exceptional cases. Rooms equipped with comfort ventilation must be located within the thermal (insulated) building shell.

Table 1

| Zone | Room use (examples) |
|------------------|---|
| Supply air zone | Bedroom, living room, nursery, dining room |
| Overflow zone | Corridor, hallway, stairway |
| Extract air zone | Bathroom, toilet, storage room, kitchen, hall |

Flow rates

Necessary volume flows must be defined for a specific project on the basis of the current status of the relevant standards. Special requirements, e.g. concerning noise, moisture loads and temperatures must be taken into account. The following design recommendations are based on DIN 1946 part 6, although compliance with this standard must be examined on a case-by-case basis. The values in the table apply to ventilation with a fan and already take into account that a small proportion of the exchange of air occurs by «infiltration» (through joints, etc.). The largest of the volume flows described in the following 4 points is used as the basis for the nominal ventilation of the ventilation unit (e.g. total of all extract air volume flows).

The maximum air flow rate of the ventilation unit should be sufficient for intensive ventilation (1.3 x nominal ventilation at 170 Pa, for example).

1. A volume flow of 30 m³/h must be provided per person for the residential unit.
2. The area-related minimum volume flows in Table 2 must be complied with.
3. The volume flows in Table 3 must be guaranteed for extract air rooms.
4. The volume flows in Table 4 are recommended for supply air rooms.

Table 2

| Relevant surface A _{NE} [m²] | ≤ 30 | 50 | 70 | 90 | 110 | 130 | 150 | 170 | 190 | 210 |
|--|------|----|----|-----|-----|-----|-----|-----|-----|-----|
| Nominal ventilation V _{R,NL} [m³/h] | 50 | 68 | 86 | 104 | 120 | 135 | 150 | 164 | 177 | 190 |

Table 3: extract air

| Room type | Extract air [m³/h] | n * |
|------------------------------|--------------------|-----|
| Kitchen, kitchenette | 42 | 2 |
| Bathroom, toilet with shower | 42 | 2 |
| Toilet | 23 | 1 |
| Utility room, hobby room | 23 | 1 |

* n = usual number of flexible pipes

Table 4: supply air

| Room type | Extract air [m³/h] | n * |
|--|--------------------|-----|
| Living room | 40-50 | 2 |
| Master bedroom (2 persons) | 40 | 2 |
| Nursery (1 person) | 24 | 1 |
| Office (private), dining room, guestroom | 20 | 1 |

* n = usual number of flexible pipes

Supply / extract air

Only heated rooms are included in the ventilation. All supply and extract lines must be routed within the insulated building envelope. The position of the supply air, overflow air and extract air openings must be selected such that cross-ventilation occurs. Supply air openings must be positioned outside the occupied area, and in particular not above the head ends of beds, writing desks or couches. Hoval normally uses round flexible pipes DN75 (90) as distribution lines. For noise and efficiency reasons, they should be 6 and 15 m long. The external pressure drops (outside + supply air or extract + exhaust air incl. distributor and silencer) should not be more than approx. 100 Pa for nominal ventilation. Hoval recommends complying with a maximum pressure drop of 40 Pa for the lines after the distributor (room-side). Volume flows in excess of 27 m³/h rated ventilation must therefore be distributed between 2 lines. In long line runs, it is necessary to carry out a corresponding calculation.

Distributors must be accessible for inserting the throttle orifices and for cleaning. Lines between the ventilation unit and the supply air distributor or extract air manifold are normally routed with the diameter of the unit coupling. In cool rooms, they must be insulated.

Fresh / exhaust air

The fresh air inlet should be planned in such a way as to avoid the intake of pollutants and smells. It should be at least 2 m above ground and not close to garages or roads with heavy traffic.

The exhaust air outlet should be positioned in such a way that it cannot be drawn in by the outside air inlet. The horizontal distance should be at least 2 m (note the predominant wind direction). Positioning on different walls is a favourable solution. The fresh and exhaust air lines must be insulated over their complete surface and be impervious to vapour diffusion so as to avoid condensation forming on surfaces (e.g. 25 mm EPDM). The insulation must be continued through the outer wall at least until shortly below the outside surface.

Silencers

Silencers suitable for the noise emissions of the ventilation units must always be positioned in the supply and extract air lines. To avoid disturbance of neighbours or on your own patio, for example, it is recommended that silencers should be installed in the exhaust air and possibly also outside air lines.

Unit installation

The comfort ventilation unit can be mounted in various different installation orientations (mounting on a wall / ceiling / floor, outside air top / bottom). Vibration dampers (accessories) must be used for mounting in order to avoid noise transmission and to prevent distortion of the unit. The entire comfort ventilation unit as well as its integrated and add-on parts must be accessible for maintenance and servicing work.

The installation conditions in the technical data (temperature, humidity) must be complied with.

■ Engineering

Operator terminal / wiring

The comfort air ventilation unit is configured ready-to-connect. For connection with the mains supply a 3 m long cable with plug is supplied. A 230 V mains socket should be provided close to the comfort ventilation unit in the electrical planning. The operator terminal should be installed in a reference room with typical air humidity (e.g. living room, hallway between supply and extract air rooms) so that it is visible (fault display, operation) (only BG02 and BG03).

The comfort ventilation unit and operator terminal are connected by an 8-pol CAT 5 patch ribbon cable. A socket (RJ45) must be installed in the building close to the comfort ventilation unit and connected to the position of the operator terminal (RJ45 plug). The HomeVent® comfort ventilation unit is supplied with a 3 m long cable with an RJ45 plug for connecting the unit to the socket.

Combination with heating sources

When using ventilation systems together with heating sources, the chimney sweep must be consulted in advance.

Systems extracting air (e.g. cooker hood, ventilation system, central vacuum cleaner, extract air dryer) can give rise to negative pressures and cause hazardous flue gases to be drawn out of the heat source; as a result, a pressure monitor with design certification is generally required as a safety device. This interrupts the electrical power supply to the air extraction system if dangerous pressure conditions arise. The use of approved fire sources independent from the room air can prevent the flue gas being sucked out.

Services

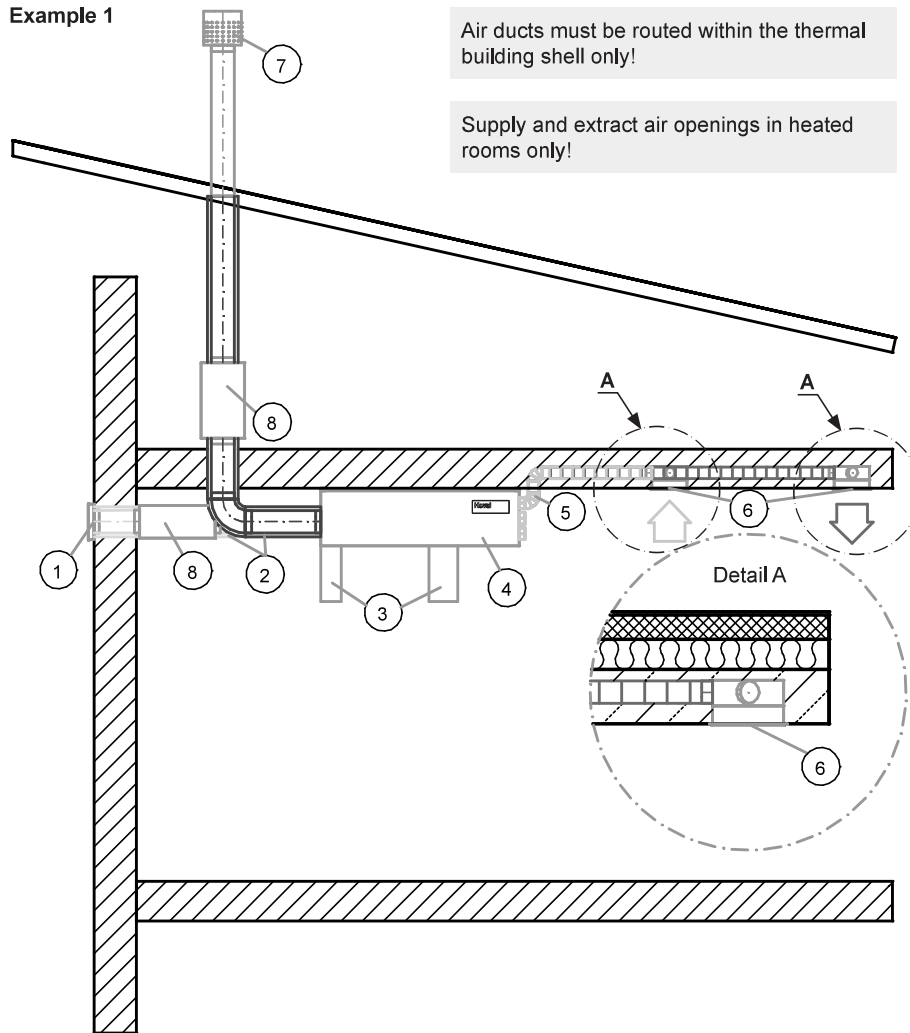
Hoval will be happy to assist you in planning and taking the systems into operation.

IsiPipe and IsiPipe Plus air ducts made of EPP

- The IsiPipe EPP air ducts are joined via a connecting sleeve.
- To ensure tight sealing, the individual sections must be inserted into the sleeve as far as the stop. Tight sealing must be ensured even when individual sections expand or contract as a result of temperature fluctuations.
- The individual sections can be shortened (e.g. using a knife or a saw). When shortening sections, always cut at right angles and remove any residue from the pipe. Use an assembly device, e.g. pipe clamp.
- IsiPipe air ducts made of EPP must be accessible (must not be routed in the cable duct).
- IsiPipe air ducts made of EPP must be supported at regular intervals (approx. every 1.5 m) with pipe clamps.
- When installing accessory parts with a high dead weight, the weight must be supported so that there is no load on the IsiPipe air duct.
- Thermal bridges must be prevented at the junctions between IsiPipe air ducts and pipes or components made of another material, e.g. metal.

■ Examples

Example 1



- ① Weatherproof grille for fresh air
- ② Diffusion-tight heat insulation for fresh and exhaust air
- ③ Service area filter
- ④ Hoval HomeVent® comfort (suitable for all installation positions)
- ⑤ Distributor ducts up to 6 x supply air and 6 x extract air
- ⑥ Connection housing + extension + selectable grille
- ⑦ Hood for exhaust air
- ⑧ Silencer - optional

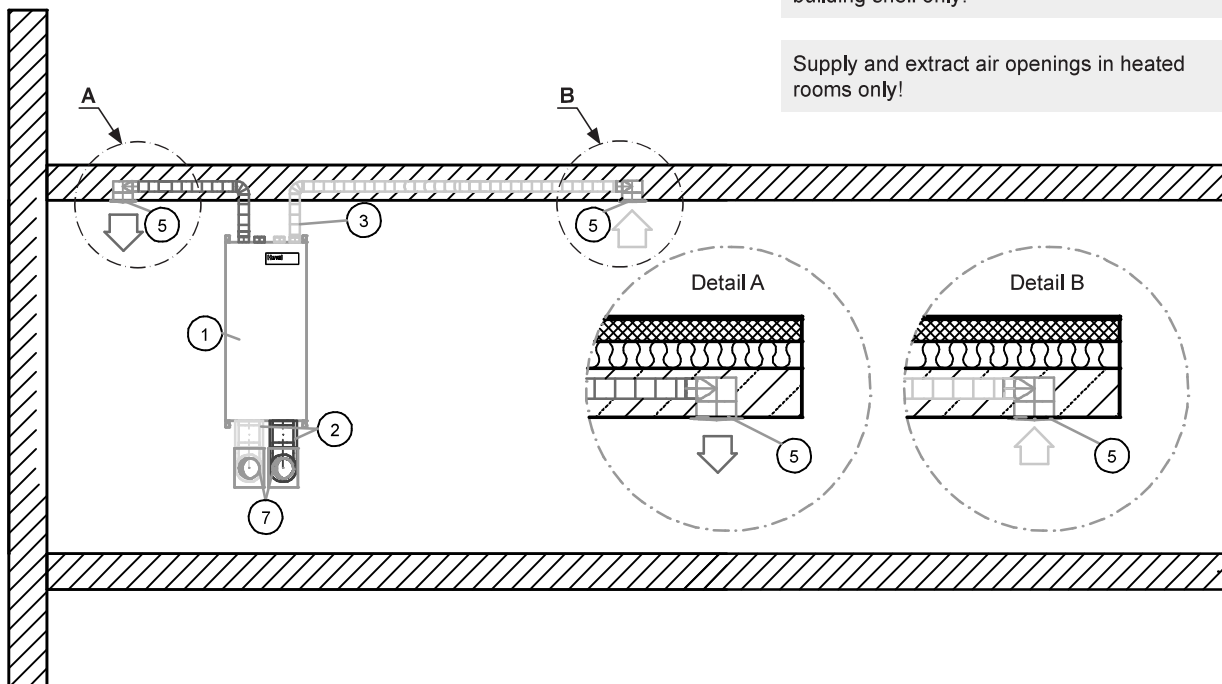
Fire areas and insulation thickness:
The local regulations must be observed!

■ Examples

Example 2a

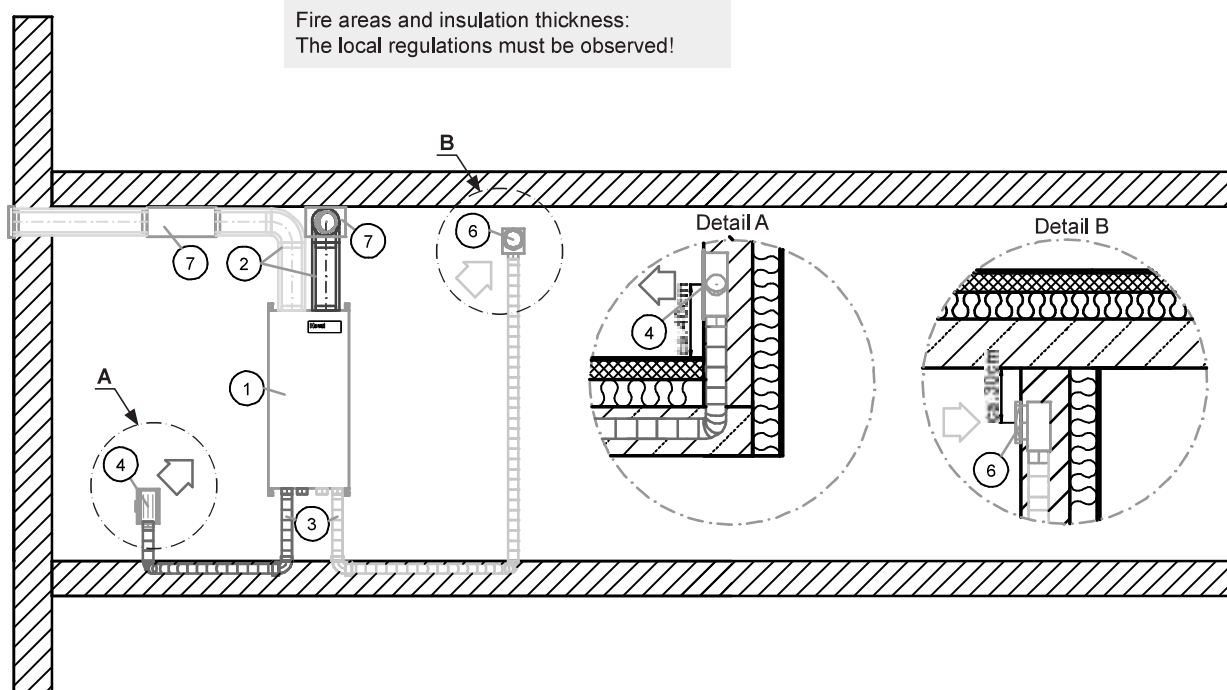
Air ducts must be routed within the thermal building shell only!

Supply and extract air openings in heated rooms only!



- ① Hoval HomeVent® comfort (suitable for all installation positions)
- ② Diffusion-tight heat insulation for fresh and exhaust air
- ③ Distributor ducts up to 6 x supply air and 6 x extract air
- ④ Connection housing + selectable grille
- ⑤ Tangential casing + Tangential add-on + Tangential design grille
- ⑥ In-wall unit + disc valve extract air
- ⑦ Silencer - optional

Fire areas and insulation thickness:
The local regulations must be observed!

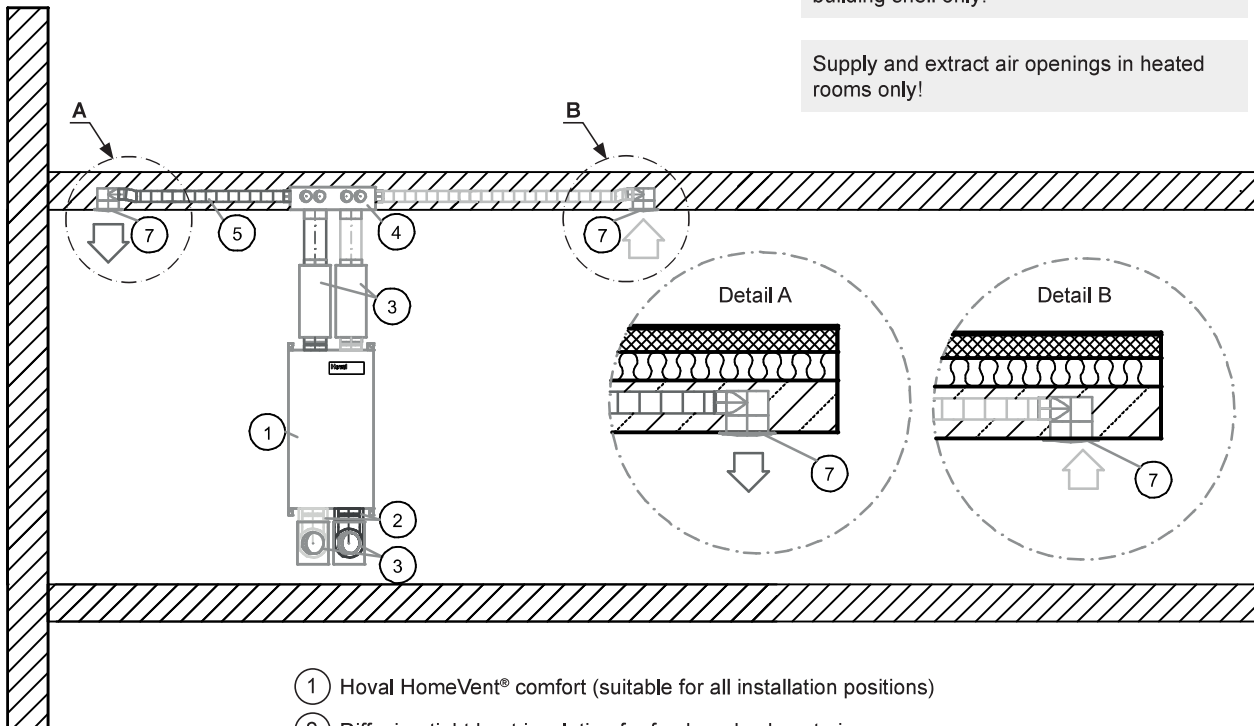


■ Examples

Example 2b

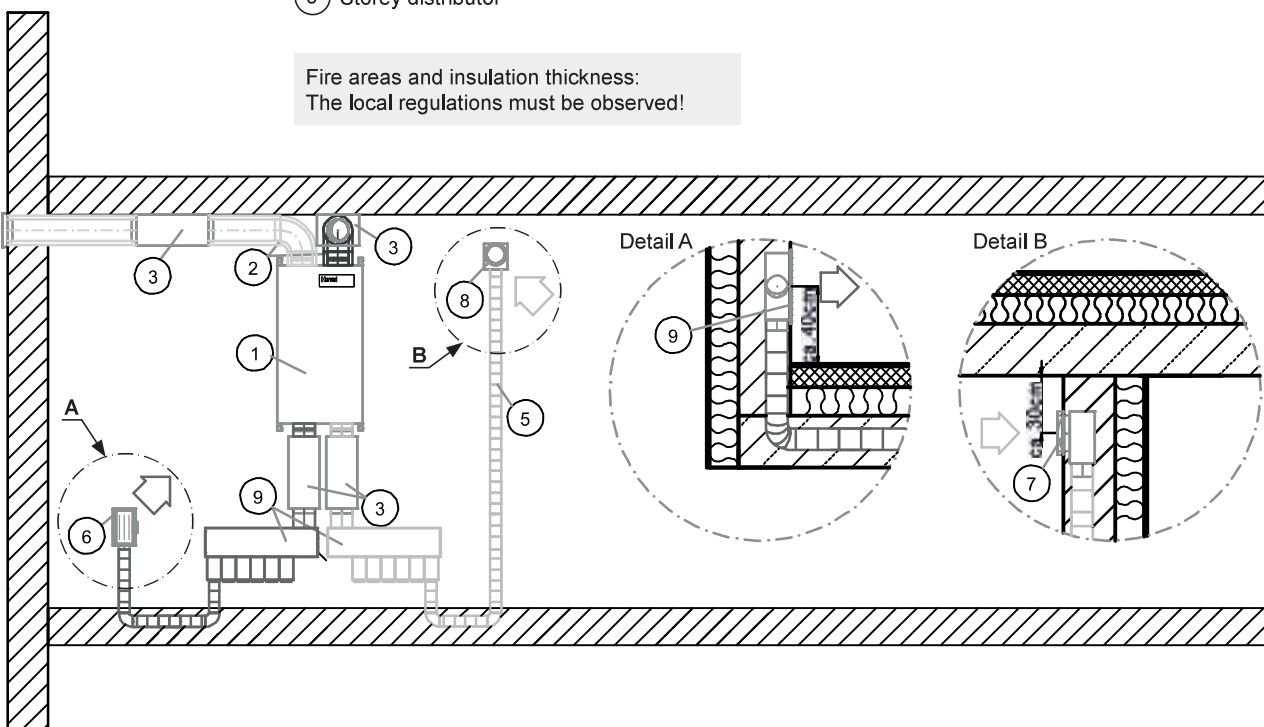
Air ducts must be routed within the thermal building shell only!

Supply and extract air openings in heated rooms only!



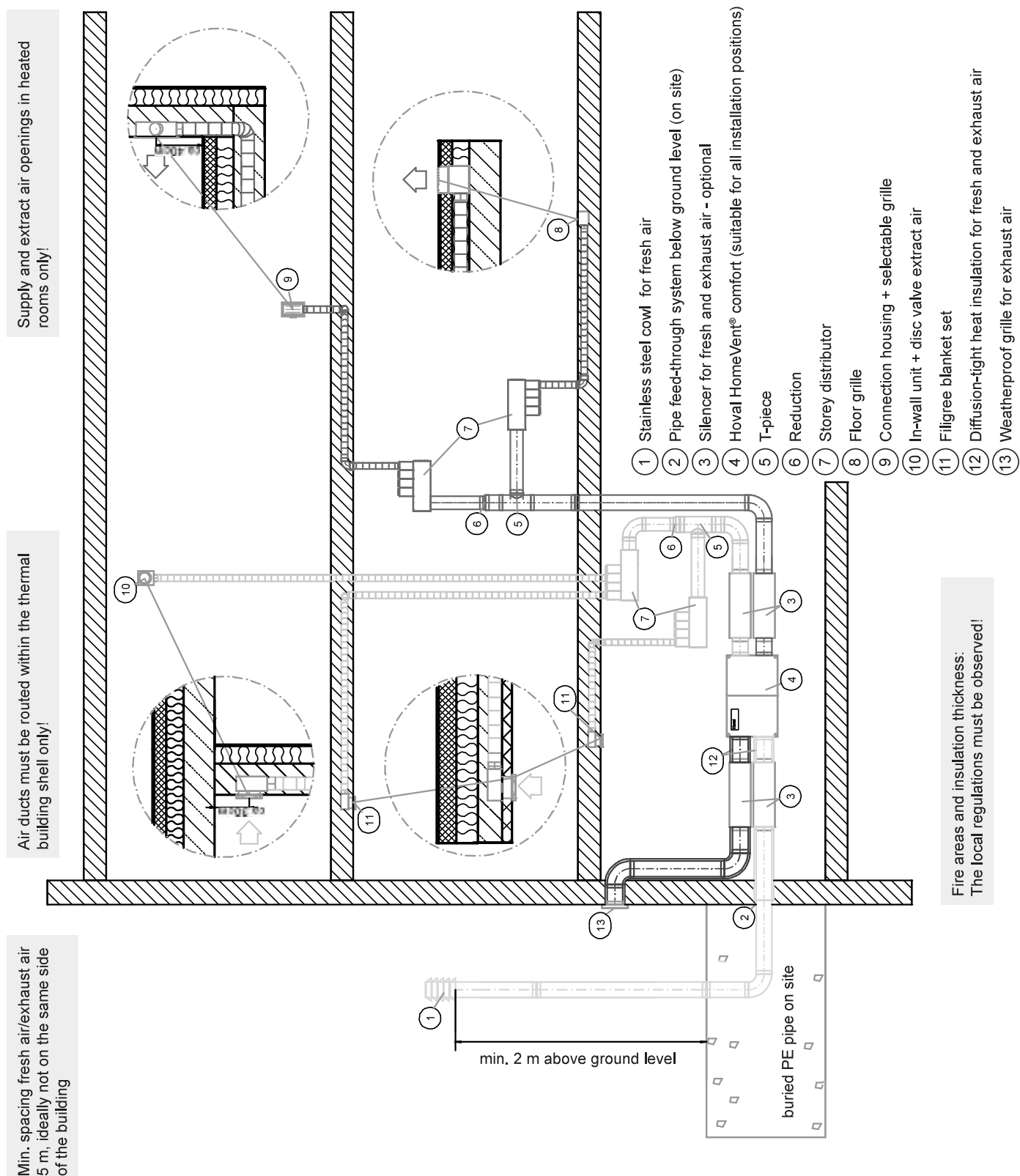
- ① Hoval HomeVent® comfort (suitable for all installation positions)
- ② Diffusion-tight heat insulation for fresh and exhaust air
- ③ Silencer for fresh and exhaust air - optional
- ④ Distribution box
- ⑤ Distributor ducts
- ⑥ Connection housing + selectable grille
- ⑦ Tangential casing + Tangential add-on + Tangential design grille
- ⑧ In-wall unit + disc valve extract air
- ⑨ Storey distributor

Fire areas and insulation thickness:
The local regulations must be observed!



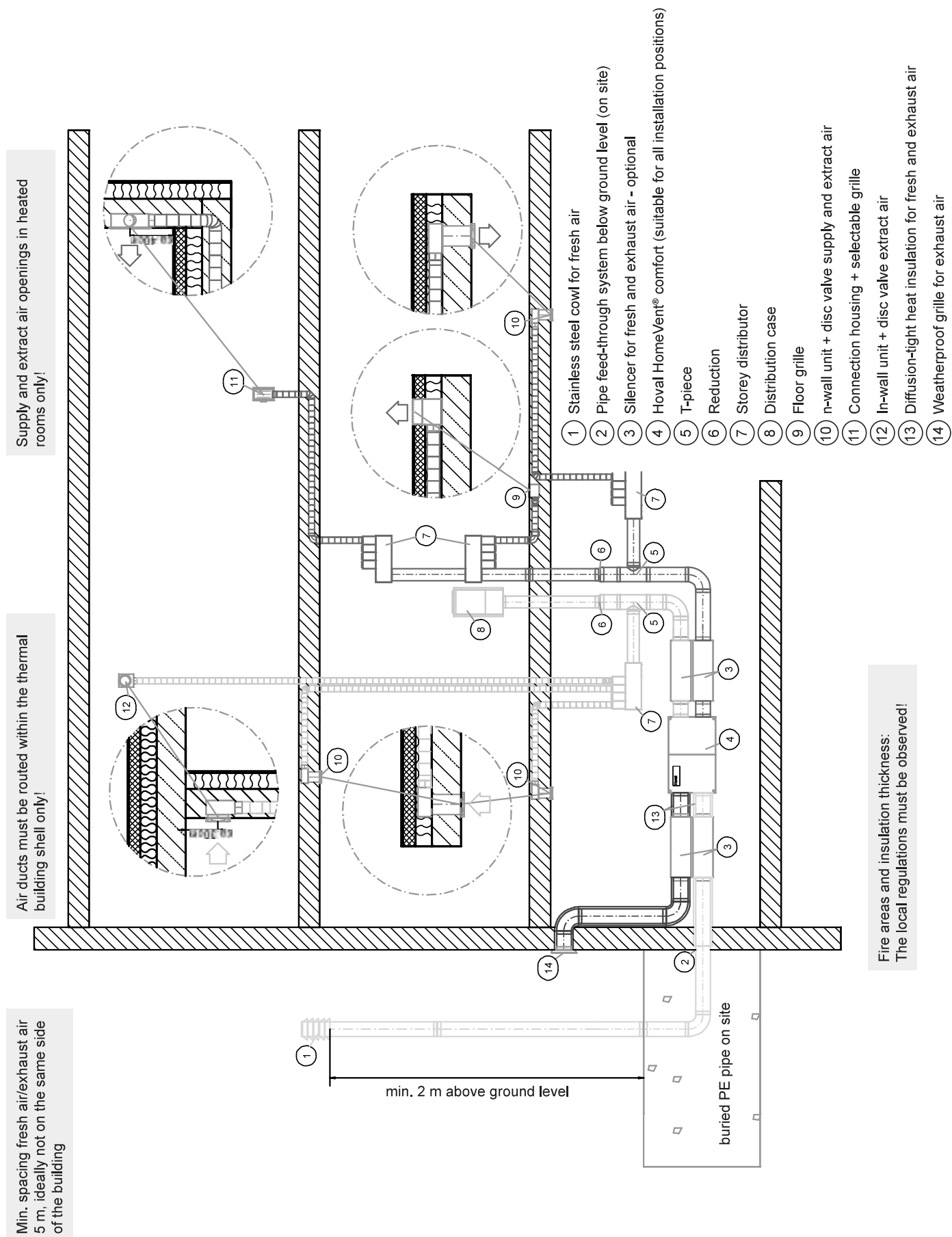
■ Examples

Example 3



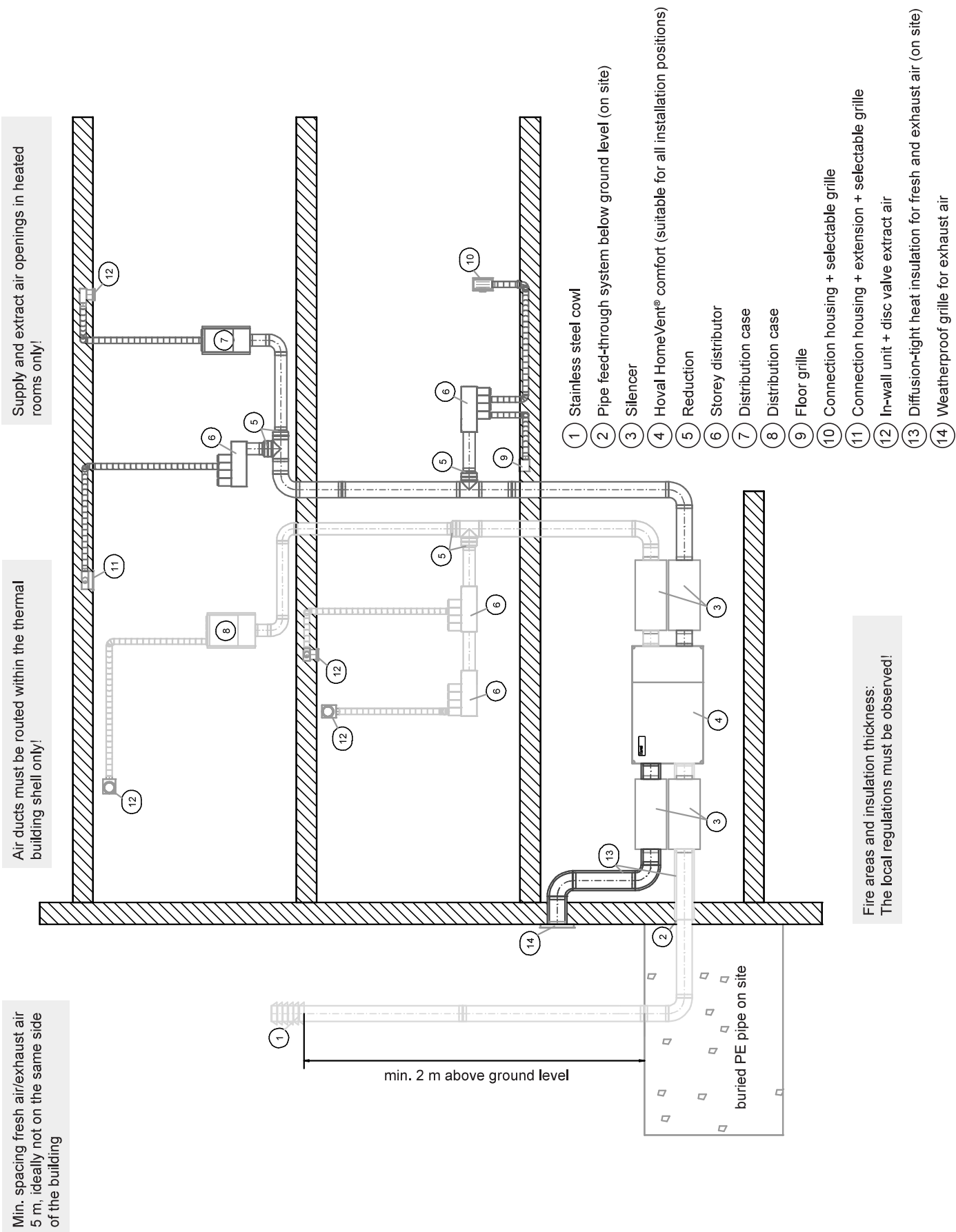
■ Examples

Example 4



■ Examples

Example 5



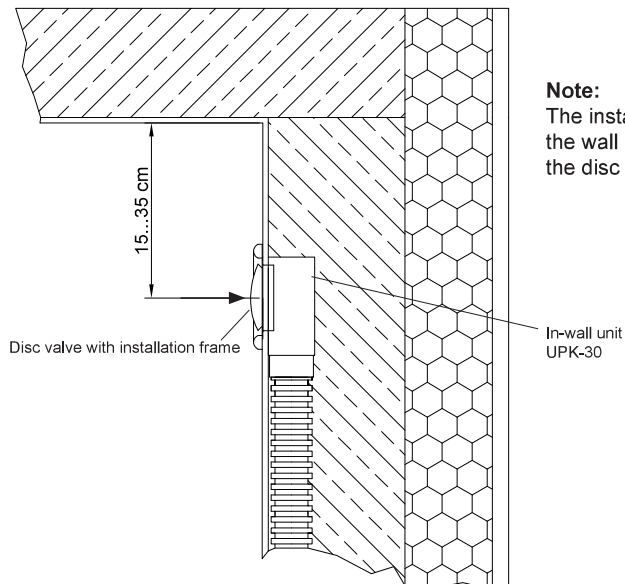
■ Engineering

Component installation instructions

Example: extract air, wall installation

Recommended material

- UPK-30
- TVA-125
- Sealing ring
- Flexible pipe



Note:

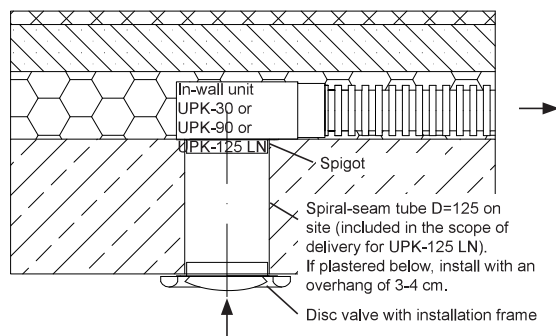
The installation frame of the disc valve must not be mounted before the wall is plastered or tiled (otherwise it will not be possible to mount the disc valve).

Example: extract air, ceiling installation

On concrete ceiling

Recommended material

- Flexible pipe
- Sealing
- UPK-30 (or UPK-125 LN) or UPK-90
- Spigot 125
- Spiral-seam tube (on site or included in the scope of delivery with UPK-125 LN)
- TVA-125



Note:

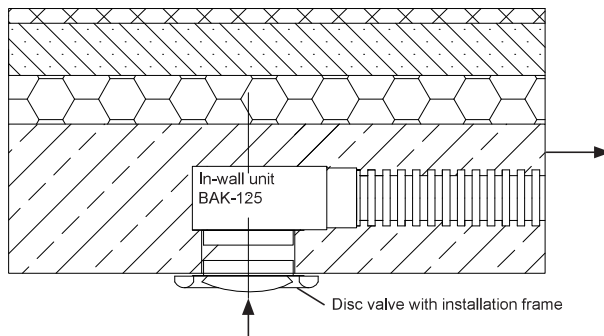
The installation frame of the disc valve must only be mounted after plastering (otherwise it will not be possible to mount the disc valve).

Example: extract air, ceiling installation

In concrete ceiling

Recommended material

- Flexible pipe
- Sealing
- Extract air set for concrete installation BAK-125-70 or BAK-125-90

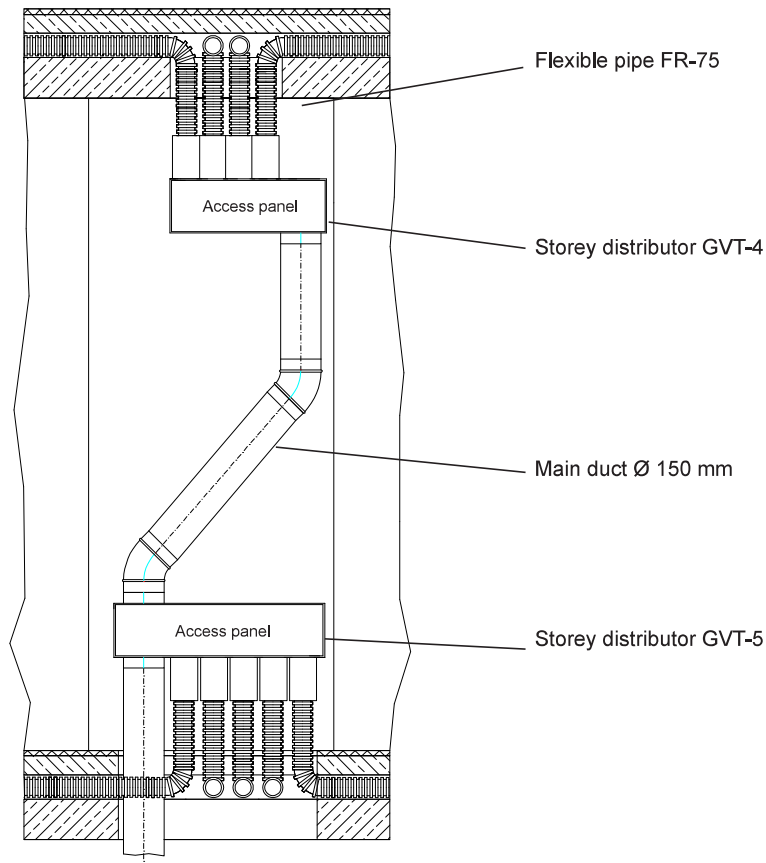


■ Engineering

Component installation instructions

Example of supply air distribution:

To achieve a simple design for the distribution of the supply air, the following version is recommended.



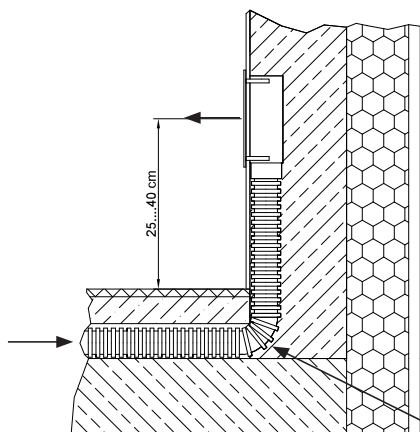
The access panel should be accessible for cleaning purposes. The air flow rate is controlled using baffles in the storey distributor.

The length of the supply ducts (applies to flexible pipe FR-75) should be at least 5.0 m, ideally not above 10.0 m.

Example: supply air, wall

Recommended material

- Connection housing AG-60 with required design grille
- Seal
- Flexible pipe



When routing flexible pipes on cold slab ceilings, use effective insulation (at least 3 cm) underneath (cold).

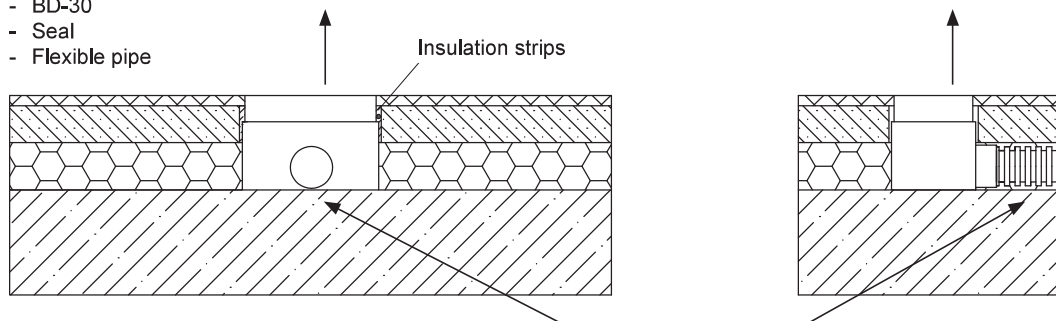
■ Engineering

Component installation instructions

Example: floor grille BD-30

Recommended material

- BD-30
- Seal
- Flexible pipe



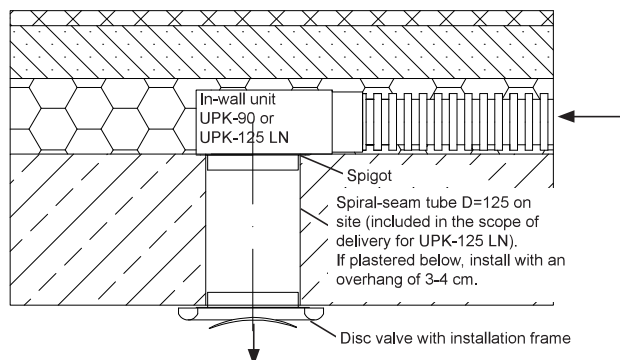
When routing flexible pipes on cold slab ceilings, use effective insulation (at least 3 cm) underneath (cold).

Example: supply air, ceiling installation

On concrete ceiling

Recommended material

- Flexible pipe
- Sealing
- UPK-90 or UPK-125 LN
- Spigot 125
- Spiral-seam tube (included in the scope of delivery for UPK-125 LN)
- TVZ-125

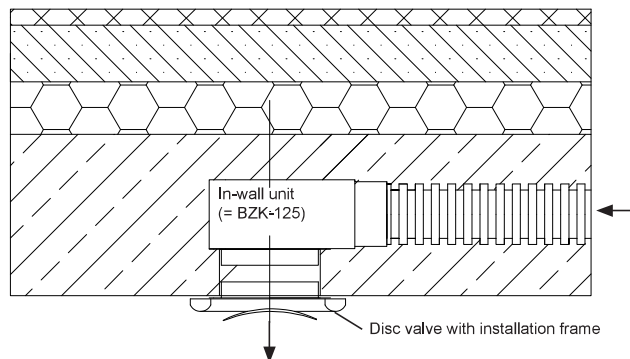


Example: supply air, ceiling installation

In concrete ceiling

Recommended material

- Flexible pipe
- Sealing
- Supply air set for concrete installation BZK-125-75 or BZK-125-90



Note:

The installation frame of the disc valve must only be mounted after plastering or tiling (otherwise it will not be possible to mount the disc valve).

When routing on cold slab ceiling/wall, use effective thermal insulation (at least 5 cm) underneath.

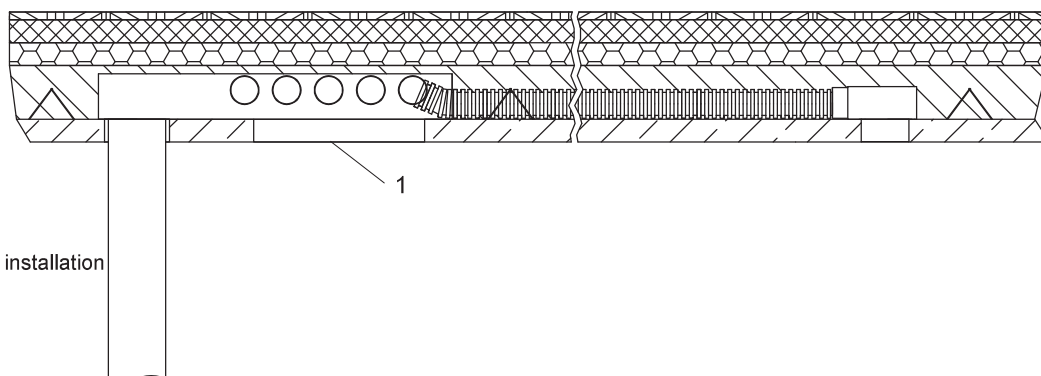
Example: supply air, filigree blanket installation

In concrete ceiling

Recommended material

- Filigree blanket set FDS-125
- Sealing ring
- In-wall unit 10 x Ø X for concrete installation
- Flexible pipe

¹ access panel



1. General

- 1.1 The following Terms and Conditions shall apply to all our present and future contracts for deliveries and other services (even if the said Terms and Conditions are not specifically mentioned in verbal, telephonic or fax communications).
- 1.2 All deviations from the present Terms and Conditions, ancillary verbal agreements and subsequent contractual amendments shall only be valid if they have been confirmed by us in writing.
- 1.3 Buying terms and conditions of the client shall not be valid even if they are not specifically rejected by us. Our Standard Terms and Conditions of Delivery shall be regarded as accepted at the latest upon receipt of our goods and services by the client.
- 1.4 If a provision of the present Terms and Conditions of Delivery proves to be wholly or partially invalid, the contracting parties shall replace the aforesaid provision by a new provision which comes as close as possible to the legal and economic intention of the invalid provision.

2. Offers

- 2.1 Our offers shall be subject to change without notice.
- 2.2 Orders shall only be regarded as accepted when they have been confirmed by us in writing.
- 2.3 Illustrations, drawings and all technical details in catalogues and printed material shall be approximate values as customary within the industry. They shall only be binding if specific reference is made to them in the contract. We shall also reserve the right to make technical and design changes after the conclusion of the contract.
- 2.4 Cost estimates, drawings and other documents shall remain our property and shall be subject to copyright protection; they may not be made available to third parties.

3. Regulations in the country of destination

- 3.1 At the latest at the time of the order, the buyer shall draw our attention to the regulations and standards in force in the country of destination relating to the design of the delivered goods and the operation thereof and also to the execution of services.
- 3.2 Our deliveries and services shall comply with the regulations and standards in the country of destination provided the buyer has drawn our attention thereto in accordance with Section 3.1.
- 3.3 The buyer shall duly inform us of any special application features of goods ordered from us if these differ from our general recommendations.

4. Prices

- 4.1 Our prices shall be ex works, net, excluding packaging.
- 4.2 All ancillary costs, e.g. freight, insurance, export, transit, import and other approvals, licenses and authentications, shall be for the account of the buyer. The buyer shall also bear all taxes, charges, customs duty, etc., which are levied in connection with the contract.
- 4.3 We shall reserve the right to make price adjustments if wage rates or material prices change between the date of the order confirmation and the contractual performance of the contract. Price increases shall normally be notified three months in advance. We shall be bound to the price stated in the order confirmation for a period of three months after the effective date of the price increase.

5. Payment terms

- 5.1 Unless otherwise agreed in writing, our invoices shall be payable within thirty days with no cash discount. Payment shall be deemed to have been made when the amount in question is at our unrestricted disposal on our account in Swiss Francs.
- 5.2 Payment dates shall be observed even if any delays whatsoever occur after shipment of the goods from our works. The buyer shall not be permitted to reduce or withhold payments on account of complaints or counterclaims not recognised by us.
- 5.3 Payments shall also be made if insignificant components are missing but usage of the delivered goods is not rendered impossible as a result or if rectification work has to be carried out on the delivery. We shall be entitled to reject rectification of the defect as long as the buyer has not discharged his/its obligations to us.
- 5.4 If the buyer fails to comply with the agreed payment dates, default interest shall be paid from the agreed due date without a reminder being issued; the aforesaid interest shall be based on the interest rates prevailing at the domicile of the buyer, but shall be not less than four percent above the current discount rate of the Swiss Central Bank.

- 5.5 We shall be entitled to make deliveries of pending orders dependent upon settlement of outstanding claims.

6. Reservation of title

- 6.1 Delivered goods shall remain our property (reserved goods) pending full and complete payment of all present and future claims to which we are entitled regardless of their legal cause. This shall also apply if payments are made in settlement of specifically designated claims.
- 6.2 The buyer shall be entitled to process and sell reserved goods in the ordinary course of business.
- 6.3 If our reserved goods are combined or intermingled with other goods, the buyer shall hereby transfer his/its ownership rights in the new goods or chattels to us upon the conclusion of the contract in the amount of the invoice value of the reserved goods.
- 6.4 If the goods are resold by the buyer, he/it shall hereby transfer to us upon the conclusion of the contract with us his/its claims arising from the aforesaid resale in the amount of the invoice value of the reserved goods.
- 6.5 If the reserved goods are used by the buyer to perform a works or works delivery contract, his/its claim from the aforesaid works or works delivery contract shall hereby be assigned to us in the same amount and on the same date as for the purchase price claim (Section 6.4).
- 6.6 As long as he/it is honouring his/its payment obligations, the buyer shall, however, be authorised to collect his/its resale claim which has been assigned to us. He/it may not dispose of such claims by way of assignment to third parties, however. The empowerment of the buyer to collect the claim may be revoked by us at any time. We shall be entitled to notify third party debtors of the assignment. The buyer shall be entitled to provide us with the necessary information and documents in order to enable us to enforce our rights.
- 6.7 If the value of our securities exceeds our total claims by more than 10 %, we shall be obliged to release securities of our choice at the request of the buyer.
- 6.8 The buyer shall inform us immediately of any pledge or other impediment to our property enforced by third parties.
- 6.9 The buyer shall be obliged to collaborate in measures required to protect our title. He/it shall, in particular, empower us upon the conclusion of the contract to make entries or prior notice of the reservation of title at his/its cost in public registers, books and documents, etc., in accordance with the relevant national laws and shall perform all formalities in this respect.
- 6.10 The buyer shall maintain the reserved goods at his/its cost for the duration of the reservation of title and shall insure the said goods against theft, breakage, fire, water and other risks in our favour. He/it shall also take all steps to ensure that our property claims are neither adversely affected nor rescinded.

7. Delivery periods

- 7.1 Delivery periods and deadlines stated by us shall be approximate unless we have given an express written confirmation of a deadline as binding.
- 7.2 Delivery periods shall be deemed to have been met if notification of readiness to deliver has been sent to the buyer before the end of the delivery period.
- 7.3 The delivery period shall be prolonged if details required for the performance of the contract are not received on time or if they are subsequently changed by the buyer.
- 7.4 The delivery period shall also be reasonably prolonged if impediments arise which we cannot avert despite exercise of the necessary care (e.g. major operational disruptions, industrial disputes, delayed or defective deliveries, force majeure, etc.).
- 7.5 If an agreed delivery date is met by more than 14 days, the buyer shall be obliged to set us a reasonable period of grace. The buyer may only withdraw from the contract if our goods have not been delivered by the end of the said period of grace. Compensation claims for non-performance, delayed performance or any consequential losses shall be excluded unless there was gross negligence on our part.

8. Transfer of risk

- 8.1 Unless expressly agreed otherwise in writing, our "ex works" deliveries shall be made in accordance with the international rules

on the interpretation of commercial clauses of the International Chamber of Commerce (Incoterms) in the version in force on the date of the order confirmation.

- 8.2 The transfer of risk shall be determined by the aforesaid Incoterms.
- 8.3 Insurance against damages of any kind shall be the responsibility of the buyer.
- 8.4 Complaints in connection with the transport shall be immediately notified by the buyer to the last carrier upon receipt of the delivery.
- 8.5 If despatch is delayed at the request of the buyer or for any other reasons not attributable to us, the risk shall pass to the buyer on the original date envisaged for the "ex works" delivery. We shall be entitled to demand payment from this date onwards.

9. Delivery inspection

- 9.1 The buyer shall be required to inspect deliveries immediately. If the goods do not comply with the order or the delivery note or if visible defects are identified, he/it shall be obliged to notify the aforesaid to us in writing within eight days of receipt. Later complaints shall not be recognised. (Re transport damages, cf. Section 8.4)

10. Assembly and operations

- 10.1 The assembly, putting into operation, operation and maintenance of the delivered goods shall be carried out in accordance with our guidelines. They may be executed by our staff or by appropriately trained third parties as agreed with the buyer.
- 10.2 If we require a commissioning certificate for certain product groups, warranty claims for the proper functioning of the equipment can only be enforced if a proper hand-over has been documented by a confirmed commissioning certificate received by us within one month of the hand-over.

11. Warranty

11.1 Warranty period

- 11.1.1 The general warranty period shall be 12 months from the first commissioning but no longer than 18 months from the date on which the relevant goods left our works.
If despatch is delayed for reasons not attributable to us, the warranty shall lapse no later than 18 months after notification of the readiness to deliver.
The general warranty period shall exclude electrical components for which the warranty period shall be 6 months from the first commissioning but no later than 12 months from the date of shipment from our works.
- 11.1.2 We refer to Section 11.6.1 with regard to the warranty period for third party products.
- 11.1.3 The warranty period for components which we have repaired during the warranty period or have delivered as replacement shall be 12 months from the completion of our repair or from the date of the replacement delivery but no longer than the end of a period equivalent to twice the original warranty period as per Section 11.1.1.

11.2 Liability for material, design and workmanship defects

- 11.2.1 The contractual condition of the goods shall be based on the condition upon the transfer of risk.
- 11.2.2 Defects shall be notified to us immediately in writing.
- 11.2.3 We shall be liable for all components which can be shown to have become defective or unusable before the end of the warranty period as a result of defective materials, defective design or defective workmanship, with such components being repaired or replaced ex works immediately at our choice.

11.3 Liability for warranted qualities

- 11.3.1 Warranted qualities shall only be those which are specifically designated as such in the order confirmation or in the relevant specifications.
- 11.3.2 The aforesaid assurance shall apply at the latest until the end of the warranty period. If a taking-over test has been agreed with the buyer, the assurance shall be deemed as performed if proof of the relevant qualities is furnished during the aforesaid test.
- 11.3.3 If the warranted qualities are not performed or only partially performed, the buyer shall be entitled to an immediate rectification. The buyer shall grant us the necessary time and opportunity for this purpose.
- 11.3.4 If the rectification is abortive or only partially successful, the buyer shall be entitled to a reasonable reduction of the purchase price. If the defect is so serious that it cannot be rectified within

a reasonable period of time, and if deliveries or services for the notified purpose are not usable or are only usable to a much lesser extent, the buyer shall be entitled to refuse acceptance of the defective component or to withdraw from the contract if part-acceptance is economically unreasonable. We shall only be obliged to refund amounts which have been paid to us for the components affected by the aforesaid withdrawal.

11.4 Exclusion of liability for defects

- 11.4.1 Our liability shall exclude damages which cannot be proved to have been sustained as a result of defective material, defective design or defective workmanship.
- 11.4.2 Damages shall therefore be excluded for example which were caused by
 - improper work of other persons with regard to planning, site preparation, assembly, operation and maintenance;
 - plant concepts and designs which do not comply with the latest state of the art;
 - non-observance of our guidelines for planning, assembly, commissioning, operations and maintenance;
 - force majeure (e.g. thunderstorms).
- 11.4.3 The following shall be excluded in particular
 - corrosion damages (e.g. as a result of aggressive water, unsuitable water treatment, oxygen intakes, emptying the plant over a longer period of time, falling below the dew point, chemical or electrochemical effects, etc.);
 - damages caused by air pollution (e.g. the accumulation of intense dust, aggressive vapours, etc.);
 - damages caused by unsuitable equipment and fuels;
 - damages caused by overcharging, excessive water pressure, scaling, improper electrical connections and inadequate fuse protection.
- 11.4.4 Components shall also be excluded from the warranty which are subject to natural wear and tear (e.g. burner nozzles, combustion chamber inserts, ignition and monitoring components in contact with fire, fireclay and wall facings, fuses, seals and flexible tubes).

11.5 Commissioning certificate

- 11.5.1 We hereby draw attention to the due and proper hand-over and - if envisaged - the commissioning certificate in accordance with Section 10.2 as prerequisites for our warranty.

11.6 Deliveries and services of sub-contractors

- 11.6.1 Our liability for third party products which form a major part of the delivered goods (e.g. warehouse and conveying equipment, burners, measuring and control equipment, electrical components, flue gas and waste water cleaning equipment) shall - if permissible - be limited to an assignment of our claims against the suppliers of the said third party products.

12. Exclusion of further liability

- 12.1 The buyer shall have no rights and claims for materials, design and workmanship defects or the lack of warranted qualities unless specifically mentioned in Sections 11.1 to 11.6.
- 12.2 All claims for compensation, reduction in the contract price, rescission of the contract or withdrawal from the contract shall be excluded in particular unless these are specifically mentioned. Under no circumstances shall the buyer have any compensation claim for damages which were not sustained by the delivered goods themselves (e.g. replacement costs, cost for establishing the cause of the damage, expertises, production stoppages, production losses, lost orders, lost profit and other direct or indirect damages). The aforesaid liability exclusion shall not apply in the event of gross negligence on our part.
- 12.3 The exclusion as per Section 12.2 shall apply for all breaches of contract and all claims of the buyer regardless of why they were lodged from a legal point of view. It shall therefore also apply for a breach of any ancillary obligations (e.g. inadequate advice, etc.).

13. Jurisdiction

- 13.1 The place of jurisdiction for the buyer and for us shall be Vaduz. We shall be entitled to bring action against the buyer at his/its domicile, however.
- 13.2 The legal relationship between the parties shall be governed by the substantive laws of Switzerland. The application of the UN convention on contracts for the international sale of goods (CISG) shall be excluded.