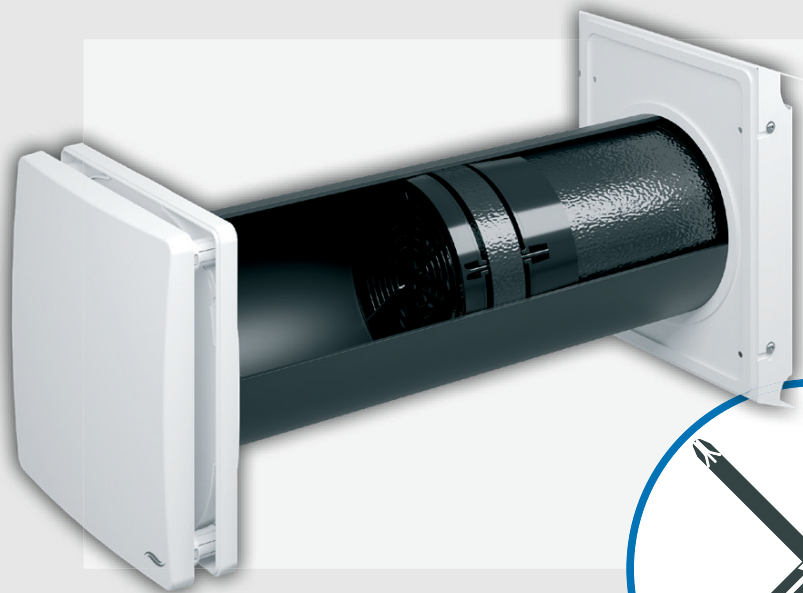




INVENTER

iV-Smart⁺

Standard • Corner • Ohio



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Disclaimer

This documentation is a translation of the original German installation instructions. After completion of the installation it must be given to the user (tenant, owner, property management, etc.). The content of this documentation has been checked for compliance with the described hardware and software. Nevertheless deviations may still occur, therefore no guarantee of compliance can be provided. This documentation describes the functionality of the standard scope. The documentation does not purport to cover all details on all types of the product and cannot cover every conceivable scenario for installation and assembly. The illustrations in this document may differ slightly from the design of the product that you have purchased. The same functionality is ensured despite any design deviations.

This documentation is updated regularly. Necessary corrections and appropriate supplements are always included in subsequent editions. You can find the latest version at www.inventer.eu/downloads

Version 1.0

1 User and safety instructions

Thank you for purchasing this high quality product from inVENTer!

This section provides an overview of the basic safety precautions for safe and proper operation of your ventilation unit.

1.1 User information

Concept of safety instructions

The safety and warning instructions in these operating instructions have a uniform structure and are marked with a symbol on the left side of the instruction. A signal word in front of the text also indicates the hazard level. If several hazard levels exist, the highest level safety instruction is always used.

The safety and warning instructions contain the following information.



SIGNAL WORD: Type and origin of the hazard. Possible consequences of the hazard! Measures to avoid the hazard.

A signal word indicates the severity of the potential hazard unless the preventative measures are taken.



WARNING indicates: Imminent danger of serious injury or death.



CAUTION indicates: Imminent or possible risk of minor/significant injury.



CAUTION indicates: Imminent or possible risk of minor/significant injury due to electricity. Before carrying out any work on steps stressed with this symbol disconnect the power supply.



NOTICE indicates: Imminent or possible damage to property due to an adverse event/state.



Damage to property due to non-observance of required slope: Install the component with a slope to the exterior wall side to ensure that occurring condensate may drain away.



Damage to property, e. g. accumulation of algae, due to missing sealing tapes. When installing the unit attach all sealing tapes!

If you see this sign, ensure you observe the described measures to prevent possible hazards and/or damage.

Other symbols used in this documentation

In addition to the safety instructions, the following symbols are used:



Red frame surrounding: Graphic shows the interior wall.



Blue frame surrounding: Graphic shows the exterior wall.

1.2 Safety instructions

These installation instructions are part of the ventilation unit and must be permanently available. When handing the equipment/system to a third party, the installation instructions must be handed over also. Before performing any work on the system, read the installation instructions carefully and observe all information regarding installation and assembly contained in this section. Also note the safety instructions that precede the described handling instructions. Non-observance of safety warnings could result in injury and/or property damage.

Intended use

The ventilation unit is designed to ventilate dwellings and similar residential spaces. It is controlled via an inVENTer system controller.

General instructions

- Observe the relevant standards, regulations and guidelines, especially the applicable building codes and fire and accident prevention regulations issued by the respective trade association.
- Use the equipment/system exclusively for the applications that are described in this documentation and only in conjunction with components that are recommended, authorised and described by inVENTer GmbH in this documentation. Changes or modifications to the equipment/system are not permitted.
- Your ventilation unit is exclusively designed for use in ambient temperatures between -20 and 50 °C.
- Trouble-free and safe operation of the equipment depends on proper transportation, proper storage and installation as well as careful operation and maintenance.

Assembly and installation




- **CAUTION: Installation of the system may only be performed by qualified personnel.**
- Before starting work, you should have a ventilation concept from which the number of ventilation units, their position, the ventilation principle (cross ventilation, individual room ventilation, extraction) and the relevant controllers can be determined. The exact positioning of the units and controllers must be determined on-site and, if necessary, adapted to the local conditions by the user/planner. Installation is recommended in a suitable position in the upper wall area for optimal operation.



- **WARNING:** Install a pressure monitor in rooms with open flues. In any case air exchange must be assured to be sufficient for the ventilation units as well as the fire place. Consult your chimney sweeper and/or building planner before installation!



- **NOTICE:** The ventilation unit must not be used for drying out buildings. It must not be put into operation until after completion of the construction work. The ventilation unit must remain sealed against dust during the construction work (attached protective discs).
- **NOTICE:** Do not place the unit near radiators, room thermostats or in the immediate vicinity/above sensitive paintings or furnitures.
- **NOTICE:** Observe the predetermined minimum distances on both sides of the wall and in front (see , page 15) to avoid the mixing of outdoor air and exhaust air, and to ensure access to the unit and its components.
- **NOTICE:** Install the wall sleeve outside airtight and inside vapour tight into the air resistance layer. Material must be provided by the customer. After installing the wall sleeve replace the wall structure as far as the wall sleeve and observe the necessary barrier levels in order to avoid the interruption of the thermal insulation composite system. Consult your planner!



- **NOTICE:** Install the wall sleeve with a slope of 1 – 2° to the exterior wall in order to ensure that occurring condensate may drain away.
- **NOTICE:** The ventilation unit must not be installed in areas in which direct contact with water spray is possible.
- **NOTICE:** In order to prevent algae accumulation and a discolouration of the façade around the weather protection hood observe all installation advices (apply all sealing tapes!). In vulnerable areas, apply a biocidal/water repellent treatment to the plaster surface around the weather protection hood, flat duct and the reveal grille before installing. Consult your planner!
- **NOTICE:** When installing components to (exterior) walls with insulation use insulation plugs to ensure safe fastening. These are not part of the scope of supply, but are available as an option.
- **NOTICE:** Exclusively use permanently elastic sealing compound for exterior/outdoor use to seal the joints at the exterior closures (protective hoods Nova and Ohio).
- **NOTICE:** Your ventilation unit has scratch-sensitive plastic surfaces. Do not touch the inner cover with oily and/or dirty hands. Avoid contact with sharp or pointed objects, e.g. rings.

Wiring/Electrical connection of the fan



- **CAUTION: Electrical connection of the system may only be performed by qualified personnel.**
- **NOTICE:** Your ventilation unit operates with a safety extra low voltage (SELV) and an operating voltage of 6 – 16 V DC. The ventilation unit must therefore not be connected directly to the 230 V mains, but **must always be connected via a controller**.
- **NOTICE:** Exclusively lay cables without a plaster-resistant cable sheath inside an empty conduit.
- The ventilation units must be synchronised when using multiple ventilation units controlled via multiple controllers (see installation and operating instructions for the controller). All of the controllers should be connected via a mains fuse in the building distributor.

If your equipment/system has a defect, contact your nearest distributor or our technical service.

Any kind of use other than the intended use will exclude all liability claims.

Improper use

Any use that is not mentioned in the intended use section, is considered to be improper.

Do not install the equipment in areas which...

- Contain (or may contain) strong oils or lubricants.
- Contain (or may contain) flammable gases, liquids or vapours.
- Contain (or may contain) extreme dusts.
- Are exposed to ambient temperatures below -20 °C and above 50 °C.
- Contains obstacles that hinder access to, or removal of, the unit's components.

2 System overview

The iV-Smart⁺ ventilation system is designed to ventilate living rooms and bedrooms in single- and multi-family houses, hotels and guest houses, rooms in public facilities and work rooms in office buildings. It is suitable for installation in new buildings as well as for retrofitting in existing buildings. Installation is carried out in the exterior wall.

The ventilation unit iV-Smart⁺ comprises a wall sleeve into which a thermal accumulator insert is installed, as well as an inner cover and an exterior closure.

The thermal accumulator insert contains the ceramic thermal accumulator and inVENTron. Due to the flow-optimised design of inVENTron, the two guiding vanes with embedded Xenion reversible fan, ensures efficient capacity utilisation and even flow through the thermal accumulator.

The standard length of the wall sleeve is 495 mm. For thicker walls, there is the option of ordering a wall sleeve with a length of 745 mm. Both versions can be trimmed on site.

It is controlled via one of the following inVENTer system controllers¹⁾:

- sMove s4
- sMove s8
- MZ-Home

Components

- Inner cover inkl. dust filter of class G4
- Thermal accumulator insert (thermal accumulator and inVENTron)
- Wall sleeve
- Exterior closure:
- Pollen, micro and activated carbon filter options available
- Sound and wind protection options available as accessory

Models

- **Standard version:** iV-Smart⁺ ventilation units with driving rain proof Nova or Smart weather protection hood (white/grey/Nord/custom colour)
- **Corner version:** iV-Smart⁺ ventilation units with flat duct for integration into the thermal insulation layer and reveal grille (white/grey/Nord/custom colour)
Corner version is particularly suitable when subsequently fitting insulation or if a weather protection hood cannot be fitted to the outside wall for structural or other reasons (e.g. listed buildings). Due to the reveal grille in the window reveal the ventilation unit disappears subtly into the external wall.
- **Ohio version:** Ventilation units iV-Smart+ with Ohio weather protection hood (grey)
It is designed as an solution for buildings with the special requirements of particularly thin exterior walls, e. g. if due to construction requirements no thermal insulation may be fitted.

¹⁾The installation and operating instructions for the controller do not form part of this documentation and are supplied separately.

2.1 Function

The iV-Smart⁺ ventilation system is used to provide ventilation for living rooms and bedrooms. An integrated thermal accumulator in combination with the Xenion reversible fan and the guiding vanes ensures optimum heat recovery with maximum air flows in its class.



The ventilation unit operates on the principle of heat recovery by changing the direction of the fan. The integrated thermal accumulator charges itself with heat energy from the room's air as it flows to the exterior (extract air). After 70 seconds, each Xenion reversible fan changes direction. When the reversible fan changes direction, it releases the stored heat energy into the incoming outside air (supply air).

For this principle to work correctly and to ensure the room's pressure stability the incoming air and extract air volumes must match, i. e. two iV-Smart⁺ ventilation units are required. These are operated in pairs in

push-pull operation: One ventilation unit works in supply air mode while the other works in extract air mode at the same time.

Due to the Xenion reversible fan's high pressure built-up and active speed control (integrated wind stabiliser) the air flow within the system is kept nearly constant. Thus, the air flow sensitivity to pressure variation meets the requirements of class S3 according to EN 13141-8 (max. 30 % air flow deviation at ± 20 Pa).

In order to ensure the full functioning of the ventilation system throughout the entire year, an additional, flexible temperature sensor is integrated into the Xenion reversible fan. This measures the temperature of the air flow. If the temperature falls below +5°C, the reversible fan is automatically switched to extract air mode for 4 cycles. This allows the thermal accumulator to heat up again and prevents cooling of the interior due to cold drafts. During this phase, the mode that has been set on the controller is ineffective. Subsequently, the controller switches the ventilation unit back to the originally selected mode.

A multi-use dust filter of filter class G4 is integrated discreet and easy of access into the inner cover. It filters off reliably dusts as well as allergenic particles (such as pollen) from the ambient air before it can enter living spaces. Dust filters are season independent. For special requirements micro, pollen and activated carbon filters are available as an option.

A decentralised ventilation system is based on the free movement of air between individual pairs of ventilation units. Therefore, internal doors must not have air-tight seals. Ensure adequate air transfer measures: An air gap of about 10 mm below the door, unscrew the hinges by 5 mm, use a ventilation grille or similar (cross ventilation).

The ventilation unit is controlled via one of the inVENTer system controllers. Depending on the controller, operating modes and functions may be selected.

2.2 Control elements

sMove controller



The controllers from the sMove product range are electronic control unit for controlling the iV-Smart[®] ventilation units. They are characterised by their timeless and slim design and a simple touch-based operating concept.

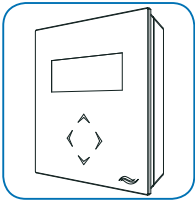
The sMove controller is available in the s4 and s8 versions. s4 is used to control up to four iV-Smart[®] ventilation units. s8 is used to control up to eight iV-Smart[®] ventilation units.

Both versions are available in a flat and standard version: In contrast to the flat version, in addition to pause mode, the standard version provides the option to switch off the ventilation unit completely.

The connected ventilation units can be controlled in the following modes:

- Heat recovery
- Ventilation
- Pause function
- Off (only sMove standard version)

MZ-Home controller



The MZ-Home controller is an electronic control unit for controlling up to 16 iV-Smart[®] ventilation units.

It is characterised by Clust-Air technology (multizone control), simple installation, touch-based operation and its versatility.

The MZ-Home controller consists of a control unit and at least one (optional up to four) Clust-Air module(s). Each Clust-Air module can control up to four iV-Smart[®] ventilation units in different zones within the accommodation unit. This allows the MZ-Home controller to provide varied ventilation for up to four different areas (zones)

within the accommodation unit. For each zone, the operating mode and output level can be set manually or via a 7-day timer.

The connected ventilation units can be controlled in the following modes:

- Heat recovery
- Ventilation
- Dehumidification
- Off / Pause function

The sMove and MZ-Home controllers can be expanded with additional sensors. An external interface allows the connection of a potential-free switching contact or integration into an existing home automation system via an analogue input.

For detailed information see the separate operating instructions of the controller.


3 Specifications

3.1 General specifications


Feature	Value
Operating range [°C]	-20 – 50
Extract air/Outdoor air	Free from aggressive gases, dust and oils
Air flow in reverse operation (push-pull) per unit [m³/h]	8.5 – 29
Extract air flow per unit [m³/h] (EN 13141-8)	17 – 58
Sound pressure level [dB (A)]	16 – 36
Standard sound level differential [dB]	Standard: 38 – 49
	Corner: 39 – 47
	Ohio: 34
Heat recovery [η _v]	0.87
Output voltage [V DC]	6 – 16
Power consumption [W]	1 – 3
Flow based electrical fan capacity [W/(m³/h)]	0.15
Protection class (EN 61140)	III
Type of protection (EN 60529)	IP20
Filter class (standard filter) (EN 779:2012)	G4
Air flow sensitivity at ± 20 Pa (EN 13141-8)	S3
Frost protection	Automatically due to push-pull operation (up to -20 °C)
Weight [g]	Max. 5390 (with Smart protective hood)
	Max. 5330 (with Nova protective hood)
	Max. 6150 (with Corner exterior closure)
	Max. 5670 (with Ohio protective hood)
Conformity	CE

3.2 Specifications according to EC Directive for energy related products

iV-Smart⁺, local demand control:

 Product fiche iV-Smart ⁺ according to VO 1254/2014 EU, dated 2014-07-11			
Pt.	Description	Data	
a	Supplier's name	inVENTer GmbH	
b	Supplier's model identifier	iV-Smart ⁺ iV-Smart ⁺ Corner iV-Smart ⁺ Ohio	
c	SEC class / Specific energy consumption [kWh/(m ² a)]	cold	-88.068
		average	A+ -43.952
		warm	-18.678
d	Typology	BVU	
e	Type of drive installed	2	
f	Type of heat recovery system	regenerative	
e	Thermal efficiency of heat recovery η_t [%]	87	
h	Maximum flow rate (supply air) [m ³ /h]	58	
i	Electric power input [W]	6	
j	Sound power level L_{wa} [dB (A)]	44	
k	Reference flow rate [m ³ /h]	42	
l	Reference pressure difference [Pa]	0	
m	Specific power input (SPI) [W/m ³ /h]	0.15	
n	Control factor	0.65	
o	Internal/external leakage rate [%]	n. a.	
p	Mixing rate [%]	n. a.	
q	Position of visual filter warning	Controller	
r	Regulated supply and exhaust grilles in the facade (one-direction devices only)	no	
s	Internet:	www.inventer.eu	
t	Airflow sensitivity [%]	29.4	
u	Indoor and outdoor air tightness [m ³ /h]	6.3	
v	Annual electricity consumption [kWh/(m ² a)]	0.87	
w	Annual heating saved [kWh/(m ² a)]	cold	90.25
		average	46.13
		warm	20.86

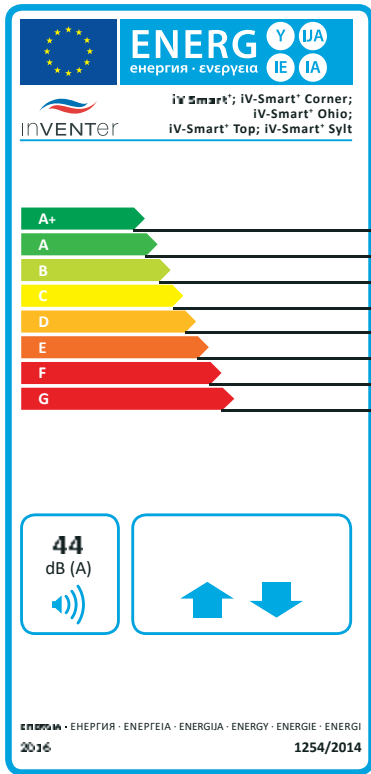
iV-Smart⁺, manual control:

 Product fiche iV-Smart ⁺ according to VO 1254/2014 EU, dated 2014-07-11			
Pt.	Description	Data	
a	Supplier's name	inVENTer GmbH	
b	Supplier's model identifier	iV-Smart ⁺ iV-Smart ⁺ Corner iV-Smart ⁺ Ohio	
c	SEC class / Specific energy consumption [kWh/(m ² a)]	cold	-82.062
		average	A -39.422
		warm	-14.995
d	Typology	BVU	
e	Type of drive installed	2	
f	Type of heat recovery system	regenerative	
e	Thermal efficiency of heat recovery η_t [%]	87	
h	Maximum flow rate (supply air) [m ³ /h]	58	
i	Electric power input [W]	6	
j	Sound power level L_{wa} [dB (A)]	44	
k	Reference flow rate [m ³ /h]	42	
l	Reference pressure difference [Pa]	0	
m	Specific power input (SPI) [W/m ³ /h]	0.15	
n	Control factor	1	
o	Internal/external leakage rate [%]	n. a.	
p	Mixing rate [%]	n. a.	
q	Position of visual filter warning	Controller	
r	Regulated supply and exhaust grilles in the facade (one-direction devices only)	no	
s	Internet:	www.inventer.eu	
t	Airflow sensitivity [%]	29.4	
u	Indoor and outdoor air tightness [m ³ /h]	6.3	
v	Annual electricity consumption [kWh/(m ² a)]	2.07	
w	Annual heating saved [kWh/(m ² a)]	cold	87.23
		average	44.59
		warm	20.16

3.3 Label according to EC Directive for energy related products, regulation 1254/2014 [Germany]

On the energy label you can find the following information from the product fiche:

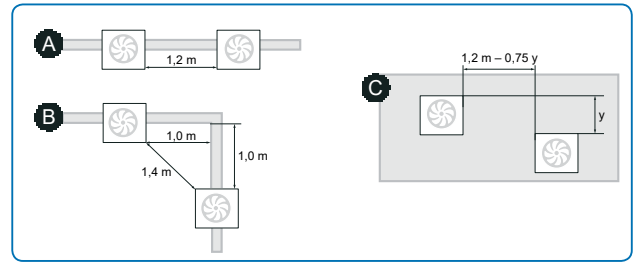
- Energy efficiency class (Specific energy consumption class)
- Sound power level L_{wa}
- Maximum air flow (supply air)



Local demand control	Manual control
MZ-Home sMove w/ sensors	sMove with sensors
A+	A

4 Preparing for installation / Installation position

- The exact positioning of the ventilation units and controllers must be determined on-site and, if necessary, adapted to the local conditions. **Consult your planner!** Installation is recommended in a suitable position in the upper wall area for optimal operation (approx. room height 1.8 m [top edge of finished floor]).
- Do not place the unit near radiators, room thermostats or in the immediate vicinity/above delicate furniture, surfaces or pictures.
- The ventilation unit must not be installed in areas in which direct contact with water spray is possible.
- Observe the following **minimum distances for the unit's wall opening:**
 - 1 between two ventilation units in push-pull operation (pair) in the same room to avoid the mixing of outdoor air and exhaust air:



- 2 to adjacent components on the exterior wall (observe insulation/shutters):
 - Nova protective hood: 450 mm from hole center / center axis circumferentially
 - Smart / Ohio protective hood: 250 mm from hole center / center axis circumferentially
 - Corner flat duct: 155 mm from hole center / center axis circumferentially
- 3 to adjacent components on the interior wall:
 - 250 mm from hole center / center axis circumferentially
- 4 to frontal adjacent components: 300 mm for maintenance tasks

5 iV-Smart+ ventilation unit

5.1 Construction

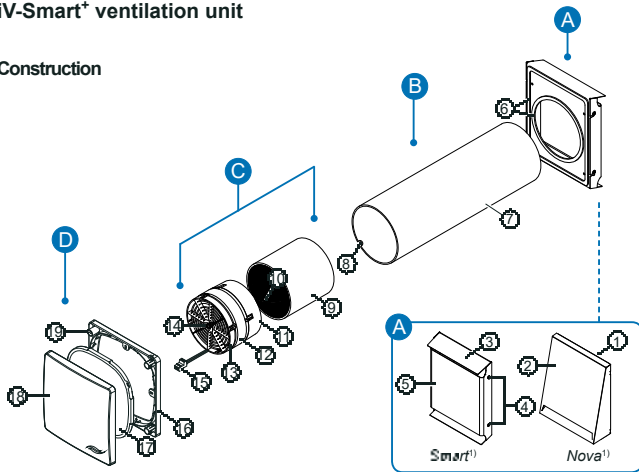


Abbildung 1: Overview of iV-Smart+ Standard ventilation unit

Components

- A Exterior closure: weather protection hood**
 - 1 Nova-R protective hood base plate
 - 2 Nova protective hood cover
 - 3 Smart protective hood base plate
 - 4 Fastening screws for cover (4 x)
 - 5 Smart protective hood cover
 - 6 Sealing tape
- B Wall sleeve**
 - 7 Wall sleeve R-D160
 - 8 Recess for fan BUS (interior wall side)
- C Thermal accumulator insert (thermal accumulator and inVENTron)**
 - 9 Thermal accumulator with insulation
 - 10 Thermal accumulator handle
 - 11 Standard guiding vane (broad)
 - 12 Xenion reversible fan
 - 13 Slim guiding vane
 - 14 Guiding vane knob
 - 15 BUS plug connection
- D Flair inner cover**
 - 16 Inner cover base plate
 - 17 Dust filter²⁾
 - 18 Inner cover panel
 - 19 Spacer (4 x)

¹Choice between Smart (magnifier, figure 1, left) or Nova (magnifier, figure 1 right) protective hood
²Pollen, micro and activated carbon filter options available

5.2 Dimensions

Designation	Depth/length [mm]	Width [mm]	Height [mm]	Ø [mm]
Wall thickness with render [mm]	> 270			
Wall opening for wall sleeve	Wall thickness ¹⁾	–	–	180
Wall sleeve R-D160x495 (745)	495 (745)	–	–	160
Smart protective hood	43	222	285	–
Nova protective hood	23 – 88	279	313	–
Flair inner cover V-233x233	61 ²⁾	233	233	–

¹⁾incl. render, insulation, masonry and inner structure. ²⁾opened

Sectional drawing

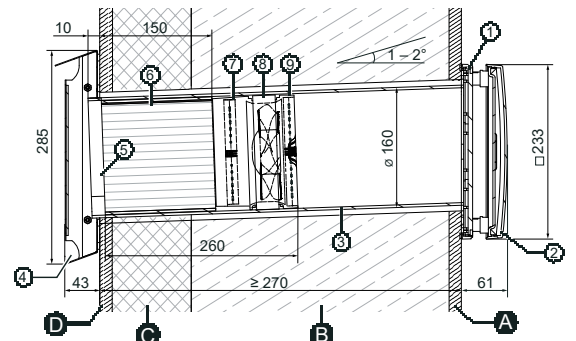
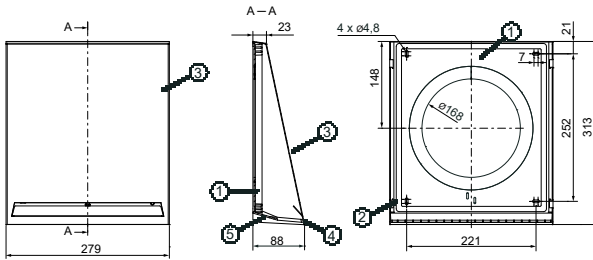


Abbildung 2: Sectional drawing iV-Smart+ (side view)

- 1 Inner cover base plate
- 2 Inner cover panel
- 3 Wall sleeve R-D160
- 4 Exterior closure: Weather protection hood
- 5 Joint tape
- 6 Thermal accumulator
- 7 Standard guiding vane (broad)
- 8 Xenion reversible fan
- 9 Slim guiding vane
- A Inner plaster/internal structure
- B Masonry
- C Insulation
- D Render

Exterior closure: Nova or Smart weather protection hood



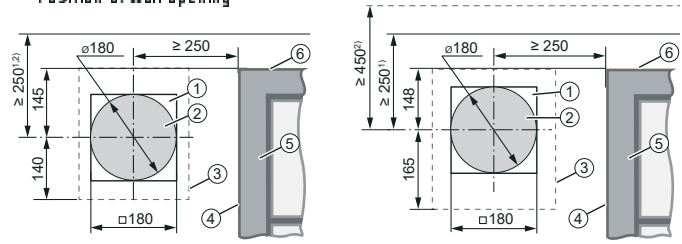
Nova protective hood cover

Nova-R protective hood base plate

Abbildung 3: Dimensioned drawing of Nova protective hood

- | | |
|--|-------------------------|
| 1 Protective hood base plate | 3 Protective hood cover |
| 2 Exterior wall attachment with
Ø 8 mm, min. 50 mm deep (4 x) | 4 Protective grid |
| | 5 Drip rail |

Position of wall opening



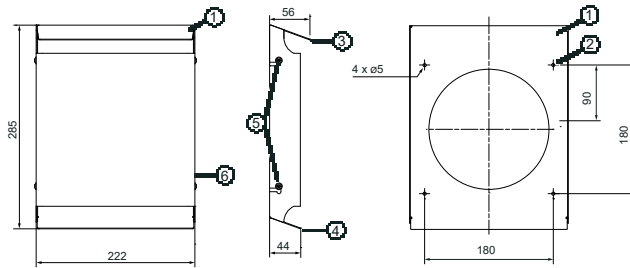
With Smart protective hood

With Nova protective hood

Abbildung 5: Dimensioned drawing of wall opening iv-Smart+ (Interior view)

- | | |
|--|---------------------------------------|
| 1 Wall opening: New building
(Simplex as an option) | 4 Window reveal |
| 2 Wall opening: Existing buildings | 5 Door/window frame |
| 3 Position of protective hood (contour) | 6 Bottom edge of reveal ³⁾ |

¹⁾ Minimum distance to adjacent components on the interior wall
²⁾ Minimum distance to adjacent components on the exterior wall.
³⁾ Observe insulation/shutters



Smart protective hood cover

Smart protective hood base plate

Abbildung 4: Dimensioned drawing of Smart protective hood

- | | |
|--|------------------------------------|
| 1 Protective hood base plate | 4 Bottom drip rail |
| 2 Exterior wall attachment with
Ø 8 mm, min. 50 mm deep (4 x) | 5 Fastening screws for cover (4 x) |
| 3 Upper drip rail | 6 Protective hood cover |

Inner cover

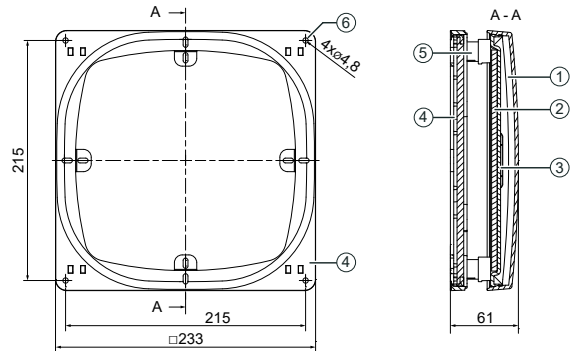
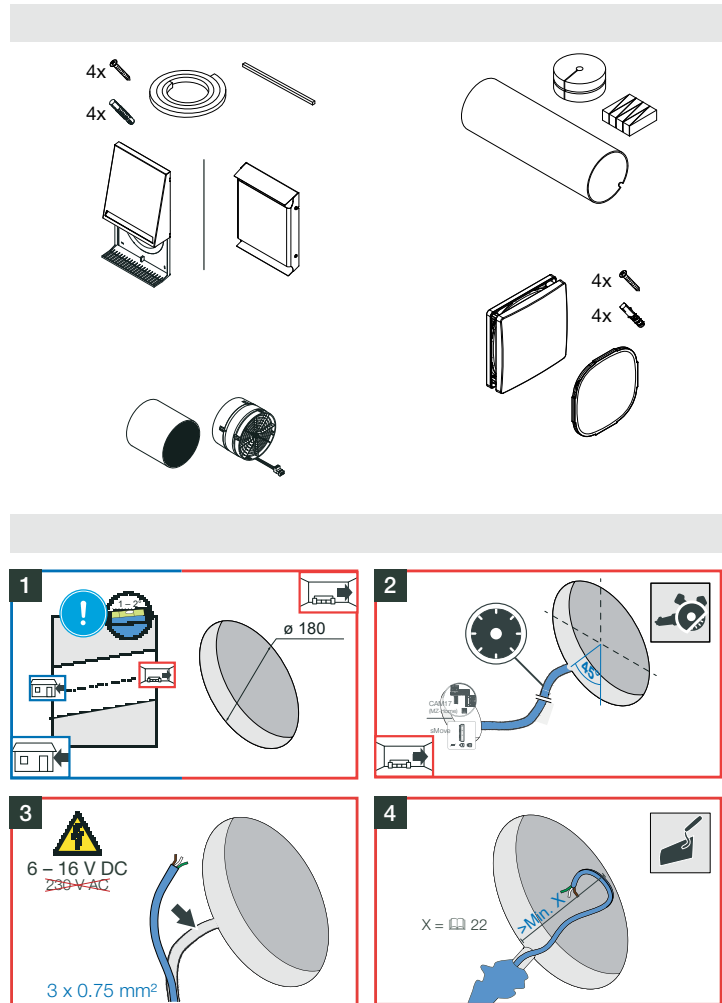
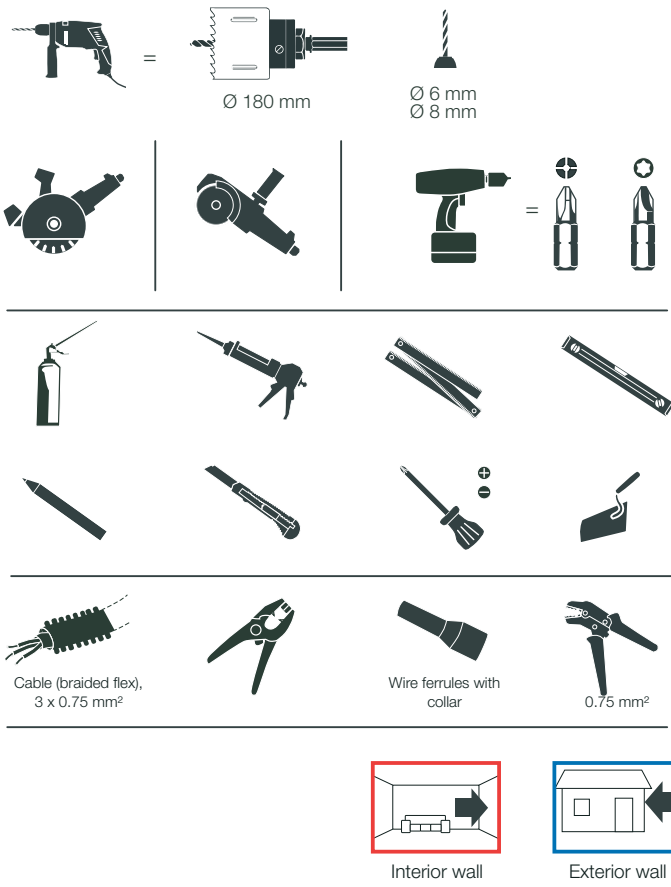
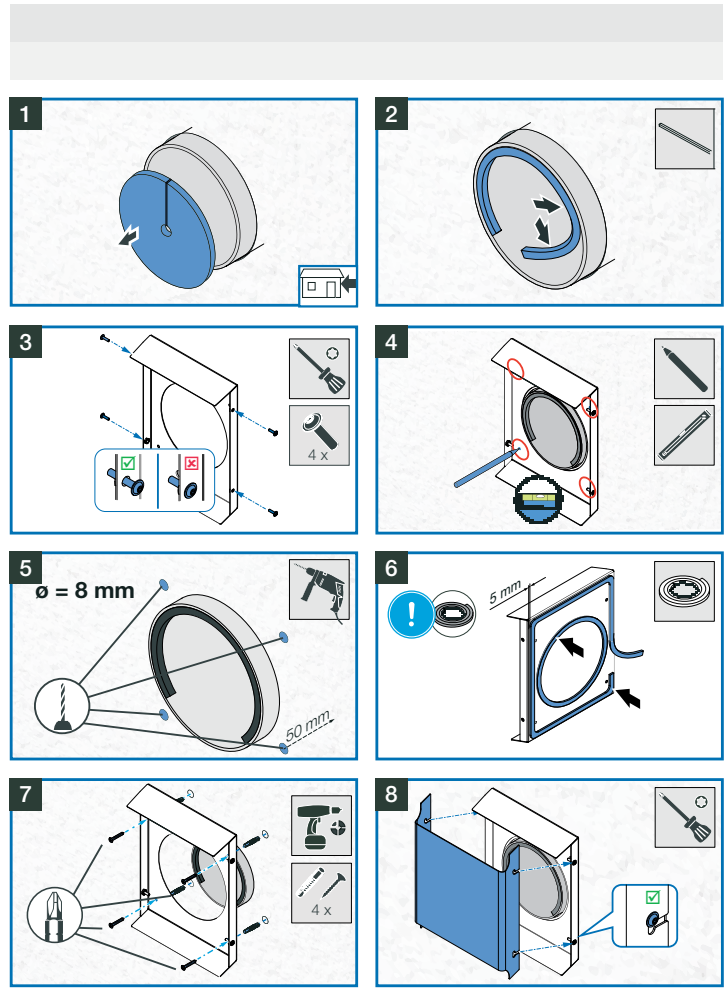
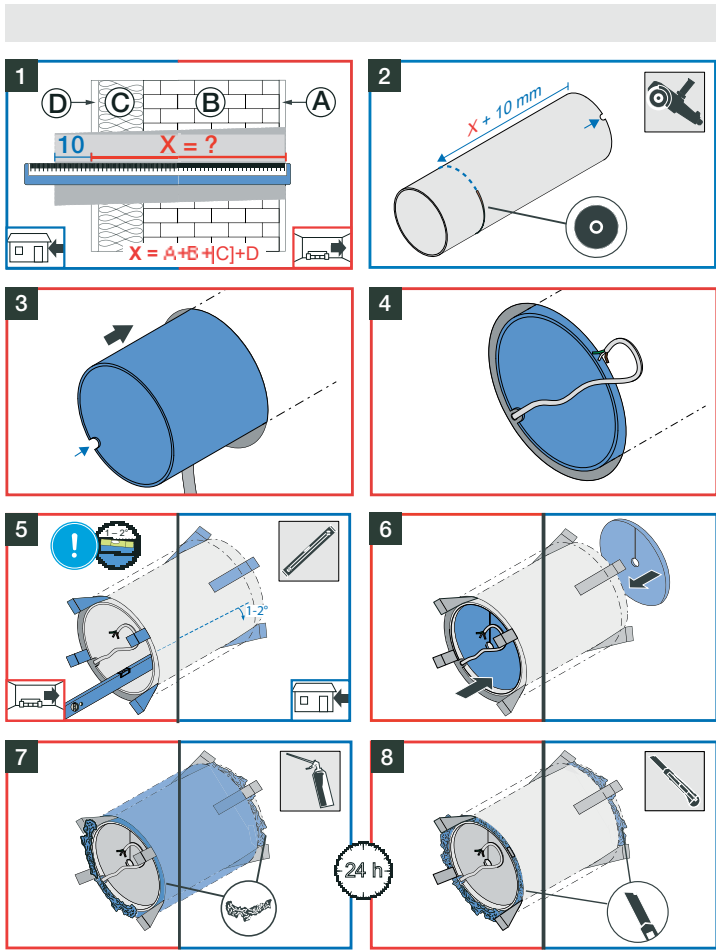


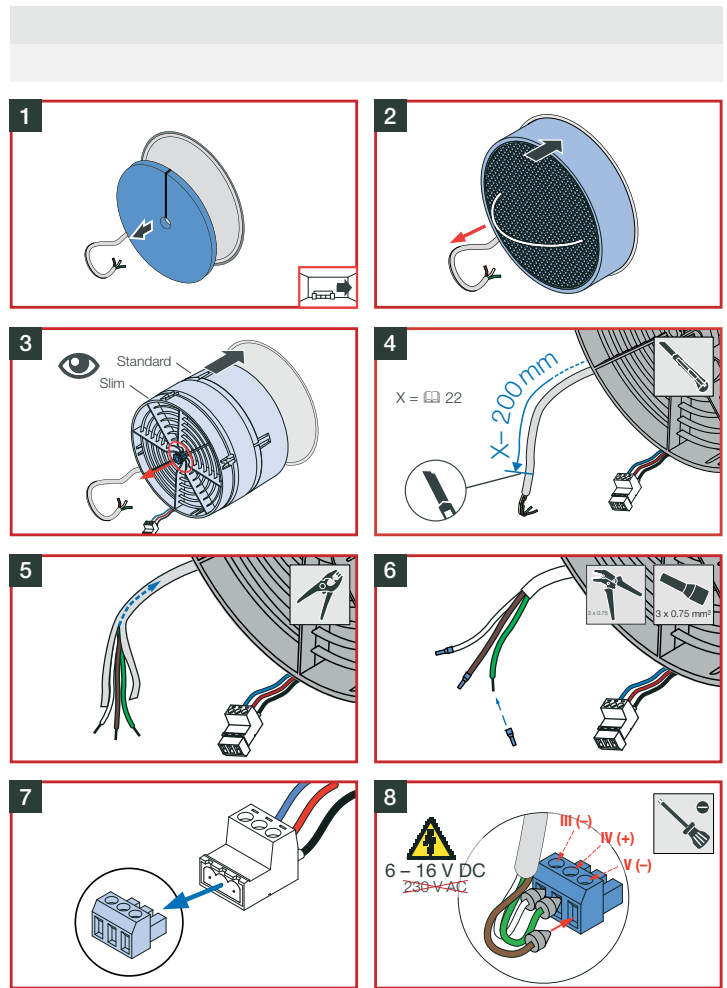
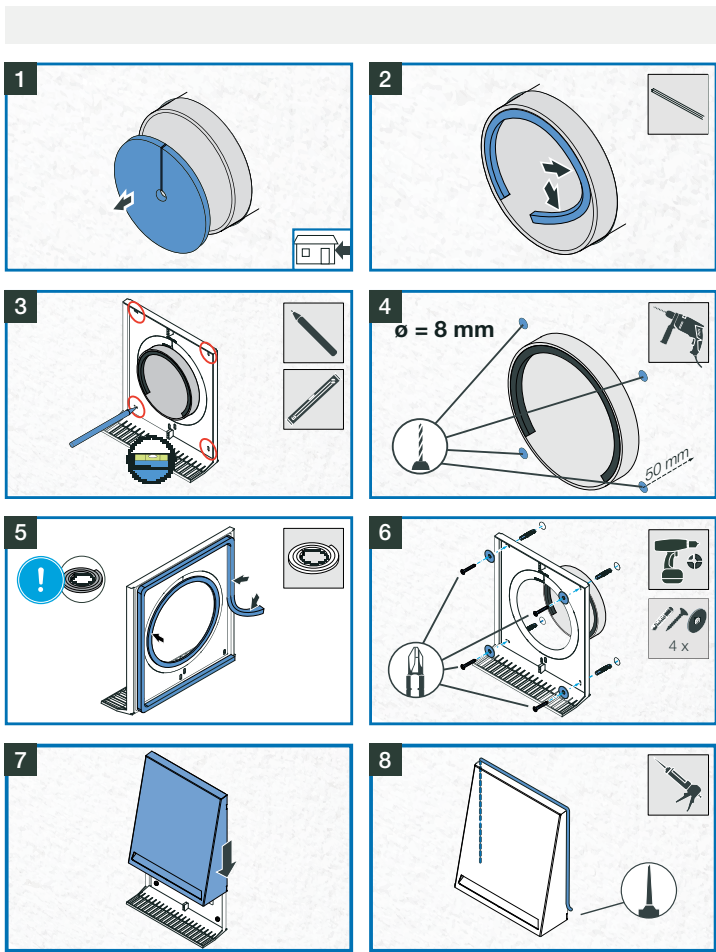
Abbildung 6: Dimensioned drawing of Flair inner cover V-233x233

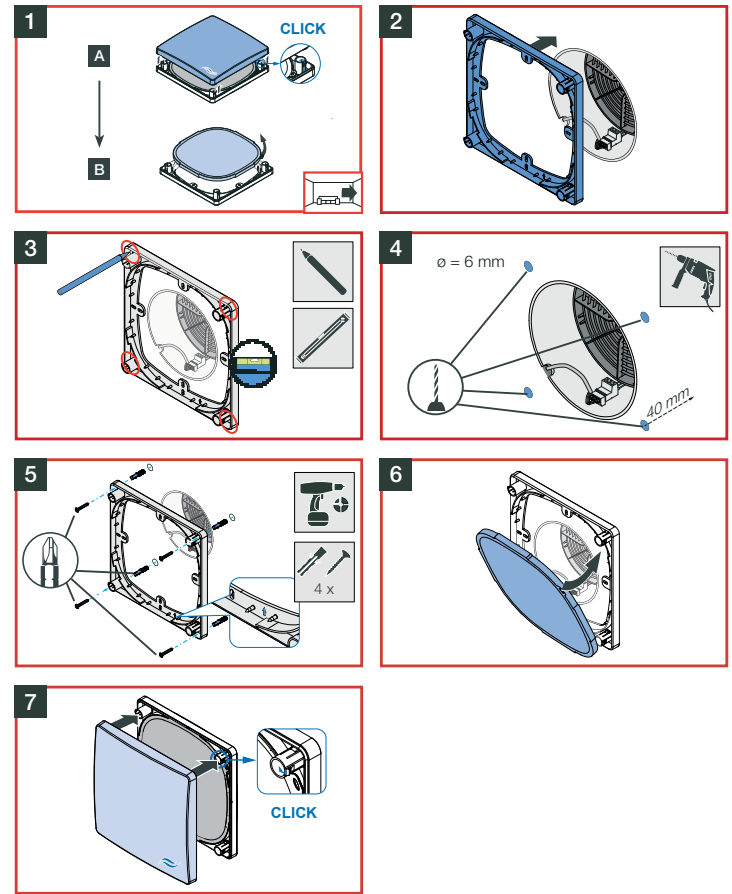
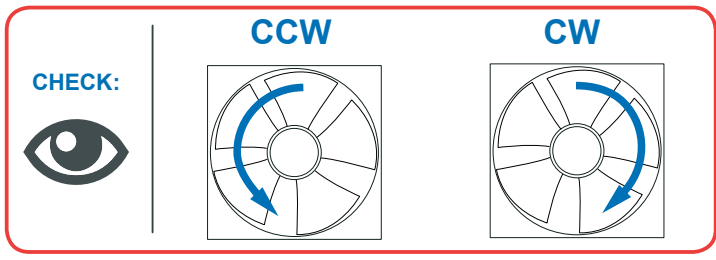
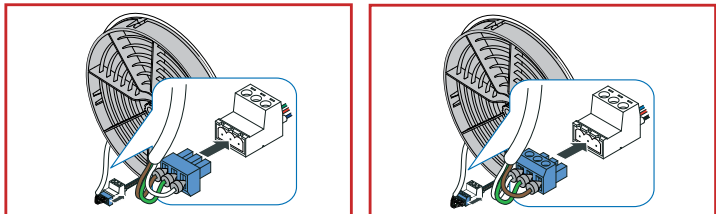
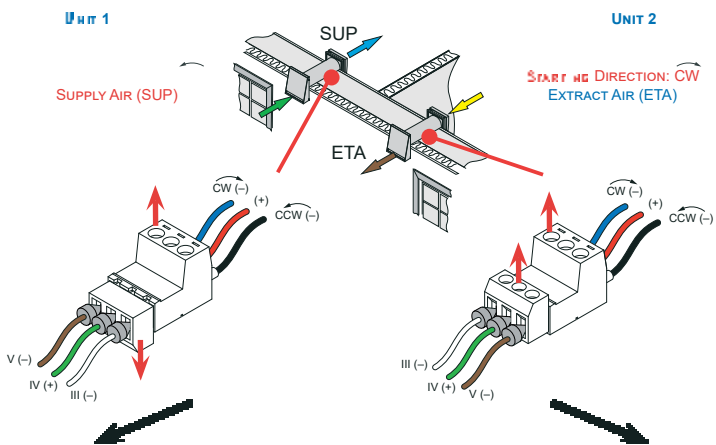
- | | |
|-------------------------------|--|
| 1 Inner cover panel | 5 Spacer (4 x) |
| 2 Sound insulation (optional) | 6 Interior wall attachment with Ø 6 mm,
min. 40 mm deep (4 x) |
| 3 Holding plate IC V-233x233 | |
| 4 Inner cover base plate | |

5.3 Assembly and installation









6 iV-Smart+ Corner ventilation unit

6.1 Construction

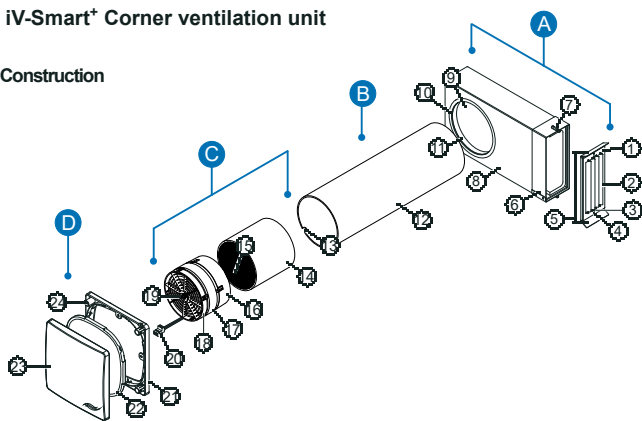


Abbildung 7: Overview of iV-Smart+ Corner ventilation unit

Components

A Exterior closure: Reveal grille and flat duct

- 1 Reveal grille
- 2 Louvres
- 3 Through hole (2 x)
- 4 Condensate drip
- 5 Drip rails
- 6 Flat duct sliding sleeve
- 7 Fastening elements reveal grille (2 x)
- 8 Corner flat duct:
- 9 Opening for wall sleeve
- 10 Sealing tape
- 11 Neopor insert

B Wall sleeve

- 12 Wall sleeve R-D160
- 13 Recess for fan BUS (interior wall side)

C Thermal accumulator insert (thermal accumulator and inVENTron)

- 14 Thermal accumulator with insulation
- 15 Thermal accumulator handle
- 16 Standard guiding vane (broad)
- 17 Xenion reversible fan
- 18 Slim guiding vane
- 19 Guiding vane knob

D Flair inner cover

- 20 BUS plug connection
- 21 Inner cover base plate
- 22 Dust filter¹⁾
- 23 Inner cover panel
- 24 Spacer (4 x)

¹⁾Pollen, micro and activated carbon filter options available

6.2 Dimensions

Designation	Depth/length [mm]	Width [mm]	Height [mm]	Ø [mm]
Thickness Masonry and inner structure	> 250	–	–	–
Thickness Insulation	> 120	–	–	–
Wall opening for wall sleeve	Wall thickness ¹⁾	–	–	180
Wall sleeve R-D160x495 (745)	495 (745)	–	–	160
Corner flat duct 90x220x400 (D160)	400	95	224	–
Corner flat duct 90x220x500 (D160)	500	95	224	–
Reveal grille V-90x220	10	104	281.5	–
Flair inner cover V-233x233	61 ²⁾	233	233	–

¹⁾incl. render, insulation, masonry and inner structure

²⁾opened

Sectional drawing

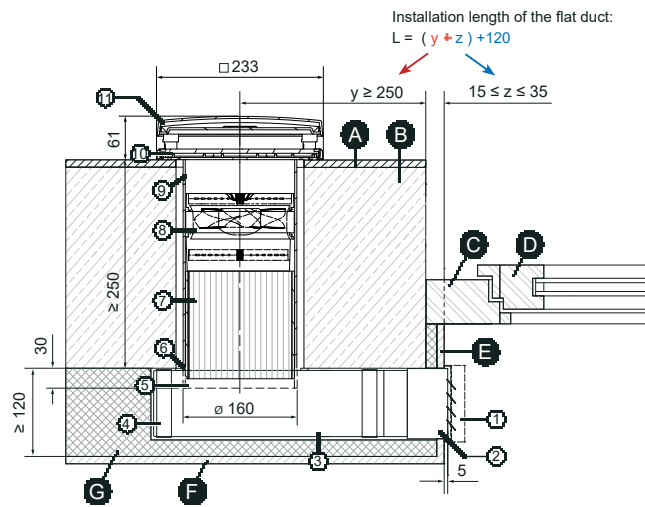


Abbildung 8: Sectional drawing iV-Smart+ Corner ventilation unit (plan view)

- | | |
|--------------------------------------|--|
| A Plaster | E Render of reveal |
| B Masonry | F Render |
| C Window frame | G Insulation ¹⁾ |
| D Window casement | |
| 1 Reveal grille | 8 inVENTron:
Xenion reversible fan embedded in
guiding vanes |
| 2 Flat duct sliding sleeve | 9 Wall sleeve |
| 3 Corner flat duct ^{2), 3)} | 10 Inner cover base plate |
| 4 Wall bracket (2x) | 11 Inner cover panel |
| 5 Joint tape | |
| 6 Sealing tape | |
| 7 Thermal accumulator | |

¹⁾ Insulation on flat duct must be at least 10 mm.
²⁾ Use flat duct Corner 400 if (y + z) is at least 265 mm / is max. 285 mm.
³⁾ Use flat duct Corner 500 if (y + z) is at least 365 mm / is max. 385 mm.

Wall opening

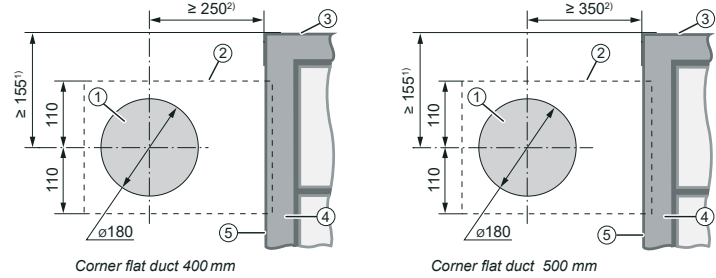


Abbildung 9: Dimensioned drawing of wall opening with flat duct (Interior view)

- | | |
|---|---------------------------------------|
| 1 Wall opening: New building (Simplex as an option) | 3 Bottom edge of reveal ¹⁾ |
| 2 Corner flat duct (contour): | 4 Door/window frame |
| | 5 Window reveal |

¹⁾ Observe insulation/shutters on exterior wall
²⁾ □ 30, Abb. 8

Inner cover

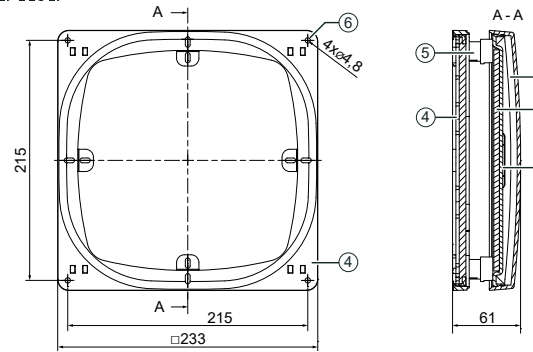


Abbildung 10: Dimensioned drawing of Flair inner cover V-233x233

- | | |
|-------------------------------|--|
| 1 Inner cover panel | 5 Spacer (4 x) |
| 2 Sound insulation (optional) | 6 Interior wall attachment with Ø 6 mm,
min. 40 mm deep (4 x) |
| 3 Holding plate IC V-233x233 | |
| 4 Inner cover base plate | |

Exterior closure

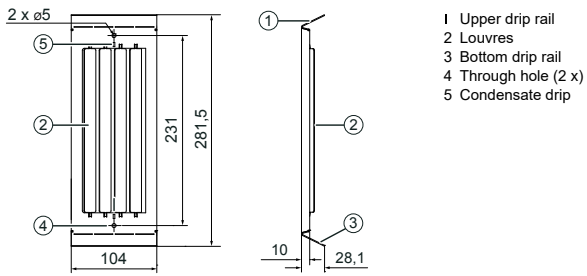


Abbildung 11: Dimensioned drawing of reveal grille

6.3 Assembly and installation

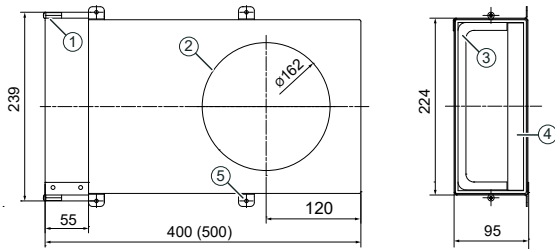
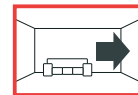


Abbildung 12: Dimensioned drawing of Corner flat duct 90x220x400[500] (D160)

- 1 Fastening element (2 x)
- 2 Opening for wall sleeve
- 3 Sound insulation
- 4 Neopor insert
- 5 Spacer (2 x)



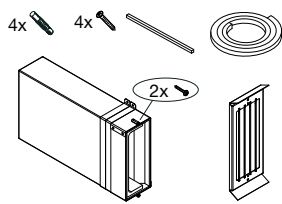
Interior wall



Exterior wall

IV-SMART+ CORNER VENTILATION UNIT

IV-SMART+ CORNER VENTILATION UNIT

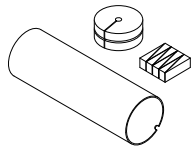


Item no. 1506-0066
1506-0067

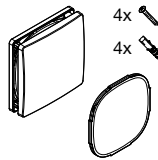
Item no. 1508-0018
1508-0030
1508-0065



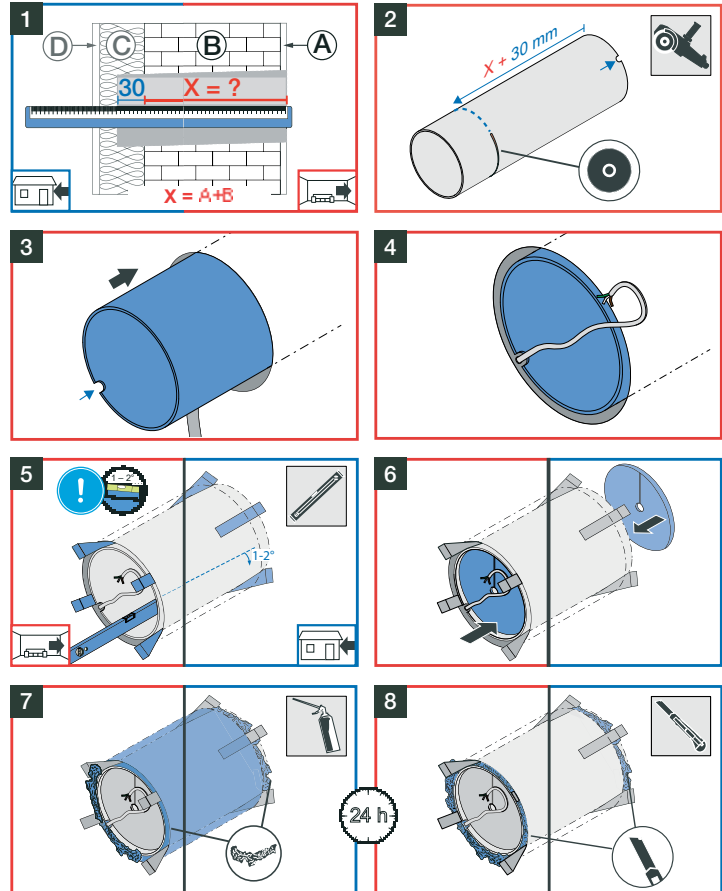
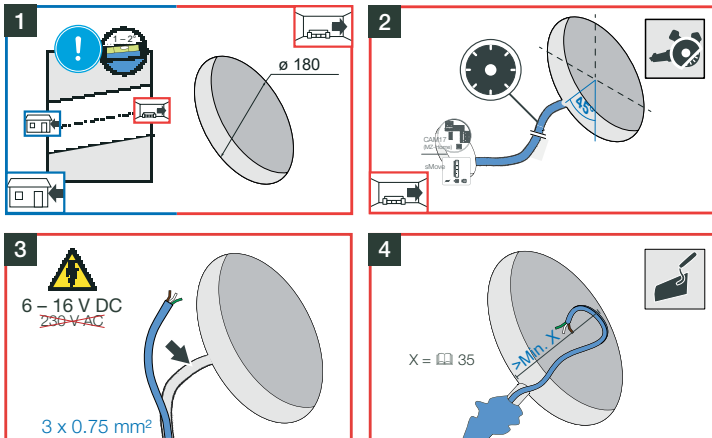
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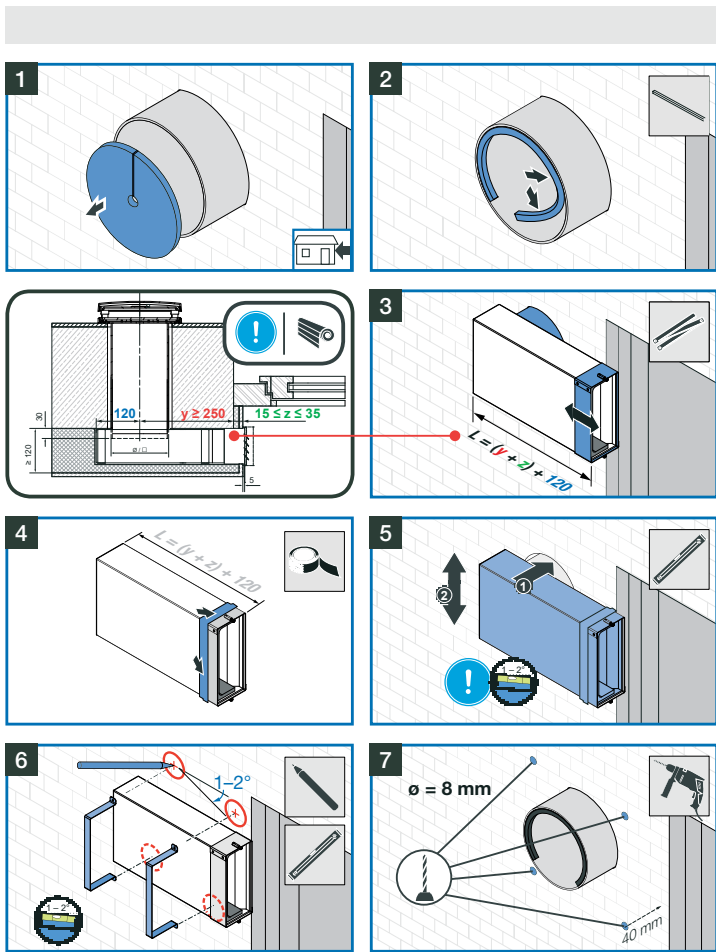
Item no. 1506-0068 / 1506-0069



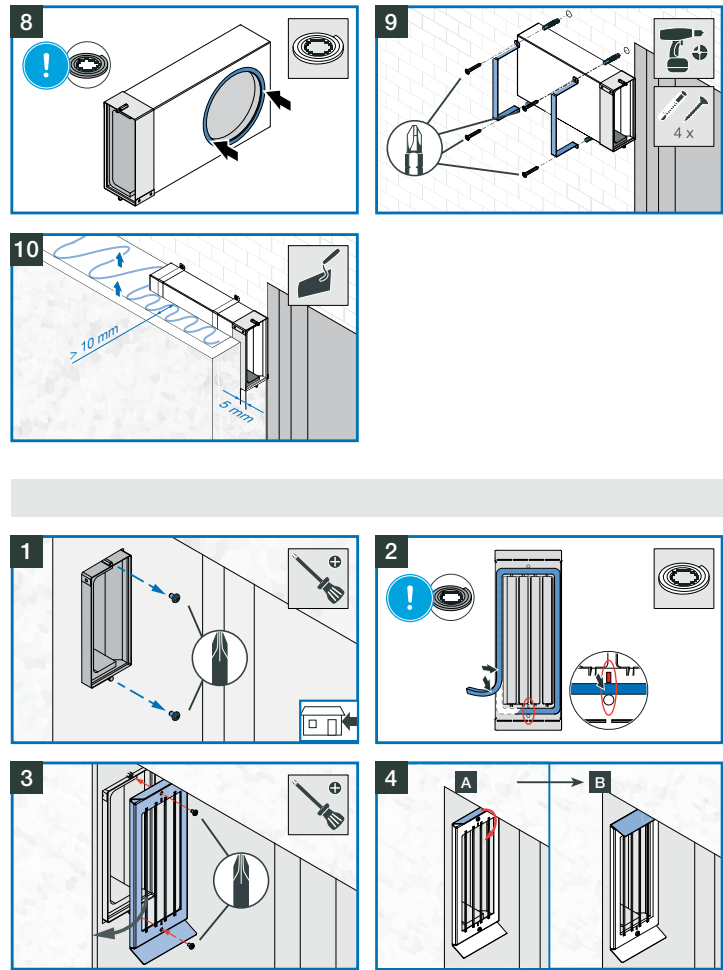
Item no. 1505-0036 / 1505-0037

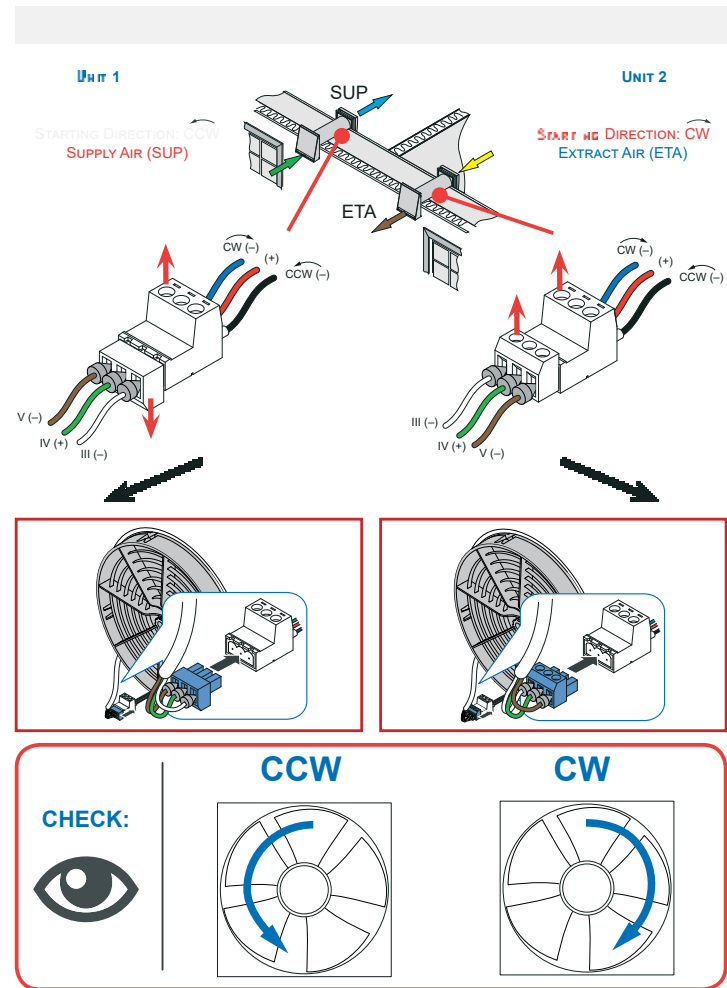
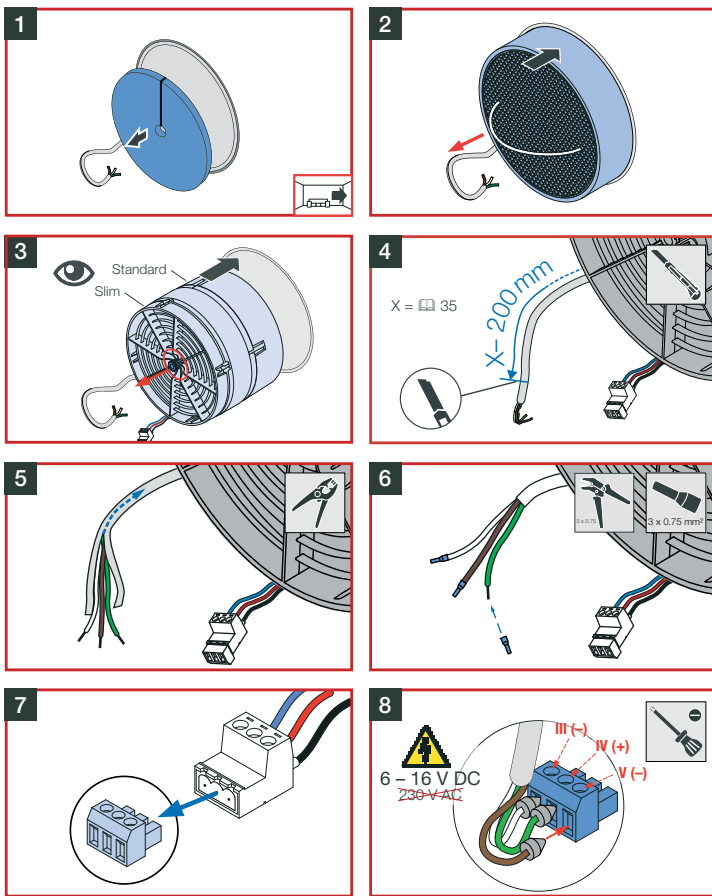


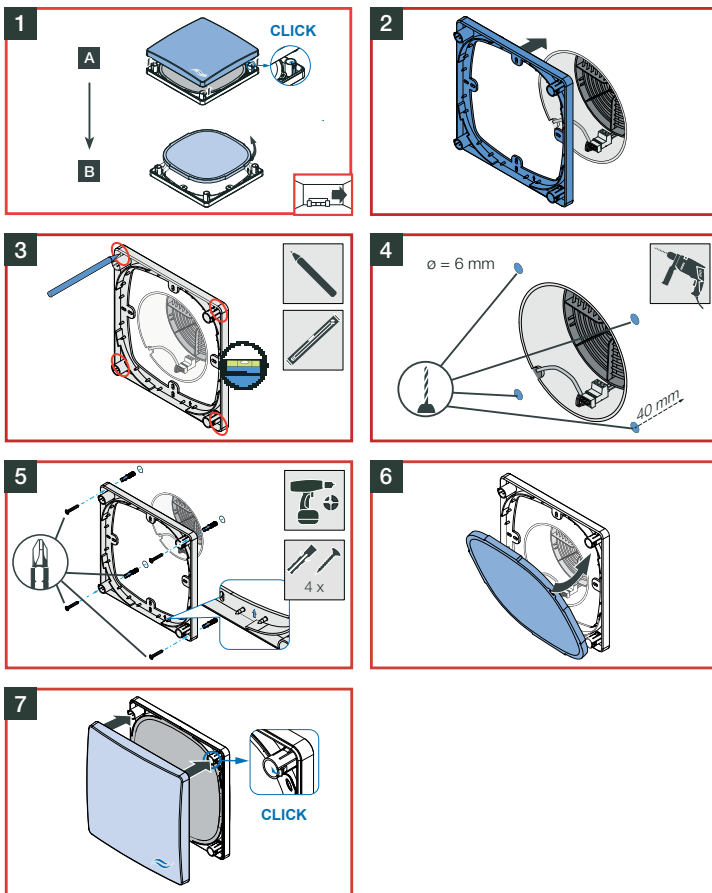
IV-SMART+ CORNER VENTILATION UNIT



IV-SMART+ CORNER VENTILATION UNIT







7 iv-Smart+ Ohio ventilation unit

7.1 Construction

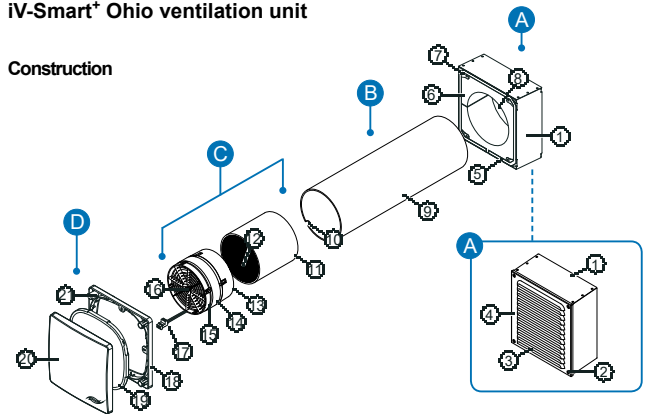


Abbildung 13: Overview of iv-Smart+ Ohio ventilation unit

Components

A Exterior closure: Ohio weather protection hood

- 1 Metal sleeve
- 2 Attachment point protective grille (4 x)
- 3 Louvres of protective grille
- 4 Weather protection grille [protective grille]
- 5 Sealing tape
- 6 Neopor insert
- 7 Attachment points exterior wall (4 x)
- 8 Opening for wall sleeve

B Wall sleeve

- 9 Wall sleeve R-D160
- 10 Recess for fan BUS (interior wall side)

C Thermal accumulator insert (thermal accumulator and inVENTron)

- 11 Thermal accumulator with insulation
- 12 Thermal accumulator handle
- 13 Standard guiding vane (broad)
- 14 Xenion reversible fan
- 15 Slim guiding vane
- 16 Guiding vane knob
- 17 BUS plug connection

D Flair inner cover

- 18 Inner cover base plate
- 19 Dust filter^{*)}
- 20 Inner cover panel
- 21 Spacer (4 x)

^{*)}Pollen, micro and activated carbon filter options available

7.2 Dimensions

Designation	Depth/length [mm]	Width [mm]	Height [mm]	Ø [mm]
Wall thickness	> 180	-	-	-
Wall opening for wall sleeve	Wall thickness ¹⁾	-	-	180
Wall sleeve R-D160x495 (745)	495 (745)	-	-	160
Ohio protective hood	110	230	247	-
Flair inner cover V-233x233	61 ²⁾	233	233	-

¹⁾incl. render, insulation, masonry and inner structure

²⁾opened

Sectional drawing

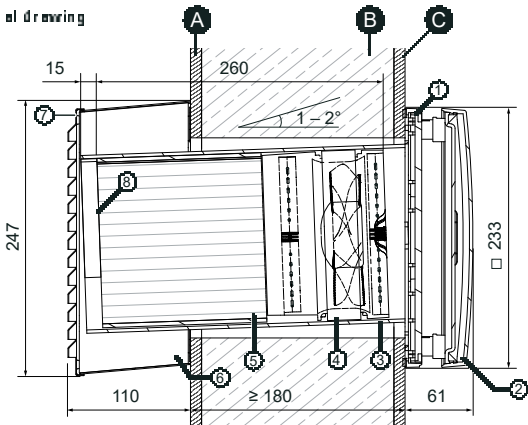


Abbildung 14: Sectional drawing IV-Smart+ Ohio ventilation unit (plan view)

A Render
B Masonry
C Plaster

1 Inner cover base plate
2 Inner cover panel
3 Wall sleeve

4 inVENTron: Xenion reversible fan embedded in guiding vanes
5 Thermal accumulator
6 Metal sleeve
7 Protective grille
8 Joint tape

Wall opening

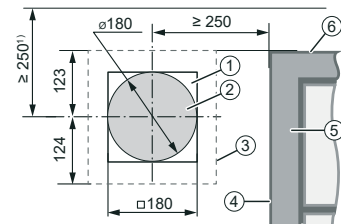


Abbildung 16: Dimensioned drawing of wall opening IV-Smart+ Ohio (Interior view)

1 Wall opening: New buildings (Simplex as an option)

2 Wall opening: Existing buildings

3 Position of protective hood (contour)

4 Window reveal

5 Door/window frame

6 Bottom edge of reveal²⁾

¹⁾Minimum distance to adjacent components on the interior wall

²⁾Observe insulation/shutters on exterior wall

Inner cover

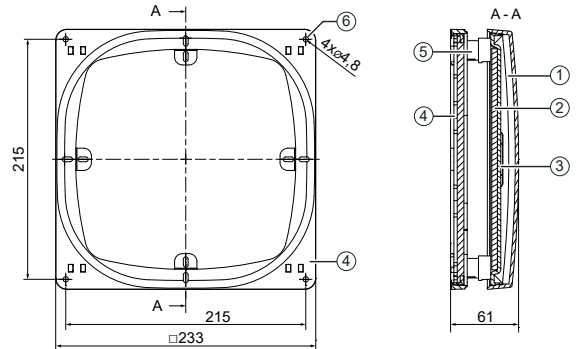


Abbildung 15: Dimensioned drawing of Flair inner cover V-233x233

1 Inner cover panel
2 Sound insulation (optional)
3 Holding plate IC V-233x233
4 Inner cover base plate

5 Spacer (4 x)
6 Interior wall attachment with Ø 6 mm, min. 40 mm deep (4 x)

Weather protection hood

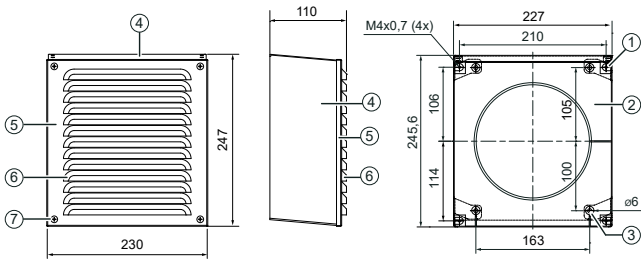


Abbildung 17: Dimensioned drawing of Ohio protective hood

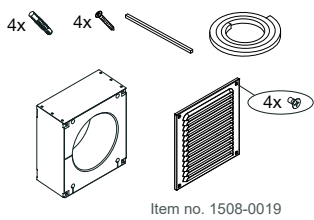
- 1 Attachment points for protective grille
- 2 Neopor insert
- 3 Attachment points exterior wall (4 x)
- 4 Metal sleeve
- 5 Protective grille
- 6 Louvres
- 7 Fastening screws for protective grille (4 x)

7.3 Assembly and installation

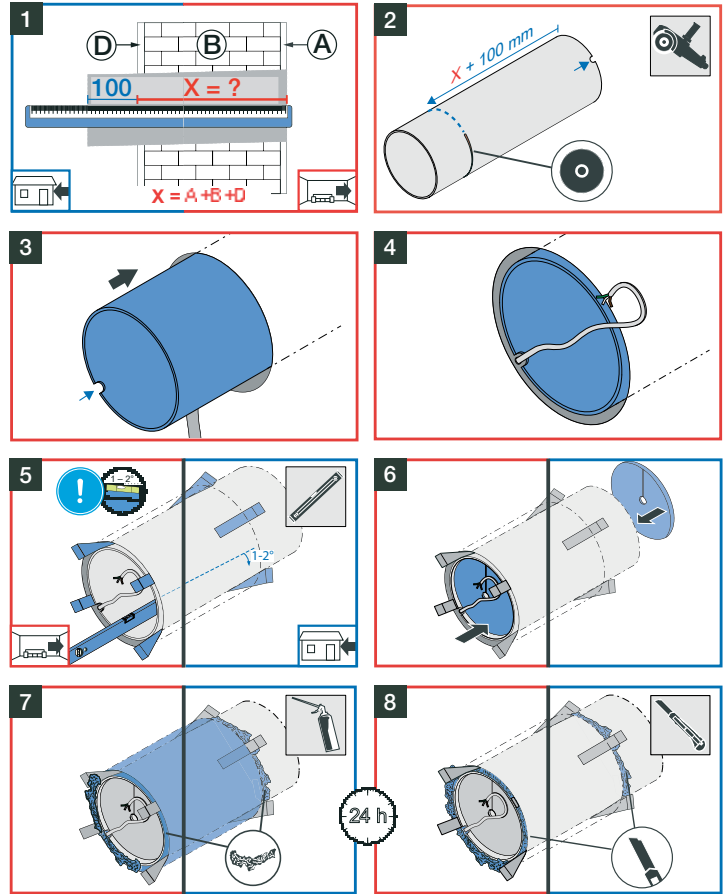
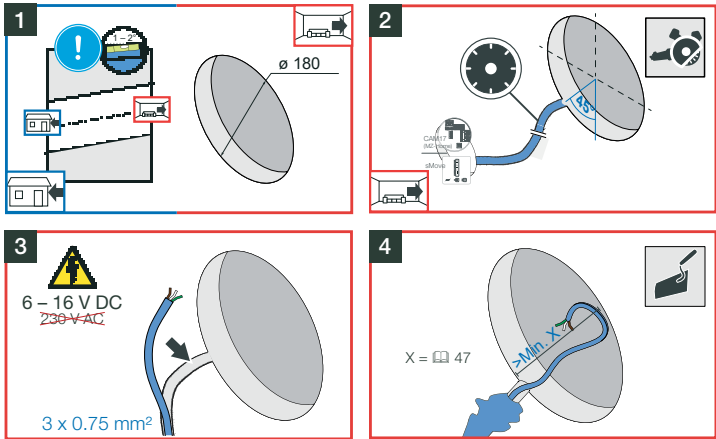
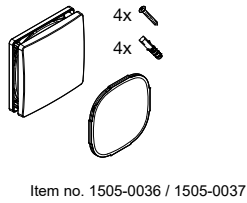
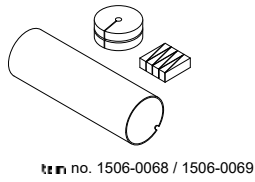
The tools and materials list includes:

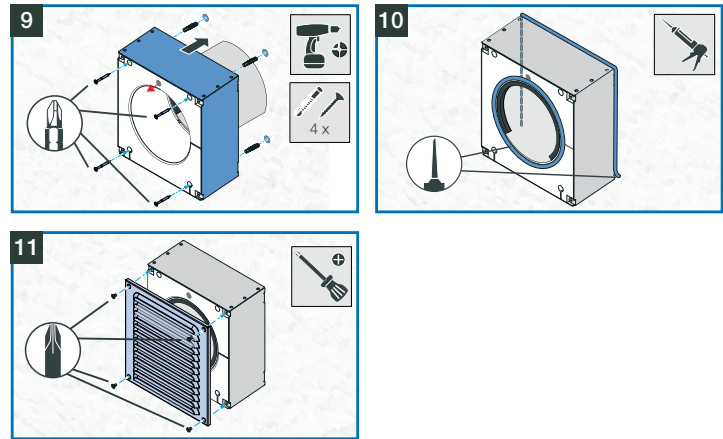
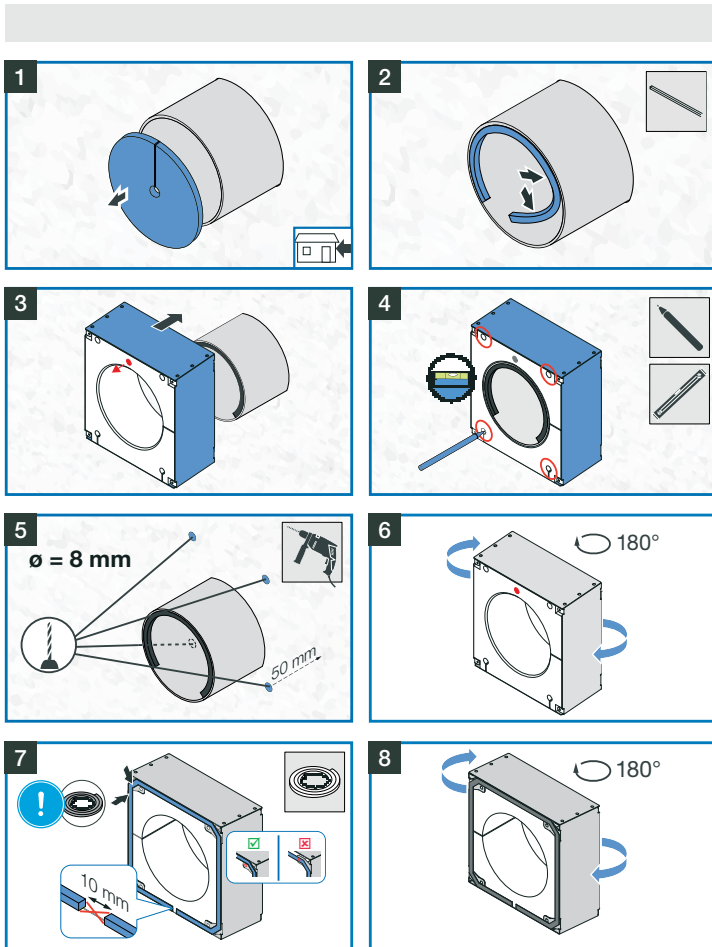
- Drill (with bit)
- Drill bit (Ø 180 mm)
- Drill bit (Ø 6 mm and Ø 8 mm)
- Circular saw
- Angle grinder
- Drill (with bit)
- Bit
- Sealant
- Injection gun
- Level
- Level
- Pencil
- Utility knife
- Screwdriver
- Hand saw
- Cable (braided flex), 3 x 0.75 mm²
- Wire ferrules with collar
- Wire ferrules with collar
- 0.75 mm²

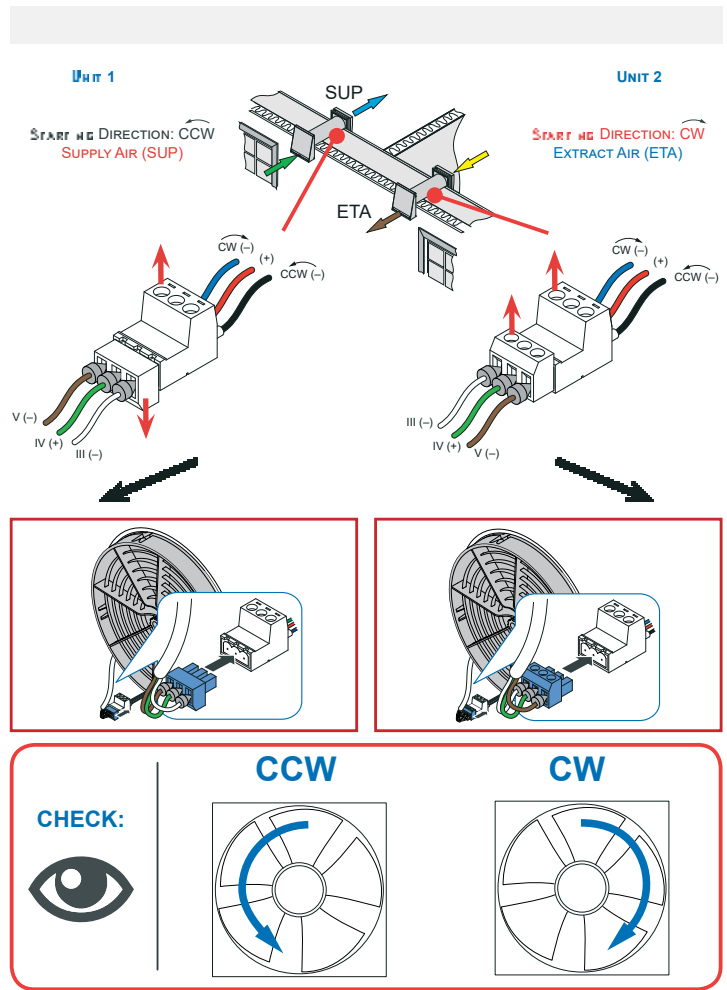
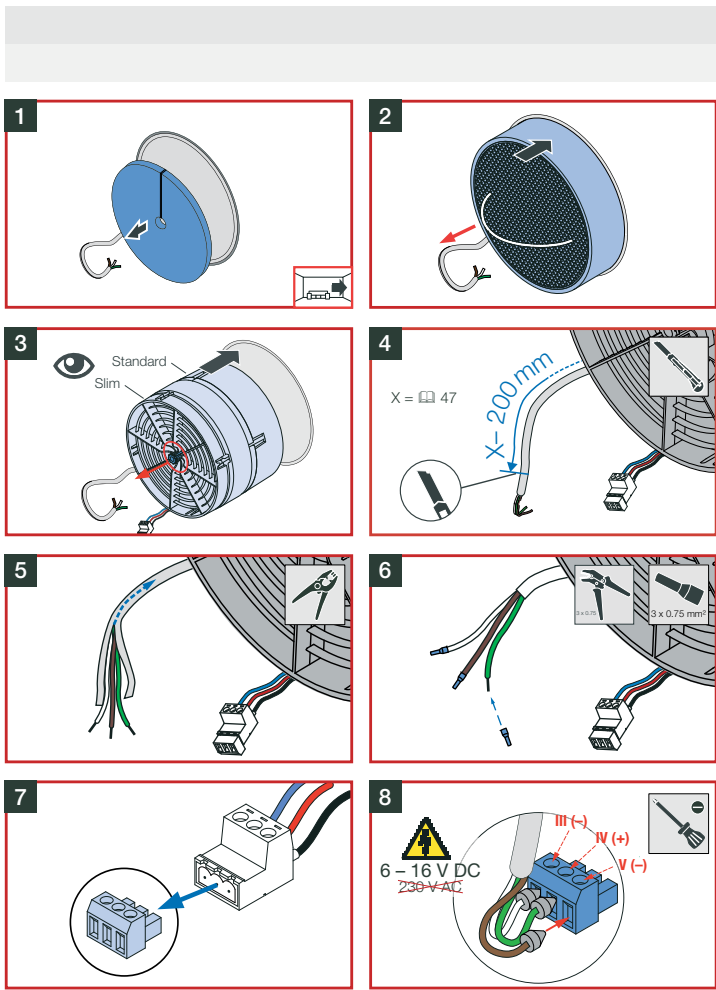
Installation diagrams show the unit being installed on an interior wall (indicated by a red box and arrow) and an exterior wall (indicated by a blue box and arrow).

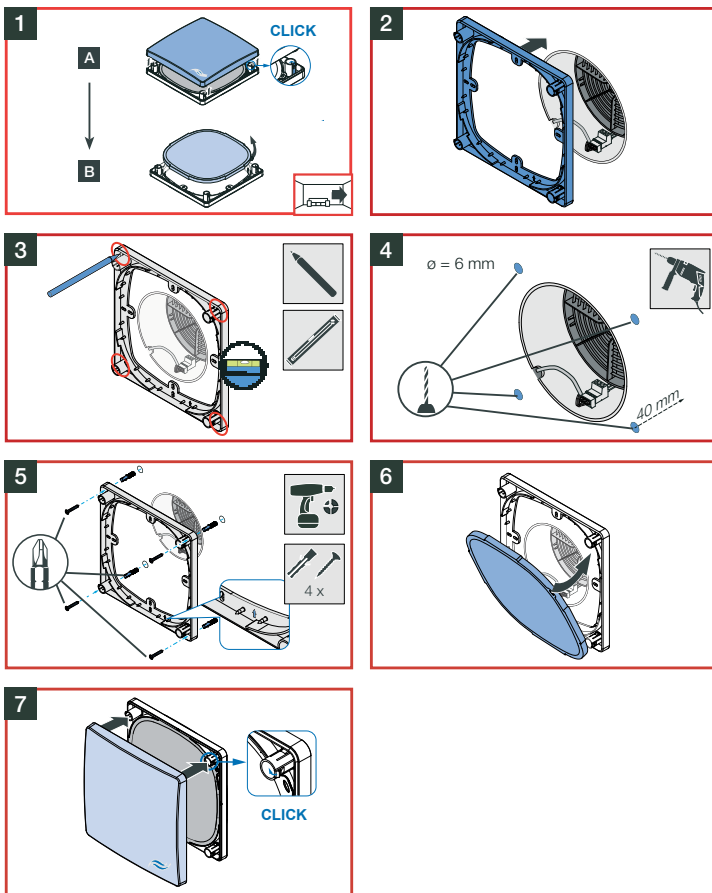


Item no. 1508-0072









Fault	Possible cause	Remedy
Fan failure	No electrical power.	Check fuse.
	Installation error.	Check wiring for correct polarity. Check all connectors for correct fit. Check usage of wire end ferrules.
	Fan defective.	Replace fan.
	Controller/power supply defective.	Replace controller/power supply.
Fan does not switch off.	Faulty controller.	Replace controller.
Low air flow	Inner cover closed.	Open inner cover panel.
	Dust filter/pollen filter heavily soiled.	Clean/replace dust filters. Replace pollen filters.
	Micro filter/activated carbon filter inserted.	Inserted micro or carbon filter reduces the air flow. Only use filters for special requirements during periods of heavy pollution. Replace filter if heavily soiled.
	Fans are not operating in paired mode.	Connect the first fan in extract air mode and the second fan in supply air mode.
	Fan speed is too low.	Increase the output level.
	Thermal accumulator is soiled.	Clean the thermal accumulator.
Noises	Foreign body in the fan.	Remove foreign body from the fan. Clean the ventilation unit.
	Fan blades contaminated.	Clean fan blades.
	Thermal accumulator is not correctly positioned in the wall sleeve.	Slide the thermal accumulator out of the wall sleeve. Insert it again. Slide the thermal accumulator into the wall sleeve as far as the joint tape.
	Fan speed very high.	Set a lower output level on the controller.
Supply air is cold	Installation error.	Check the connector plug on the controller. The connector plug must be sitting firmly in the connector housing.
	The controller is operating in ventilation mode.	Select heat recovery mode on the controller.

Disassembly

Disassemble the ventilation unit in the opposite sequence to the assembly sequence. You can subsequently dispose of your old equipment/system. Please note the disposal recommendation outlined below.

Disposal



Dispose of the product in compliance with the applicable national regulations.

The products described in these installation instructions are largely recyclable due to their low-pollutant processing. Contact an electronic appliance disposal company to arrange environmentally friendly recycling and disposal of your old system. Ensure that each product's packaging is sorted correctly for disposal.

Recommendations for disposal can be found in the table below.

Product	Material	Disposal
Nova protective hood	Powder-coated stainless steel / ASA	Scrap metal collection / Recyclable material collection
Smart protective hood	Powder-coated stainless steel	Scrap metal collection
Ohio protective hood	Powder-coated stainless steel / Neopor / Anodised aluminium	Scrap metal collection / Recyclable material collection
Flat duct:	PP	Recyclable material collection
Reveal grille	Powder-coated stainless steel	Scrap metal collection
Reversible fan	PBTP / PA	Drop-off center for electronic equipment
Guiding vanes	PC	Recyclable material collection
Wall sleeve	PP	Recyclable material collection
Flair inner cover V-233x233	PS-SZ	Recyclable material collection
Thermal accumulator	Ceramics	Household waste
Dust filter	TPU / PES	Household waste
Pollen filter	PP	Household waste
Micro filter	PES	Household waste
Activated carbon filter	Polyester non-woven enriched with activated carbon	Household waste

9 Guarantee and warranty

Warranty

Outside Germany, the national warranty provisions of the country in which the system is sold apply. Please contact the distributor for your country.

The warranty refers to the defect-free condition of the product at the time of purchase and covers all defects that were present at the time of purchase. Failure to observe the intended use will invalidate all warranty claims.

Manufacturer guarantee

inVENTer GmbH provides a five-year guarantee for all electrical components and the wall sleeve, as well as a thirty-year guarantee on the heat accumulator ceramic. This covers premature product wear. It affects in no way the applicable law.

Further information about the warranty is available at www.inventer.eu/warranty

10 Service

Claims

Check the delivery for completeness and transport damage upon receipt using the delivery note. Report missing items immediately, and at the latest within 14 days to your supplier, distributor or factory representative.

Warranty and guarantee claims

In the case of a warranty or guarantee claim, contact your local distributor or factory representative.

In all cases, return the complete ventilation unit to the manufacturer. The guarantee is an additional offer by the manufacturer and in no way affects the applicable law.

Accessories and spare parts

To order parts for your controller, contact your nearest factory outlet or our service staff.

Technical customer service

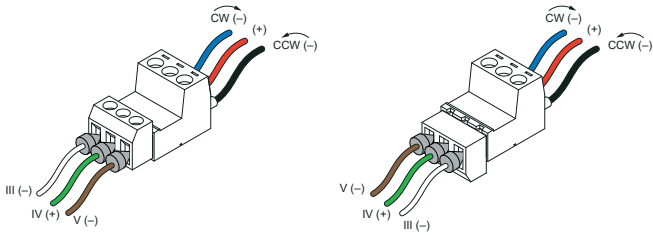
For technical support contact our service staff.

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 info@inventer.de
 <http://www.inventer.eu>

Appendix 1: Terminal assignment: reversible fan

Plug (Cable from controller)						Socket (Cable from fan)	
Starting direction: Extract air			Starting direction: Supply air				
Terminal	Signification	Colour	Terminal	Signification	Colour	Terminal	Colour
III (-)	GND (-)	White	V (-)	GND (-)	Brown	CW (-)	Blue
IV (+)	Operating voltage	Green	IV (+)	Operating voltage	Green	+	Red
V (-)	GND (-)	Brown	III (-)	GND (-)	White	CCW (-)	Black

Starting direction of reversible fan



Starting direction Extract air:
 • The locking screws of the green BUS terminal's plug and socket are pointing to the same direction.

Starting direction Supply air:
 • The locking screws of the green BUS terminal's plug and socket are pointing to different directions.

Appendix 2: Wiring protocol

Ventilation unit	Floor	Area/room and position	Ventilation zone (CAM)	Starting direction	
				Supply	Extract
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Ventilation unit	Floor	Area/room and position	Ventilation zone (CAM)	Starting direction	
				Supply	Extract
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

COMPANY DETAILS

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