

MANUFACTURER OF VENTILATION ELEMENTS



# SAW-POL



## COMPENSATORY SUPPLY AIR GRILLE KW

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## DESCRIPTION AND APPLICATION

**KW transfer grilles** serve both supply and exhaust functions, as well as pressure equalization and airflow balancing. They are particularly suitable for facilities requiring **effective smoke extraction compensation**, such as underground car parks, industrial halls, or public utility buildings. They ensure reliable air supply in smoke ventilation systems.

KW grilles are equipped with fixed blades of the following types:

- **CzS-A-HF**: 90% optical free area (75% net free area),
- **CzS-A-HV**: 75% optical free area (60% net free area).

The product bears the Polish construction mark **B**, the **CE** marking, and holds a hygienic certificate. A National Declaration of Performance is also issued.

## MATERIALS

KW transfer grilles are available in three material versions:

- **Galvanized steel\***
- **Aluminium\***
- **Stainless, acid-resistant steel (grade 1.4301 / AISI 304 or 1.4404 / AISI 316L)**

\*Powder coating available in any RAL colour. By default, stainless and acid-resistant steel components are not coated.

## DIMENSIONS

KW grilles are manufactured to order. Dimensions according to customer requirements.

**L** - Installation opening width

**H** - Installation opening height

**D** - Blade spacing depending on the blade type used

Frame width:

**25mm** for L or H  $\leq$  1000mm

**50mm** for L or H > 1000mm

Frame depth:

Blades CzS-A-HF:

**110mm**

Blades CzS-A-HV:

**100mm**

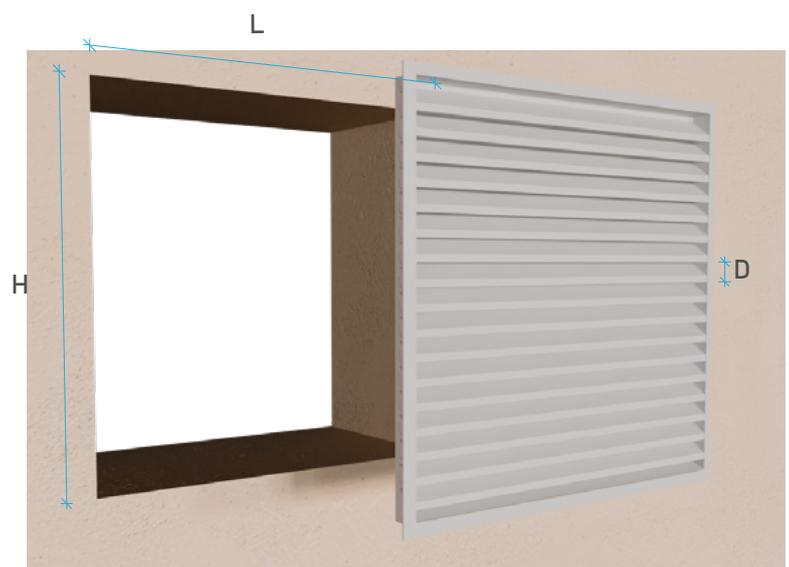


Fig. 1

The manufacturer reserves the right to make technical modifications.

# TECHNICAL DATA OF KW GRILLE WITH CzS-A-HF BLADES

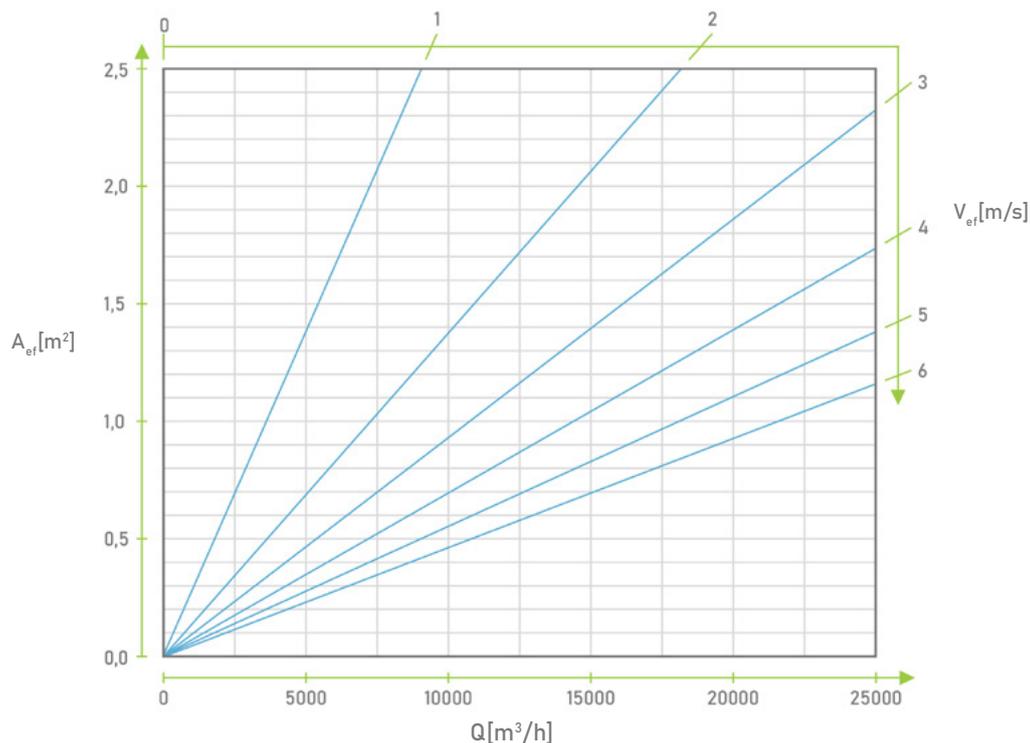
## NET FREE AREA

Net free area  $A_{ef}$  [m<sup>2</sup>] of the KW grille with CzS-A-HF intake blades.

H <sub>[mm]</sub> \ L <sub>[mm]</sub>	300	400	500	600	800	1000	1200	1400	1600	1800	2000
300	0,070	0,090	0,110	0,140	0,180	0,230	0,270	0,320	0,360	0,410	0,450
400	0,090	0,120	0,150	0,180	0,240	0,300	0,360	0,420	0,480	0,540	0,600
500	0,110	0,150	0,190	0,230	0,300	0,380	0,450	0,530	0,600	0,680	0,750
600	0,140	0,180	0,230	0,270	0,360	0,450	0,540	0,630	0,720	0,810	0,900
800	0,180	0,240	0,300	0,360	0,480	0,600	0,720	0,840	0,960	1,080	1,200
1000	0,230	0,300	0,380	0,450	0,600	0,750	0,900	1,050	1,200	1,350	1,500
1200	0,270	0,360	0,450	0,540	0,720	0,900	1,080	1,260	1,440	1,620	1,800
1400	0,320	0,420	0,530	0,630	0,840	1,050	1,260	1,470	1,680	1,890	2,100
1600	0,360	0,480	0,600	0,720	0,960	1,200	1,440	1,680	1,920	2,160	2,400
1800	0,410	0,540	0,680	0,810	1,080	1,350	1,620	1,890	2,160	2,430	2,700
2000	0,450	0,600	0,750	0,900	1,200	1,500	1,800	2,100	2,400	2,700	3,000
2400	0,540	0,720	0,900	1,080	1,440	1,800	2,160	2,520	2,880	3,240	3,600
2800	0,630	0,840	1,050	1,260	1,680	2,100	2,520	2,940	3,360	3,780	4,200
3000	0,680	0,900	1,130	1,350	1,800	2,250	2,700	3,150	3,600	4,050	4,500

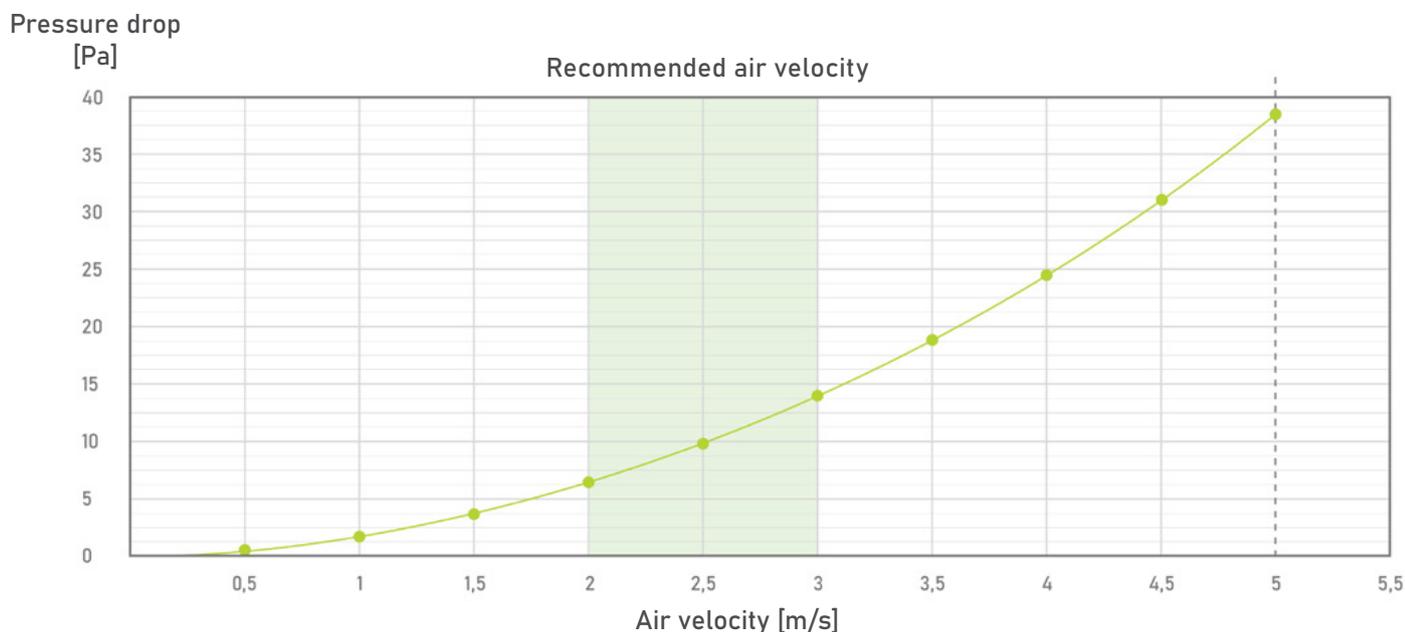
## EFFECTIVE VELOCITY

Effective velocity  $V_{ef}$  [m/s] depending on the airflow rate  $Q$  [m<sup>3</sup>/h] and the effective area  $A_{ef}$  [m<sup>2</sup>].



## TECHNICAL DATA OF KW GRILLE WITH CzS-A-HF BLADES PRESSURE DROP

Pressure drop depending on the air velocity through the KW grille



## TECHNICAL DATA OF KW GRILLE WITH CzS-A-HV BLADES NET FREE AREA

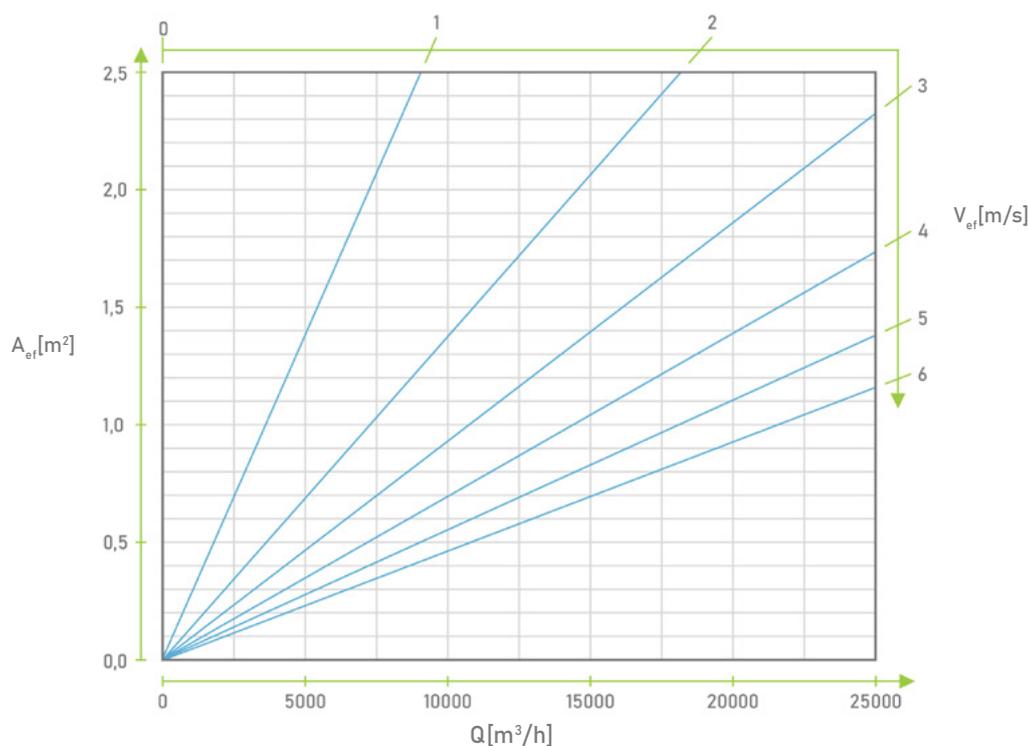
Net free area  $A_{ef}$  [m<sup>2</sup>] of the KW grille with CzS-A-HF intake blades.

$H_{(mm)}$ \ $L_{(mm)}$	300	400	500	600	800	1000	1200	1400	1600	1800	2000
300	0,050	0,070	0,090	0,110	0,140	0,180	0,220	0,250	0,290	0,320	0,360
400	0,070	0,100	0,120	0,140	0,190	0,240	0,290	0,340	0,380	0,430	0,480
500	0,090	0,120	0,150	0,180	0,240	0,300	0,360	0,420	0,480	0,540	0,600
600	0,110	0,140	0,180	0,220	0,290	0,360	0,430	0,500	0,580	0,650	0,720
800	0,140	0,190	0,240	0,290	0,380	0,480	0,580	0,670	0,770	0,860	0,960
1000	0,180	0,240	0,300	0,360	0,480	0,600	0,720	0,840	0,960	1,080	1,200
1200	0,220	0,290	0,360	0,430	0,580	0,720	0,860	1,010	1,150	1,300	1,440
1400	0,250	0,340	0,420	0,500	0,670	0,840	1,010	1,180	1,340	1,510	1,680
1600	0,290	0,380	0,480	0,580	0,770	0,960	1,150	1,340	1,540	1,730	1,920
1800	0,320	0,430	0,540	0,650	0,860	1,080	1,300	1,510	1,730	1,940	2,160
2000	0,360	0,480	0,600	0,720	0,960	1,200	1,440	1,680	1,920	2,160	2,400
2400	0,430	0,580	0,720	0,860	1,150	1,440	1,730	2,020	2,300	2,590	2,880
2800	0,500	0,670	0,840	1,010	1,340	1,680	2,020	2,350	2,690	3,020	3,360
3000	0,540	0,720	0,900	1,080	1,440	1,800	2,160	2,520	2,880	3,240	3,600

# TECHNICAL DATA OF KW GRILLE WITH Czs-A-HV BLADES

## EFFECTIVE VELOCITY

Effective velocity  $V_{ef}$  [m/s] depending on the airflow rate  $Q$  [m<sup>3</sup>/h] and the effective area  $A_{ef}$  [m<sup>2</sup>].



## PRESSURE DROP

Pressure drop depending on the air velocity through the KW grille



## TYPES OF FRAMES

Two types of frames are available in the offer. The **R1 frame** has a flange that allows it to be fixed to the wall from the outside while masking imperfections of the opening. The **R2 frame**, on the other hand, is characterized by a discreet appearance, fitting seamlessly into the wall without any outward-facing elements. It is dedicated for use with walls made of stone, clinker, or similar materials.



Frame R1

Frame R2

Fig. 2

## MOUNTING METHODS

### Variant W1

**Installation** is carried out using screws and mounting holes in the wall-facing flange of the frame (**W1**) or in its vertical sections (**W1a**). In the case of the **R2 frame**, holes are made only in the vertical sections (**W1a**) for grilles with a width of less than 1000 mm.

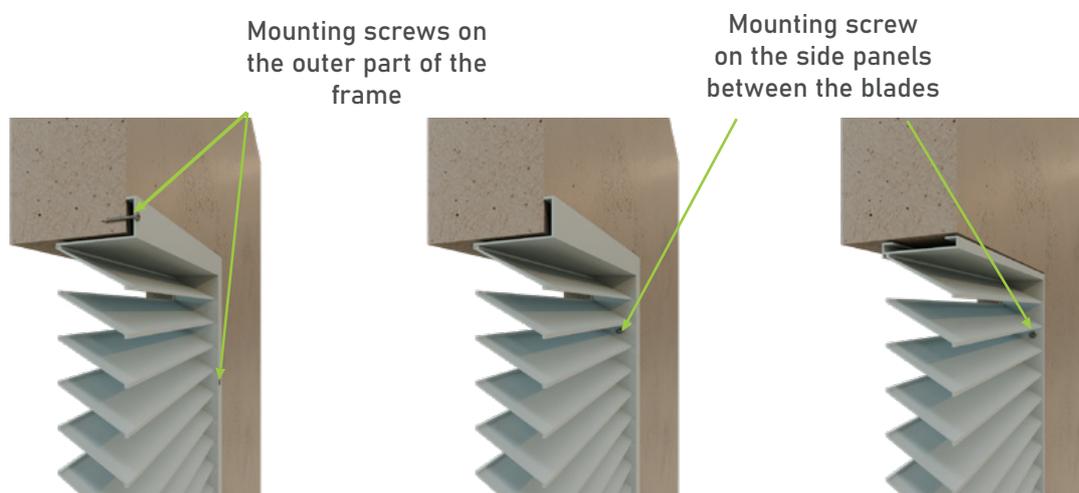
W1  
Frame R1W1a  
Frame R1W1a  
Frame R2

Fig. 3

## MOUNTING METHODS

### Variant W2

Concealed installation using screws and mounting flat bars – recommended solution when there is free access from the room side. The flat bars are supplied separately and are to be riveted to the KW grille directly on site. The length of the flat bars is subject to agreement.

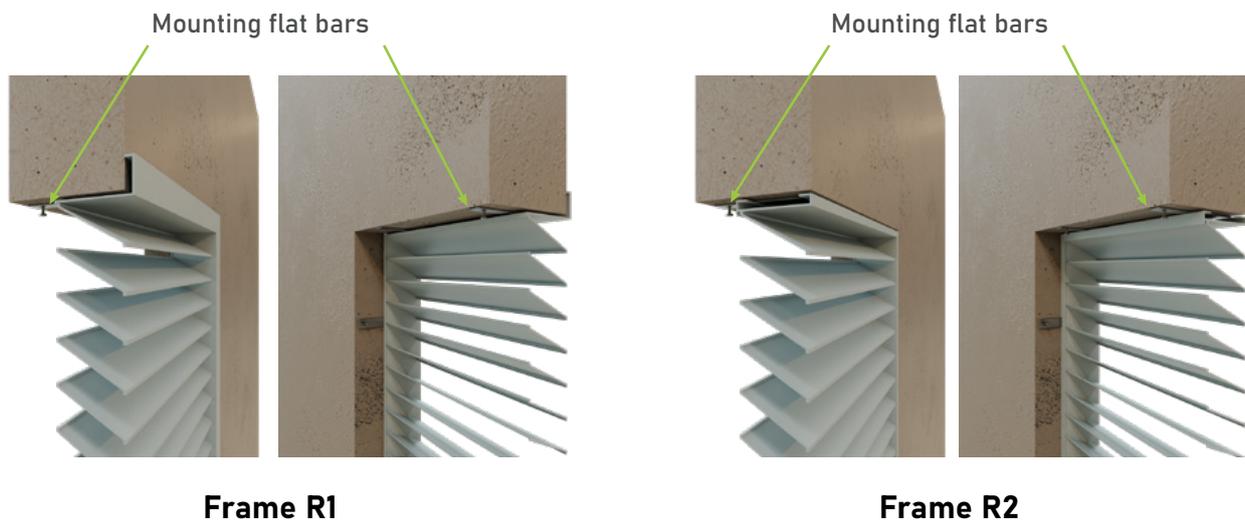


Fig. 4

### Variant W3

Concealed installation using screws and mounting brackets in the **RM frame**, allowing multiple installations and removals of the KW grille. This variant is recommended for walls with an insulation layer. The **W3 variant** is not suitable for the R2 frame. For the R1 frame, installation from the room side (**W3a**) is offered; for KW grilles with a width of less than 1000 mm, front-side installation (**W3b**) is also possible.

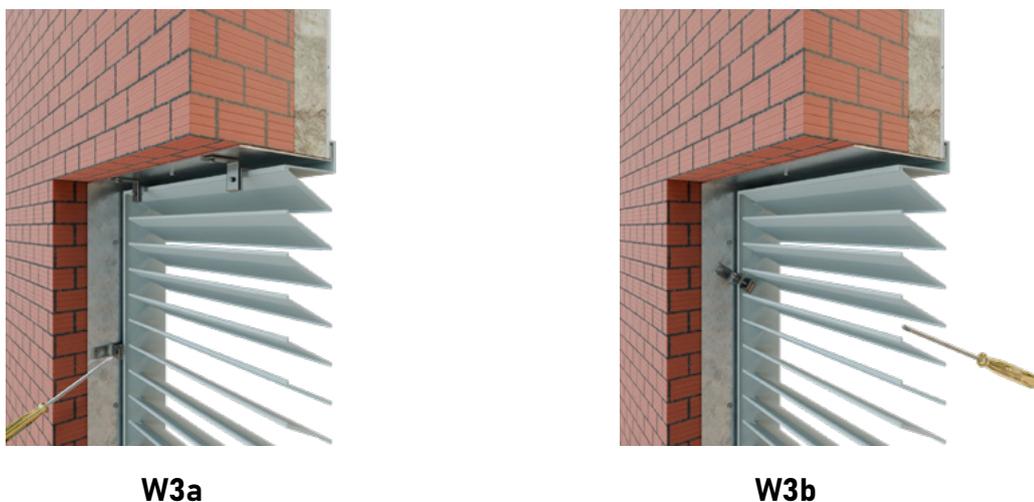


Fig. 5

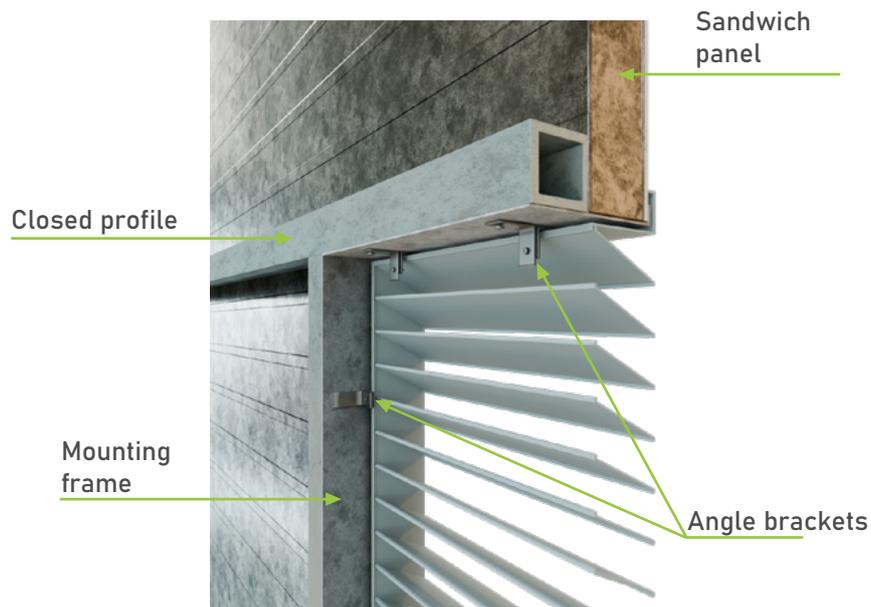
**Variant W3a** – installation from the room side.

**Variant W3b** – installation from the front of the KW grille, only for widths  $L \leq 1000$  mm.

## MOUNTING METHODS

### Variant W4

Dedicated for installing KW grilles in sandwich panels. Due to the construction of the panel (filling covered with thin sheets, 0.5 mm thick), the use of a mounting frame is recommended. This frame reinforces the attachment and covers the filling (wool/foam). Additionally, it allows fastening with a locking bar or a profile surrounding the installation opening. This installation variant ensures secure mounting of the air intake in sandwich panels, especially for large modules.



**Frame R1**

Fig. 6

## DIVIDING OF KW VENTILATION GRILLES

If the width of the KW grille  $L$  (blade length) exceeds 2800 mm, it must be divided. We offer two division variants, adapted to the installation conditions. The choice should be discussed individually.

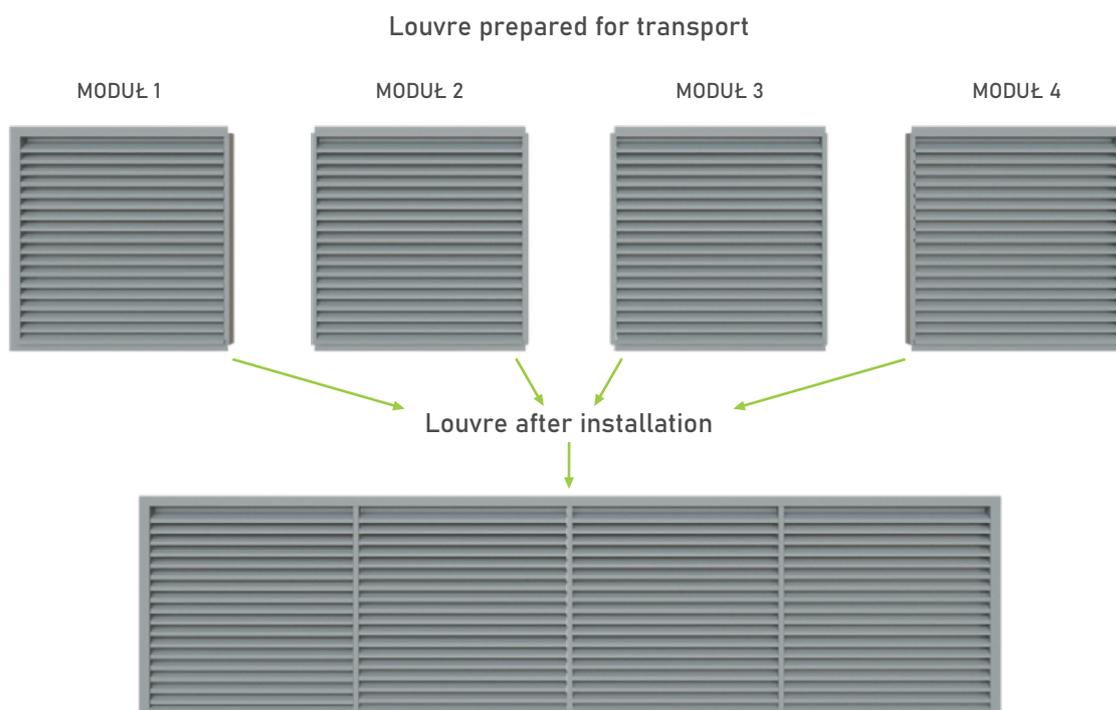
### FRAME IN ONE PIECE

For dimensions  $L \leq 2800$  mm and  $H \leq 1500$  mm, we recommend a single-piece frame, in which the grille blades are reinforced with vertical supports.



### PUZZLE

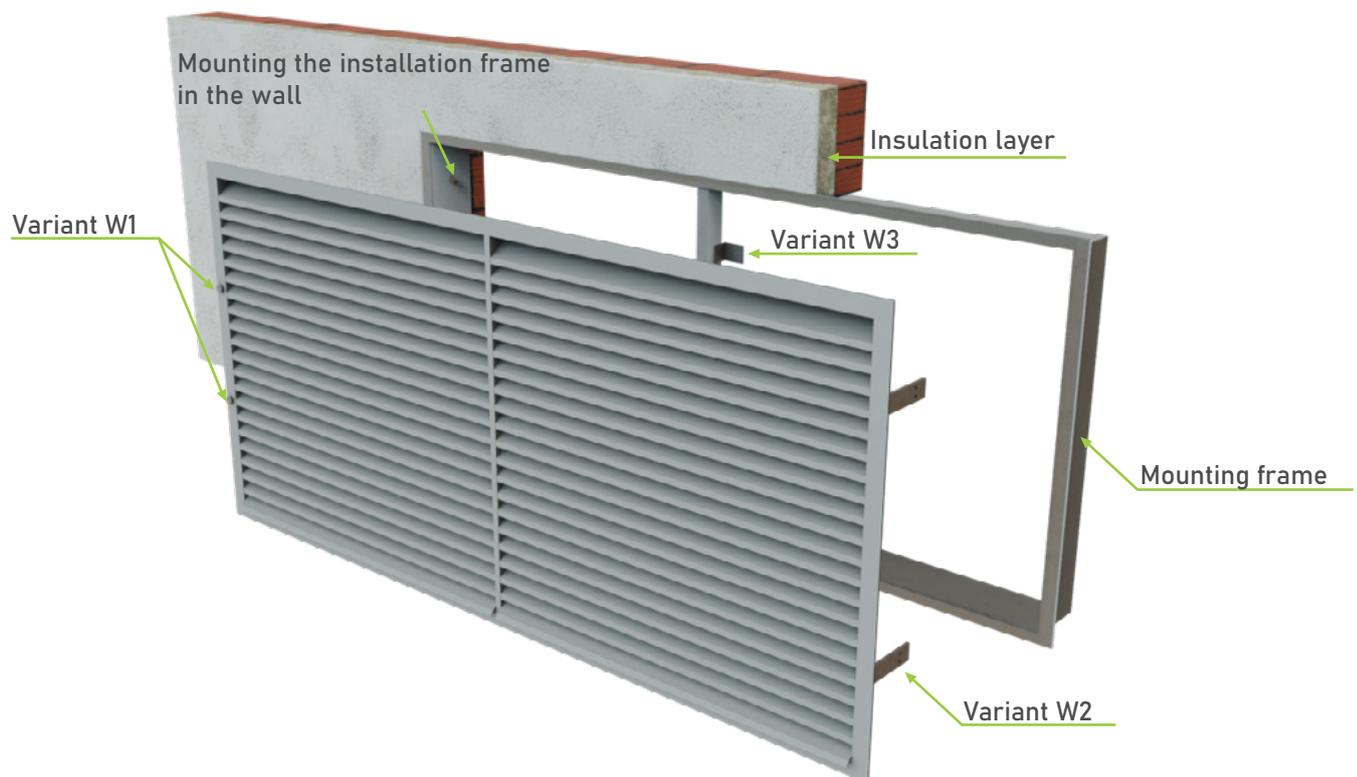
For installation openings with dimensions  $L > 2800$  mm and  $H > 1500$  mm, the grilles are divided into modules, so-called "puzzle" sections, which form a single unit with discreet connections.



## DIVIDING OF KW VENTILATION GRILLES

### MOUNTING FRAME / SUBCONSTRUCTION

To reinforce and protect the insulation layer and to ensure a solid installation of the KW grille in the ventilation opening, especially for large modular grilles, we recommend the use of a mounting frame with subconstruction elements. Below, alternative fastening variants W1, W2, and W3 are also presented.



**Variant W1** – visible installation with screws.

**Variant W2** – concealed installation using screws and mounting flat bars. This solution is recommended when there is free access from the room side. The flat bars are supplied separately and must be riveted to the KW grille directly on site. The length of the flat bars is subject to agreement.

**Variant W3** – concealed installation using angle brackets fixed to the grilles and their identical counterparts in the subconstruction frame. Once the KW grille is placed in the opening, the pairs of mounting locks at the same height must be tightened.

**Variant W3a** – installation from the room side.

**Variant W3b** – installation from the front of the ventilation grille.

## HOW TO PLACE AN ORDER

Please place orders according to the following format:

**KW / 'LxH' / 'D' / 'M' / 'RAL' / 'R' / 'W'**

**KW** product name

**LxH** width × height of installation opening in mm (see Fig. 1)

**D** blade type

- **CzS-A-HF\***
- **CzS-A-HV**

**M** material

- **OC\*** - galvanized steel, powder-coated
- **AL** - aluminium, powder-coated
- **KO** - stainless / acid-resistant steel (grade 1.4301 / AISI 304 or 1.4404 / AISI 316L)

**RAL** colour according to RAL chart

- **RAL 9016, 7004, 9010, 7016 matt, fine structure\***
- **or any other RAL colour number**

**R** frame type (see Fig. 2)

- **R1\*** - frame with wall flange
- **R2** - channel frame

**W** installation variant

- **W1\*** - visible installation with screws and mounting holes in wall flange (see Fig. 3)
  - **W1a** - screws in inner frame walls
- **W2** - concealed installation using screws and mounting flat bars (see Fig. 4)
- **W3** - concealed installation using screws and mounting brackets in RM frame (see Fig. 5)
  - **W3a** - installation from room side
  - **W3b** - installation from front of the grille, only for L ≤ 1000 mm
- **W4** - installation in sandwich panel to the support profile (see Fig. 6)

\* - Default parameters will be applied if no information is provided.

**Sample order:**

**KW/1600x800/CzS-A-HF/OC/RAL9016/R1/W3a**





# SAW-POL

The mission of P.P.H.U. SAW-POL is to provide all customers with access to the widest possible range of ventilation products.

As a Polish manufacturer of ventilation components, we strive to meet and adapt our product range to the expectations of architects, designers, and investors – even the most demanding ones. We continuously expand our portfolio, including new product categories. We improve our operations with respect to environmental responsibility.

An additional value for our customers is the highest standard of service, supported by an experienced team always ready to assist, as well as an individual approach to every order.

**Please contact us by phone  
between 8:00–16:00.**

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 Product page:  
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