

# Ventilation grilles for floor installation

## Type ARR



3

### Roll down grilles made of aluminium, with fixed transverse blades, for floor installation

Roll down grilles with rounded blade edges, for covering floor voids such as trenches for heating, underfloor induction units, decentralised ventilation units, light wells and similar

- Nominal width: 150, 200, 250, 300, 350, 400, 450 mm
- Grille height 15 or 20 mm
- Fixed transverse blades made of aluminium
- Cut sections and rolls to be cut to length
- Good impact sound insulation, quiet to walk on and non slip due to rubber underside
- Cut edges of blades are covered

| Type |                                    | Page    |
|------|------------------------------------|---------|
| ARR  | General information                | 3.2 – 2 |
|      | Order code                         | 3.2 – 4 |
|      | Dimensions and weight              | 3.2 – 5 |
|      | Specification text                 | 3.2 – 6 |
|      | Basic information and nomenclature | 3.8 – 1 |

### Description

For detailed information on accessories see Chapter K1 – 3.6

For detailed information on attachments see Chapter K1 – 3.7

### Application

- Type ARR roll down grilles as supply air or extract air variant for comfort zones and industrial zones
- Suitable also for entrance areas and other high traffic areas
- Directed supply air discharge for mixed flow ventilation
- For variable and constant volume flows
- For supply air to room air temperature differences from –12 to +4 K
- For floor installation
- For covering trenches for heating, underfloor induction units, decentralised ventilation units or light wells and as overflow grating surrounding swimming pools

### Variants

- 15: Grille height 15 mm
- 20: Grille height 20 mm

### Nominal sizes

- Cut sections, L: 150 – 3000 mm, in 1 mm increments
- R: 1 roll of 10 m; for ARR-20, width 400 and 450 comes in 2 rolls of 5 m each
- B: 150, 200, 250, 300, 350, 400, 450 mm

### Special characteristics

- Fixed blades
- High-quality design
- Good impact sound insulation, quiet to walk on and non slip
- High thermal, chemical and mechanical resistance, tested to DIN

### Parts and characteristics

- Transverse blades with rounded upper edges
- Connecting strip, covering the cut edges of each blade, with integral distance pieces
- Rubber underside ensures optimum sound impact insulation and non slip characteristic
- Special tool for cutting to length
- Stabilising strip from B = 300 mm

### Construction features

- Rigid fitting of the blades on the connecting strip
- Blades rest on the connecting strip (no frame), 8 mm wide support area
- Easy handling
- Quiet and safe to walk on
- Individual blades can be replaced

### Materials and surfaces

- Blades made of aluminium
- Connecting strip made of plastic, UL 94, V-0, flame retardant
- Rubber underside
- Anodised blades, E6-C-0, natural colour

### Installation and commissioning

- Preferably for floor installation
- Wall installation only with special fixing provided by others
- Use special tool to cut rolls to length at the installation location
- Individual blades can be replaced

### Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

### Maintenance

- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

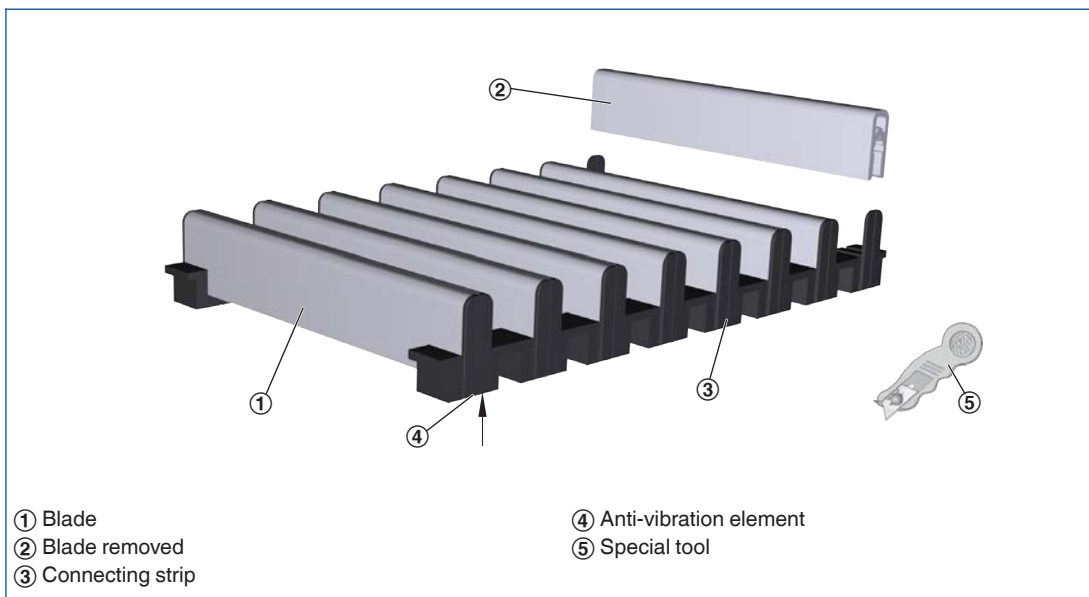
### Technical data

|   |                                      |
|---|--------------------------------------|
| Nominal widths                                | 150, 200, 250, 300, 350, 400, 450 mm |
| Supply air to room air temperature difference | –12 to +4 K                          |

### Note

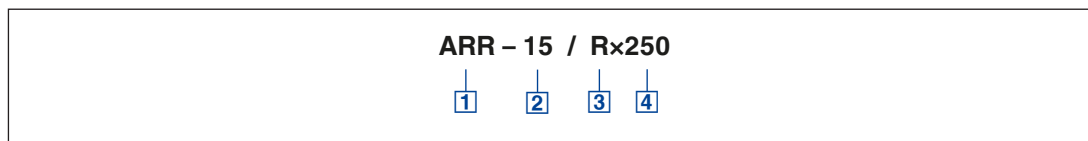
For a general functional description and installation details for ventilation grilles see Chapter K1 – 3.8

### Schematic illustration of ARR



Order code

ARR



|                                      |                               |
|--------------------------------------|-------------------------------|
| <b>1</b> Type                        | <b>4</b> Nominal width [mm]   |
| <b>ARR</b> Roll down grille          | 150                           |
|                                      | 200                           |
| <b>2</b> Grille height [mm]          | 250                           |
| 15                                   | 300                           |
| 20                                   | 350                           |
| <b>3</b> Nominal length              | 400                           |
| <b>R</b> Roll (10 m)                 | 450                           |
|                                      | ARR-20, widths 400 and 450 mm |
|                                      | come in 2 rolls of 5 m each   |
| <b>L</b> Cut section (150 – 3000 mm) |                               |

3

Order examples

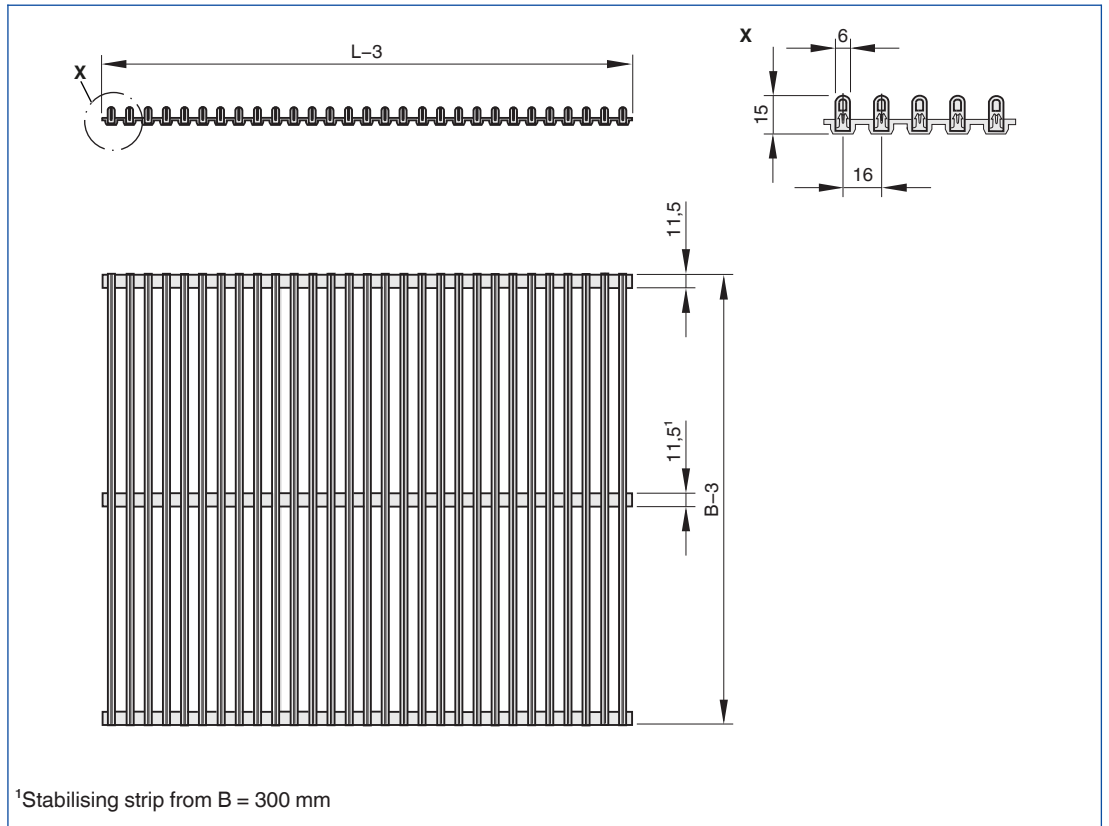
**ARR-15/1000x250**

|                |                     |
|----------------|---------------------|
| Grille height  | 15 mm               |
| Nominal length | Cut section 1000 mm |
| Nominal width  | 250 mm              |

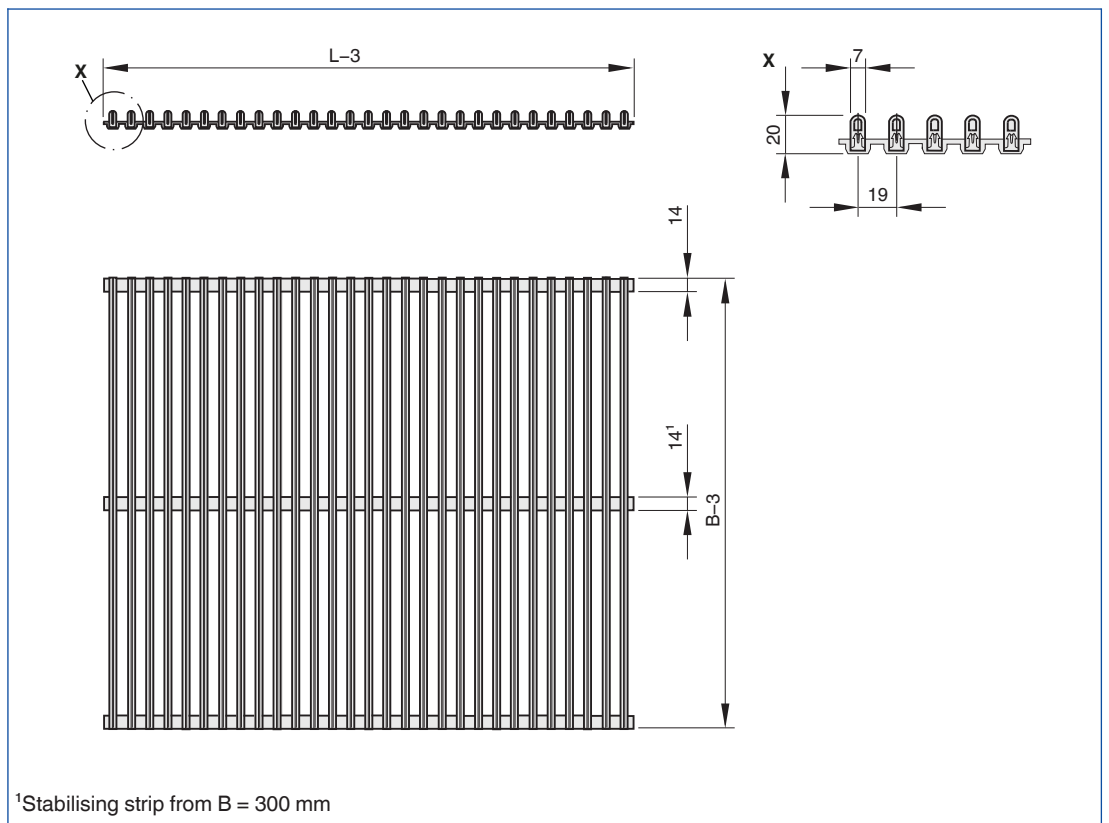
**ARR-20/Rx400**

|                |                       |
|----------------|-----------------------|
| Grille height  | 20 mm                 |
| Nominal length | Two rolls of 5 m each |
| Nominal width  | 400 mm                |

ARR-15



ARR-20



### Standard text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Roll down grilles, rectangular, made of aluminium, for supply and extract air. For covering trenches for heating, underfloor induction units, decentralised ventilation units, light wells, overflow grating surrounding swimming pools and similar openings.

Ready-to-install component which consists of fixed transverse blades resting on two connecting strips with anti-vibration elements, available as a roll or as cut sections. Rolls come with a special tool for cutting to length. The covering of the blade cut edges prevents injuries and ensures that the grille is both quiet to walk on and flexible enough to be removed. Replacement of individual blades is possible.

Non slip characteristic and good optimum sound impact insulation due to rubber underside.

### Special characteristics

- Fixed blades
- High-quality design
- Good impact sound insulation, quiet to walk on and non slip
- High thermal, chemical and mechanical resistance, tested to DIN

### Materials and surfaces

- Blades made of aluminium
- Connecting strip made of plastic, UL 94, V-0, flame retardant
- Rubber underside
- Anodised blades, E6-C-0, natural colour

### Technical data

- Nominal width: 150, 200, 250, 300, 350, 400, 450 mm
- Supply air to room air temperature difference: -12 to +4 K

### Sizing data

- $\dot{V}$  \_\_\_\_\_ [m<sup>3</sup>/h]
- $\Delta p_t$  \_\_\_\_\_ [Pa]
- $L_{WA}$  Air-regenerated noise \_\_\_\_\_ [dB(A)]

# 3

### Order options

#### 1 Type

**ARR** Roll down grille

#### 2 Grille height [mm]

- 15
- 20

#### 3 Nominal length

- R** Roll (10 m)  
ARR-20, widths 400 and 450 mm  
come in 2 rolls of 5 m each
- L** Cut section (150 – 3000 mm)

#### 4 Nominal width [mm]

- 150
- 200
- 250
- 300
- 350
- 400
- 450

# Ventilation grilles

## Basic information and nomenclature



### Ventilation grilles

- Product selection
- Quick sizing
- Principal dimensions
- Nomenclature
- Sizing and sizing example
- Function
- Installation information
- Commissioning

# Ventilation grilles

## Basic information and nomenclature

### Product selection

|  | Installation into walls, sills or rectangular ducts |                   |               |               |               |               |               |               |               |               |               |
|--|---|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|  | X-GRILLE<br>Cover                                   | X-GRILLE<br>Basic | ASL           | AT            | VAT           | AH            | AWT           | SL            | TR            | TRS           | TRSK          |
| <b>Blades</b>                            |   |                   |               |               |               |               |               |               |               |               |               |
| Longitudinal                             | ●   | ●                 | ●             | ●             |               | ●             | ●             | ●             | ●             |               |               |
| Transverse                               |   |                   |               |               | ●             |               |               |               |               | ●             | ●             |
| Fixed                                    |   |                   |               |               |               | ●             | ●             |               |               |               |               |
| Adjustable                               | ●   | ●                 | ●             | ●             | ●             |               |               | ●             | ●             | ●             | ●             |
| Aluminium                                | ●   | ●                 | ●             | ●             | ●             | ●             | ●             |               |               |               |               |
| Galvanised sheet steel                   |   |                   |               |               |               |               |               |               | ●             | ●             | ●             |
| Sheet steel                              |   |                   |               |               |               |               |               | ●             | ●             | ●             |               |
| Discharge angle                          | var.  | var.              | var.          | var.          | var.          | 0°, 15°       | 0°            | var.          | var.          | var.          | var.          |
| Blade pitch [mm]                         | 20  | 20                | 16,7          | 16,7          | 16,7          | 12,5          | 16,7          | 20            | 20            | 20            | 20            |
| <b>Border</b>                            |   |                   |               |               |               |               |               |               |               |               |               |
| Width of longitudinal section [mm]       | 28  | 26                | 28            | 23, 27        | 23, 27        | 20, 28        | 30            | 28            | 27            | 27            | 27            |
| Width of transverse section [mm]         |   |                   |               |               |               |               |               | 20            |               |               |               |
| Aluminium                                | ●   |                   | ●             | ●             | ●             | ●             | ●             |               |               |               |               |
| Galvanised sheet steel                   |   | ●                 |               |               |               |               |               |               | ●             | ●             | ●             |
| Sheet steel                              |   |                   |               |               |               |               |               | ●             | ●             | ●             |               |
| Concealed screw fixing                   | ●   | ●                 | ●             | ●             | ●             | ●             |               | ●             | ●             | ●             |               |
| Spring clip fixing                       | ●   | ●                 | ●             | ●             | ●             | ●             |               |               |               |               |               |
| Screw fixing                             | ●   |                   |               | ●             | ●             | ●             | ●             |               | ●             | ●             | ●             |
| <b>Attachments</b>                       |   |                   |               |               |               |               |               |               |               |               |               |
| AG, AS, D,DG                             | ●   | ●                 | ●             | ●             | ●             | ●             | ●             | ●             | ●             | ●             |               |
| *S, *5                                   |   |                   |               |               |               |               |               |               |               |               | ●             |
| <b>Accessories</b>                       |   |                   |               |               |               |               |               |               |               |               |               |
| Installation subframe                    | ●   | ●                 | ●             | ●             | ●             | ●             | ●             | ●             | ●             | ●             | ●             |
| Installation subframe with filter casing | ●   | ●                 |               | ●             | ●             | ●             |               | ●             | ●             | ●             |               |
| <b>Nominal sizes</b>                     |   |                   |               |               |               |               |               |               |               |               |               |
| Length [mm]                              | 225<br>- 1225                                       | 225<br>- 1225     | 225<br>- 1225 | 225<br>- 1225 | 225<br>- 1225 | 225<br>- 1225 | 325<br>- 1225 | 225<br>- 1225 | 225<br>- 1225 | 225<br>- 1225 | 225<br>- 1225 |
| Horizontal run section                   | ●   | ●                 |               |               |               | ●             |               | ●             |               |               |               |
| Height [mm]                              | 125 - 525   | 125 - 525         | 125 - 525     | 125 - 525     | 75 - 525      | 75 - 425      | 125 - 325     | 125 - 525     | 125 - 525     | 75 - 325      | 75 - 325      |
| <b>Technical data</b>                    |   |                   |               |               |               |               |               |               |               |               |               |
| Volume flow rate range [l/s]*            | 16 - 2554   | 19 - 2651         | 11 - 1999     | 11 - 1999     | 11 - 1999     | 10 - 1234     | 17 - 949      | 11 - 1999     | 11 - 1999     | 11 - 1999     | 11 - 1999     |
| Volume flow rate range [m³/h]*           | 58 - 9194   | 68 - 9544         | 40 - 7196     | 40 - 7196     | 40 - 7196     | 36 - 4442     | 61 - 3416     | 40 - 7196     | 40 - 7196     | 40 - 7196     | 40 - 7196     |
| ●  | Möglich   |                   |               |               |               |               |               |               |               |               |               |
|  | Nicht Möglich                                       |                   |               |               |               |               |               |               |               |               |               |



# Ventilation grilles

## Basic information and nomenclature

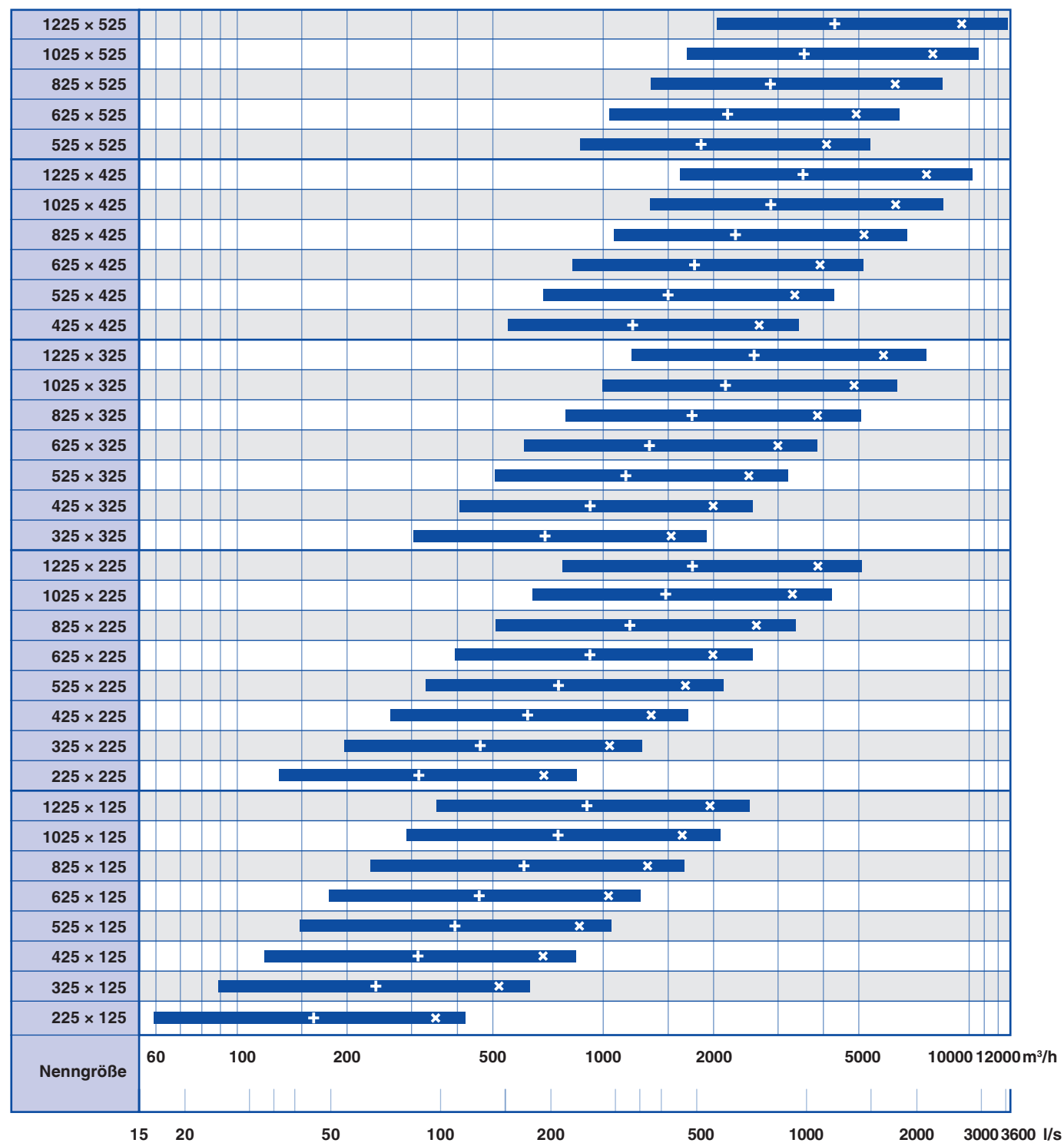
### Product selection

|                                    | Grille cores  | Floor installation |             | Door and wall installation | Installation into circular ducts |
|------------------------------------|---------------|--------------------|-------------|----------------------------|----------------------------------|
|                                    | EF            | AF                 | ARR         | AGS                        | TRSR                             |
| <b>Blades</b>                      |               |                    |             |                            |                                  |
| Longitudinal                       | ●             | ●                  |             | ●                          |                                  |
| Transverse                         |               |                    | ●           |                            | ●                                |
| Fixed                              | ●             | ●                  | ●           | ●                          |                                  |
| Adjustable                         |               |                    |             |                            | ●                                |
| Aluminium                          | ●             | ●                  | ●           | ●                          |                                  |
| Galvanised sheet steel             |               |                    |             |                            | ●                                |
| Discharge angle                    | 0°, 15°       | 0°, 15°            | 0°          |                            | var.                             |
| Blade pitch [mm]                   | 12,5, 16,7    | 12,5               | 19          | 20                         | 20                               |
| <b>Border</b>                      |               |                    |             |                            |                                  |
| Width of longitudinal section [mm] |               | 5,5                |             | 30                         | 24                               |
| Width of transverse section [mm]   |               |                    |             |                            |                                  |
| Galvanised sheet steel             |               |                    |             |                            | ●                                |
| Aluminium                          |               | ●                  |             | ●                          |                                  |
| Screw fixing                       |               |                    |             | ●                          | ●                                |
| <b>Attachments</b>                 |               |                    |             |                            |                                  |
| AG, AS, D,DG                       |               | ●                  |             |                            |                                  |
| *S, *5                             |               |                    |             |                            | ●                                |
| <b>Accessories</b>                 |               |                    |             |                            |                                  |
| Installation subframe              |               | ●                  |             | ●                          | ●                                |
| <b>Nominal sizes</b>               |               |                    |             |                            |                                  |
| Length [mm]                        | 225 – 1225    | 225 – 1225         | 1000 – 3000 | 225 – 1225                 | 225 – 1225                       |
| Horizontal run section             | ●             | ●                  | ●           |                            |                                  |
| Height [mm]                        | 75 – 425      | 75 – 425           | 150 – 450   | 125 – 525                  | 75 – 225                         |
| <b>Technical data</b>              |               |                    |             |                            |                                  |
| Volume flow rate range [l/s]       |               | 10 – 1234          |             | 4 – 533                    | 11 – 1999                        |
| Volume flow rate range [m³/h]      |               | 36 – 4442          |             | 14 – 1918                  | 40 – 7197                        |
| ●                                  | Möglich       |                    |             |                            |                                  |
|                                    | Nicht Möglich |                    |             |                            |                                  |

# Ventilation grilles

## Basic information and nomenclature

### Quick sizing for X-GRILLE Cover, X-GRILLE Basic

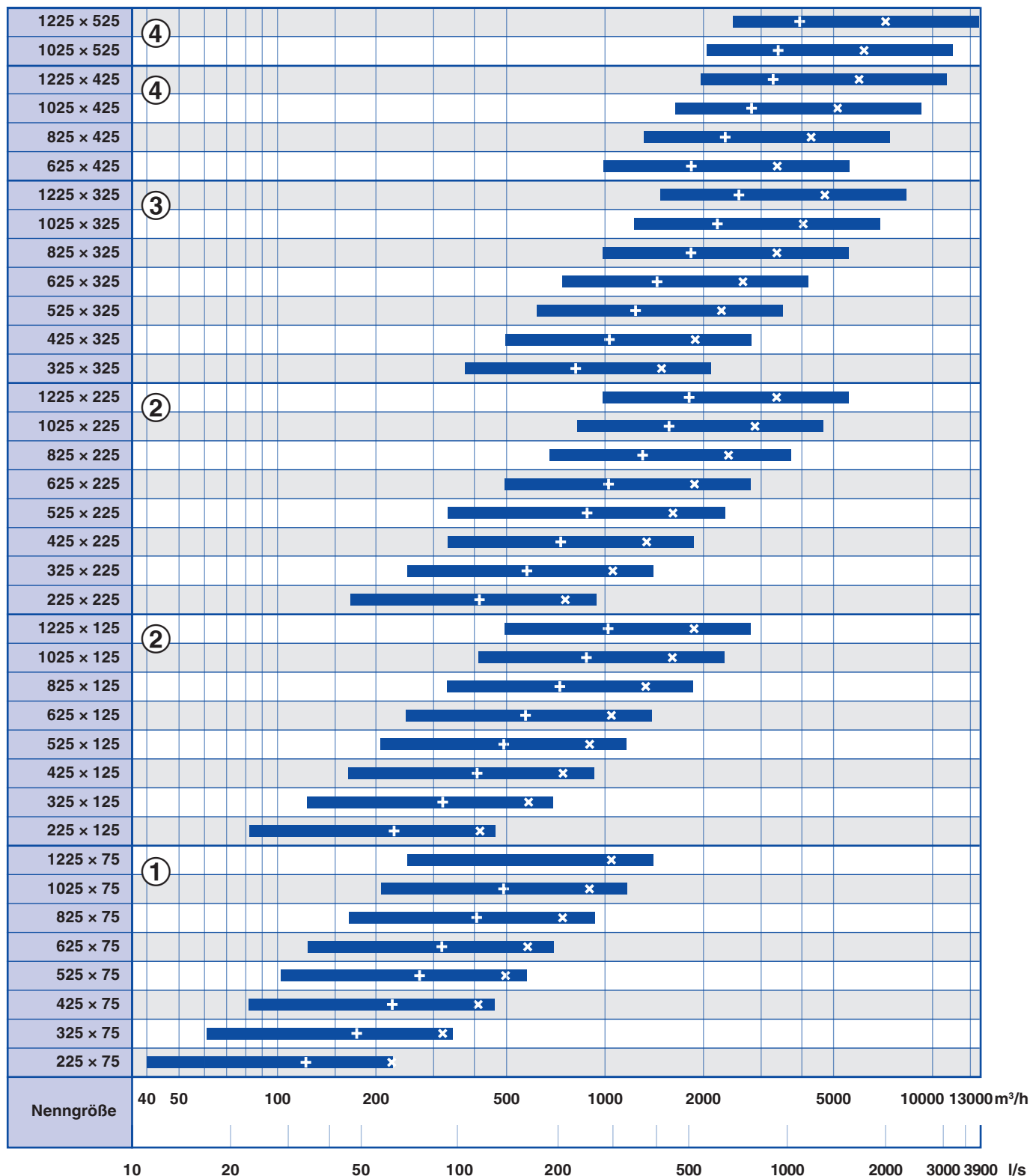


×  $L_{WA} = 40 \text{ dB(A)}$  with unrestricted airflow +  $L_{WA} = 40 \text{ dB(A)}$  with airflow restricted by 50 %

# Ventilation grilles

## Basic information and nomenclature

### Quick sizing for ASL, AT, KS, SL, TR, TRS, TRSK, TRSR, VAT



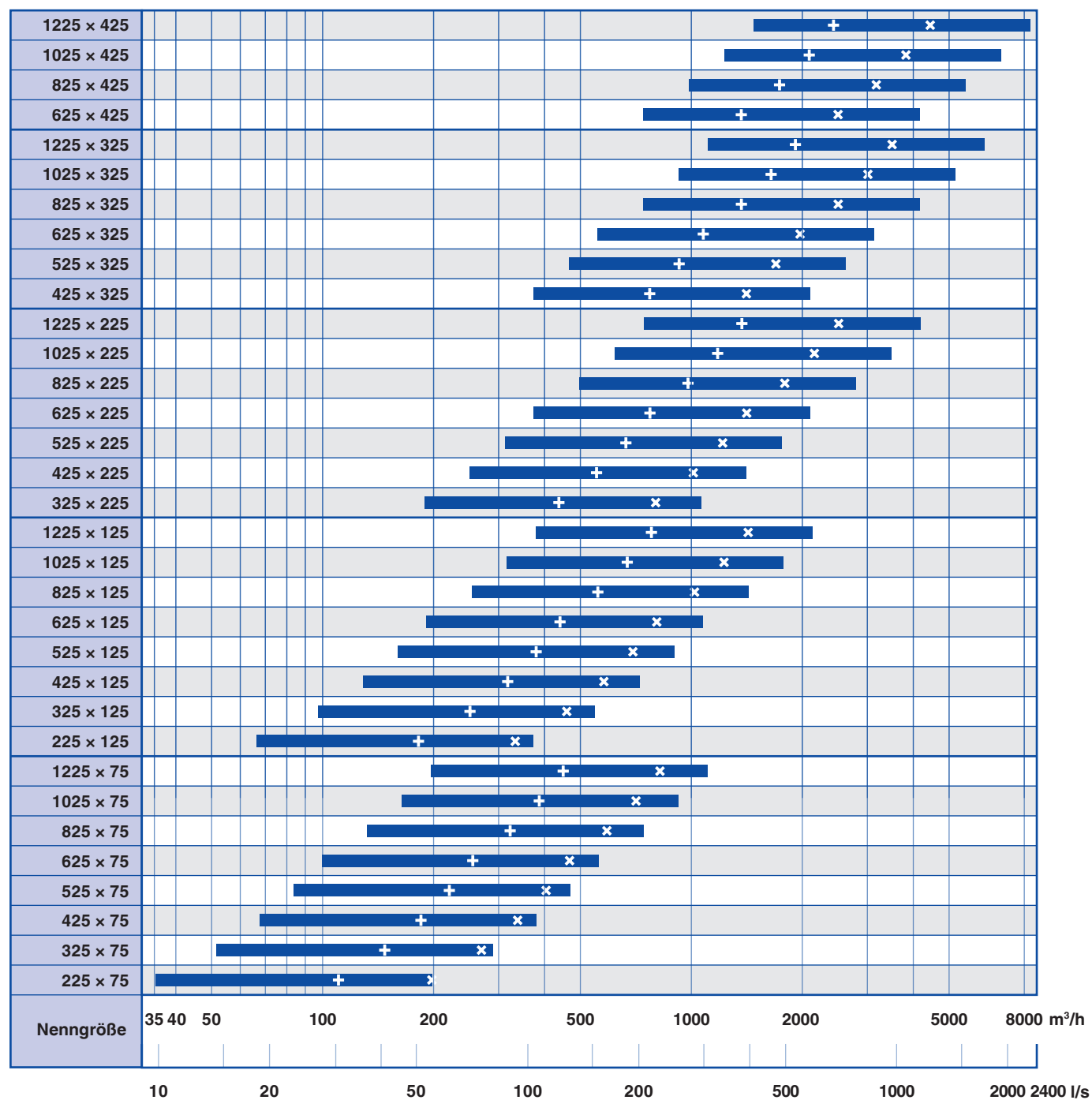
- ① TRS, TRSK, TRSR, VAT
- ② ASL, AT, KS, SL, TR, TRS, TRSK, TRSR, VAT
- ③ ASL, AT, SL, TR, TRS, TRSK, VAT
- ④ ASL, AT, SL, TR, VAT

+  $L_{WA} = 40$  dB(A) with unrestricted airflow  
 x  $L_{WA} = 40$  dB(A) with airflow restricted by 50 %

# Ventilation grilles

## Basic information and nomenclature

### Quick sizing for AF, AH, EF

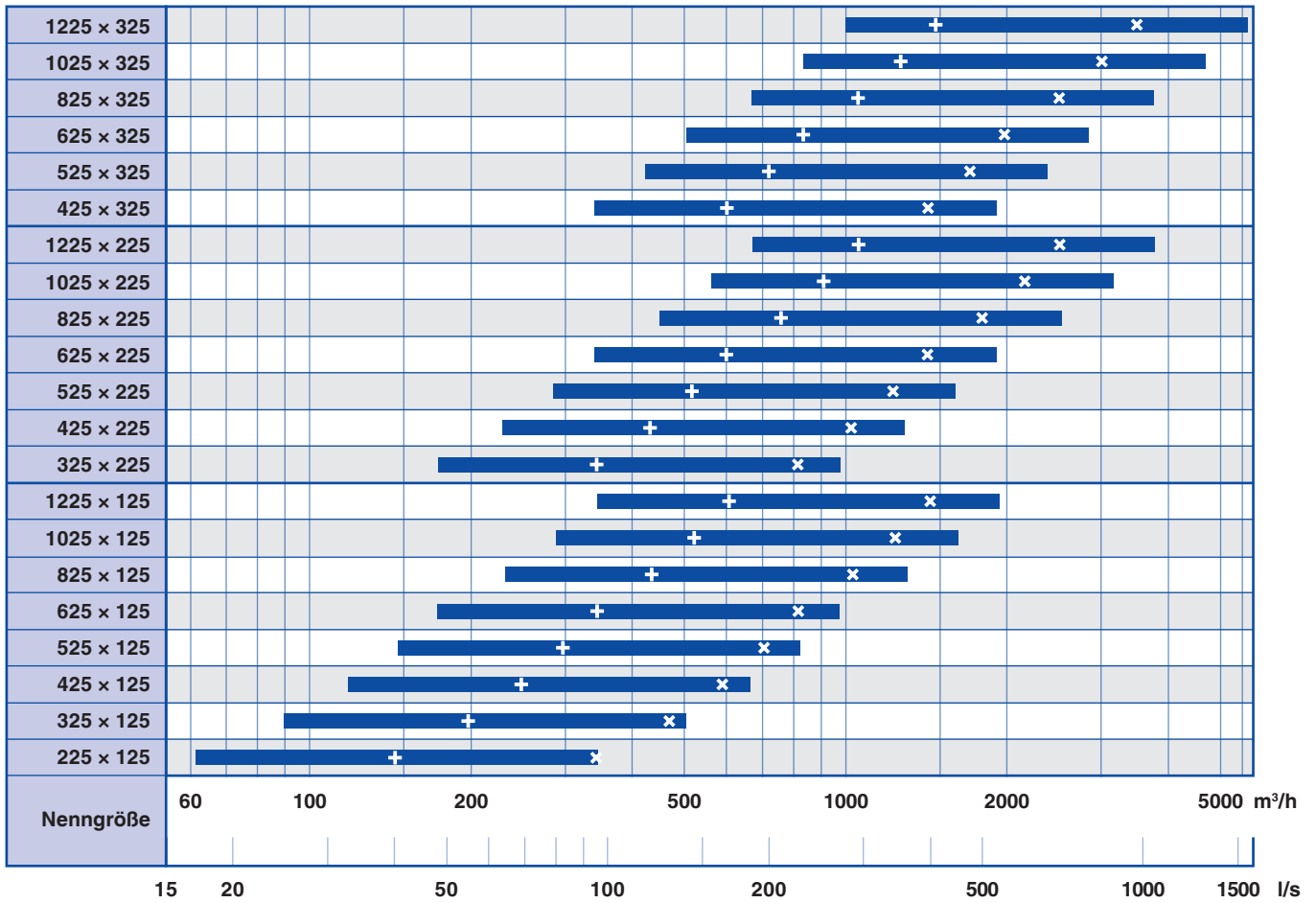


×  $L_{WA} = 40$  dB(A) with unrestricted airflow +  $L_{WA} = 40$  dB(A) with airflow restricted by 50 %

# Ventilation grilles

## Basic information and nomenclature

### Quick sizing for AWT

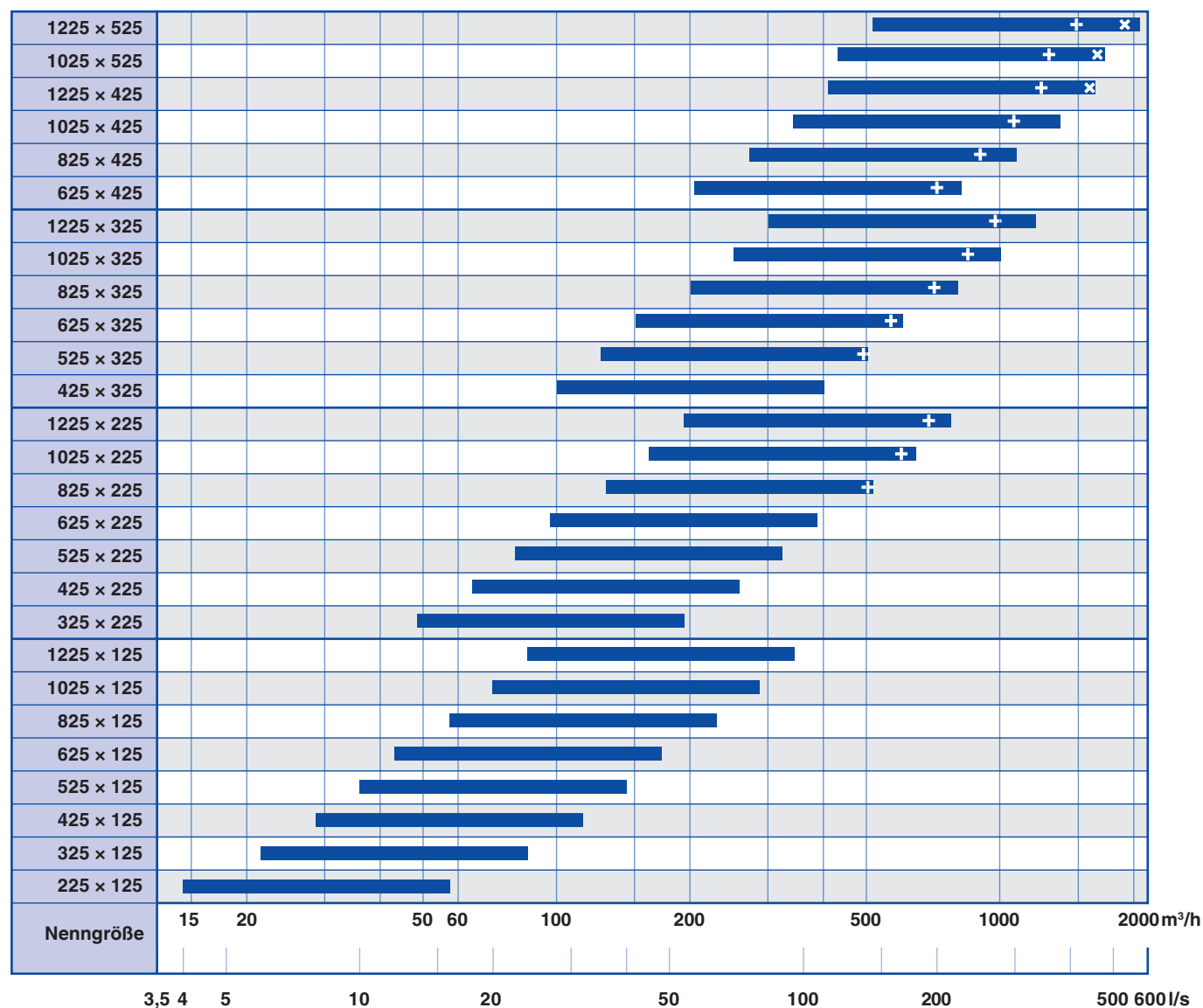


x  $L_{WA} = 40$  dB(A) with unrestricted airflow +  $L_{WA} = 40$  dB(A) with airflow restricted by 50 %

# Ventilation grilles

## Basic information and nomenclature

### Quick sizing for AGS



x  $L_{WA} = 40 \text{ dB(A)}$  +  $L_{WA} = 35 \text{ dB(A)}$

# Ventilation grilles

## Basic information and nomenclature

### Principal dimensions

**L [mm]**

Nominal length of the ventilation grille

**H [mm]**

Nominal height of the ventilation grille

**m [kg]**

Weight

### Nomenclature

**$L_{WA}$  [dB(A)]**

Sound power level of the air-regenerated noise

**$\dot{V}$  [ $m^3/h$ ] and [l/s]**

Volume flow rate

**$\Delta p_t$  [Pa]**

Total differential pressure

**$l_s$  [m]**

Distance from single grille or horizontal run section (throw distance)

# Ventilation grilles

## Basic information and nomenclature

### Sizing with the help of this catalogue

This catalogue provides convenient quick sizing tables for ventilation grilles. The tables give supply air volume flow rates for all nominal sizes. The volume flow rates which apply to a sound power level of the air-regenerated noise of 40 dB(A) with an open damper unit (unrestricted airflow), with no damper unit, or with a damper unit and the airflow restricted by 50 % are marked. Sizing data for other volume flow rates and damper blade positions can be determined quickly and precisely using the Easy Product Finder design programme.

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### Sizing example

#### Given data

$\dot{V} = 335 \text{ l/s}$  (1206  $\text{m}^3/\text{h}$ )  
 Ventilation grilles, made of steel, with adjustable blades  
 Maximum sound power level of 40 dB(A), with the airflow restricted by 50 %  
 Nominal height as low as possible

#### Quick sizing

Type SL or TR  
 Nominal sizes: 825 × 225, 525 × 325, 625 × 425  
 Selected: SL/825 × 225

### Easy Product Finder



The Easy Product Finder allows you to size products using your project-specific data.

You will find the Easy Product Finder on our website.



# Ventilation grilles

## Basic information and nomenclature

### Function

#### Functional description

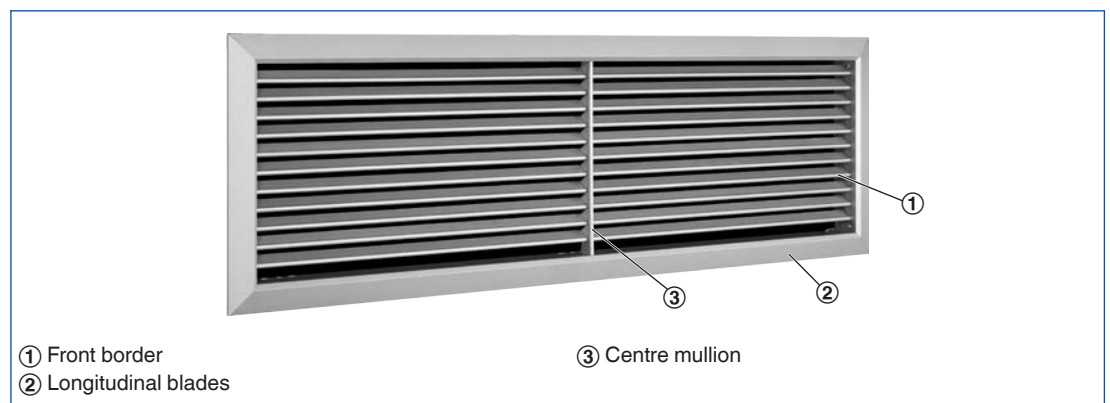
Ventilation grilles are air terminal devices for the supply air and extract air of ventilation and air conditioning systems. They direct the supply air into the room. Ventilation grilles with adjustable blades allow for adapting the discharge direction to the local conditions. The result is a mixed flow ventilation in comfort zones and industrial zones, with good overall room ventilation.

Induction slows the airflow down, i.e. the airflow velocity decreases as the distance from the grille increases. The distance at which the airflow velocity reaches a certain defined value, e.g. 0.2 m/s, is called throw distance. The supply air jet from wall grilles that are installed near the ceiling achieves a larger throw distance than a free jet (from a grille that is not installed near the ceiling). Single grilles, groups of grilles and continuous horizontal runs all achieve different throw distances.

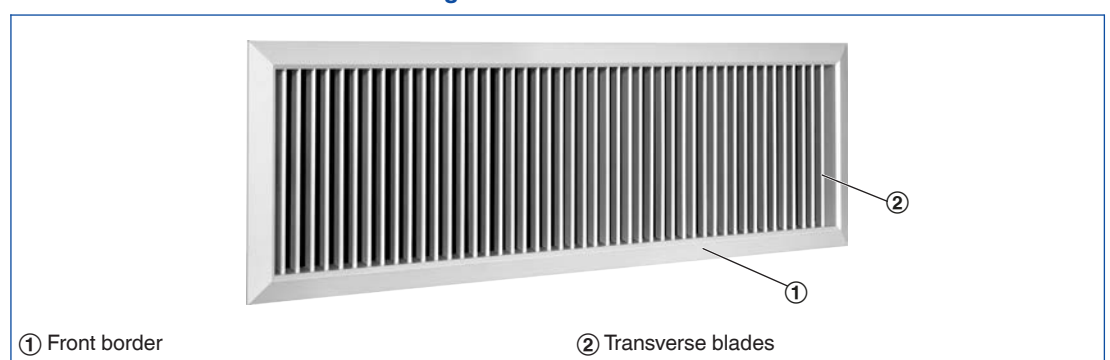
In cooling mode it is necessary to take account of the jet deviation towards the occupied zone, which increases as the supply air to room air temperature difference increases and the discharge velocity decreases. In heating mode the supply air jet deviates towards the ceiling. This has no negative effect on the airflow velocity in the occupied zone, but it may affect the complete ventilation of the room.

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#### Schematic illustration of a ventilation grille with longitudinal blades



#### Schematic illustration of a ventilation grille with transverse blades

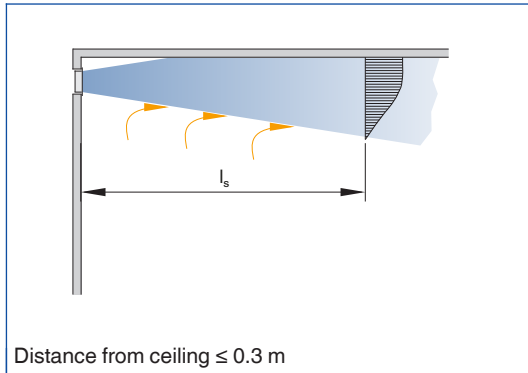


# Ventilation grilles

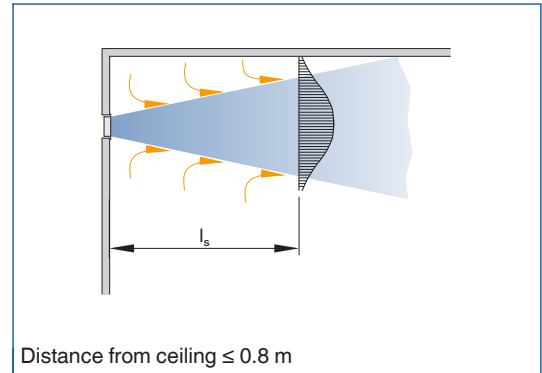
## Basic information and nomenclature

### Air pattern

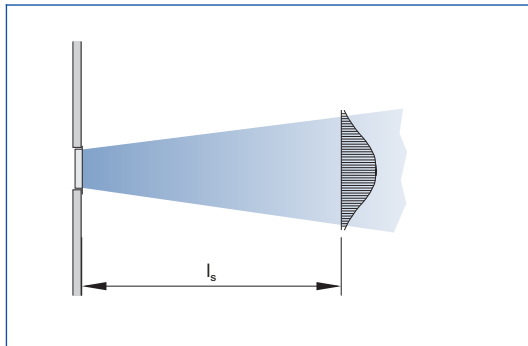
**Air pattern with ceiling effect, sectional view**



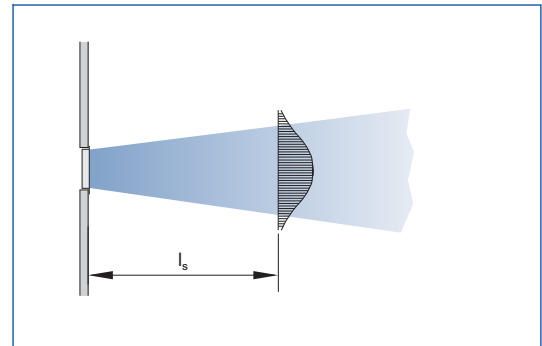
**Air pattern without ceiling effect, sectional view**



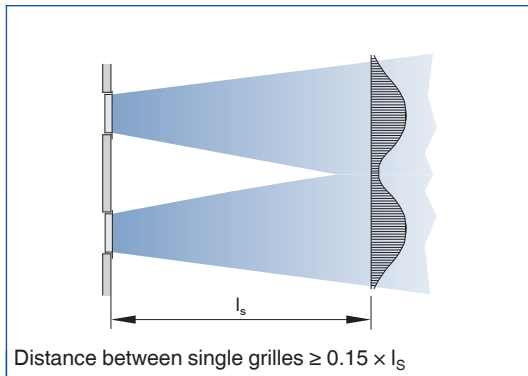
**Air pattern with ceiling effect, top view**



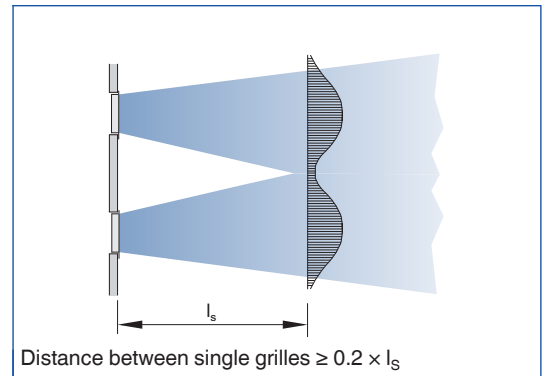
**Air pattern without ceiling effect, top view**



**Air pattern with ceiling effect, group of grilles, top view**



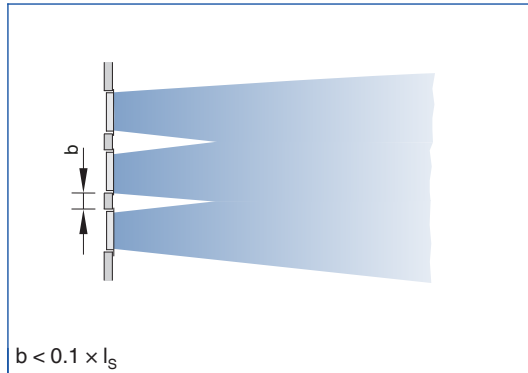
**Air pattern without ceiling effect, group of grilles, top view**



# Ventilation grilles

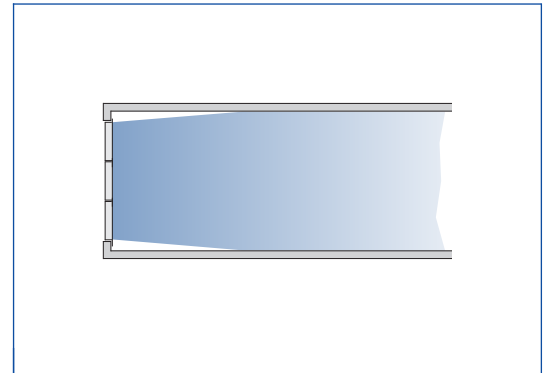
## Basic information and nomenclature

**Air pattern, group of grilles, top view**

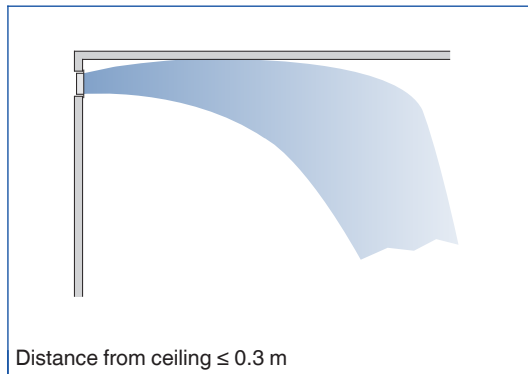


Several single grilles arranged in a row and with not much distance between them have the same effect as a continuous horizontal run.

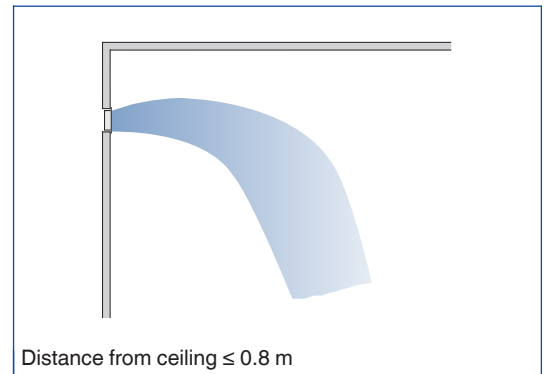
**Air pattern, continuous horizontal run, top view**



**Air pattern in cooling mode, with ceiling effect, sectional view**



**Air pattern in cooling mode, without ceiling effect, sectional view**



# Ventilation grilles

## Basic information and nomenclature

### Description

#### Installation information

- Installation and making connections to be performed by others

#### Installation subframe

- The installation subframe consists of four sections
- Push the sections together
- For wall installation: Spread the fixing tabs, then mortar them in
- Fixing holes are provided for fixing the frame with screws and rivets to different structures

#### Installation subframe with filter casing

- For wall installation: Spread the fixing tabs, then mortar them in
- Fixing holes are provided for fixing the frame with screws and rivets to different structures

#### Concealed screw fixing

- Only with installation subframe ER

#### Spring clip fixing

- With installation subframe ER and installation subframe with filter casing EF

#### Screw fixing

- Countersunk holes are provided for fixing the frame with screws to different structures

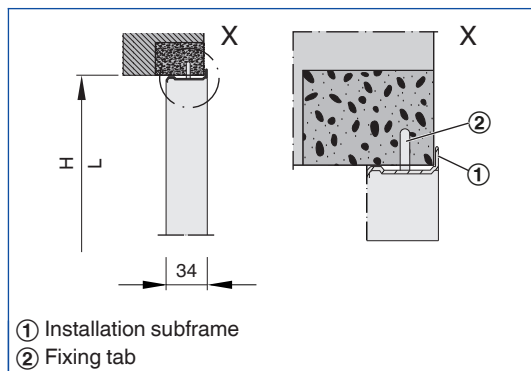
#### Horizontal run sections

- Connect multi-section installation subframes
- Screw-fix the grille end sections and grille middle sections together for continuous horizontal runs

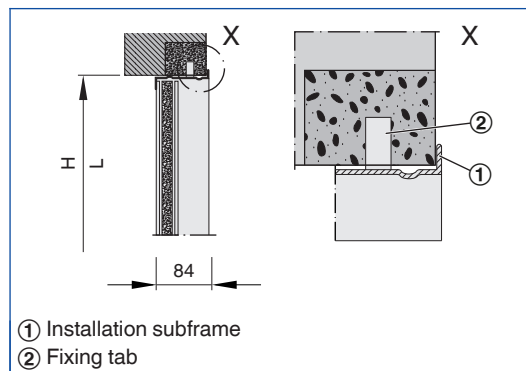
3

### Installation subframe

#### Installation dimensions of installation subframe ER for ventilation grilles

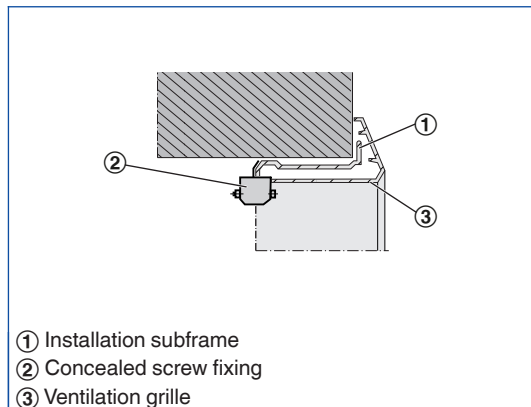


#### Installation dimensions of installation subframe with filter element (EF)

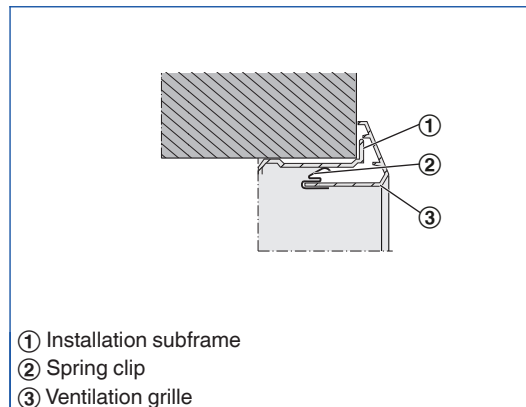


### Fixing of ventilation grilles

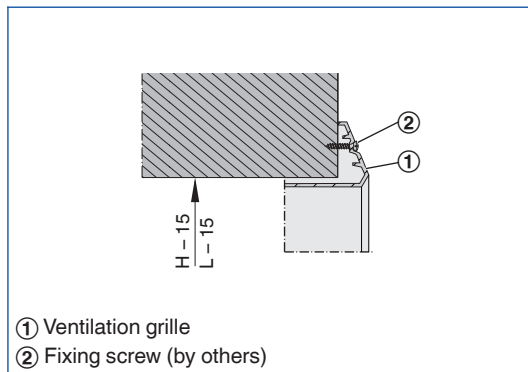
#### Ventilation grille with concealed screw fixing



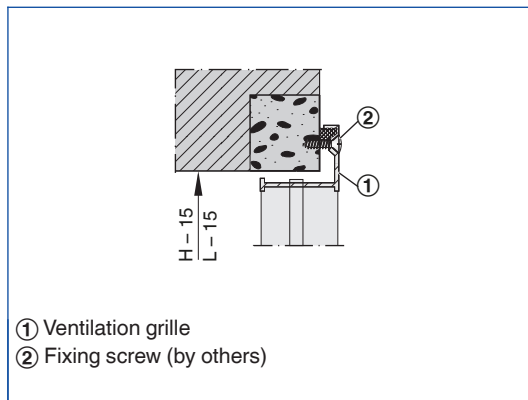
#### Ventilation grille with spring clip fixing



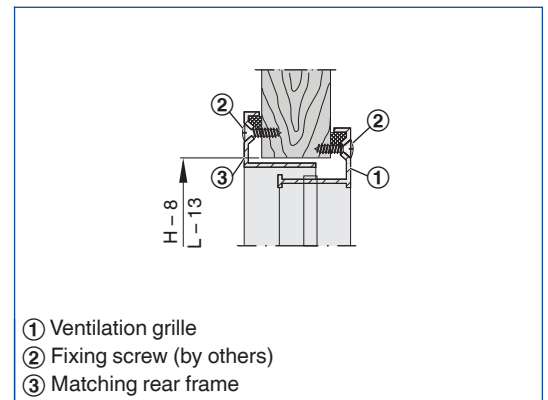
### Ventilation grille with screw fixing



### Ventilation grille AGS with screw fixing, without installation subframe

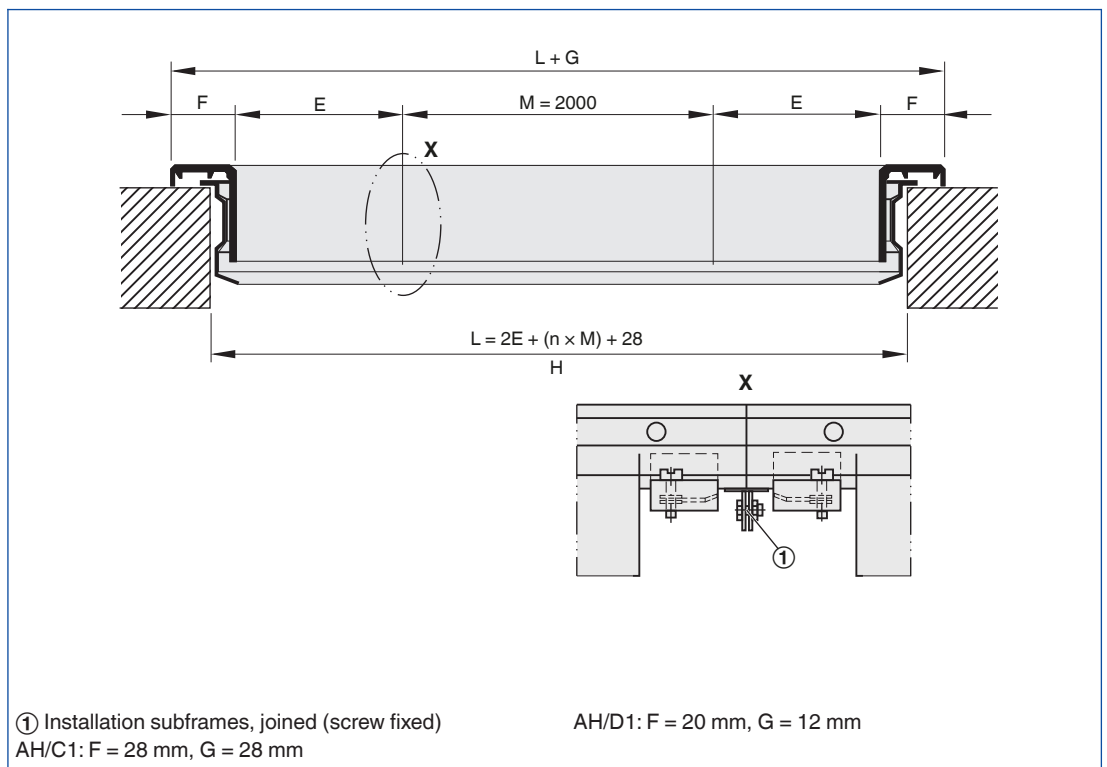


### Ventilation grille AGS-T, with screw fixing and matching rear frame

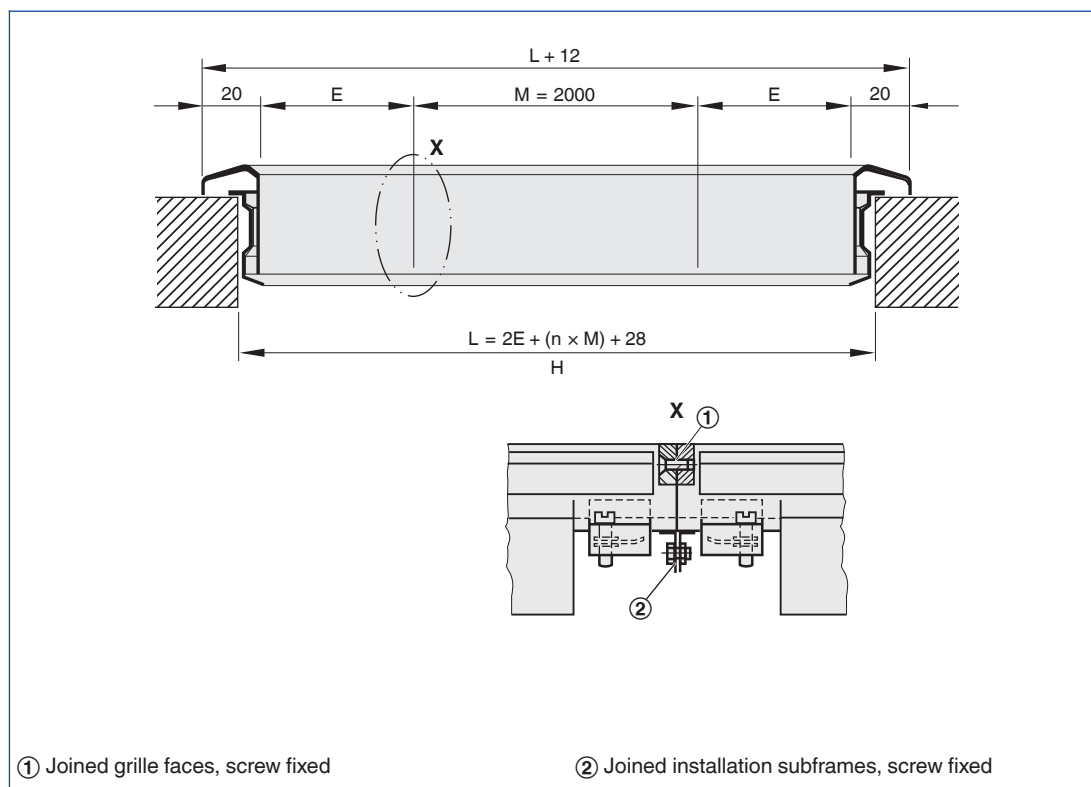


### Grille tapes

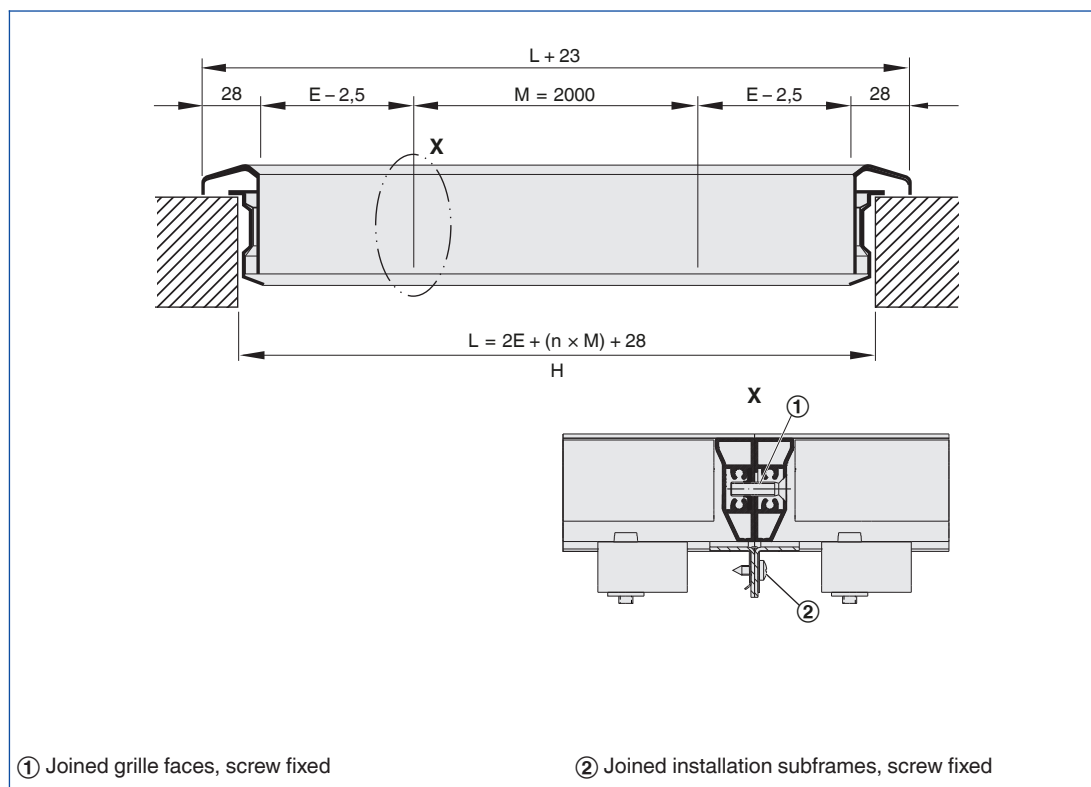
### AH, horizontal run sections with butt joint



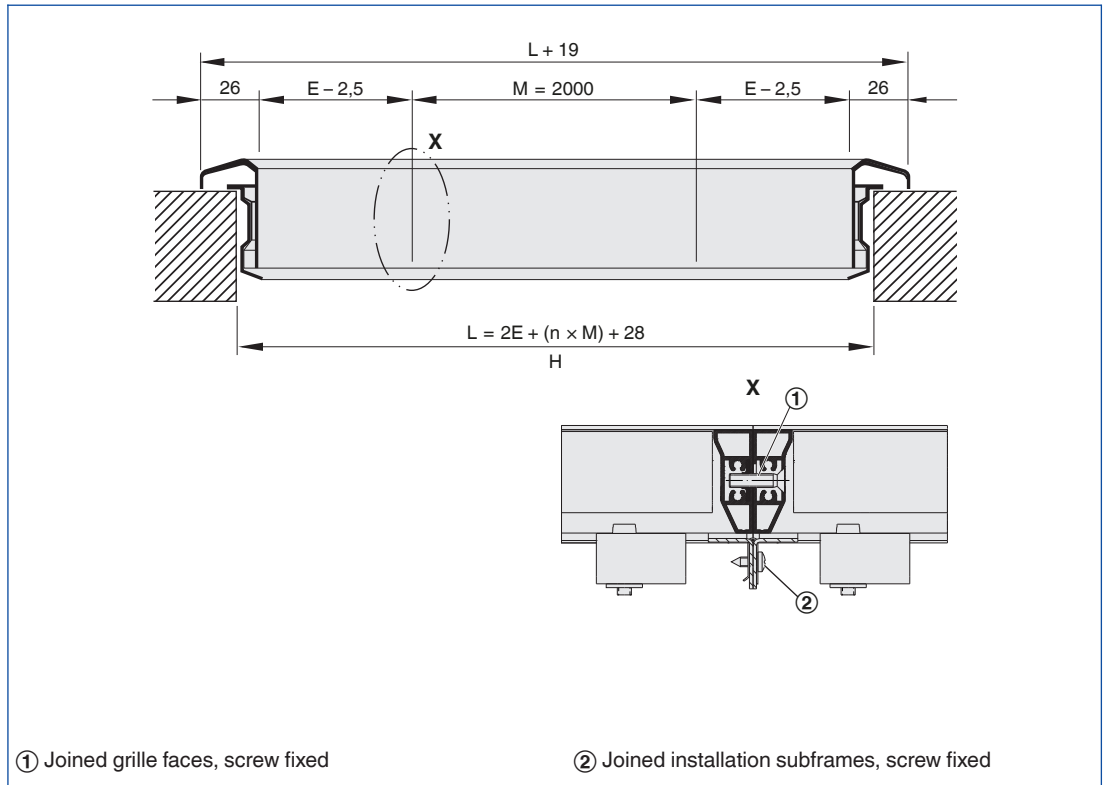
### SL, horizontal run sections with butt joint



### X-GRILLE Cover, horizontal run sections with butt joint

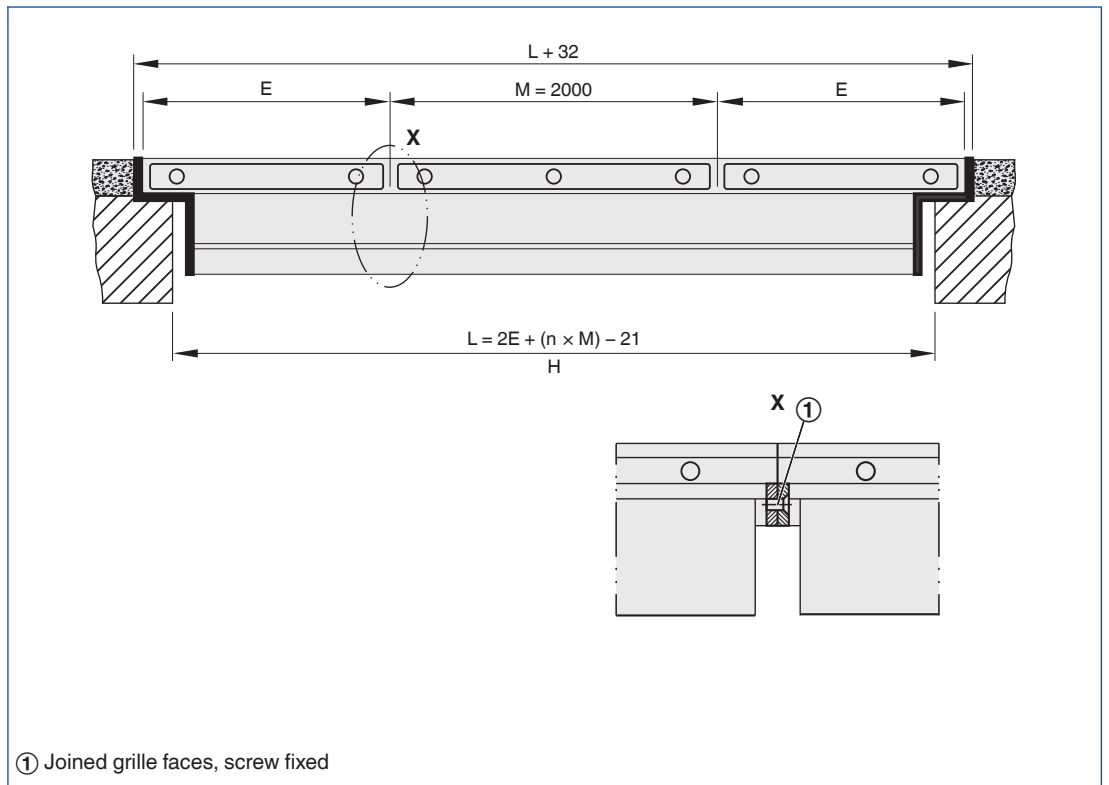


### X-GRILLE Basic, horizontal run sections with butt joint

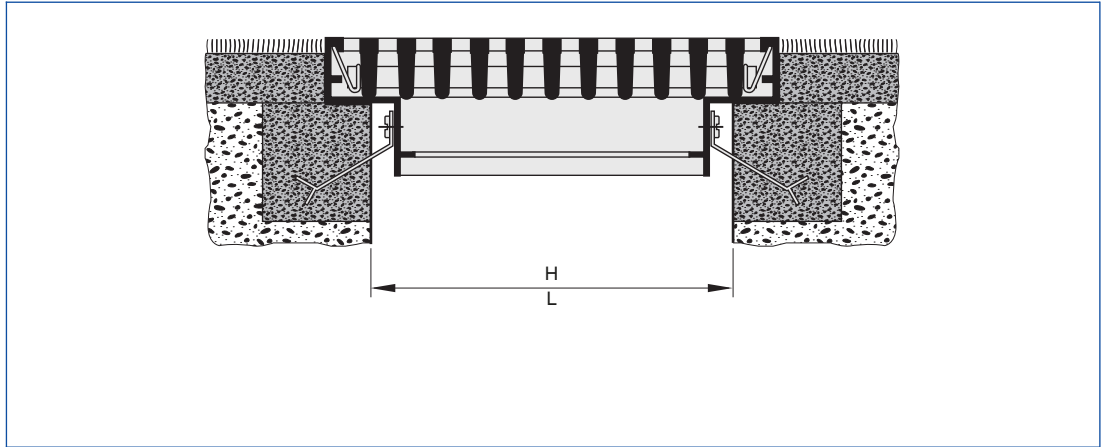


### Floor grille

### AF, horizontal run sections with butt joint



AF, fixing of the installation subframe



3



# Ventilation grilles

## Basic information and nomenclature

### Description

#### Volume flow rate balancing

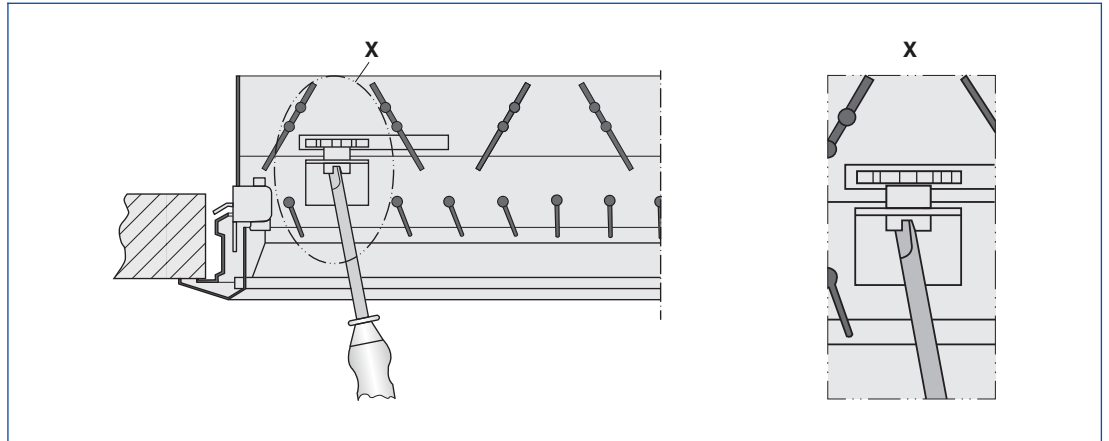
When several ventilation grilles are installed on the same duct, it may be necessary to balance the volume flow rates.

- AG: Damper unit with opposed action blades, adjustable, secured with a locking screw
- AS: Damper unit with hit and miss damper, adjustable, secured with a locking screw

#### Air pattern

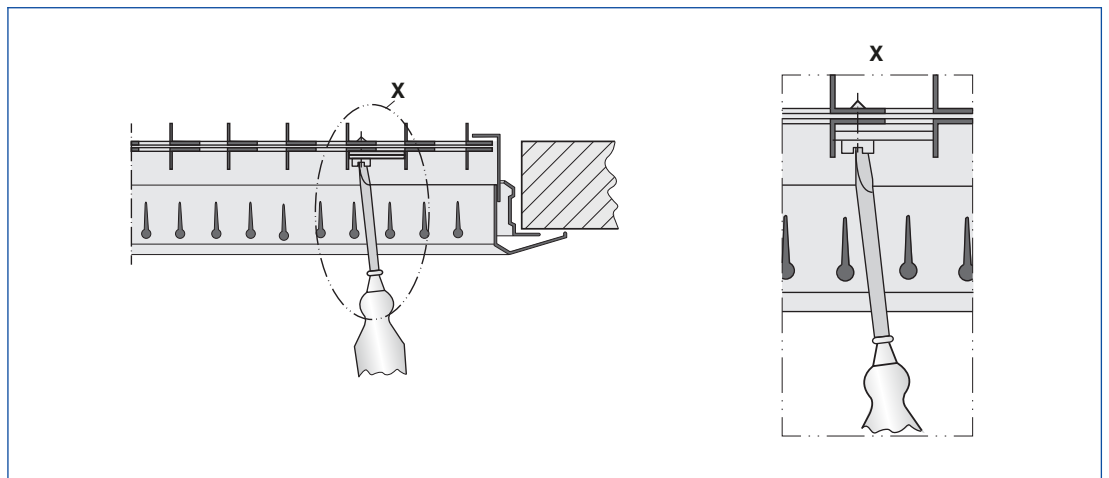
- Adjustable blades: Set the air control blades individually or together and depending on the local conditions
- D, DG: Air control blades, fitted at 90° to the front blades, can be adapted to the local conditions

#### Volume flow rate balancing -\*G



Attachments -AG, -DG and Types AGW, DGW

#### Volume flow rate balancing -S



Attachments -AS, -S and Type ASW