



Air diffusers

X-GRILLE modular

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Product overview

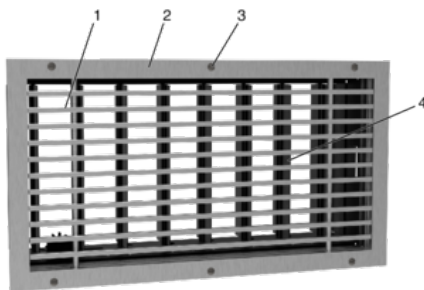


Fig. 1: Product example X-GRILLE modular (variant H-F0-L-A11-xx-AG)

- 1 Grille core (H-F0)
- 2 Front frame (L)
- 3 Fixing (A11)
- 4 Attachment (AG)

Important notes

Information on the installation manual

This manual enables operating or service personnel to correctly install the product described below and to use it safely and efficiently.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

Correct use

Air diffusers are used for the ventilation of rooms in industrial and comfort areas. The air diffusers are connected to a supply air or extract air system (provided by the client), which is typically connected to a central air handling unit.

Air diffusers are used to supply cooled or heated air to rooms (within the specified supply air to room air temperature differences).

Depending on the area of application, special hygiene requirements must be observed during installation, operation, and maintenance.

Possible installation in humid rooms, areas with potentially explosive atmospheres, or rooms with dust-laden or aggressive air must be checked individually.

Qualified staff

Trained personnel

Trained personnel are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to carry out their assigned duties, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

Personal protective equipment

Personal protective equipment must be worn for any work in order to reduce health or safety hazards to the minimum.

The appropriate protective equipment for a job must be worn for as long as the job takes.

Industrial safety helmet



Industrial safety helmets protect the head from falling objects, suspended loads, and the effects of striking the head against stationary objects.

The actual scope of delivery may differ from the information in this manual for special constructions, additional order options or as a result of recent technical changes.

Protective gloves



Protective gloves protect hands from friction, abrasions, punctures, deep cuts, and direct contact with hot surfaces.

Safety shoes



Safety shoes protect the feet against crushing, falling parts, and slipping on slippery ground.

Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The manufacturer does not accept any liability for damages resulting from:

- Non-compliance with this manual
- Incorrect use
- Operation or handling by untrained individuals
- Unauthorised modifications

Transport and storage

Delivery check

After delivery, carefully remove the packaging and check the device for any transport damage and completeness. In case of transport damage or incomplete delivery, inform the forwarding agent and the supplier immediately. After inspection of the goods, put the product back into its packaging to protect it from dust and contamination.



Fixing and installation material

Fixing and installation material is not part of the supply package (unless stated otherwise), but has to be provided by others; it has to be suitable for the installation situation.

Transport on site



CAUTION!

Danger of injury from sharp edges, sharp corners and thin sheet metal parts!

Sharp edges, sharp corners and thin sheet metal parts may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

Observe the following points during transport:

- Be careful when unloading or moving the product on site, and pay attention to the symbols and information on the packaging.
- If possible, take the product in its transport packaging up to the installation location.
- Use only lifting and transport gear designed for the required load.
- During transport, always secure the load against tipping and falling.
- Bulky equipment should be transported by at least two people to prevent injury and damage.

Storage

Please note:

- Store the unit only in its original packaging
- Protect the unit from the effects of weather
- Protect the unit from humidity, dust and contamination
- Storage temperature: -10 °C to 50 °C.
- Relative humidity: 95 % max., no condensation

Packaging

Properly dispose of packaging material.

Fixing types

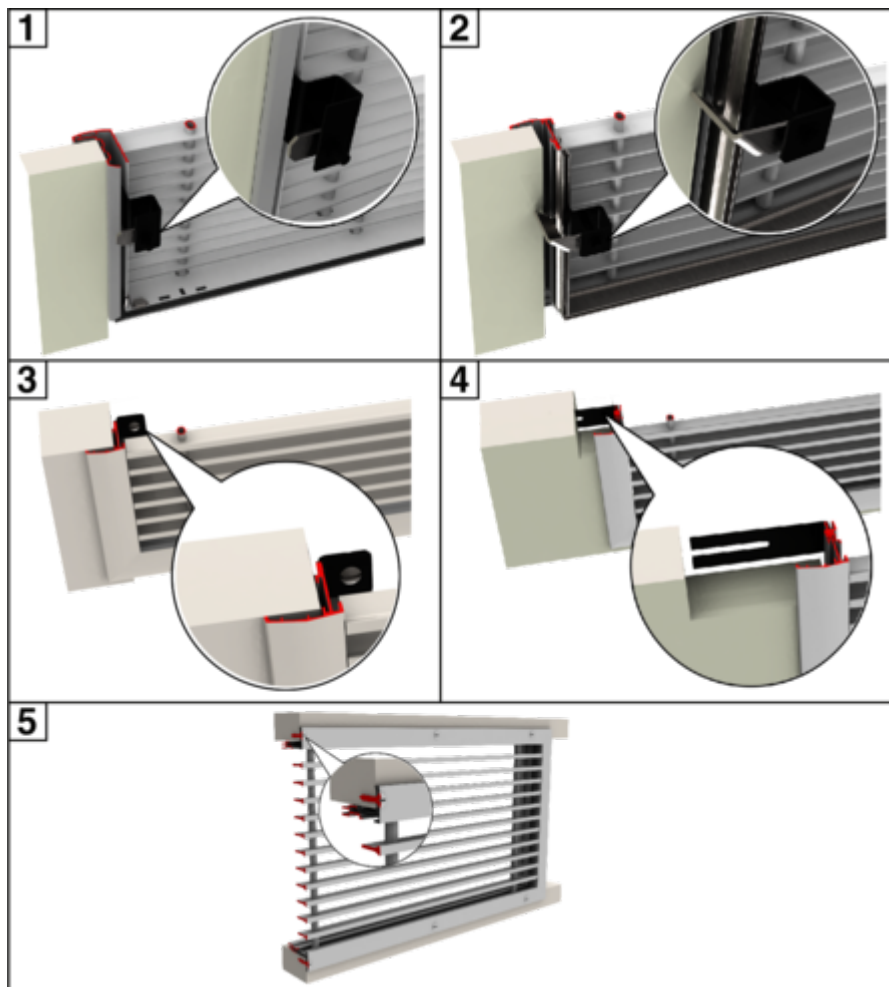


Fig. 2: Fixing types, no. of fixings (fixing types 1 - 4) according to the respective table

- | | | | |
|---|--|---|--|
| 1 | Fastening -VS: concealed screw fixing (rear view). | 4 | Fixing -CF: clamp fixing or using wall fixing tab (front view). |
| 2 | Fixing -SP: concealed screw fixing without installation subframe (rear view). | 5 | Fixing -A11: visible screw fixing (front view). Fixing screws to be provided by the client. |
| 3 | Fixing -HS: fixing with concealed screw (front view). Fixing screws to be provided by the client. | | |

Number of fixings standard grille (depending on the grille size)

Height H [mm]	Length (L) [mm]											
	225	325	425	525	625	825	1025	1225	1425	1625	1825	2025
75	2	2	2	2	2	2	2	2	4	4	4	4
125	2	2	2	2	2	2	2	2	4	4	4	4
225	2	2	2	2	2	2	2	2	4	4	4	4
325	2	2	2	2	2	2	2	2	4	4	4	4
425	4	4	4	4	4	4	4	4	6	6	6	6
525	4	4	4	4	4	4	4	4	6	6	6	6

Details for grille Fig. 2, Pos. 1 - 4

Number of fixings linear run section (depending on the grille size)

Height (H) [mm]	Length (L) [mm]			
	End section		Middle section	
	up to 1225	> 1225	up to 1225	> 1225
75	3	5	4	6
125	3	5	4	6
225	3	5	4	6
325	3	5	4	6
425	4	6	4	6
525	4	6	4	6

Details for grille Fig. 2, Pos. 1 - 4

Weights

Maximum weight [kg] without attachment Add: grille core with vertical blades + front frame L, A ...												
H [mm]	Length (L) [mm]											
	225	325	425	525	625	825	1025	1225	1425	1625	1825	2025
75	0.33	0.44	0.55	0.66	0.77	1	1.21	1.44	1.66	1.89	2.11	2.33
125	0.46	0.63	0.79	0.95	1.12	1.43	1.76	2.08	2.41	2.72	3.05	3.38
225	0.71	0.97	1.23	1.49	1.75	2.28	2.8	3.32	3.85	4.37	4.89	5.41
325		1.31	1.67	2.03	2.39	3.12	3.84	4.57	5.28	6.01	6.73	7.46
425					3.04	3.96	4.88	5.81	6.73	7.65	8.57	9.5
525							5.99	7.11	8.25	9.39	10.53	11.65

Weights

Maximum weight [kg] with attachment Add: grille core with vertical blades + front frame L, A ... + attachment DG												
H [mm]	Length (L) [mm]											
	225	325	425	525	625	825	1025	1225	1425	1625	1825	2025
75	0.73	1.04	1.35	1.56	1.87	2.5	3.01	3.54	4.06	4.69	5.31	5.83
125	1.06	1.43	1.79	2.15	2.62	3.33	4.16	4.88	5.61	6.32	7.15	7.98
225	1.51	2.17	2.73	3.29	3.95	5.08	6.3	7.42	8.55	9.67	10.89	12.11
325		2.91	3.67	4.43	5.29	6.82	8.44	10.07	11.48	13.01	14.63	16.26
425					6.64	8.56	10.58	12.61	14.43	16.35	18.37	20.4
525							12.79	15.21	17.35	19.49	21.93	24.55

Installation

General installation information

Personnel:

- Trained personnel

Protective equipment:

- Industrial safety helmet
- Protective gloves
- Safety shoes

Observe during installation:

- Fix the product only to load-bearing structural elements.
- Only load suspension with the device's own weight. Adjacent components and connecting air ducts must be supported separately.
- Use only approved and adequately sized fixing material (fixing material is not included in the supply package).
- For cleaning purposes, the air diffusers must be easily accessible after installation.
- Installation and sealing materials provided by the manufacturer are usually enclosed in a bag in the package.

Before installation, ensure that the air-ducting components cannot be contaminated by construction activities (VDI 6022). If this is not possible, at least cover the device or take other precautions to protect it from contamination. In this case, make sure the device is not in operation. Ensure that all components are clean before you install them. Clean thoroughly if necessary. When interrupting the installation procedure, protect all device openings from the ingress of dust or humidity.

Safety instructions for installation



CAUTION!

Risk of injury due to incorrect installation!

Ventilation grilles can weigh up to 25 kg, depending on size and attachments. If they fall, there is a high risk of personal injury or damage to property. Depending on the installation situation, it must be ensured that suitable measures are taken to prevent falling.

For ceiling installation or installation at great heights, additional safety measures may be required in addition to a suitable type of fastening (screw connection) to prevent the device from falling down.

Installation opening

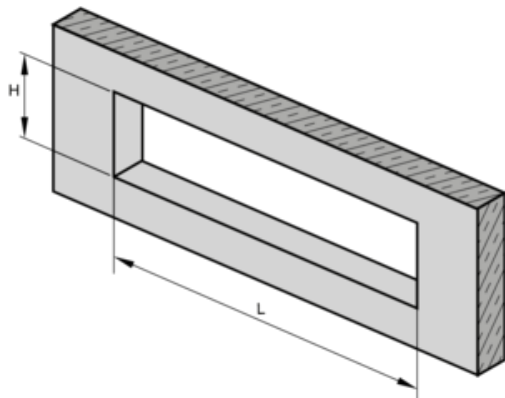


Fig. 3: Installation opening with installation subframe -A1 and -B1 for fixing -VS

L= Order length ventilation grille L
H= Order height ventilation grille H

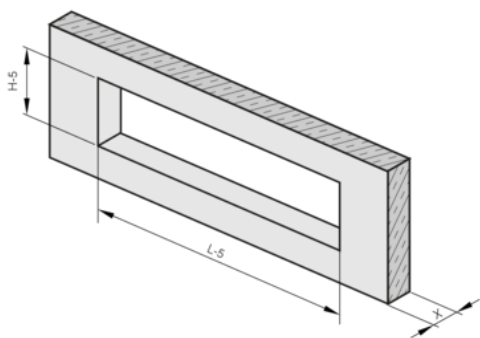


Fig. 4: Installation opening with installation subframe -C1 for fixing -VS or without installation subframe for fixing -SP

L= Order length ventilation grille L - 5mm
H= Order height ventilation grille H - 5mm

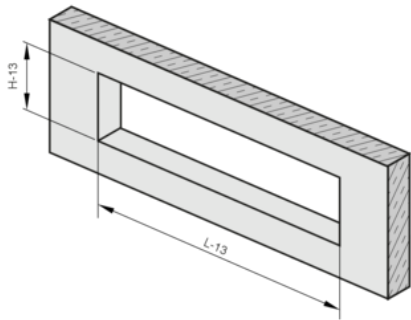


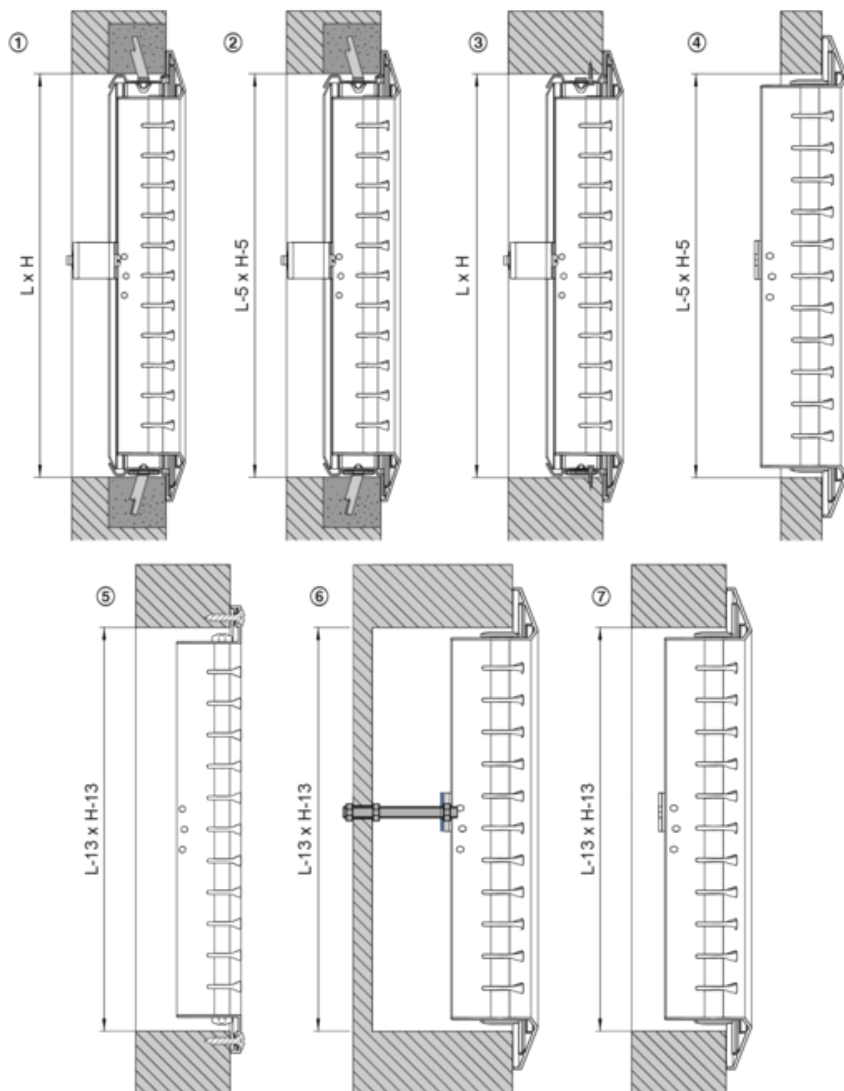
Fig. 5: Installation opening without installation sub-frame for fixing -A11, -HS, -CF

L= Order length ventilation grille L - 13mm
H= Order height ventilation grille H - 13mm

Installation dimensions

Fixing	Installation sub-frame	Combination with front frame						Installation opening [mm]
		S	M	L	A	C	H	
-VS	-A1	—	—	—	X	X	—	L × H
	-B1	—	—	X	X	X	—	
	-C1	—	X	X	X	X	—	(L -5) × (H -5)
-SP	—	—	X	X	X	X	—	(L -13) × (H -13)
-A11	—	—	—	X	X	X	X	
-CF	—	X	X	X	X	X	X	
-HS	—	X	X	X	X	X	X	

L = Length of grille ordered
H = Height of grille ordered

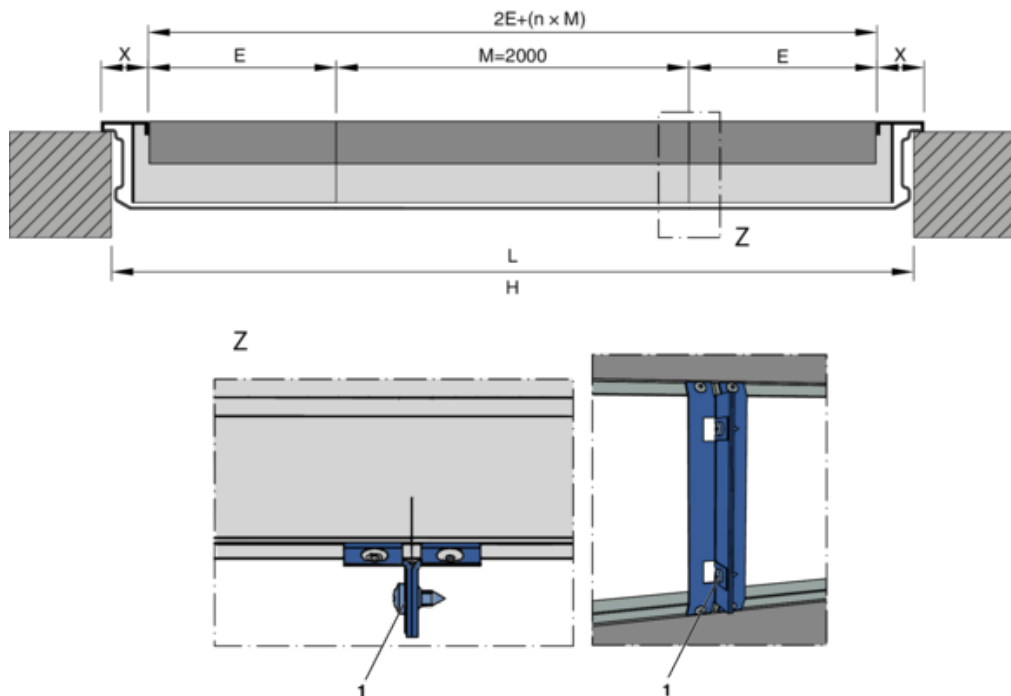


- 1 Installation subframe, mortared in, used with fixing VS, see available installation subframes (A1/B1)
- 2 Installation subframe, mortared in, used with fixing VS, see available installation subframes (C1)

- 5 Visible screw fixing A11
- 6 Concealed screw fixing HS
- 7 Clamp fixing CF

- 3 Installation subframe used with fixing VS, screw-fixed
- 4 Concealed screw fixing SP without installation subframe

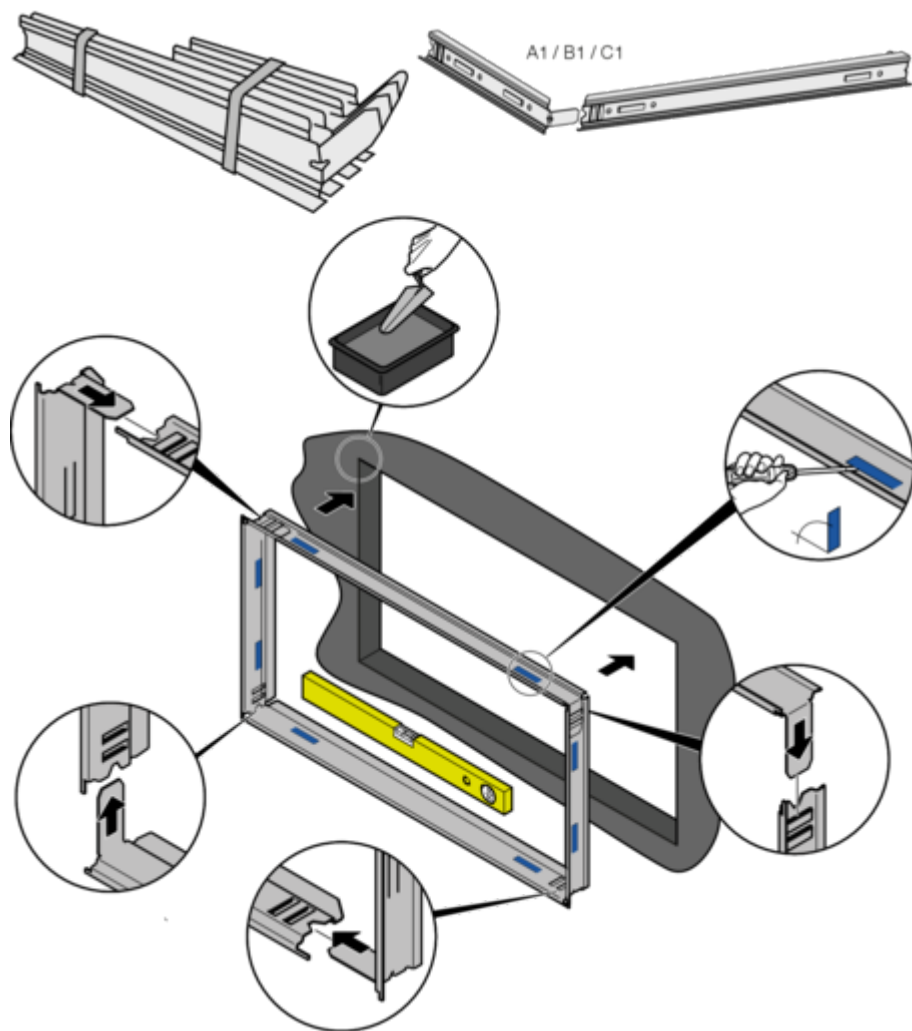
Linear run section



- 1 Screw fixing installation subframe
- L with installation subframe A1 / B1: $2E + (n \times M) + X$
 with installation subframe C1: $2E + (n \times M) + (X - 5)$
 without installation subframe: $2E + (n \times M) + (X - 13)$
- H: ☞ 'Installation dimensions' on page 9

Frame	S	M	L	A	C	H
X [mm]	7	14	20	27	27	20

Installation subframe



Installation subframes A1, B1 and C1

- The installation subframe consists of four frame sections
- Push the frame sections together
- For wall installation: spread the wall fixing tabs, then mortar them in
- Alternative: Fixing to different building structures with screws or rivets

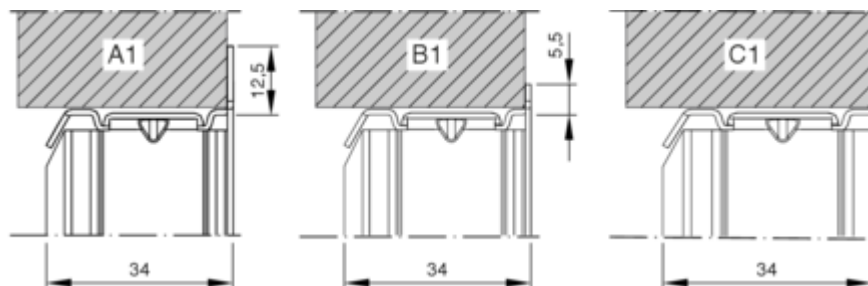
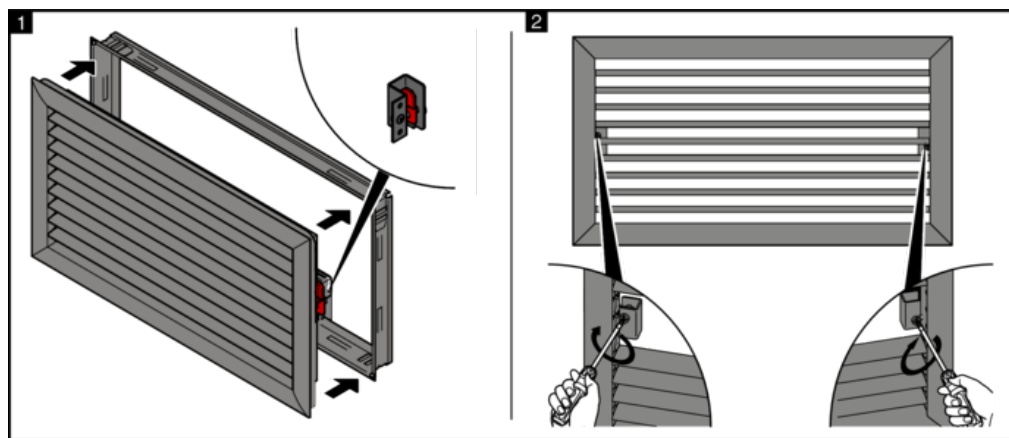
Details installation subframes A1, B1 and C1

Fig. 6: Installation subframe

Installation details**Concealed screw fixing -VS (with installation subframe)**

Concealed screw fixing -SP (without installation subframe)

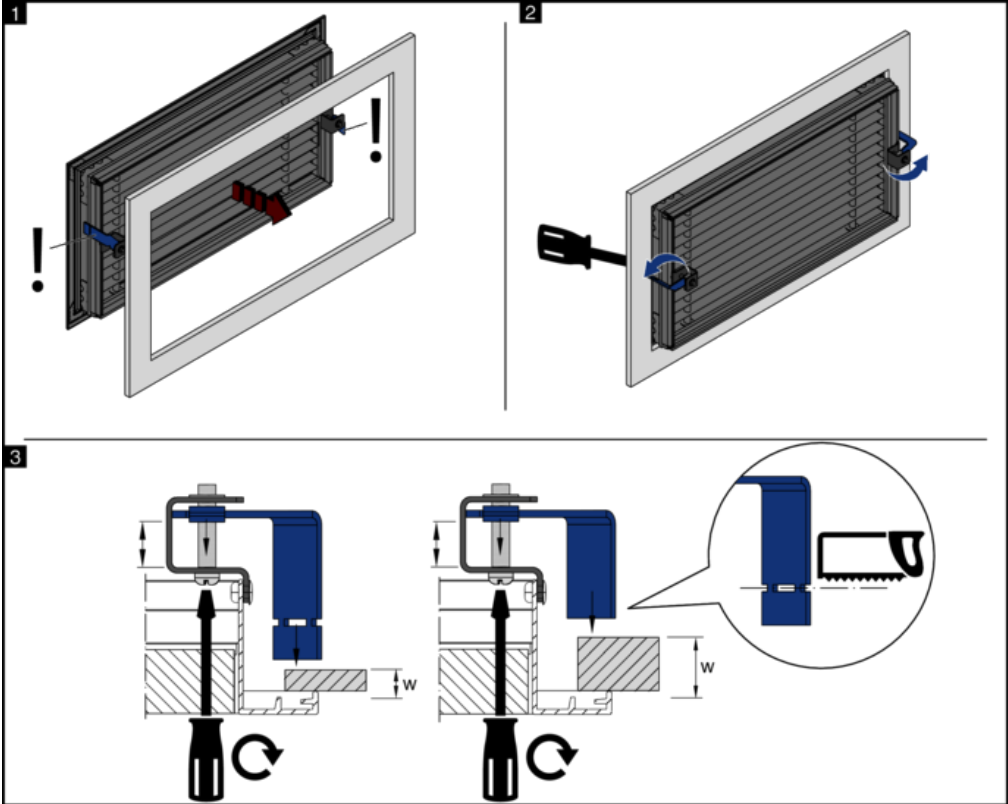


Fig. 7: Installation concealed screw fixing -SP

Clamping range reveal of the installation opening, dimension W [mm]

Fastener	Front frame							
	M		L		A		C	
	min.	max.	min.	max.	min.	max.	min.	max.
long	2.0	16.0	0.0	14.0	0.0	12.0	1.4	15.0
short	16.0	30.0	14.0	28.0	12.0	26.0	15.0	29.5

You can increase the clamping range by shortening the sash fastener at the marking.

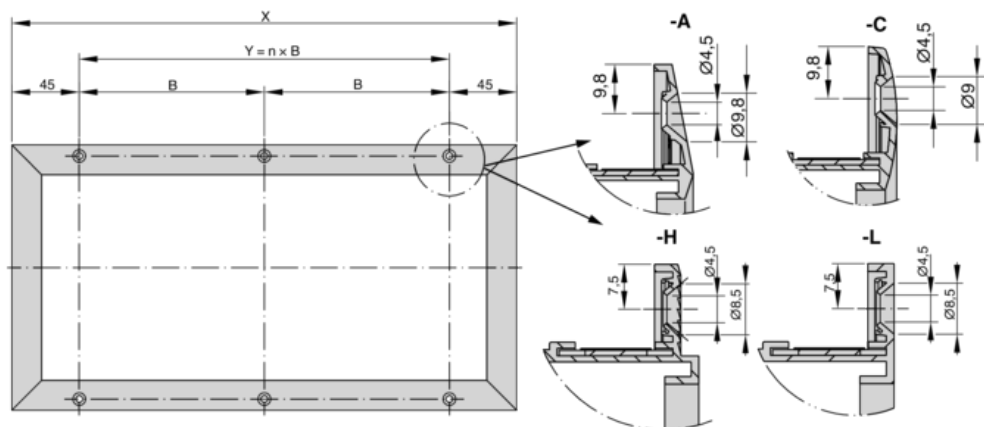
Visible screw fixing -A11 – screw hole pitch


Fig. 8: X-GRILLE screw hole pitch -A11

Length (L) [mm]	Frames -A and -C			Frames -L and -H		
	X	Y	nxB	X	Y	nxB
225	251	161	-	237	147	-
325	351	261	-	337	247	-
425	451	361	-	437	347	-
525	551	461	2x230.5	537	447	2x223.5
625	651	561	2x280.5	637	547	2x223.5
825	851	761	2x253.7	838	747	3x249.0
1025	1051	961	3x320.3	1037	947	3x315.7
1225	1251	1161	4x290.3	1237	1147	4x286.8
1425	1451	1361	4x340.3	1437	1347	4x336.8
1625	1651	1561	5x312.2	1637	1547	5x309.4
1825	1851	1761	5x352.2	1837	1747	5x349.4
2025	2051	1961	6x326.8	2037	1947	6x324.5

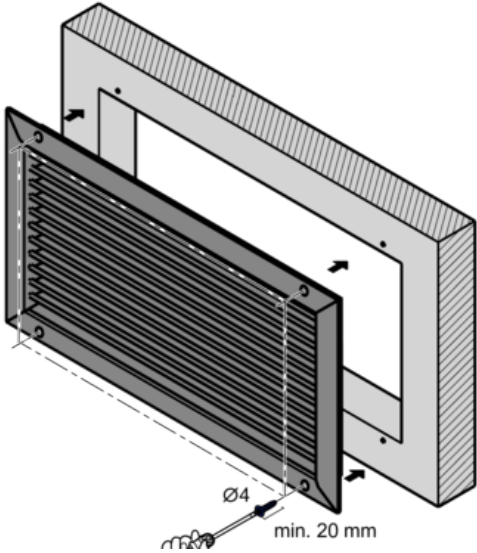


Fig. 9: Installation of frame -A11

Use screws (provided by the client) suitable for the material; pre-drill holes if necessary.

Concealed screw fixing -HS

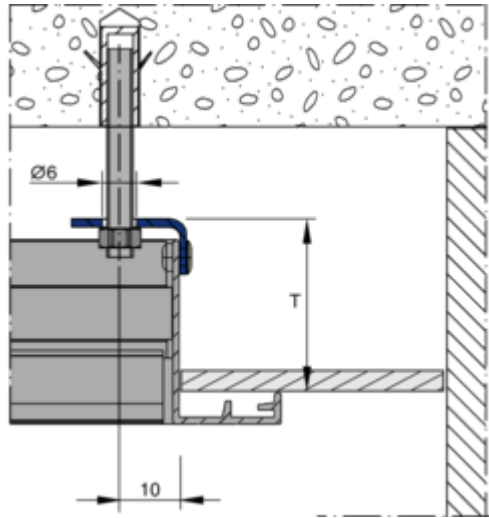
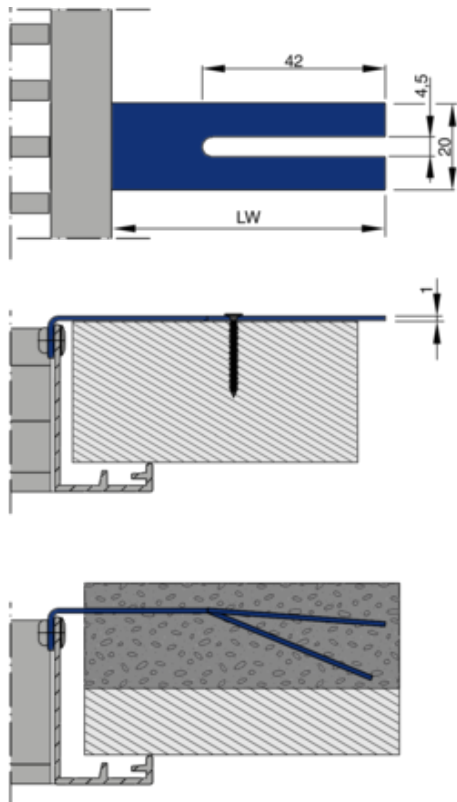
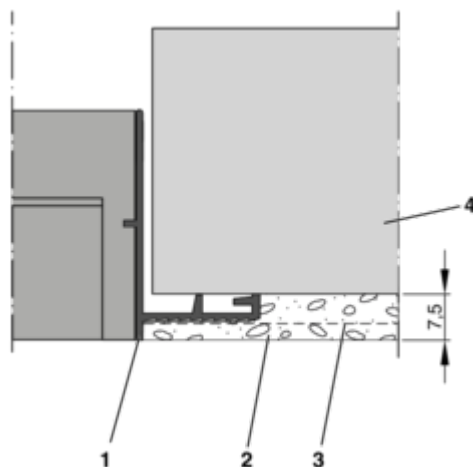


Fig. 10: Example ceiling installation, fixing type -HS

Frame	S	M	L	A	C	H
T [mm]	32	32	30	28	32	31

Clamp fixing -CF*Fig. 11: Fixing -CF***Frame H***Fig. 12: X-GRILLE modular*

- 1 X-GRILLE modular with frame H
- 2 Plaster
- 3 Mesh (provided by the client)
- 4 Wall

Air connection

Ventilation grilles do not have an air connection, they are installed directly into air ducts or similar.

Frame	LW [mm]
S	70
M	63
L	57
A	50
C	50
H	57

Initial commissioning, maintenance and cleaning

Initial commissioning

Before you start commissioning, check the following points:

- Check that the ventilation grilles are fitted correctly.
- Remove protective foils, if any.
- Ensure that all grilles are clean and free from residues and foreign matter.
- Check proper fastening and connection with air duct

For commissioning, see also VDI 6022, Sheet 1 - Hygienic requirements for ventilation and air conditioning systems.

Volume flow rate balancing

When several ventilation grilles are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

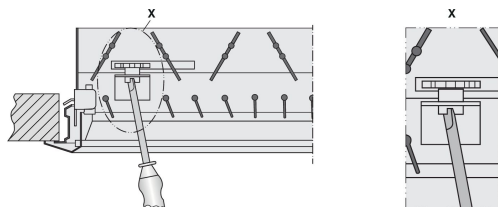


Fig. 13: Attachments -AG and -DG

Damper element with opposed action blades, adjustable

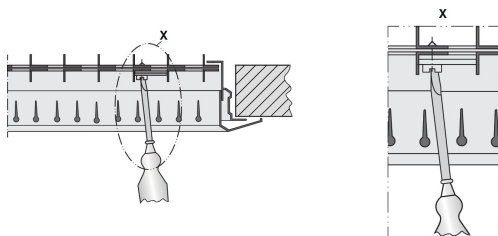
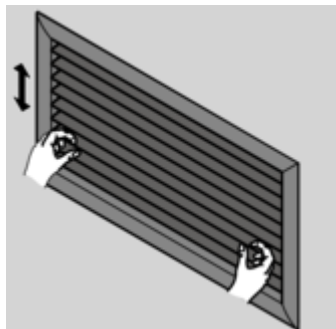


Fig. 14: Attachments -AS

Damper element with hit and miss damper, adjustable, secured with a locking screw

Air pattern

Set the air control blades depending on the local conditions:



Maintenance and cleaning

During cleaning, the following points must be observed:

- The cleaning intervals given in the VDI 6022 standard apply.
- Clean surfaces with a damp cloth.
- Use only common household cleaners, do not use any aggressive cleaning agents.
- Do not use cleaning agents that contain chlorine.
- Do not use equipment for removing stubborn contamination, e.g., scrubbing sponges or scouring cream, as it may damage the surfaces.

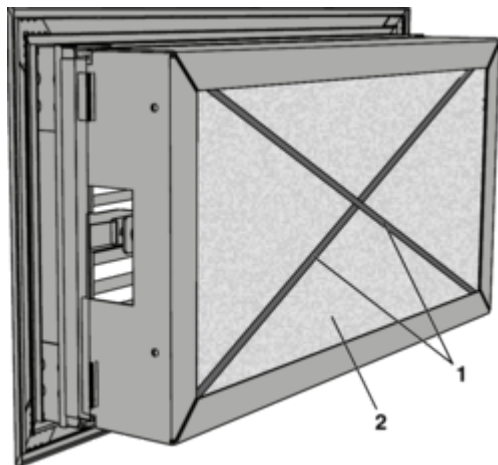
Attachment EF - filter change

Fig. 15: X-GRILLE modular with attachment EF

1. ▶ Remove grille with attachment EF.
2. ▶ Remove bars (1).
3. ▶ Remove contaminated filter (2).
4. ▶ Clean component.
5. ▶ Insert new filter.
6. ▶ Re-insert bars (1).
7. ▶ Place the grille with attachment EF back into the installation opening and fix it.

Ordering replacement filters

To ensure permanent protection against particle ingress and suspended particles, we recommend using only original TROX filters.

Filter medium FMP-G4-C11, coarse dust filter to EN779, classification G4, ISO 16890: Coarse 55%



To avoid downtime of the ventilation and air conditioning system, we recommend that you stock up on the filters used.

To order filters: www.troxtechnik.com