



# Air terminal devices

## X-GRILLE modular

**TROX GmbH**

Heinrich-Trox-Platz  
47504 Neukirchen-Vluyn, Ger-  
many  
Germany  
Phone: +49 (0) 2845 2020  
+49 (0) 2845 202-265  
E-mail: trox-de@troxgroup.com  
<http://www.troxtechnik.com>

### Product overview

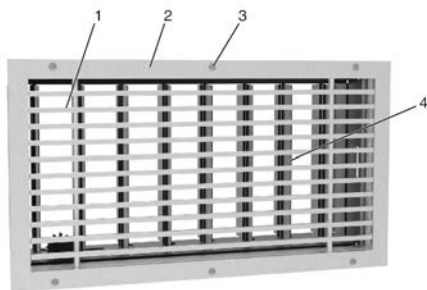


Fig. 1: X-GRILLE modular, example (variant H-F0-L-A11-xx-AG)

- 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 terminal devices are used for the ventilation of internal spaces in industrial and comfort areas. The air terminal devices are connected to a supply air or extract air system (by others), which is typically connected to an air handling unit.

Air terminal devices supply cold or warm air to rooms (within the stated supply air to room air temperature differences).

Installation, operation and maintenance may have to meet increased hygiene requirements for certain areas of application.

Installation in humid rooms, areas with potentially explosive atmospheres or rooms with dust-laden or aggressive air has to be assessed beforehand because it depends on the actual conditions on site.

### Qualified staff

#### Specialist personnel

Specialist 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.

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.

## Industrial safety helmet



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

## 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

Upon delivery, carefully remove the packaging and check the unit for transport damage and completeness. In case of any damage or an incomplete shipment, contact the shipping company and your supplier immediately. Put the product back into its packaging after the delivery check 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.

Please note:

- Be careful when unloading or moving the product, 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.
- Always secure the load against tipping and falling.
- Do not move bulky items just by yourself. Get help to prevent injuries 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

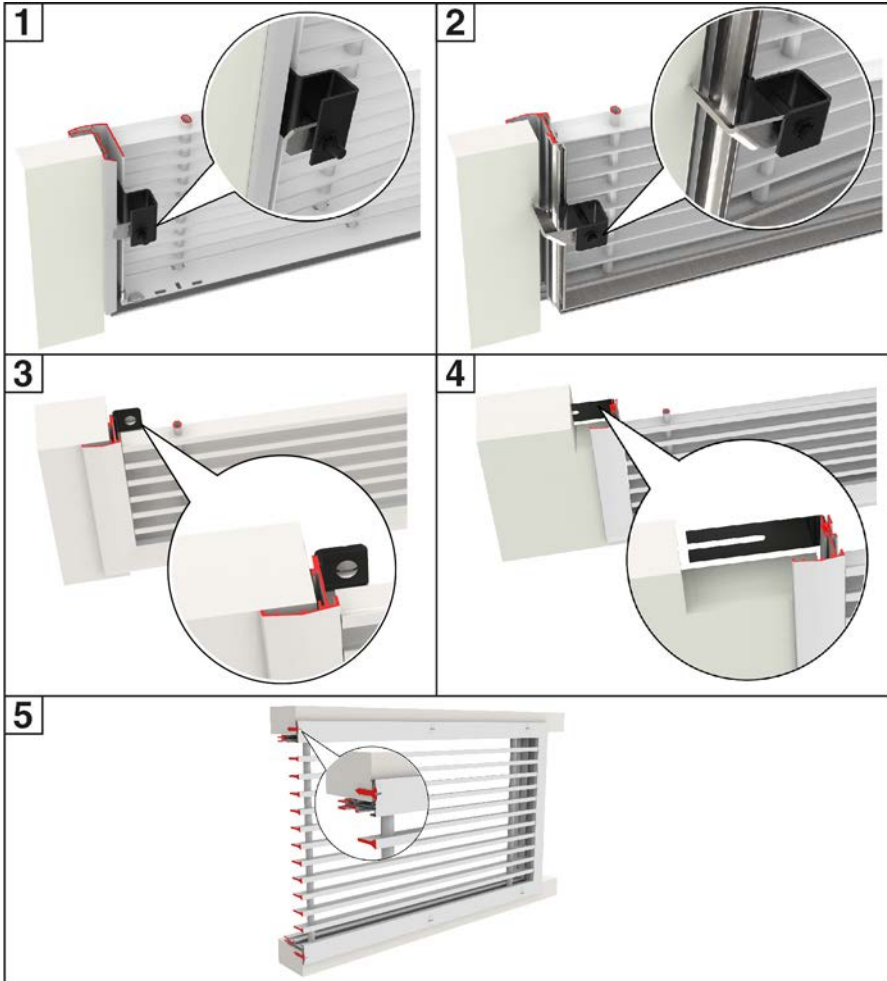


Fig. 2: Fixing types, no. of fixings (fixing types 1 - 4) according to the respective table

- |   |  |
|---|--|
| <p>1 <b>Fixing -VS:</b> concealed screw fixing (rear view).</p> <p>2 <b>Fixing -SP:</b> concealed screw fixing without installation subframe (rear view).</p> <p>3 <b>Fixing -HS:</b> fixing with concealed screw (front view). Fixing screws are to be provided by others.</p> | <p>4 <b>Fixing -CF:</b> clamp fixing or fixing with fixing tab (front view).</p> <p>5 <b>Fixing -A11:</b> visible screw fixing (front view). Fixing screws are to be provided by others.</p> |
|---|--|

**No. of fixings for standard grille Fig. 2, fixing types 1 - 4 (depending on 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

**No. of fixings for continuous horizontal runs Fig. 2, fixing types 1 - 4 (depending on grille size)**

Height (H) [mm]	Length (L) [mm]			
	End section		Middle section	
	to 1225	> 1225	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

**Weights**

Max. weight [kg] without attachment 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

Max. weight [kg] with attachment 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

Max. weight [kg] with attachment												
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
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

**Assembly**

**General information**

**Personnel:**

- Specialist personnel

**Protective equipment:**

- Industrial safety helmet
- Protective gloves
- Safety shoes

**Note:**

- Fix the product only to load-bearing structural elements.
- Load suspension systems only with the weight of the product. Adjacent components and connecting ducts must be supported separately.
- Use only approved and adequately sized fixing material (fixing material is not included in the supply package).
- The air terminal devices must remain accessible for cleaning even after installation.
- Installation and sealing material which the manufacturer provides is usually supplied in an extra bag.

Before you install the product, take suitable precautions to protect air distribution components from contamination during installation (VDI 6022). If this is not possible, at least cover the product or take other precautions to protect it from contamination. In this case you have to ensure that the product cannot be started. Ensure that all components are clean before you install them. If necessary, clean them thoroughly. If you have to interrupt the installation procedure, protect all openings from the ingress of dust or moisture.

**Safety notes regarding installation**



**CAUTION!**

**Risk of injury due to incorrect installation.**

A ventilation grille can weigh up to 25 kg, depending on size and attachments. If it falls down, there is a high risk of personal injury or damage to property. Make sure it cannot fall down. Take suitable precautions.

If you install it at height or in the ceiling, be sure to choose a suitable fixing type (screw fixing) and, if necessary, take additional safety measures to prevent it from falling down.

Installation opening

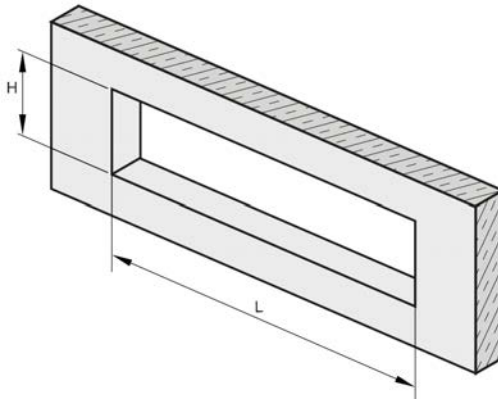


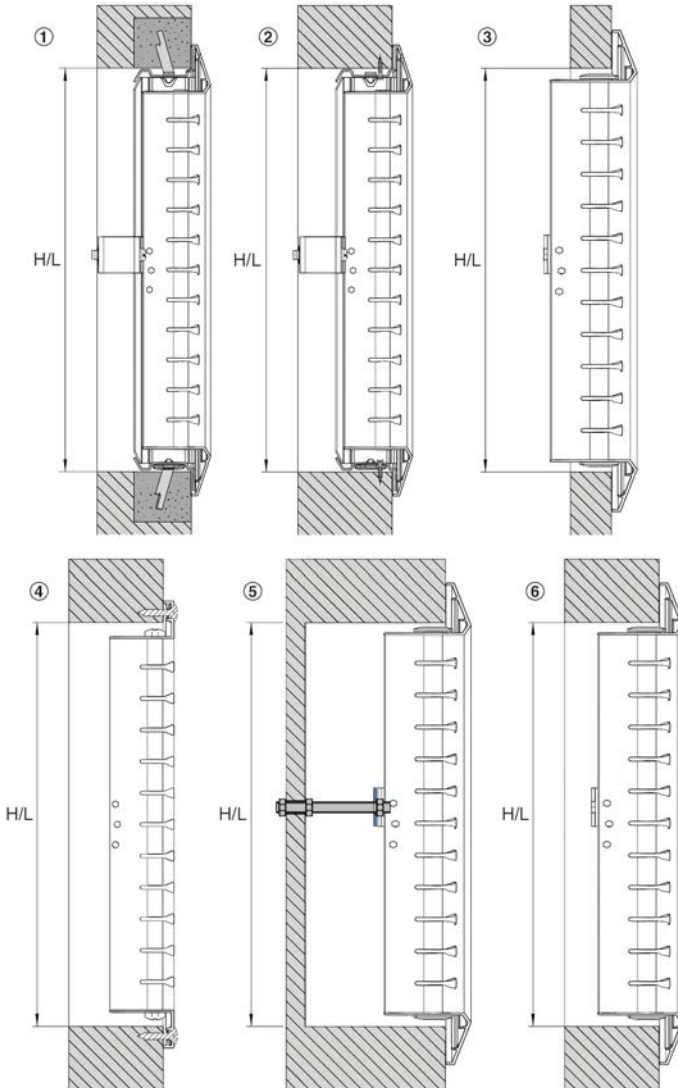
Fig. 3: Installation opening

Installation dimensions

Mounting	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	-	
-SP	-	-	X	X	X	X	-	(L - 5) × (H - 5)
-A11	-	-	-	X	X	X	X	(L - 13) × (H - 13)
-CF	-	X	X	X	X	X	X	
-HS	-	X	X	X	X	X	X	

L = Length of grille ordered

H = Height of grille ordered



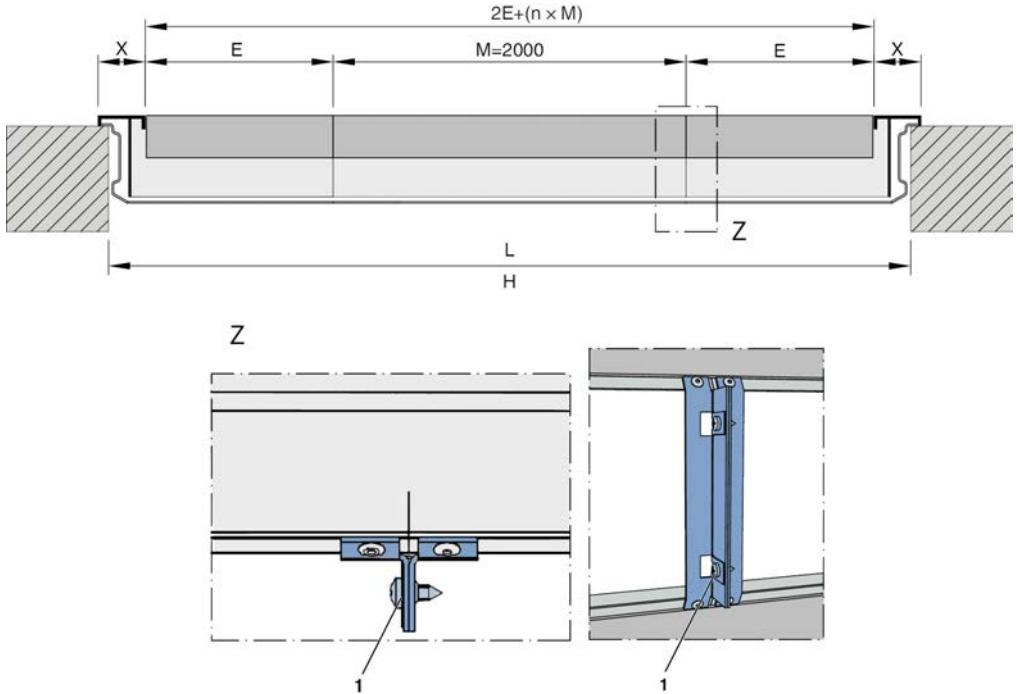
- 1 Installation subframe, mortared in, used with fixing VS, see available installation subframes A1/B1/C1
- 2 Installation subframe used with fixing VS, screw-fixed

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



3 Concealed screw fixing SP without installation subframe

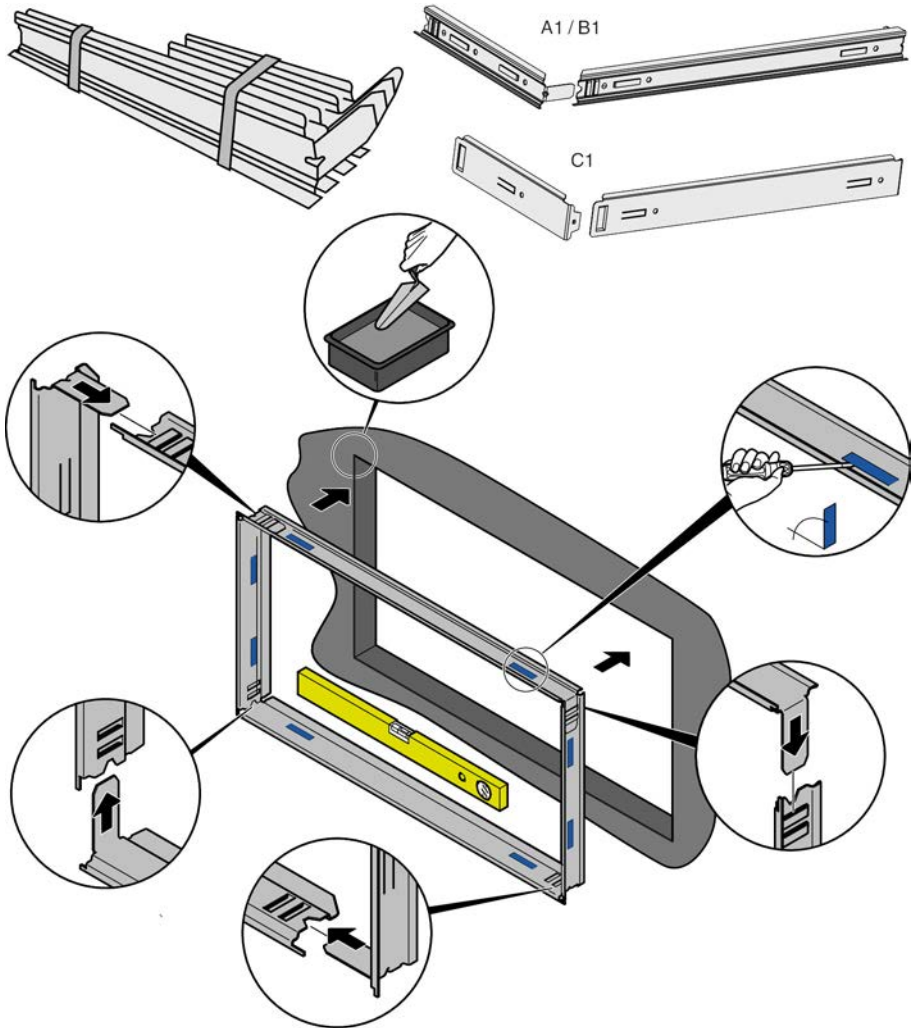
Horizontal run section



- 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 7

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 sections
- Push the sections together
- For wall installation: Spread the fixing tabs, then mortar them in
- Alternatively: Countersunk holes are provided for fixing the frame with screws or rivets to different structures

Installation subframes A1, B1 and C1, details

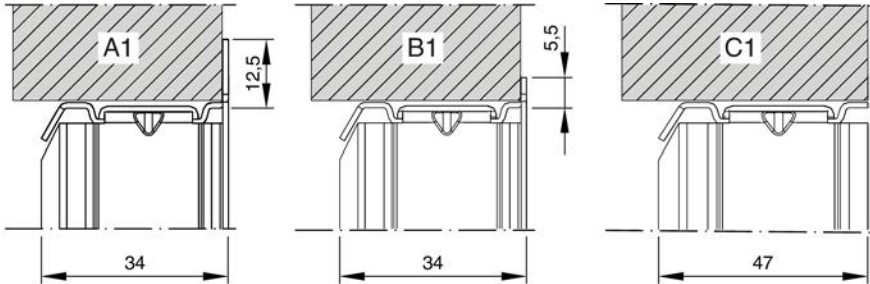
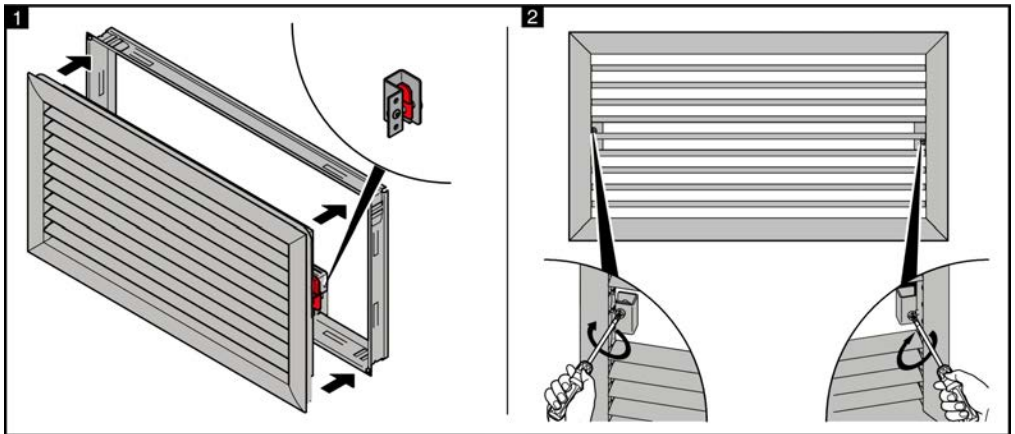


Fig. 4: Installation subframe

Installation details

Concealed screw fixing -VS (with installation subframe)



Concealed screw fixing -SP (without installation subframe)

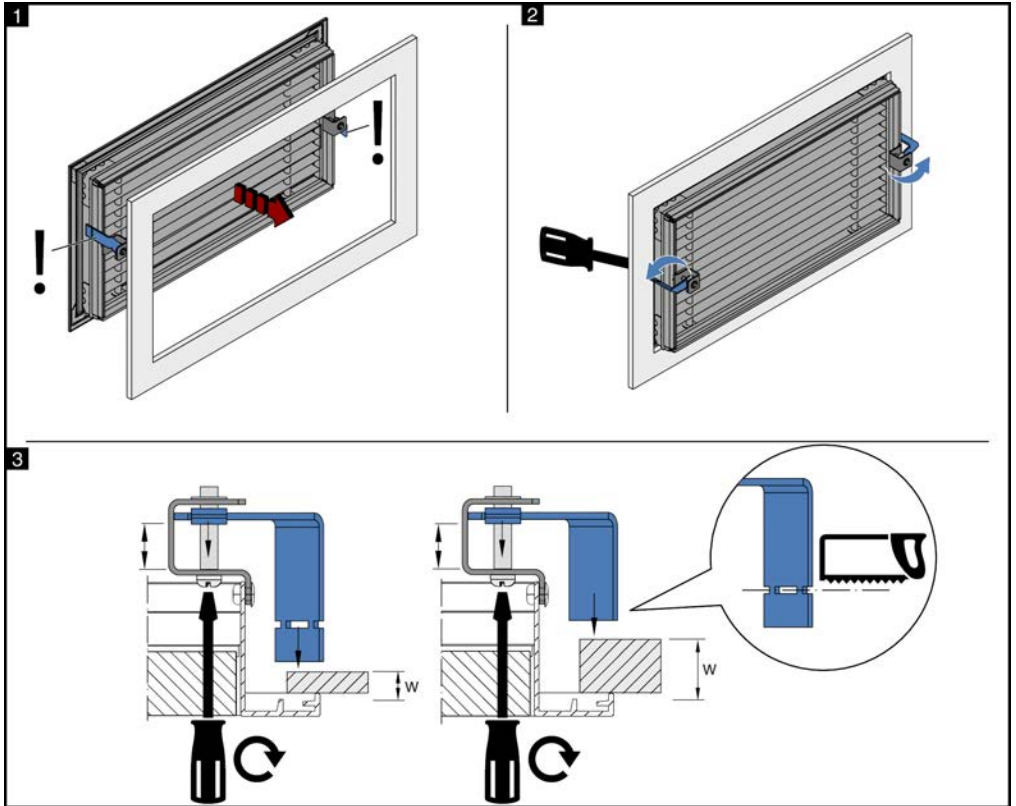


Fig. 5: Concealed screw fixing -SP, fitting

Installation opening (trim panels), clamping width W [mm]

Fastener	Front border							
	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 width by shortening the fastener at the marking.

Visible screw fixing -A11 – screw hole pitch

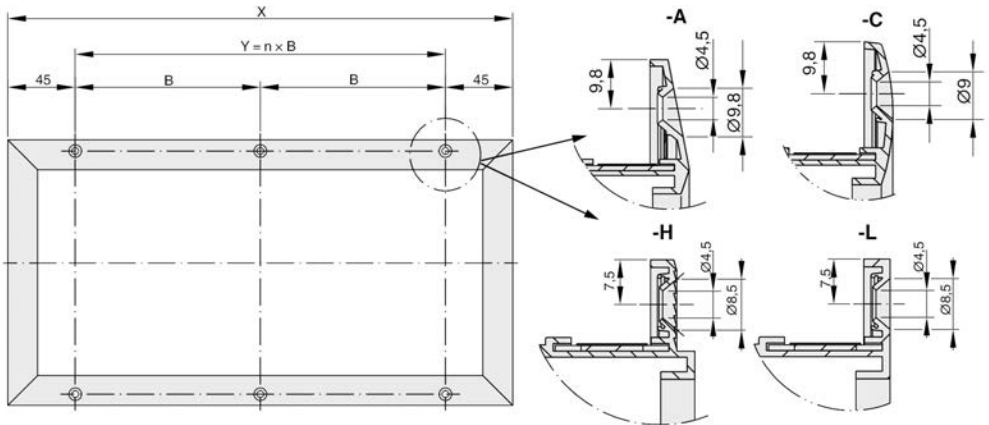


Fig. 6: X-GRILLE screw hole pitch -A11

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

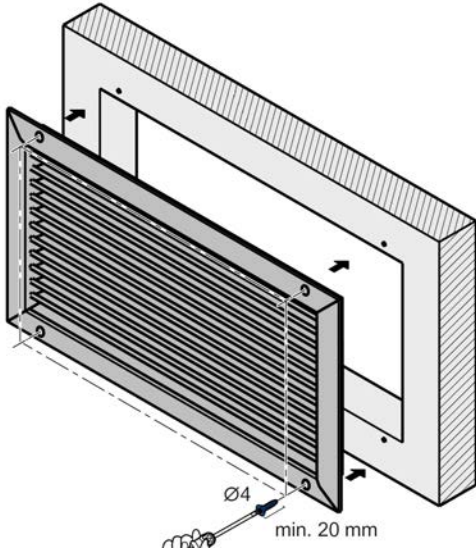


Fig. 7: Installation of frame -A11

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

Concealed screw fixing -HS

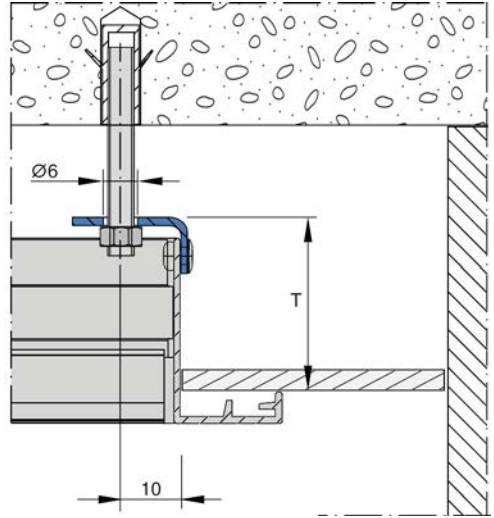


Fig. 8: Fixing type -HS, ceiling installation, example

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

**Clamp fixing -CF**

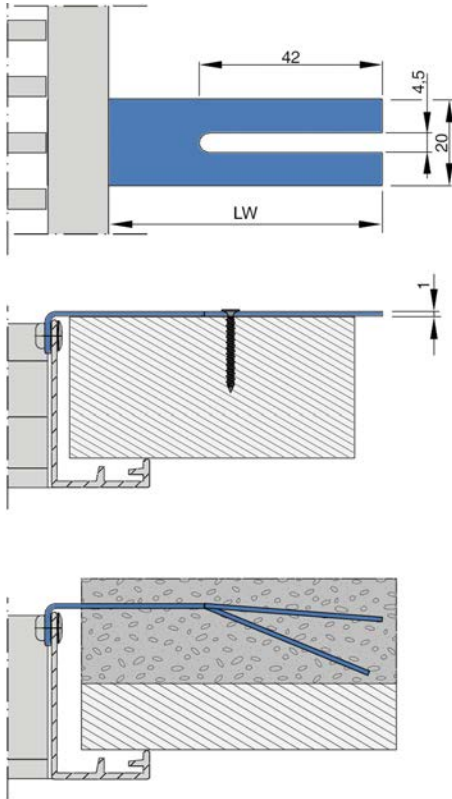


Fig. 9: Fixing -CF

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

**Frame H**

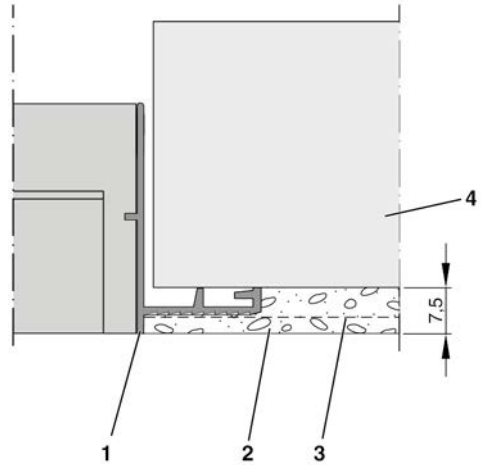


Fig. 10: X-GRILLE modular

- 1 X-GRILLE modular with frame H
- 2 Mortar
- 3 Mesh (by others)
- 4 Wall

**Duct connection**

Ventilation grilles are not fitted with a spigot or flange as they are installed into ducts or other openings.

**Initial commissioning, maintenance and cleaning**

**Initial commissioning**

Before you start commissioning:

- Check that the grilles are correctly seated.
- Remove protective film, if any.
- Ensure that all grilles are clean and free from residues and foreign matter.
- Ensure that the devices have been correctly fixed and connected to the ducting.

For commissioning see also VDI 6022, part 1 – 'Hygiene requirements for ventilation and air-conditioning systems and units'.

**Volume flow rate balancing**

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

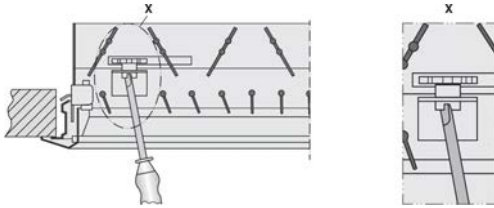


Fig. 11: Attachments -AG and -DG

Damper unit with opposed action blades, adjustable

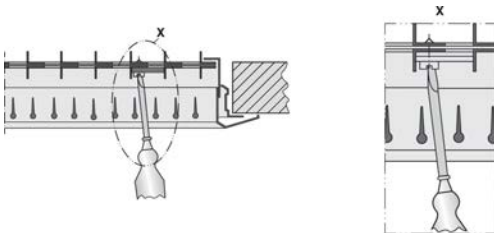
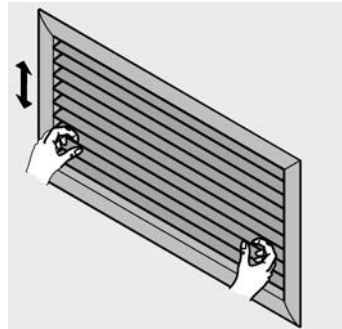


Fig. 12: Attachments -AS

Damper unit 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**

Please note:

- 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

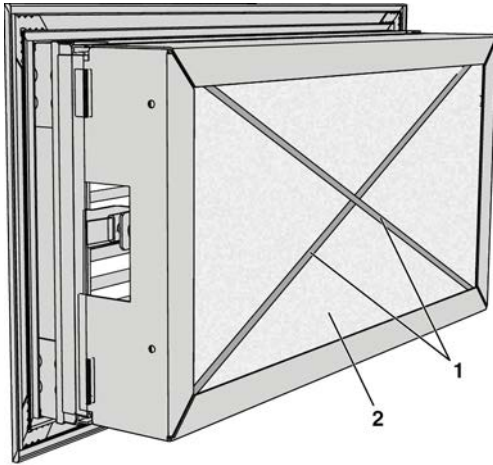


Fig. 13: X-GRILLE modular with attachment EF

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 into the installation opening and fix it.

### Ordering replacement filters

To ensure permanent protection from particulate matter and other pollutants 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 you to always have the required filters in stock.*

To order filters go to: [www.troxtechnik.com](http://www.troxtechnik.com)

