ALUPROF
SUN SHADING SOLUTIONS

SB550 Pergola

Installation Instructions

Supplier:

Manufacturer:
ALUPROF SA

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43-300 Bielsko-Biała, Polska
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ALUPROF SA

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e-mail: opole@aluprof.com
www.aluprof.com

Pergola SB550 product
The product meets CE safety requirements.

Construction Products Contact Point
https://punkt-kontaktowy.gunb.gov.pl/

Important safety instructions.

WARNING!
Compliance with this Manual is essential for personal safety. Keep this Manual for reference.

Read the installation instructions before installing the product.
If the manual contains unclear phrases or if there are any doubts regarding its interpretation, we recommend contacting the manufacturer before installing or using the pergola.

After installation, provide the user with the Instructions for Use and Maintenance.

CONTENTS

1. INTRODUCTION

This document contains:

- Basic information on delivery acceptance and product storage,
- General safety requirements for work and installation,
- Detailed instructions for assembling the supporting structure and roof of the pergola,

The instructions for use and maintenance are provided in a separate manual.

Electrical installations such as the power supply, lighting and roof control are covered in a separate manual.

Important functional notes.

- Please note that the dimensions B, L and H are the external dimensions of the fixed structure.
- When planning installation under balconies, eaves or other permanent building elements, take into account the space required for the slats to open fully:
  - Lamele K441197X - wymagany dodatkowy prześwit min. + 80 mm ponad wymiar H
  - Lamele K441198X pod LED - wymagany dodatkowy prześwit min. + 80 mm ponad wymiar H.
- Please note that the overall dimensions of the product are larger than the nominal dimensions due to protruding elements and the specific nature of the articulated foot mounting.
- When installing on a building façade, technological gaps are created, which must be secured on your own using dedicated flashings.
- The installation options given in the catalogue are strictly defined in terms of statics and cannot be modified beyond the scope provided for by the system.
- It is prohibited to remove corner posts, as they are the main load-bearing element of the structure (the only exception is the dedicated bracket version).
- The design must allow free access to the drive located in the active rafter. It is not permitted to install the active rafter directly against the wall or block it with an adjacent module, as this would prevent maintenance or replacement of the motor.

1.1. Symbols and nomenclature

Manufacturer – means an entity that manufactures and markets a product under its own name or trademark. The product is an outdoor pergola. The manufacturer is Aluprof.

Supplier – means a natural or legal person who makes another manufacturer's product available on the market. The Supplier may also be the product installer.

Installer - oznacza podmiot (osobę fizyczną lub prawną) lub zespół osób, uprawnionych i posiadających odpowiednie kwalifikacje, który jest odpowiedzialny za prawidłowe i bezpieczne przeprowadzenie całości procesu montażu Pergoli SB550 zgodnie z dokumentacją techniczną Producenta i obowiązującymi normami. Może być to również Dostawca lub podmiot przez niego upoważniony.

Product user – a person using the installed product.

Pergola SB550 product – The SB550 pergola system is made of powder-coated aluminium profiles and steel elements. The roof structure is made of movable aluminium slats. The slats can be adjusted to change the angle of inclination.

Movable roof - The roof consists of slats attached to adjustable crossbeams, which are moved by an electric drive.

Pen - A roof element made of extruded aluminium, designed to drain rainwater, protect against sunlight and withstand snow loads up to a certain limit.

2. PREPARATION FOR ASSEMBLY

2.1. Acceptance of delivery

Pergola structural elements: posts, purlins, rafters, roof slats, gutters and other long elements are packed at the production plant in cardboard packaging to protect the surface of the products from damage during transport and storage on the construction site. Accessories: connectors, roof drive components, system fasteners and seals are packed in cardboard boxes. The packaging should contain information about the assortment and quantity of components in each package, enabling quick identification of products and quantity control.

Due to the dimensions and weight of the structural elements, unloading should be carried out by at least two people.

Before starting installation, you must:

- Check that the load is correctly secured on the means of transport before unloading.
- Check the completeness of the delivery and the required documentation.
- Prepare a report on the quality and quantity of the delivery; any discrepancies should be immediately reported to the driver, supplier or site manager.
- Secure the delivery and ensure its proper storage and transport to the installation site.
- Assessment of the correctness of the construction site preparation for assembly work.

2.2. Storage of structures on the construction site

If the pergola is not installed immediately after delivery, the following storage rules must be observed on the construction site:

- The product is factory-packed in cardboard packaging that protects it from damage during storage, transport and movement to the final installation site.
- The product for transport/storage must be positioned in accordance with the arrows on the packaging.
- Structural elements and other delivery items should be stored in their original packaging; aluminium profiles should be protected with self-adhesive film, which may only be removed once installation is complete.
- Avoid stacking, protect packaging from crushing.
- Do not place other objects on top of the packaging.
- Aluminium profiles, seals and other installation materials should be stored in dry, ventilated rooms at a temperature between 5°C and 30°C.
- Stored products should not be exposed to direct heat from radiators or other heat emitters, or to high levels of sunlight.
- When unloading and moving the delivery items, observe the health and safety regulations, in particular those relating to the permissible loads per person (25 kg/person).

3. GENERAL SAFETY REQUIREMENTS FOR INSTALLATION

3.1. Inspection of the installation site

Before starting the installation, you must:

- The pergola must be mounted to the ground or substructure with parameters ensuring stability and safety. The assessment of the load-bearing capacity of the ground is the responsibility of the User and the Installer. The use of an installation method other than that suggested by ALUPROF S.A. is permissible provided that safety and construction requirements are met. In such a case, the responsibility and risk shall be borne by the User or Installer. It is recommended that any deviations from the standard installation technology be consulted with a licensed designer.
- Check that the foundations or foundation slab comply with the construction documentation.
- If dimensional non-compliance or insufficient load-bearing capacity of the ground is found, installation work must be suspended until the deficiencies are remedied.
- Remove all objects, materials and obstacles from the installation site that could hinder the manoeuvring of the pergola components or pose a risk to the installation team.
- A detailed inspection of the installation site should be carried out with regard to the location of underground and surface installations (in particular electrical, water, sewage and gas installations) in order to prevent their accidental damage during the anchoring of the structure.
- Anchoring elements are not included in the set. They must be selected individually by the installer depending on the substrate material. It is recommended to consult a qualified designer in this regard.

3.2. Safety requirements for installation at height

Due to the size of the pergola structure, it may be necessary to carry out work under special conditions. Work performed at a height of more than 1.0 m (and in particular more than 2.0 m) above ground or floor level is classified as work at height. It poses a risk of accidents, in particular falls, and therefore requires the use of certified scaffolding and personal protective equipment.

The supplier is obliged to draw up a health and safety plan (BIOZ) for the duration of the installation, ensure direct supervision of the work and provide on-the-job training for employees. In addition, the supplier must provide suitable fall protection equipment or ensure that the installation manager has such equipment. It is recommended that the installation site be clearly cordoned off and marked for the entire duration of the work.

Installers must hold valid medical certificates permitting them to work at heights. The installation site should be prepared in such a way as to minimise the need for workers to lean over the scaffolding barriers. Work at heights above 2 m requiring the use of personal protective equipment must be carried out by at least two people to ensure mutual safety.

3.3. Safety when working with power tools

When installing the pergola, use only power tools that are in good working order and have valid certificates.
The following rules must be observed:

- Technical condition: Before starting work, check the condition of the tool housing, power cables and plugs. It is prohibited to use tools with visible damage to the insulation.
- Structural conductivity: As the SB550 pergola is made of aluminium, there is an increased risk of electric shock in the event of a puncture. It is recommended to use cordless tools or tools powered by residual current devices (RCDs).
- Environmental conditions: It is forbidden to use mains-powered power tools during rainfall and in conditions of high humidity, unless the tool has an appropriate protection class (IP) that allows such conditions.
- Securing cables: Power cables should be routed in such a way as to prevent them from being accidentally cut, tripped over or damaged by moving parts of the scaffolding.

Personal Protective Equipment (PPE):

- When drilling or cutting aluminium elements, safety goggles must be worn at all times to prevent damage to the eyes from metal filings.
- IF the work generates noise exceeding 85 dB, hearing protection must be used.

3.4. General safety requirements

- For safety reasons, at least three people are required to assemble the pergola support frame. Working in a smaller team may result in the loss of structural stability and accidents.
- It is prohibited to carry out installation work (especially at height and with large components) during strong winds, precipitation or icy conditions. Wind can cause uncontrolled movement of profiles or feathers, posing a direct threat to life and health.
- The drive and control systems must be connected in accordance with separate instructions. This work may only be carried out by persons with the appropriate electrical qualifications, with the power supply completely disconnected.
- The product must be protected against construction dirt (mortar, assembly foam, silicone).
- After drilling, immediately remove all metal filings from the surface of the structure. Leaving filings (e.g. from steel drill bits) will lead to contact corrosion and permanent damage to the paint coating.
- If it is necessary to use chemicals (adhesives, sealants, chemical anchors), strictly follow the safety data sheets and manufacturers' recommendations regarding operating temperatures and respiratory and skin protection measures.
- Inform the user that the pergola is an open terrace covering. All items and devices placed under its structure must be designed for outdoor use and resistant to weather conditions (moisture, temperature changes).
- Improper installation, use of incompatible fasteners or unauthorised modifications to the structure may lead to situations that are hazardous to the user, for which the Manufacturer shall not be held liable.

4. GUIDELINES FOR FOUNDATIONS

4.1. Static requirements

The SB550 pergola system transfers loads to its fixing points using dedicated brackets.
For proper installation, it is necessary to select anchoring elements appropriate for the type of substrate.
The table below shows the permissible forces on the brackets at the structural nodes from the SGN lOad combination (ultimate limit state).

4.1.1 Console Type 1 & Type 2

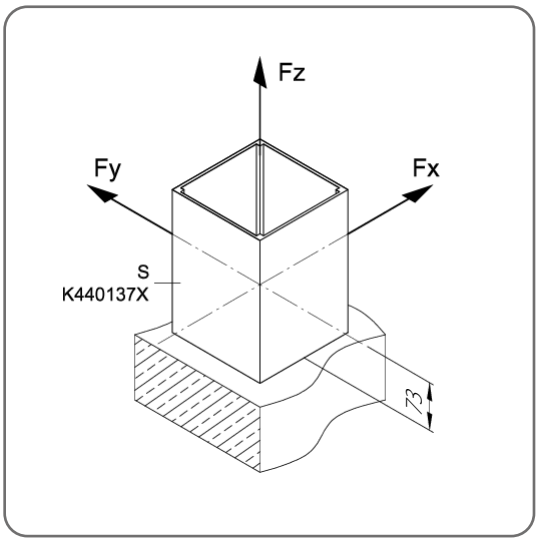


Fig. 1 Pole bracket Type 1 - 8A01473X/8A01474X

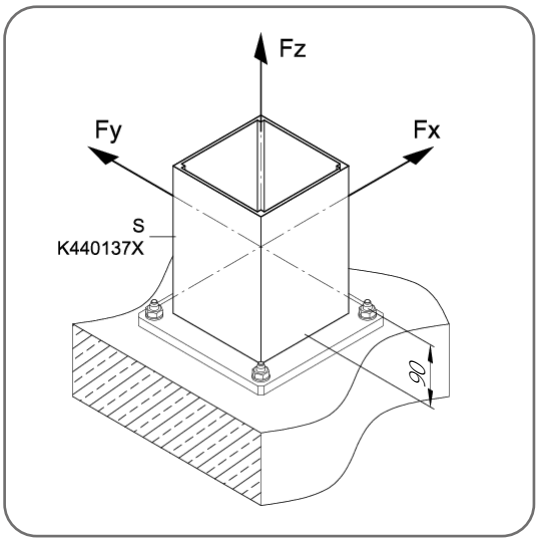


Fig. 2 Pole bracket Type 2 - 8A001540

Fz		Fx	Fy
+ 12,0 kN	- 28,0 kN	± 7,5 kN	± 1,5 kN
+ 15,3 kN	- 28,0 kN	± 4,5 kN	± 2,5 kN
+ 15,3 kN	- 28,0 kN	± 2,5 kN	± 4,5 kN

Fz		Fx	Fy
+ 15,3 kN	- 36,0 kN	± 7,5 kN	± 7,5 kN

The 8A01473X/8A01474X bracket has been designed to accommodate the use of optional levelling shims 8A01460X/8A01461X. The maximum total height of the shims under the bracket is 12 mm; however, to ensure the effectiveness of the roof drainage system, the difference in foundation height between the outer posts must not exceed 10 mm.

4.1.2 Console 8A01347X & 8A01413X

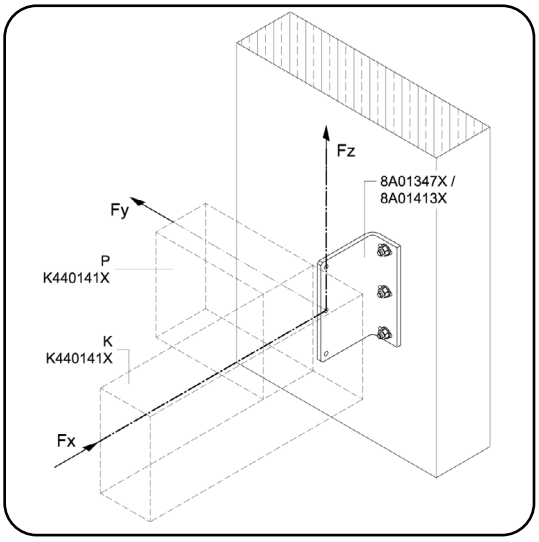


Fig. 3 Wall bracket 8A01347X/8A01413X

FZ = ±11,0 kN, FX = ±7,6 kN, FY = ±2,0 kN

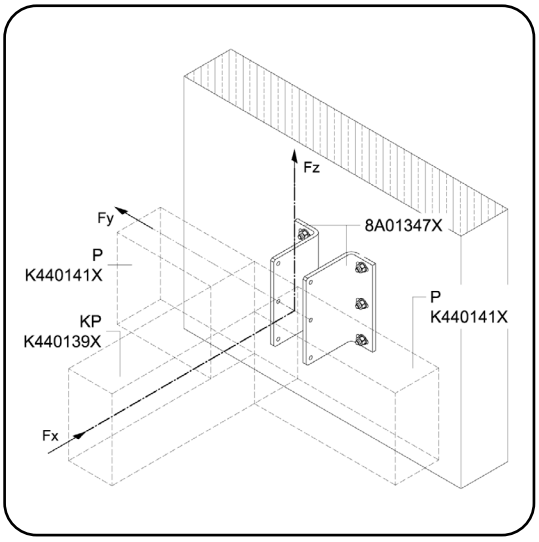


Fig. 4 Wall bracket 8A01347X

FZ = ±22,0 kN, FX = ±15,2 kN, FY = ±4,0 kN

4.1.3 Console 8A01476X - wall rafter

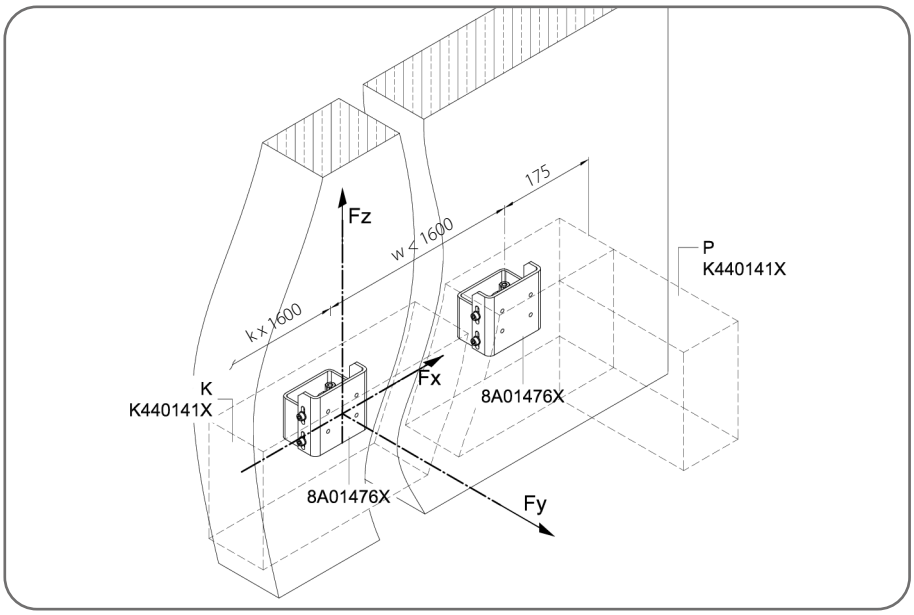


Fig. 5 Linear mounting bracket 8A01476X

FZ = ±6,0 kN, FX = 0 kN, FY = 0 kN

FZ = ±4,0 kN, FX = ±1,1 kN, FY = ±5,0 kN

4.1.4 Console 8A01476X - wall purlin

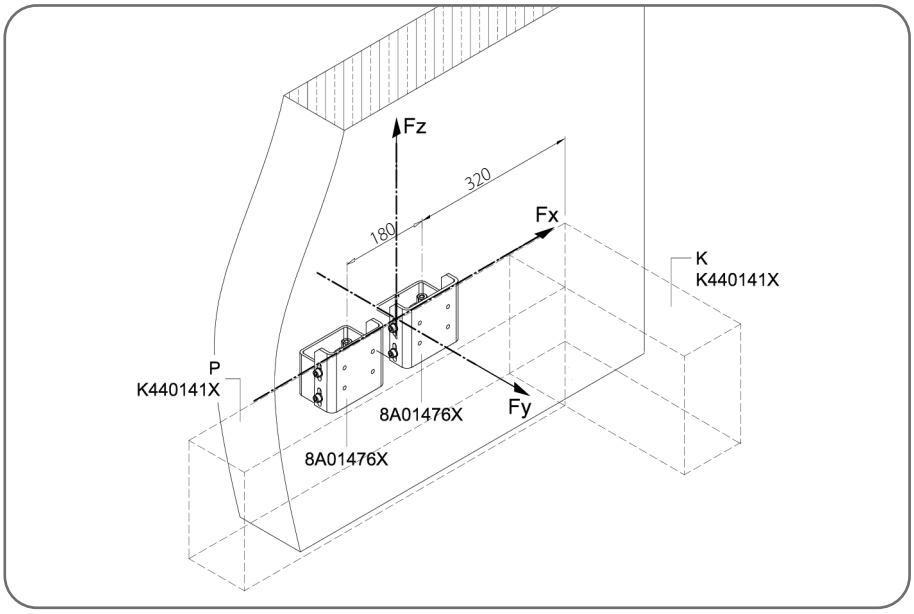


Fig. 6 Linear mounting bracket 8A01476X

FZ = ±12,0 kN, FX = 0 kN, FY = 0 kN

FZ = ±8,0 kN, FX = ±2,2 kN, FY = ±10,0 kN

4.1.5 Console 8A01476X - intermediate wall purlin

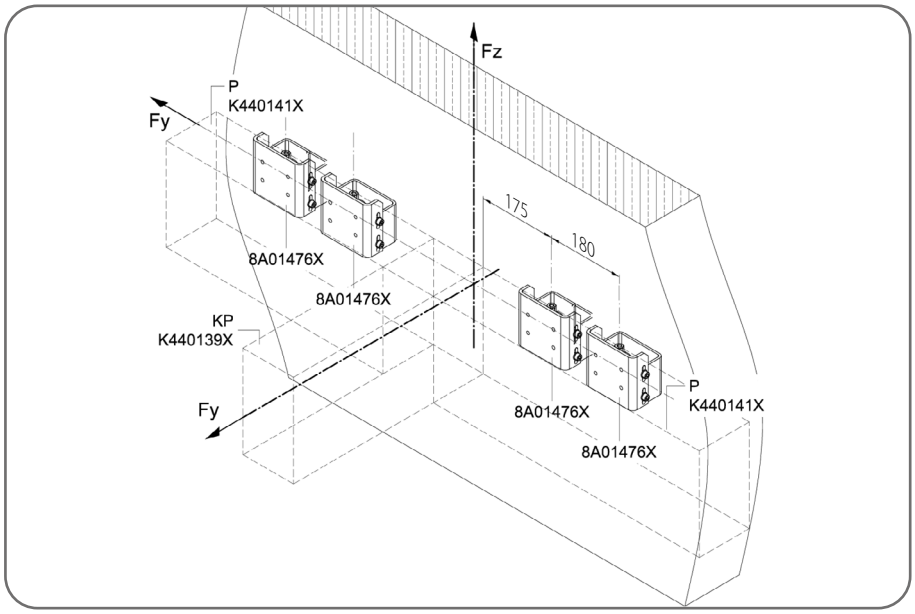


Fig. 7 Linear mounting bracket 8A01476X

FZ = ±24,0 kN, FX = 0 kN, FY = 0 kN

FZ = ±16,0 kN, FX = ±20,0 kN, FY = ±4,4 kN

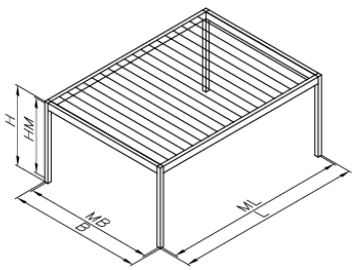
4.2. Location and Wind Zones

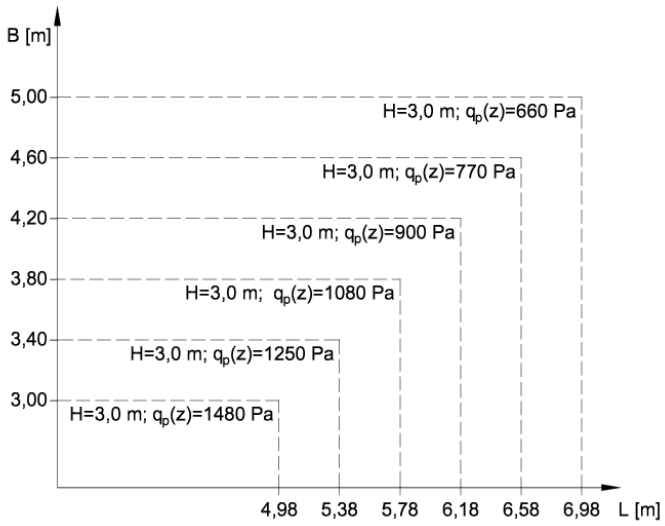
The choice of installation location must be preceded by an analysis of wind exposure by a qualified designer.

- Installation on building roofs or high terraces requires additional calculations due to increased wind speed pressure coefficients.
- In the case of installation of sun protection systems, the permissible dimensions of the structure should be determined on the basis of the normative wind load qp(z) in accordance with PN-EN 1991-1-4. It should be taken into account that they act as a solid wall, which drastically increases the forces transmitted to the foundations. In strong winds, as specified in the User and Maintenance Manual for the relevant screen, the side screens must be rolled up and the roof battens set in a safe position so as not to exceed the load-bearing capacity of the anchoring.

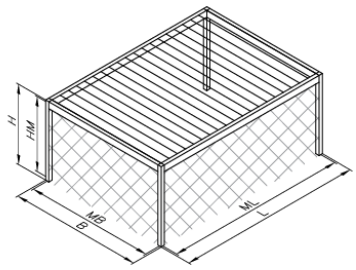
The table below shows the characteristic values of the permissible wind load qp(z) according to PN-EN 1991-1-4 with a characteristic roof snow load d=0.72 kN/m2 according to PN-EN 1991-1-3, depending on the dimensions of the structure.

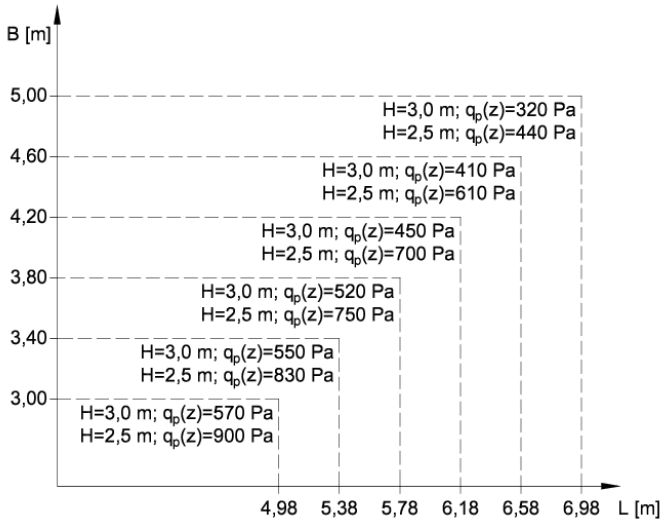
4.2.1. Free-standing single-bay pergola without enclosure



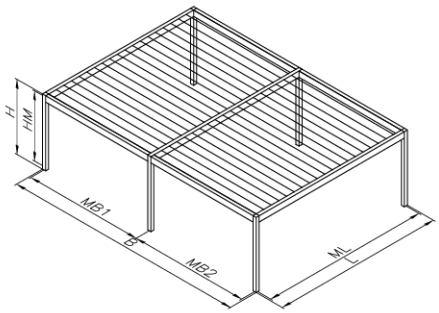


4.2.2. Single-bay freestanding pergola with enclosure





4.2.3. Free-standing transverse double pergola without enclosure



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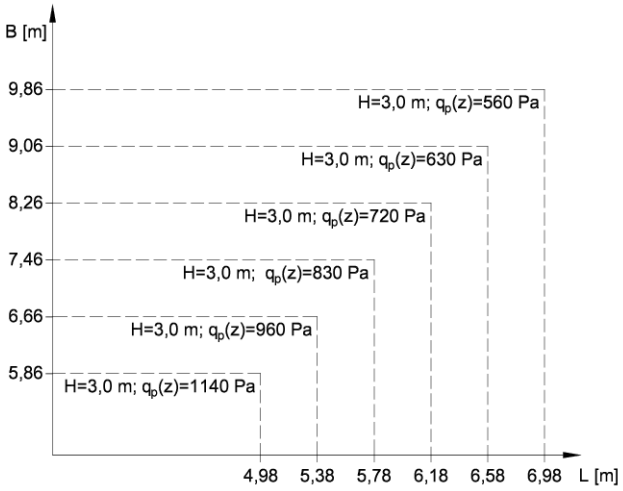
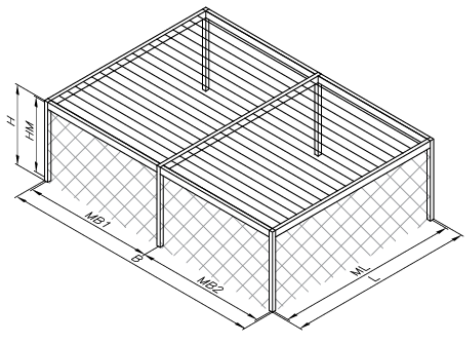


4.2.4. Free-standing double-bay transverse pergola with enclosure



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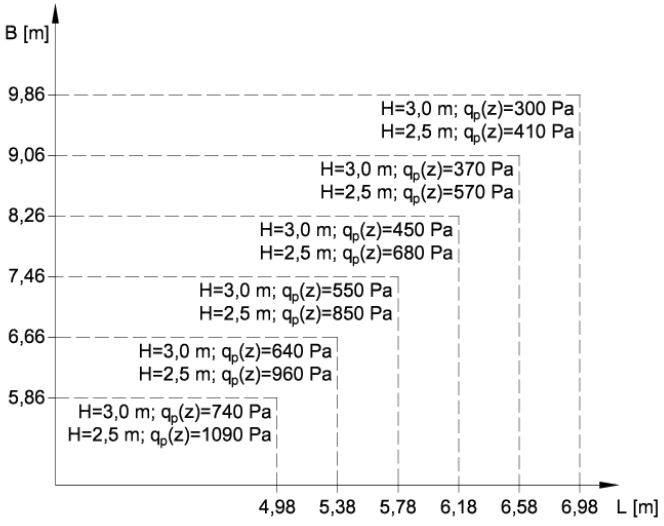
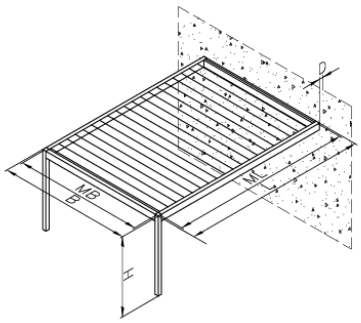
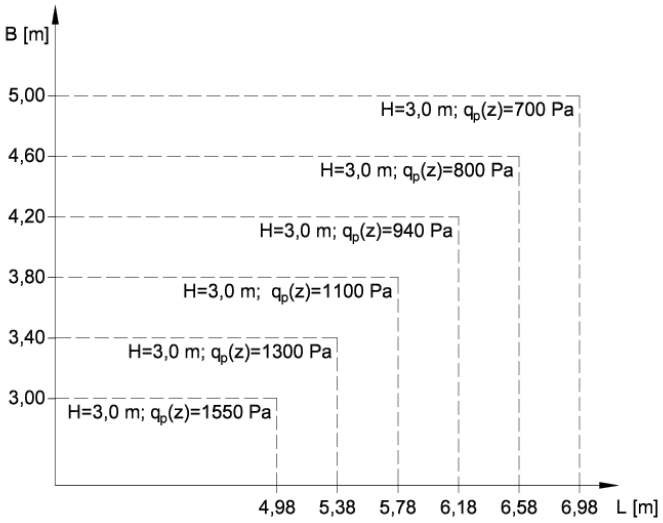
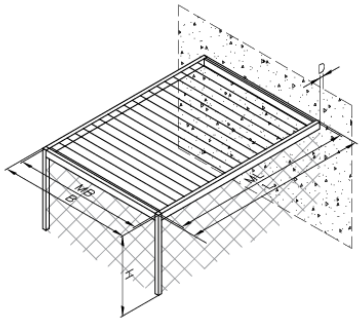


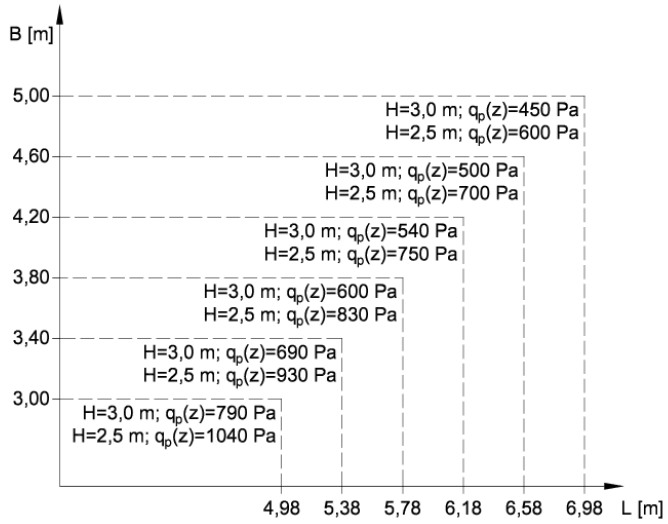
4.2.5. Single-bay pergola against a wall TYPE 1 without enclosure



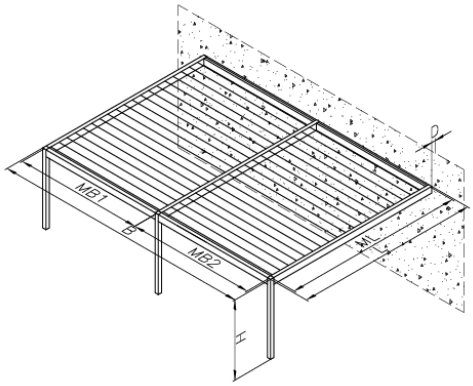


4.2.6. Single-bay pergola against a wall TYPE 1 with enclosure





4.2.7. Double-bay transverse pergola against a wall without enclosure



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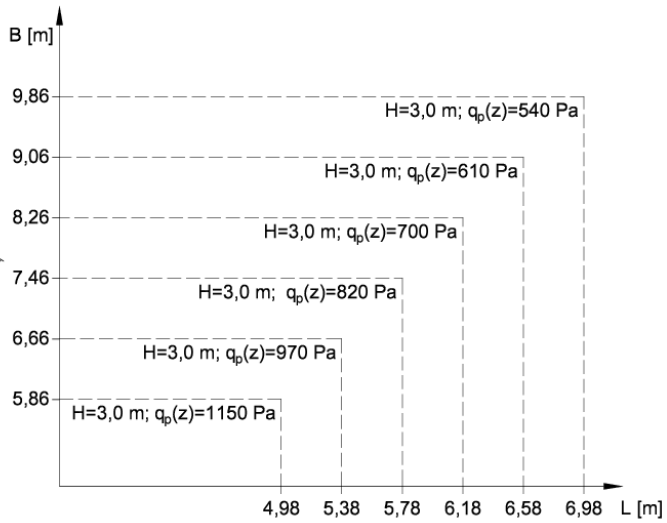
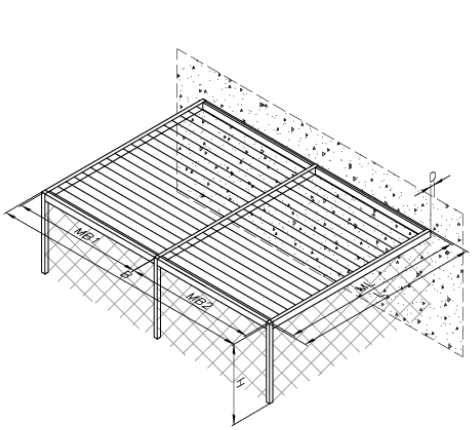


4.2.8. Double-bay transverse pergola against a wall with enclosure



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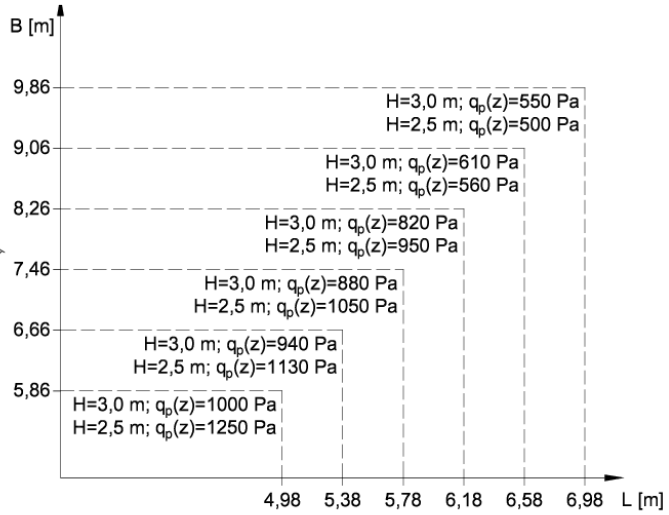
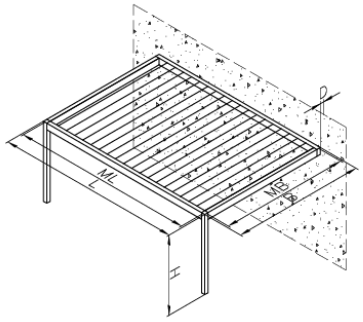
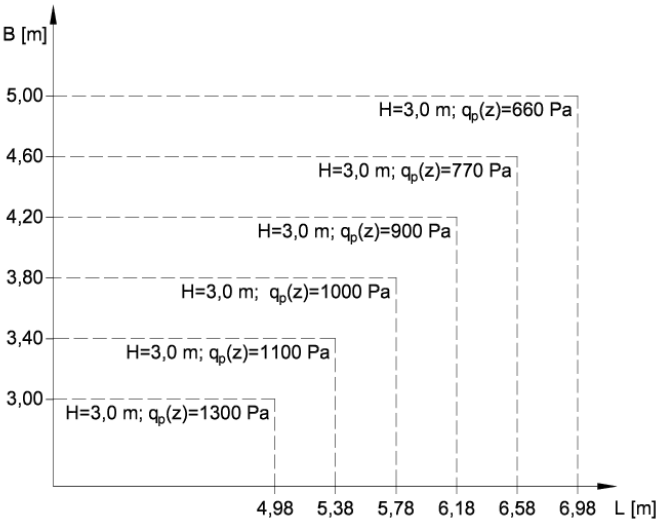
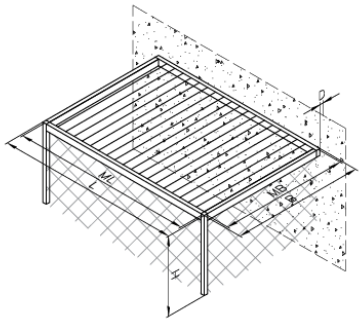


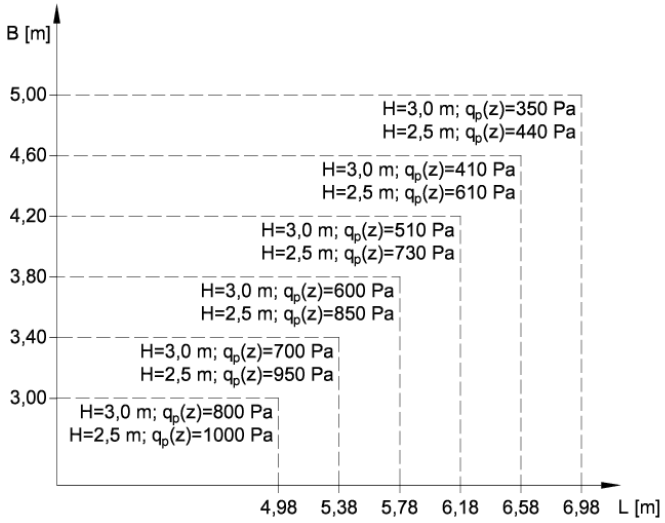
4.2.9. Single-bay pergola against a wall TYPE 2 without enclosure



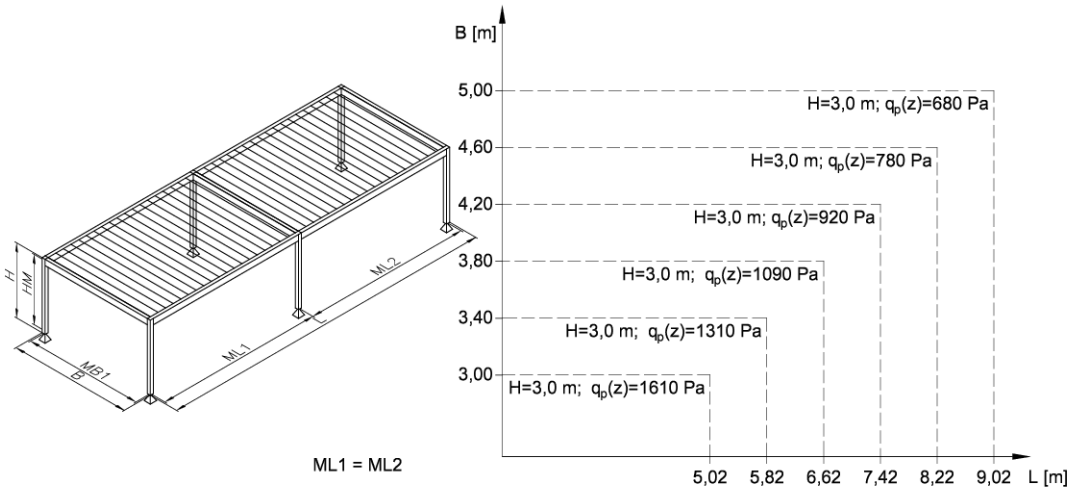


4.2.10. Single-bay pergola against a wall TYPE 2 with enclosure

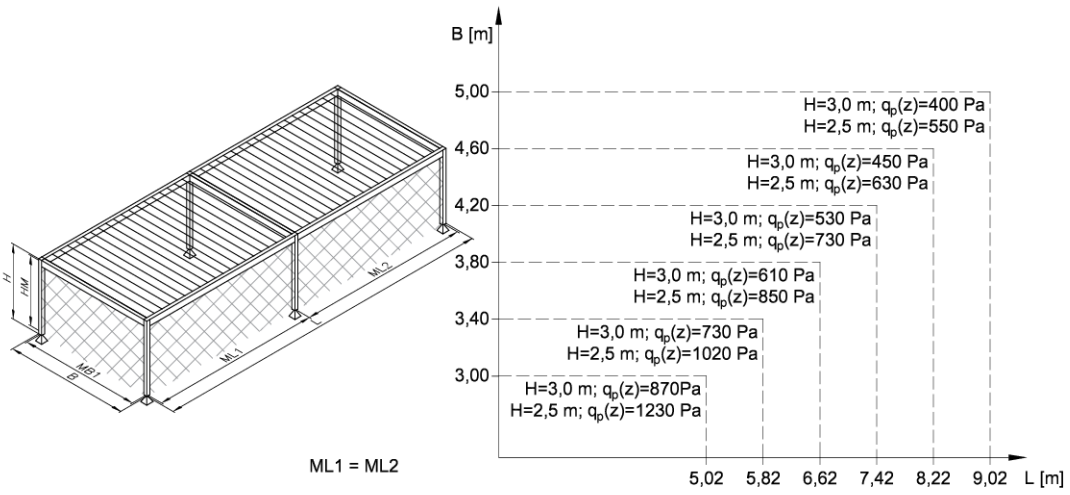




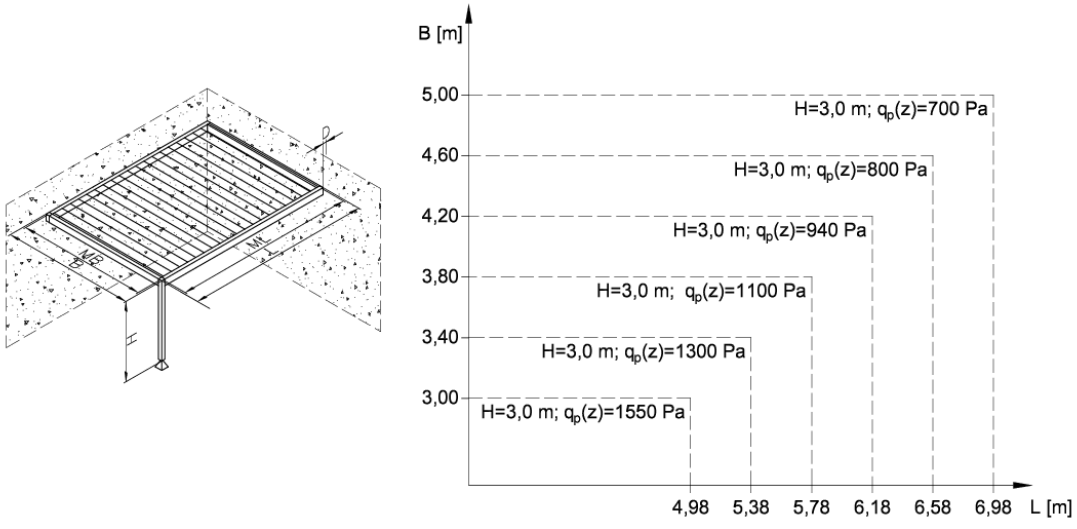
4.2.11. Free-standing double-wing longitudinal pergola without enclosure



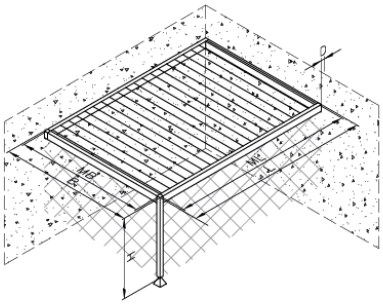
4.2.12. Free-standing double-wing longitudinal pergola with enclosure

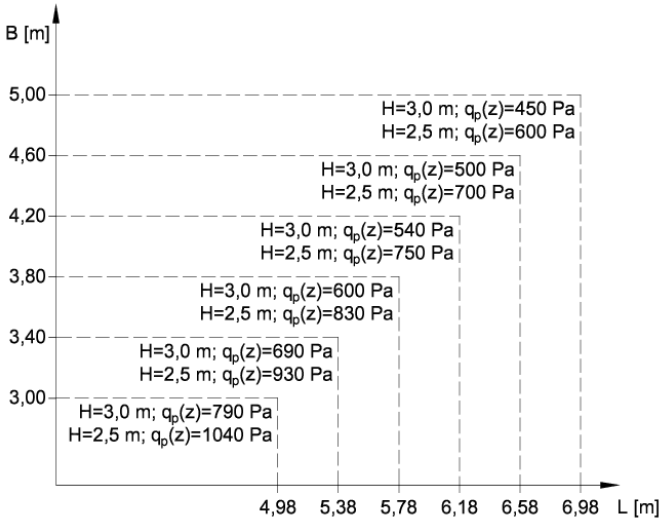


4.2.13. Single-span pergola against a wall TYPE 3 without enclosure

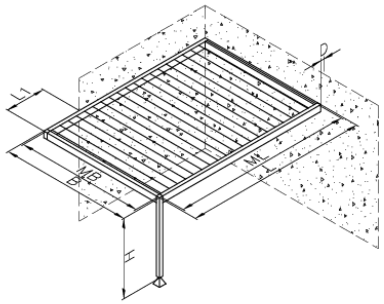


4.2.14. Single-span pergola against a wall, TYPE 3 with enclosure

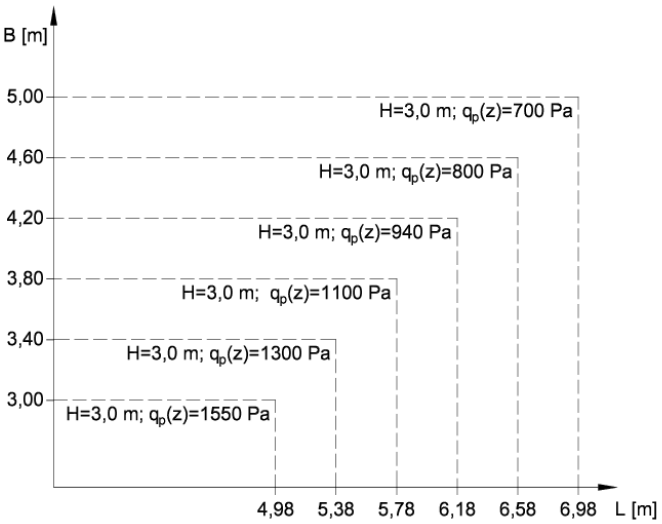




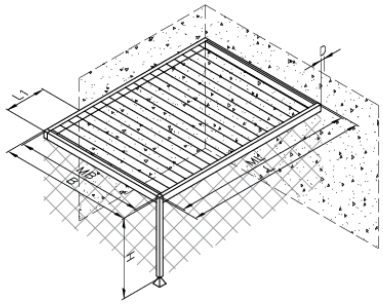
4.2.15. Single-bay pergola against a wall TYPE 4 without enclosure



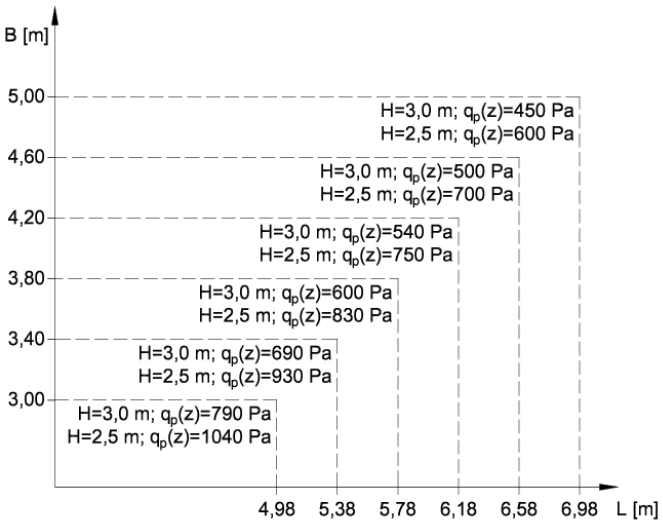
L1 ≤ 0,90 m



4.2.16. Single-span pergola against a wall, Type 4 with enclosure



L1 ≤ 0,90 m



4.3. Point foundation specification

- Concrete class: Minimum C20/25.
- To ensure stability under maximum wind loads, a base with a minimum cross-section of 300 x 300 mm is recommended.
- The difference in foundation levels between the feet must not exceed 10 mm, which is a prerequisite for the proper functioning of the drainage system.
- Before concreting, lay electrical conduits in the axis of the foundations (drive power supply, LED lighting).
- The area around the feet must be flexibly sealed so that water flowing out of the posts does not penetrate the foundation structure.
- When making the footings, ensure that the bottom of the excavation is not flooded by rainwater or that the ground does not freeze (during periods of low temperatures).
- Levelling: The difference in height between the feet must not exceed 10 mm to ensure proper water drainage.
- Due to the use of rainwater drainage in columns with water outlets, it is important to carefully compact and flexibly seal the area around the footings in the ground due to possible mechanical impacts caused by wind. For locations at ground level, ensure anchoring and support on stable, load-bearing ground without layers susceptible to washing out, loosening or crushing (ballast, thermal insulation).
- The foundation must be based on stable and load-bearing ground.
- The soil at the bottom of the excavation must not be loose, wet or frozen. It is unacceptable to install the foundation on non-load-bearing soils: non-construction embankments, topsoil, peat, silt or soils with organic inclusions and debris.
- Depth (non-cohesive soils): For stable and non-heaving soils, the minimum foundation depth is 70 cm (provided that the foundation has sufficient ballast weight).
- Depth (heaving soils): In the case of heaving soils (clay, loam, loess, silty sand), the bottom of the foundation must be below the local ground frost depth, specified for Poland in the range of 0.8 m – 1.4 m (according to Fig. 6).

If non-load-bearing soil is found or there are doubts regarding the frost heave of the ground, one of the following methods should be used:

1. The foundation must be laid to the full frost depth for the region.
2. Soil replacement: Removal of non-load-bearing soil and replacement with a compacted sand and gravel cushion (Is index > 0.95).
3. Reinforcement with lean concrete: Remove soil to the level of the frost line and fill the space with C8/10 lean concrete with a semi-dry consistency.

Fig. 8 Frost zones in: Polsce

Frost penetration depths in the areas marked next to:
I Zone - 0,8 m
II Zone - 1,0 m
III Zone - 1,2 m
IV Zone - 1,4 m

4.4. Anchoring technology

- High-performance M8 expansion anchors may be used, provided that an effective anchoring depth is achieved. This requires the utmost precision in installation, thorough cleaning of the holes and maintaining minimum distances from the edge of the foundation.
- Due to the minimum centre-to-centre distances (85 mm), chemical anchoring is the preferred solution, as it prevents expansion stresses in the substrate.
- Recommended system: High-load-bearing injection resin in combination with system threaded rods.
- Use rods of class min. 5.8 (galvanised) or A4-70 (stainless steel), in accordance with the EOTA documentation of the selected manufacturer.
- It is prohibited to assemble kits from non-certified components. Installation must be carried out in accordance with the Technical Assessment of the manufacturer of the anchoring system for concrete of at least class C20/25.
- To achieve full load-bearing capacity at pull-out forces of 11.0 kN, the depth of the rod should be selected based on the manufacturer's load-bearing capacity tables (recommended min. 120 mm for M8).
- The use of adapter 8A01125X (anchor spacing 170 mm), which allows the use of M10 anchors, significantly increases the stability of the structure under dynamic loads.

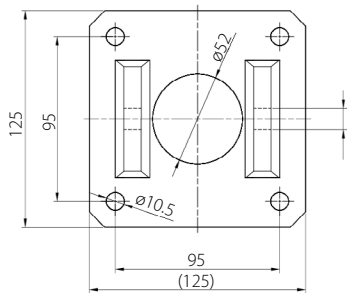
⚠ Any inaccuracy in the construction of the foundation or error in the selection of resin for chemical anchors may lead to structural failure in strong winds. It is recommended to document the process of bonding the anchors (cleaning the holes).

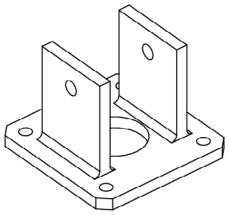
5. INSTALLATION DIAGRAM

5.1. Preparation and geometry of the substrate

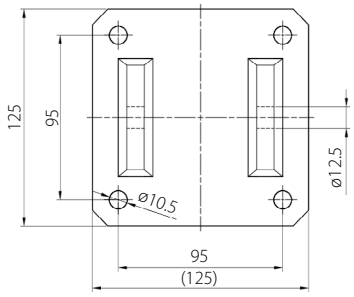
- Before proceeding with the installation, precisely mark the locations for fixing the posts.
- The pergola must be built on a rectangular plan – it is essential to ensure that the base diagonals are equal.
- The ground beneath the supporting structure must be carefully levelled. Steeper slopes should be levelled by ordering appropriately cut posts of varying lengths.
- The maximum difference in foundation height between the outer columns must not exceed 10 mm. This is critical for maintaining the efficiency of the drainage system hidden in the gutters.
- For precise adjustment, console washers can be used, but their total height under one foot must not exceed 12 mm.

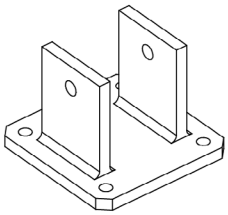
5.2. Foot dimensions and anchor hole spacing



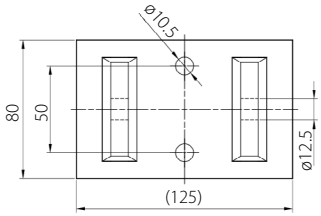


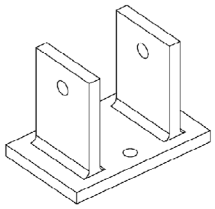
8A01472X



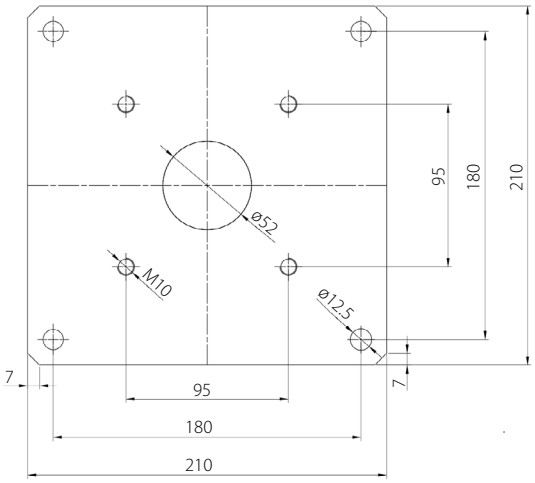


8A01449X





8A01450X



8A01455X

5.3. Construction node diagram

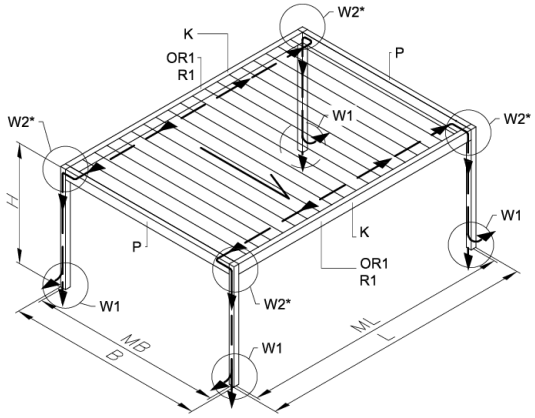
Where:

B	- Pergola width
L	- Pergola length
MB, ML	- Spacing between posts
MZ1, MZ2	- Axial spacing between the additional post and the main post
P	- Pergola rafter
PO	- Pergola purlin with drainage system
PP	- Intermediate purlin for a two-bay longitudinal pergola
K	- Pergola rafter
KP	- Intermediate rafter of a cross pergola

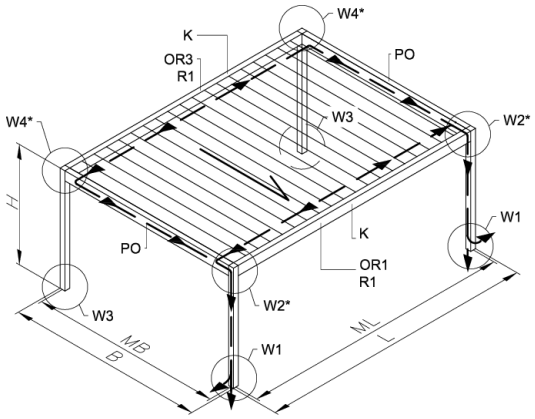
Node markings:

W1 - Joint W1, column base, visible or concealed drainage
W2 - node W2, connection between column and purlin
W3 - node W3, column base without drainage
W4 - node W4, connection of column – purlin in a 2-column drainage system
W5 - Joint W5, connection of intermediate column to intermediate rafter
W6 - Joint W6, intermediate post–intermediate purlin connection
W7 - Node W7, rafter-to-wall connection (bracket 8A01413X)
W8 - Joint W8, rafter-to-wall connection (bracket 8A01347X)
W9 - Joint W9, intermediate rafter–wall connection, bracket 8A01347X
W10 - Joint W10, connection of purlin to wall/intermediate rafter
W11 - joint W11, rafter–wall connection, bracket 8A01476X
W12 - joint W12, linear fixing of wall rafter
W13 - joint W13, connection between purlins and wall
W14 - node W14, fixing of wall rafter – purlin with offset
W15 - Joint W15, fixing of an intermediate column
W16 - node W16, connection between rafter and intermediate column
W17 - node W17, connection between purlin and intermediate column

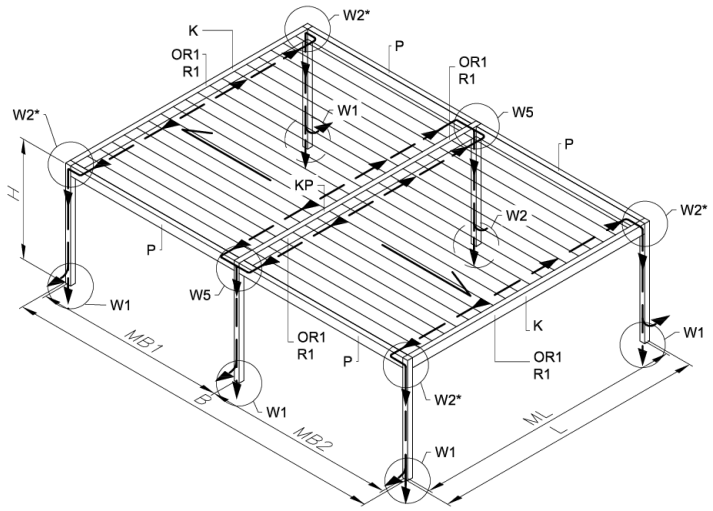
5.3.1. Free-standing pergola – drainage using 4 posts



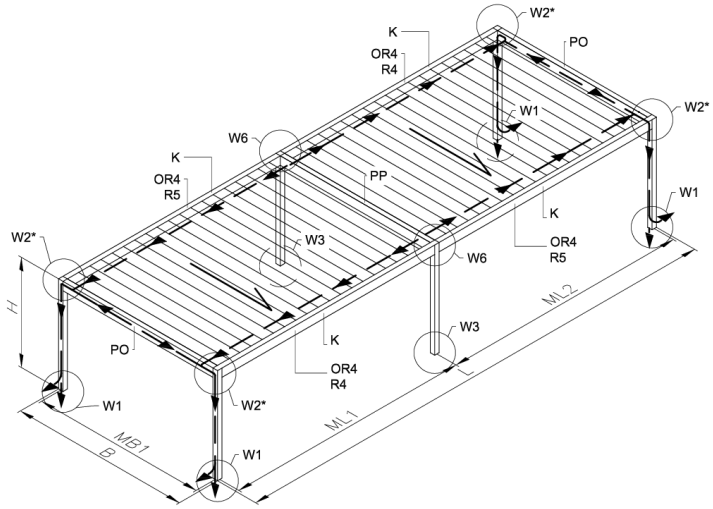
5.3.2. Free-standing pergola - drainage using 2 posts



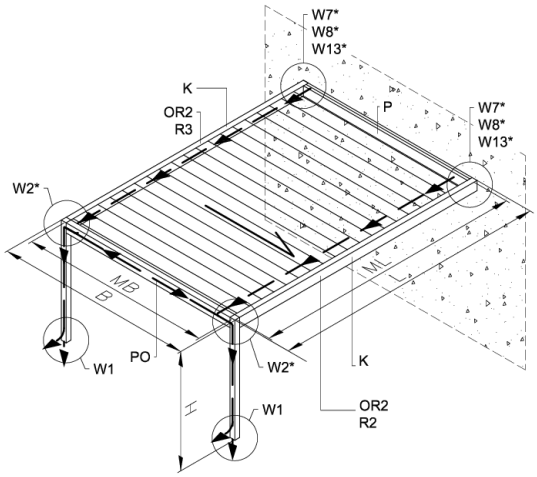
5.3.3. Free-standing double transverse pergola



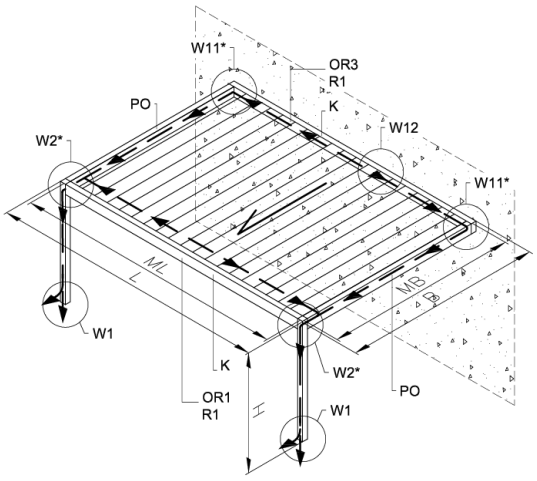
5.3.4. Freestanding double-wing longitudinal pergola



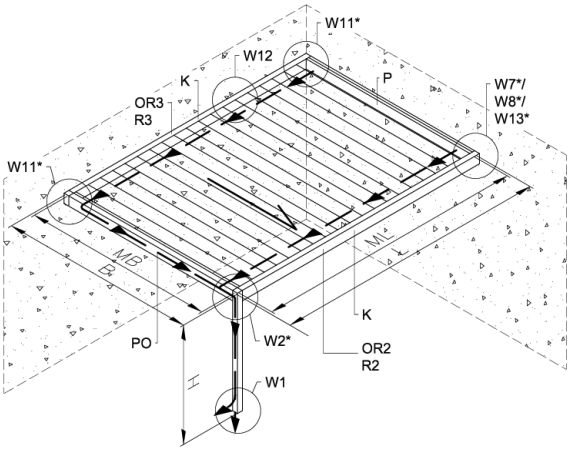
5.3.5. Single-span pergola against a wall Type 1



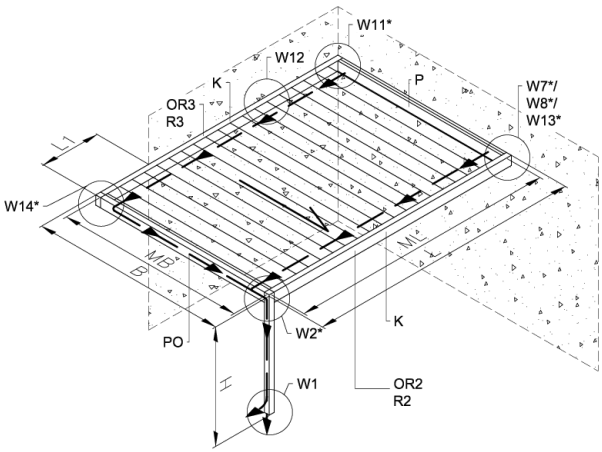
5.3.6. Single-span pergola against a wall Type 2



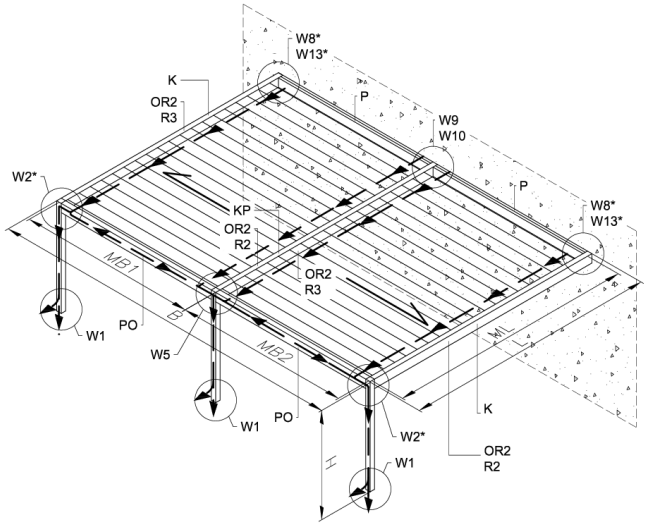
5.3.7. Single-span pergola against a wall Type 3



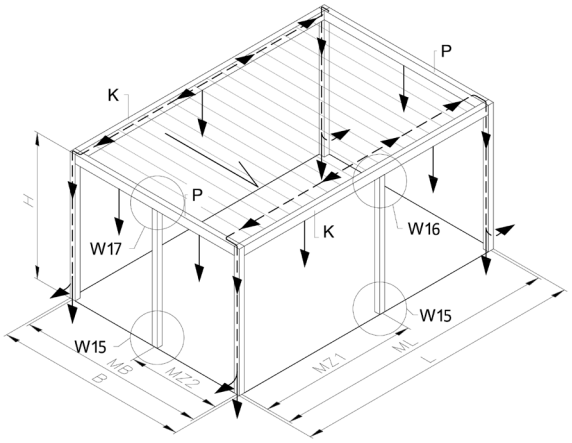
5.3.8. Single-span pergola against a wall Type 4



5.3.9. Double-aisle pergola against a wall



5.3.10. Single-span pergola with additional post



5.4. Fastening of free-standing pergola structures

5.4.1. Fastening brackets and posts with a type A drainage system (node W1)

1. Remove the 2 M12 x 20 mm screws from console no. 8A01473X and remove the console insert (Fig. 9.1).
2. Plan the mounting positions for the bracket set, check their level; if there are greater differences than specified in the design, use 2 mm or 5 mm shims (cat. no. 8A01460X; 8A01461X).
3. Ensure that the brackets tilt in the same axis.
4. Screw the console base 8A01473X to the foundation using 4 M10 anchors.
5. Refit the console insert, securing it with the screws removed earlier; coat the screws with thread sealant, cat. no. 13364618 (Fig. 9.2).
6. Remove the 2 M12 x 25 mm Allen screws from the console assembly, apply thread sealant (cat. no. 13364618) to them and use them to secure the 2 console spacers (cat. no. 8A00399X) (Fig. 9.3).
7. Insert drainage plug no. 8A01342X into each post; press drainage hole plug no. 8A00821X into the post's drainage hole (Fig. 10.1).
8. Depending on the type of pergola, connect 2 pergola posts (cat. no. K440137X) with purlins (cat. no. K440141X) or 2 posts (cat. no. K440137X) with rafters (cat. no. K440139X) to form a 'gate'.
9. Place the K440137X pergola posts onto the brackets (Fig. 10.2).

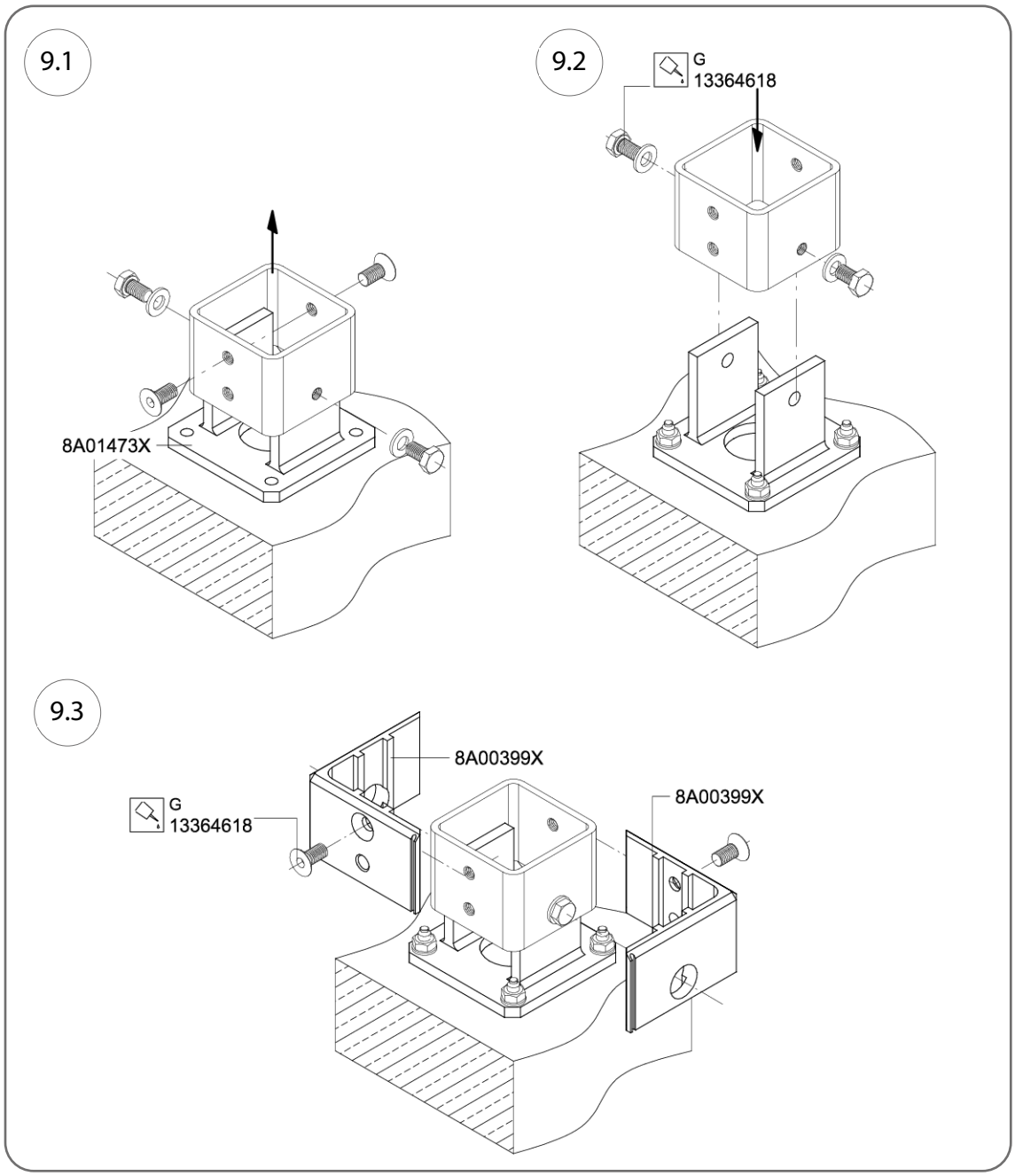
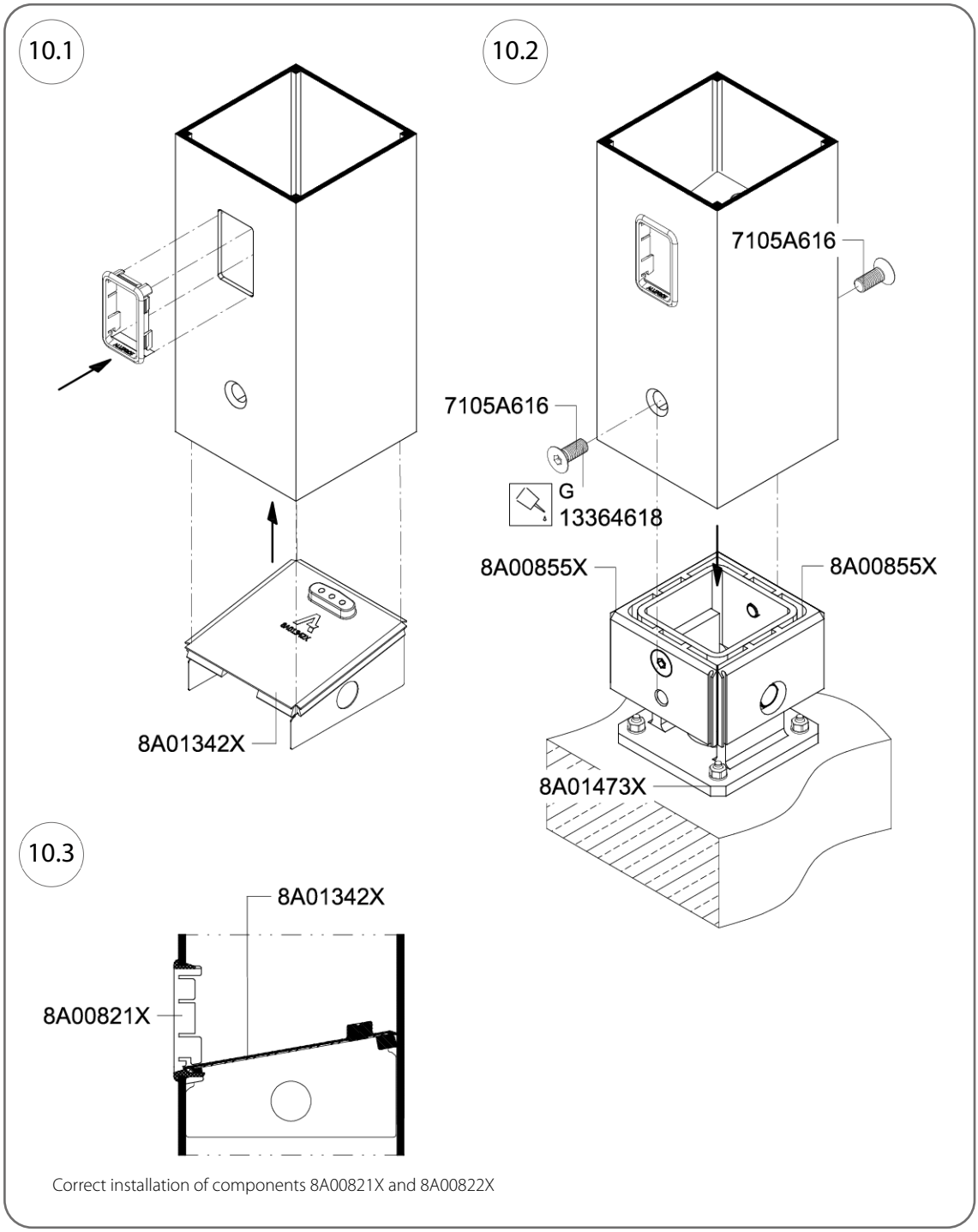


Fig. 9



Correct installation of components 8A00821X and 8A00822X

Fig. 10

5.4.2. Fastening brackets and posts with drainage system type B (node W1)

1. Remove all bolts from bracket Cat. No. 8A01474X and remove the bracket insert with the drainage hole (Fig. 11.1).
2. Plan the mounting locations for the bracket set, check their level; if there are greater differences than assumed in the design, use 2 or 5 mm shims (cat. no. 8A01270X; 8A011354X).
3. Ensure that the brackets tilt in the same axis.
4. Screw the console base 8A01474X to the foundation using 4 M10 anchors.
5. Reattach the insert to the bracket base using M12 x 20 mm hexagon head bolts; apply sealant to the bolt threads (Fig. 11.2).
6. Remove the two M12 x 25 mm Allen screws from the console insert, apply thread sealant (cat. no. 13364618) to them and use them to screw on the two console spacers (cat. no. 8A000399X) (Fig. 11.3).
7. Rivet the elbow spacer (cat. no. 8A01410X) to the 50 mm diameter stainless steel elbow (cat. no. 8A01229X) using a 4 x 16 mm rivet (cat. no. 7609K4060), then connect the elbow to the concealed drainage outlet (cat. no. 8A01343X) and secure the connection with a clamp (cat. no. 8A00968X) (Fig. 12.1).
8. Apply adhesive (cat. no. 13364617) to the edge of the spout 8A01343X and insert the elbow together with the spout into the console (Fig. 12.2), using a 4.2 mm diameter x 13 mm screw, cat. no. 87252505, screw the elbow spacer, cat. no. 8A01410X, through the wall of the console insert 8A01474X (Fig. 12.3).
9. Depending on the type of pergola, connect the pergola posts K440137X with a purlin or rafter K440141X or an intermediate rafter K440139X to form a "gate".
10. Place the K440137X pergola posts onto the brackets and secure each one to the bracket using 2 Allen screws, cat. no. 7105A616 M12 x 30 mm; coat the screws with thread sealant, cat. no. 13364618 (Fig. 13.1).
11. Press a 50 mm diameter PVC elbow onto the elbow (cat. no. 8A01229X) (Fig. 13.2).

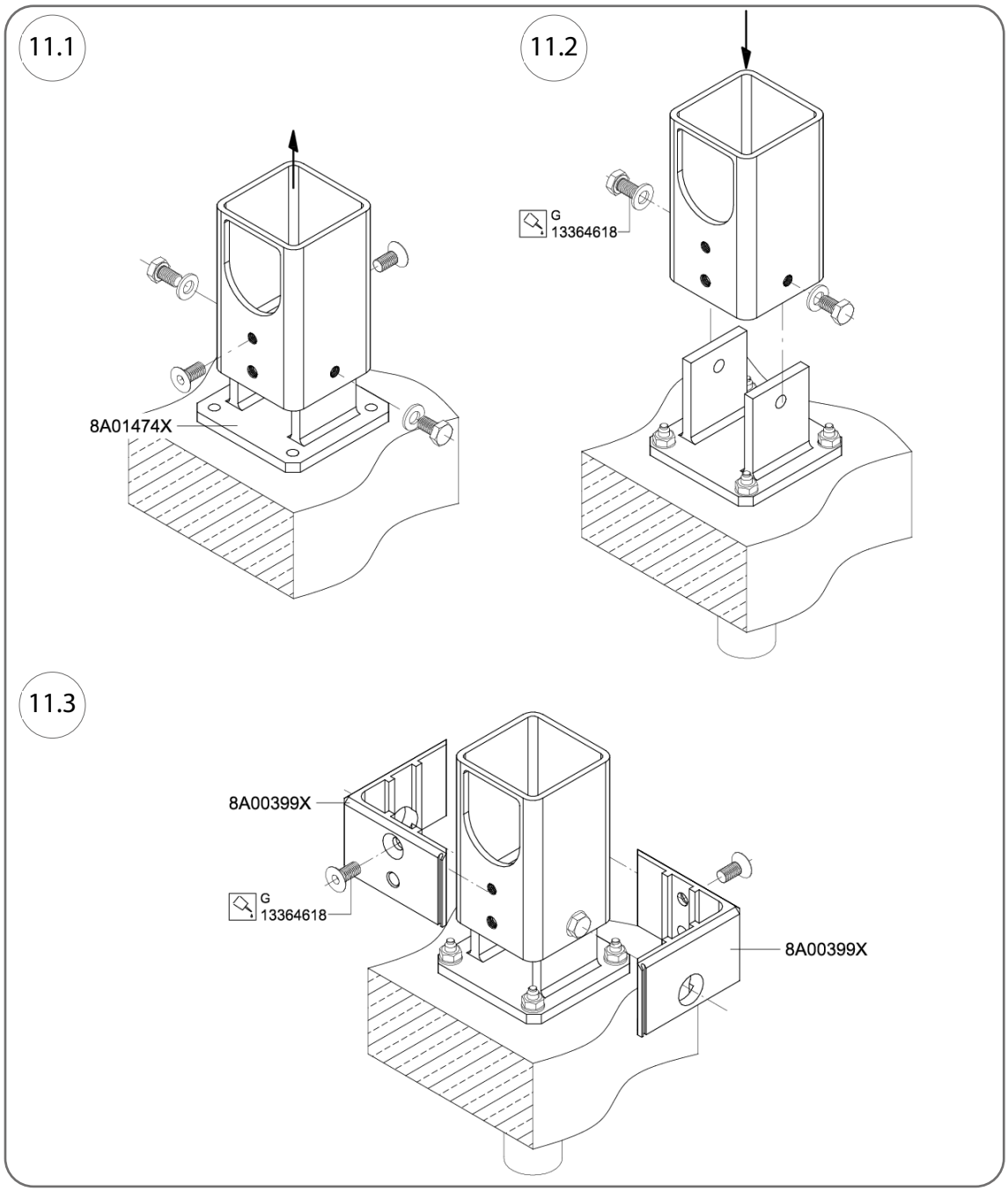


Fig. 11

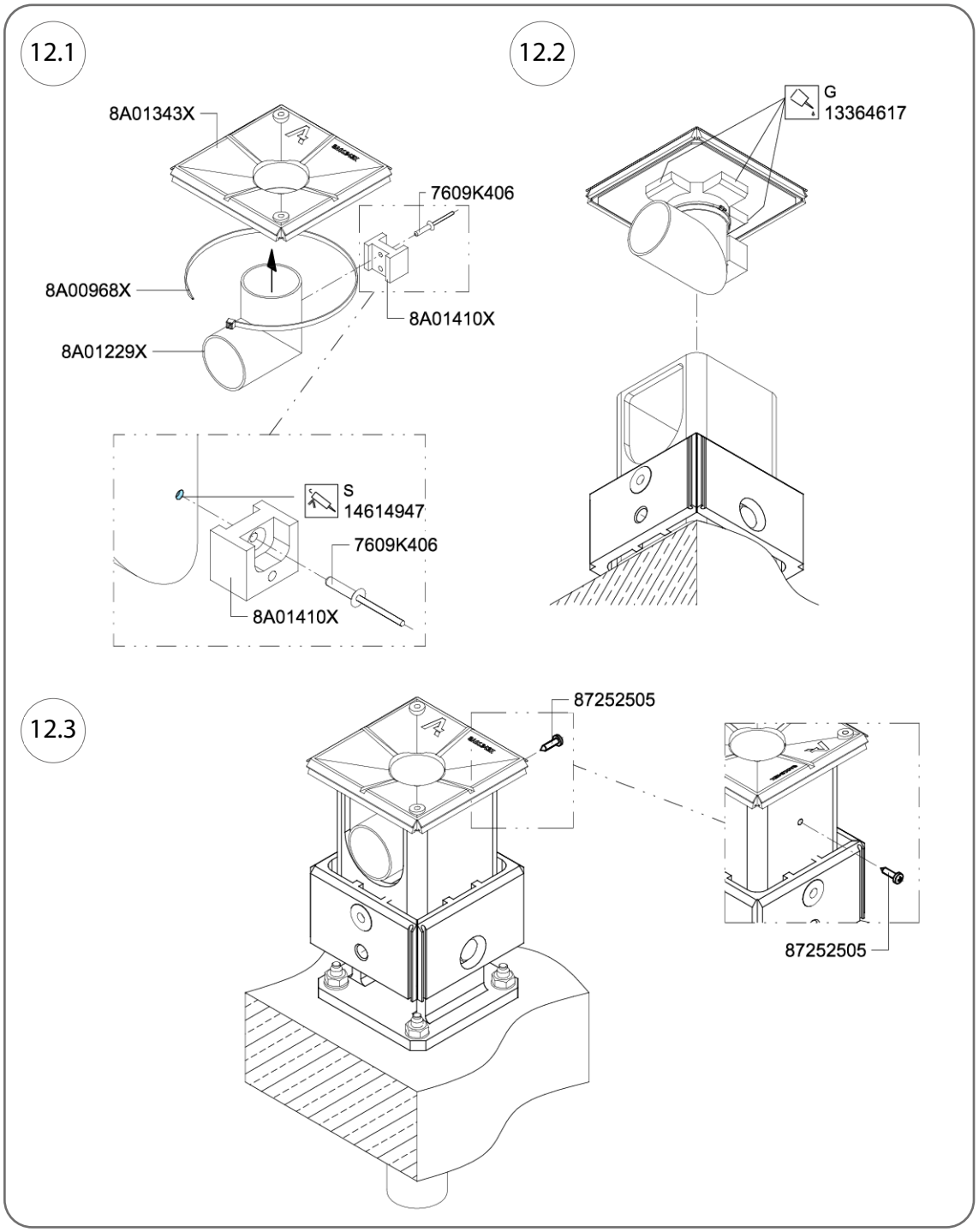


Fig. 12

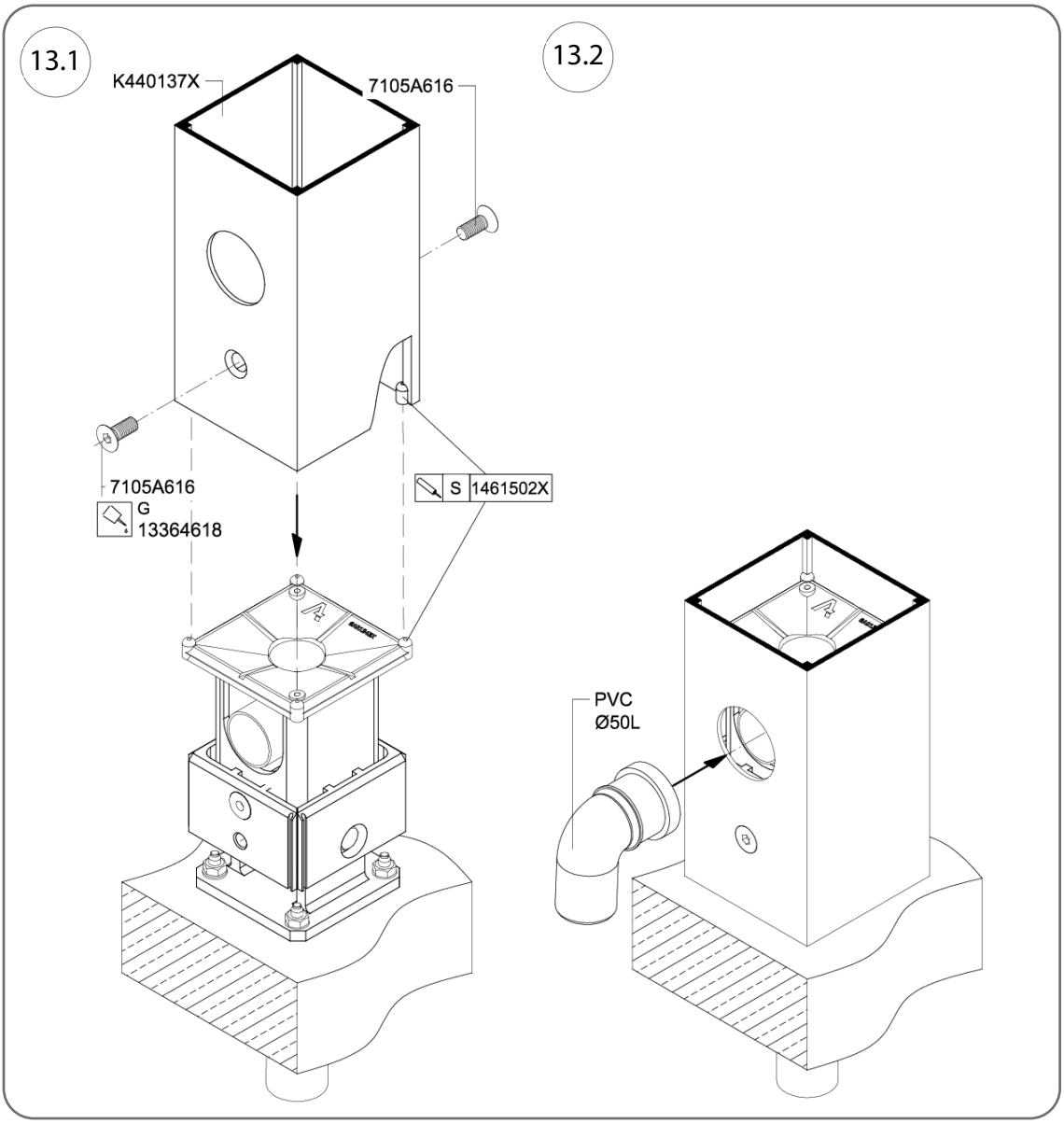

13.1
K440137X
7105A616
7105A616
G
13364618
S
1461502X
13.2
PVC
Ø50L

Fig. 13

5.4.3. Fastening brackets and posts with a concealed drainage system (node W1)

1. Mark out the position of the adapters with the post brackets in accordance with the pergola's design dimensions, then use a hole saw to drill a through hole (o 110 mm) in the decking.
2. Screw 4 M10 x 50 mm clamping screws (cat. no. 5701A617) into the adapter (cat. no. 8A01455X).
3. Remove the 2 M12 x 20 mm bolts from bracket no. 8A01473X and remove the bracket insert.
4. Fit the base of bracket 8A01473X onto the clamping screws and secure it to the adapter using M10 nuts with washers (cat. no. 80375304 + 80375305).
5. Level all brackets relative to the post installation point with the highest elevation; in the event of discrepancies, use 2 mm or 5 mm shims (cat. no. 8A01123X; 8A01124X), inserted between the adapter and the base of the bracket (Fig. 15).
6. Screw the steel bracket insert back into place using the M12 x 25 mm bolts removed earlier (apply thread sealant, cat. no. 13364618, to the bolts).
7. Screw 2 bracket spacers (cat. no. 8A00399X) to the insert using the hexagonal socket screws (conical), which have previously been removed from the steel insert.
8. Connect drainage spout cat. no. 8A01343X to a PVC pipe connector (o 50 x 250 mm), securing the joint with a clamp cat. no. 8A00968X.
9. Coat the upper edge of the bracket with silicone, cat. no. 1461502X, and insert the drainage pipe into the bracket.
10. Connect the pergola posts K440137X to the purlin or rafter K440141X or to the intermediate rafter K440139X to form a 'gate'.
11. Place the K440137X pergola posts onto the brackets and secure each one to the bracket with 2 Allen screws, cat. no. 7105A616 M12 x 30 mm; coat the screws with thread sealant, cat. no. 13364618.

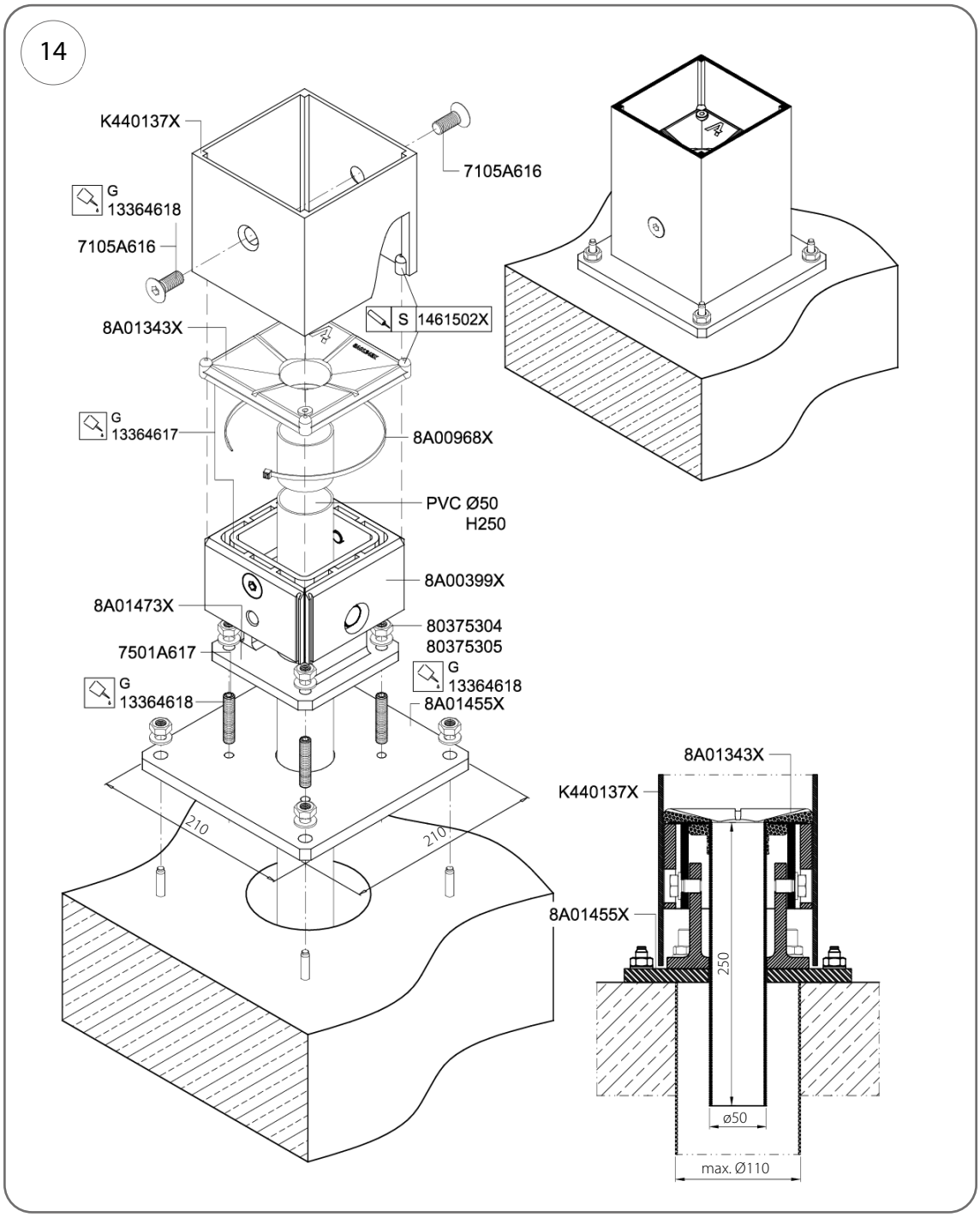


Fig. 14

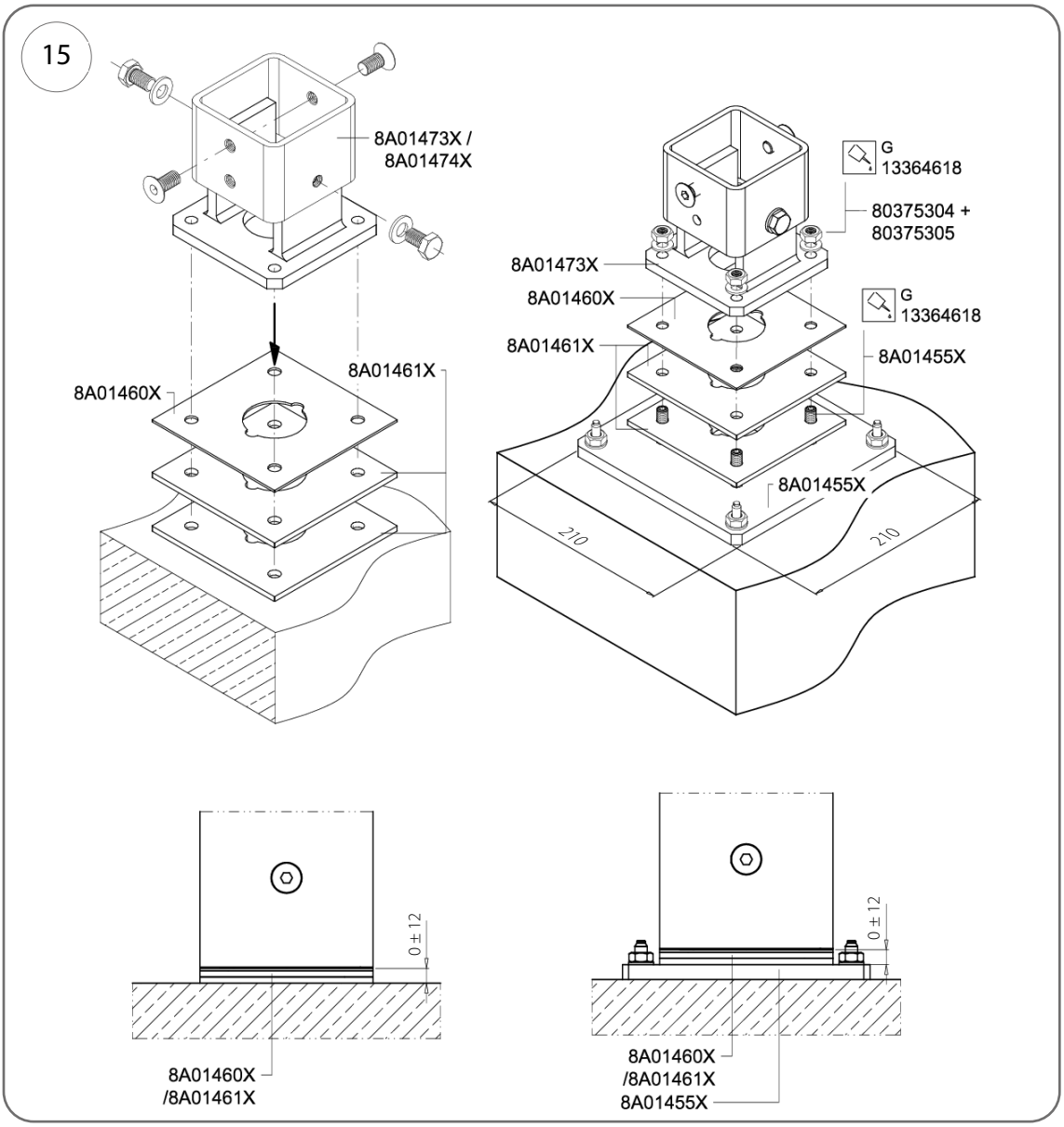

15
8A01473X /
8A01474X
8A01460X
8A01461X
G
13364618
80375304 +
80375305
8A01473X
8A01460X
G
13364618
8A01461X
8A01455X
8A01455X
210
210
0 ± 12
8A01460X
/8A01461X
0 ± 12
8A01460X
/8A01461X
8A01455X

Fig. 15

5.4.4. Fastening brackets and posts without a drainage system (node W3)

1. Remove the 2 M12 x 20 mm screws from console no. 8A00848X and remove the console insert.
2. Plan the mounting locations for the bracket set, check their level; if there are greater differences than assumed in the design, use 2 or 5 mm shims (cat. no. 8A01123X; 8A01124X).
3. Ensure that the brackets tilt in the same axis.
4. Screw the 8A00848X bracket base to the foundation using 4 M10 bolts.
5. Replace the console insert, securing it with the screws removed earlier.
6. Remove the 2 Allen screws (cat. no. 80379975, M10 x 20 mm) from the bracket assembly, apply thread sealant (cat. no. 13364618) to them, and use them to screw on the 2 bracket spacers (cat. no. 8A00399X).
7. Connect 2 pergola posts K440137X to the purlin or rafter K440641X to form a "gate".
8. Fit the K440137X pergola posts onto the brackets and secure each one to the bracket using 2 Allen screws, cat. no. 7105A616; coat the screws with thread sealant, cat. no. 13364618.

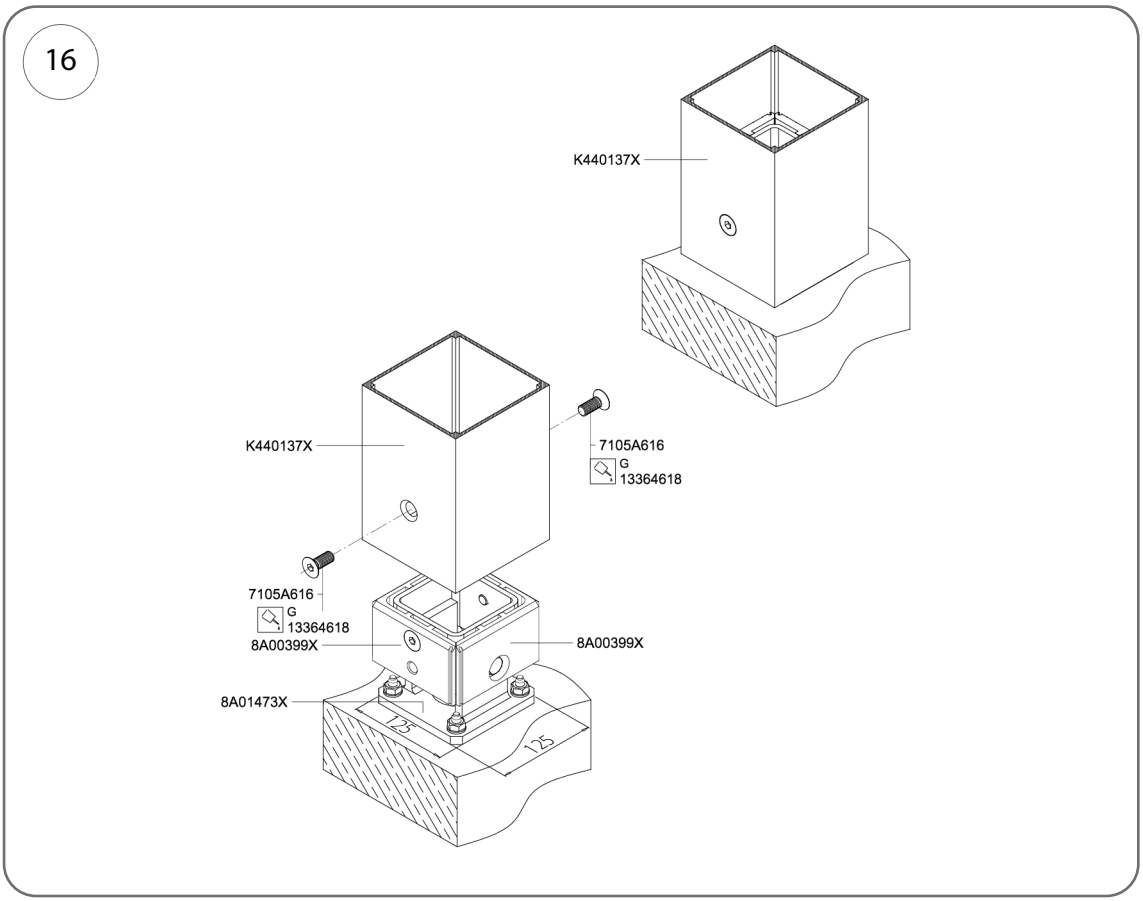


Fig. 16

5.4.5. Fixing intermediate posts of a free-standing pergola (joint W15)

1. Remove the 2 M12 x 20 mm bolts from the bracket (cat. no. 8A01478X) and remove the steel bracket insert.
2. Screw the bracket base (cat. no. 8A01478X) to the foundation using 2 M10 bolt anchors.
3. Replace the console insert, securing it with the screws removed earlier.
4. From the bracket, remove the 2 Allen screws (cat. no. 80379975, M10 x 20 mm), apply thread sealant (cat. no. 13364618) to them and use them to secure the 2 bracket spacers (cat. no. 8A00399X).
5. Carry out the operation of connecting the post to the bracket in accordance with Fig. 17 and Fig. 18.
6. Fit the K440137X pergola post onto the bracket and secure it to the bracket using 2 Allen screws (cat. no. 7105A616, M12x30 mm); coat the screws with thread sealant (cat. no. 13364618) (Fig. 14).

Before securing the intermediate post to the bracket, attach post connector cat. no. 8A00889X (Fig. 19, Fig. 20) to its upper end using 2 M12x30 mm screws (cat. no. 7105A616).

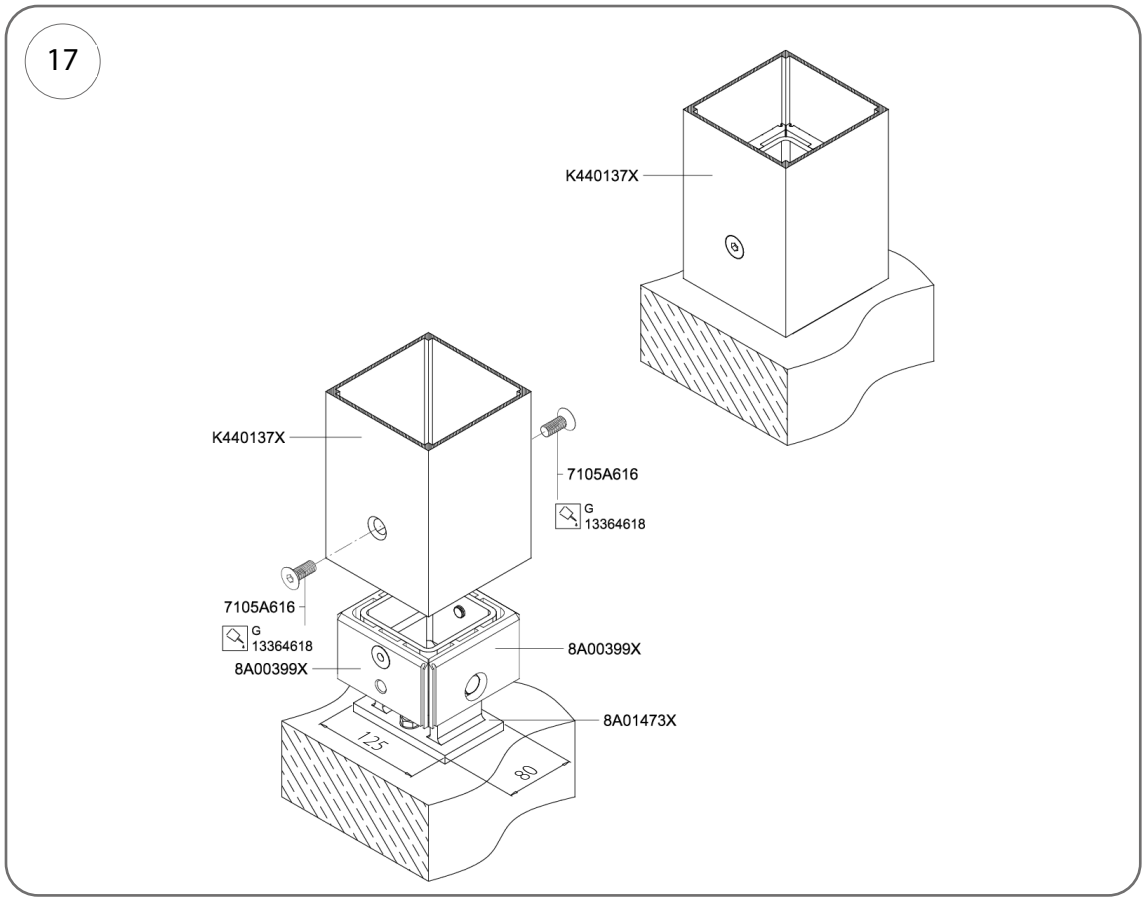


Fig. 17

5.4.6. Fixing an intermediate post to a rafter and purlin (joints W16, W17)

1. Protect the upper edges of the post (cat. no. K440137X) with plastic sheeting to avoid damaging the protective coating on the rafters or purlins.
2. Gradually straighten the intermediate post until the holes in the post connector and in the rafter or purlin align (Fig. 18).
3. Using 4 M8 x 20 mm Allen screws, cat. no. 7108A412, fasten the rafter or purlin profile to the connector, cat. no. 8A00889X, mounted in the post (Fig. 19 and Fig. 20).
4. Coat the screw threads with thread sealant (cat. no. 13364618) before tightening.

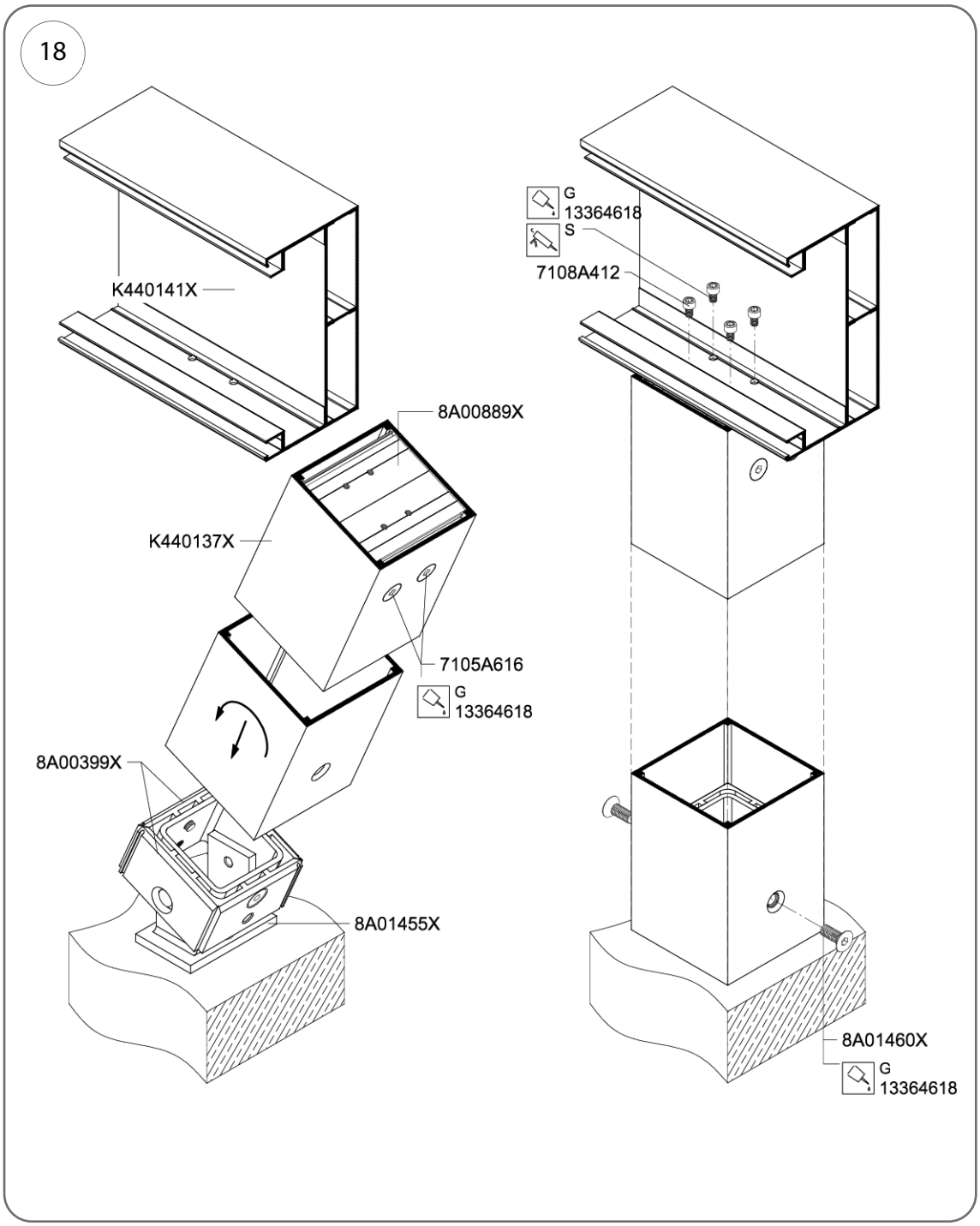


Fig. 18

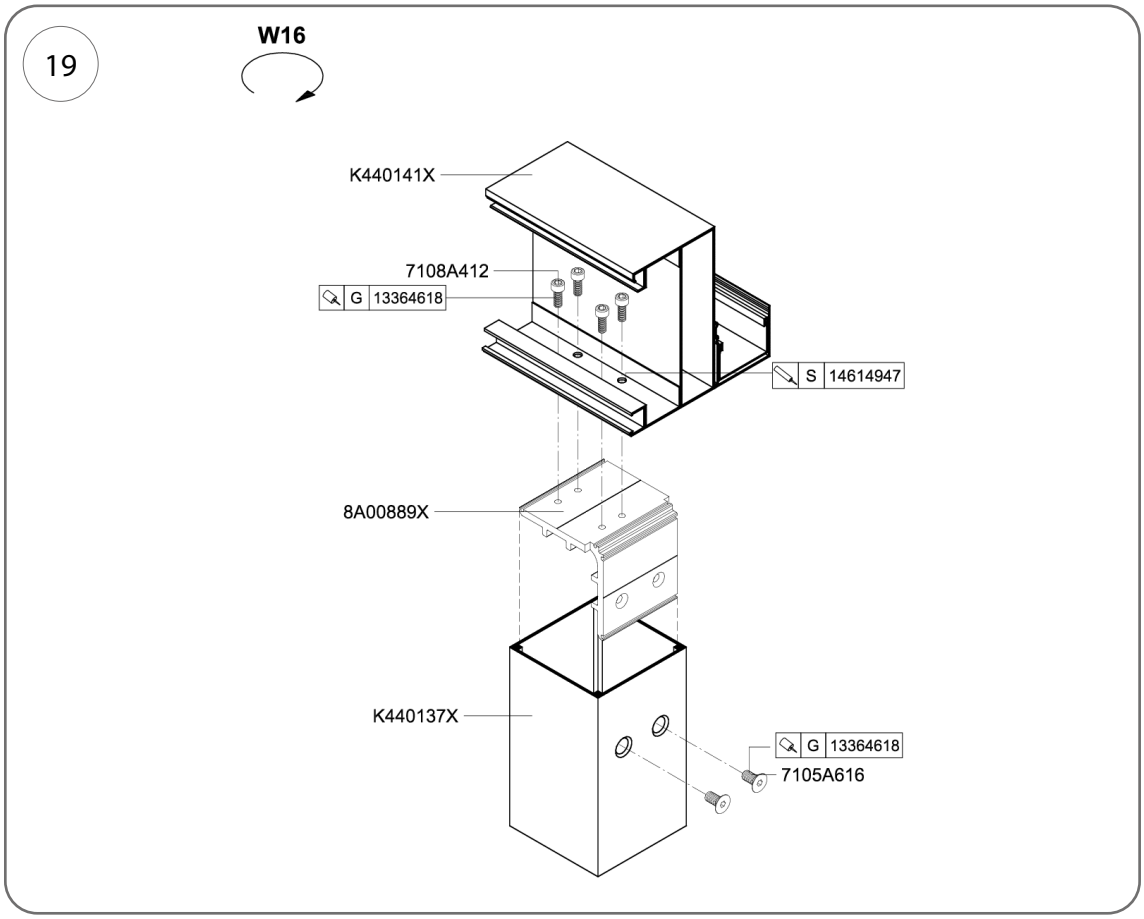

19
W16
K440141X
7108A412
G 13364618
S 14614947
8A00889X
K440137X
G 13364618
7105A616

Fig. 19

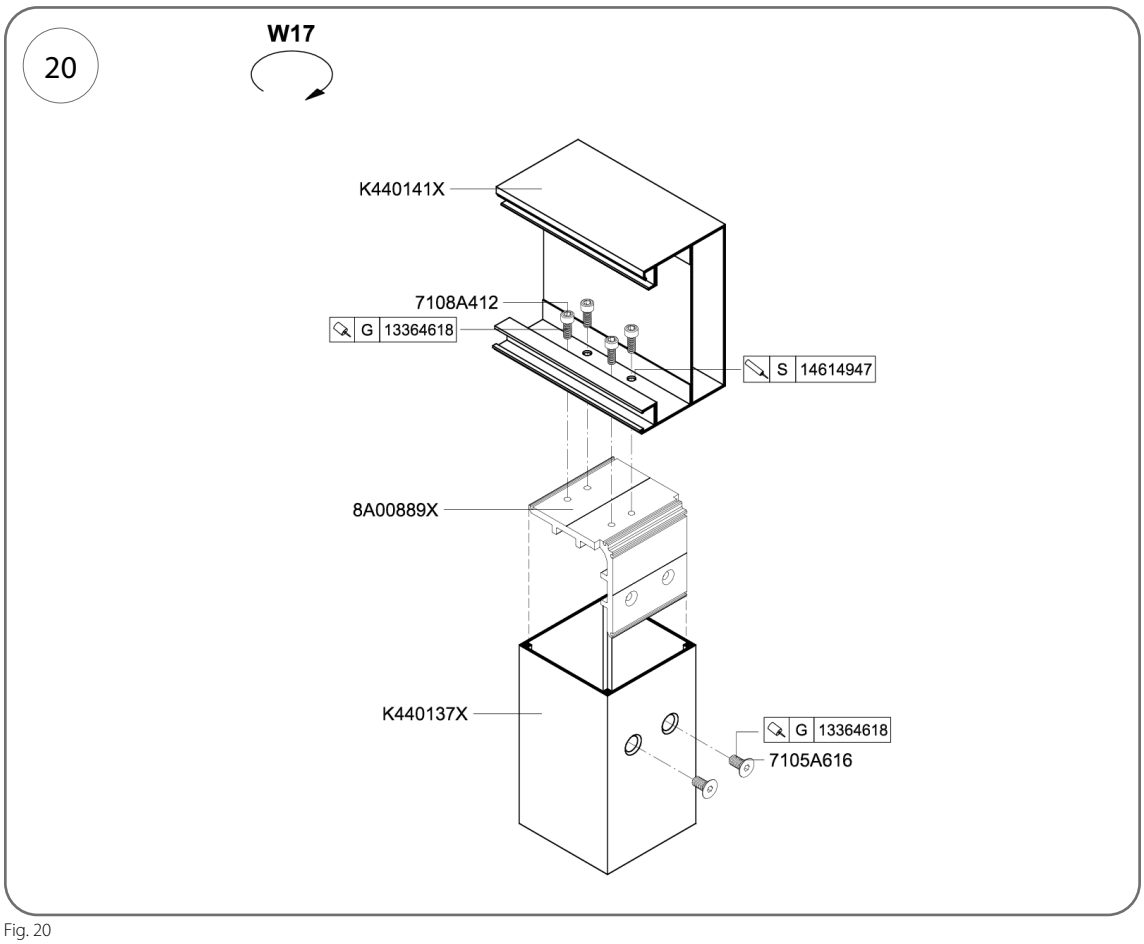

20
W17
K440141X
7108A412
G 13364618
S 14614947
8A00889X
K440137X
G 13364618
7105A616

Fig. 20

5.4.7. Fixing rafter and purlin connectors to posts (joints W2, W4)

1. Insert connector cat. no. 8A01258X (left) or 8A01259X (right) into the post.

2. At the top end of the post, use 4 bolts (cat. no. 7118A514 (M10 x 25 mm) to the rafter fixing connectors, cat. no. 8A01256X and 8A01257X, with the post connectors, cat. no. 8A01258X or 8A01259X (Fig. 21.1)

3. On the second, perpendicular side of the post, use 4 screws, cat. no. 7118A514 (M10 x 25 mm), to screw on an identical pair of connectors for fixing the purlins (Fig. 21.2).

4. Coat the threads of all screws with thread sealant, cat. no. 13364618.

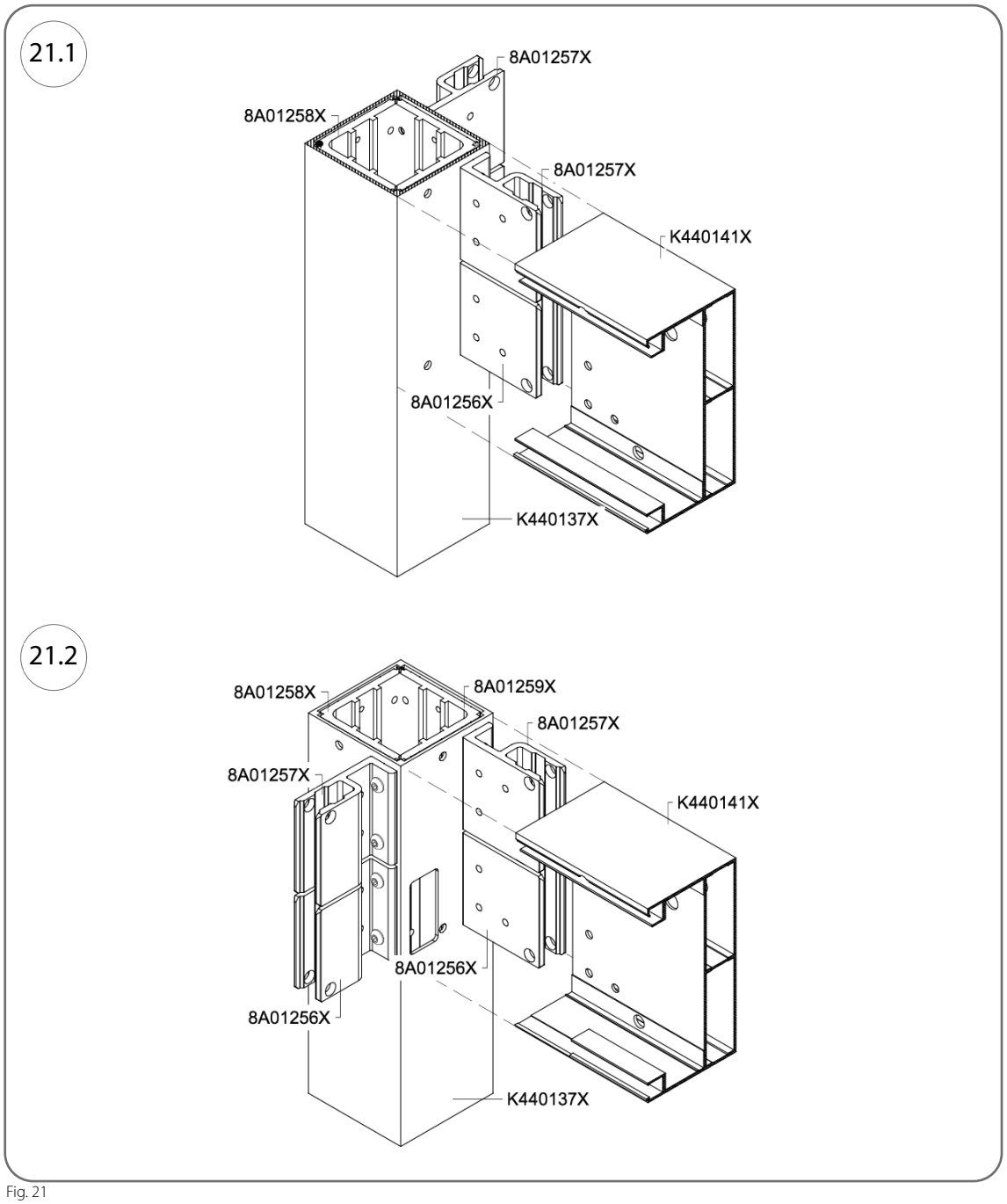


Fig. 21

5.4.8. Fixing connectors to rafter and purlin posts (joints W5, W6)

1. Insert connector 8A01351X (node W5) / 8A01258X (node W6) into the upper end of the post and secure with M10 x 25 mm bolts (cat. no. 7118L214) 2 rows of connectors, cat. no. 8A001470, for the intermediate rafter and purlin connectors, in the following order from the top: cat. no. 8A01256X + 8A01257X.

2. Insert connector no. 8A01352X (node W6) / 8A01353X (node W6) and secure the purlin connectors with M10 x 25 mm bolts (cat. no. 7118L214), in the following order from the top: cat. no. 8A01256X + 8A01257X.

3. Coat the threads of all screws with thread sealant, cat. no. 13364618.

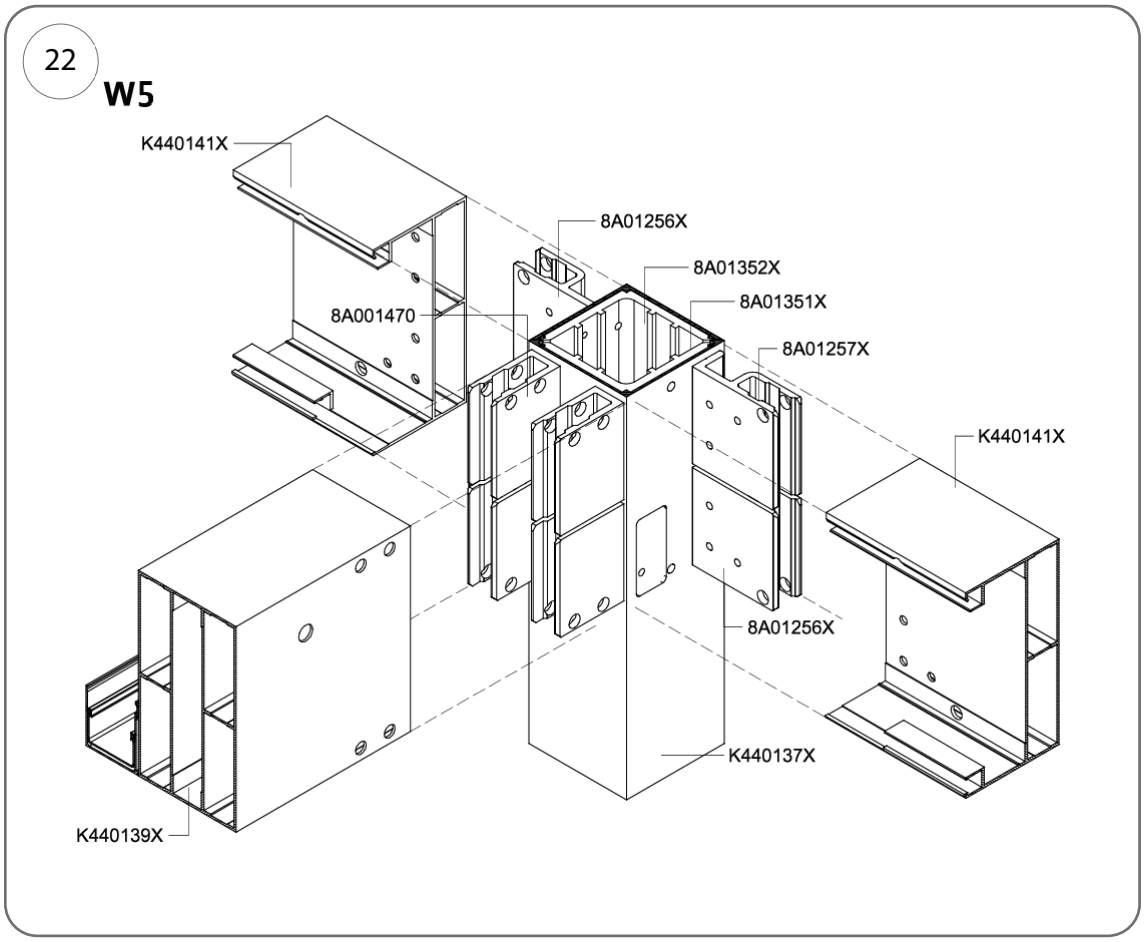


Fig. 22

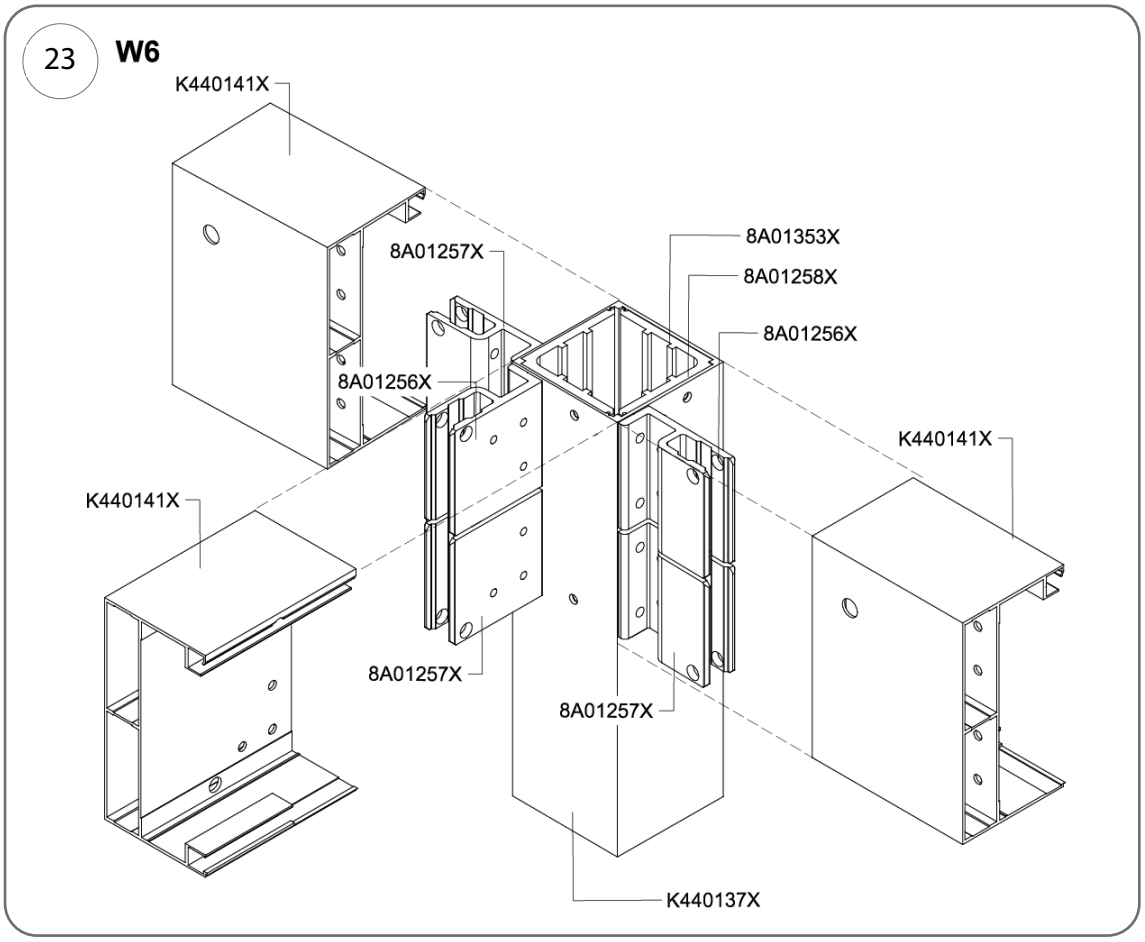


Fig. 23

5.4.9. Fixing posts to rafters (joints W2, W4)

1. Press the active and passive slotted sleeves for the slat axles (cat. no. 8A01084X) into the holes in the rafters (press the 8A01084X sleeves into the first, outermost holes in the rafters after connecting the rafters to the posts).
2. On the rafter from the working side, press flanged sleeves (cat. no. 8A00807X) into one of the holes where the drive lever will be fitted, on both sides of the hole.
3. Using 3 M8 x 12 mm screws (cat. no. 7118A406), screw the actuator bracket (cat. no. 8A01355X) to the rafter.
4. Fit the purlins onto the fasteners secured in accordance with Fig. 22 and Fig. 23 to connect them to the posts.
5. Insert two pins (cat. no. 8A01260X, o 15 x 114 mm) into the prepared holes in the rafters and connectors.
6. Pass bolts Cat. No. 80371262 (M8 x 90 mm) through the holes in the pins 8A01260X and screw them into the walls of the post connectors cat. no. 8A01258X (left) or 8A01259X (right) in nodes W2 and W4, or into connectors cat. no. 8A01353X and 8A01258X in the case of node W6 (Fig. 23) with an intermediate purlin, double-bay longitudinal pergola.
7. Screw each rafter to the aforementioned connectors using 6 bolts, cat. no. 7118A512 (M10 x 20 mm) and washers, o 10 mm, cat. no. 80375304; coat the bolt threads with thread sealant, cat. no. 13364618.

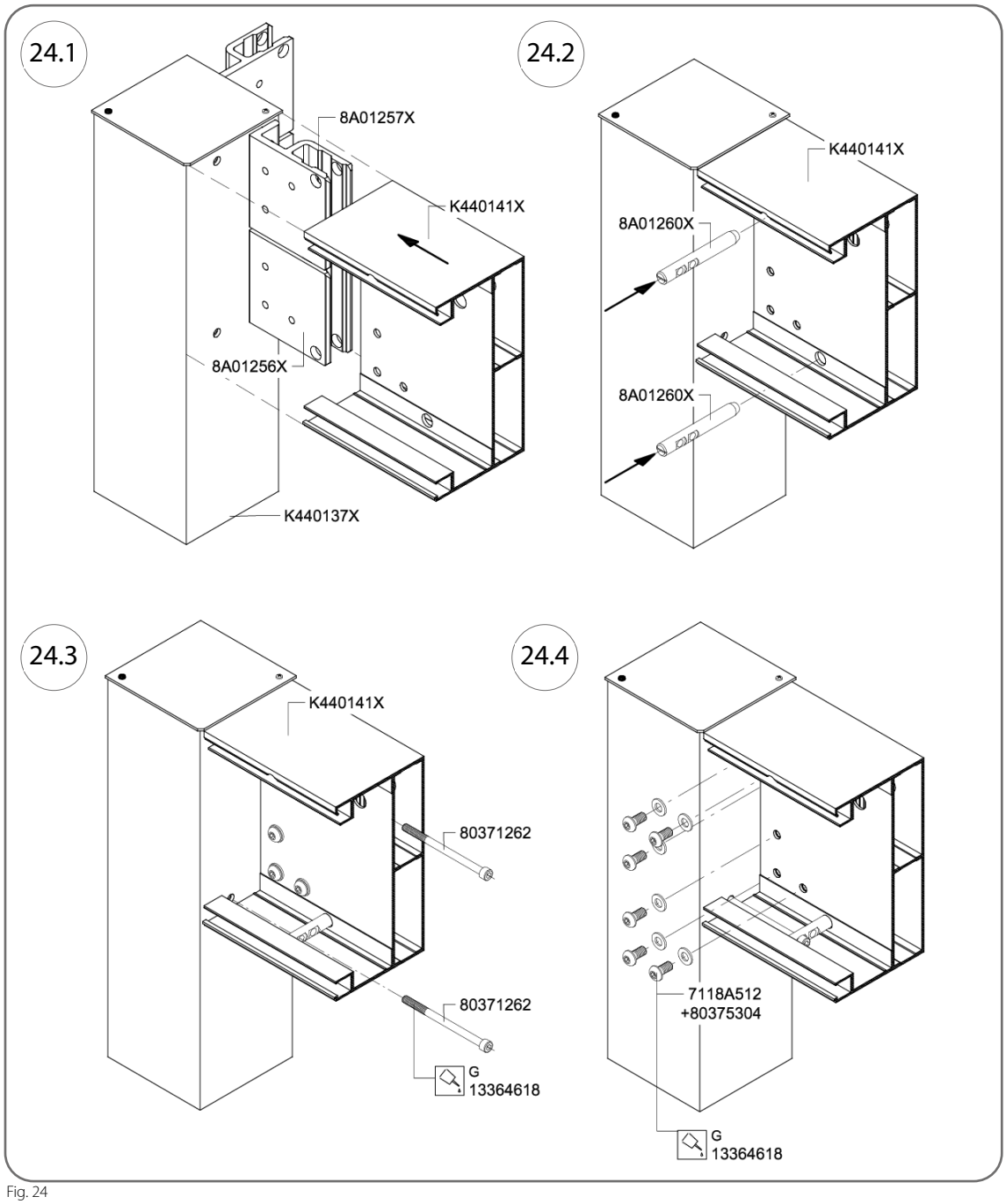


Fig. 24

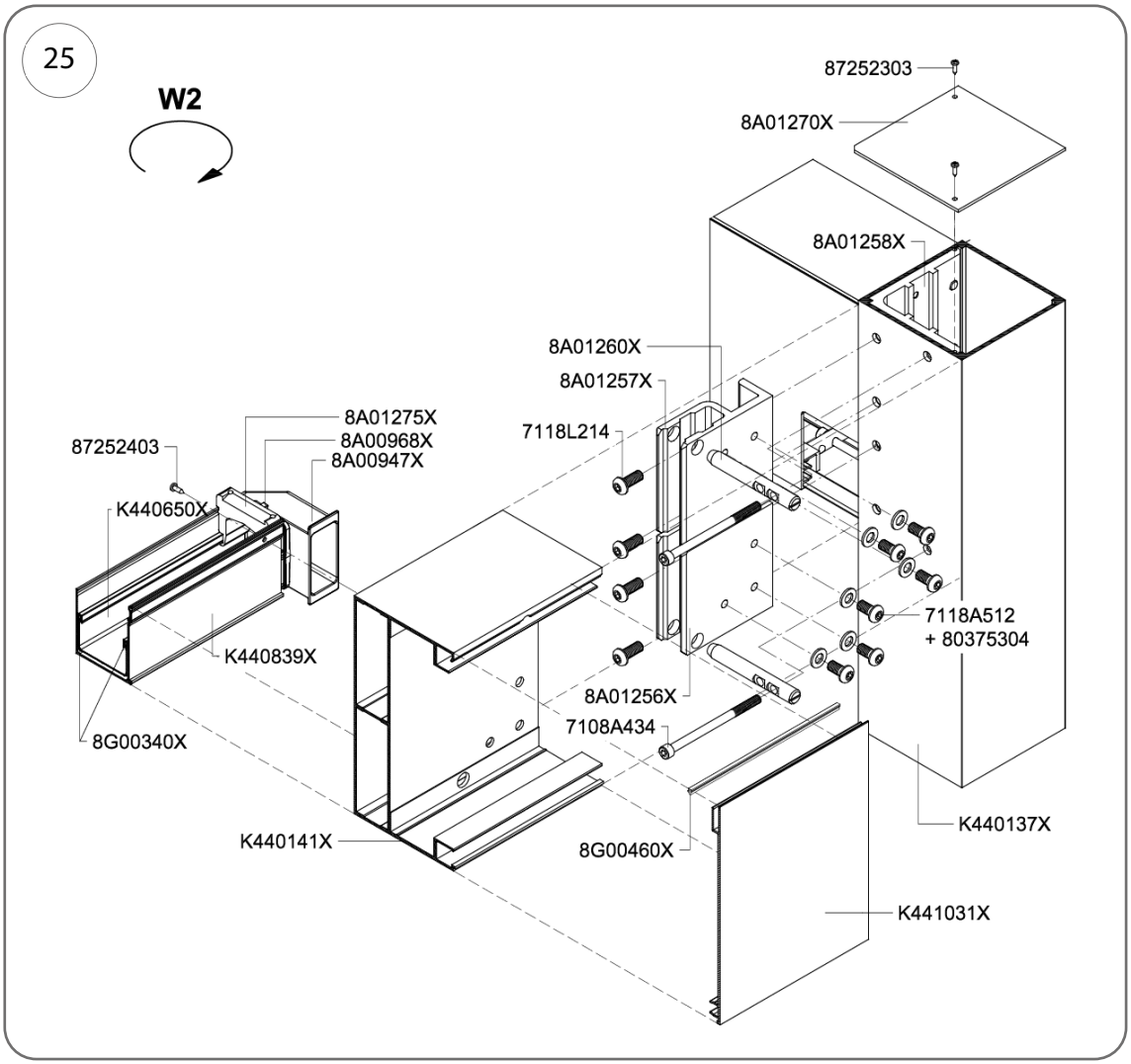


Fig. 25

5.4.10. Fastening of an intermediate rafter to a post (joint W5)

1. To make the connection, slide the intermediate rafter (cat. no. K440139X) onto the connectors (cat. no. 8A001470) and, through the double-sided holes in the rafter profile, insert 4 sets of intermediate rafter pins (cat. no. 8A001490X, and then screw the two parts of the pin together (as shown in Fig. 26 and Fig. 27, operation no. 27.2).

2. Before fixing the intermediate rafter K440139X to the posts, press the slat axle sleeves (cat. no. 8A01084X) into the holes on both sides of the rafter, and into the rafter on the working side, additionally press the flanged sleeve (cat. no. 8A00807X) of the drive lever.

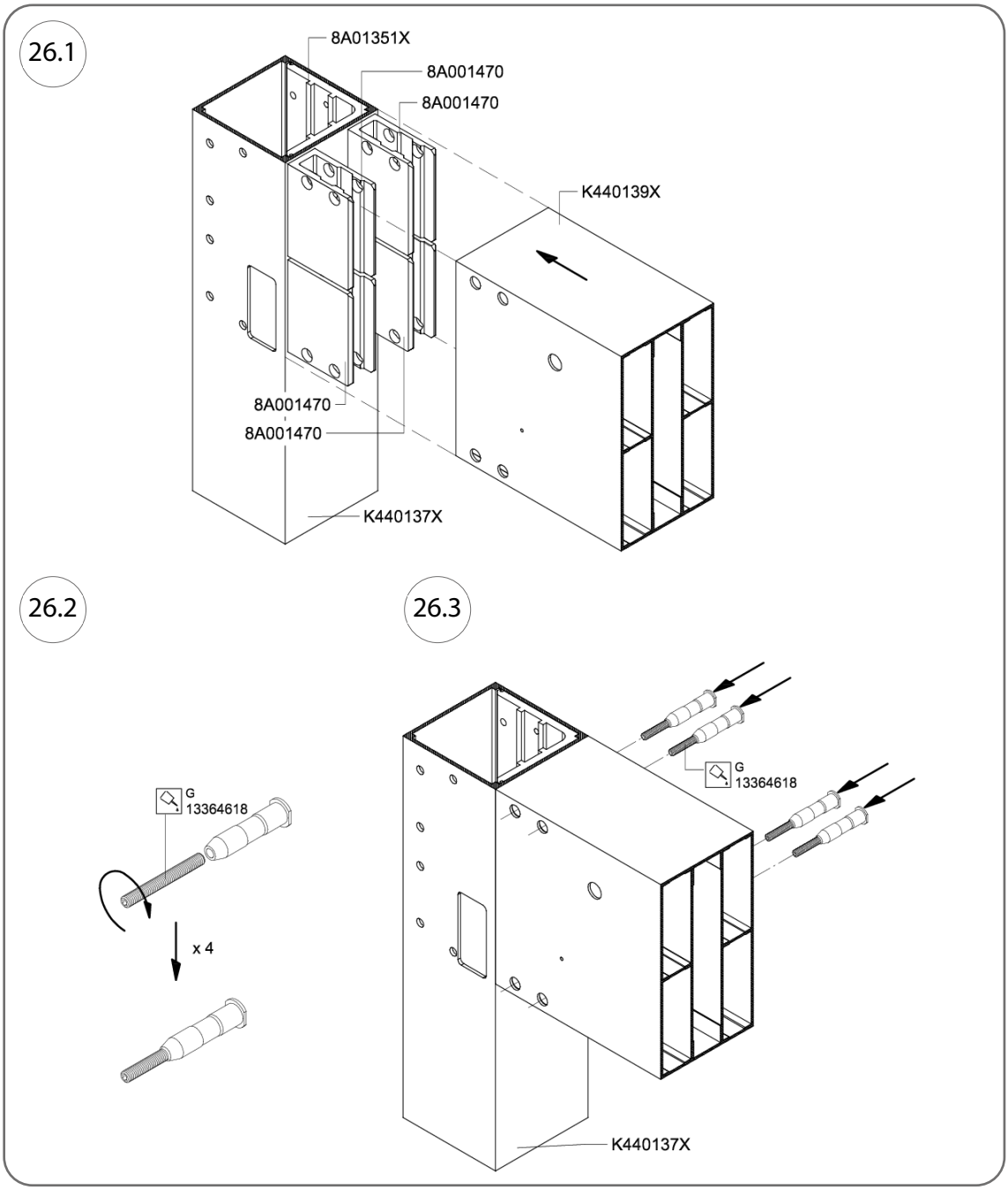


Fig. 26

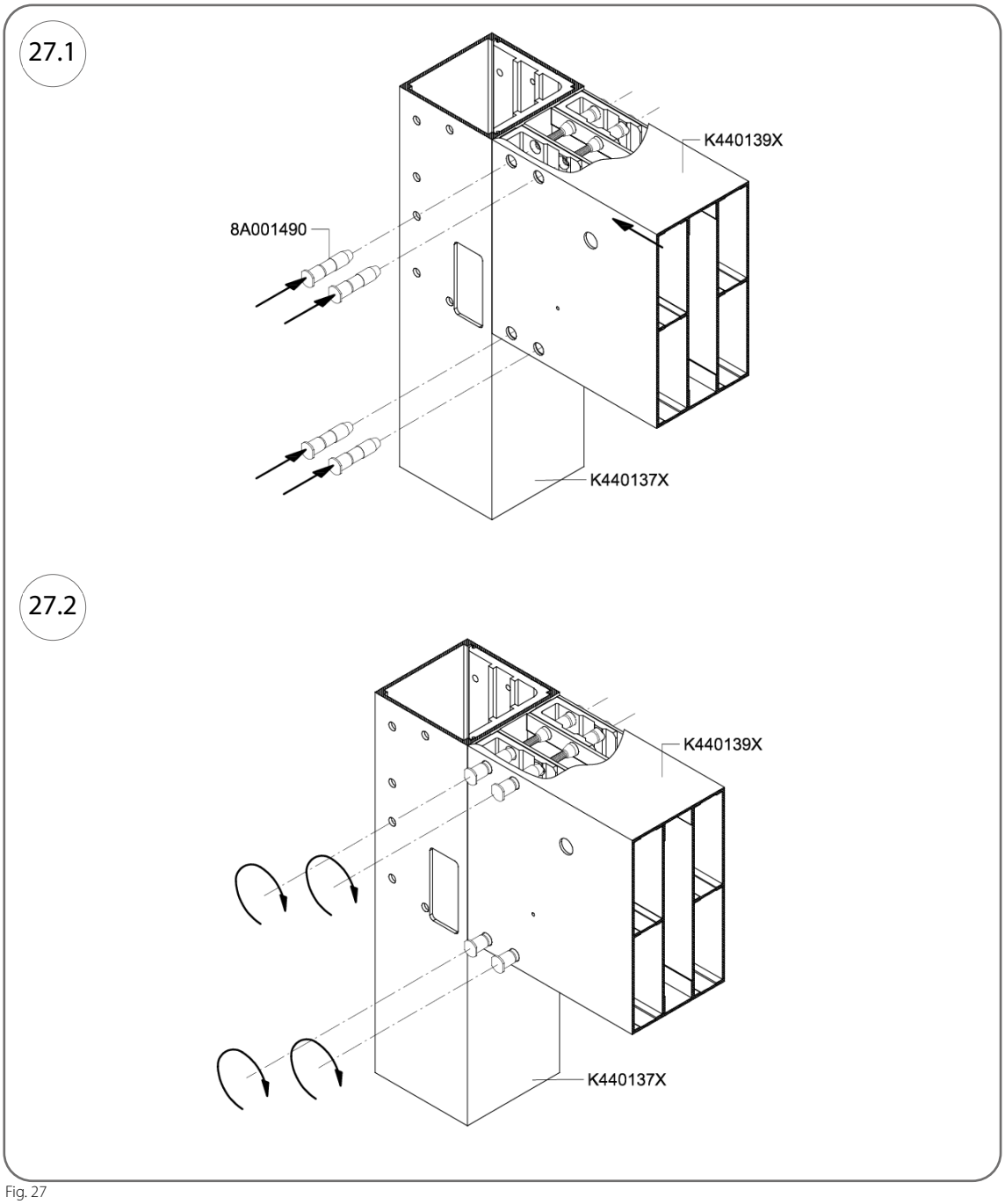


Fig. 27

28

W5

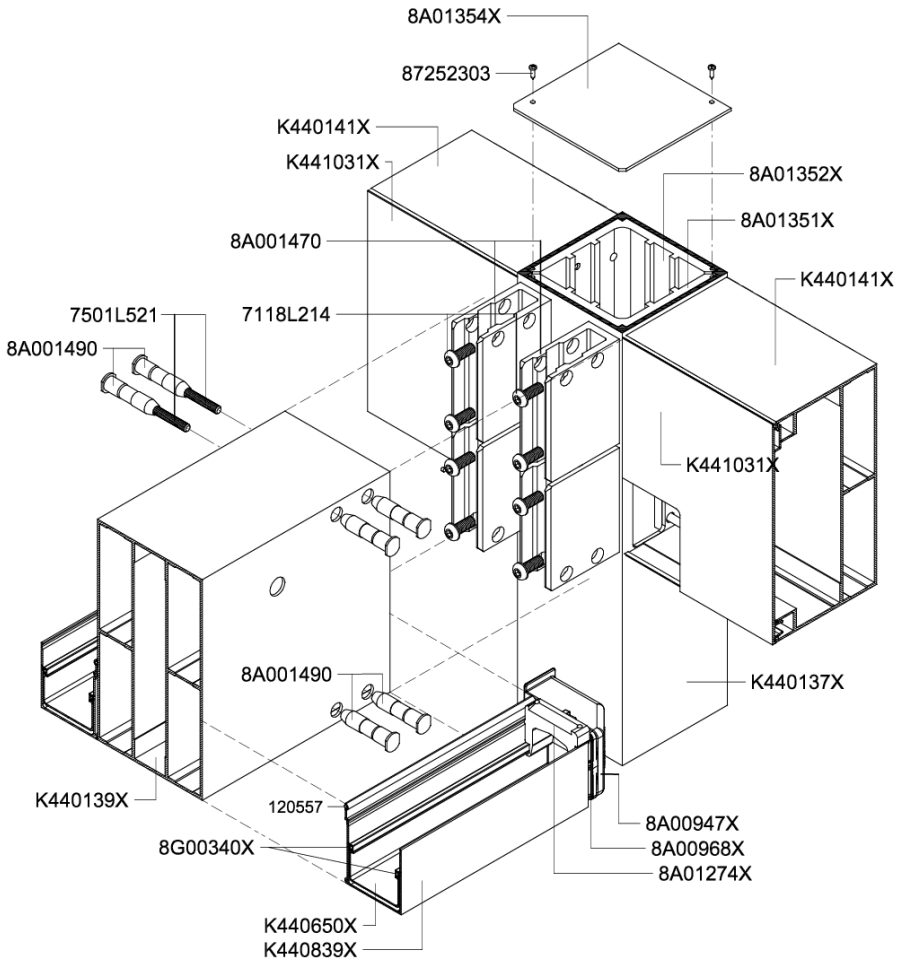

8A01354X
87252303
K440141X
K441031X
8A01352X
8A01351X
8A001470
K440141X
7501L521
7118L214
8A001490
K441031X
8A001490
K440137X
K440139X
120557
8A00947X
8G00340X
8A00968X
8A01274X
K440650X
K440839X

Fig. 28

5.4.11. Fixing purlins to posts (joint W2, W4)

1. Place the purlins onto the fasteners secured in accordance with Fig. 21, Fig. 22 and Fig. 23 to connect them to the posts.
2. Drive 2 pins, cat. no. 8A01260X (o 15 x 114 mm), into the prepared holes in the purlins and connectors, cat. no. 8A01256X (lower) or 8A01257X (upper).
3. Pass the screws (cat. no. 7108A434, M8 x 120 mm) through the holes in the pins (cat. no. 8A01260X) and screw them into the wall of the post connector (cat. no. 8A00850X for the left-hand side or 8A00851X for the right-hand side).
4. Screw each purlin to the above-mentioned fasteners using 6 bolts, cat. no. 7118A512 (M10 x 20 mm) and washers, o10 mm, cat. no. 80375304; coat the bolt threads with thread sealant, cat. no. 13364618.

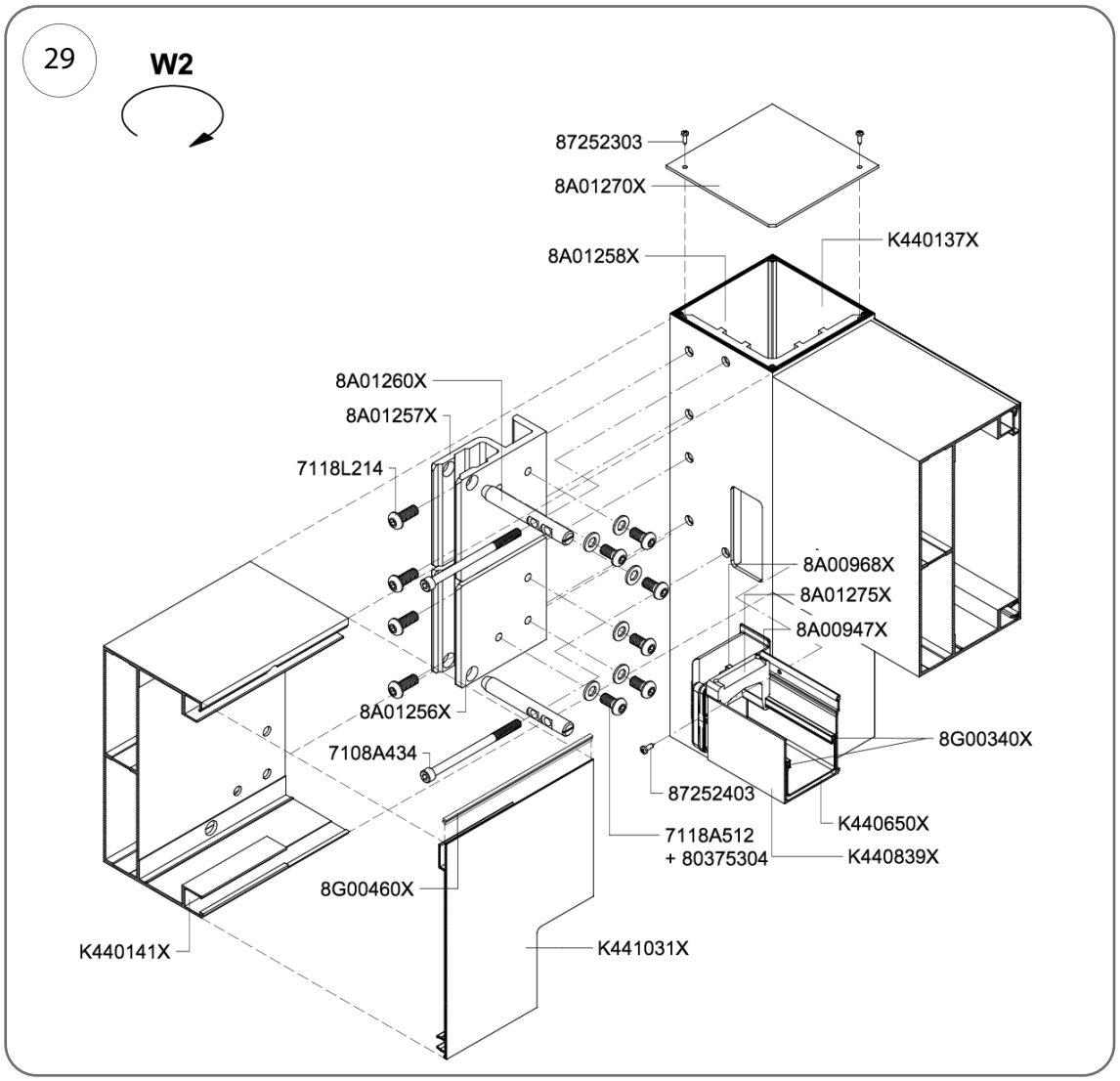


Fig. 29

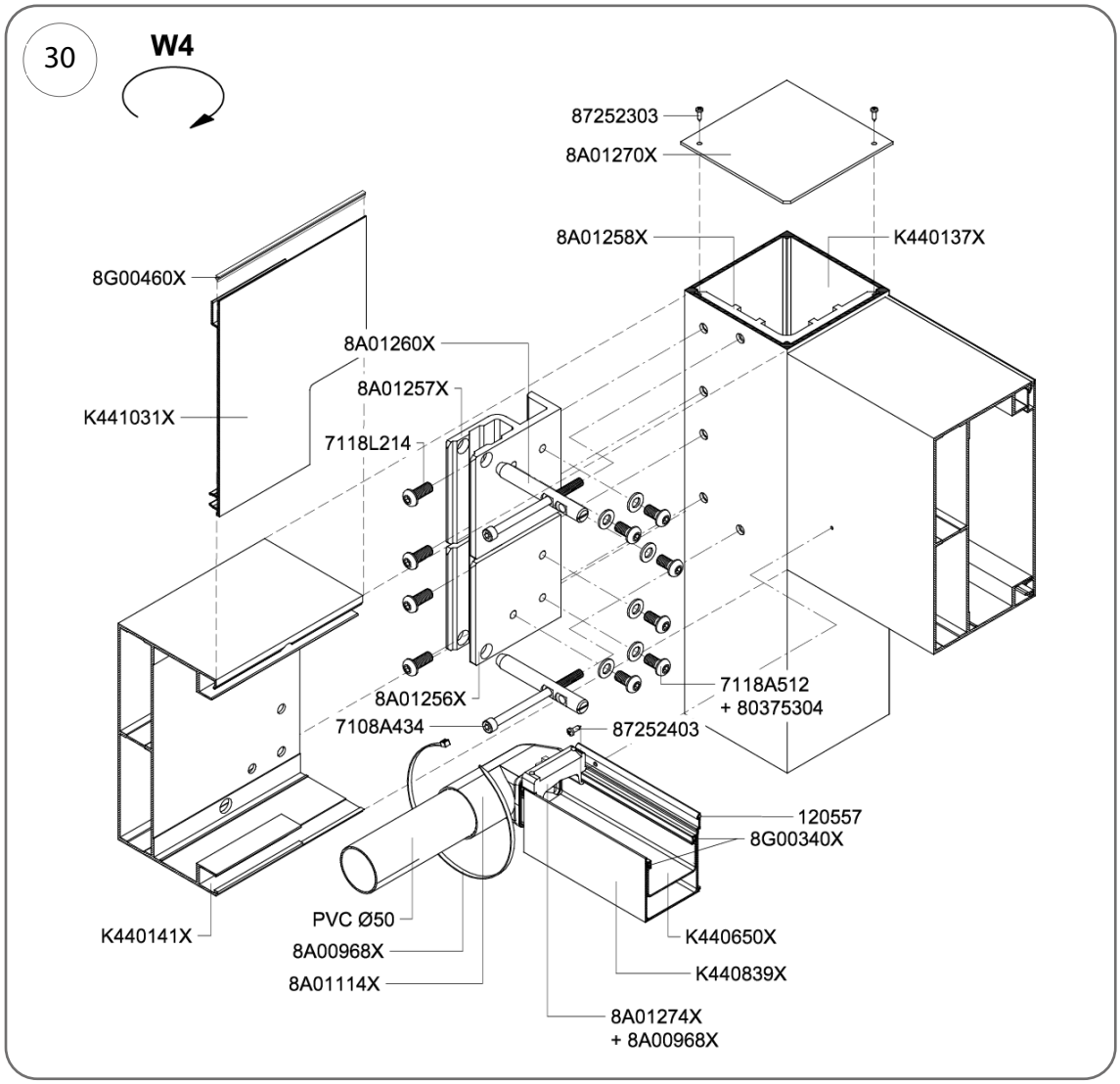

30
W4
87252303
8A01270X
8A01258X
K440137X
8G00460X
8A01260X
8A01257X
K441031X
7118L214
8A01256X
7108A434
7118A512
+ 80375304
87252403
120557
8G00340X
K440141X
PVC Ø50
8A00968X
8A01114X
K440650X
K440839X
8A01274X
+ 8A00968X

Fig. 30

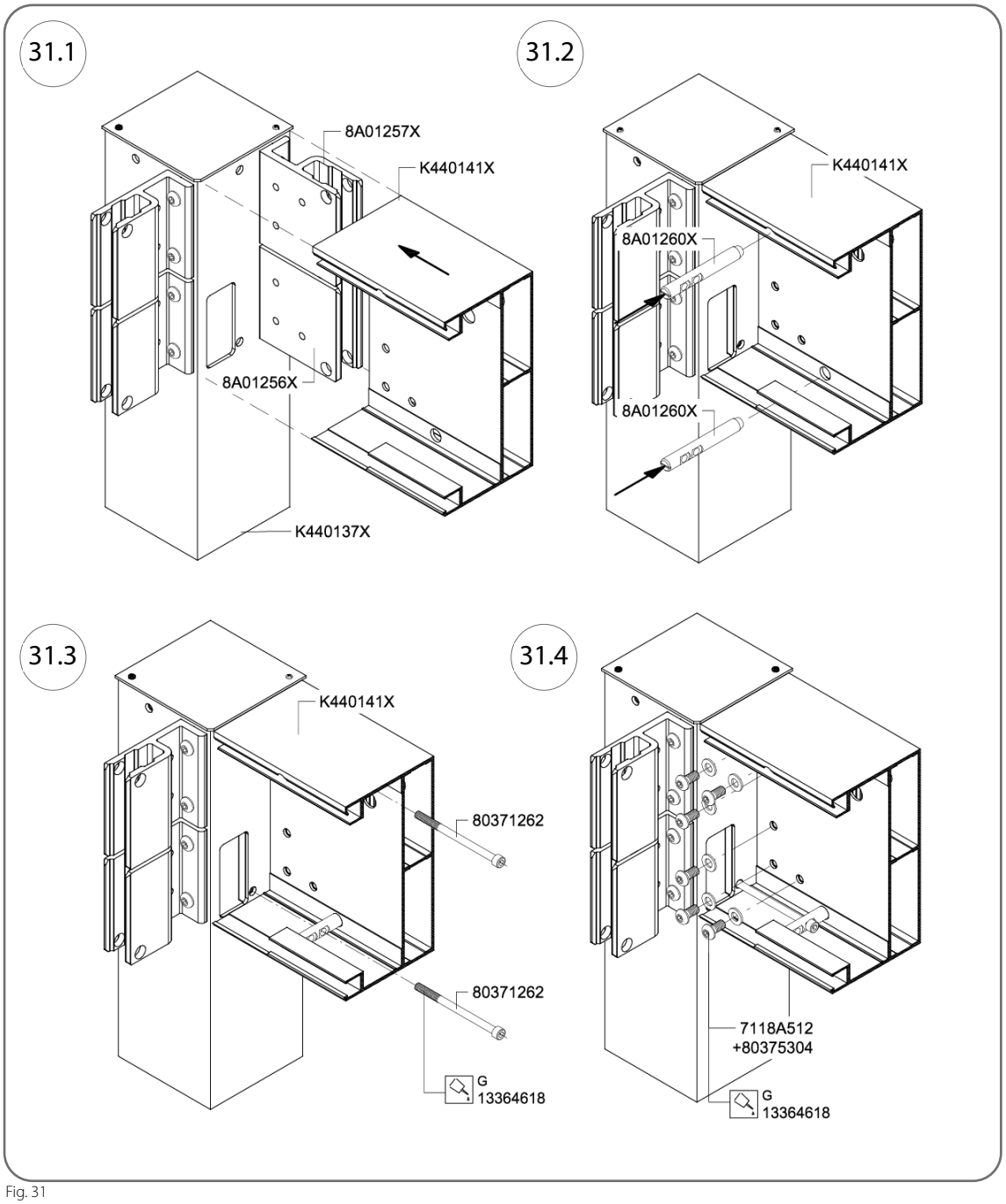


Fig. 31

5.4.12. Fixing purlins to posts in double-span pergolas (joints W5, W6)

1. Place the purlins onto the fasteners secured in accordance with Fig. 21, Fig. 22 and Fig. 23 to connect them to the posts.

2. Drive 2 pins, cat. no. 8A01260X (o 15 x 114 mm), into the prepared holes in the purlins and connectors, cat. no. 8A01256X (lower) or 8A01257X (upper).

3. Pass the screws (cat. no. 7108A434) (M8 x 120 mm) through the holes in the pins 8A01260X and screw them into the side of the intermediate column connectors 8A01351X and 8A01352X in the case of node W5 with an intermediate rafter (Fig. 32), or pass bolts (cat. no. 7108A434, M8 x 120 mm) through the holes in the pins 8A01260X and screw them into the side of the intermediate column connector 8A0101258X in the case of node W6 with an intermediate purlin (Fig. 33).

4. Screw each purlin to the above-mentioned fasteners using 6 bolts, cat. no. 7118A512 (M10 x 20 mm) and washers, o10 mm, cat. no. 80375304; coat the bolt threads with thread sealant, cat. no. 13364618.

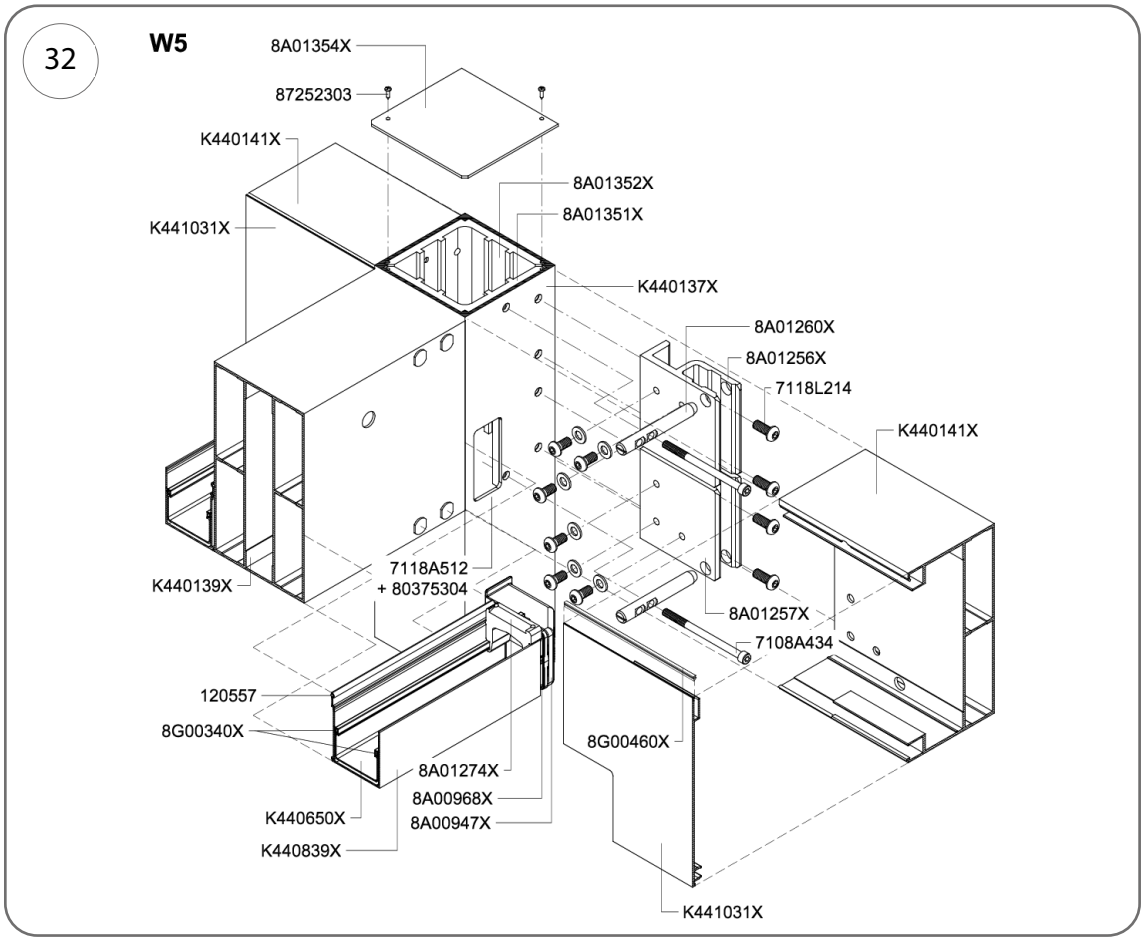


Fig. 32

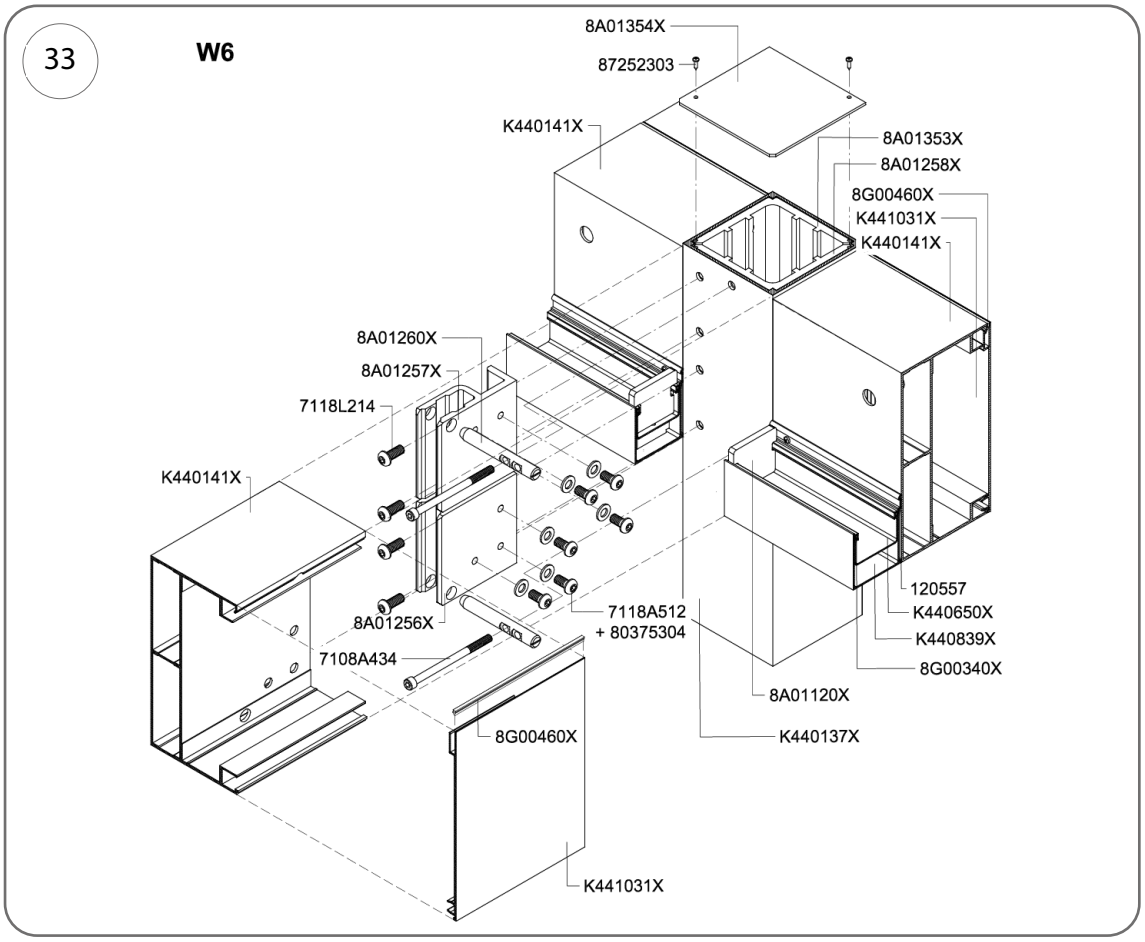
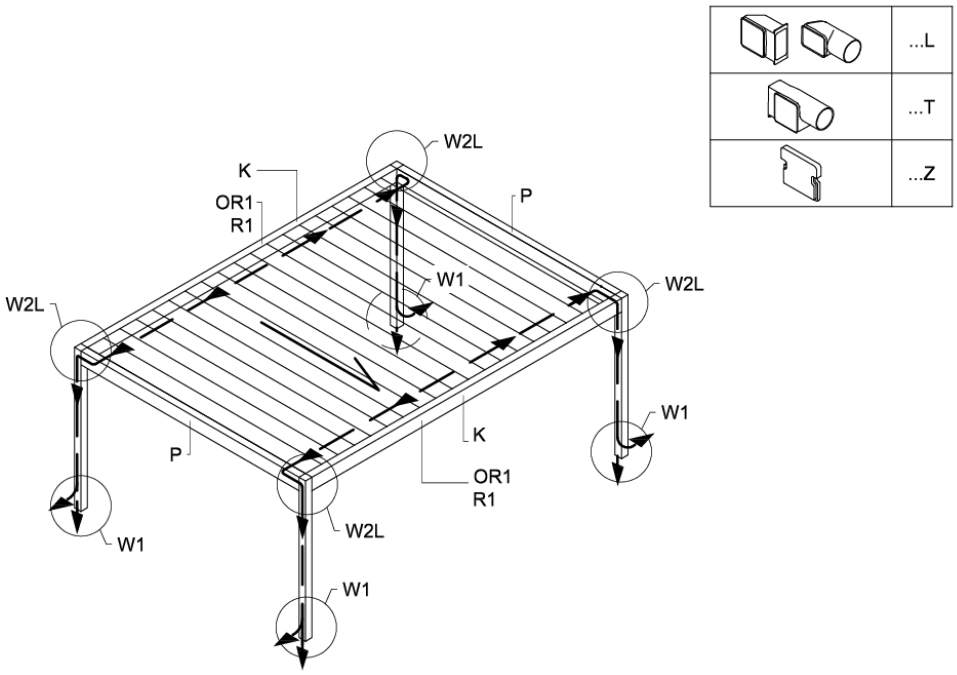


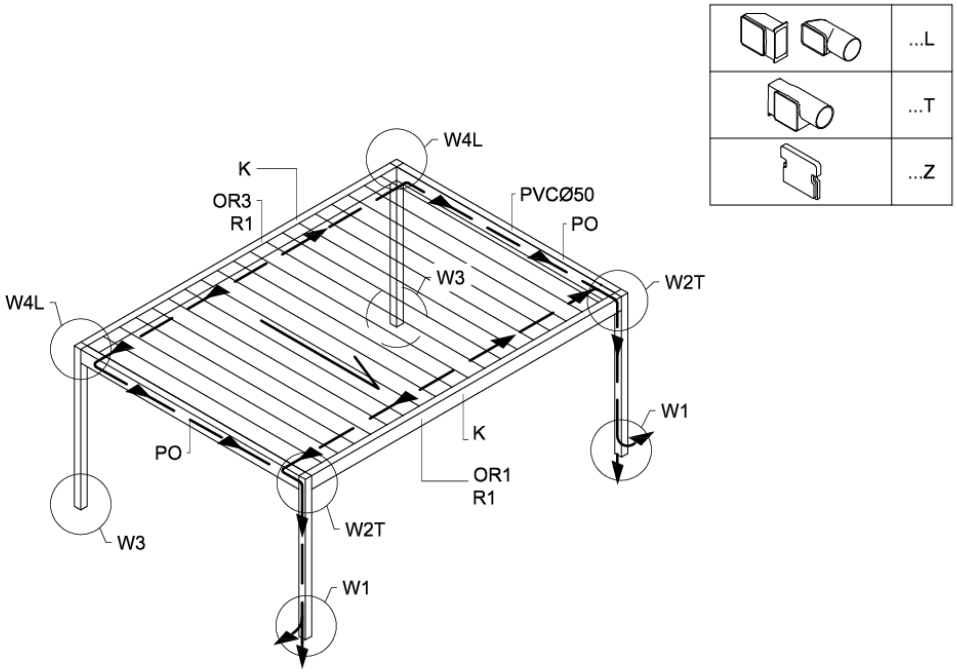
Fig. 33

5.5. Guttering and drainage systems for pergola roofs

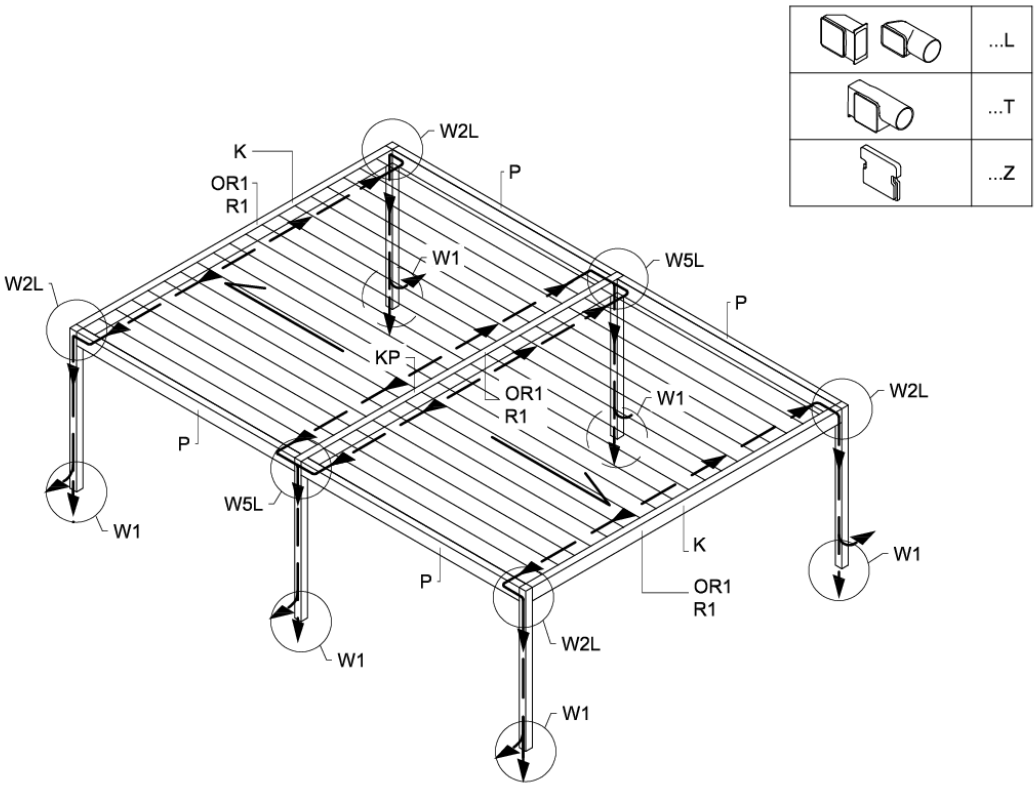
5.5.1. Free-standing pergola – drainage using 4 posts



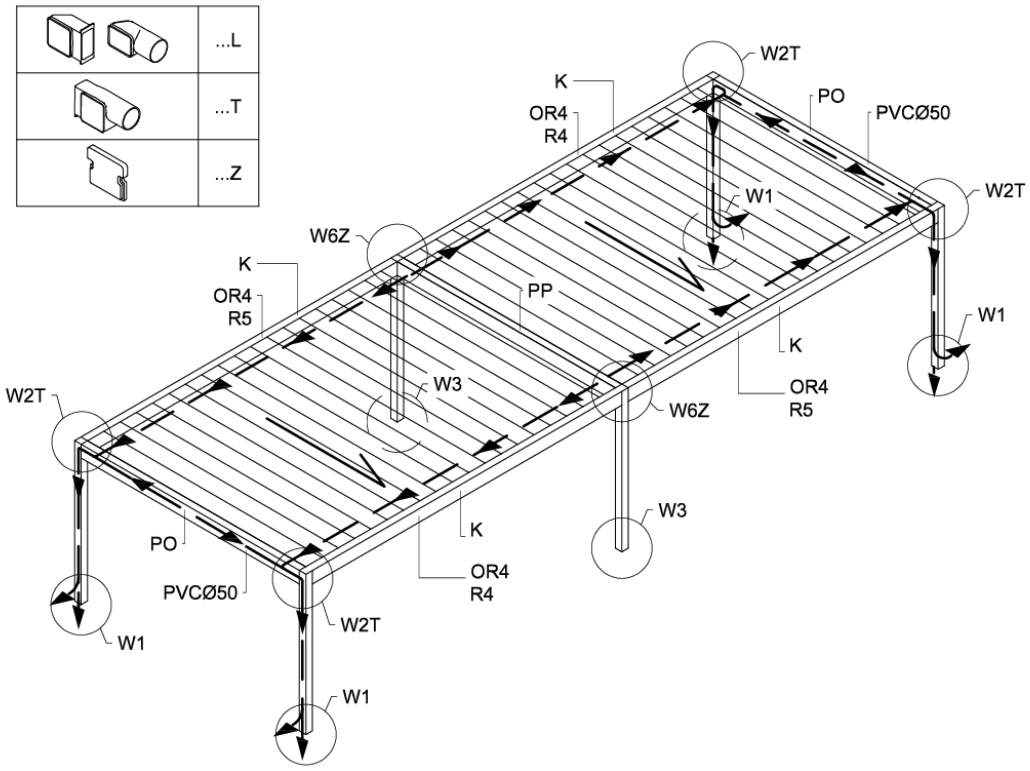
5.5.2. Free-standing pergola - drainage using 2 posts



5.5.3. Free-standing double transverse pergola



5.3.4. Freestanding double-wing longitudinal pergola



5.5.5. Installation of gutters (knot W2L, W2T, W4L, W5L, W6Z)

Two complete gutter assemblies are supplied for installation, consisting of K440650X gutter sections mounted in a gutter housing made of K440651X or K440839X sections.

Depending on the pergola drainage system used:

- Both gutter assemblies are finished with elbows, cat. no. 8A00947X, when roof drainage is carried out using 4 posts
- one set of gutters is terminated with T-joints, cat. no. 8A01115X (left) or 8A01116X (right), and the other set of gutters is terminated with 8A01114X elbows, where drainage is via two posts
- In a double-bay transverse pergola, all gutter assemblies are terminated with elbows, cat. no. 8A00947X
- In a double-bay longitudinal pergola, the 4 gutter assemblies are terminated at one end with T-joints (cat. no. 8A01115X (left) or 8A01116X (right)) and at the other end with gutter end caps (cat. no. 8A01120X).

1. Press a 4 mm diameter roller seal (cat. no. 120557) into the groove of the gutter housing profile K440939X along its entire length.
2. Lift the gutter upwards and press the ends of the elbows or tees of the drainage system into the cut-outs in the posts.
3. Position the gutter housing so that its lower edge aligns precisely with the lower edge of the pergola rafters.
4. Using 4.2 x 16 mm screws (cat. no. 87252404), screw the gutter housing to the rafters at 250 mm intervals.
5. In the case of drainage via two columns, the ends of the 8A01115X (left) or 8A01116X (right) tees must be connected with 8A01114X elbows using a 50 mm diameter PVC pipe – the PVC pipe should be laid within the purlin channel.
6. Fit clamp cat. no. 8A00968X onto the connection between the PVC pipe and the elbows or tees, and tighten it.
7. After installing the gutters, use silicone (cat. no. 14614947) to seal the points where the ends of the elbows or tees enter the posts and to seal the joints between the gutters and the rafters.
8. Fit the cover from profile K441031X onto the purlin profile.
9. From the top of the pergola, insert wedge seal cat. no. 8G00460X into the gap between purlin K440141X and cover K441031X.
10. At the top ends of the posts, fix the post covers (cat. no. 8A01270X or 8A01354X) using 2 screws (o3.5 x 13 mm, cat. no. 87252303).

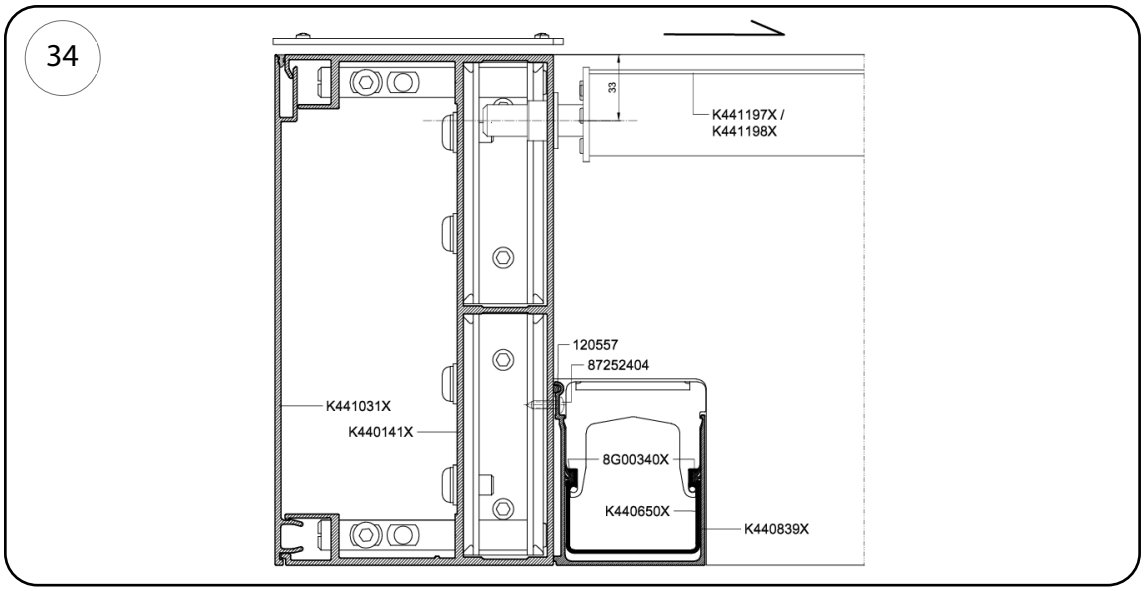


Fig. 34

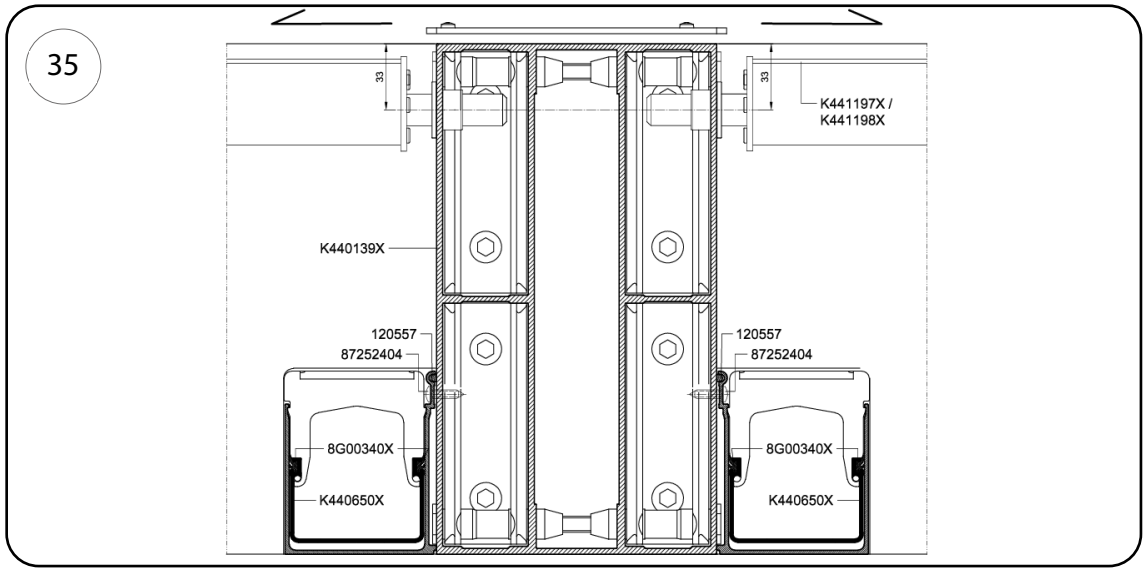


Fig. 35

5.5.6. Installation W2L

1. Slide the snap-on elements no. 8A01274X (left) and 8A01275X (right) onto the ends of the K440650X channel respectively.
2. Secure the latch elements to prevent them from moving by screwing in 2 screws, o3.5 x 13 mm (cat. no. 87252203) – Fig. 36.
3. Apply a layer of adhesive and sealant, cat. no. 1461502X, around the entire perimeter of the gutter and the snap-fit element, as shown in Fig. 36.
4. Slide drainage elbow 8A00947X onto the ends of the gutter and tighten clamp 8A00968X.
5. Insert the K440650X gutter into the K440839X gutter housing and secure it to the housing as shown in Fig. 41.
6. After inserting the elbows into the drainage holes of the posts and securing the gutters, seal the connection between the snap-fit elements and the gutter by pressing adhesive-sealant compound (cat. no. 1461502X) into the holes in the snap-fit elements.

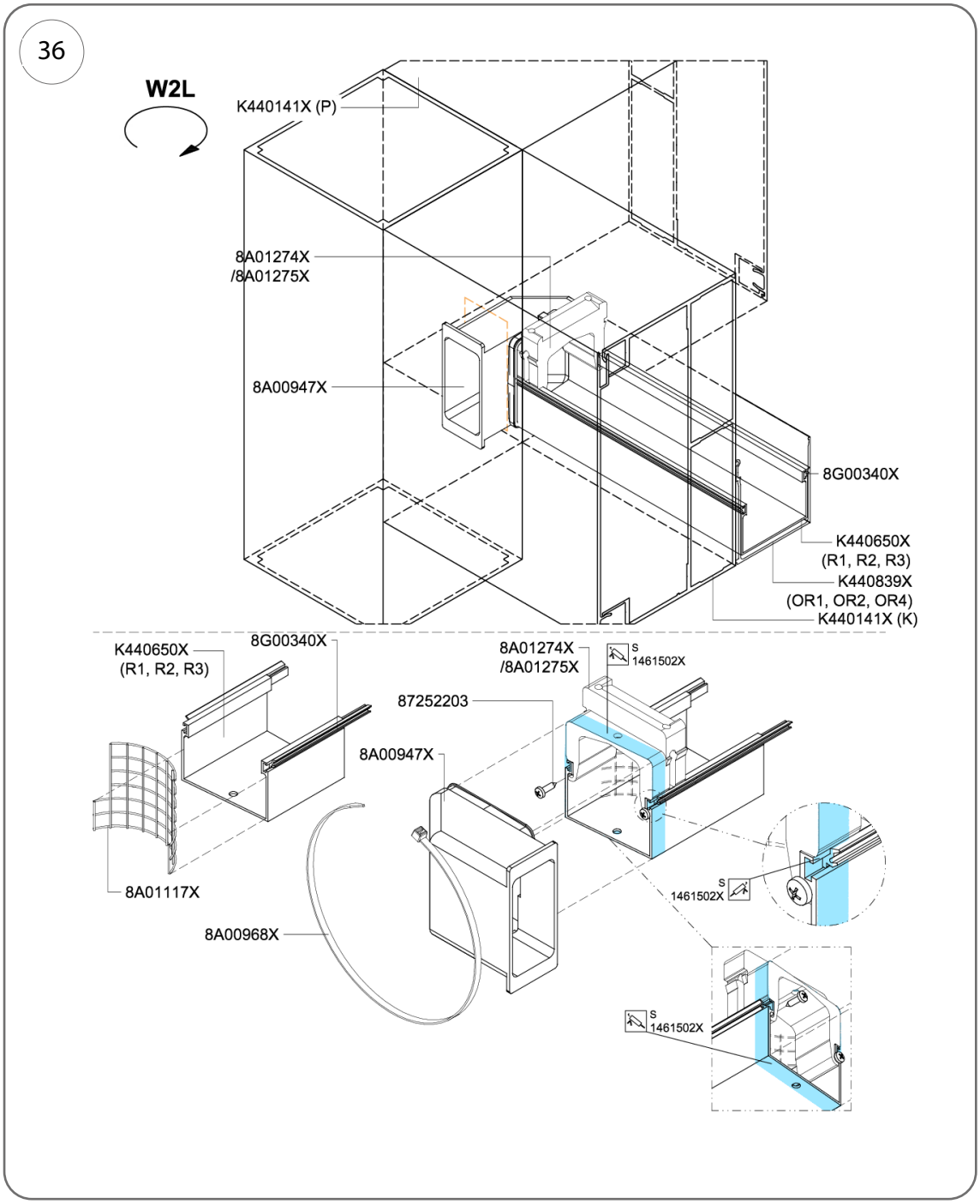


Fig. 36

5.5.7. Installation W2T

1. Slide the snap-on elements no. 8A01274X (left) and 8A01275X (right) onto the ends of the K440650X channel respectively.
2. Secure the latch components to prevent them from shifting by fitting 2 screws, 3.5 mm diameter x 13 mm long (cat. no. 87252203) – Fig. 37.
3. Apply a layer of adhesive-sealant compound (cat. no. 1461502X) around the entire perimeter of the gutter and the snap-fit element, as shown in Fig. 37.
4. Fit drainage tees (cat. no. 8A01115X (left) and 8A01116X (right)) onto the ends of the gutter and tighten the clamp 8A00968X.
5. Insert the K440650X gutter into the K440839X gutter housing and secure it to the housing as shown in Fig. 41.
6. After inserting the elbows into the drainage holes of the posts and securing the gutters, seal the connection between the snap-fit elements and the gutter by pressing adhesive-sealant compound (cat. no. 1461502X) into the holes in the snap-fit elements.

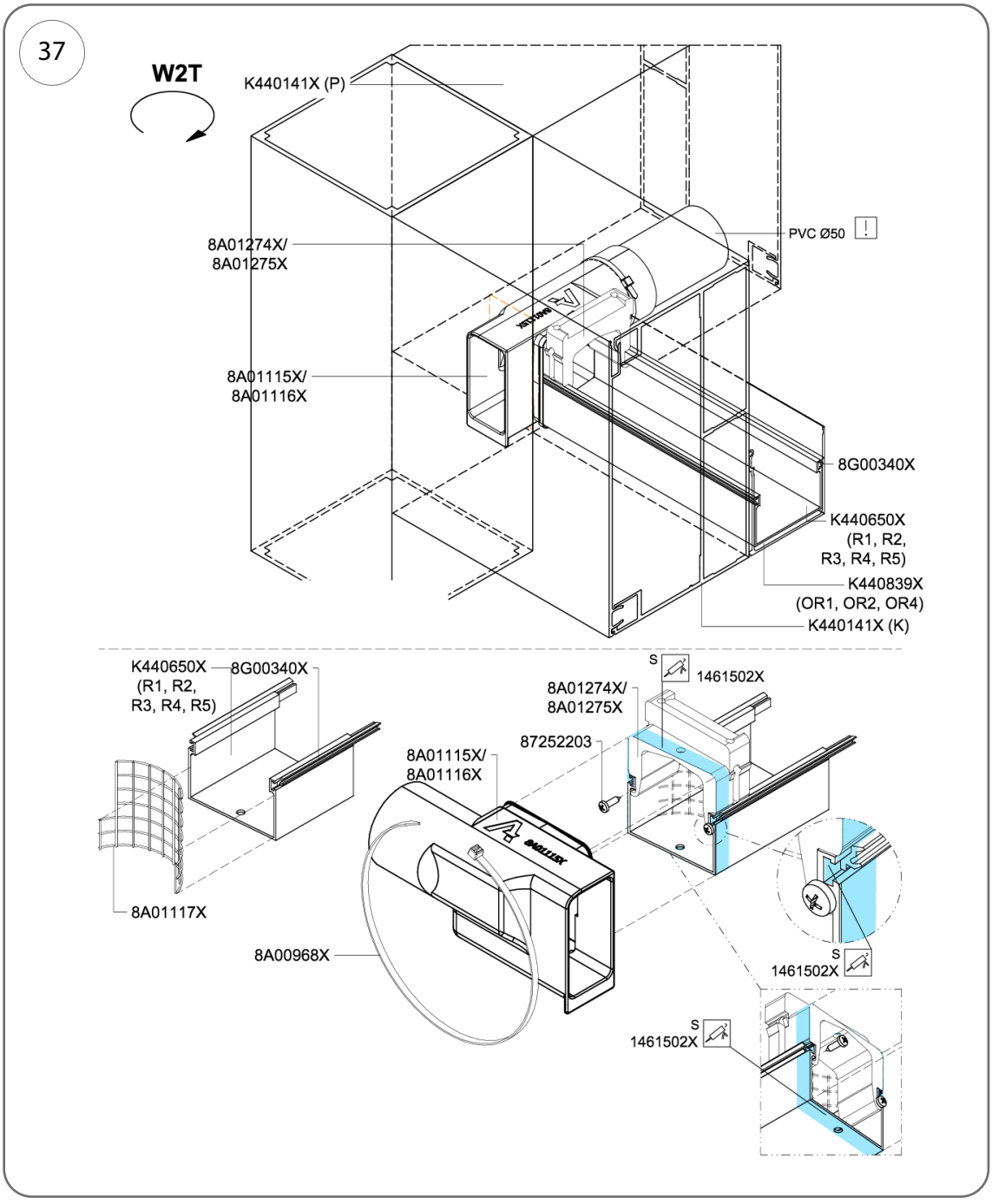


Fig. 37

5.5.8. Installation W4L

1. Slide the snap-on elements no. 8A01274X (left) and 8A01279X (right) onto the ends of the K440650X channel respectively.
2. Secure the latch elements to prevent them from moving by screwing in 2 screws o3.5 x 13 mm (cat. no. 87252203) – Fig. 38.
3. Apply a layer of adhesive-sealant compound (cat. no. 1461502X) around the entire perimeter of the gutter and the snap-fit element, as shown in Fig. 38.
4. Fit drainage T-pieces (cat. no. 8A01115X (left) and 8A01116X (right)) onto the ends of the gutter and tighten the clamp 8A00968X.
5. Insert the K440650X gutter into the K440839X gutter housing and secure it to the housing as shown in Fig. 41.
6. After inserting the elbows into the drainage holes of the posts and securing the gutters, seal the connection between the snap-fit elements and the gutter by pressing adhesive-sealant compound (cat. no. 1461502X) into the holes in the snap-fit elements.

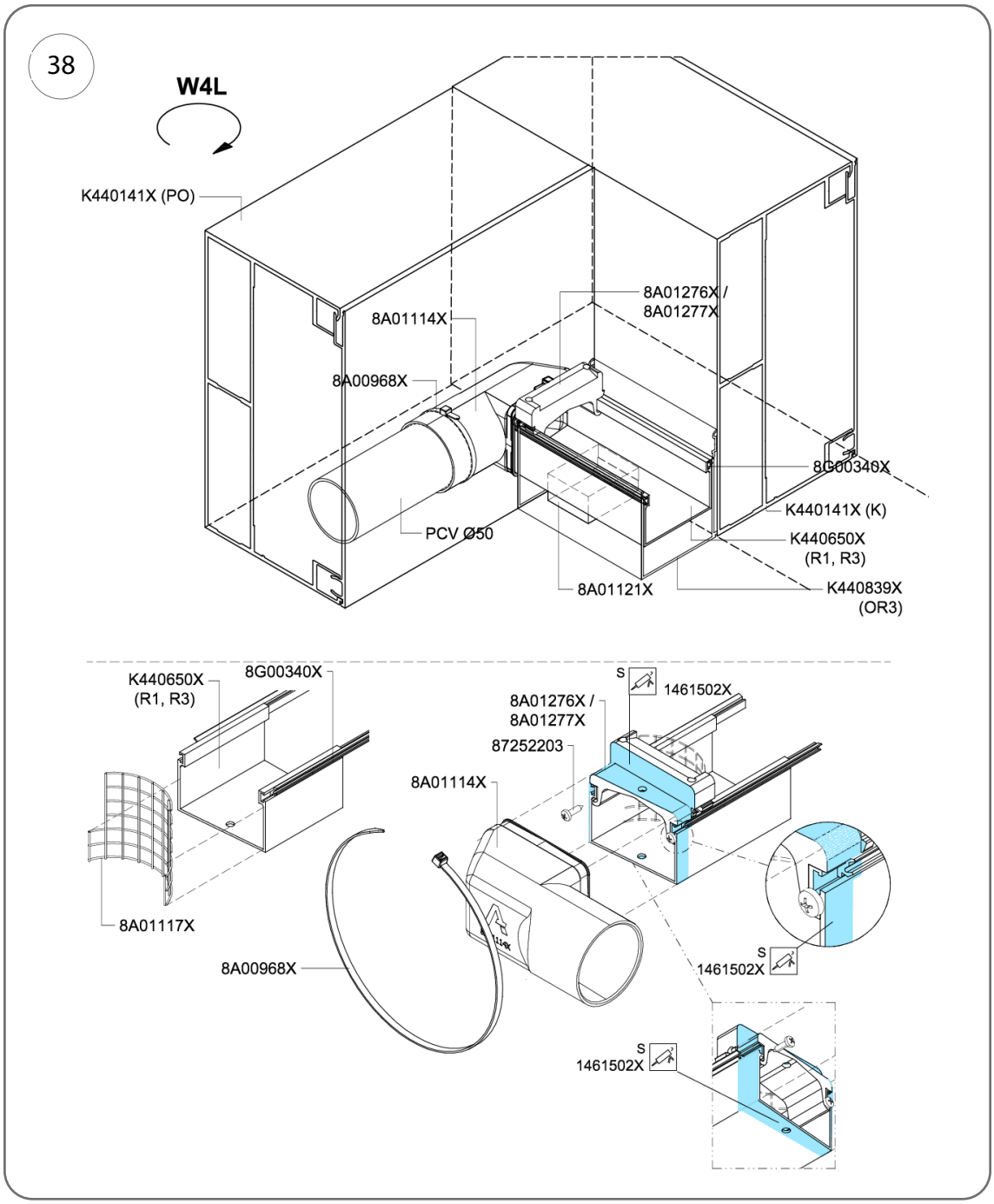


Fig. 38

5.5.9. Installation W5L

1. Slide the snap-on elements no. 8A01274X (left) and 8A01275X (right) onto the ends of the K440650X channel respectively.
2. Secure the snap-fit elements to prevent them from shifting by inserting 2 screws, o3.5 x 13 mm (cat. no. 87252203) – Fig. 39.
3. Apply a layer of adhesive and sealing compound (cat. no. 1461502X) around the entire perimeter of the gutter and the snap-fit element, as shown in Fig. 39.
4. Slide drainage elbow 8A00947X onto the ends of the gutter and tighten clamp 8A00968X.
5. Insert the K440650X gutter into the K440839X gutter housing and secure it to the housing as shown in Fig. 41.
6. After inserting the elbows into the drainage holes of the posts and securing the gutters, seal the connection between the snap-fit elements and the gutter by pressing adhesive-sealant compound (cat. no. 1461502X) into the holes in the snap-fit elements.

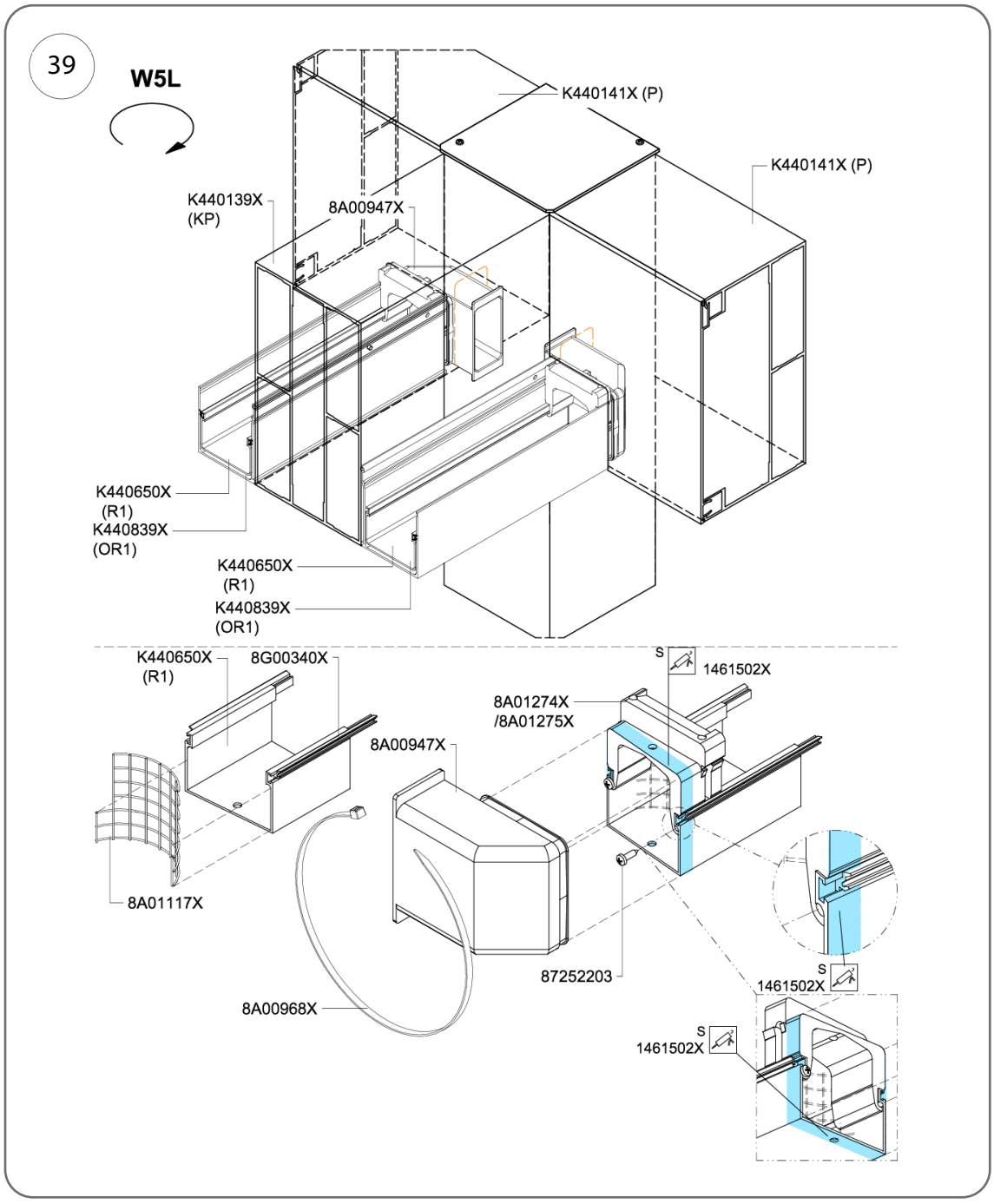


Fig. 39

5.5.10. Installation W6Z

1. Slide the snap-on fittings no. 8A01274X (left) and 8A01275X (right) onto the ends of the K440650X gutter respectively; fit the gutter end cap (cat. no. 8A01120X) onto the other end of the gutter.
2. Secure the latch element no. 8A01274X (left) or 8A01275X (right) to prevent it from moving by screwing in 2 screws o3.5 x 13 mm (cat. no. 87252203) – e.g. Fig. 36.
3. Apply a layer of adhesive and sealing compound (cat. no. 1461502X) around the entire perimeter of the gutter and the snap-fit element, as shown in Fig. 36.
4. Slide drainage elbow cat. no. 8A01115X (left) or 8A01116X (right) onto the ends of the gutter and tighten clamp 8A00968X, as for the W2T joint.
5. Seal the joint between cover no. 8A01120X and the gutter with adhesive sealant as shown in Fig. 40.
6. In the gutter housing K440839X, install gutter spacer no. 8A01122X next to the cover 8A01120X.
7. Insert the K440650X channel into the K440839X channel housing.
8. After inserting the elbows into the drainage holes in the posts and securing the gutters, seal the connection between the snap-fit elements and the gutter by pressing sealant (cat. no. 1461502X) into the holes in the snap-fit elements.

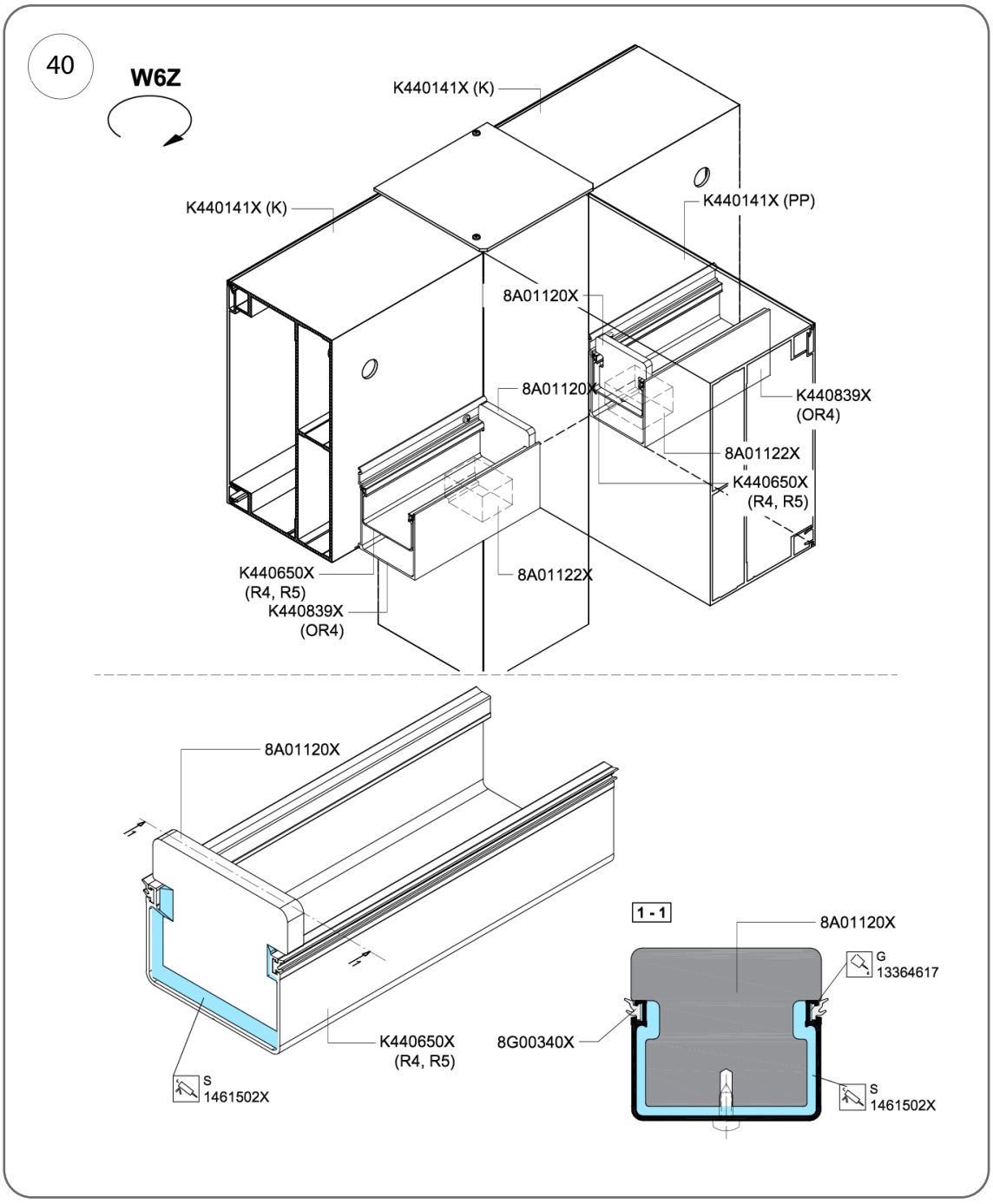


Fig. 40

5.5.11. Installation of the gutter in the housing

Fig. 41 shows the connection of the K440839X gutter to its K440839X housing.
The connection is intended to create the gutter's drop height. To do this, as shown in Fig. 41, fix spacer no. 8A01121X or 8A01122X halfway along the gutter's length using o 4.2 x 16 mm screws (no. 87252404).
A seal (cat. no. 8A00340X) should be inserted into the channel along its entire length, on both sides.

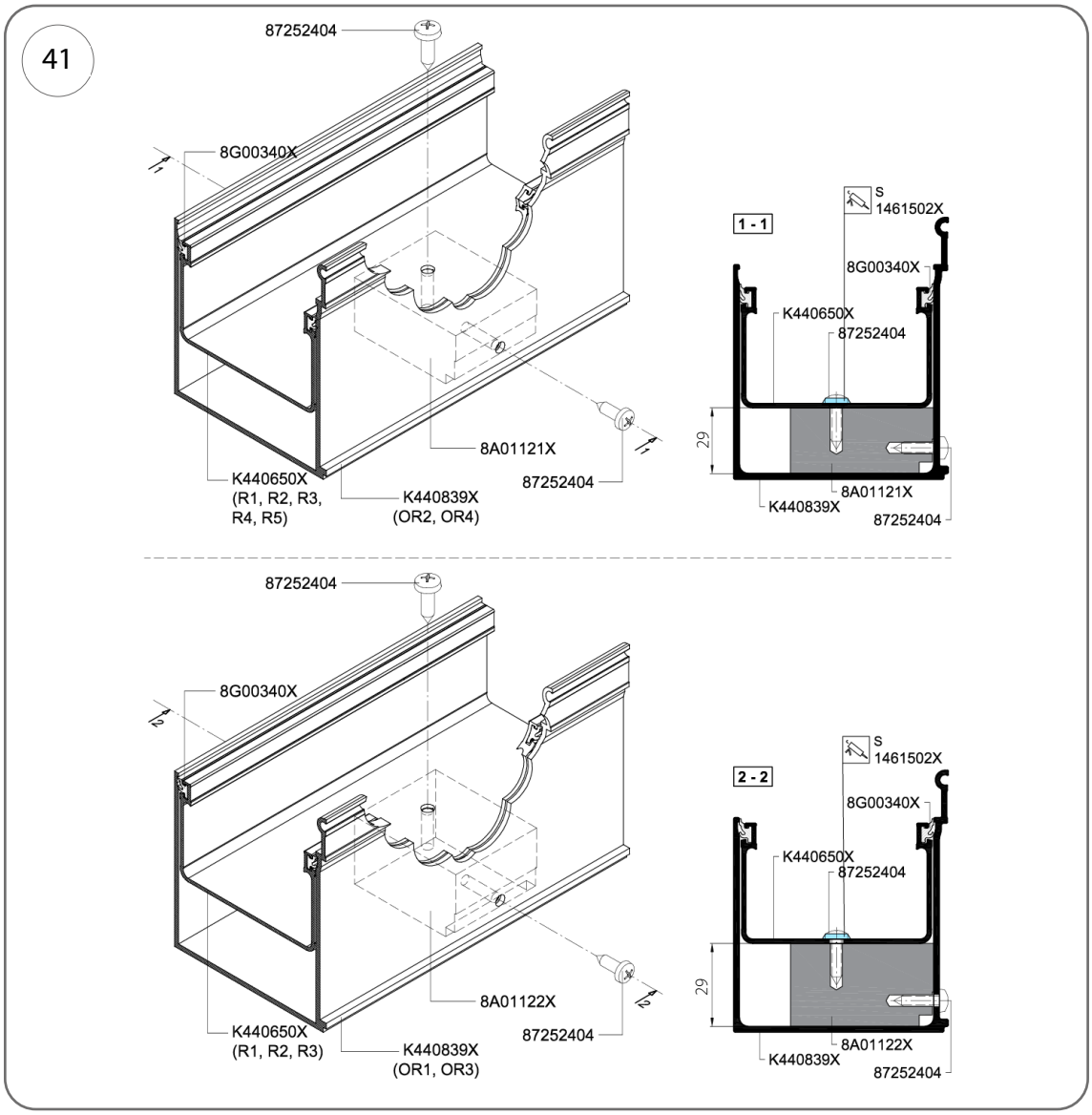


Fig. 41

5.6. Roof installation

The SB550 technical solution allows for the construction of three types of pergola roofs:

- Type 1 – slatted roof made from profile K441197X, allowing for spot lighting,
- Type 2 - slatted roof made from K441198X profile, enabling lighting using LED strips,
- Type 3 - slatted roof without lighting elements in the slats (with so-called crown lighting).

The pergola roof has an active and a passive side – the active side is the side along the rafters where the actuator and the slat drive lever system are mounted.

The slats are delivered partially assembled, divided according to their function:

- the passive side is fully prefabricated,
- the active side is equipped with covers, cat. no. 8A00814X.

5.6.1. Installation of accessories for the passive side of the roof

1. Insert brush seal no. 8G00309X into the groove of the slat (cat. no. K441197X or K441198X) along the entire length of the slat.
2. Inject Cosmofen Duo two-component adhesive (cat. no. 13364612) into the hole in the slat (cat. no. K441197X or K441198X).
3. Fit the o16 mm expansion ring (cat. no. 7702A014) onto the slat shaft (cat. no. 8A01479X).
4. Insert the shaft into the hole in the 8A01479X louvre profile.
5. Fit the cover (cat. no. 8A00844X or 8A01513X, depending on the roof opening direction) onto the shaft and secure it to the front of the slat using 4 screws, 3.9 x 13 mm (cat. no. 80371208).

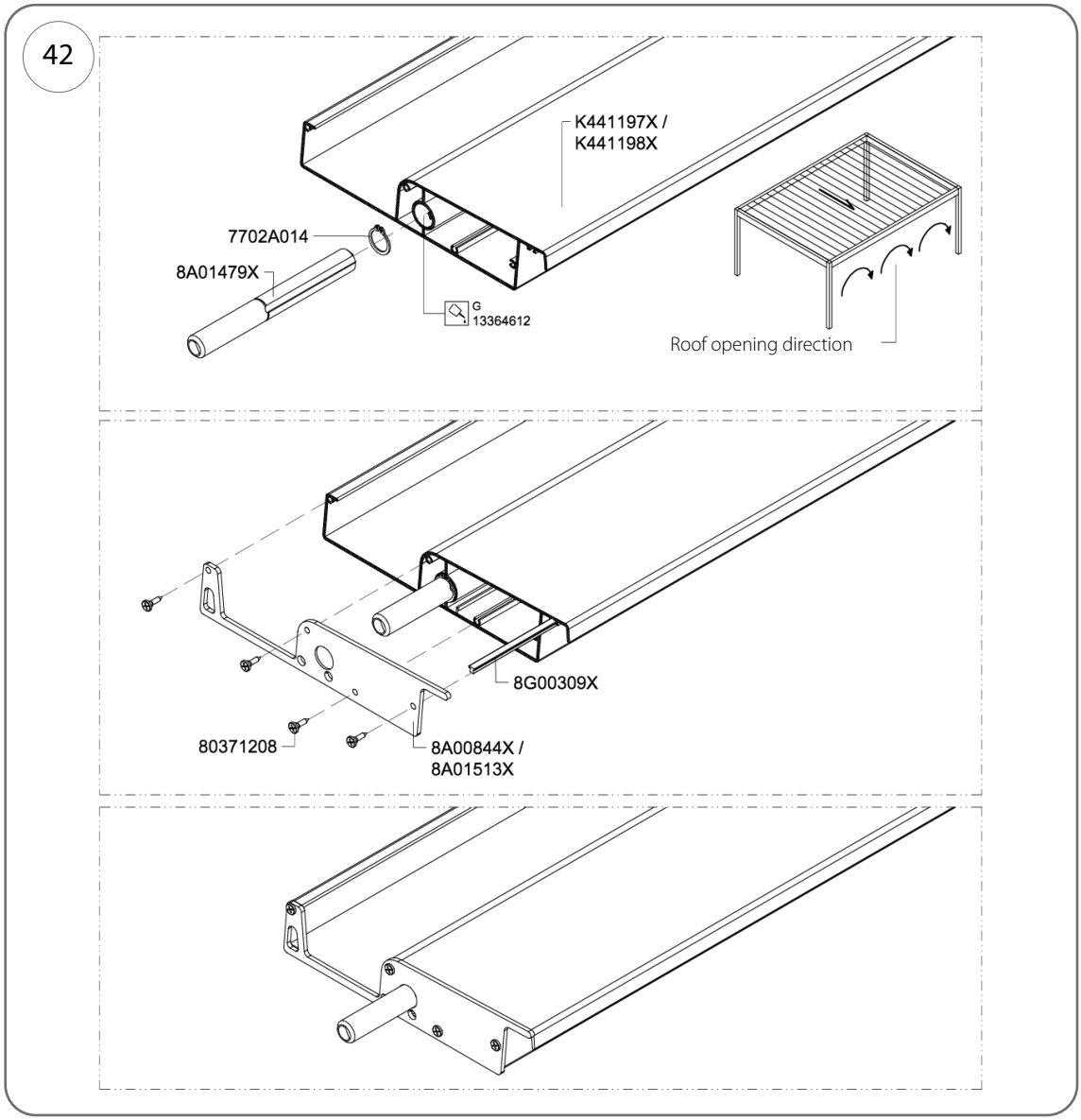


Fig. 42

5.6.2. Installation of active side slat accessories

1. Insert a 4 mm seal, cat. no. 120557, into the groove of profile no. K440646X.
2. Fasten the cover (cat. no. 8A00843X) to the front of the slats using 4 screws, o3.9 x 13 mm (cat. no. 80371208).

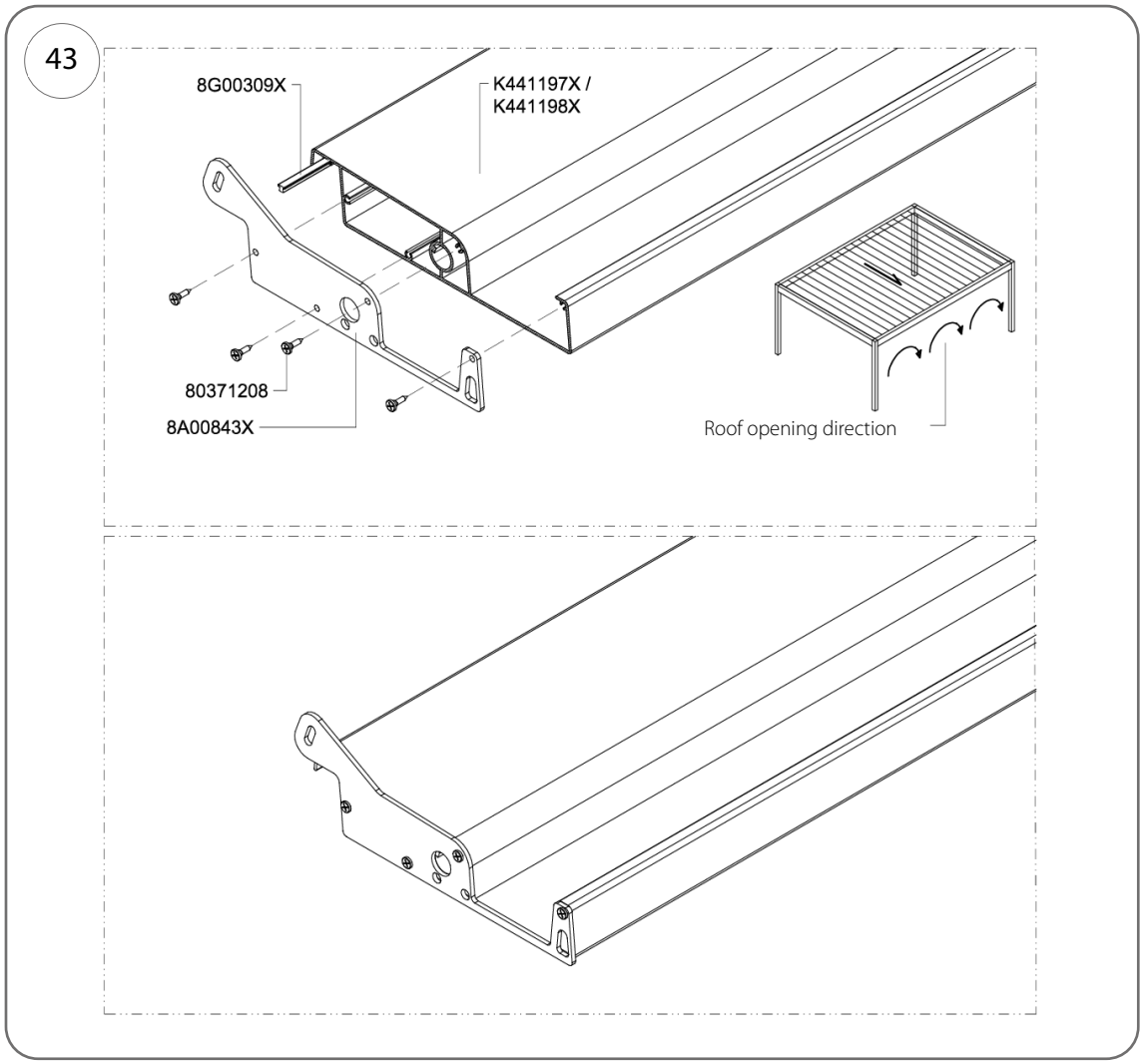


Fig. 43

5.6.3. Installation of battens on the passive side of the roof

1. In the rafter section Cat. No. K440141X, or in the case of a double-span transverse pergola in the intermediate rafter section Cat. No. K440139X, press sliding sleeves with flanges Cat. No. 8A01084X into the prepared 20 mm diameter holes.
2. Insert the slat shaft at an angle into sleeve 8A01084X (Fig. 39).

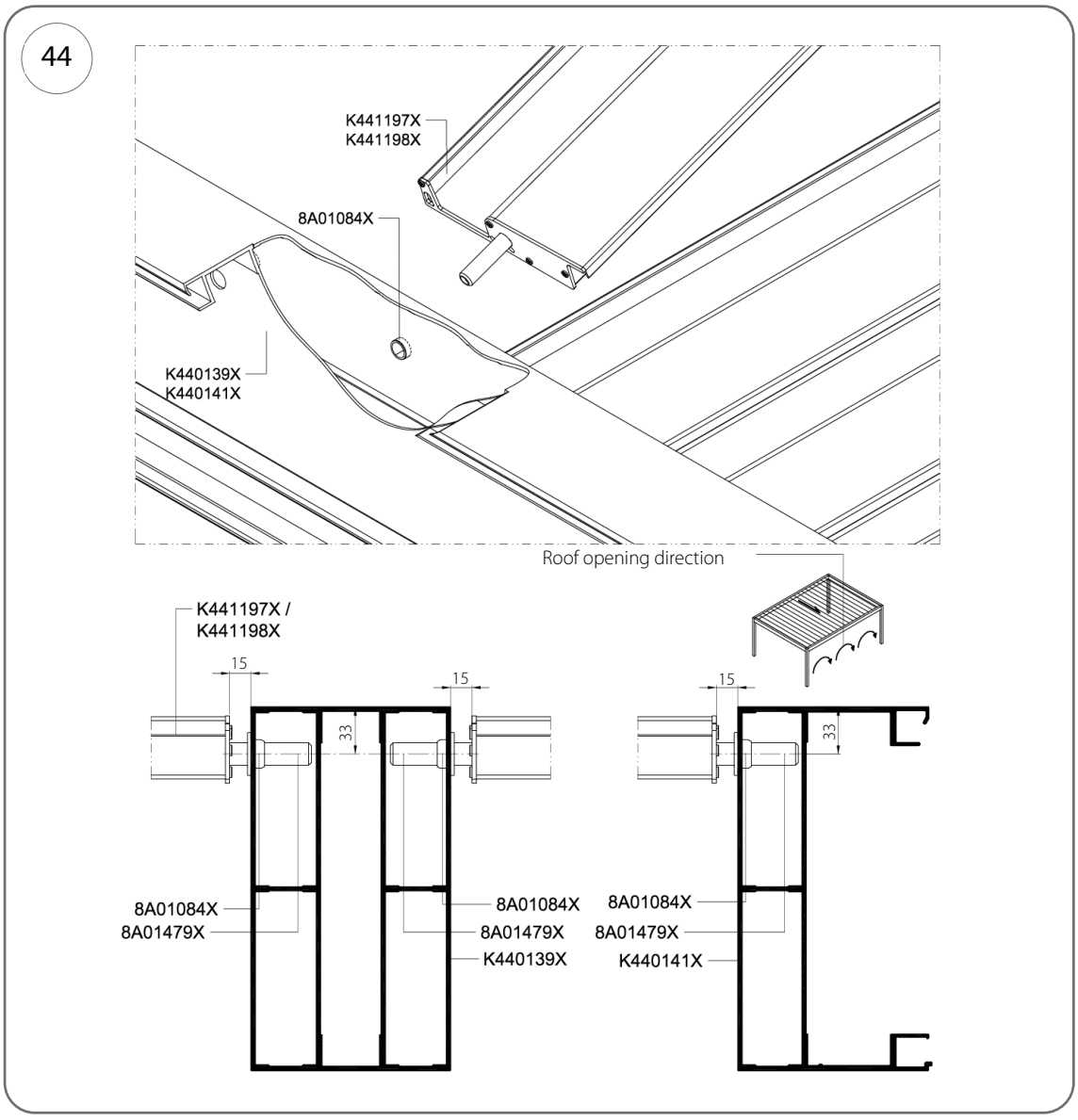


Fig. 44

5.6.4. Installation of slats on the active side of the roof (slats not operated by an actuator)

1. In the rafter profile (cat. no. K440141X), press sliding sleeves with flanges (cat. no. 8A01084X) into the prepared 20 mm diameter holes.
2. Using sleeve 8A01084X, begin inserting shaft no. 8A01544X into the lamella profile no. K441197X or K441198X.
3. After sliding the end of the axle (cat. no. 8A01544X) beyond the flange of the sleeve (cat. no. 8A01084X), fit the spacer washer (cat. no. 8A01059X) onto the axle and insert the axle into the hole in the slat K441197X or K441198X.
4. In the space between the rafter and the batten, secure spacer no. 8A00812X to the axis using a o4.2 x 19 mm screw (cat. no. 87222402).

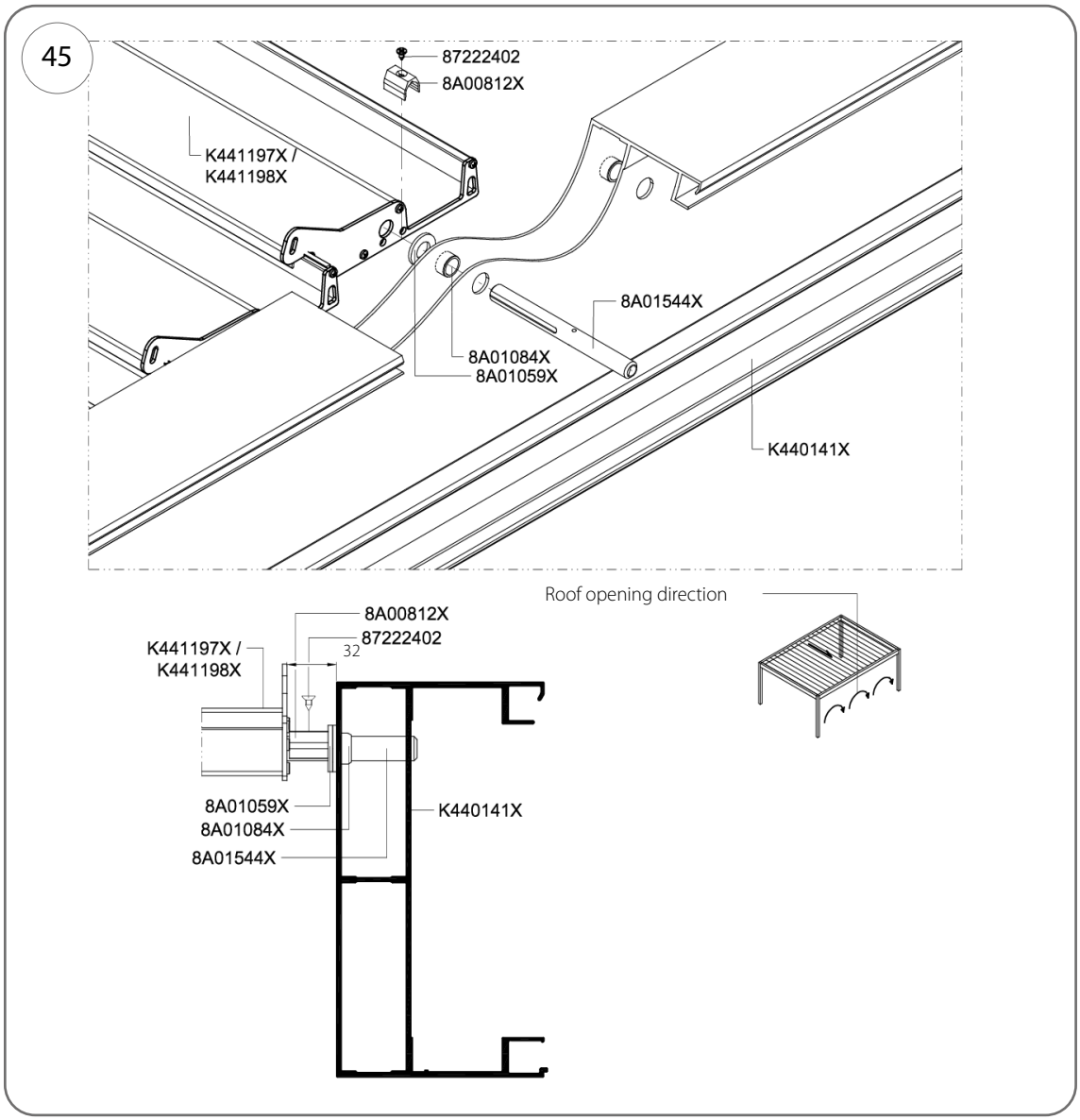


Fig. 45

5.6.5. Installation of slats on the active side (slats working with the actuator)

1. In the rafter profile K440141X, fit the sliding sleeves with flanges (cat. no. 8A00807X) into the 26 mm diameter holes in both the outer and inner walls.
2. Fit washer cat. no. 8A00806X onto the drive lever shaft.
3. Begin inserting the drive lever shaft 8A00839X or the lever shaft 8A01509X into the slat, sequentially fitting onto the shaft (after passing the outer wall of the rafter) the second washer 8A00806X and then the drive crank, cat. no. 8A00842X.
4. Screw an M6 x 30 mm bolt (cat. no. 80371316) into the drive crank clamp (cat. no. 8A00842X) and clamp the drive crank onto the drive lever shaft.

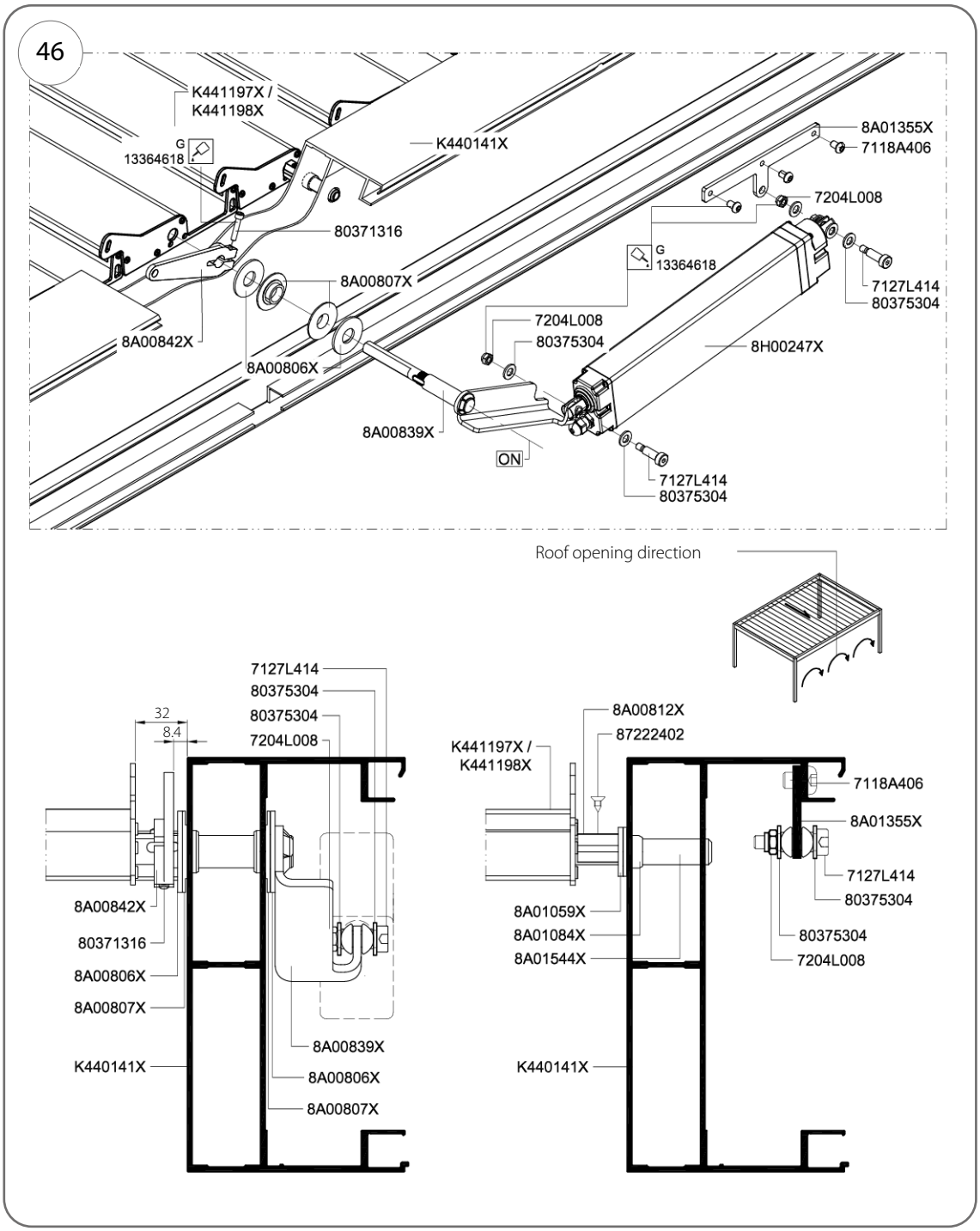


Fig. 46

5.6.6. Installation of the louvre drive actuator

Follow the instructions in Fig. 47

1. Attach the actuator body (cat. no. 8H00247X) to the bracket (cat. no. 8A01355X).
2. Place a o10 mm washer (cat. no. 80375304) on the two-stage screw with an M8 thread (cat. no. 7127L414).
3. Pass this screw through the actuator body handle and fit a 10 mm diameter washer (cat. no. 80375304) on the other side.
4. Apply thread sealant (cat. no. 13364618) to the thread of the bolt (cat. no. 7127L414), pass the bolt through the hole in the bracket and tighten the M8 nut (cat. no. 7204L008).
5. Connect the actuator piston (cat. no. 8H00247X) to the drive lever (cat. no. 8A00839X or cat. no. 8A01509X).
6. Place a o10 mm washer (cat. no. 80375304) on the two-stage screw with an M8 thread (cat. no. 7127L414).
7. Insert the drive lever eye (cat. no. 8A00839X or cat. no. 8A01509X) into the actuator piston fork.
8. Pass this screw through the actuator piston fork and the drive lever eye, and fit a 10 mm diameter washer (cat. no. 80375304) on the other side.
9. Coat the thread of screw cat. no. 7127L414 with thread sealant cat. no. 13364618 and tighten the M8 nut cat. no. 7204L008.

5.6.7. Roof tie installation

1. Place retaining ring no. 7702A008 on adjustment sleeve no. 8A00808X.
2. Insert the sleeves in the following order: through the sleeves in the tie rod, the 8 mm diameter washer (cat. no. 80375325), and the tab of the active-side slat cover (cat. no. 8A00843X).
3. Coat the thread with thread sealant, cat. no. 13364618, place an 8 mm washer, cat. no. 80375325, on the adjustment sleeve and tighten the whole assembly with an M8 cap nut, cat. no. 7211M008.

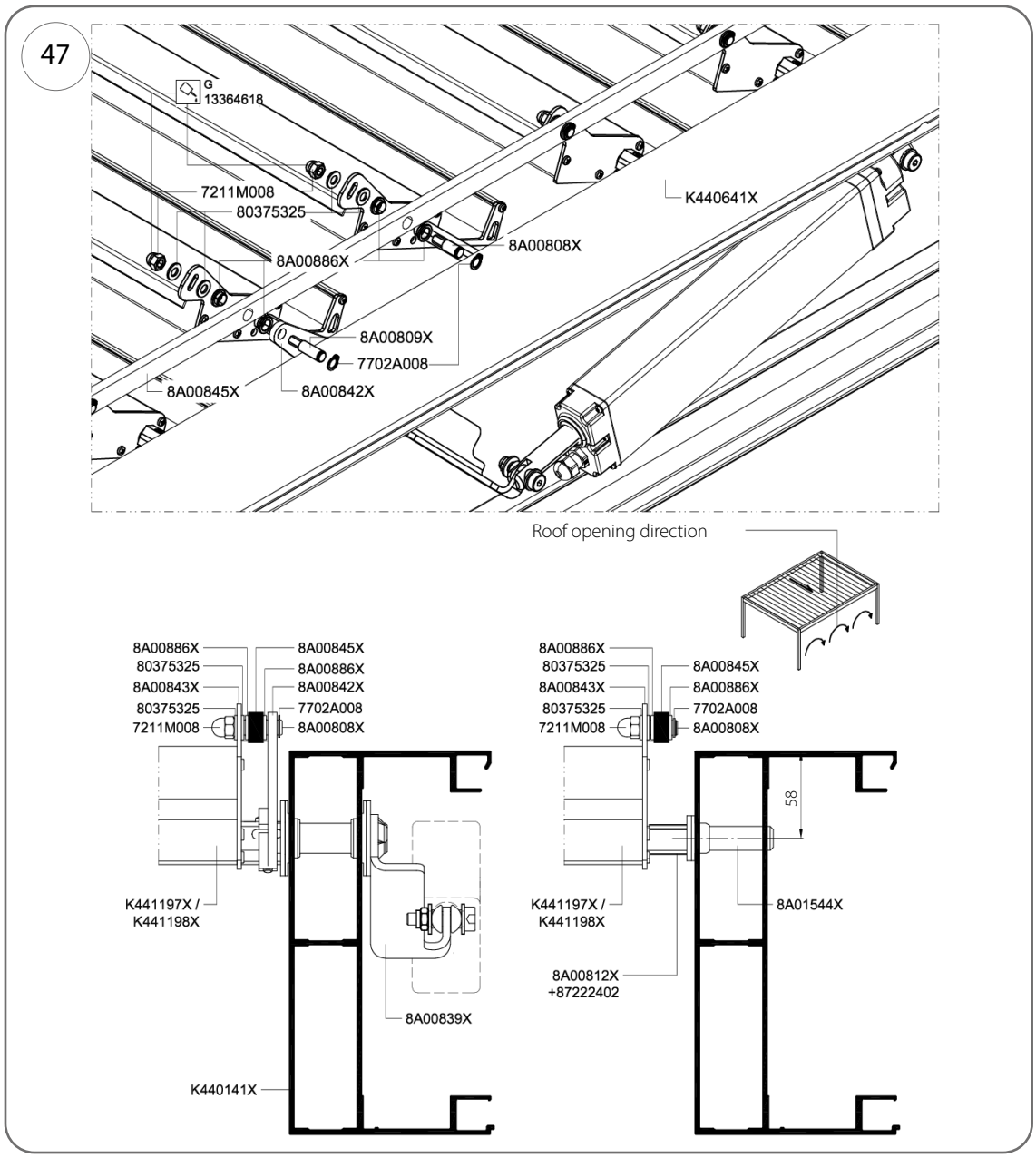


Fig. 47

5.6.8. Installation of the lower roof edge profile

1. Attach the lower end section, cat. no. K440170X, to the purlin cover made of section no. K440640X.
2. Using 4.2 x 9.5 mm screws, cat. no. 87252402, at a maximum spacing of 300 mm (the first and last holes must be no more than 50 mm from the ends of the K440170X profile).

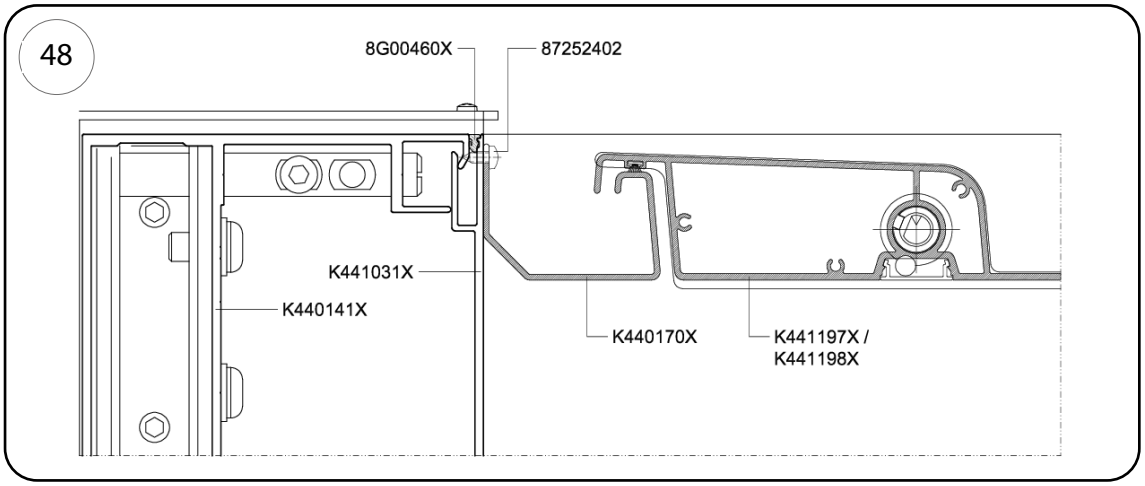


Fig. 48

5.6.9. Installation of the upper roof edge profile

1. Attach the upper end section, cat. no. K440646X, to the purlin cover made of section no. K440640X.
2. Press a 4 mm seal, cat. no. 120557, into the groove of profile no. K440646X.
3. Using 4.2 x 16 mm screws, cat. no. 87252402, attach profile no. K440646X to the purlin cover at 250 mm intervals.

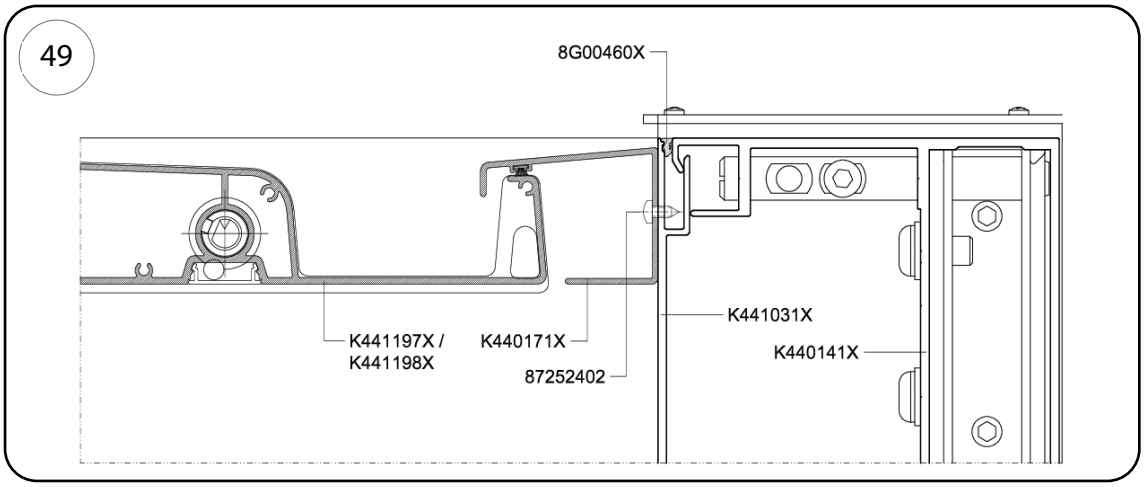


Fig. 49

5.7. Installation of pergola roof lighting

It is possible to install LED lighting in the slats and LED lighting in the so-called crown of the pergola roof.

1. In a roof made of K441198X slats, only LED strip lighting is possible.
2. In a roof made of K441197X slats, it is possible to install LED spot lighting.
3. In all cases, it is possible to route electrical cables from either the active or passive side of the roof. It is recommended to route power cables and install lighting equipment on the active side of the slats.

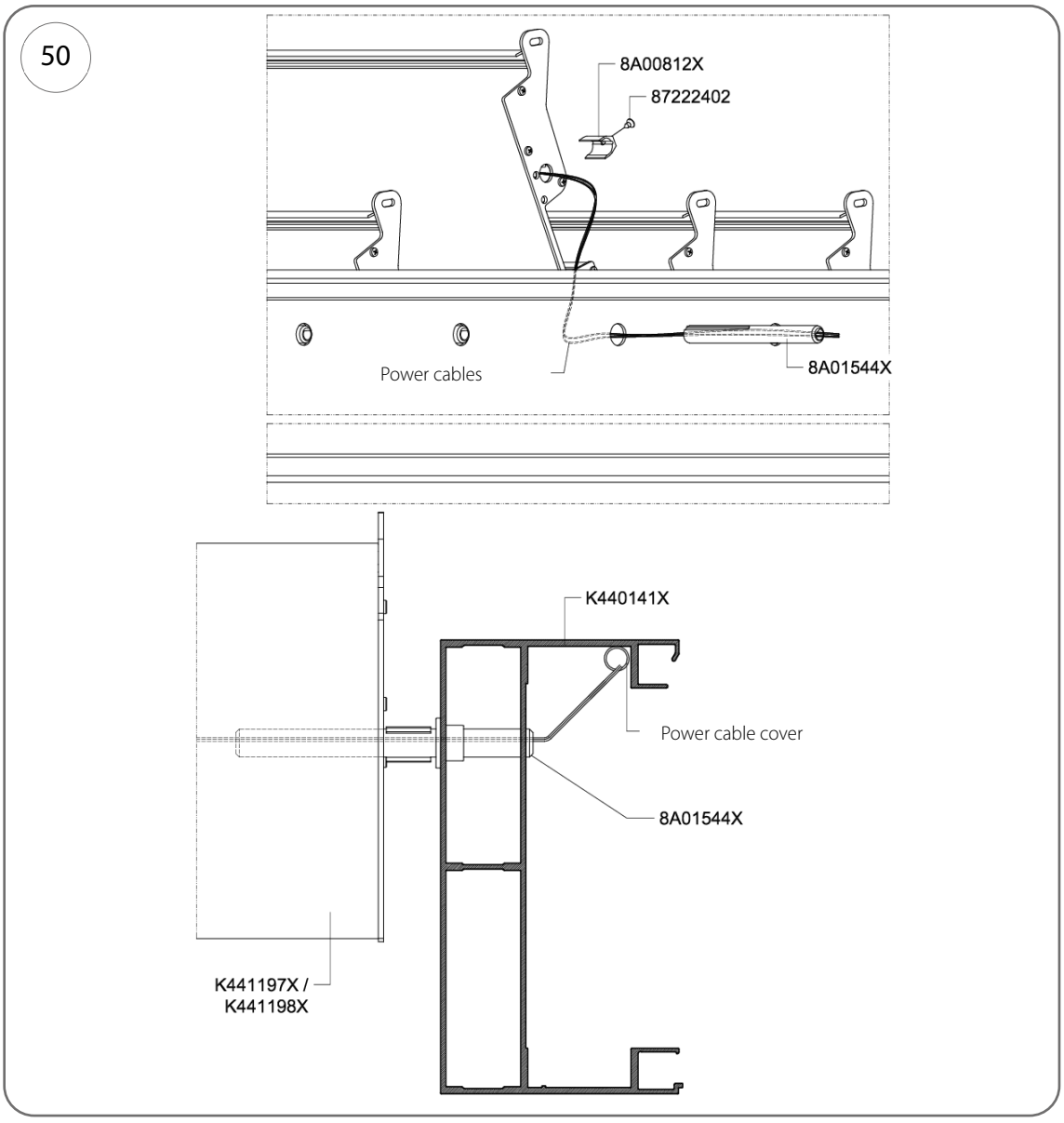


Fig. 50

5.7.1. Roof lighting using LED strips

Holes of o 4.0 mm should be drilled in the slat K441198X to allow the LED strip cables to pass through, at a distance of 100 mm from the ends of the slats on the active side.

To install the lighting, proceed as follows:

1. Using Cosmofen 60 cleaning agent (cat. no. 12894900), degrease the LED strip channel in the K441198X profile.
2. Insert the ends of the LED strip cables into the 4.0 mm diameter holes in the K441198X slats.
3. Stick the LED strip along the entire length of the slat.
4. Insert the cables into the rafters through the lamella axle.
5. Insert the profile end cap, cat. no. 8G000960, into the slat profile, cat. no. K441198X.

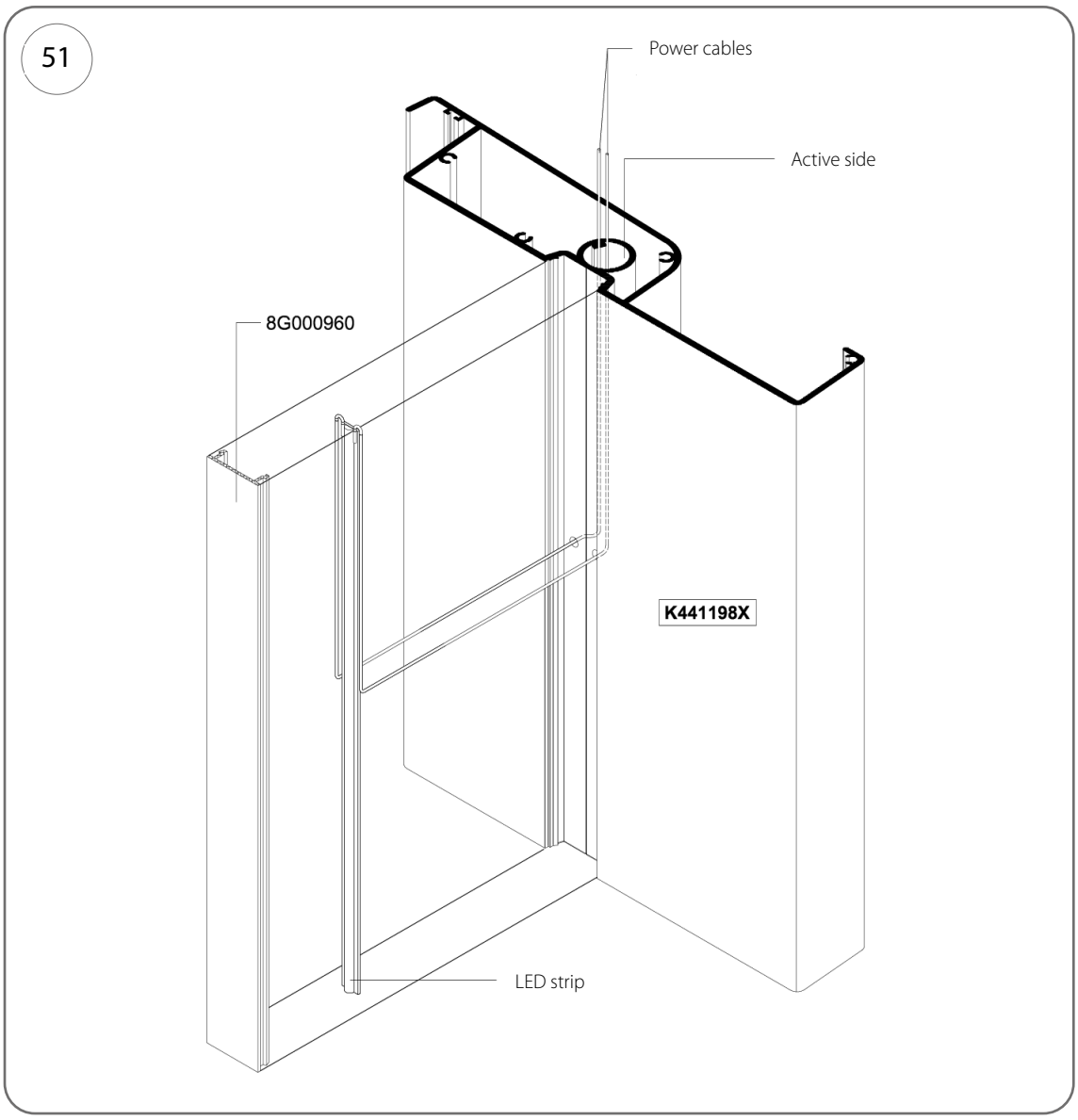


Fig. 51

5.7.2. Spot lighting on the roof

A 6.0 mm hole should be drilled in the K441197X slat to route the cables to the slat axis from the active side.
For spot lighting in the K441197X extruded profile slats, 23 mm diameter holes should be drilled.

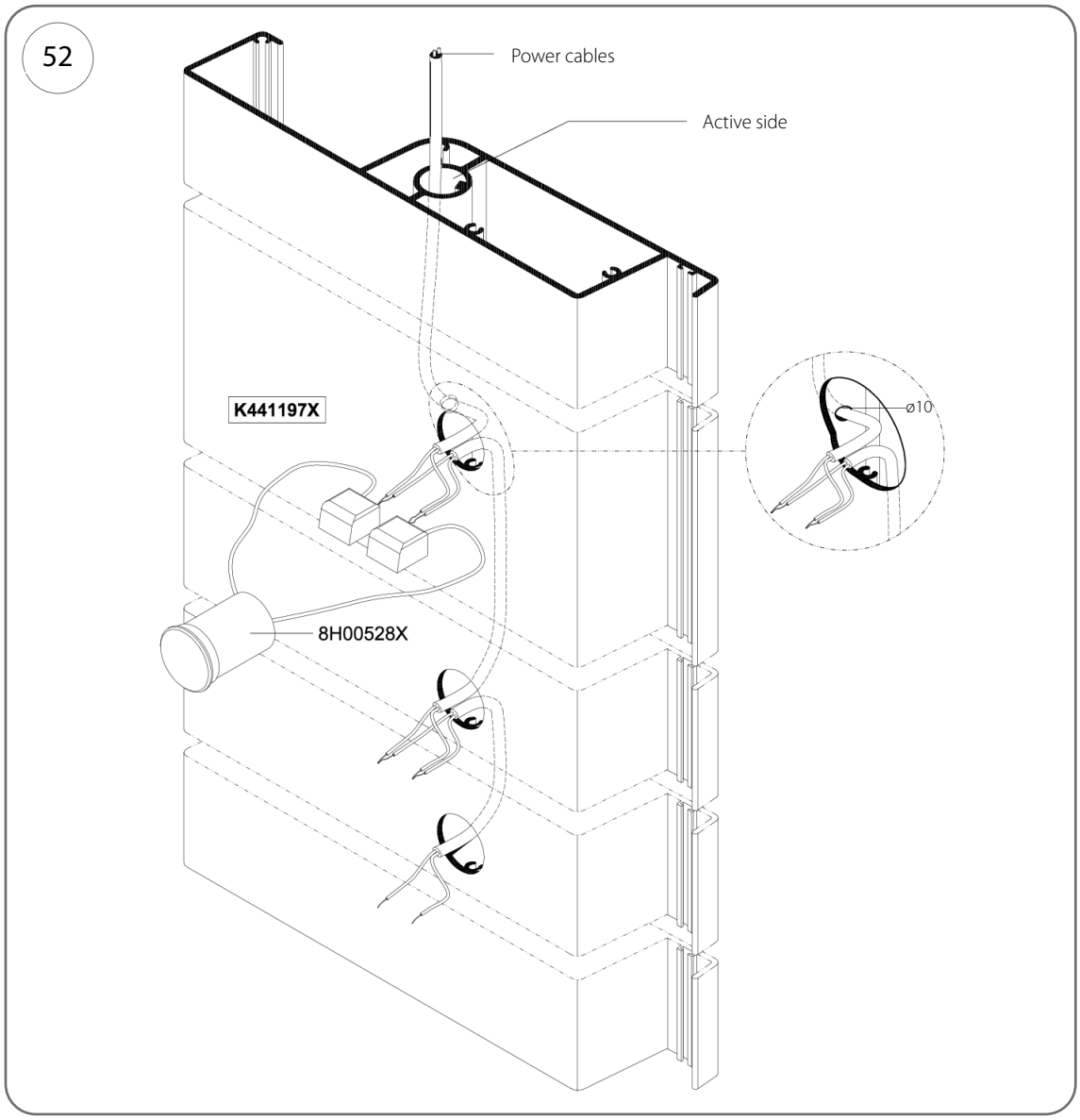


Fig. 52

5.8. Installation of LED lighting in the crown

The lighting in the crown is an installation attached to the rafters and purlins of the pergola on the inner perimeter of the pergola.

1. Screw the purlin cover (cat. no. K440640X) (Fig. 53) and the gutter housing (cat. no. K440651X or K440839X) (Fig. 54) the LED profile section (cat. no. K440840X) using o 3.5 x 9.5 mm screws (cat. no. 87222202).
2. The maximum spacing between screws should not exceed 250 mm.
3. Insert the power cables into the purlins through the drainage hole in the post via the 8.0 mm hole in the K440840X profile, running along the purlins and rafters
4. Use Cosmofen 60 cleaning agent, cat. no. 12894900, to degrease the LED strip channel in the K440840X profile.
5. Insert the ends of the LED strip cables through the 8 mm diameter hole into the purlin and through the post to the rafter (Fig. 55).
6. Stick the tape along the entire length of profile no. K440840X.
7. Insert the profile end cap, cat. no. 8G000960.

53

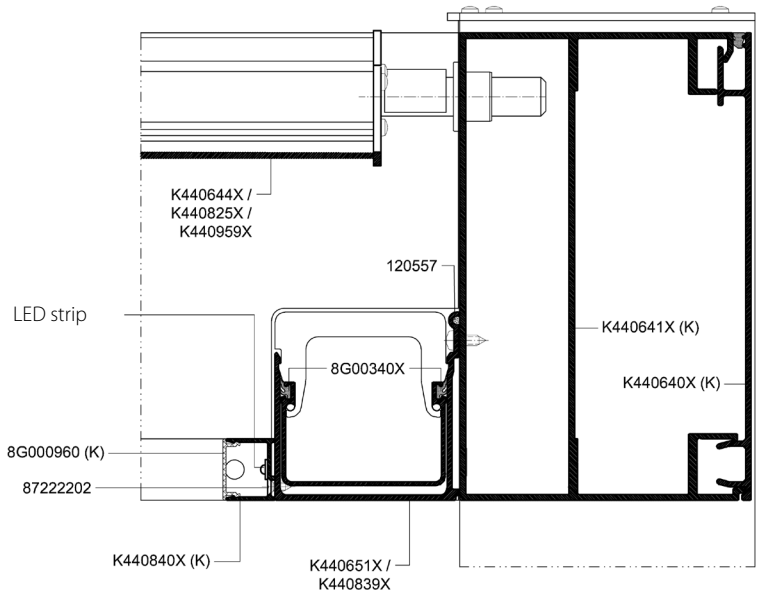


Fig. 53

54

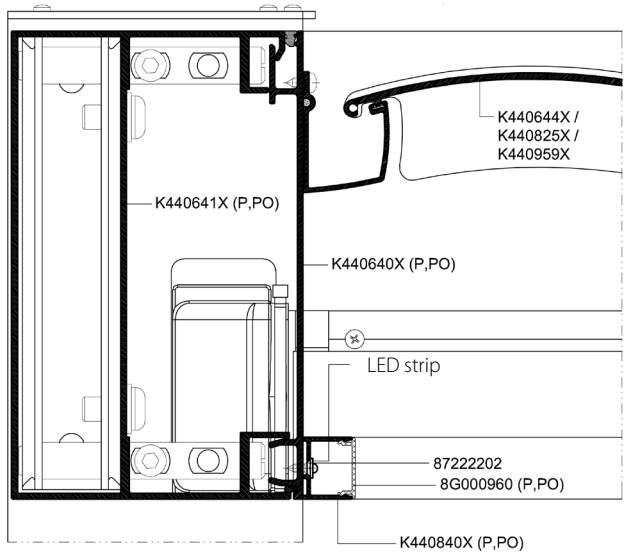


Fig. 54

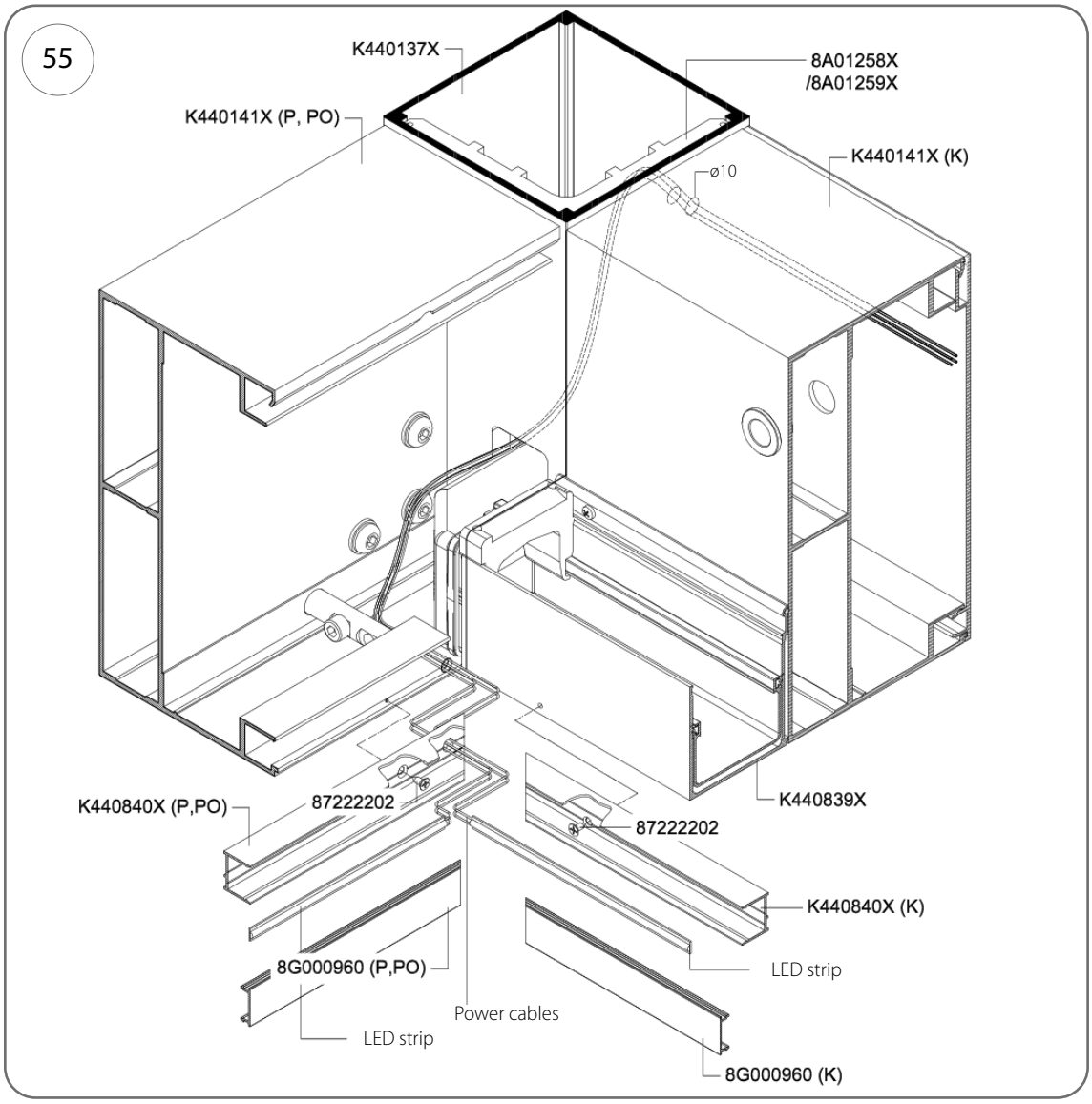

55
K440137X
8A01258X
/8A01259X
K440141X (P, PO)
K440141X (K)
ø10
K440840X (P,PO)
87222202
87222202
K440839X
K440840X (K)
LED strip
8G000960 (P,PO)
Power cables
LED strip
8G000960 (K)

Fig. 50

5.9. Setting the roof plane

Set the end positions with the nuts (cat. no. 7211M008) and adjustment sleeves (cat. no. 8A00808X / 8A00809X) loosened.

The recommended guidelines for the position of the tie rod 8A00845X must be confirmed at the connection point between the tie rod and the crank 8A00842X.

1. Start up and program the actuator according to the instructions.
2. Set the open end position in accordance with Fig. 56.
3. Set the closed end position as shown in Fig. 57.
4. In the fully closed position, check that the slat profiles fit together properly. Correct any unevenness in the roof using the adjustment system shown in Fig. 58. Once the roof is positioned, secure the slats by tightening the locking nut (cat. no. 7211M008). Coat the thread with thread sealant, cat. no. 13364618.

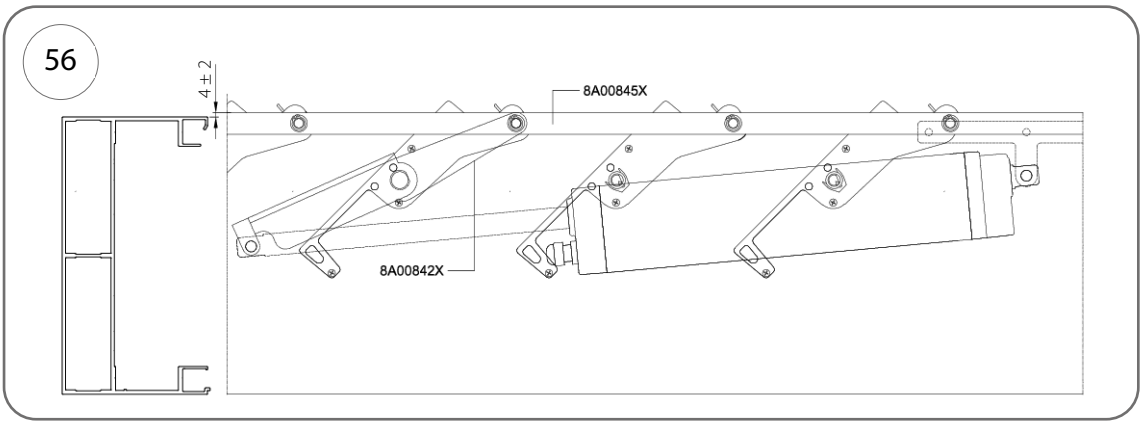


Fig. 56

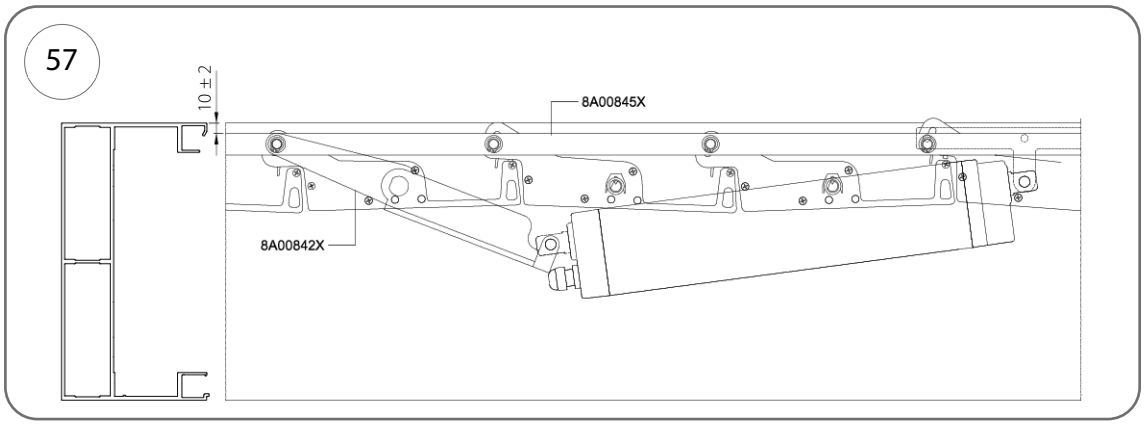


Fig. 57

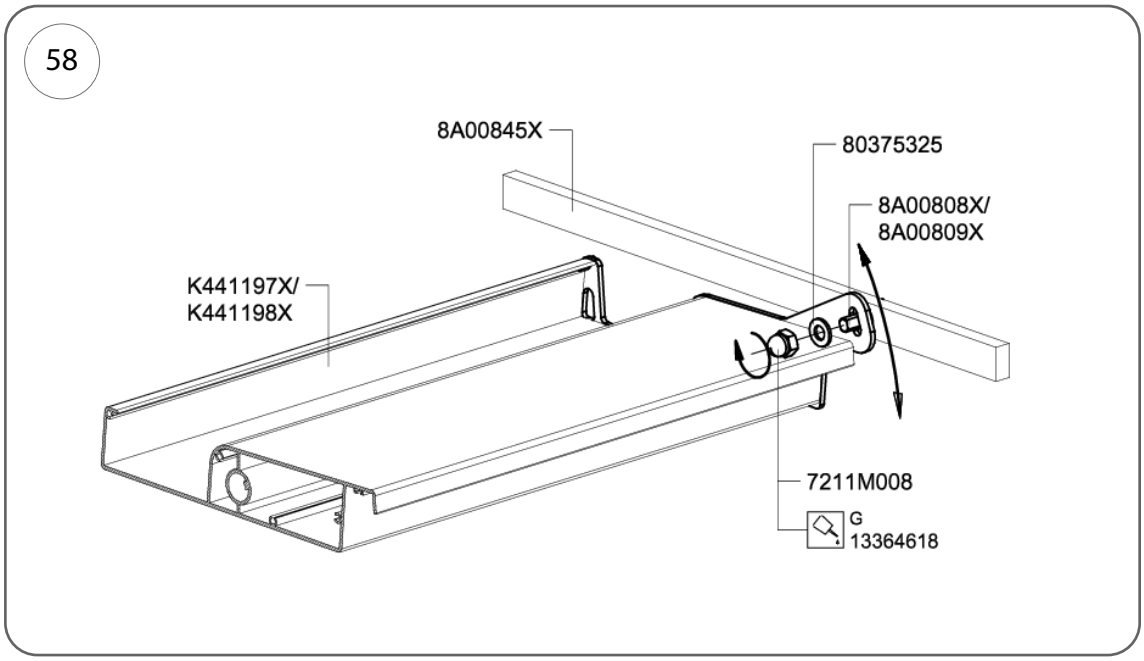


Fig. 58

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Original instructions.
This document forms part of the instructions within the meaning of the Regulation of the Minister of Economy of 21 October 2008 on the essential requirements for machinery. The operating and maintenance instructions, installation instructions and product manufacturing documentation together constitute the complete set of instructions and are available from the manufacturer.

Valid from 2026.04.15