

Installation Manual

BISOL EasyMount™

Alpine TRIANGLE





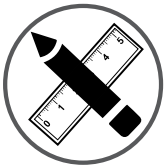
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GENERAL REQUIREMENTS

The sole purpose of this installation manual is to demonstrate the installation of BISOL EasyMount™ mounting systems, therefore PV module installation guidelines and related safety precautions are not a part of this manual. For guidelines on how to safely and effectively install BISOL PV modules please refer to the PV installation manual, published on www.bisol.com.



PV design:

The installer carries all responsibility for PV system dimensioning, static calculations of the roof, weather and environmental conditions at location, proper selection and use of components and their mounting as well as the mechanical durability and water tightness of the installed interface connections at the building surface. All safety warnings outlined in this manual are to be closely considered.



Roof:

The continual pressure loading capacity (point load) of the insulation and the roofing material must be checked thoroughly and found to be sound before installation. If the compression strength of the roof surface is not sufficient, extra support surfaces must be added.

The roof must be in good condition and strong enough to bear the weight of the solar panels, including associated materials, ballast, wind and snow load. The customer is responsible to check the stability of the roof structure and, when necessary, employ a builder to correct it.

The customer is responsible to check the compatibility of EasyMount™ Quick RAIL mounting materials with local climate conditions (salt, acidity, sulphates etc.) and roof materials. The types of materials used in the Quick RAIL are stated in the product datasheets.



Installation work:

All installation work must be carried out by a specialised company with qualified personnel. Strict safety and accident prevention measures as defined by relevant regulations must be carried out and should be known by the installer. Appropriate protective equipment for work at height must be used throughout the installation process.
















Electrical work:

Although electrical connections are strictly not part of this manual, some safety warnings are in place. PV modules and mounting structure must be grounded even when the site is already equipped with lightning protection. PV modules are under high voltage and generate electrical current even in low light conditions. When modules are connected in series, life-threatening voltage is present at the end of the terminals. Open circuited branches can cause electric arc when in touch with conductive surface. Electrical installations must not be carried out in case of dampness.

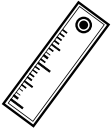
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COMPONENTS OVERVIEW

	Component	ID Code	Component description
1		SEKP-EMTAL_125	EasyMount™™ ALU Triangular 125
2		SEKP-EMTAL_200	EasyMount™™ ALU Triangular 200
3		SEKP-EMTAL_300	EasyMount™™ ALU Triangular 300
4		SEK-48_27_5400	EasyMount™™ 48 x 27 x 5400 mm
5		SEK-EMRL80	EasyMount™™ ALU Rail 80 x 5850 mm
6		SEK-EMRL80U_6000	EasyMount™™ ALU Rail 80 x 30 x 6000 mm, without holes
7		SEKP-EMC48	Connector set for EasyMount™™ 48 x 27
8		SEKP-EMC48_M	Connector set for EasyMount™™ 48 x 27, Magnelis
9		SEKP-EMCRL80	Connector set for EasyMount™™ Rail 80
10		EM-CLA.EA30S.3	Clamp end EasyMount™™ 30 mm, assembled
11		EM-CLA.MA30S.3	Clamp middle EasyMount™™ 30 mm, assembled
12		SEK-HHS_10_25	Screw hammerhead M10 x25 A2-70
13		SEK-DIN6923_10	Nut M10 flange A2-70
14		SEK-EMT_BPNRL	Ballast pan EasyMount™™ for ALU Rail 80, double-sided
15		SEK-LOAD_CP15	Load Concrete plate 40/40/3.8 cm (13.5 kg)
16		EM-WDE.10_175	Wind deflector, 10-degrees, length 175 cm
17		EM-WDE.10_210	Wind deflector, 10-degrees, length 210 cm
18		EM-WDE.10_217	Wind deflector, 10-degrees, length 217 cm
19		EM-WDE.20_175	Wind deflector, 20-degrees, length 175 cm
20		EM-WDE.20_210	Wind deflector, 20-degrees, length 210 cm
21		EM-WDE.20_217	Wind deflector, 20-degrees, length 217 cm
22			SEK-JF3_48_19



TOOLS REQUIRED



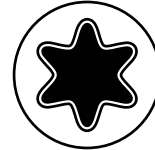
Measuring tool



Electric drill



Torque wrench



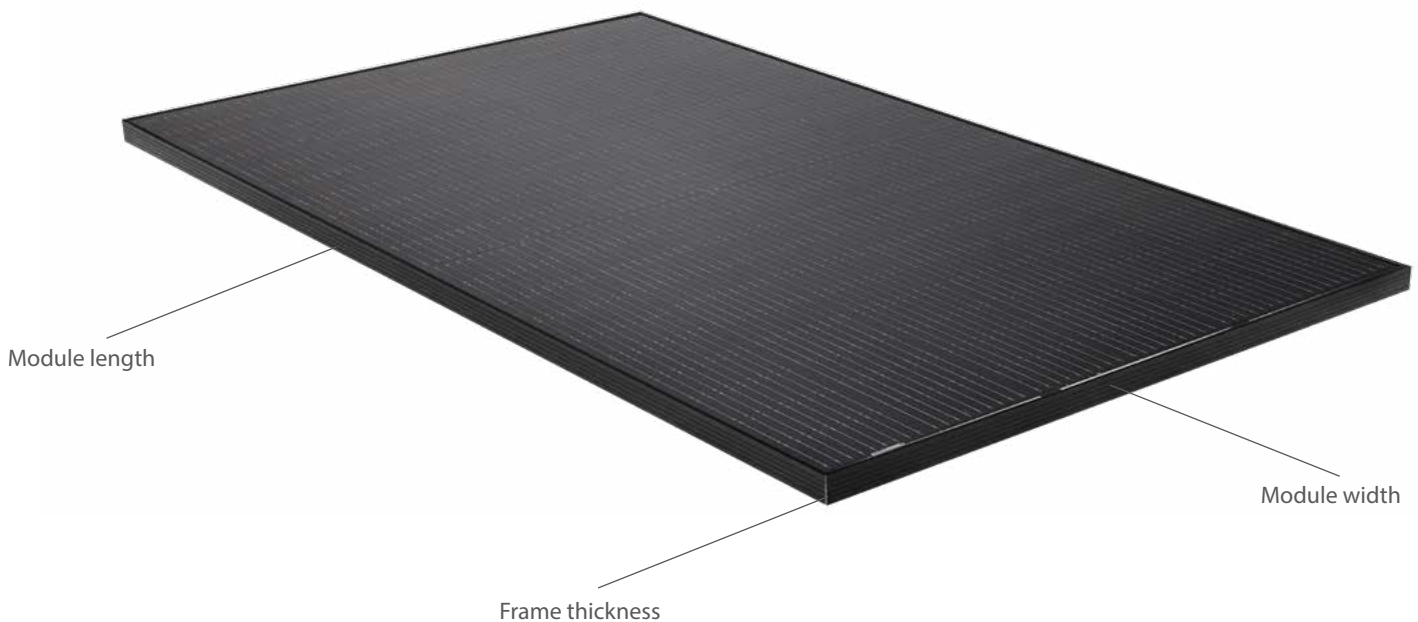
Torx T30 socket



Open-end wrench

PLANNING THE PV LAYOUT

Project Design



Designing the PV Module Layout

Minimal horizontal roof space required:

$a = \text{number of modules} * (\text{module length} + 20 \text{ mm}) + 60 \text{ mm}$

$a_{\text{max}} = 15 \text{ m}$

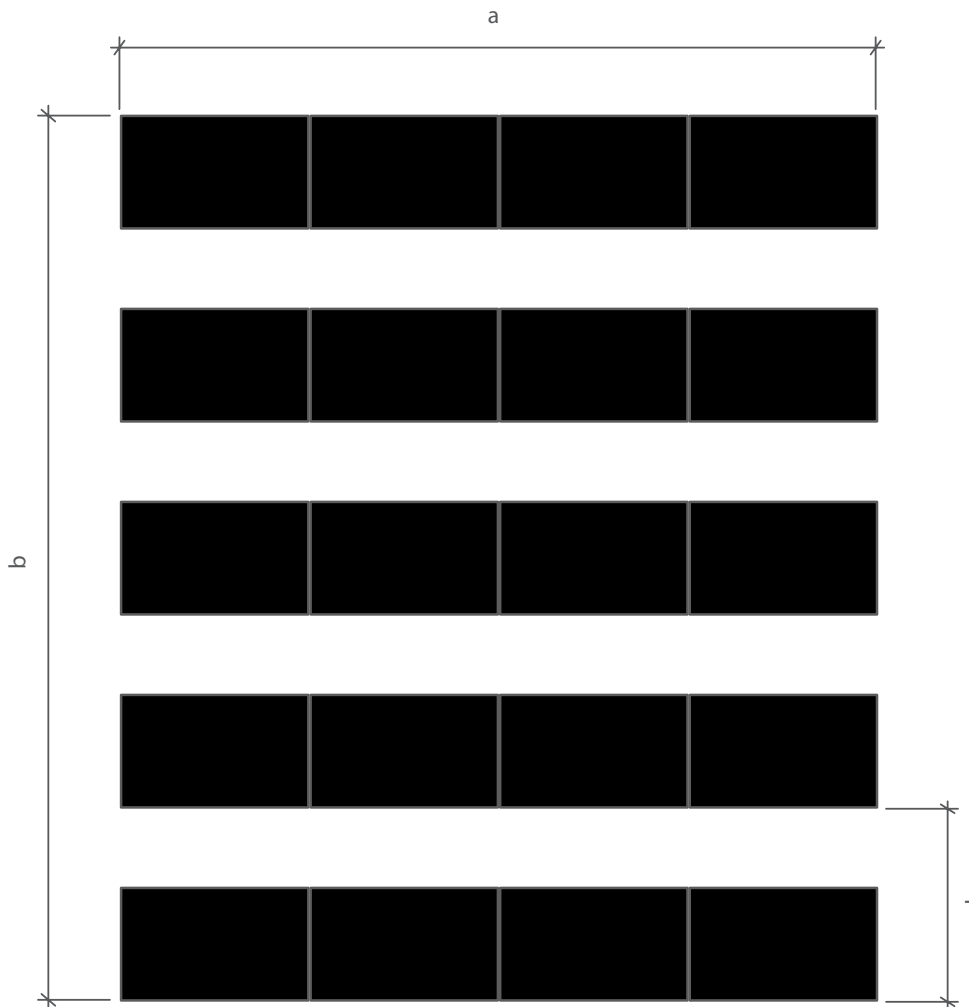
Minimal vertical roof space required:

$b = \text{number of rows} * r - (r - \text{module width})$

Maximum row distance, 12,5°: $r = 165 \text{ cm}$

Maximum row distance, 20°: $r = 190 \text{ cm}$

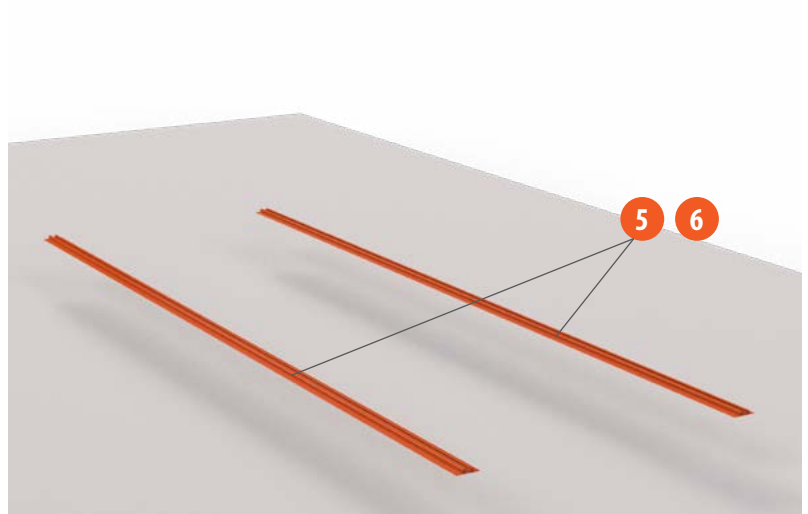
Maximum row distance, 30°: $r = 250 \text{ cm}$



MOUNTING INSTRUCTIONS

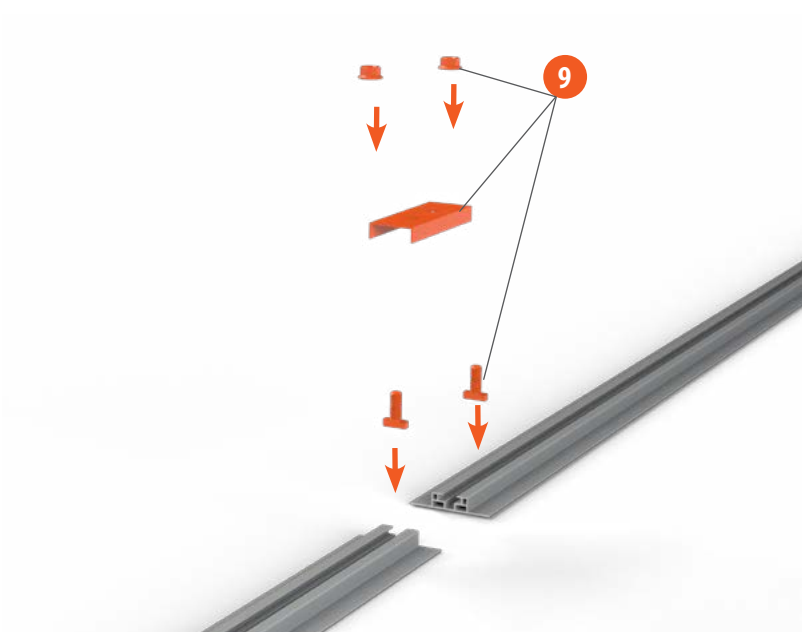
STEP 1: Laying Rails

Lay down EasyMount™ ALU Rails 80 parallel to each other.



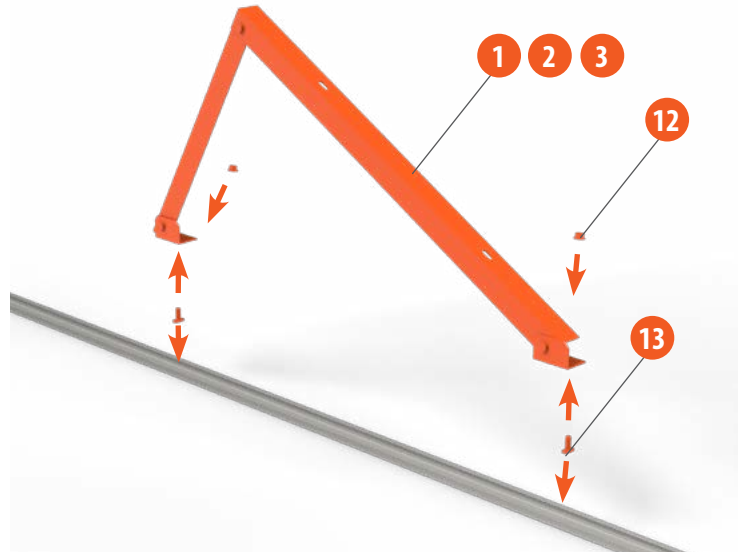
STEP 2: Extending Rails

If needed, extend the rails by using the connector set for EasyMount™ Rail 80. Mount the connector onto the EasyMount™ ALU Rail 80 and fix it with the screws. Connector set for EasyMount™ Rail 80 is delivered pre-assembled with two sets of screws.



STEP 3: Mounting A-frames on Rails

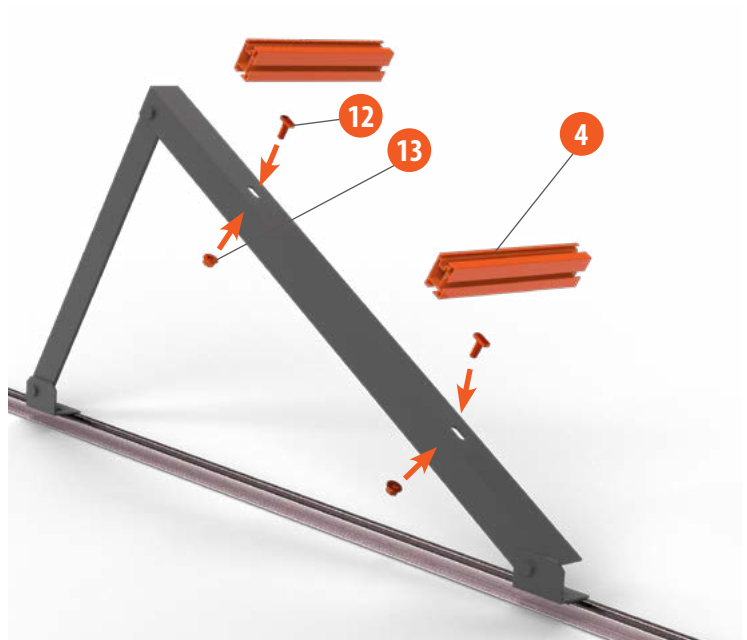
Mount the EasyMount™ ALU Triangular A-frames onto the rails, using screws and flange nuts, applying a maximum torque of 25 Nm. EasyMount™ ALU Triangular A-frame is delivered pre-assembled with two sets of screws.



STEP 4: Mounting Profiles on A-frames

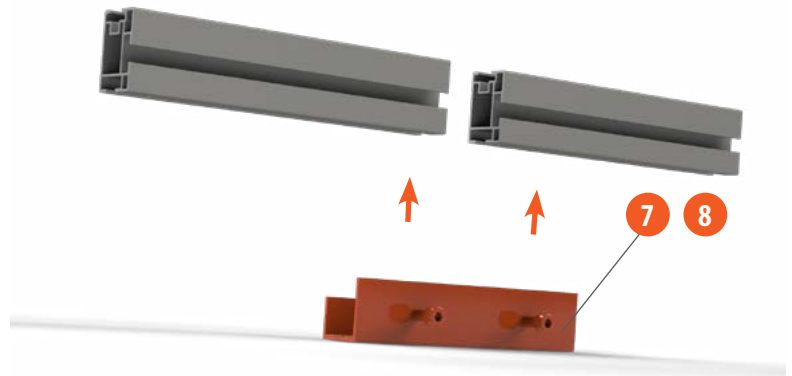
Mount two EasyMount™ 48 profiles perpendicular to the EasyMount™ ALU Triangular A-frames and in parallel to each other, using screws and flange nuts, applying a maximum torque of 25 Nm. Screws and flange nuts are packed separately.

Distance between the two profiles is predetermined by the distance between oval holes on the EasyMount™ ALU Triangular A-frames.



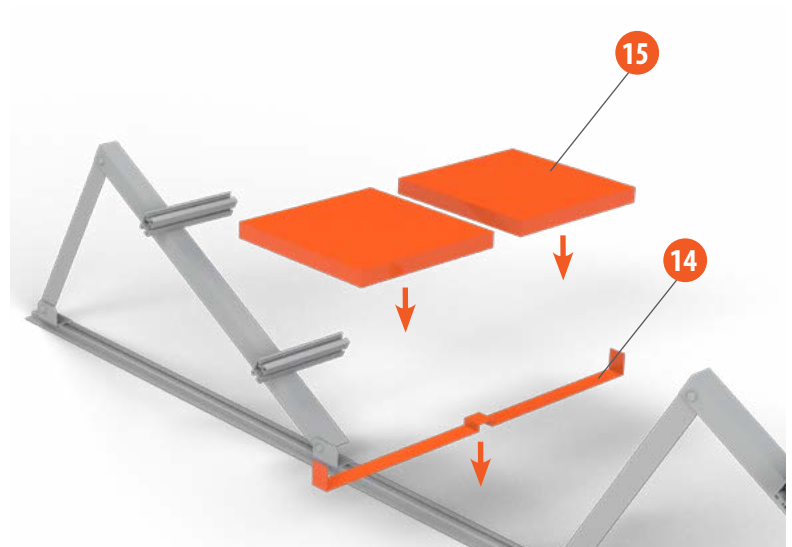
STEP 5: Extending Profiles

If needed, extend the profiles by using the connector set for EasyMount™ 48. Mount the connector from the side of the EasyMount™ 48 profile and fix it with the screws. Connector set for EasyMount™ 48 is delivered pre-assembled with two screws.



STEP 6: Attaching Ballast Pans & Ballasting

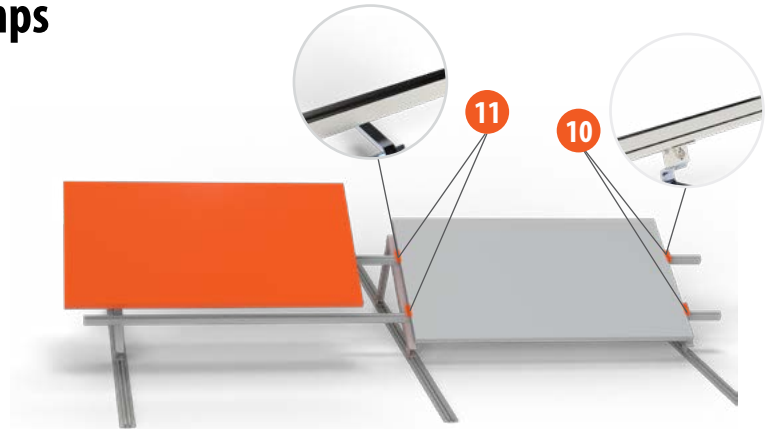
Attach ballast pan EasyMount™ for ALU Rail 80 onto each EasyMount™ Rail 80 between every row of modules, and ballast them with load concrete plates.



STEP 7: Fixing PV Modules with Clamps

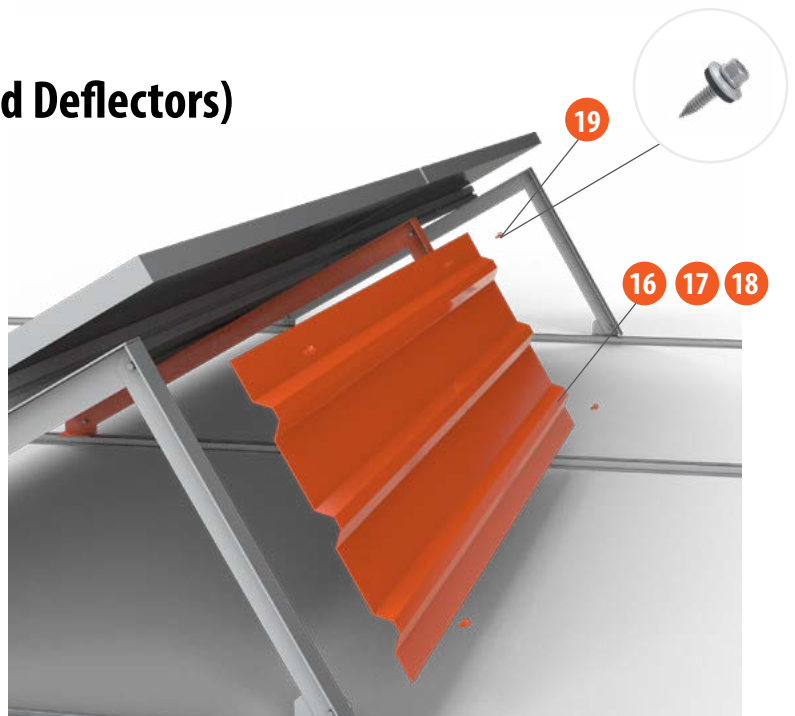
Insert the lower part of the end or middle clamp into the top slot of the EasyMount™ 48 profile. Lay the PV modules on the profiles and fix them with the clamps applying a torque of 9 Nm. Each module on Alpine TRIANGLE has to be fixed by four clamps.

The end clamps are used at the ends of each row, while the middle clamps are used to fixate two adjoining modules in the same row. All clamps are delivered pre-assembled.



STEP 8: Mounting Windshields (Wind Deflectors)

Mount the windshield to the rear legs of the EasyMount™ ALU Triangular A-frames and fix them with self-drilling screws onto the rear legs (two screws per each leg).





TERMS AND CONDITIONS

BISOL Production Ltd. as manufacturer of BISOL EasyMount™ mounting solutions in connection with their installation takes no responsibility for the design solutions of individual designers, also assumes no responsibility in connection with the installation of BISOL EasyMount™ mounting solutions by a third party and contrary to these instructions, as well as for the choice of mounting structure in this regard.

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Failure to follow the guidelines set out in this document and / or in the construction plan may invalidate all claims for product guarantees and liabilities.

The information in this manual is based on the knowledge and experience of the BISOL Production Ltd., but such information, including product specifications (without limitation), and suggestions do not constitute guarantees, expressed or implied. BISOL Production Ltd. reserves the right to change the installation instructions and product specifications without prior notice. The most recent version of this installation manual is published on official website www.bisol.com.

In addition, our General Sales Terms and Conditions for Supply of Goods and Services (GSTC) as well as Standard Limited Guarantee terms and conditions for mounting systems, both published on the website www.bisol.com, apply.



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