



Congratulations on buying the ValkQuattro® mounting system and on helping the environment by deciding to install solar panels.

The ValkQuattro® mounting system is an universal mounting system that can be used to install 4 standard solar panels in a landscape set-up one above the other, with a tilt angle of 10°, on a flat roof with a height up to 10 m. The components supplied do not include the additional ballast required, which will be a number of tiles. The weight of tiles required per position, per type of solar panel, per roof area and per building height is specified in the tables on the back of this document.

Safety instructions

The ValkQuattro® mounting system shall be installed on roofs and will be exposed to wind and snow. The building in question will be subject to a greater load as a result of the solar system. A design calculation must be used to establish whether or not the building in question will be able to withstand the extra load. Where necessary, modifications need to be made.

When installing the ValkQuattro® mounting system, the instructions provided in this user manual must be observed at all times.

Read this manual carefully and keep it in a safe place. Also follow the instructions stated in the manuals for the other system components that form part of the overall solar system.

All current structural, safety and building regulations must be observed.

Van der Valk Solar Systems B.V. will never be liable for any direct and/or indirect intangible or consequential loss ensuing from or connected to the failure to observe the instructions provided in this manual.

Starting points

The following starting points apply for the ValkQuattro® mounting system:

The standards applied

NEN-EN 1990	: Eurocode – Basis of structural design
NEN-EN 1991-1-4	: Eurocode 1: Actions on structures - Part 1-4: General actions – Wind actions
NVN7250	: Solar energy systems – Integration in roofs and facades – Constructional aspects
BS EN 1991-1-4	: British Standard


Type of solar panel

The ValkQuattro® mounting system is a universal mounting system for solar panels. The following starting points apply:

Panel design	: Standard solar panels with an aluminium frame.
Panel length	: Approx. 1650 mm
Panel width	: Approx. 1000 mm
Thickness of the aluminium frame	: 28 - 50 mm
Panel weight	: Approx. 20 kg

Types of roof


The ValkQuattro® mounting system can be used to mount panels on flat roofs. The following starting points apply:

 Type of roof covering: bitumen, EPDM and concrete (for the ballast applicable per type of roof covering, see the tables on the back of this document).

Before installing the ValkQuattro® mounting system, make sure that you carefully sweep the roof area. The ballast calculation for the ValkQuattro® mounting system (see the back of the manual) only applies for flat roofs and roofs with a slight pitch of up to 5°. Above this roof pitch, the system should be attached to the roof securely.

Ballast


The ValkQuattro® mounting system needs to be supported by ballast, to make sure that the system is unable to move, lift or tip over.

 See the back of this document for details of which ballast should be used for each type of solar panel, each region, each type of roof covering and for each building height (subject to a maximum of 10 m).

The weight specified per position will be vital to ensure that the mounting system can be used safely.

To achieve this, follow the instructions on the ballast required on the back of this document.

Position

 Restrictions also apply for the position of the system on a roof. The solar panels must be installed at a certain distance from the edge of the roof. According to the current standard, NEN-EN 1991-1-4, this free edge zone is 1/5 of the height of the roof. So, if a roof is 6 metres high, a free edge zone of 120 cm will be necessary.

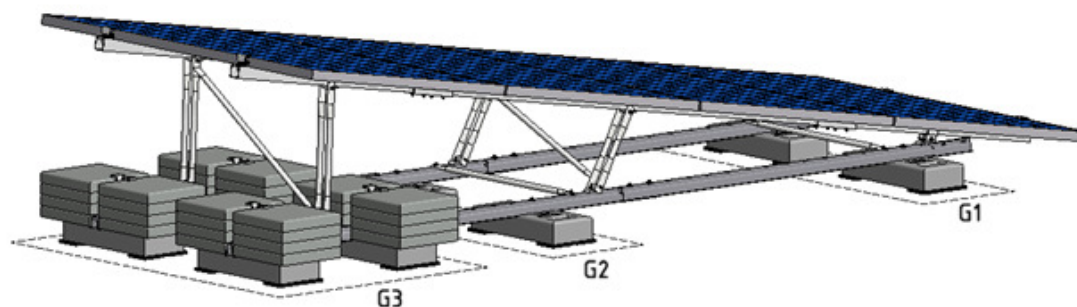
Guarantee

The guarantee provided is subject to the guarantee conditions stated in the general terms and conditions stipulated by Van der Valk Solar Systems B.V. Our terms and conditions can be found on our website: www.valksolarsystems.nl

The ValkQuattro® mounting system is a product that has been produced by: Van der Valk Solar Systems B.V.,
Registered with the chamber of commerce for Haaglanden under number 27355116. Internet : www.valksolarsystems.nl

Issue date: May 2014
Version: VALK-USER-EN/GB-ValkQuattro –Flat Roof-2014-05

Ballast requirements



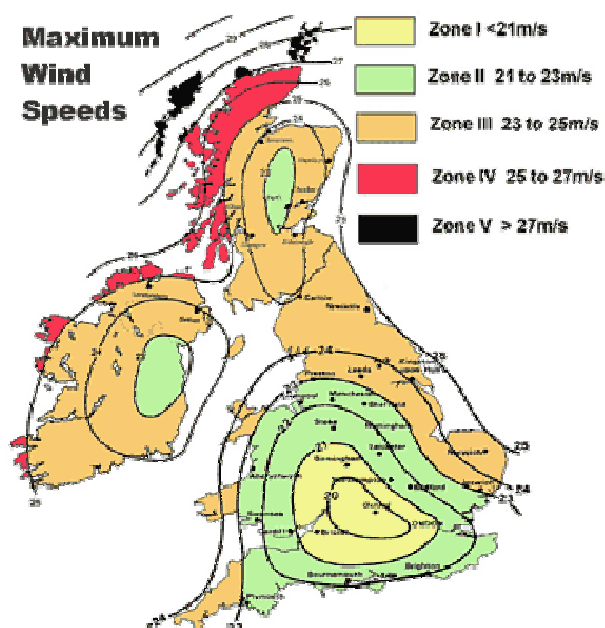
General

The ValkQuattro® mounting system must be weighted down by tiles, which will be placed at positions G2 and G3.

Start by choosing the wind area in which the system will be installed from the overview below.

Next, look at the table for the panel length in question. In this table, you will choose the relevant type of roof covering. Bitumen and EPDM have a higher skin friction and it will be possible to use less ballast for this type of roof covering. Next, choose the table for the wind area in question and the row for the building height applicable. This will show you the number of tiles necessary for positions G2 and G3.

Maximum Wind Speeds



Selection table:

Minimum number of kilograms per position G2 and G3

Based on:

* Category: Town (sites more than 1km inside town boundary - area where at least 15% of the surface is covered with buildings with an average height above 15m)

* Distance to shoreline: >10km

* Maximum height above sea level: <100m

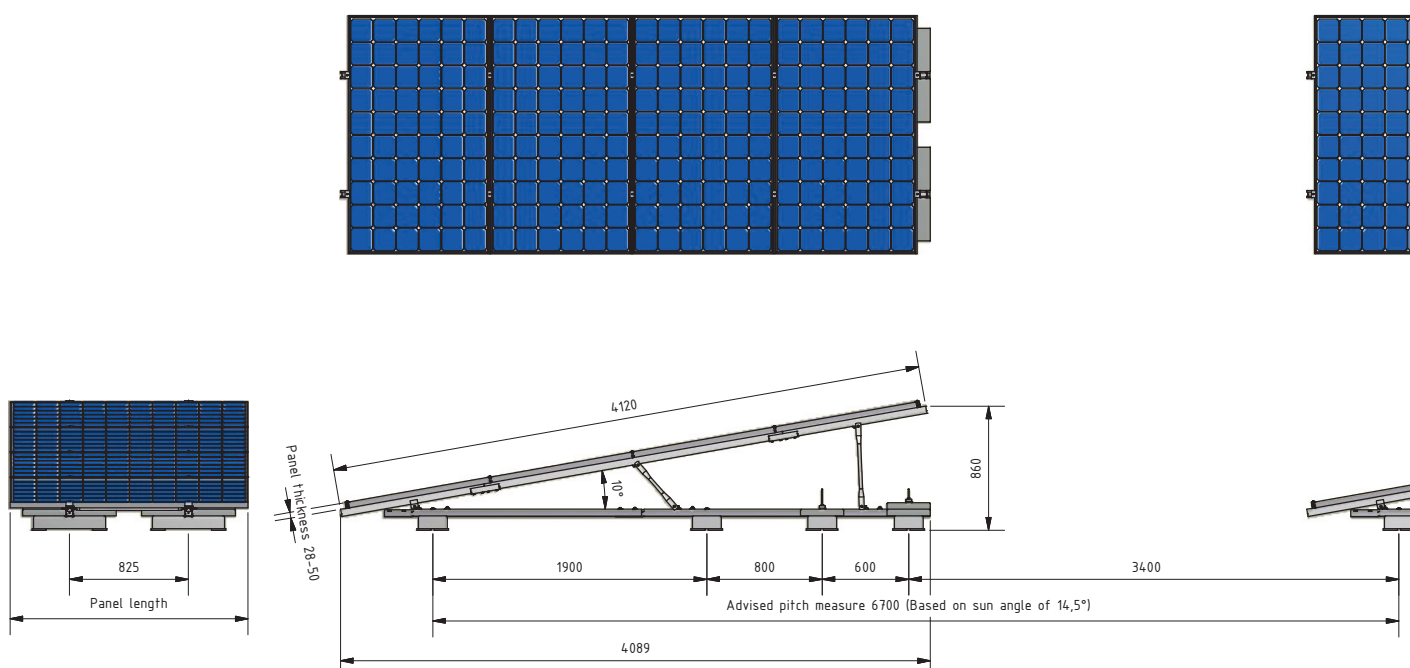
		Panel height approx. 165cm (approx. 100 cm)					
		Bitumen + EPDM			Concrete		
		Position			Position		
Building Height		Zone G1	Zone G2	Zone G3	Zone G1	Zone G2	Zone G3
21,5 m/s	0 - 5 meter	0 kg	0 kg	105 kg	0 kg	0 kg	116 kg
	5 - 10 meter	0 kg	0 kg	217 kg	0 kg	0 kg	230 kg
22 m/s	0 - 5 meter	0 kg	0 kg	123 kg	0 kg	0 kg	133 kg
	5 - 10 meter	0 kg	0 kg	240 kg	0 kg	0 kg	254 kg
23 m/s	0 - 5 meter	0 kg	0 kg	158 kg	0 kg	0 kg	170 kg
	5 - 10 meter	0 kg	0 kg	286 kg	0 kg	14 kg	288 kg
24 m/s	0 - 5 meter	0 kg	0 kg	196 kg	0 kg	0 kg	209 kg
	5 - 10 meter	0 kg	47 kg	288 kg	0 kg	64 kg	288 kg

Installation manual ValkQuattro



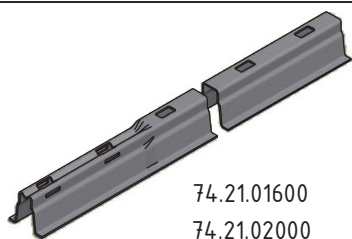
Version 01

Measurements ValkQuattro

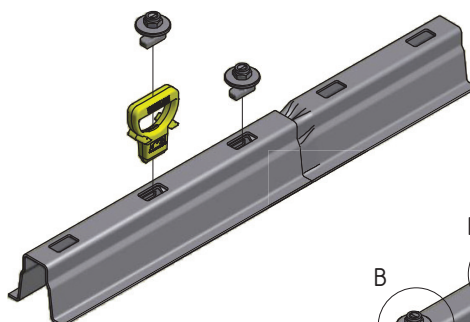


Coupling of the roof carriers

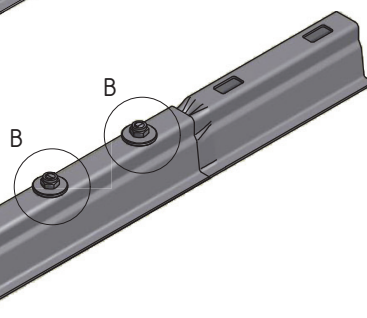
VAN DER VALK



77.42.21

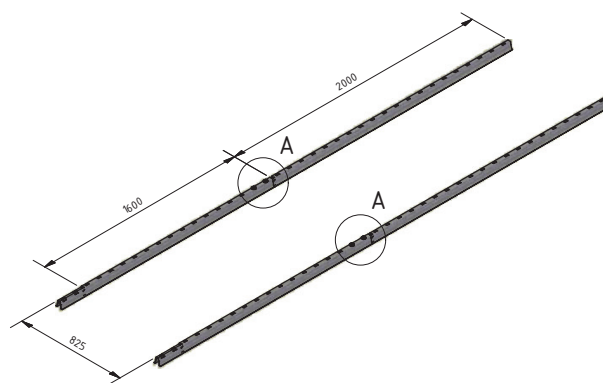
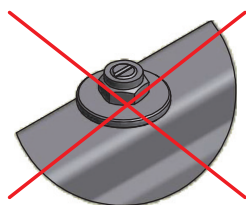
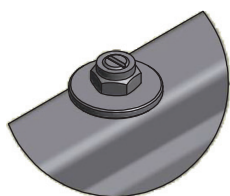


Detail A



Detail B

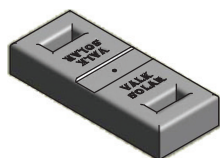
The groove of the bolt corresponds with the orientation of the bolt head.



2

Front mass block

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75.05.20



72.96.10

M8x65



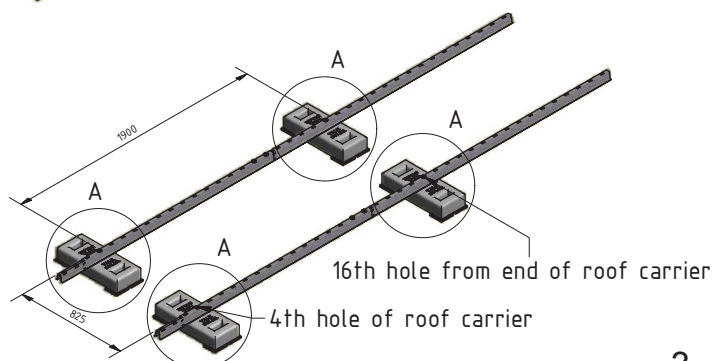
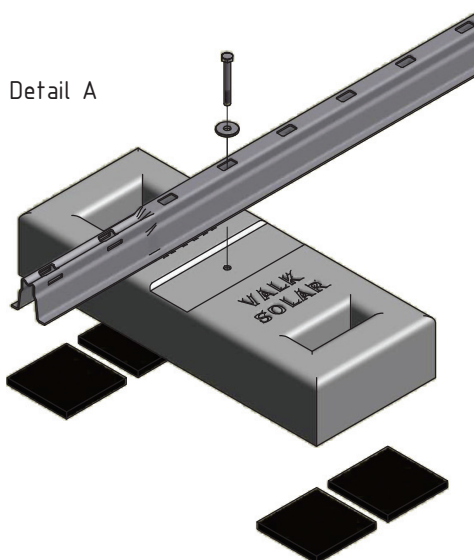
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M8

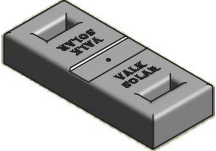






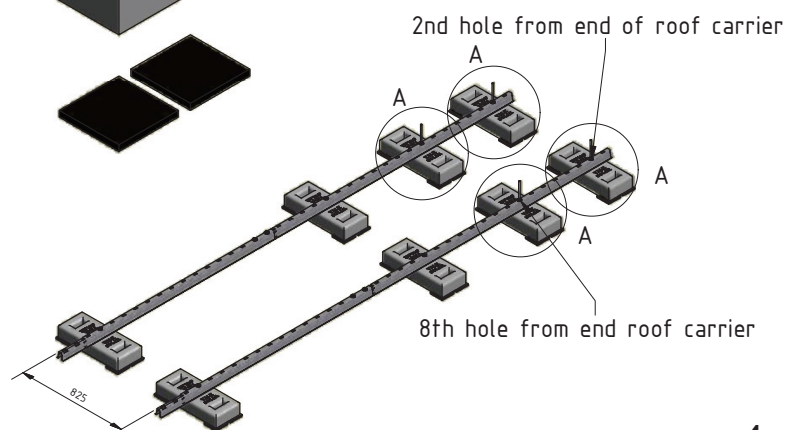
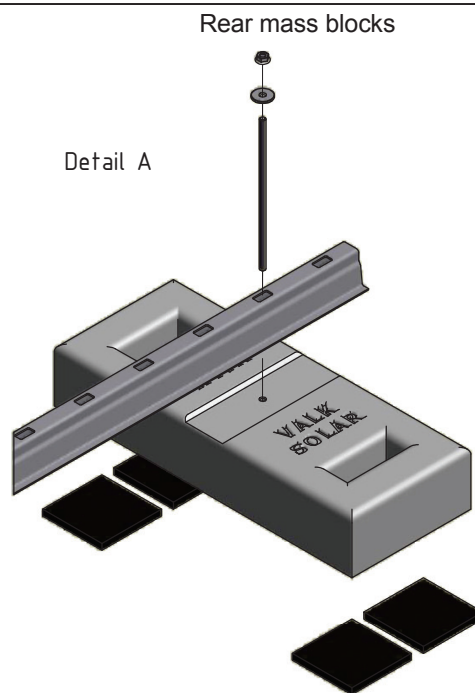
77.40.08

Detail A

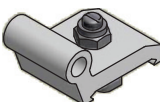


3

	75.05.20
	72.96.10
M8x220 	74.79.74
M8 	77.40.06
M8 	77.40.08



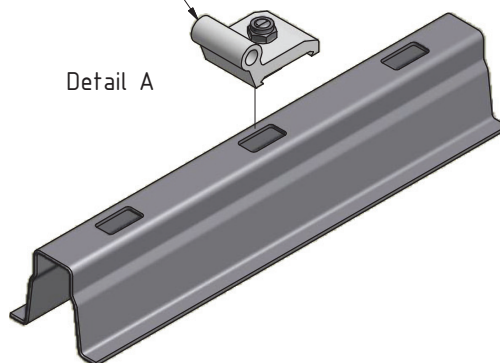
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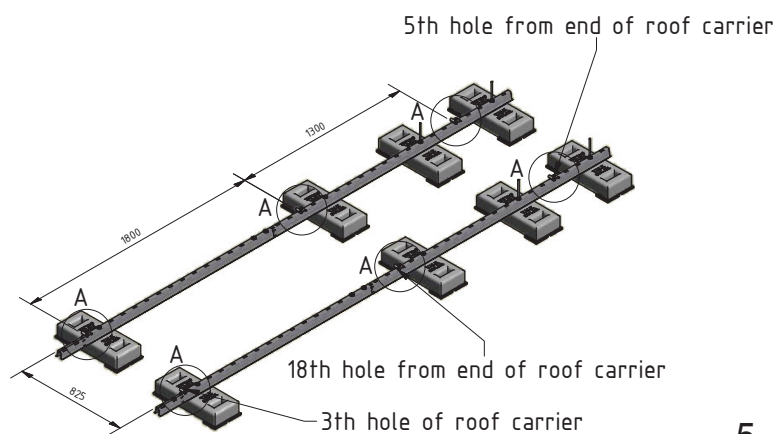
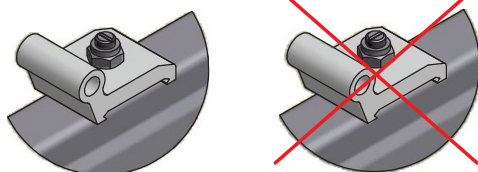
A-frame connector

Mount hole to the front

Detail A



The groove of the bolt corresponds with the orientation of the bolt head.



5

Push-rods

VAN DER VALK



G13.03.22.0825.00.00

M8x25



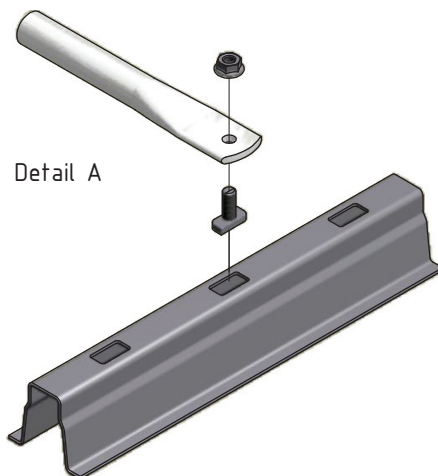
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M8

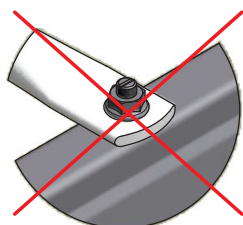
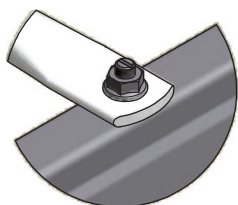


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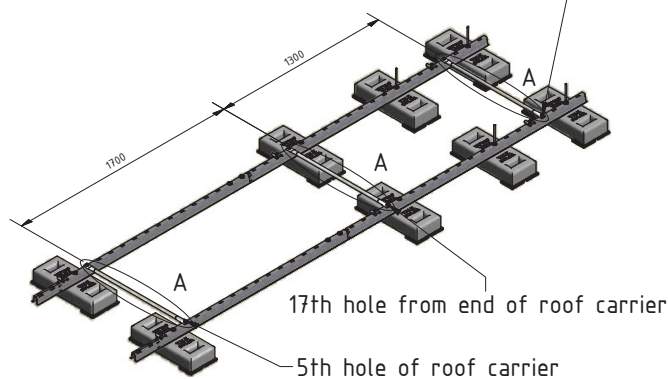
Detail A



The groove of the bolt corresponds with the orientation of the bolt head.



4th hole from end of roof carrier



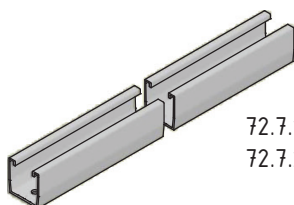
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Subassembly profile (2x)

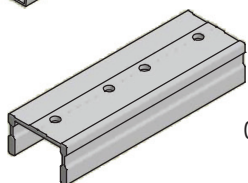
VAN DER VALK



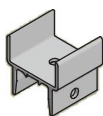
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72.44.50



72.44.14



M8x20



77.40.20

M8

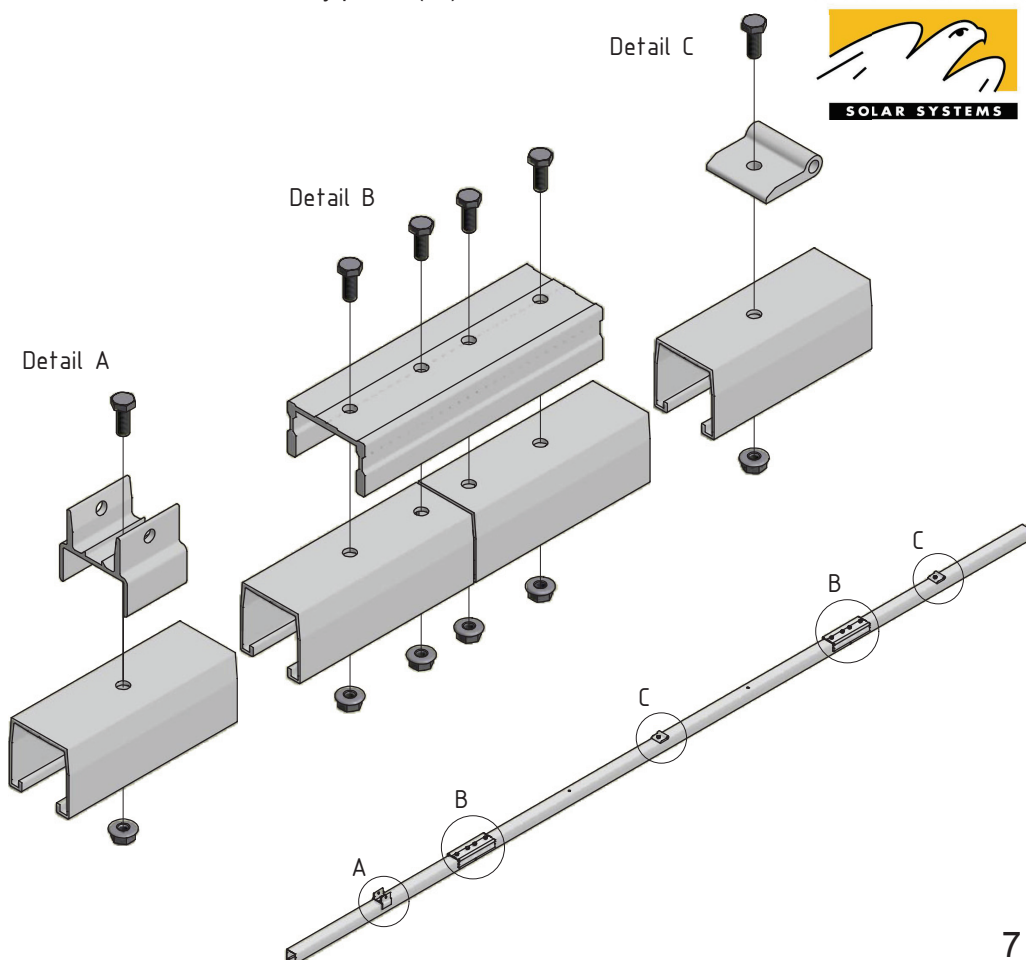


77.40.06

Detail A

Detail B

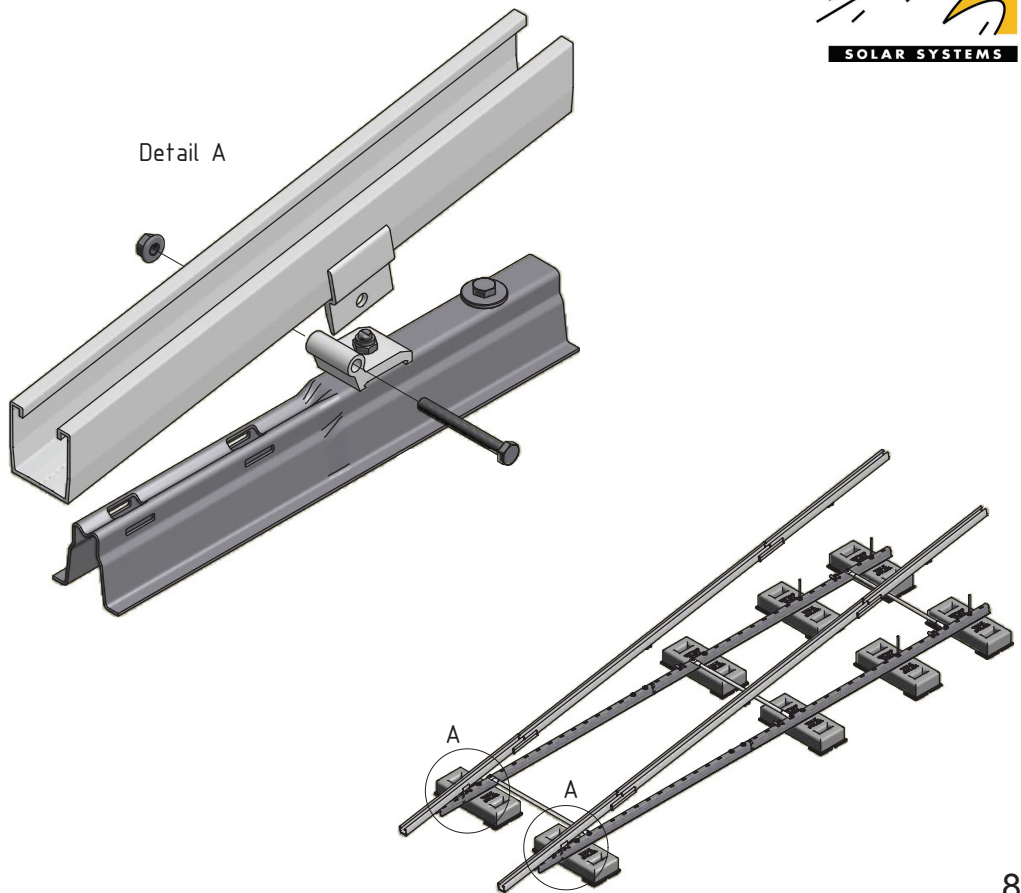
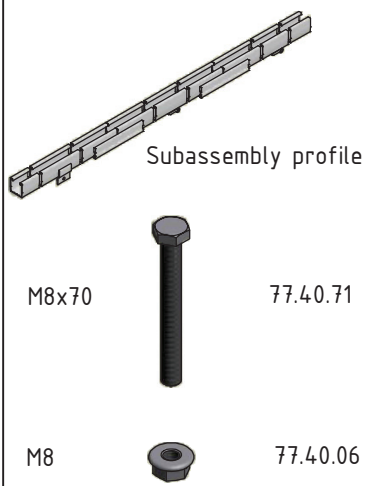
Detail C



7

Mounting subassembly

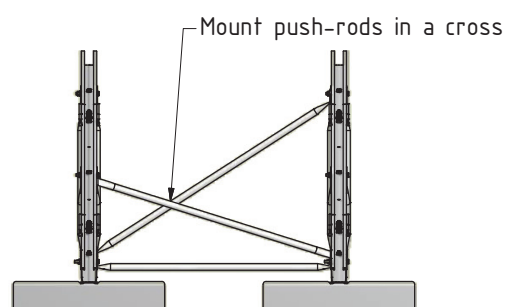
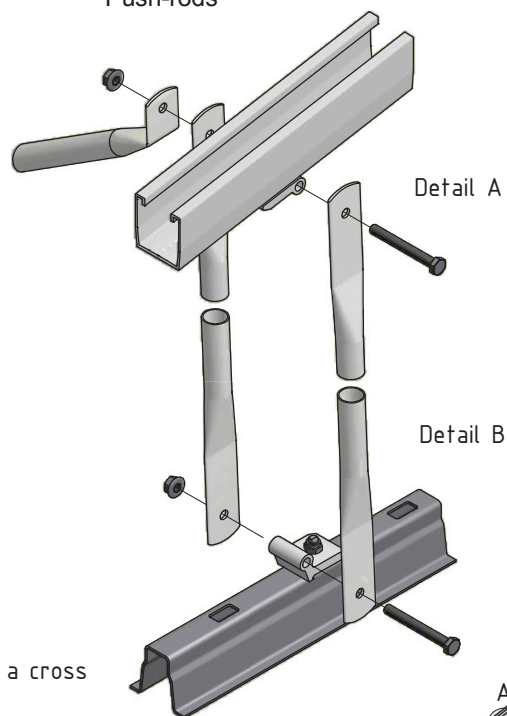
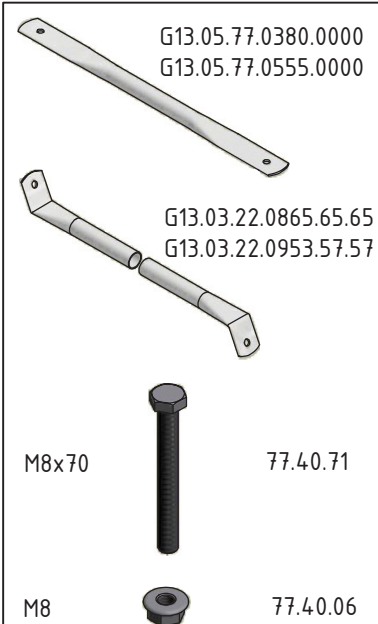
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8

Push-rods

VAN DER VALK



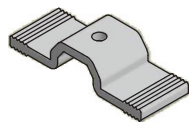
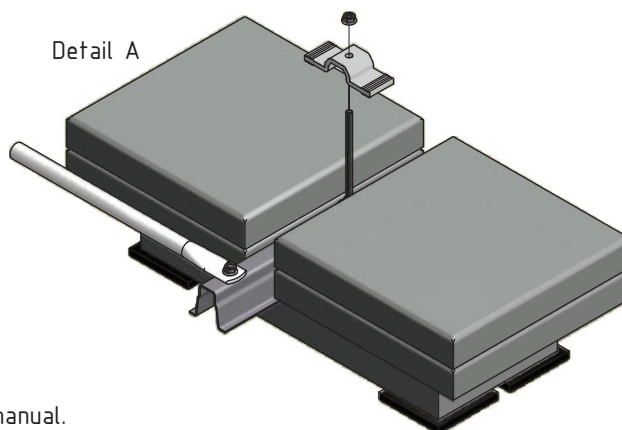
9

Ballast

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Detail A



72.51.40

M8



77.40.06

Not included

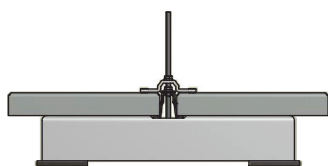


Tile

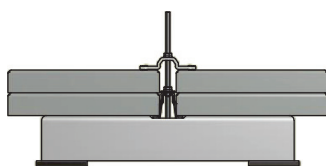
Tile 300x300x45 mm

Refer to the ballast table in front of this manual.

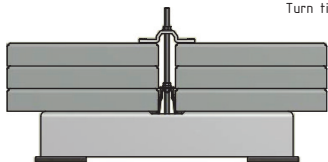
2 extra tiles



4 extra tiles

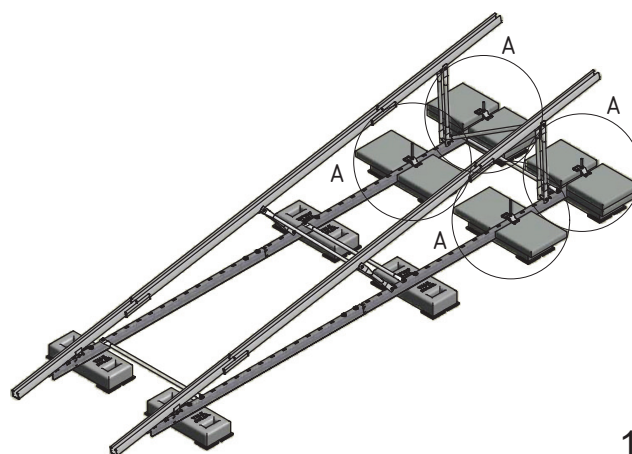
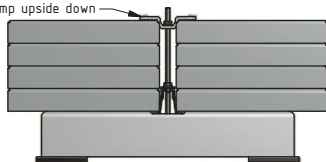


6 extra tiles



8 extra tiles

Turn tile clamp upside down



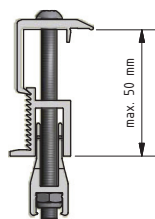
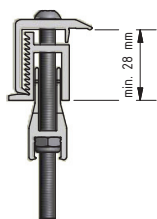
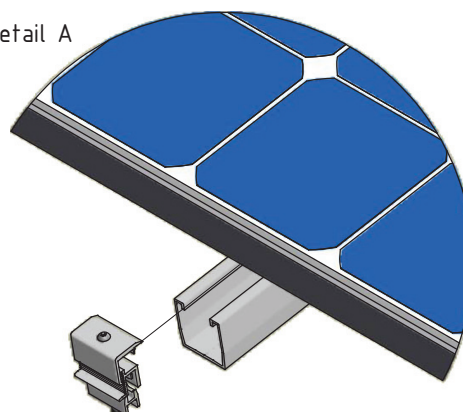
10

End clamp

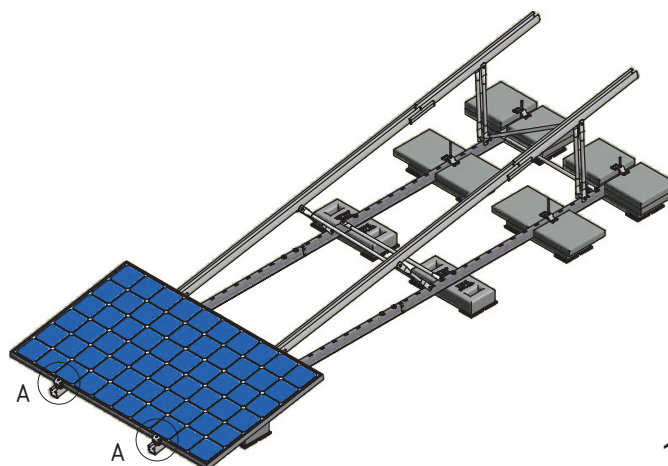
VAN DER VALK



Detail A



Mount the clamping plate (top) in the right groove, which corresponds with the thickness of the panel.



11

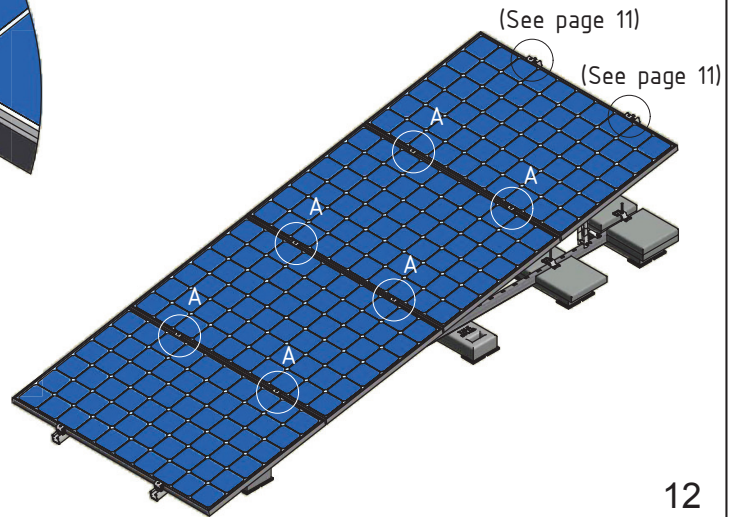
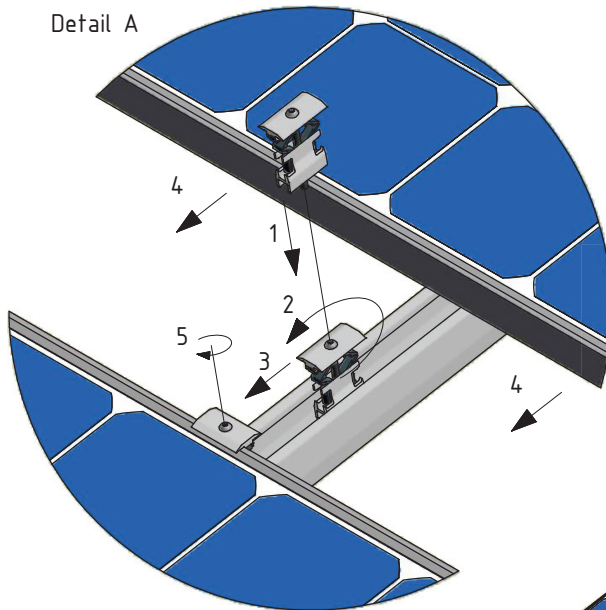
Panel clamp

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72.15.50

Detail A



12

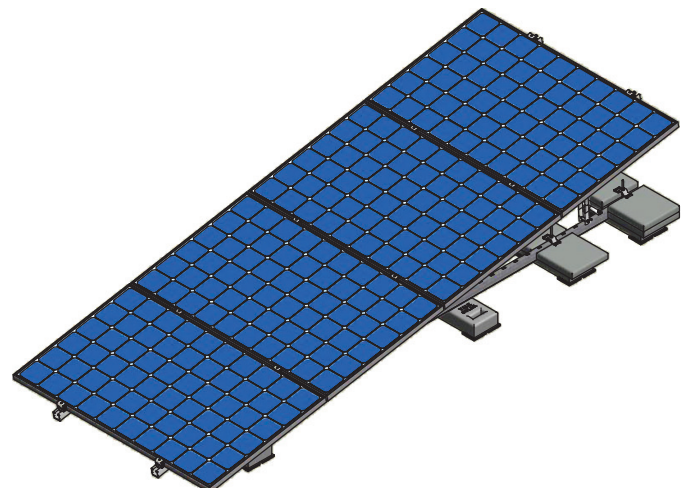
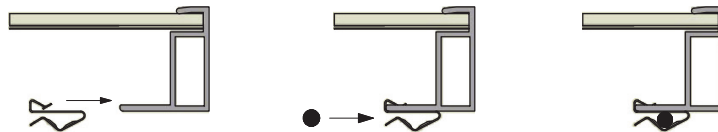
DC cable clamp

VAN DER VALK



73.20.01
Max. cable
diameter Ø 9 mm

Mount cable clamp on the panel



13

Van der Valk Solar Systems

Van der Valk Solar Systems is a specialist company that is fully focused on developing and producing mounting systems for use with solar panels. To this end we work in close collaboration with Van der Valk Systemen, our sister company.

Van der Valk Systemen has been a well-known name in the field of moving systems and stationary components for the greenhouse horticultural sector and industry throughout the world since 1963. Van der Valk Systemen's high quality products have been individually developed from a scientific approach and produced with mathematical precision. They are made to be low-maintenance and to stand out thanks to their durability, reliability, functionality and ease of assembly.

Both Van der Valk Systemen and Van der Valk Solar Systems only introduce innovative products to the market. Our shared business complex consists of 20,000 m² of offices and production facilities, in which modern machinery and the latest technologies facilitate development, manufacturing and testing that is fast, flexible and precise.

We develop and produce solar mounting systems for:



Open Fields



Pitched Roofs



Flat Roofs



Greenhouses



Water Features



PLEASE CONTACT VAN DER VALK SOLAR SYSTEMS , YOUR INSTALLATION
COMPANY OR PROJECT ORGANISATION FOR FULL INFORMATION.