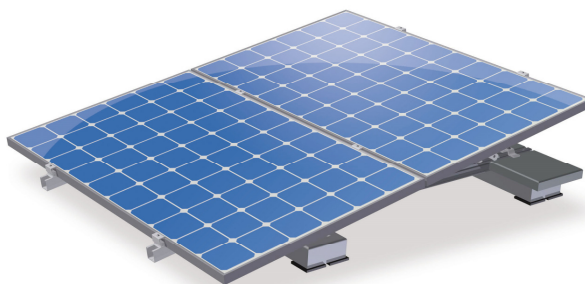




Congratulations on buying the ValkDouble® mounting system and on helping the environment by deciding to install solar panels.

The ValkDouble® mounting system is an universal mounting system that can be used to install 2 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 ValkDouble® 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 ValkDouble® 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 ValkDouble® 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 ValkDouble® 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 ValkDouble® 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 ValkDouble® mounting system, make sure that you carefully sweep the roof area. The ballast calculation for the ValkDouble® 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 ValkDouble® 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.

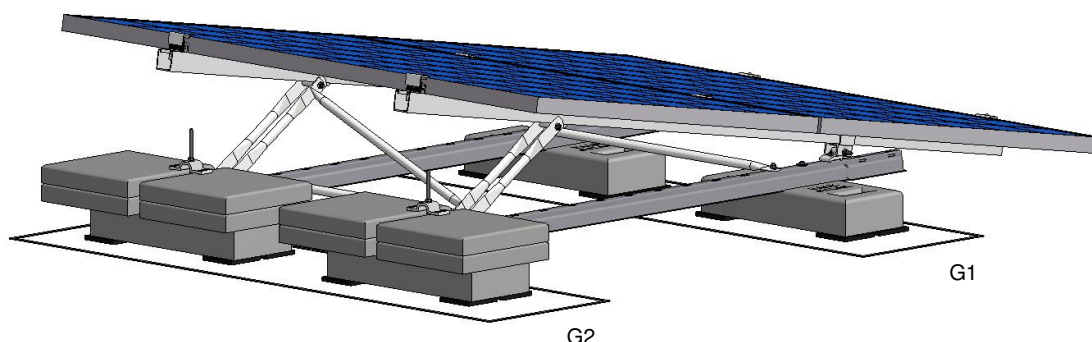
Guarantee

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 ValkDouble® 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-ValkDouble –Flat Roof-2014-05

Ballast requirements



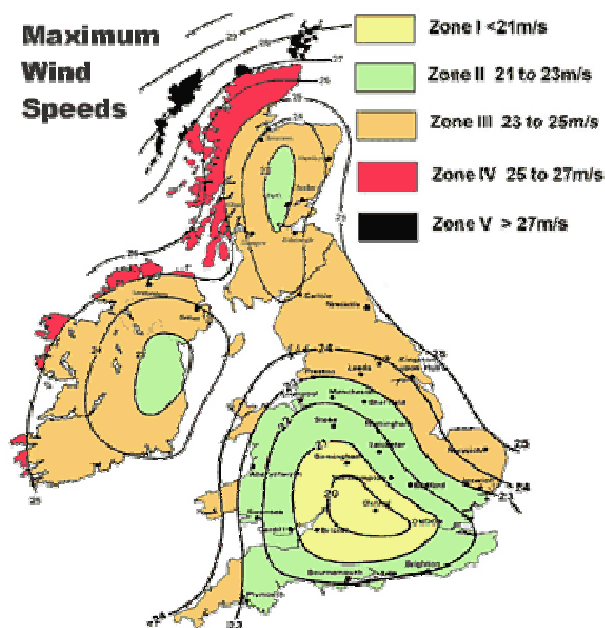
General

The ValkDouble® mounting system must be weighted down by tiles, which will be placed at position G2.

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 position G2.

Maximum Wind Speeds



Selection table:

Minimum number of kilograms per position G2

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)

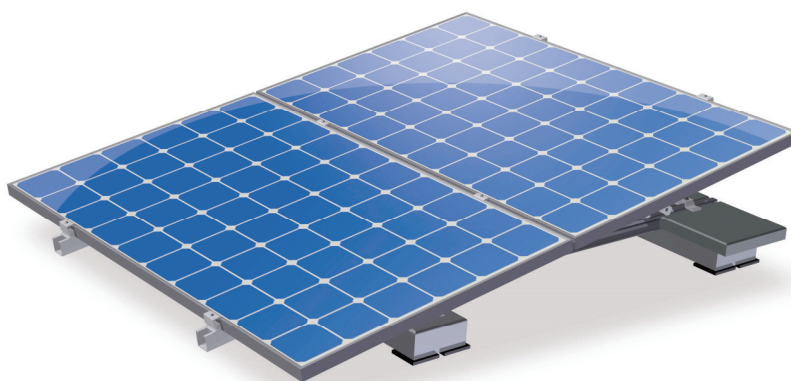
* Distance to shoreline: >10km

* Maximum height above sea level: <100m

Panel height approx. 165cm (approx. 100 cm)					
Building height		Bitumen + EPDM		Concrete	
		Position		Position	
		Zone G1	Zone G2	Zone G1	Zone G2
21,5 m/s	0 - 5 meter	0 kg	53 kg	0 kg	58 kg
	5 - 10 meter	0 kg	109 kg	0 kg	116 kg
22 m/s	0 - 5 meter	0 kg	62 kg	0 kg	67 kg
	5 - 10 meter	0 kg	120 kg	0 kg	127 kg
23 m/s	0 - 5 meter	0 kg	80 kg	0 kg	86 kg
	5 - 10 meter	0 kg	143 kg	0 kg	151 kg
24 m/s	0 - 5 meter	0 kg	98 kg	0 kg	105 kg
	5 - 10 meter	0 kg	168 kg	0 kg	176 kg

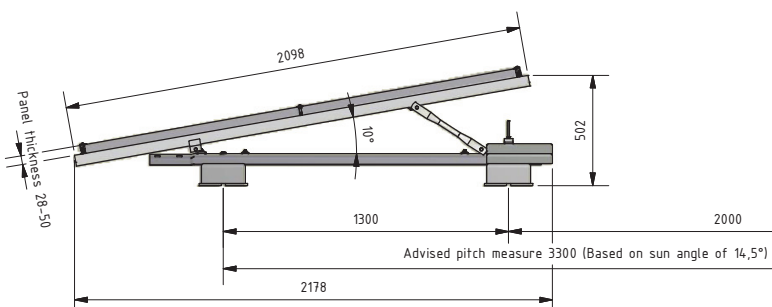
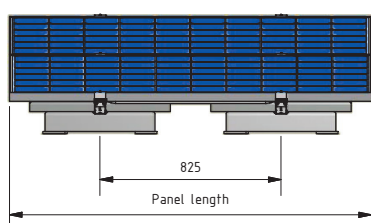
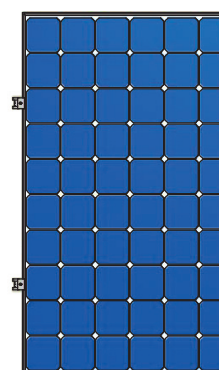
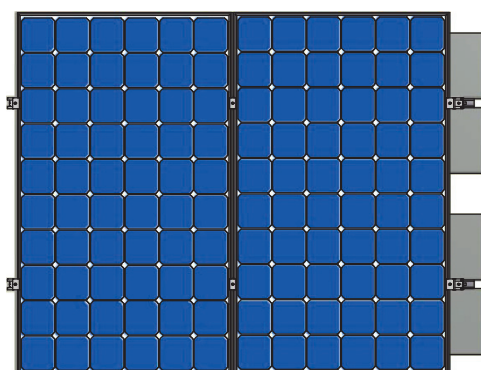
Van der Valk Solar Systems
TRACKING AND FIXED SOLAR MOUNTING SYSTEMS

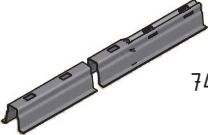




Installation manual ValkDouble

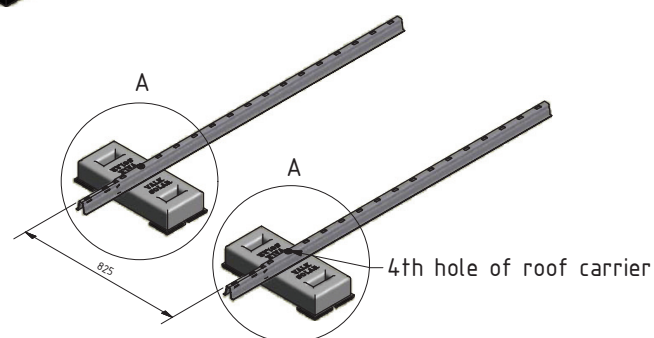
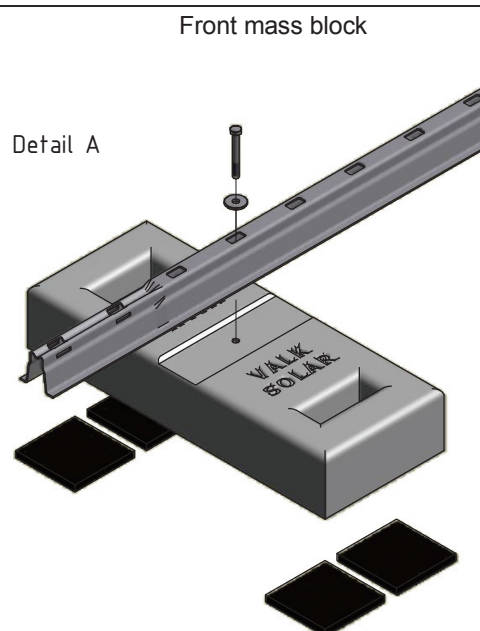


Version 01

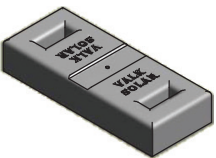




Measurements ValkDouble

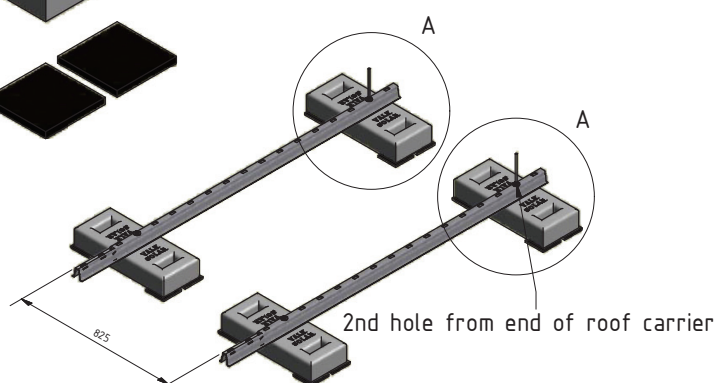
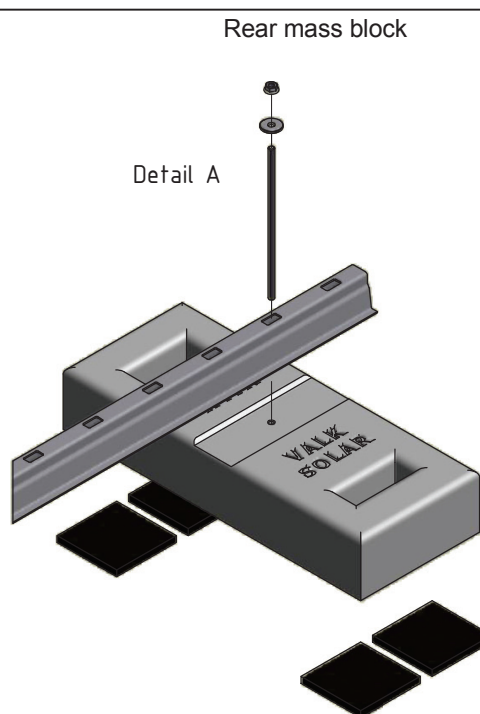


	74.21.01600
	75.05.20
	72.96.10
M8x65 	77.40.65
M8 	77.40.08

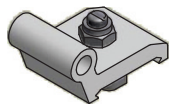


2

	75.05.20
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M8 	77.40.06
M8 	77.40.08



3

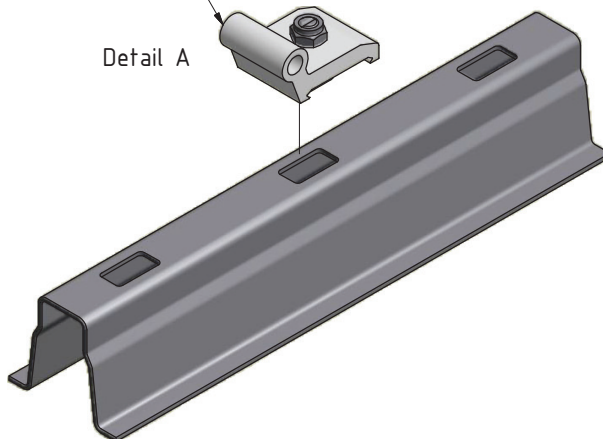


72.44.20

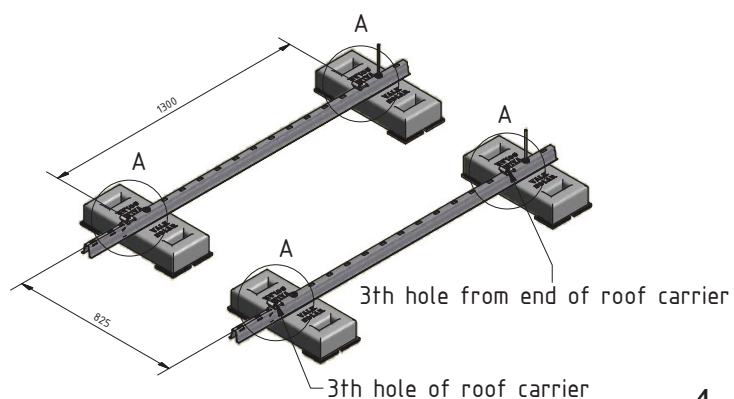
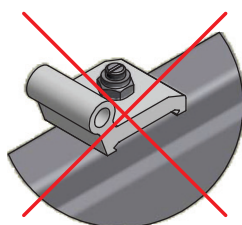
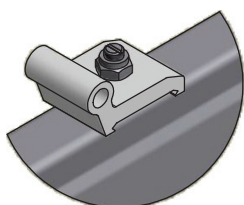
A-frame connector

Mount hole to the front

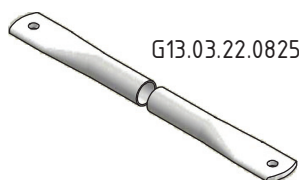
Detail A



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



4



G13.03.22.0825.00.00

M8x20



77.42.20

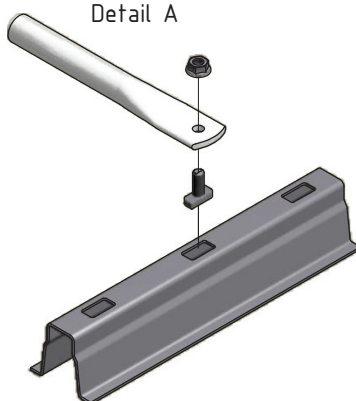
M8



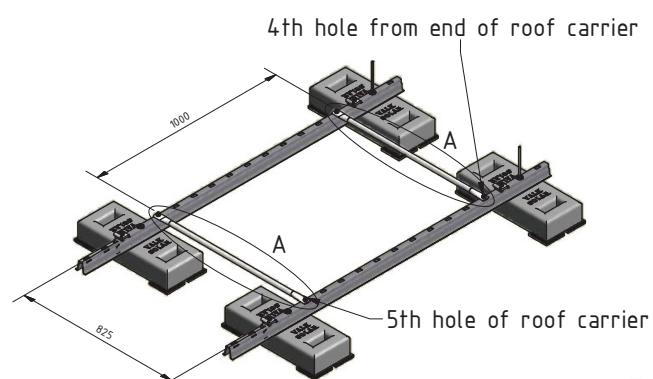
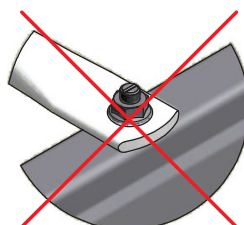
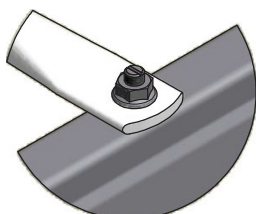
77.40.06

Push-rods

Detail A



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



5

VAN DER VALK

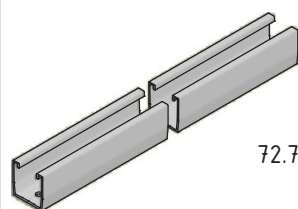


VAN DER VALK

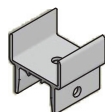


Subassembly profile

VAN DER VALK



72.7.2098



72.44.50



72.44.14

M8x20

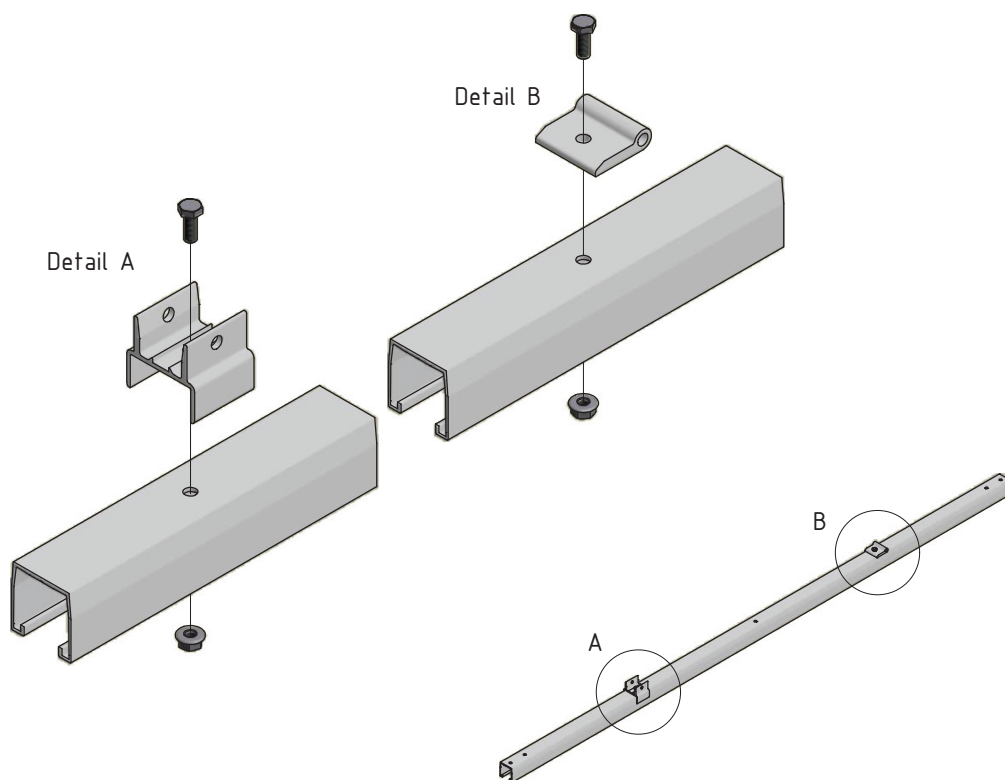


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M8



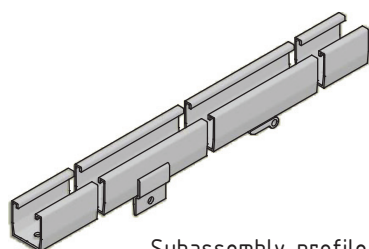
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6

Mounting subassembly

VAN DER VALK



Subassembly profile

M8x70

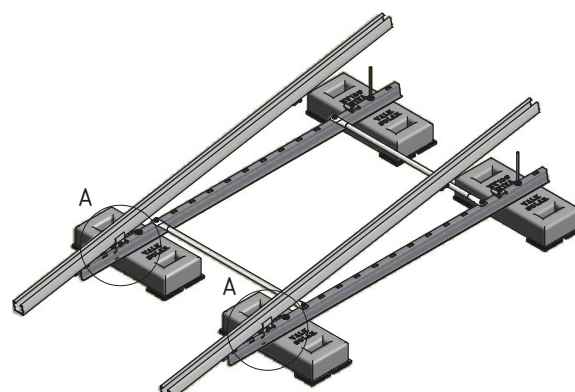
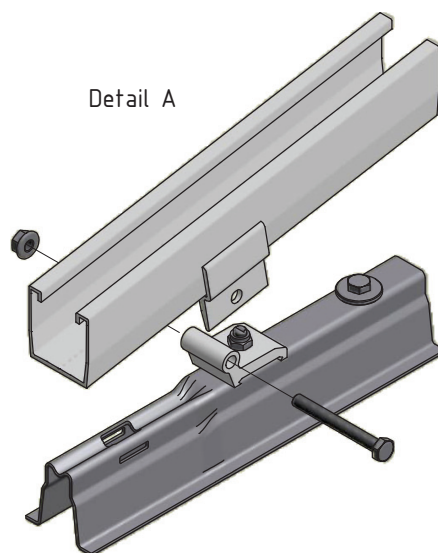


77.40.71

M8



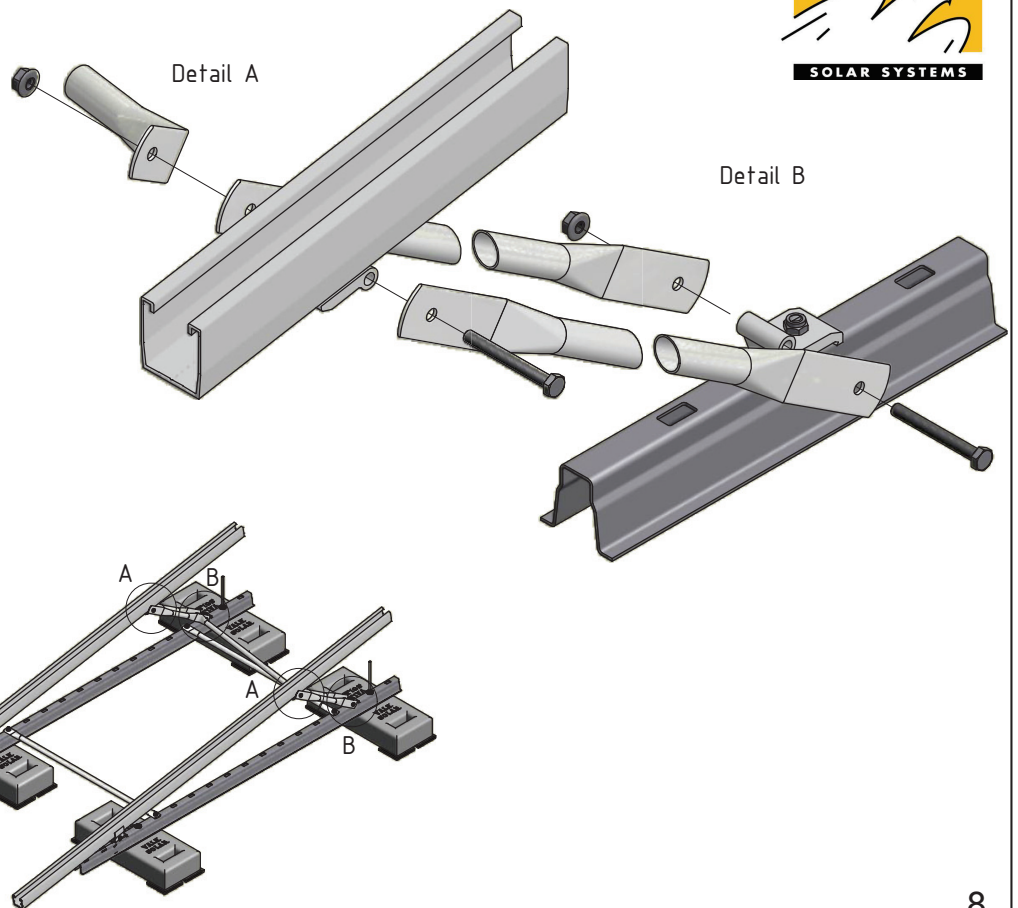
77.40.06



7

Push-rods

VAN DER VALK



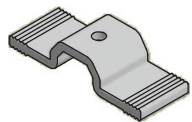
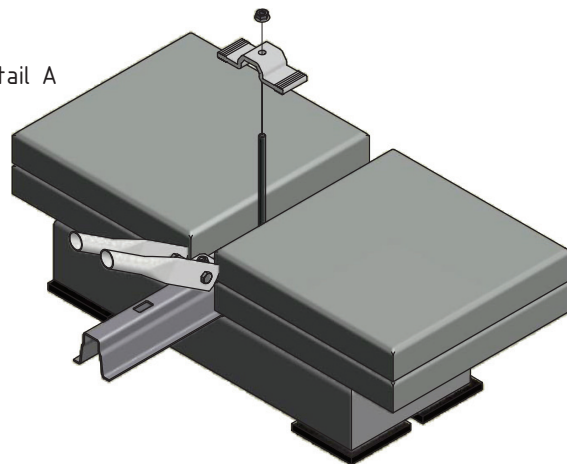
8

Ballast

VAN DER VALK



Detail A



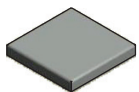
72.51.40

M8



77.40.06

Not included

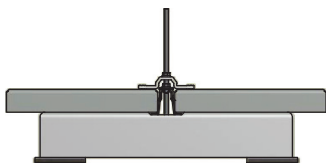


Tile

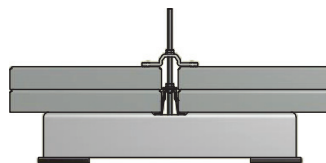
Tile 300x300x45 mm

Refer to the ballast table in front of this manual.

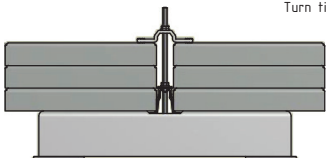
2 extra tiles



4 extra tiles

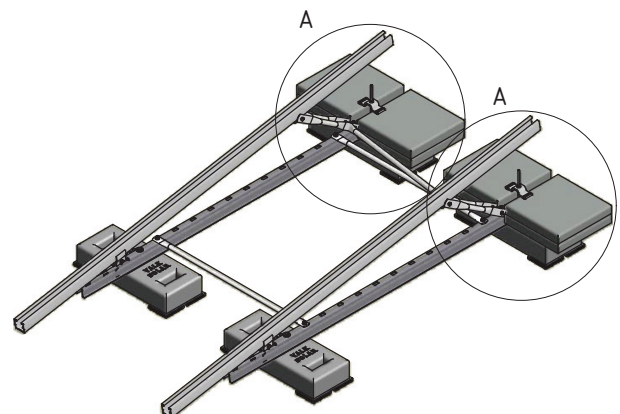
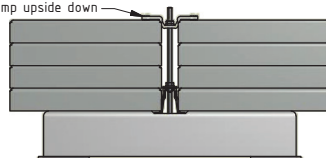


6 extra tiles



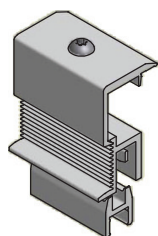
8 extra tiles

Turn tile clamp upside down



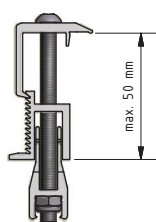
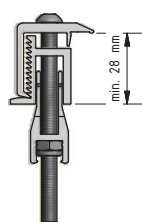
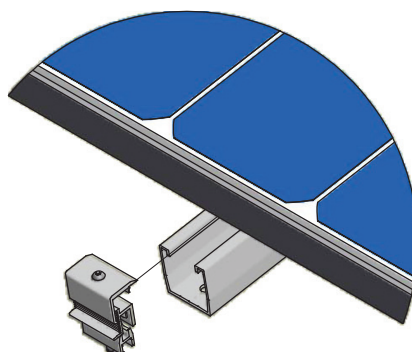
9

End clamp

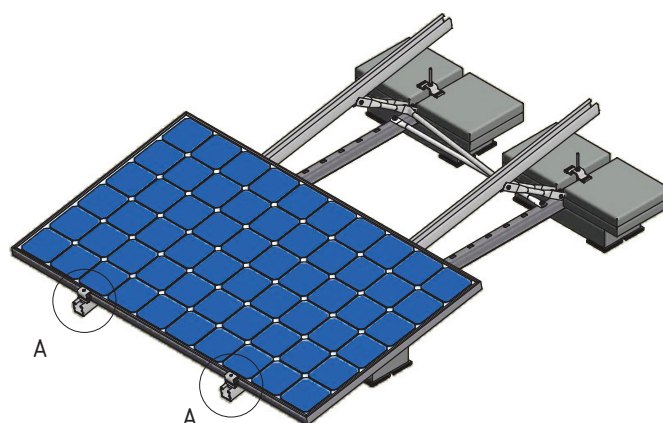


72.15.51

Detail A



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



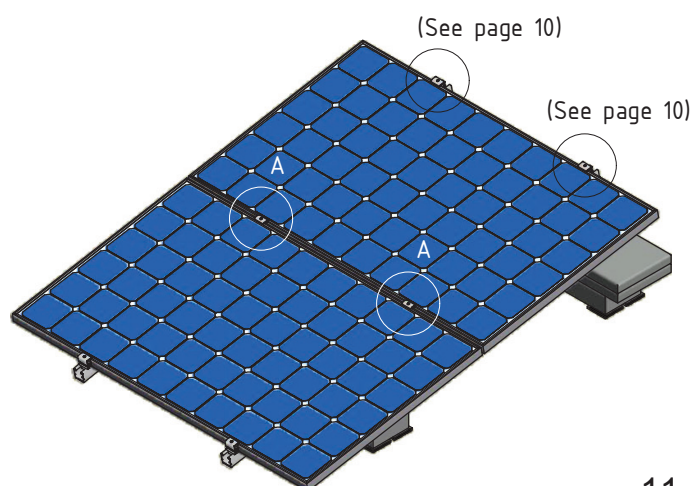
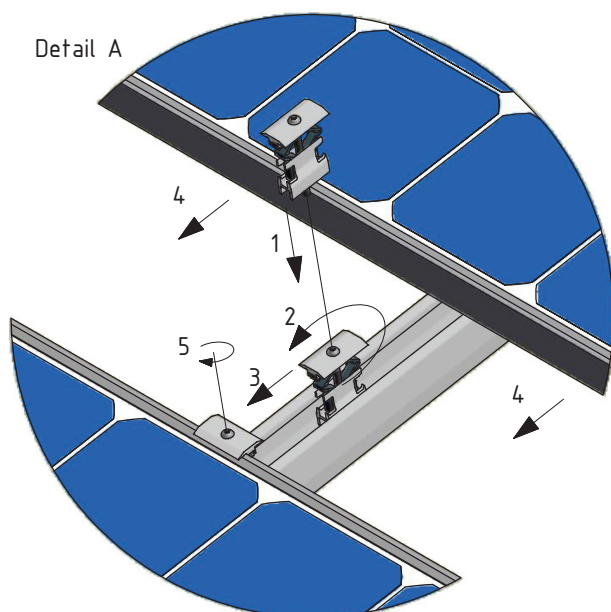
10

Panel clamp



72.15.50

Detail A



11



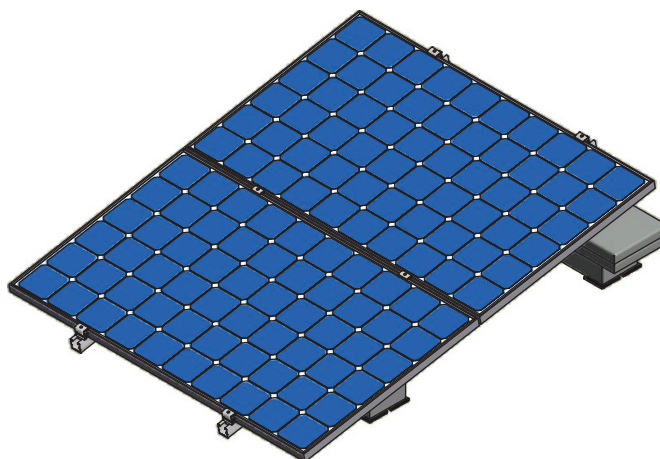
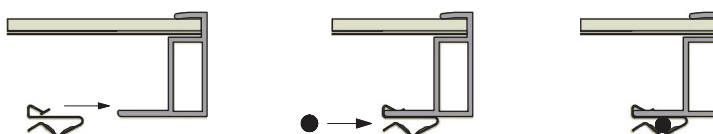
73.20.01
Max. cable
diameter Ø 9 mm

DC cable clamp

VAN DER VALK



Mount cable clamp on the panel



12

VAN DER VALK



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.