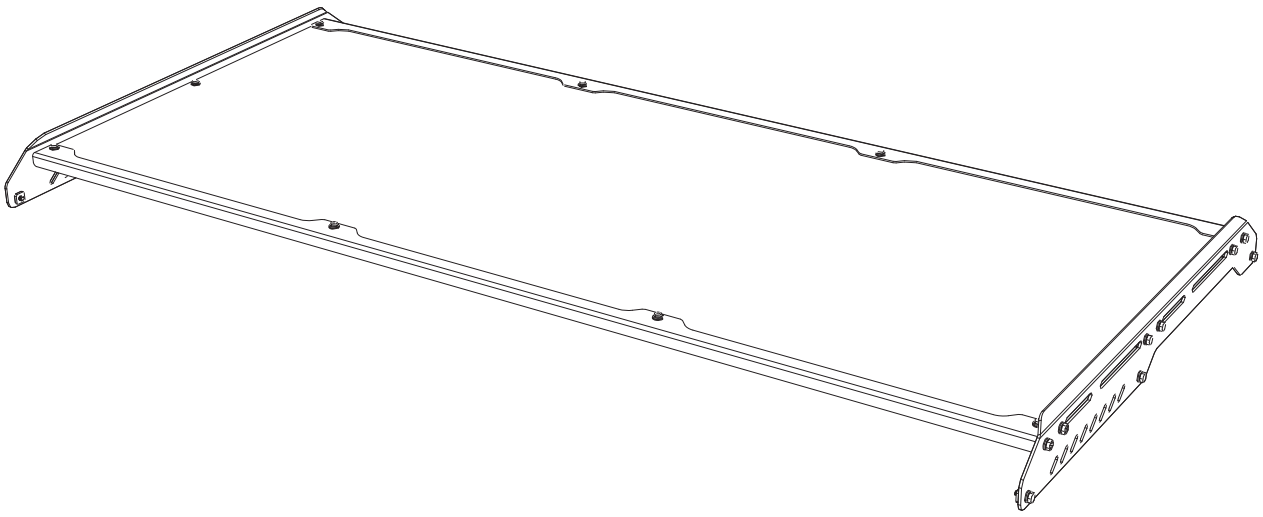
User Manual

BDV
SOLAR PANEL



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취급 시 주의사항

설치

· 조립 지침을 참조하여 필요한 모든 부품이 있는지 확인하십시오.
· 텐트와 텐트에 닿는 부품을 닦으십시오.
· 캐리어를 장착할 때마다 캐리어가 차량의 지붕에 단단히 고정되어 있는지 확인하십시오. 이와 같은 테스트를 정기적으로 수행해야 합니다.
· 제조업체는 제품의 잘못된 장착 또는 사용으로 인한 사유 재산 손상 또는 금전적 손실에 대해 책임을 지지 않습니다.
· 제품은 개조할 수 없습니다.
· 제품의 작동 및 제한 사항과 관련하여 문의 사항이 있는 경우 대리점에 문의하십시오. 모든 설명서와 보증 정보를 자세히 검토하십시오.
· 제품을 사용하려는 국가의 법률 및 규정을 고려하십시오.
· 랙 또는 기타 랙 액세서리가 차량의 열 수 있는 모든 종류의 선루프/파노라마 루프/유리 루프를 방해하지 않는지 항상 확인하십시오.

적재

· 조립 지침에 명시된 최대 적재 중량을 초과할 수 없습니다. 하지만 차량 제조업체에서 권장하는 최대 적재 중량을 우선시합니다.
명시된 권장 최대 적재중량보다 항상 낮은 중량을 적재하십시오.
· 적재물품이 캐리어의 폭을 넘어서는 안되며 적재물품을 좌우로 펼쳐서 캐리어의 좌우가 평형이 되도록 하고 캐리어의 중앙이 가장 하중을 덜 받도록 적재하십시오.
· 참고! 반드시 적재물품에 부착된 품목이 고정되어 있는지 확인하십시오.

운전 정보 및 법규

· 차량 속도는 항상 도로 유형, 도로 상태, 바람 상태, 교통 상황 및 해당 속도 제한 등과 같은 현재 주행 조건과 실은 짐에 맞게 조정해야 하지만 어떠한 경우에도 110km/h를 초과해서는 안 됩니다. 해당하는 속도 제한 및 다른 교통 규정을 항상 준수해야 합니다.
· 과속 방지턱에서는 최대 10km/h의 속도로 천천히 주행하십시오.
· 적재물품을 세워서 운송하는 경우 차량의 전체 높이가 늘어납니다.
· 적재물품을 지붕에 적재하는 경우 차량의 운전 특성 및 브레이크 동작이 변화하며 옆에서 부는 바람에 취약해집니다.
· 잠금 장치가 장착된 제품은 운송 중에 반드시 잠궈야 합니다.
· 도로 상태와 운송하는 짐에 맞게 속도를 조정하십시오. 특히, 거친 도로를 주행할 때에는 화물 캐리어의 고정 장력을 확인하십시오.

유지관리

· 닳거나 손상된 부품은 확인하여 교체하십시오.
· 특히 겨울철에는 반드시 캐리어를 청소하고 유지 관리해야 합니다.
· 사용하지 않을 때는 제품을 차량에서 분리하십시오.
· 제품을 차량에서 분리하는 경우 분리한 부품을 모두 안전하게 보관해야 합니다.

품질보증

· 본 제품은 엄격한 품질 관리 및 검사 과정을 거쳐 만들어졌으며 품질 보증기간은 1년입니다.
· 구입 후 정상적인 사용상태에서 발생한 성능 · 기능상의 하자로 수리가 필요한 경우, 구매일로부터 1년간 무상으로 수리 또는 교체해 드립니다.
· 아래의 원인으로 발생된 파손, 불량에 대해서는 무상 A/S가 불가할 수 있습니다.
- 환경적 요인으로 인한 제품 부식
- 제품을 임의로 개조한 경우
- 보관 및 사용상의 부주의로 인한 변형

Handling Precautions

Installation

- Refer to the assembly instructions to ensure that all necessary parts are included for installation.
- Clean the tent and the parts that come into contact with the tent.
- Each time mounting the carrier, make sure it is securely attached to the roof of the vehicle, and perform such check-ups on a regular basis to ensure this.
- The manufacturer is not responsible for any damage to private property or financial loss caused by faulty installation or incorrect use of the product.
- Do not modify the product.
- If there is any question regarding the operation and limitations of the product, please contact the agency. Please review all instructions and warranty information carefully.
- Check the laws and regulations of the country in which you intend to use the product.
- Check whether the rack or other rack accessories do not obstruct all types of openable sunroofs/panoramic roofs/glass roofs on the vehicle at all times.

Loading

- Do not exceed the maximum loading weight specified in the assembly instructions. However, the maximum loading weight recommended by the vehicle manufacturer takes priority. Make sure to load an item that weighs less than the recommended maximum loading weight at all times.
- The loaded items must not exceed the width of the carrier. Spread the loaded items left and right to balance the carrier and load them in a way that the center of the carrier receives the least amount of weight.
- Note: Check if the objects attached to the loaded items are secured at all times.

Driving Information and Regulations

- The vehicle speed should always be adjusted to current driving conditions such as road type, road conditions, wind conditions, traffic situations, and applicable speed limits, as well as the loaded items, but never exceed 110km/h under any circumstances. Comply with applicable speed limits and other traffic regulations at all times.
- Drive slowly through speed bumps at a maximum speed of 10km/h.
- When transporting items in an upright position, the overall height of the vehicle will increase.
- When loading items on the roof, the vehicle's driving characteristics and braking performance may be varied, and it may become vulnerable to side winds.
- Items equipped with locking devices must be locked during transportation.
- Adjust the speed according to road conditions and the features of the items being transported. Especially when driving on rough roads, check the fixed tension of the cargo carrier.

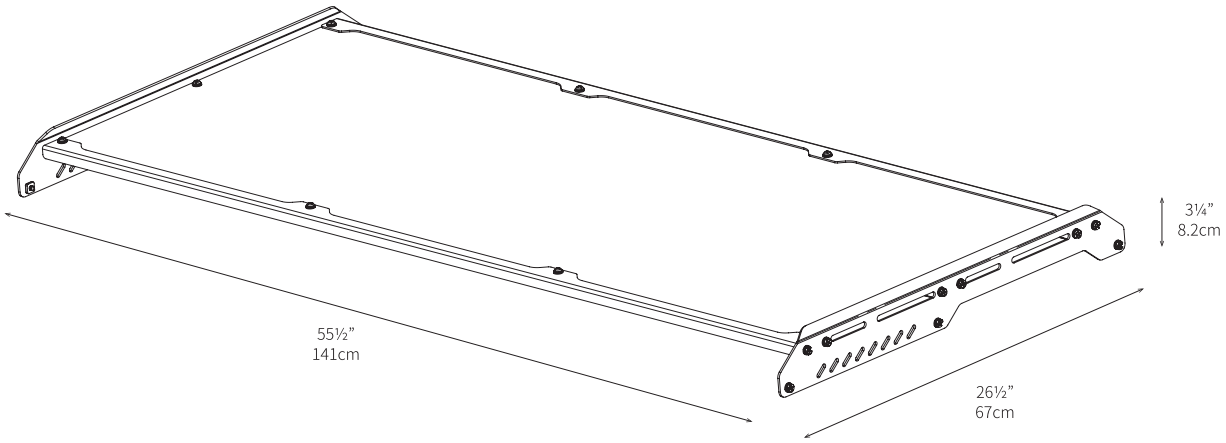
Maintenance

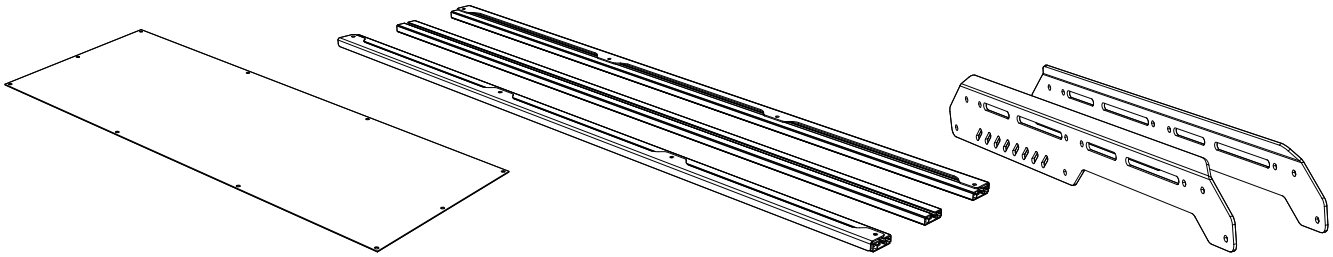
- Check and replace worn-down or damaged parts.
- Make sure to clean and maintain the carrier, especially during winter.
- When not in use, remove the product from the vehicle.
- When removing the product from the vehicle, store all removed parts safely.

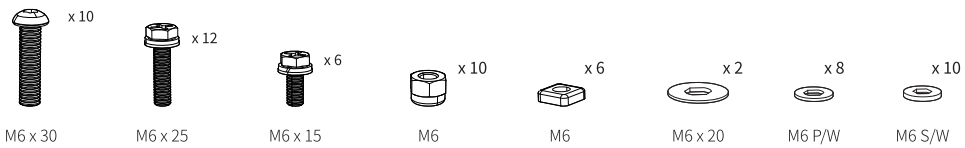
Quality Guarantee

- This product is manufactured through strict quality control and inspection processes, and the product's quality guarantee period is 1 year.
- If repairs are required due to performance or functional defects that occurred under normal use after purchase, free repairs or replacement will be provided for 1 year from the date of purchase.
- Free repair may not be available for damage or defects caused by the following reasons:
  - Product corrosion due to environmental factors
  - Product modification by the user
  - Deformation caused by careless storage or use

Specification (BDV Duo)





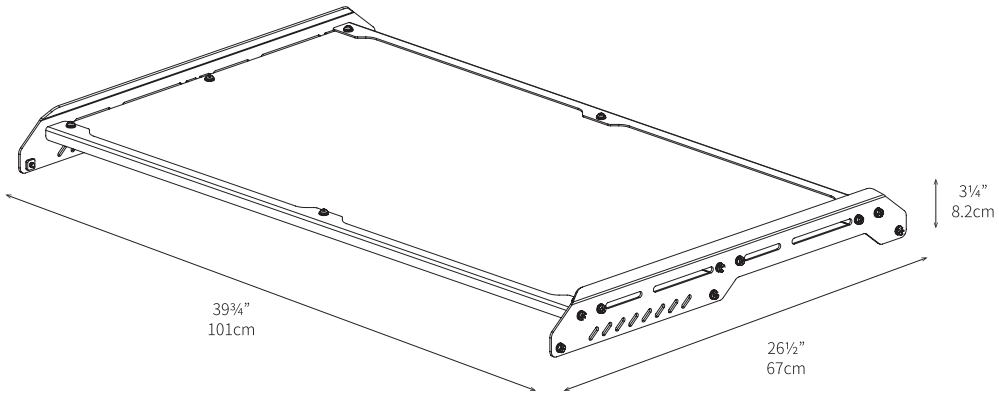


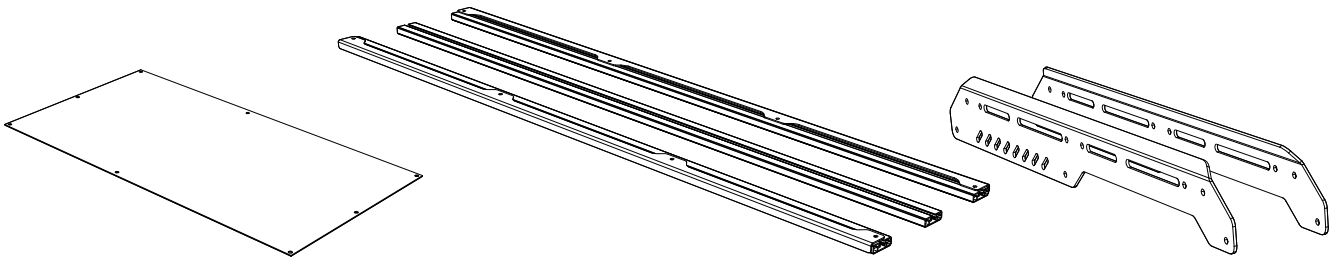
*Please see the description in Page 12~14 for more information about Solar panel

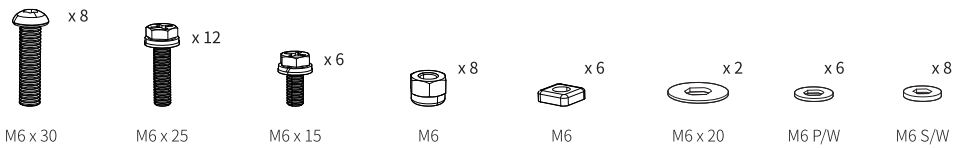
Weight	6.6kg, 14.5lb
Size	141 x 67 x 8.2cm , 55½ x 26½ x 3¼"
Compatible Models	BDV Duo
Power Output (Pmax)	140W
Power Maximum Voltage (Vmp)	24V
Power Maximum Current (Imp)	5.83A
Installation Time	About 30 Min, 1-2 people may be needed.

The actual measurements may vary somewhat.

Specification (BDV Solo)





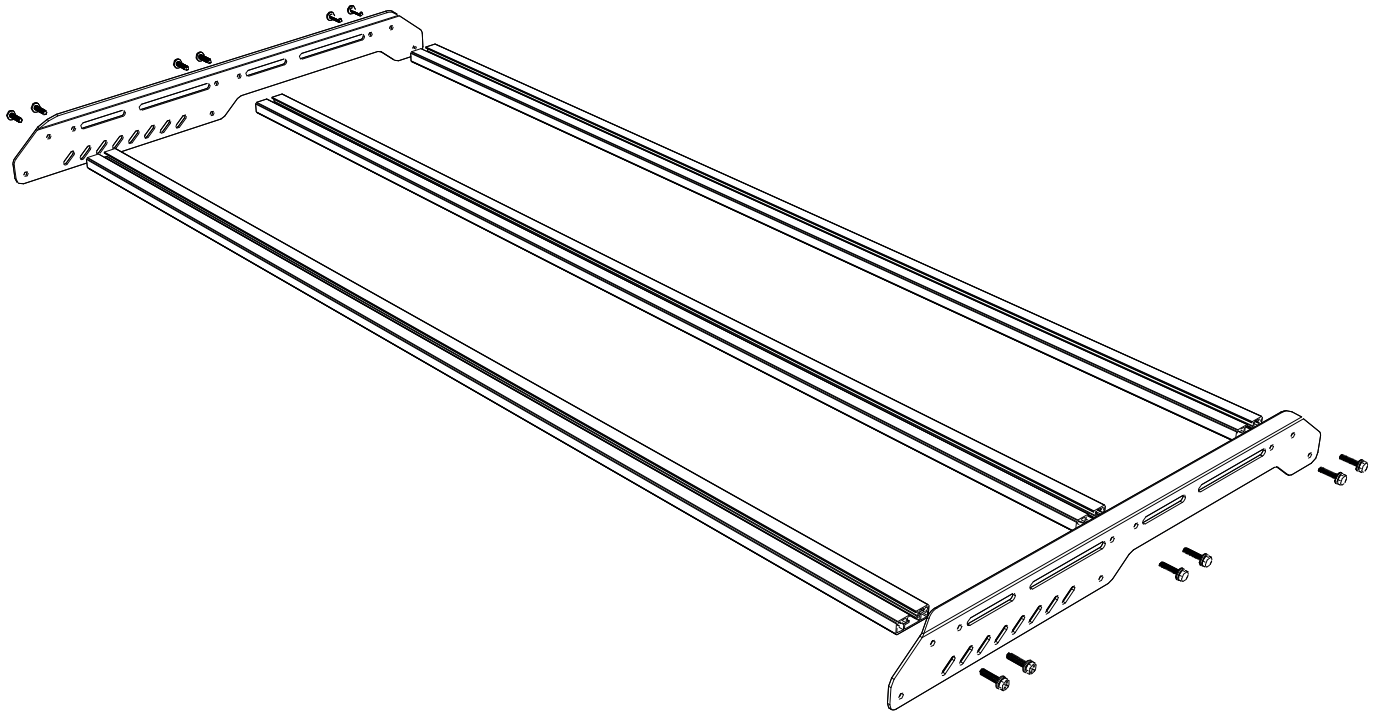


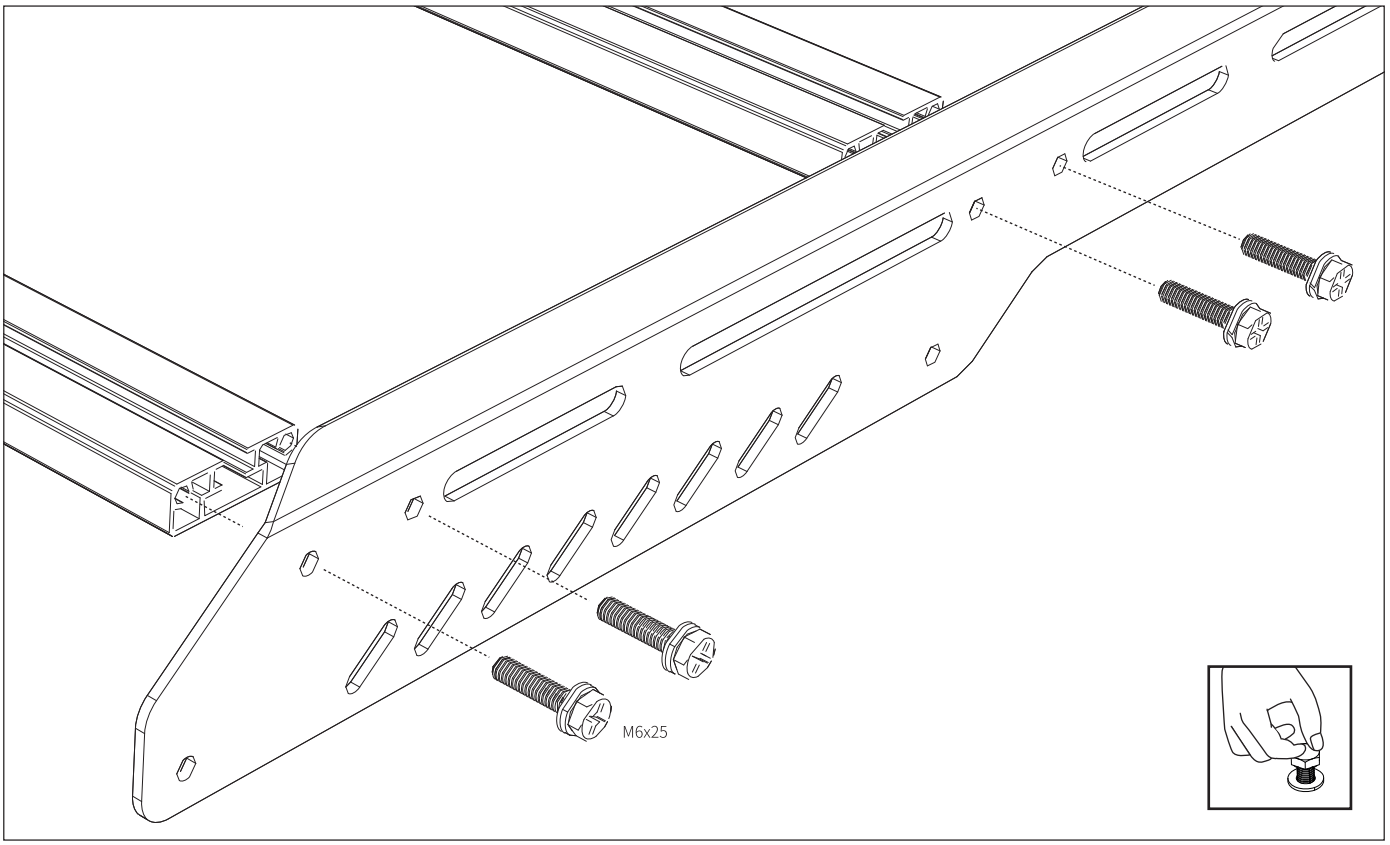
*Please see the description in Page 12~14 for more information about Solar panel

Weight	5.0kg, 11.0lb
Size	101 x 67 x 8.2cm , 39¾ x 26½ x 3¼"
Compatible Models	BDV Solo
Power Output (Pmax)	100W
Power Maximum Voltage (Vmp)	16.5V
Power Maximum Current (Imp)	6.06A
Installation Time	About 30 Min, 1-2 people may be needed.

The actual measurements may vary somewhat.

1





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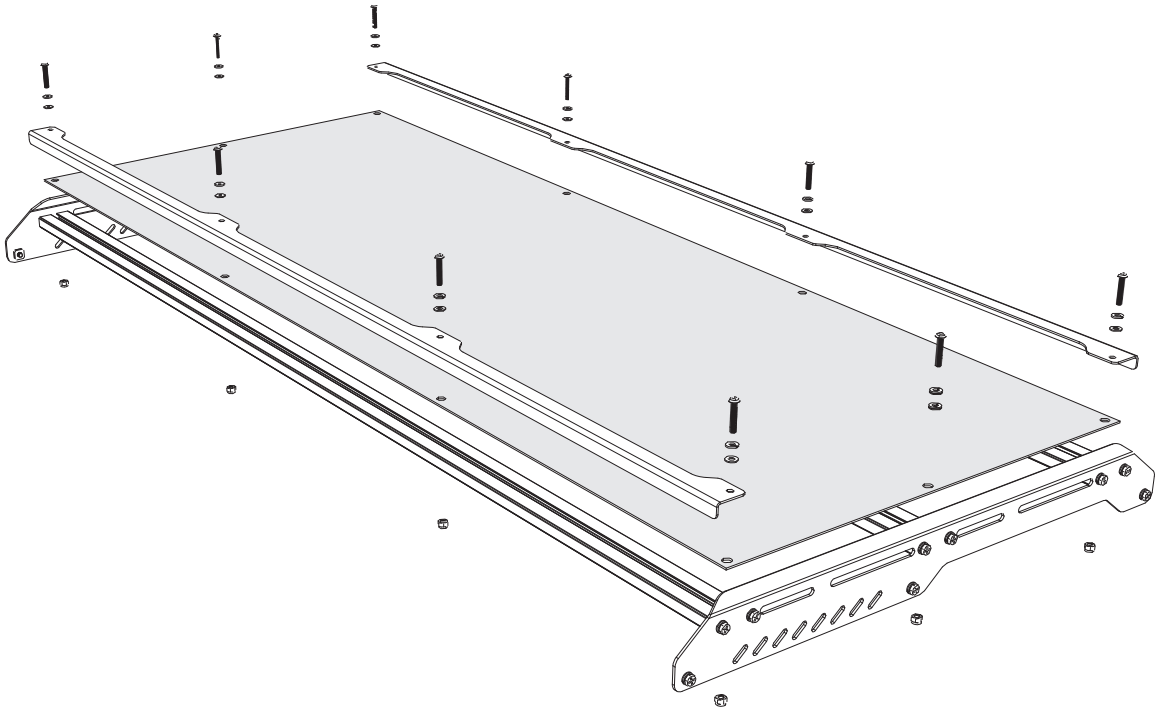

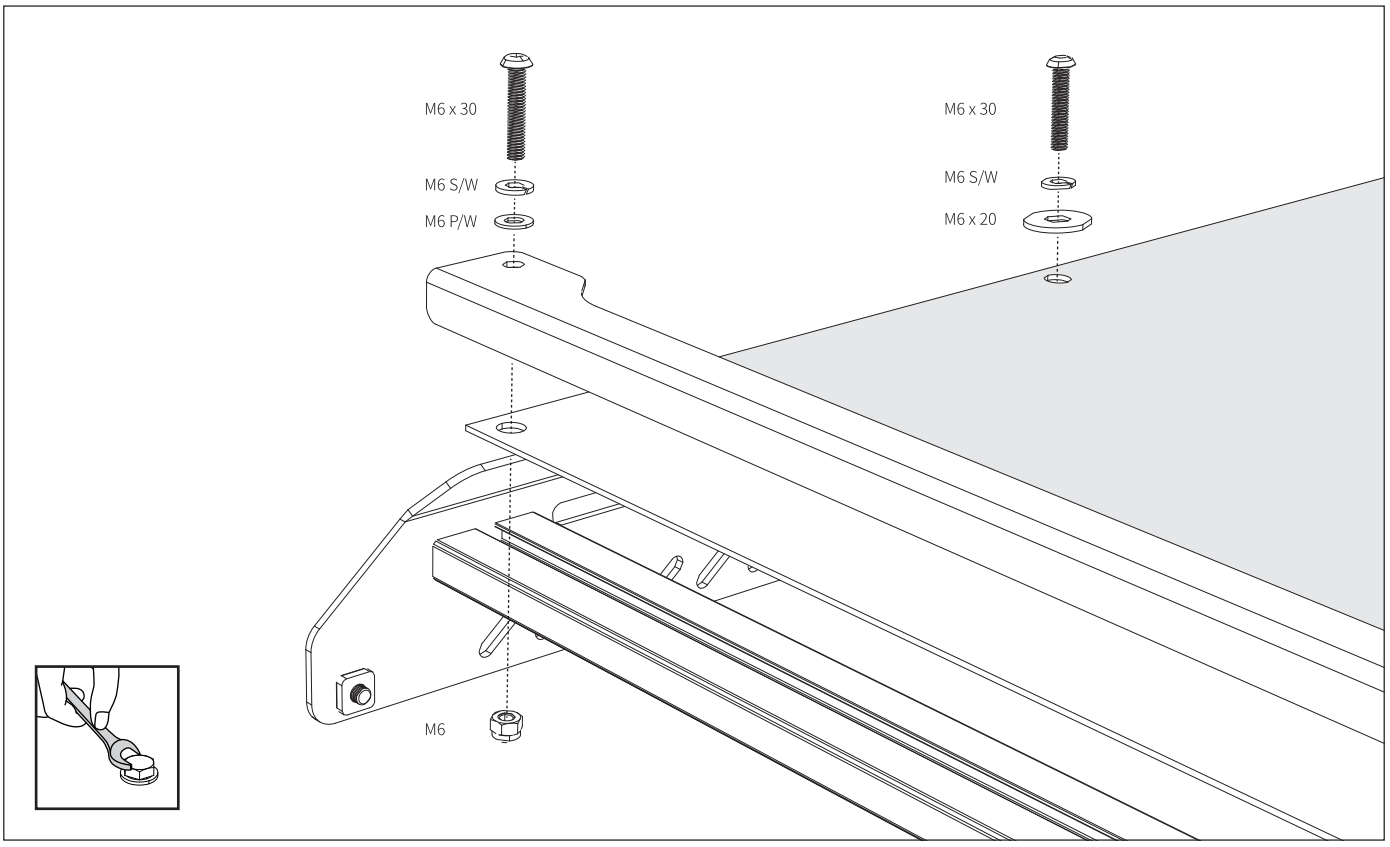

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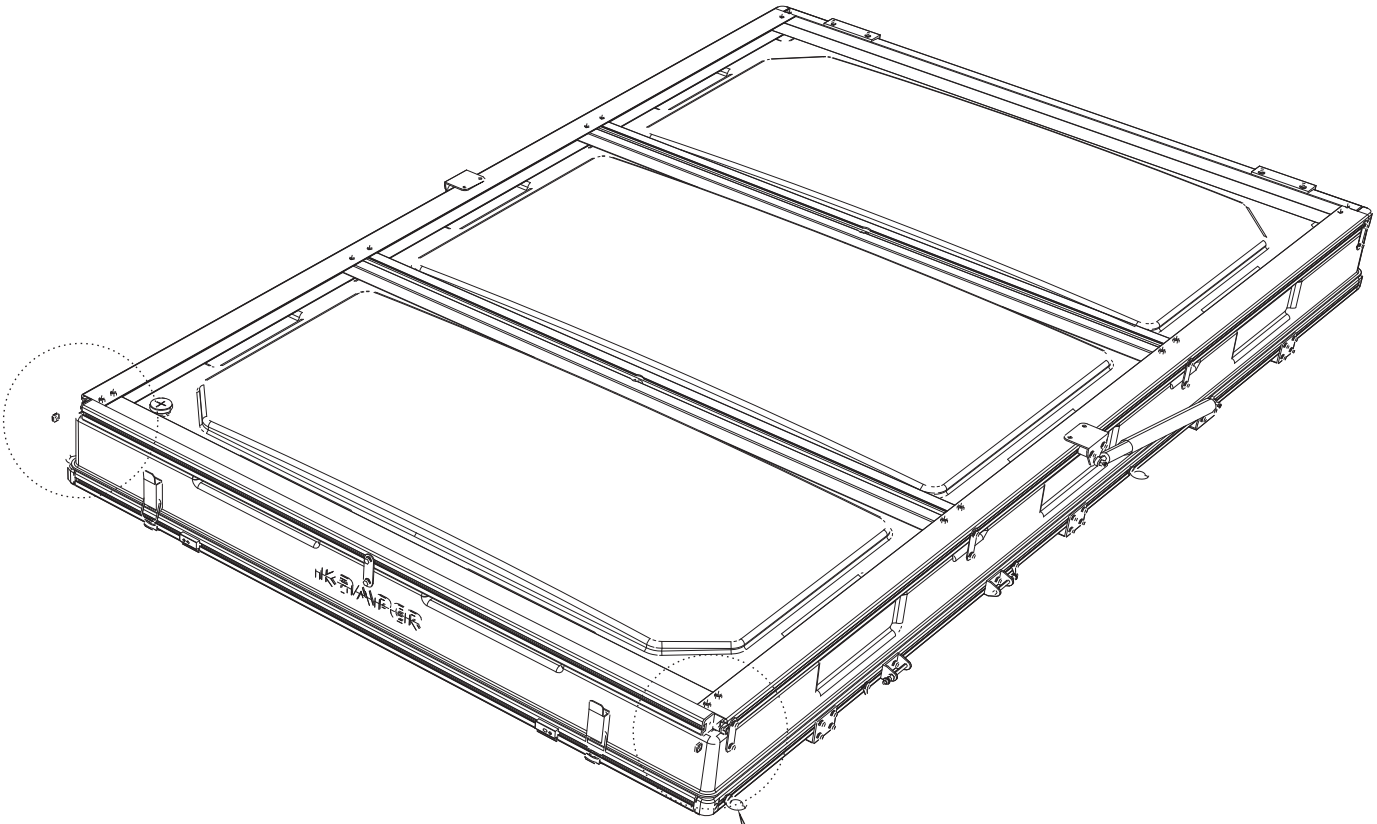

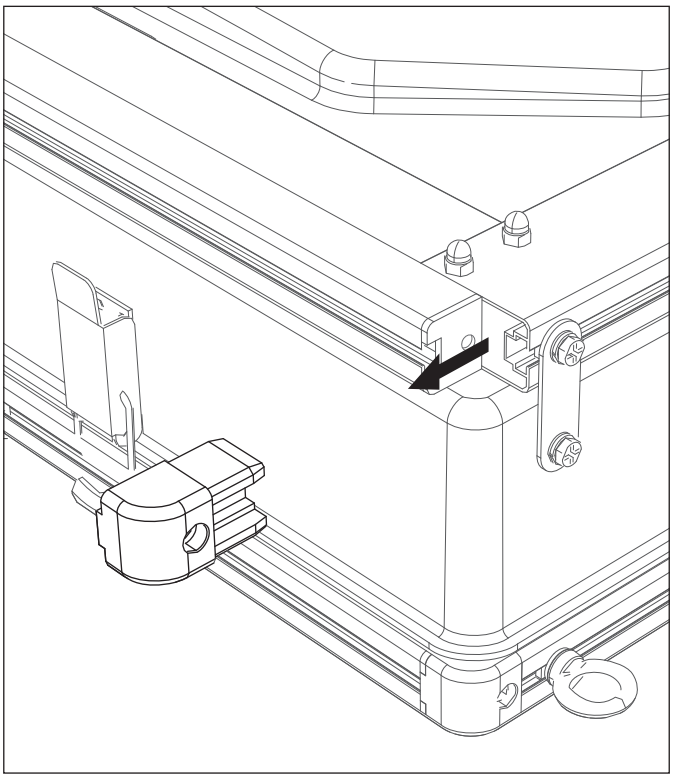

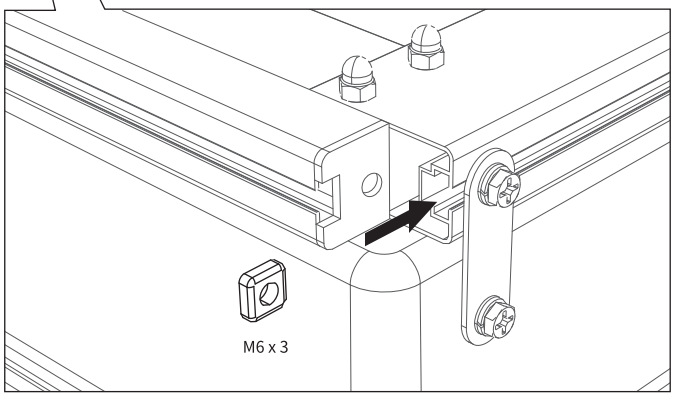

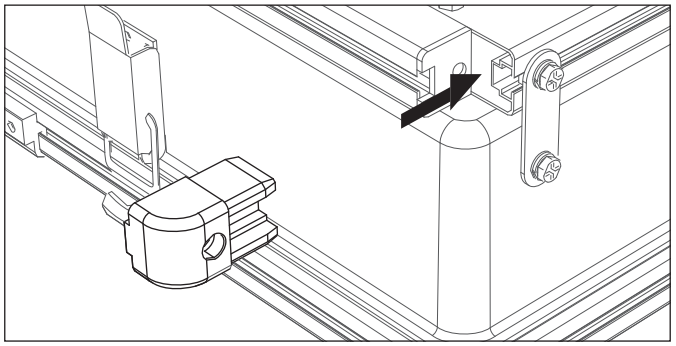

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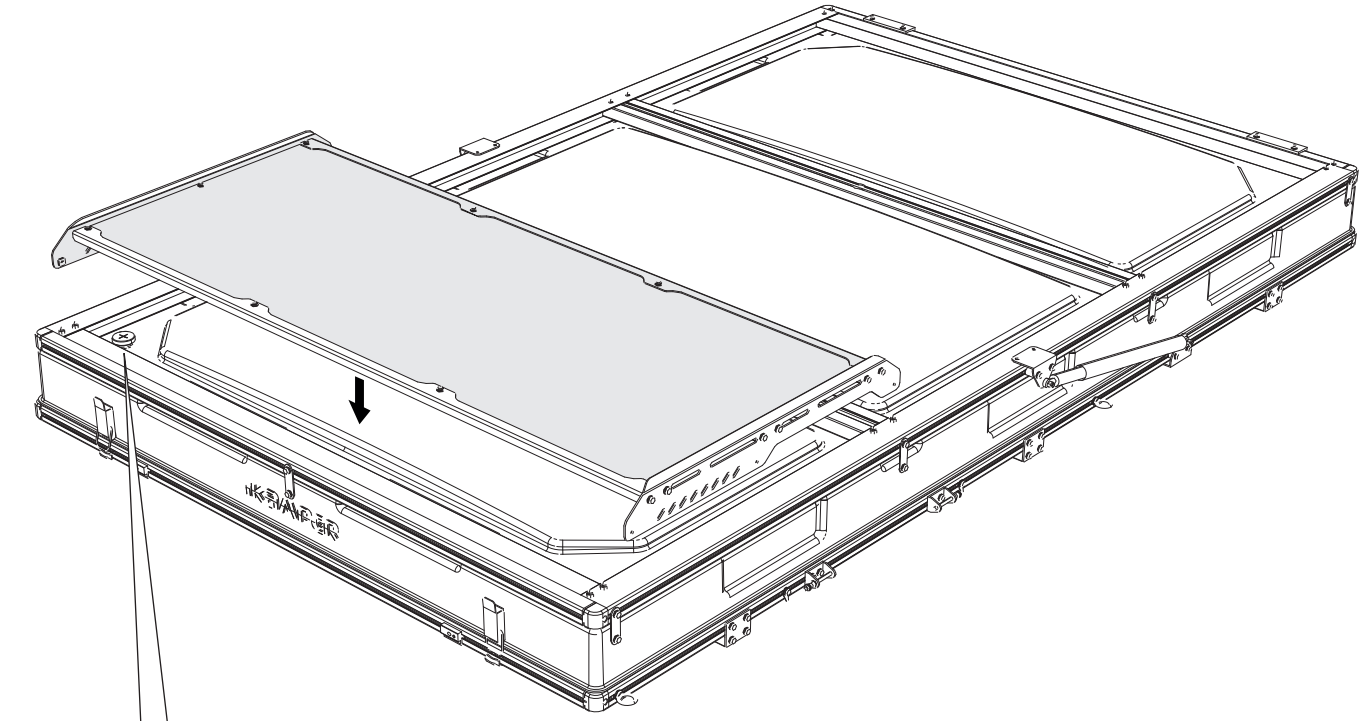

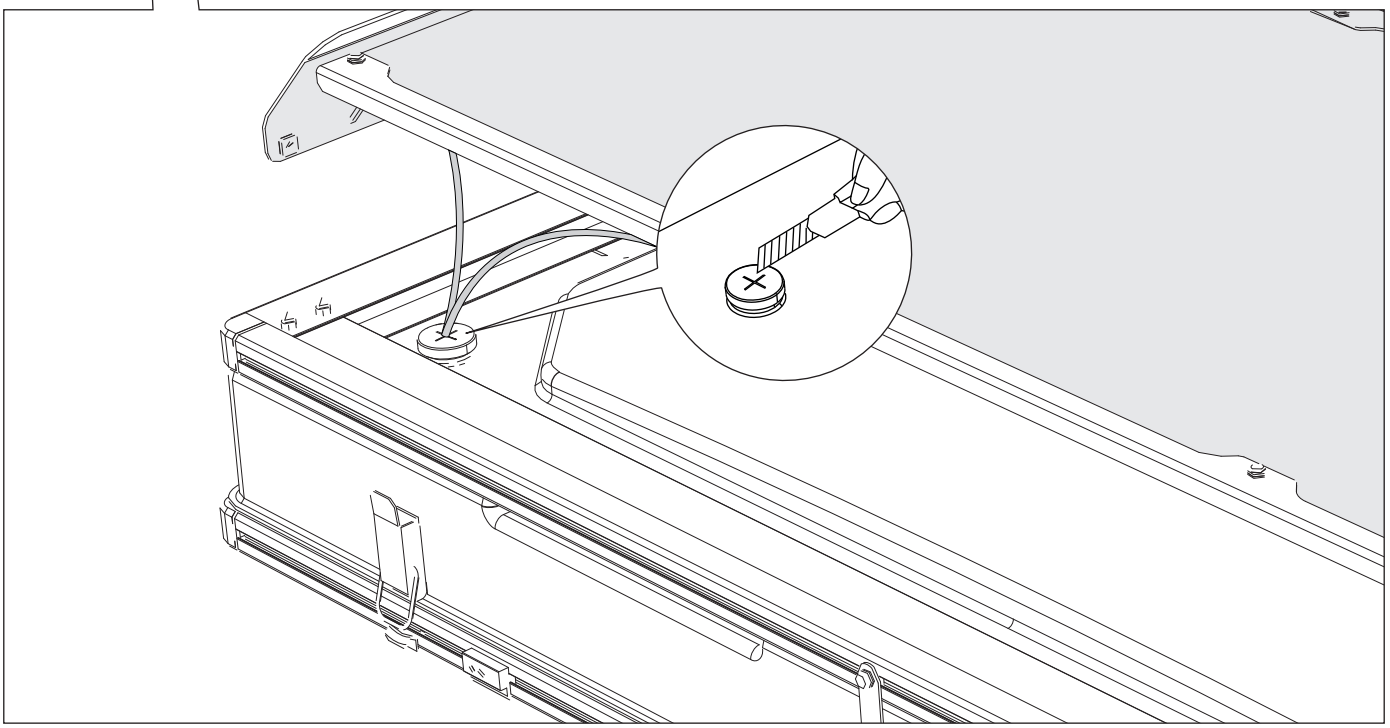

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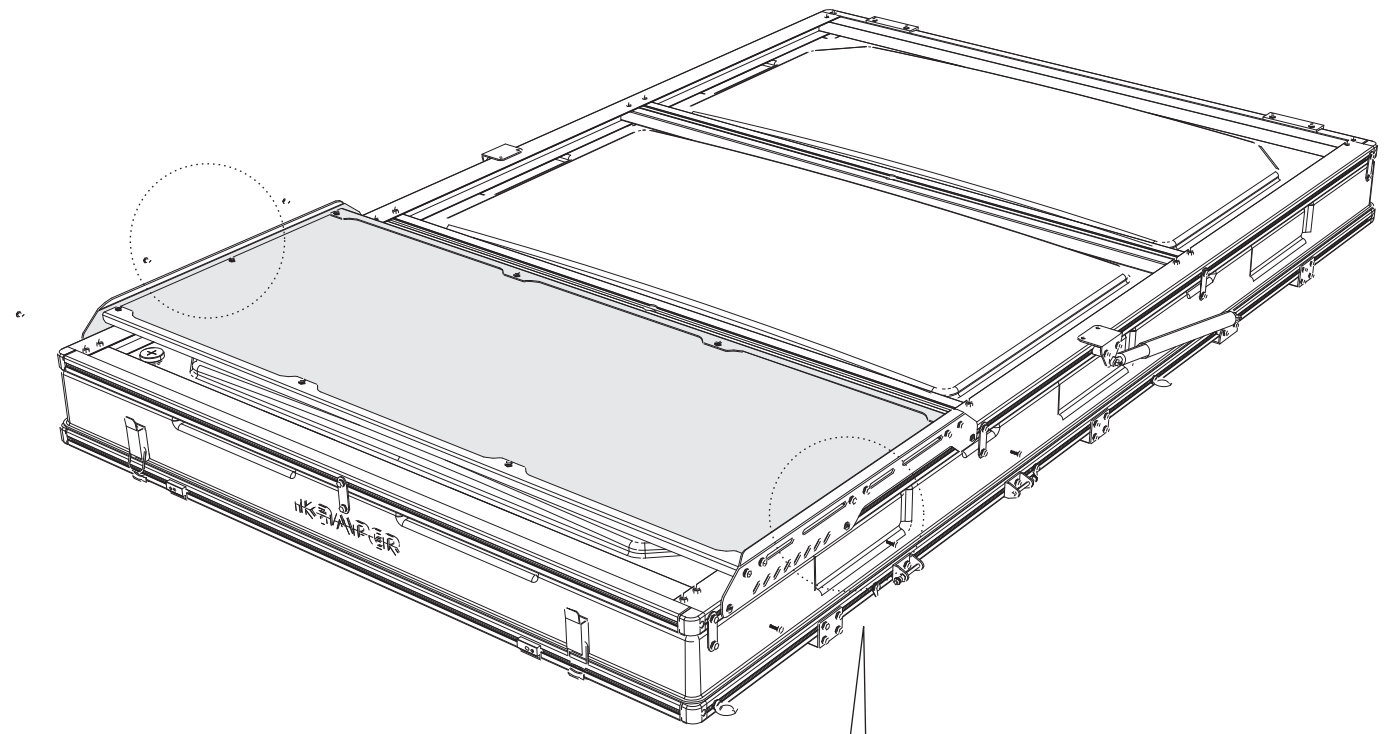

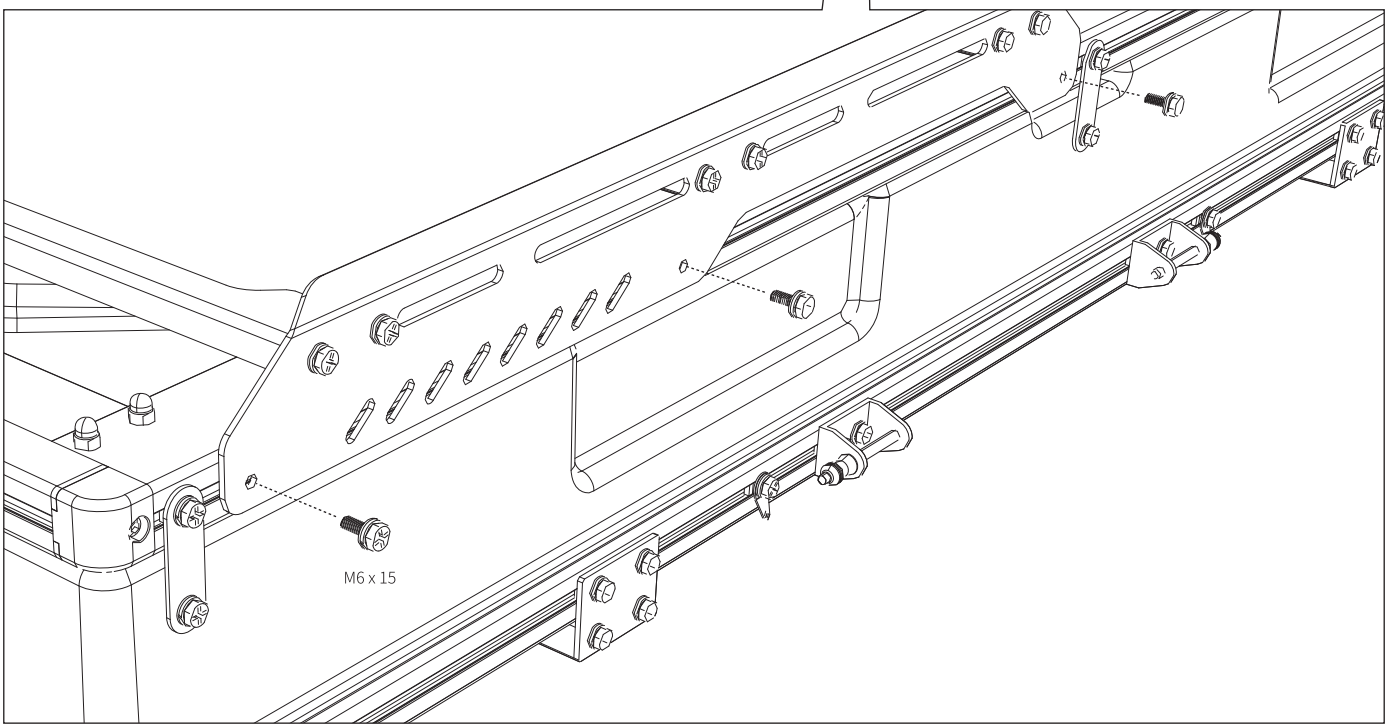

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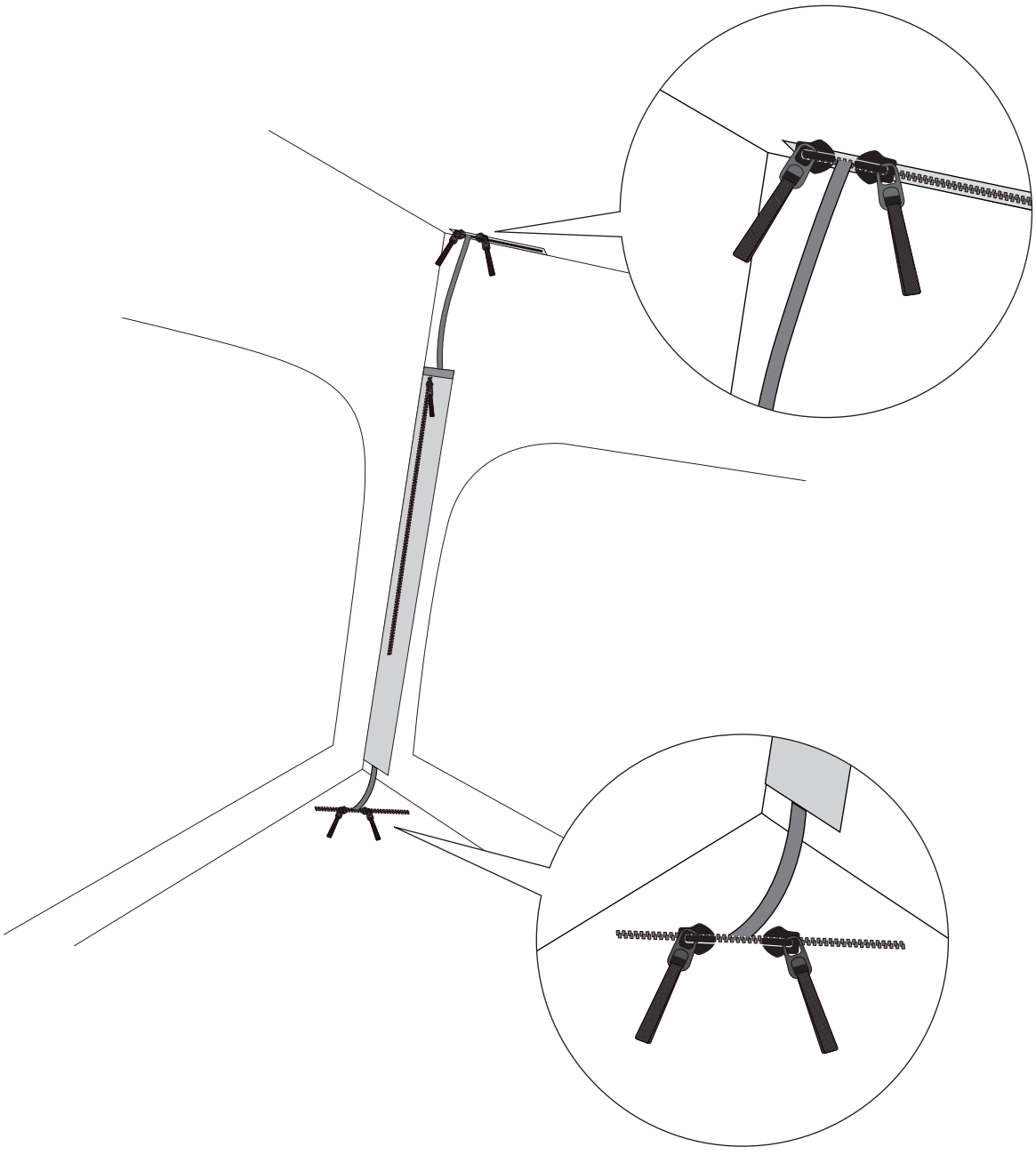
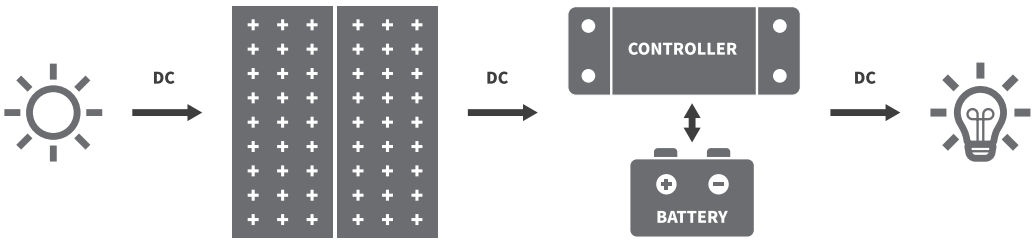
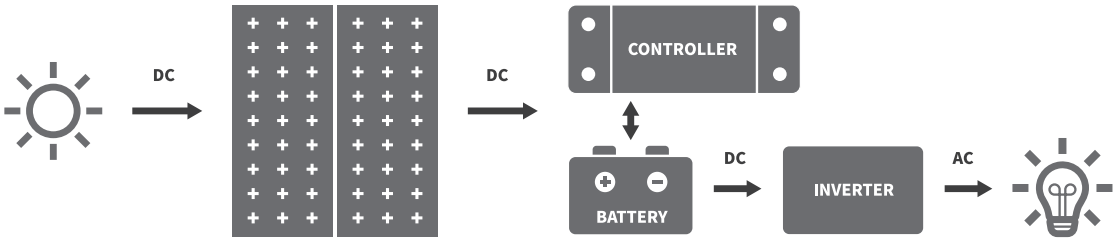


솔라 패널 배터리 연결 방법　How to connect the battery of solar

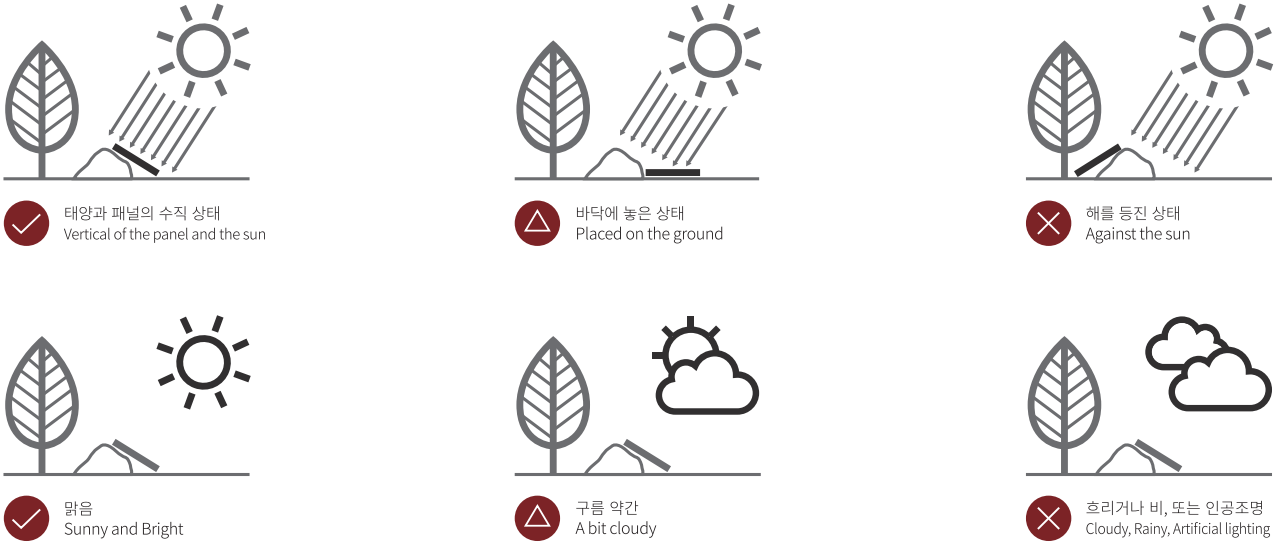
· DC 직류



· AC 교류



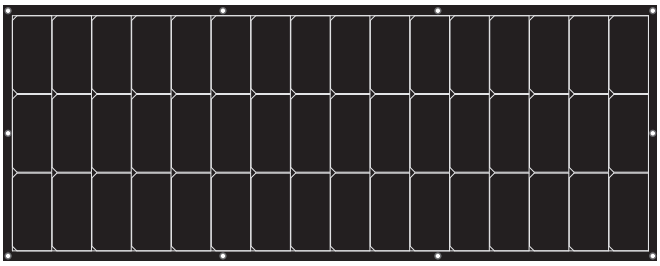
솔라 패널 충전 방법　How to charge the solar pannel



· 깨진 패널 을 만지면 전기 쇼크로 인해 치명적인 상해를 입을 수 있습니다.
· 전선 연결 시 +,- 극성 변경에 주의하세요.
· 패널 앞면 유리에 금이 가거나 깨졌을 경우, 또는 옆면 막이 손상됐을 경우 반드시 절연 장갑을 끼고 작업하십시오.
· 배터리와 충전 컨트롤러를 먼저 연결 후 솔라패널을 연결하시기 바랍니다.
· 인버터는 꼭 솔라 패널에 연결하여 사용하시기 바랍니다. 인버터를 충전 컨트롤러 LOAD 단자에 연결 시 충전 컨트롤러 고장의 원인이 됩니다.
· 패널의 프레임과 지지대 사이에는 약간의 간격을 두고 설치해야합니다. 간격이 없을 경우 패널 뒷쪽의 공기 순환을 방해하고 이슬 맺힘을 가져올 수 있습니다.

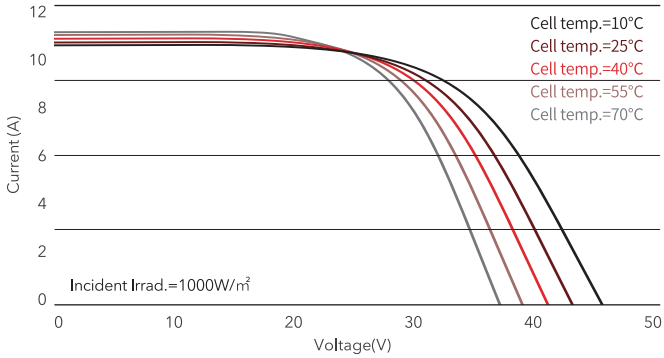
· Touching a broken panel can cause fatal injury due to electrical shock.
· Be careful of +,- polarity changes when connecting wires.
· Be sure to wear insulated gloves when the front glass of the panel is cracked, broken, or damaged on the side.
· Connect the battery and charge controller first, then connect the solar panel.
· The inverter must be connected to the solar panel. Connecting the inverter to the charge controller LOAD terminal will damage the charge controller.
· The panel should be installed with a slight gap between the frame and the support. If there is no gap, it may interfere with air circulation at the back of the panel and result in dew formation.

Solar Module (BDV Duo)

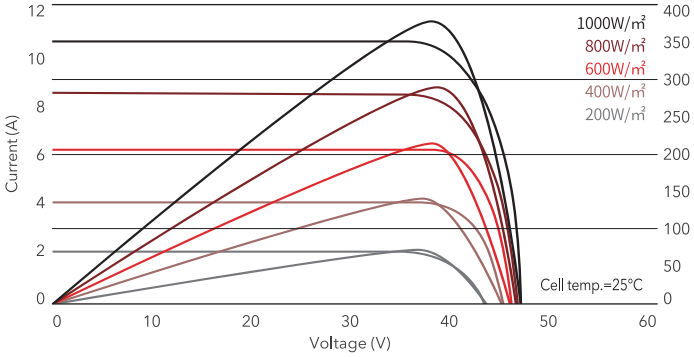


- Composite material EV imported from Japan, the maximum bending degree can reach 45°.
- Series and parallel design, reduce the series resistance RS of module, reduce the loss of internal electrical performance, and improve the power generation capacity of whole system.
- Assembled with multi-busbar cells, reduce shading effect on the energy generation, lower risk of hot spot.
- Cutting solar cell technology, which significantly reduces string current and module damage, it is good choice for projects in high temperature areas.
- Pass the test for weather resistance in harsh environments. (salt mist, ammonia corrosion and sand)
- Process optimization of high efficiency PERC solar cell and strict control on raw materials to ensure highly resistance against PID of PV module.

I-V curves of module under different temperature (380w)



I-V curves / P-V curves of module under different irradiation (380w)



Electrical performance parameters (STC)

Power Output	Pmax(W)	140
Rated Power Maximum Voltage	Vmp(V)	24
Rated Power Maximum Current	Imp(A)	5.83
Open Circuit Voltage	Voc(V)	28.8
Short Circuit Current	Isc(A)	6.41
Module Efficiency	(%)	22.0
Power Tolerance	(W)	±5W

* STC : 1000W/m2 irradiance, 25°C module temperature, AM1.5 spectrum.

Electrical performance parameters (NMOT)

Power output	Pmax (W)	104.86
Rated Power Maximum Voltage	Vmp (V)	22.32
Rated Power Maximum Current	Imp (A)	4.69
Open Circuit Voltage	Voc (V)	26.78
Short Circuit Current	Isc (A)	5.45

* NMOT:800W/m2 irradiance, 20°C module temperature, 1m/s wind speed.

Structure Features

Solar Cell	156MONO (Cell)
Solar Cell Array	48 pcs (16x3)
Module Dimension	1395×545×3mm
Weight	2.5 kg
Surface Technology	ETFE
Back sheet	Black
Junction Box	IP68 rated
Cable	4mm², PV cable
Diode Quantity	2
Wind Pressure/Snow Pressure	2400pa / 5400pa
Connector	MC4 Compatible

* More details please read the installation manual.

Maximum Ratings

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Maximum Fuse Rated Current	20A

Optional

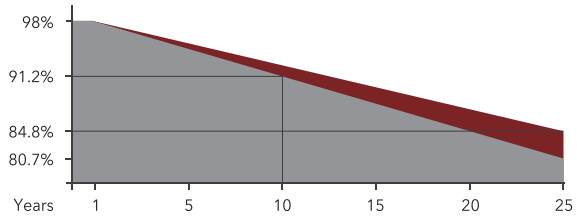
Connector	Original MC4
Cable length	4000 mm
Solar Module Dimension	1395×545×3 mm
Back sheet color	Black

Quality Assurance

· 1 years Product Warranty

· 25 years Linear Power Output Warranty

· The attenuation of the power output in the first year ≤2%, the annual average attenuation after the first year ≤0.55%



* More details please read the guarantee letter.

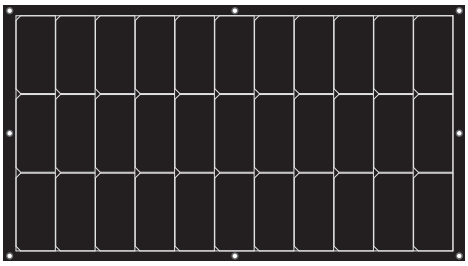
Temperature Characteristics

Solar Cells Rated Working Temperature		44±2	°C
Temperature Coefficient	(Isc)	+0.06%	/°C
Temperature Coefficient	(Voc)	-0.35%	/°C
Temperature Coefficient	(Pmax)	-0.38%	/°C

Product Certification & Management Certification

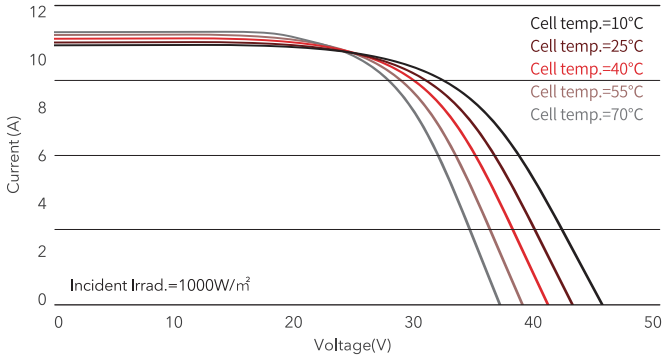
FCC	FCC Part 15 Subpart B HK2205071886E-R02
CE	EN 55032:2015 + A1:2020 + A11:2020 EN 55035:2017 + A11:2020 HK2205071885E-R01
ROHS	HK2205073274R-R01
PSE	J55032(H29) HK2205091915E-R01

Solar Module (BDV Solo)

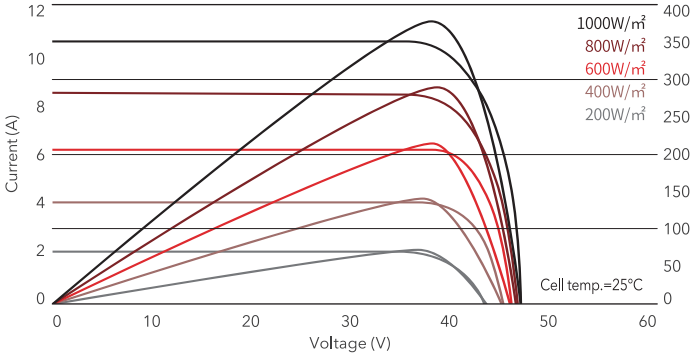


- Composite material EV imported from Japan, the maximum bending degree can reach 45°.
- Series and parallel design, reduce the series resistance RS of module, reduce the loss of internal electrical performance, and improve the power generation capacity of whole system.
- Assembled with multi-busbar cells, reduce shading effect on the energy generation, lower risk of hot spot.
- Cutting solar cell technology, which significantly reduces string current and module damage, it is good choice for projects in high temperature areas.
- Pass the test for weather resistance in harsh environments. (salt mist, ammonia corrosion and sand)
- PID Process optimization of high efficiency PERC solar cell and strict control on raw materials to ensure highly resistance against PID of PV module.

I-V curves of module under different temperature (380w)



I-V curves / P-V curves of module under different irradiation (380w)



Electrical performance parameters (STC)

Power Output	Pmax(W)	100
Rated Power Maximum Voltage	Vmp(V)	16.5
Rated Power Maximum Current	Imp(A)	6.06
Open Circuit Voltage	Voc(V)	19.8
Short Circuit Current	Isc(A)	6.66
Module Efficiency	(%)	22.0
Power Tolerance	(W)	±5W

* STC : 1000W/m2 irradiance, 25°C module temperature, AM1.5 spectrum.

Electrical performance parameters (NMOT)

Power output	Pmax (W)	74.9
Rated Power Maximum Voltage	Vmp (V)	15.34
Rated Power Maximum Current	Imp (A)	4.88
Open Circuit Voltage	Voc (V)	18.4
Short Circuit Current	Isc (A)	5.36

* NMOT:800W/m2 irradiance, 20°C module temperature, 1m/s wind speed.

Structure Features

Solar Cell	156MONO (Cell)
Solar Cell Array	33 pcs (11x3)
Module Dimension	985 × 545 × 3 mm
Weight	1.8 kg
Surface Technology	ETFE
Back sheet	Black
Junction Box	IP68 rated
Cable	4mm², PV cable
Diode Quantity	2
Wind Pressure/Snow Pressure	2400pa / 5400pa
Connector	MC4 Compatible

* More details please read the installation manual.

Maximum Ratings

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Maximum Fuse Rated Current	20A

Optional

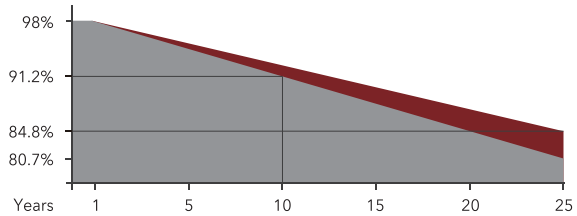
Connector	Original MC4
Cable length	4000 mm
Solar Module Dimension	985 × 545 × 3 mm
Back sheet color	Black

Quality Assurance

· 1 years Product Warranty

· 25 years Linear Power Output Warranty

· The attenuation of the power output in the first year ≤2%, the annual average attenuation after the first year ≤0.55%



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