



A Canadian Solar subsidiary

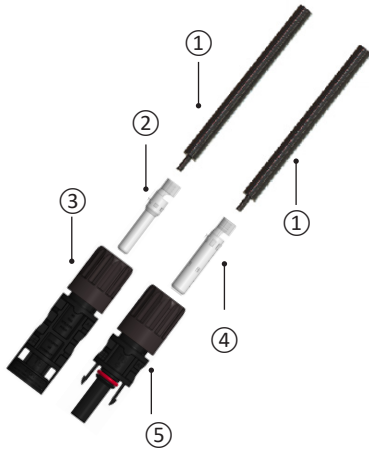
A close-up photograph of a person wearing a white t-shirt and brown overalls, using a power drill to install a solar panel. The worker is leaning over the panel, which is part of a larger array. The background is a blurred wooden fence and foliage, suggesting an outdoor installation site. The lighting is warm and golden, indicating it might be late afternoon or early morning.

T6 PV CONNECTOR INSTALLATION MANUAL

For professional use only

1.	T6 CONNECTOR PARTS	3
2.	T6 PRODUCT SPECIFICATIONS	3
3.	T6 INSTALLATION PARAMETERS	4
4.	SAFETY PRECAUTIONS	4
5.	T6 FIELD TOOLKIT	5
6.	CONNECTOR & WIRE ASSEMBLY STEPS	6
7.	THE CORRECT CONNECTION	8
8.	DISCONNECTING THE CONNECTORS	8
	AMENDED EDITIONS AND DATES	8
	LIST OF FORBIDDEN CHEMICAL SUBSTANCES	9

1. T6 CONNECTOR PARTS



Item	Part Name
1	PV Cable
2	Male Pin Contact (-)
3	Male Connector (-)
4	Female Socket Contact (+)
5	Female Connector (+)

2. T6 CONNECTOR SPECIFICATIONS



Male Connector (-)



Male Pin Contact (-)



Female Connector (+)



Female Socket Contact (+)

ELECTRICAL DATA:

Connector Specification	T6
Rated Voltage	IEC 1500 V _{DC} / UL 1500 V _{DC}
	IEC 1000 V _{DC} / UL 1500 V _{DC}
Rated Current	41A (4 mm ²) / 40A (12 AWG)
	48A (4 mm ²) / 40A (12 AWG)
	50A (6 mm ²) / 55A (10 AWG)
	54A (6 mm ²) / 55A (10 AWG)
	70A 10 mm ² / 8 AWG
Contact Resistance	≤ 0.25 mΩ
Pollution Degree	Class II
Protection Class	Class II
Protection Degree	IP68
Fire Resistance	UL 94-V0
Temperature Range	- 40 °C ~ + 90 °C
Rated Impulse Voltage	16 kV


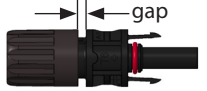


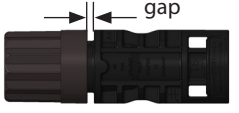
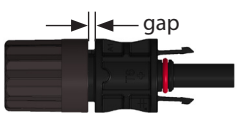


MECHANICAL DATA:

Connector Specification	T6
Cable Specification	12 AWG /10AWG /8AWG
Connector System	Φ 4.0 mm
Contact Material	Copper, Tin-plated
Type of Termination	Crimping/Machined
Locking System (UL)	Locking type

1) Standard: UL6703, UL486A-486B, NFPA7(In Free Air), C22.2 No.182.5

Note: Installation in a free air run with a cable spacing not less than 100% of the largest cable diameter.

3. T6 INSTALLATION PARAMETERS

Article	Cable Outside Diameter (OD)	Picture	Required Torque to Lock	Reference Gap
Male Connector (-)	4.3mm - 6.9mm		2.5 N·m ~ 3.5 N·m	$0.5 \leq \text{gap} \leq 1.5\text{mm}$
Female Connector (+)			2.5 N·m ~ 3.5 N·m	$0.5 \leq \text{gap} \leq 1.5\text{mm}$
Male Pin Contact (-)	---		---	---
Female Socket Contact (+)	---		---	---
Male Connector (-)	7.2mm - 8.9mm		4N·m ~ 5 N·m	$0 < \text{gap} \leq 0.5\text{mm}$
Female Connector (+)			4N·m ~ 5 N·m	$0 < \text{gap} \leq 0.5\text{mm}$
Male Pin Contact (-)	---		---	---
Female Socket Contact (+)	---		---	---

4. SAFETY PRECAUTIONS

Products must be assembled and installed by qualified personnel, ensuring all safety regulations are followed. For protection against electric shock, please ensure the system is not energized during installation. Do not disconnect under load. Ensure that the AC and the DC sides are both disconnected and the system is not energized before disconnecting.

Use only the tools and components listed in this installation manual. Follow the instructions as stated in this manual. Do not alter or willingly damage the product in anyway.

- Sealing cap must be used on disconnected connectors to prevent dust ingress.
- Connectors are IP68-rated when mated.
- Do not place connectors directly on roof surface.

• CAUTION1 :

The exposure to or direct contact with chemicals or oils of T6 product may cause corrosion, degradation of performance, or cracking of the product, thus such exposure or direct contact should be strictly prohibited during the process of product manufacturing, transportation, installation and application. It is the user's responsibility to validate any chemical that may come into contact with or used in any of the processes mentioned above, to ensure that such chemical will not affect the performance of T6 products.

• CAUTION 2:

Any T6 or T4 products can be intermated with each other.

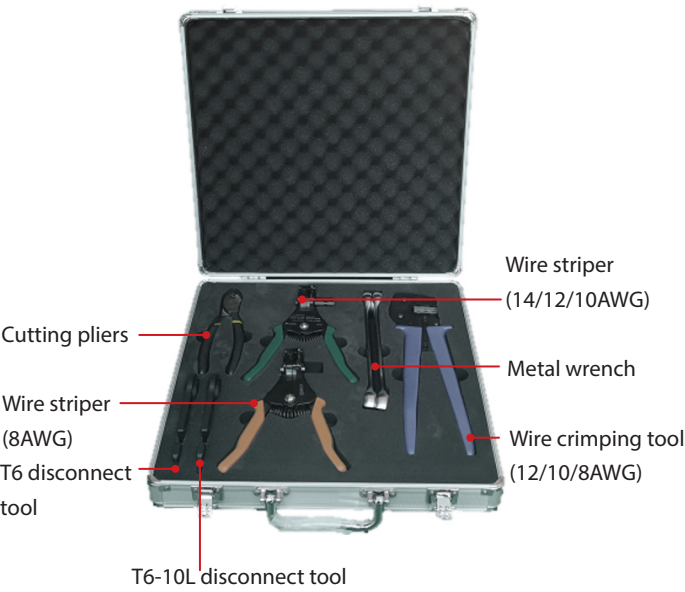
• CAUTION 3:

Interconnection of different connector types/brands with T6 is not allowed.

• CAUTION 4:

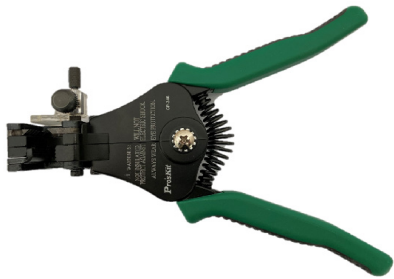
Recycling and all other types of comparable disassembly of the above mentioned products have to be performed by a qualified waste management company, in compliance with national and local waste management regulations.

5. T6 FIELD TOOLKIT



PARTS INCLUDED IN FIELD TOOLKIT:
Wire stripper tool

Type	Crimping Range	
2.5/14	2.5 mm ²	14 AWG
4.0/12	4.0 mm ²	12 AWG
6.0/10	6.0 mm ²	10 AWG



Type	Crimping Range	
10/8	10 mm ²	8 AWG



Wire crimping tool

Mark	Riveting Range	
4.0/12	4.0 mm ²	12 AWG
6.0/10	6.0 mm ²	10 AWG
10.0/8	10.0 mm ²	8 AWG



Cutting pliers



Wrench
1 set = 2 pieces



6. CONNECTOR & WIRE ASSEMBLY STEPS

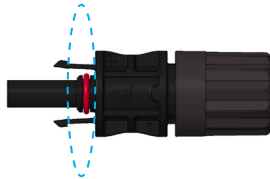
STEP 1:

VISUAL INSPECTION OF CONNECTOR

FEMALE CONNECTOR

- a. Sealing ring should fit cleanly in the slot and not be warped or distorted.

Sealing ring



- b. The two plastic clasps should be intact.
- c. Female connectors should not be obstructed by foreign objects or water.
- d. Plastic components should not be cracked.
- e. No damage should be visible on the cable.

MALE CONNECTOR

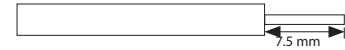
- a. Male connector should not be obstructed by foreign objects or water.
- b. Plastic components should not be cracked.
- c. No damage should be visible on the cable.



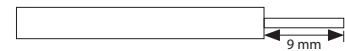
STEP 2:

STRIP THE INSULATION OFF THE CABLE

Using the wire stripper tool, remove the insulation from the cable. For 4/6mm² cable, ensure that the stripping length is 7.5 mm, and for 10mm² cable, the length is 9mm, and that the wire strands are not damaged during the process of stripping the insulation.



4/6mm² Cable



10mm² Cable

STEP 3:

CRIMP THE CONTACT

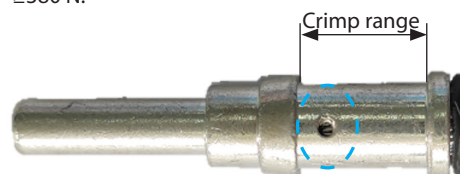
4/6mm² Cable

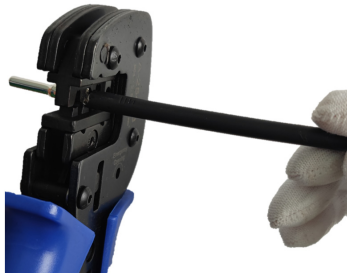
Place the contact around the bare section of the stripped wire. Crimp the contact using the wire crimping tool. The crimped contact should withstand pull forces of ≥ 310 N.



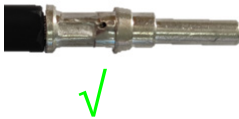
10mm² Cable

Place the contact around the bare section of the stripped wire. Make sure the wire is visible from the hole. Crimp the contact using the wire crimping tool. Crimp position is as shown in the figure. The crimped contact should withstand pull forces of ≥ 380 N.

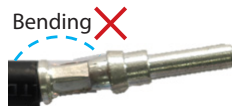
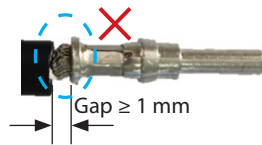




Correct crimping

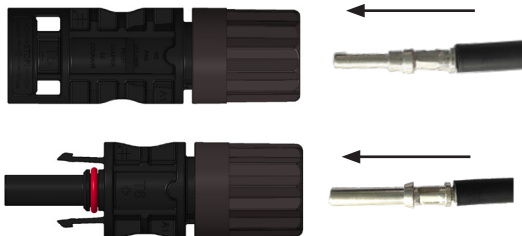


Incorrect crimping



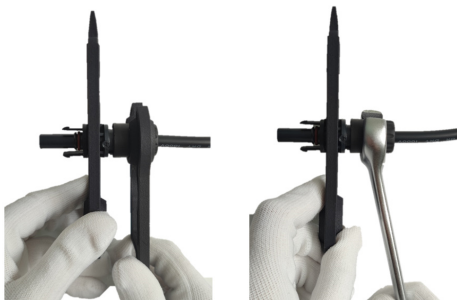
STEP 4: INSERT THE CONTACT

Push the crimped contact back into the connector until you hear a click. Lightly pull the wire to ensure the metal components of the connector are engaged.



STEP 5: TIGHTEN THE CABLE GLAND

First, tighten the gland by hand. Then use the disconnect tools to tighten the gland to the connector until it clicks, ensuring that it is locked. When tightening the male connector, please use aligner available on the disconnect tool in order to ensure the pin is not skewed.



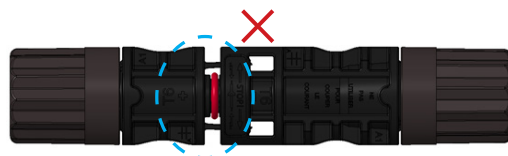
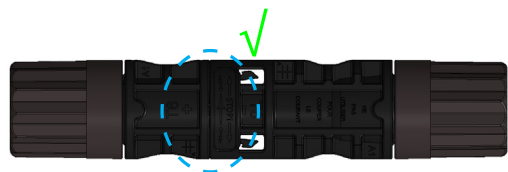
STEP 6: CONNECTING THE CONNECTORS

Check the appearance of the connectors before connecting them together. The sealing ring should be in the slot with no warping or distortion. The plastic clasps should not be damaged or broken. The connectors should be free of moisture and foreign objects. Plastic parts should not be cracked. Wires should not be frayed or damaged. When attaching, insert the connectors into each other until you hear a "click". Once attached, gently pull on the connectors to ensure they are firmly connected and cannot be easily disconnected by hand.

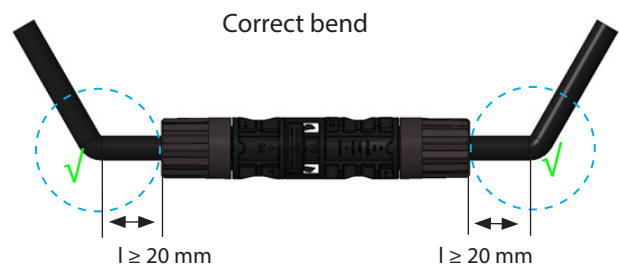
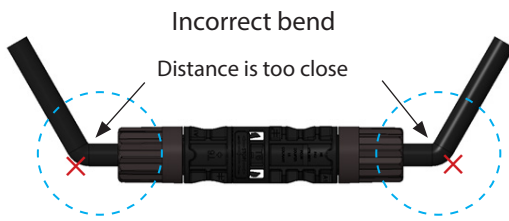


STEP 7: VISUAL INSPECTION OF THE CONNECTION

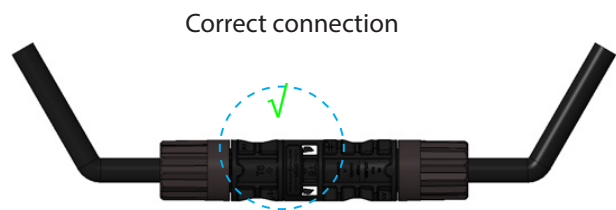
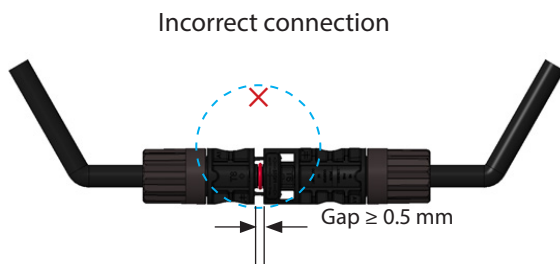
To check the connection, ensure that you cannot see the sealing ring. The gap between the connectors should be less than 0.5 mm.



7. THE CORRECT CONNECTION



Please refer to the detailed instructions of the minimum bend radius given by the cable manufacturer



8. DISCONNECTING THE CONNECTORS

The mated connectors can only be disconnected by using the disconnect tools.

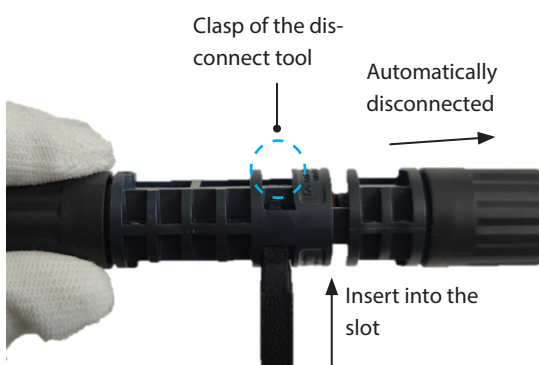
Insert the clasp of the disconnect tool in the slots of the male connector, and the female connector will automatically get disconnected.

AMENDED EDITIONS AND DATES

Rev 1.0 was released in Apr 2022

Rev 1.1 was released in Feb 2022

The technical descriptions herein are only for reference when using these products.





WARNING

Users of T6 products should prevent the exposure of T6 products to any of the following chemical substances listed below. These chemicals may cause corrosion, degradation of performance, or cracking of product and might lead to potential safety issues in applications.

Lists of all known chemicals:

Class	Chemical Name
Commonly used chemicals	Food release spray, Herbicide, Insecticide, Grease, Lubricate oil, Rust inhibitors, REMA New punch oil, Stamping oil, Engine Oil, Banana Oil, WD-40, Oily sealing agent, Doduconta B25 Kontaktol, Evabrite S, Virex TB, Suma Lima L3, Suma Rinse, Detergent, Plasticizer, Spray cleaner 8188, CM-31S, REMA cleaner oil, DX-1, CH1160, Dry lubricating oil, Paint remover, hydraulic oil, Special glue quick solvent, Gasification rust inhibitor, Dehumidifying anti-rust lubricant, Cutting oil.
Disinfectants/Cleaners	Betadine, Cide, Ammonia, Organic Ammonium Chloride, Hydrogen peroxide, Bleach, Saline, Detergent.
Cosmetics	Hand cream, Sunscreen, Lipstick, Sun screen, Makeup remover.
Oils	Die Cut (OELHELD), Machine Oil KV46 (Nippon Oil), Infeld stamping oil.
Edible	Corn oil, Cola, Light syrup, Rapeseed oil, Blend oil, Olive oil, Castor oil, Soybean oil, Coconut oil.
Acid, Alkali, Salt	Ammonium hydrogen, Potassium hydroxide, Salt acid, Sulfuric acid, Nitric acid, Phosphoric acid, Acetic acid, Ammonia, Sodium hydroxide.
Grease	Vaseline, Molykote EM-50L (Dow Corning), Molykote PG-641 (Dow Corning).
Mould Release Agent	Pelicoat S-6 (Chukyo-Kasei).
Binder	Chemlok (LORD).
Alcohols	Ethylene glycol, Amyl alcohol, Ethanol, Isopropanol, Isopropyl alcohol (IPA).
Fatty hydrocarbons	Heptane, Hexane, Cyclohexane, Liquid paraffin.
Halogenated hydrocarbon	Freon, Carbon tetrachloride, Trichloromethane, Virex 256.
Ketone	Methyl Ethyl Ketone (MEK), Acetone, Methyl ethyl ketone.
Aromatic Hydrocarbon	Toluene, Xylene, Cresol.
Other, Organic solvent	Oleic acid C18H34O2, Nonanal C9H18O, Oleic acid C9H18O2, Ethyl acetate, Butyl acetate, Tributyl phosphate, Kerosene, Gasoline, Varnish, Esters, Ethers, Amines, Glacial acetic acid, Print ink, 3M.
Adhesion sealant	APF125 (Wacker Chemical), 3M adhesive, Avancis adhesive.

Remarks:

For any chemical not listed above that may come into contact with any T6 product, it is the user's responsibility to validate that such chemical will not affect the performance of T6 products.

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