

5 MW Solar panel production line

Semi automatic line,
Lower cost

Suitable for produce solar panel power less than 500W or Flexible solar panels

Turnkey solution



Company Introduction

REOO Technology company is a leading manufacturer of solar panel machines in China. Founded in 2005, it specializes in the design and production of solar panel production equipment and specializes in manufacturing and selling solar panels.

Our equipment is exported to the United States, Britain, Germany, France, Poland, Bosnia and Herzegovina and other European and American countries, Mexico, Argentina, Chile, Jamaica and other American countries, India, Thailand, Malaysia, Bangladesh and other southeast Asian countries, South Africa, Algeria and other African countries.

Our company's advantages: Tailored for customers of all kinds of equipment; Rich experience in overseas installation, commissioning and training; Rich experience in overseas equipment after-sales service.



Production Introduce

It is a complete solar panel production line. Production capacity is 5MW per year , turnkey solution .

It can manufacture the solar panel 5W ~ 400W, by 5BB to 12BB Poly and Mono solar cell .

1, Conditions that must be present in a production building

Area of building	≧ 300 sqm
Higher of building	≧ 3.2 m
Power consume	The average maximum ≧ 40KW
Water	NA
Air supply	100L/ min
Air condition	25 °C expect laminating
Worker people	More than 8 persons
Working time per day	8 h / day
	It can run 24 hours per day
Working person	8 persons

Process flow

No	Process flow	Machine	Qty	Auto	Labor
1	Cut solar cell	Laser cutting machine	1	Autoi	
2	Tabbing and string cell	Tabbing and string machine	1	Auto	1
3	Cut EVA film	EVA backsheet cutting station	1	Manu	
4	Cut Back sheet				
5	Ribbon cutting	Ribbon cutting machine	1	Auto	
6	Lay EVA ,cell, backsheet	Laying up station	2	Manu	2
7	Bussing				
8	Stick fixing tape				
9	EL testing	EL tester	1	Semi	
10	Laminating	Laminator	1	Semi	2
11	Trimming	Trimming station	1	Manu	
12	Gluing and framing	Framing machine	1	Semi	
13	Fix junction box	JB gluing machine	1	Manu	
14	Soldering bus bar to JB			Manu	
15	Injection JB gel		1	Manu	
16	IV tester	Solar module tester	1	Semi	2
17	ELI test	EL tester	1	Semi	
18	Unload and pack		1	Manu	

Total work people : 8 persons .

Please watch the video from : <https://youtu.be/6APp5aZI5-8>

This line use the full automatic laser cutting machine and full automatic tabbing and string machine Manual laying up station, so it suitable to manufacture smaller solar panel even flexible solar module .

If use automatic laying up and bussing machine, the produce speed will be fast and the production capacity is more than 10MW.

Note :

1, Installation:

This cost did not include the cost for installation .

If seller's engineer will go over to install production line, Buyer will par for round flight tickets and hotel also food cost in buyer's side .

It need 2 engineers , working 7 days .

Salary: USD100.00 per day .

We can train buyer's engineers online in outbreak . it is free .

2, Warranty period :

12 months after finished installation and trial production .

3, After service :

Seller will supply lifetime service . include hardware and software .

Specification of machines

1, Laser cutting machine



Model : RO – L2100A

High speed, 1600 / h

Automatic Split into half cell .

Be used for cutting solar cell 158 x 158, M6 (166 X 166), M10 (182 X 182). M12 (210 X 210).

Loading : Whole cell box , 100pcs.

Unloading: Whole cell box.

Not pollute on solar cell.

Power of laser: 30W. 10% to 100% variable.

Laser wave length: 1064nm

Dicing speed : Maximum: 600mm/s

Deepness: 1/2 - 1/3 cell.

Precision : +/- 0.05mm

Frequency : 20 - 80KHz variable.

Air pressure: 0.6 - 0.8 Mpa. 400L/min

Power: 220V/50Hz, 2 KW

Measurement: 1250 x 1100 x 1380mm

Net Weight: 300Kg.

2, Tabbing and string machine



Model: H2026B

H2026B is a single track automatic tabbing and string for solar cells

Up to speed 1800 cells/hour.

High flexibility for 5BB/6BB/9BB/12BB solar cells .

The base solution is 3 type of cell of 210x 105mm, 182 x 91mm, 166x 166mm and others .

Works with different kind of cells including cut cells with width >30mm

The number of cells for string is settable from touch screen

Cell spacing is adjustable

Quick and simple operation & ribbon change

Low cost of spare parts and consumables

Soldering capacity	Max 2.7 seconds /pcs,Max1800 pcs /hour
Cell's dimension	30~166*210mm
Cell busbar	5BB/6BB/9BB/12BB/20BB
Ribbon sizes	Width: 0.8~2.0mm , Thickness: 0.12~0.23mm . Ribbon size should be informed before order
Breakage	≤0.2%, On the basis of Grade A cells with good cutting, no cracks and damage
Cell basket capacity	4 x 100 PCS,4 Cell baskets to load up to a maximum 100pcs each,total 400pcs auto switch
Operation control	PLC touch screen
Soldering technology	IR light
Soldering light life	≥1000Hr
Soldering temperature	Normal~400°C (adjustable)
Input power	3 phase/50~60Hz/380V/30A, Power cable >6mm ²
Peak power	18 KW
Average power	7 KW
Compressed air	≥ 0. 5 Mpa clean & dry air
Compressed air consumption	Approx 200L/min

Max.length of the string	2050mm, Suitable for 12pcs 6 inch cells per string with 2mm cell spacing
Operator interface	English
Warranty	12 Months

Local installation: Buyer pay for round flight ticket, accommodation . One engineer. More than 5 days. We will supply video call for installation in outbreak of infectious.

Machine size: 5040 x 1500 x 2000mm.

Operating space: 7000X 3000 mm .

3, EVA / BACKSHEET cutting station

REOO



Model : RO - ECJ

Used to cut EVA and Back sheet into designed size for solar module manufacturing..

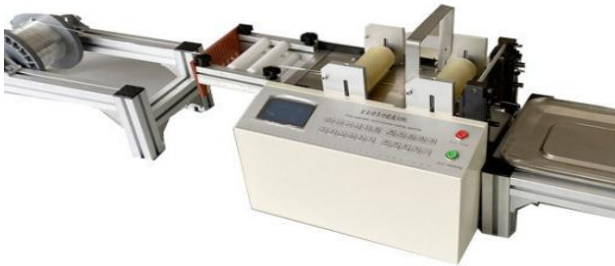
Material: Aluminum alloy.

Device characteristics:

- 1, It can cut EVA and TPT for ,maximum 600 Wp solar panel.
- 2, Electrical cutter, High speed.
- 3, Easy to adjust the size.

We can customized make it according customer's special need power supply : 1 KW single phase.

4, Ribbon cutting machine



RO - CJJ01

Full automatic. High speed.

Digital display.

Automatic alarm.

Cut length accuracy.

Speed and high efficiency.

The material of welding strip: Tinned copper alloy;

Straightening: 98%;

Cutting accuracy: $L \pm 0.2 +0.002$

Cutting Length :1-9999 mm

Maximum soldering ribbon width size: 8 * 0.2mm;

Power: 250W / 220V / 50Hz

Measument: 395 * 265 * 355mm

Weight: 26kg.

Video :www.youtube.com/watch?v=5ZN_ZZEfLYs

5, Laying up line



Model : RO – PSX

Provide horizontal surface to lay up the solar cell string and testing solar stringer.,

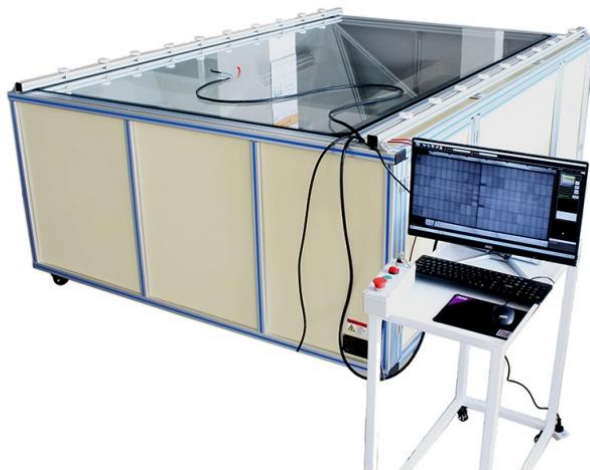
- 1, Conveyor for move glass and laying up solar cell stringer .
- 2, Configuration homo thermal electrical soldering iron.
- 3 Can produce 670W solar panel (2400 x 1400 mm)
- 4, Aluminum structure.

Dimension: 2420x1200x860mm

Support 60pcs and 72 pcs solar cell stringer,

Include all of the tools.

6 , EL tester



RO- EL2400

EL tester means electroluminescent inspection.

Be used to check the solar panel of secluded split, cracked cell, rosin joint, wire break and other defects.

Can testing module: 2200mm x 1300mm or customized .

Maximum current: 10A, Maximum 60V

Include: Cabinet (Include infrared camera) +Computer + Software

Pixel: 24000000

Time of exposure: 0.1 S-25.5 S Adjustable

Power: 220V 10A or customize.

Working environment temperature: 10 - 30 °C

Humidity: 20 - 70%

Main function of characteristics:

By using images can find: material other defects. the sides of the pneumatic feeding short, art and craft

contamination

Testing fast and convenience was longtime 1s - 25s (adjustable)

Opening and closing by pneumatic .

Electroluminescent inspection for detect solar panel before laminating and after laminating.

6, Laminating machine



Model: RO-B1

The Semi-automatic laminator is designed for different size of laminating of mono and polycrystalline solar cell with high productivity, The machine is suitable for both standard & fast cure EVA for assembly PV module.

It use friendly touch screen panel to program cycle operation, controller to maintain uniform temperature.

Effective working area: **2200X2200** mm,

Can laminate 2 pc of 390 W solar panel (72 cells) in 1 times.

Annual capacity: 390w x 2pc x 3times x 8 h x 300 days = 5.61 M Wp / year.

Total power consume : 35 KW

Dimension: 3000mm x 2700mm x 1400mm

1.1 Heating system:

Type of heating: Conduction oil heating system.

Temperature distribution on heating plate area during heat up: $< \pm 1.5$ K

Temperature distribution within steady state: $< \pm 2$ K)

Heating plate specification :

Material: Steel, thickness 45 mm, temperature range: $\leq 180^{\circ}$ C, temperature display on touch screen..

2.2 Vacuum system:

Vacuum pump ≥ 150 m³/h, ultimate value of vacuum < -100 mbar, high definition/resolution vacuum gauge/display.

2.3 Control unit:

PLC base auto cycle control,with manual control interface. Manual operation option of each operation. Automatic start of pre-selected working cycle with a start button.

2.4 General requirement:

Maintenance friendly design, loading and unloading of laminator from both sides (left and right) without any handicap. Easy maintenance/removal of heating plates. Documentation in English language

2.5 Operational safety:

Laminator is equipped with safety devices according to the respective standard.

2.6 Warranty: 12 (twelve) months

2.7. After service : Long lifetime .

8, Trimming table



RO - XBT

Be use to trimming the EVA and Backsheet out glass after laminating .

With Conveyor .

Trimming by electricity blade .

Can produce the maximum 670W solar panel ,

2400 x1200 mm and others .

9, Framing machine



Model: RO - ZKJ

The machine should be suitable to use for fix solar panel frame and lock the fourcorner of the frame.

Maximum panel size: 2500X1400mm or customized .

Power supply: single phase.

Difference of diagonal line difference:1.5mm.

With pneumatic gluing gun.

10, Solar module tester



Model: GTM - B

Mainly used in electrical performance auto test and result record of solar mono and poly module.

A grade spectrum; A or B grade unevenness degree of irradiance;

Can be used for 210 cell and PERC cell solar panel .

A or B grade instability of irradiance;

Flash pulse 10ms, continuous adjustable;

Four-line survey; 10 parameters display;

8,000 data collecting dots;

Irradiance automatically compensating;

Temperature automatically compensating; measurement parameter displays in tabulation and graphic way;

Voice counts off and prompts;

Counting prompt of flash times;

24hrs continuous working;

Working life of imported xenon lamp is 300, 000 times of flash

Model	GTM -B
Lamp Spectrum	In line with IEC60904-9 spectral Irradiance distribution requirement(AM1.5)

Light intensity	100mW/cm ² (continuous adjustable range 70-120W/cm ²)
Spectrum matching (400-1100) nm	6.2%
Test result consistency	≤±2 %
Test error of electrical properties	≤±2%
Single flash time	10ms
Effective Test range	2500x1400/5W~700W or customized .
Measuring voltage	0~100V(Resolution 1mV)
Measuring current	0~20A(Resolution 1mA)
Interval time between tests	≧ 7 seconds
Test Parameters	1sc, Voc, Pmax, Vm, Im, FF, EFF, Temp, Rs, Rsh

11, Module transfer carrier



Model: RO - DZ

Hand truck for transportation of Glass / Modules / Panel at different stage of production.

The module carrier made of steel and continues welding with rubber combination.

It should carry 10 sets of 600W solar panels at one time & strong mobile castors for free and smooth movement during transport of modules / panels.

The wheels can be locked for safety and stability to avoid any accidental damage.

Support 10 pcs of 600W modules each time

12, Ready material carrier



Model: RO - DY

Hand truck for transporting the finished laying up module to be laminated, carry 10 pcs600W solar panel with proper protection.

13, Working table



Model: RO - GZT

Working table for select out solar cells from the faulty one.

And classification the solar cell for solar production.

Dimension :1200X1200X800mm

14, Compressor.



Model : CS5.5N

Helical-lobe compressor

Working Pressure:8 bar

Machinery Test Report: Provided

Core Components: Pressure vessel, Pump

After Warranty Service: Video technical support

Cooling method: Piston air compressors hp 5 with Air Cooling

Motor: air compressors with Copper motor

Compressor type: Min piston air compressors hp5

Warranty:1 Year

Power: 5.5KW / Voltage: 380V

Dimension (L*W*H):159* 59 *98cm

Weight: 155

Packing and shipping

1 x 20ft Flat rack -- Laminator

1 x 20ft container -- Tapping and string machine

1 x 40ft container -- Other machines.

