



Owner's Manual - Tracker500

THANK YOU. We at Sunfare Solar built the Tracker so you could get the most out of your solar panel, without a lot of hassle.

Operating the TRACKER500

Initial Power On

If you are in the Southern Hemisphere, see the section: Changing the Fuse or Jumper.

Once the TRACKER500 is assembled and mounted, you run it by simply switching the toggle switch on the Control Box to “ON”. The blue Power LED will light up when the unit is operating.

When first switched ON, the TRACKER500 will swing the panel to face East. Then it will swing the panel from East to West several times in order to determine the correct scan rate for your panel. Once that rate is discovered, Tracker will remain in the East-facing direction. Tracker runs the scan-rate test once when it is switched on and then every third day at dawn to maintain the proper scan rate regardless of battery charge.

TRACKER500 will begin to scan the sky and follow the sun when the panel is capable of sourcing more than about 13.7 Volts. A rule of thumb is that if you can see a shadow, there is enough sun to track. Until there is enough sun, the panel will remain facing east. So on a very cloudy morning, there may not be enough sun to track.

Normal Tracking

When ambient light has dropped below the threshold of not enough sunlight, (i.e. “you can't see a shadow”) the TRACKER500 will wait 2 hours, then swing itself to face East and wait for morning. Tracker will begin following the sun when ambient light again makes shadows visible.

Panel Charge Status LED

When the panel is sourcing more than about 13.7 Volts, the green Status LED on the Control Box will illuminate. This is a good indicator of the battery because if the Status LED is on, then battery voltage is probably above 12.8 Volts and it is either charged or close to being fully charged.

Internal Charge Controller and Excess power

TRACKER500 contains a battery charge controller to protect the battery from overcharging. The charge controller will keep an already fully-charged battery safe, while making the extra power being supplied by the solar panel available for other uses. You can connect other 12V devices to the Battery Terminals and they will receive the extra power not used by the Battery.



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Changing the Fuse or Adjusting for Southern Hemisphere Operation

Background

If your panel is struck by lightning, or is hooked up to a solar panel with an output greater than 1.5A, TRACKER500's internal fuse will blow. This is to prevent the TRACKER's electronics from being destroyed by higher electrical currents than for which it was designed.

*Note that if your panel can output more than 1.5A Pmax, TRACKER500 is **not** designed to handle it. However, TRACKER2000 and TRACKER8500 are built for higher current panels – TRACKER8500 can safely control up to 14A Pmax and 225Watts.*

To change the fuse

1. Insert a flat head screwdriver in the shallow groove on the fuseholder. Turn counter clockwise and the fuse should pop out.
2. Replace the fuse with a 5x20mm 1.6A fast blow fuse (an extra one is supplied in the parts bag with the TRACKER500).
3. Reinsert the fuseholder into the TRACKER500 and turn the fuseholder clockwise to lock it in.

To adjust the TRACKER500 for use in the southern hemisphere

TRACKER500 is capable of being used in the northern or southern hemisphere. By default, it assumes it is in the northern hemisphere and therefore will swing the panel East – to the left when viewed from the Upper Crossmember – at night in preparation for morning. If you are in the southern hemisphere, East means the panel must point to the right in the morning.

In order for TRACKER to function correctly in the southern hemisphere, you need to turn the motor connector on the internal circuit board around. The following section describes the procedure to access the circuit board to swap the connector.

To gain access to the circuit board

1. TURN OFF THE POWER SWITCH AND DISCONNECT THE BATTERY AND PANEL WIRES (if attached) FROM THE CONTROL BOX TERMINAL STRIP.
2. REMOVE THE PANEL AND CROSSMEMBERS. Remove the control rod springs. Note the slot number the springs are attached to on the Lower Crossmember. Unbolt the Upper and Lower Crossmembers from the Control Box support bracket. Unplug the sensor connector from the control box. Be careful not to damage the Solar Panel wires or the sensor cable. Lay the TRACKER500 on a table with the control box on its feet.



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3. REMOVE THE CONTROL BOX LID. The Control Box lid is secured by 4 phillips head screws. Unscrew those to access the circuit board inside.
4. TO SWAP THE CONNECTOR: See Illustration 2 below. First remove the connector by pulling it straight up, turn it 180° then replace it onto those same two pins. The “red” wire should be on the motor shaft end of the control box for southern hemisphere operation.
5. REATTACH THE CONTROL BOX LID. Orient the lid that has the short end of the Control Box support bracket toward the motor shaft. Screw the lid on tightly but don't strip the Control Box's threads!
6. REINSTALL THE PANEL AND CROSSMEMBERS. Follow the same procedure used earlier when removing the Upper and Lower Crossmembers, this time in reverse. Tighten the nuts on the Crossmembers. Make sure the wires are not kinked. Replace the control rod springs in their original slots.