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Installation Guide Solar Panel Mounting Kit SP225 and IM200 Panels

THIS DOCUMENT TO BE READ IN CONJUNCTION WITH OWNER INSTALLER MANUAL FOR ADDITIONAL INSTALLATION INSTRUCTIONS FOR COMPLETE WATER HEATER INCLUDING SOLAR COLLECTOR INFORMATION.

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Installation and service must be performed by an authorised person. This water heater must be installed in accordance with:

1. Manufacturers Installation Instructions
2. AS/NZS 3500.4 "National Plumbing & Drainage Code"
3. AS/NZS 3000 "Wiring Rules"
4. Municipal Building Codes
5. Any other State or Federal Statutory Regulation

INSTALLATION – SOLAR COLLECTORS

PREFACE:

Approximate roof area required:

SP225 COLLECTORS (WHERE INSTALLED)

2 Collectors are 2.8m wide x 2.4m high. (88kgs total, filled with water)

3 Collectors are 4m wide x 2.4m high. (132kgs total, filled with water)

IM200 COLLECTORS (WHERE INSTALLED)

2 Collectors are 2.2m wide x 2.0m high

NOTE: Ensure the mounting surface is strong enough to support the collectors. Most roofs can support the panels, but if unsure consult a structural engineer.





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SP225 AND IM200 COLLECTOR INSTALLATION

ONLY QUALIFIED TRADESPERSONS SHOULD INSTALL THESE COLLECTORS. GLAZING CANNOT BE REPLACED ONSITE.

- 1) Select a suitable place to install the lower mounting rail on the roof, align panel location as high as possible on the roof.
- 2) Locate the lower rail and mark the lower 4 bolt positions on the rail. The bolts are positioned to line up with the peaks of the tin or tile profile. DO NOT drill in the troughs of the roofing material.
- 3) Drill the 4 bolt positions on the top of the rail using a 16-20mm metal cutting hole saw, leaving a 5mm pilot hole through the bottom of the rail.
- 4) Using the drilled rail as a guide mark and drill the roof material with a 5mm pilot hole. This may not be needed for tin roofs, as the screws supplied are self tapping.
- 5) For tile roofs drill the tiles using a 12-14mm concrete drill bit, paying careful attention for any cracking in the tiles. Replace any cracked tiles with a new tile before continuing.
- 6) Once the holes have been drilled, place a fill the hole with silicon sealant, and apply a 6mm bead around hole.
- 7) Apply Silicon into the drilled hole then insert the Aluminium spacer tube into the hole. This is not required for a tin roof.
- 8) Position the mounting rail and insert the screws through the rail and into the roof batten, place a rubber washer as a seal, then evenly tighten the screws. For Tile roofs the Aluminium spacer will act as a stop. Do not over tighten and break a tile.



NOTE: ensure a rubber sealing washer is placed between the rail and the roof

surface for each screw hole, to provide adequate sealing of the screw hole from

water ingress. Use adequate amounts of silicon sealant in the holes before

inserting the screws.

- 9) Using a 20mm screw for each bracket mount 4 of the 60mmx60mmx 35mm wide right angle brackets evenly along the lower section of the lower rail. This will leave a short tab of the bracket protruding above the rail. Evenly space 2 brackets for each panel. The





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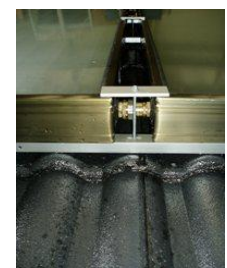
panels can now be lifted onto the rails and the brackets will stop the panels sliding down the roof.

- 10) Follow instructions 2-8 for the other rails. A total of two rails are required for non cyclone areas, and a total of 3 rails are required for cyclone rated areas.
- 11) Once the rails are mounted to the roof then the side brackets can be placed on the rails.
- 12) Attach an upper corner bracket to the top left of the upper mounting rail, using 2 x 20mm 12G self tapping metal screws. This bracket is a 60mm x 60mm x 35mm angle Aluminium bracket.
- 13) Position the solar panels on the lower and upper rail (rails). Connect them as shown in the diagram, remembering to use Teflon tape or approved liquid sealant on all plumbing joints. Always use two spanners to tighten panel fittings, and do not exert any torque on the panels.



NOTE: WATER FLOW THROUGH PANELS - the water inlet from the pump must be connected to the lower header pipe of the array. Ensure that the water exits the panels from the top header pipe, diagonally opposite from the inlet and returns to the "Solar Return" on the tank.

- 14) Once the panels have been connected together attach the corner bracket (s) to the top right of the upper mounting rail, using 2 x 20mm 12G self tapping metal screws. This bracket is a 60mm x 60mm x 3mm angle aluminium bracket.
- 15) Next attach the centre brackets (120mm x 40mm x 6mm flat Aluminium Bar) using the 135mm self drilling metal thread screw, screwing into the top of the aluminium rail sections. This provides hold down of the centre sections of the panels.
- 16) Using 1 x 20mm 12G self drilling metal screws attach each panel to each of the bottom mounting brackets by drilling through the brackets and into the sides of the panels.
- 17) Using 1 x 20mm 12G self drilling metal screws attach each side bracket to the panels by drilling through the bracket and into the sides of the panels.
- 18) The system is now fully attached to the roof bracket system.
- 19) Cover the panels with scrap cardboard, shade cloth or similar when empty of water and in direct sunlight.
- 20) Install the air bleed valve onto the outlet of the panels at the top left corner of the panels.





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NOTE: The air bleed valve needs to be checked to ensure the valve top is opened and that when the pump operates the valve seals properly when the pump is operating. This can be done by listening to the valve to ensure air is not entering the pipe work. Let the pump run for 3-5 minutes if air is still bubbling into the tank at this stage the valve is not sealing.



- 21) Mount the panel temperature sensor to the Air bleed T piece.
- 22) Drill a 10mm hole in the roof near the sensor and run the sensor leads through the hole drilled in the roof, once this is done seal the hole with silicon.

NOTE: Do not use the same hole as the pipe work as movement of cause the cable to break or short circuit.



- 23) Install the Solar Hot Pipe and Solar Cold Pipe to run between the storage tank and the collectors. Both pipes should be DN15 (1/2") copper pipe, with 13mm or thicker synthetic rubber insulation (Armaflex, Bradflex). All insulation should be protected from UV degradation by two thick coats of paint, or by covering with ductwork. Pre-lagged pipe (often green PVC or plastic insulation) is not suitable for thermal insulation purposes – only use foamed synthetic rubber insulation.
- 24) Connect the Solar Hot Pipe and Solar Cold Pipe to the heater and to the panels.

NOTE: ensure that the water inlet from the system pump flow is to the lower right edge of the array, and that the water exits the panels diagonally opposite and through the sensor outlet fitting located on the top left hand corner of the array, and returns to the solar return on the tank.



- 25) Upon completion of the water heater installation, check the panels and associated plumbing for leaks while the pump is operating. Leaks above the water line of the tank will suck air in, rather than leak water out. When checking for leaks, if you can hear air bubbling in the tank after the pump has been running for more than 5mins it is likely that air is leaking into the piping.
- 26) Remove the covers from the solar collectors once the system has been commissioned.

NOTE: The kit bags come complete with screws and spacers for both corrugated and tile roofs, there will be spare parts leftover at the end of the installation.