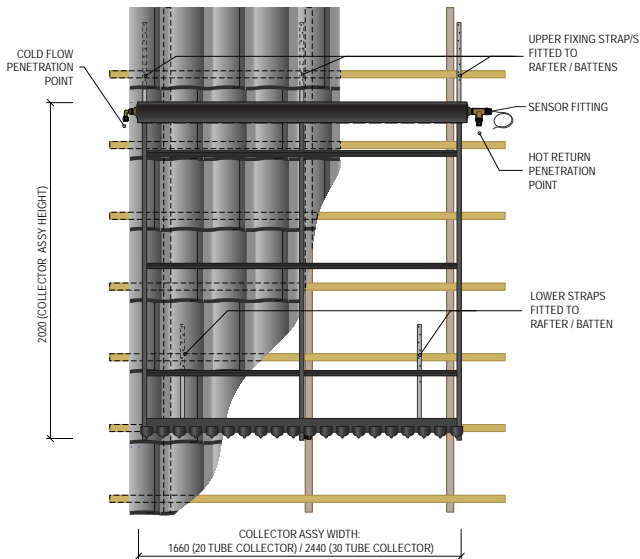
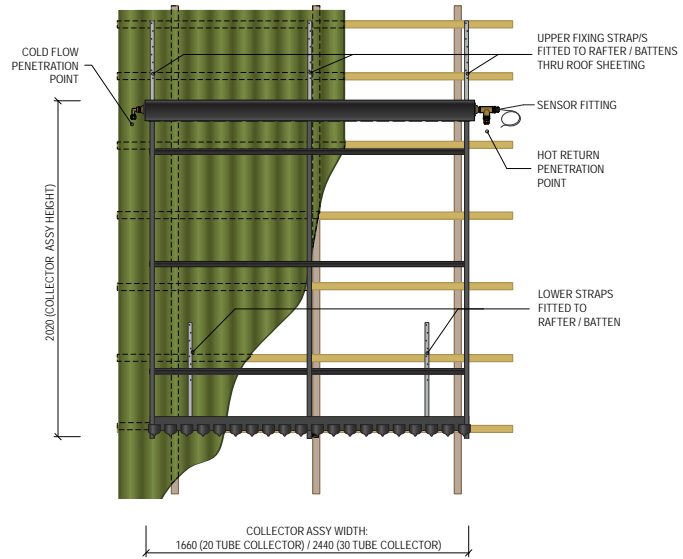


# Pumped (Split) Systems: Installing Evacuated Tube Collectors on Pitched Roof

## Collector mounting overview



Collector Mounting - Tiled Roof



Collector Mounting - Tin/Metal Roof

## Part kits & components

### Parts not included in standard kits:

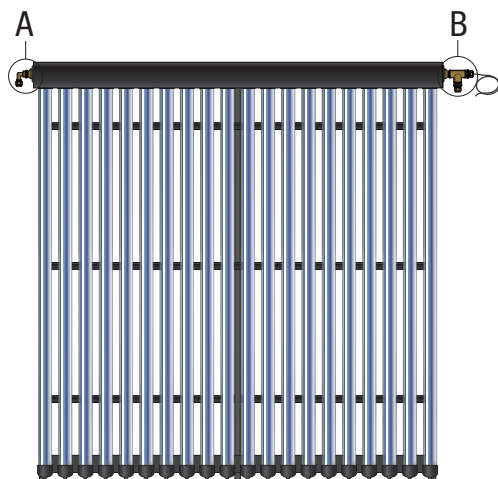
A suitable means by which to seal the roof after penetration such as (but not limited to):

- a. A water-tight flashing for tin / metal roofs
- b. Lead roof flashing and watertight seal for tiled roofs

### Standard kits included with the solar thermal collector systems:

20 tube collector system	30 tube collector system
1 x 20 tube evacuated tube kit (CSR20)	1 x 30 tube evacuated tube kit (CSR30)
1 x Additional installation kit for evacuated tubes (K1052)	1 x Additional installation kit for evacuated tubes (K1052)

## Collector connection points



INSTALLATION SHALL CONFORM TO THE PLUMBING CODE OF AUSTRALIA (PCA)

WARNING – THIS APPLIANCE MAY DELIVER WATER AT HIGH TEMPERATURE. REFER TO THE PLUMBING CODE OF AUSTRALIA (PCA), LOCAL REQUIREMENTS AND INSTALLATION INSTRUCTIONS TO DETERMINE IF ADDITIONAL DELIVERY TEMPERATURE CONTROL IS REQUIRED.

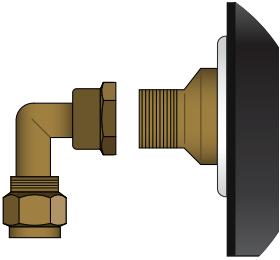
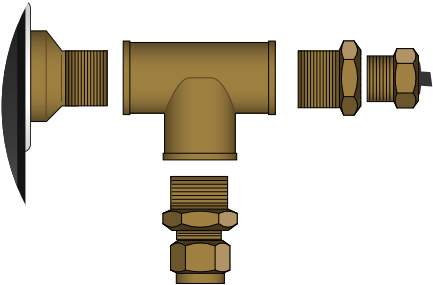
## Collector Connections Table

**IMPORTANT!** Before lifting and fitting the collectors to the roof, ensure all brass fittings are connected to the collectors, to minimise time working at heights.

**CAUTION!** Keep evacuated tubes in sealed box until ready to install and wear protective globes when handling (due to potential risk of burns).

The table below indicates all brass fittings & connections required for collectors

NOTE: Collector connections are “reversible” in which case, please make connections as a “mirror image” of what is described below.

Connection Location	Fit	Image
A: Cold inlet	20mm FI - 15mm conetite elbow	
B: Hot outlet	20mm FI - FI brass Tee	
	20mm MI - 15mm FI reducing bush	
	15mm MI brass collector sensor (Hot)	
	20mm MI - 15mm conetite reducing union	

**IMPORTANT!** Ensure all connections are tight and leak-free



### WARNING

If collector/s are to be located below the position of the tank, a thermosiphon arrestor valve must be fitted.

## Installing Evacuated Tube Collector

### Preparation

1. Check the roof for broken/loose tiles and rusted/loose tin sheets, and make good.
2. Before preparing to lift the collector / frame onto the roof area, preassemble the collector frame and install all brass fittings to the collector using appropriate jointing methods and referring to the relevant collector connections table

### Assembling the Collector Frame

Assemble the evacuated tube/aluminium mounting frame at ground level following the steps below.

3. Turning the header on its back, attach the vertical frame sections (x3) and the stainless steel collector straps to the header section.
4. Place strap directly onto header section (Fig 1), ensuring strap length runs to top side of header.
5. Place vertical frame section over strap and fasten with nuts / washers provided (take care that tube entry holes face the longer side of the frame section). Repeat this step for all other frame sections.
6. Now attach the footer to the two lower holes on either side of the vertical frame sections using the bolts, nuts and washers provided (Fig 2). Take care to install the footer with threaded side facing away from the header section.
7. Attach the 3 horizontal sections to the vertical frame sections using bolts (M6 x 40mm), nuts and washers provided. Take care to install horizontal sections to the underside of the header as shown (Fig 3).
8. Screw the remaining 2 straps into the footer using the philips screws provided. Ensure strap runs towards the header section when attached (Fig 4).

### Rooftop installation (direct/sloping)

Position the frame header roof support on the front edge of a tile or over a batten (tin roof)

9. Tin roof (Fig 5): Fix the top straps (x3) directly through tin roof into purlin/batten using 25mm self-tapping screws provided. Minimum 2 screws required per each strap, 10 per collector. Ensure all possible water entry points are appropriately sealed. Repeat the process for footer straps (x2).
10. Tile roof (Fig 6): Fix the top straps directly to the batten by removing tile. Repeat the process for the bottom straps. Ensure all possible water entry points are appropriately sealed.



Fig 1



Fig 2



Fig 3



Fig 4

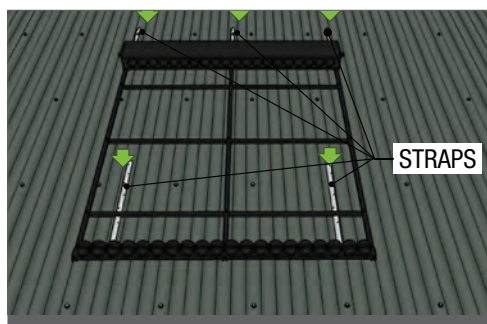


Fig 5

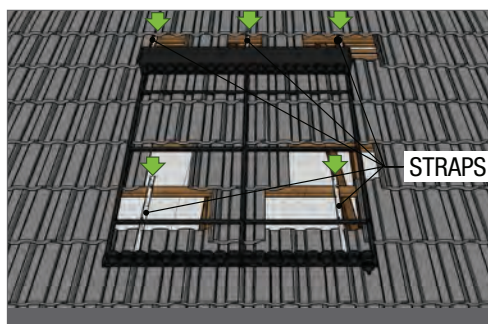


Fig 6

## Inserting the Evacuated Tubes

NOTE: Wear protective gloves when handling evacuated tubes to avoid potential risk of burns.

11. Remove the tubes carefully from the protective carton, taking care to avoid damage.
12. Fit the rubber seal and apply a small amount of heat transfer compound (white paste) to the top of the heat pipe (Fig 7).

NOTE: This compound should not be handled without protective gloves, refer to paste manufacturer indicated on packaging for MSDS.

13. Insert tubes through bottom footer eyelets and push into header pipe assembly (Fig 8).
14. Screw base cap into footer pipe to secure tube and gently tighten (Fig 9). Do not over-tighten as this may damage glass tubes. Repeat process for all of the tubes.

### Solar flow and return lines

Run the solar flow and return lines from collector/s to tank using insulated copper (or similar high temp material) with a gradual fall to the storage tank.

Approved flashings must be used when penetrating the roof, following the flashing manufacturer's recommendations

### Sensor wire

The solar sensor wire will need to be run with the flow and return lines from collectors to tank. Make sure the sensor wire is inserted into the sensor fitting and sealed. Make sure the sensor wire is protected from damage. If this wire is cut or broken it will need to be replaced.

**Ensure the sensor wire does not come into contact with the collector or tank flow and return line, as very high temperatures can interfere with the sensor wire and cause the solar controller to malfunction.**

**Care should be taken to ensure that the sensor wire is protected from damage. The use of protective conduit is advised in high traffic areas and to protect against damage by wildlife / rodents.**

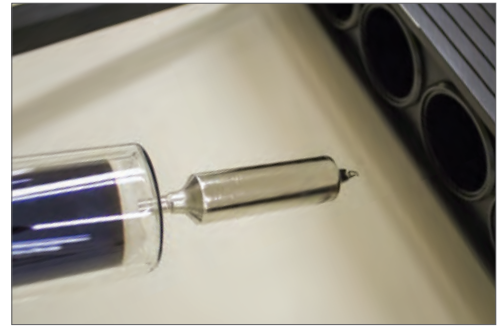


Fig 7



Fig 8



Fig 9

NOTE: Illustrations within this document are indicative only.



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