



*Your pool heating Partner*

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# D.I.Y. INSTALLATION MANUAL

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# Plumbing Diagrams

## 1

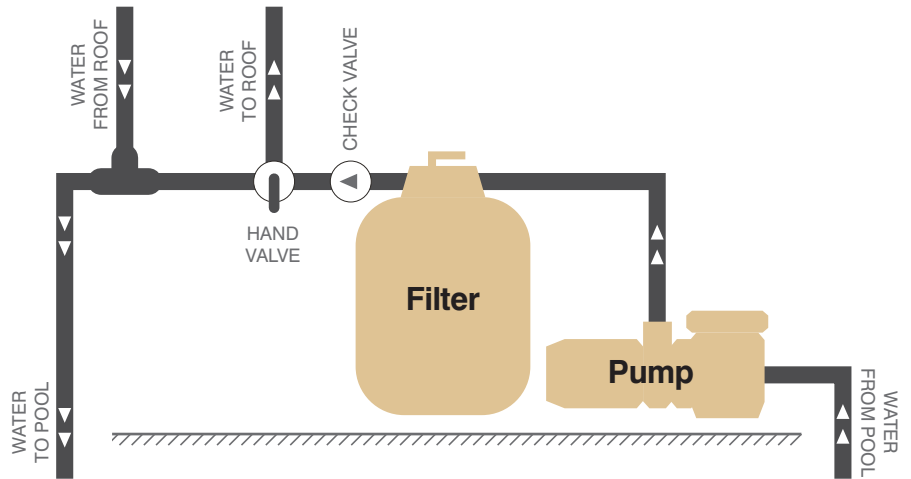
### Manual

The manual system is operated by closing a hand valve which diverts water to the solar collector - this system must be cut in before any other pool equipment eg. gas heater, chlorinator.

This system should only be used on single story installations as it puts extra load on the pump and filter.

Additional Parts Required

3 way valve is required to turn the flow of water to the roof on.



## 2

### Independent

Additional Parts Required

Boost Pump

**Hurlcon ECO 170. Pump may vary in size of solar.**

(Instructions with Pump)

Digital Solar Controller

**SL-6 or SL-2**

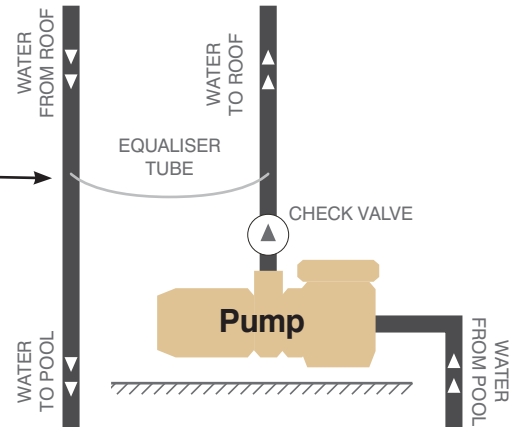
(Instructions with controller)

#### Equaliser Kit

A bleeder pipe/Equaliser tube is used to allow the roof system to drain while the solar is not operating. This is installed on the pipe work up to the roof (below the eave) connecting supply and return pipes.

To install the equaliser tube

- Drill one 9mm hole onto each of the 40mm pipes
- Insert a grommet (supplied) into each hole
- Using one tube of the solar absorber, push a joining barb into either end and push both ends into the grommets and sleeve.



## 3

### Retro Fit

If existing pool plumbing to be used, install a Hurlcon FX 140 and SL8RT Digital controller. The pool pump must be running during solar heating hours.

This system is suitable for 2 story installations.

Additional Parts Required

Boost Pump

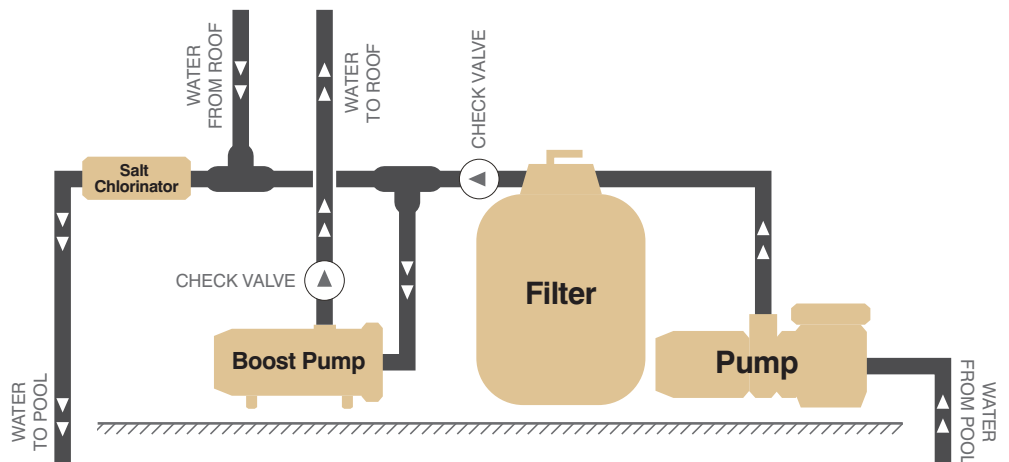
**Hurlcon FX 140**

(Instructions with Pump)

Digital Controller

**SL8RT**

(Instructions with controller)



# Installation

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## Before Installing

The absorber is designed to fit on almost any type of roof, but there are cases where it is inadvisable;

- Where there is a lack of suitable roof area facing the right direction. A north facing roof is always preferred but north-west or flat facing is acceptable.
- Where the roof is shaded by trees or buildings
- Where the roof is in bad condition and not suitable for foot traffic
- Where the roof pitch makes it difficult to work on. Generally speaking any roof exceeding 30° is unsafe.

## Overview

The collector consists of PVC EZY-Fit solar absorber and the patented manifolds. The finished collector consists of hot and cold manifold system with a third pipe acting as a balancing pipe to insure best efficiency. The solar absorber should be installed horizontally across tiles, clip lock or colorbond roofs.

The preferred maximum length run of absorber is 13m. Each pack of absorber consists of 27 lineal meters (4m<sup>2</sup>). With the manifolds located vertically (up a sloping roof), the cold feed to the collector must enter at the bottom and the hot return drawn from the top.

There are 2 parts to the installation

### Part 1

#### Laying the Absorber

Once the manifold system has been constructed it can be placed on the roof and the absorber can be measured out.

### Part 2

#### Manifold installation

Once the measurements have been taken all pipe work should be done off the roof. No drilling or cutting should be done on the roof for safety reasons.



## Safety



Full attention should be paid to safe working practices at all times. Solar heating systems are usually installed on an elevated structure and unless you have the appropriate safety equipment for working at heights, you should employ someone with experience and equipment to complete the installation for you.

**Falls from heights can result in serious injury or death.**

# Part 1

# Laying the Absorber

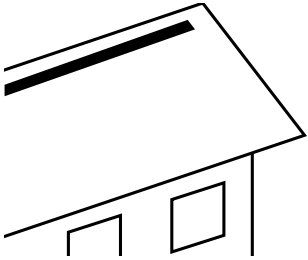
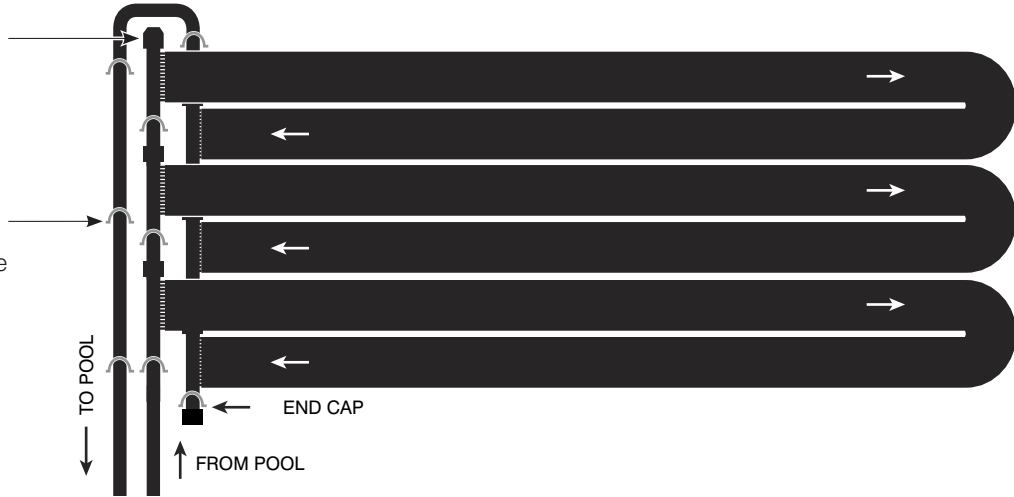
## Roof System Diagram

### VacRel

The VacRel goes on the highest possible point of the supply pipe. The valve allows air into the system while the solar is not operating.

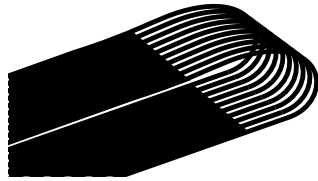
### Saddles

3 Saddles per manifold pipe



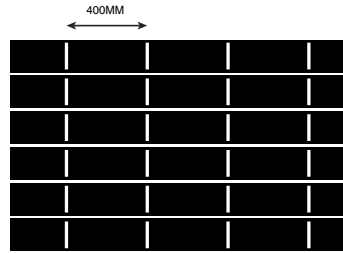
# 1

- Lay the absorber out on the roof.



# 2

- At the far end of a run the absorber is folded over and back on itself.
- Peel back the webbing in between the tubes to allow the absorber to sit flat on itself.
- Laying the runner tight up to the top run, the roll is taken back to the manifold system. The returning run is then trimmed to length and attached to the corresponding manifold.



# 3

- Finally Sunlover adhesive is applied under the absorber with a standard caulking gun at 400mm intervals. Press absorber firmly onto adhesive to ensure good contact.

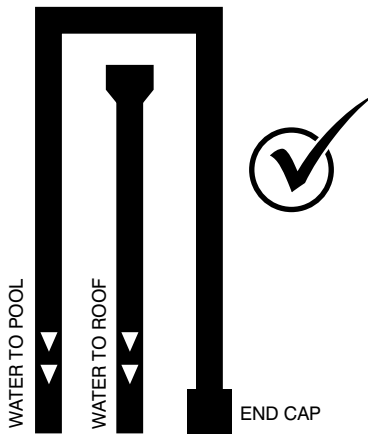
***Do not use any other adhesive than the Sunlover adhesive as untested adhesives might have adverse effects on the absorber***

# 4

***Repeat*** the process until all rolls of absorber are used.

## Part 2

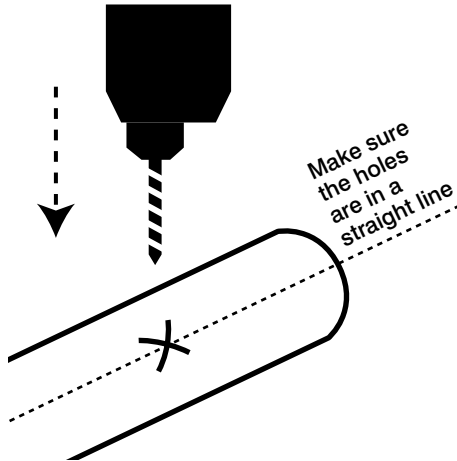
# Manifold Installation



### 1

Complete all PVC pipe work.

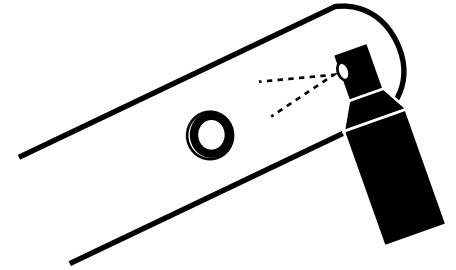
Use 3 saddles on each manifold pipe to hold in place. Ensure pipe does not bend.



### 2

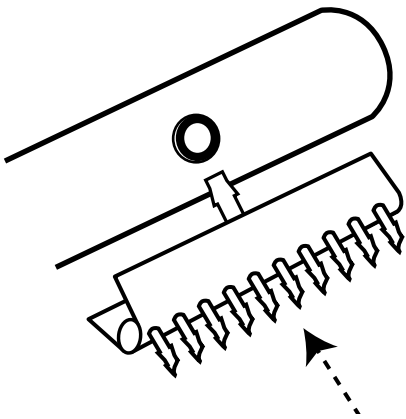
- Pre-mark PVC with text in the center of absorber.
- Drill 14.5mm holes with special drill bit loan from Sunlover Heating.
- For Tin Roof holes should be 295mm apart. Tiled roofs will vary, work out distances once absorber has been laid

**Do not run absorber over roof screws (if avoidable) as the sharp heads can pierce the absorber**



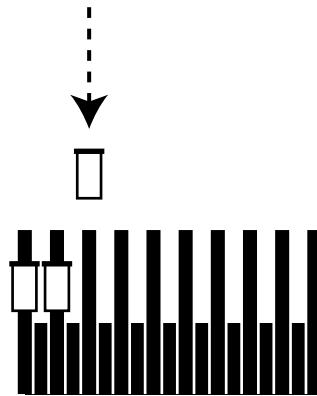
### 3

- Plug with grommet
  - Spray with silicone spray or soapy water
- Do not use petroleum or oil based lubricants as it will damage the absorber and E.P.D.M. grommet.**



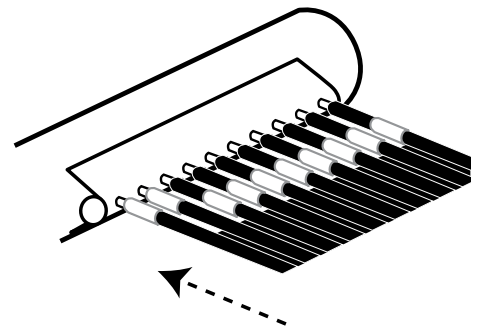
### 4

Push manifold barb through grommet until it locks in



### 5

- Strip absorber webbing back.
- Place sleeves on the tube of absorber



### 6

- Slip tube onto barb on the manifold
  - Push sleeve down to lock onto Manifold using supplied Push in Tool
  - Spray with silicone spray or soapy water
- Do not use petroleum or oil based lubricants as it will damage the absorber**

# Installation Tips

1. Lay the collector first - work plumbing back to filter
2. Make sure roof is not shaded and is clean
3. Collector runs across top of ridges of metal roof
4. Collector runs across roof tiles
5. Use saddles where needed to secure pipe to roof and walls. 3 saddles minimum per manifold PDC
6. Vacuum break valve must be installed to allow water to flow back to pool when switched off
7. All off-cuts of collector can be spliced together using splicing barbs and collars
8. Install solar controller so pump lead reaches
9. Make sure solar controller roof sensor is not shaded and is not installed on absorber
10. Wear sand shoes when working on roof and read safety issue statement before beginning work
11. Pre drill header pip for tile or metal roof and glue header last
12. At start up, check all fittings and collector for leaks.
13. When turning solar on you will see air returning to the pool - this is normal.

## Additional Notes

1. If running solar system independent of filter system, a lint pot is required to be fitted to solar pump
2. VacRel lets air into the system when it is shut down to avoid pipes collapsing from vacuum pull of water going back to the pool. VacRel should be installed at the highest point of supply line.
3. When solar system is plumbed through a filter system as per diagram of auto system, filter pump must run in conjunction with solar pump and check valves must be installed as per diagram.

### Solar Controllers

A solar controller has two sensors. One measures pool water temp (short lead). This is installed by drilling a hole in pipe before solar take off and inserting a grommet -push sensor into grommet.

The sensor with the long lead goes to the roof. This is pushed into a scrap piece of absorber and glued to the roof, Wires are held in place with wire ties. The controller is plugged into a power point and the pump plugs into the controller.

### Solar Boost Pumps

If independent suction and return lines are installed to the pool either a Hurlcon ECO140, ECO 170 or ECO 230 are to be used with a SL2 or SL6 Digital Controller.