



by **HY-CLOR**

Installation & Operation Manual

Solar Pool Heating System

For further information
call **1800 625 123**
www.hyclor.com.au

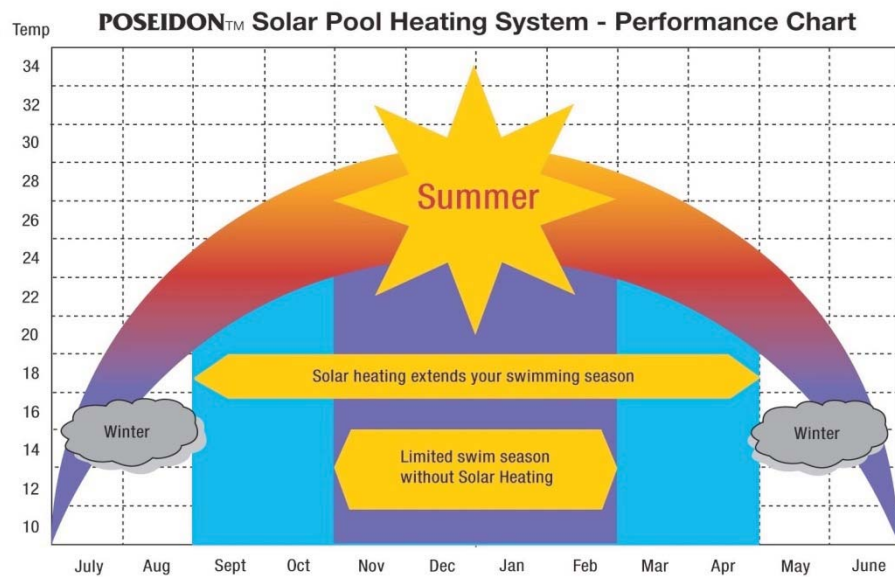
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HY-CLOR AUSTRALIA PTY LIMITED
ABN 81 000 655 381
Level 5, 15 Orion Road, Lane Cove NSW 2066, AUSTRALIA
help@hyclor.com.au

POSEIDON SOLAR INSTALLATION INSTRUCTIONS

Congratulations on purchasing your Poseidon DIY solar swimming pool kit from Bunning's Warehouse. Your Poseidon solar swimming pool system is designed to ensure you of the highest possible quality product.

Poseidon DIY solar swimming pool kits will provide you with many years of trouble free service and will extend your swimming season by many weeks in the year.

To ensure you get the most out of your Poseidon Solar swimming pool system please read the following installation manual carefully. If you do have any problems with the installation or are unsure of the type of installation you require please contact us on our help desk number 9.00am to 5.00pm seven (7) days.



HELP DESK

1800 625 123

When installing your Poseidon solar swimming pool system several things need to be taken into consideration before you commence the installation. These include:

- The required area of absorber needed to adequately heat your swimming pool
- The amount of roof area available to fit the solar system
- Roof aspect
- The roof pitch
- The type of roof (tile or tin).
- The roof colour
- The pool colour
- Whether the pool is indoors or outdoors
- How much shading the roof area selected has during the solar day
- How much shading the pool has during the day.

It is understood that when you begin installing the Poseidon swimming pool solar system you have carefully assessed all safety aspects of working on a roof. This includes location of power lines, safety harnessing and or scaffolding as well as sun protection whilst working on the roof.

Assessment of the roof area to be worked on is important as they are dangerous areas. The potential to fall is a major risk along with electric shock and exposure to the harmful U.V sun rays and heat exhaustion.

If you are unsure of any safety aspect of installing the Poseidon swimming pool solar system you should consult your state or statutory work safe authority.

ABSORBER REQUIREMENTS

The required amount of absorber to adequately heat your swimming pool will vary depending upon your location and the aspect of the swimming pool.

It is generally recommended that your Poseidon swimming pool solar system should be no smaller than 70% of the surface area of your swimming pool.

In north Queensland for example 70% of the surface area of the pool would generally be acceptable whilst in Sydney or Melbourne it would be preferable to have 100% of the surface area. This is based on climatic variations and average temperatures throughout the year.

EXAMPLE: 100% SYSTEM

Pool size:

9.00 meters long x 4.5 meters wide = 40.5 square meters. **Each absorber panel roll = 5 square meters.**

9 rolls would be needed.

This would be the amount of absorber required to give you 100% system coverage.

ROOF AREA

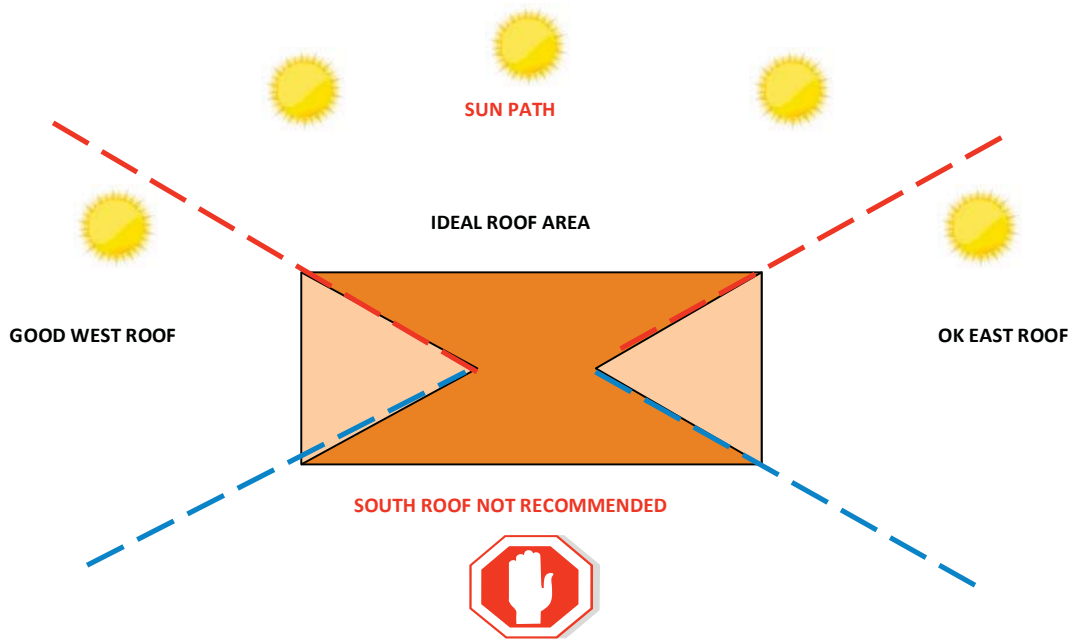
It is not always possible to install systems to give you 100% system coverage due to roof size and their physical locations which is why we recommend minimum surface area system coverage of 70%. It is possible to have smaller systems than 70% however it would not be as efficient in heating your pool water.

ROOF ASPECT

Roof aspect or which way it faces is very important in obtaining an efficient solar swimming pool system.

North facing roofs are the best location for a solar swimming pool system as it has the sun on it for the largest part of the day. If you cannot place the solar swimming pool system on the north roof for any reason then next best option is a **North West or West** facing roof because the hottest part of the day is generally in the afternoon so a west roof will potentially give excellent heat. **East facing roofs** are generally not good for solar swimming pool systems as the sun raises in the east and it is generally the coolest part of the day.

South facing roofs are not recommended at all.



THE ROOF PITCH

The roof pitch or the degree of slope on the roof is important for safety reasons. If the roof is too steep then it is too dangerous to work safely installing a solar system. The second major reason ensuring the roof pitch isn't too steep is to stop the solar absorber from slipping or sagging down the roof. Even with the correct roof attachment clips or adhesives steep roofs are not recommended for solar swimming pool system installation.

Maximum recommended roof slope (pitch) is not to exceed 30 degrees



Installing the Poseidon solar swimming pool system where roof slope (pitch) exceeds 30 degrees will void warranty.

TYPE OF ROOF

Most modern roofs are either made of tiles or tin type materials. The type of roof is important when selecting your Poseidon solar swimming pool kit as they come either as a tile or tin roof kit.

The roof kits have specific strapping devices for each roof type.



Ensure you have the correct roof fastening kit for your installation.

ROOF COLOUR

Roof colour can determine the overall efficiency of the Poseidon solar swimming pool system. The darker the roof the hotter it gets. Light coloured roofs are less efficient and you may need to take this into consideration when sizing the overall solar system being installed.

POOL COLOUR

The colour of your swimming pool can also determine the overall efficiency of the Poseidon swimming pool solar system. Generally the lighter the colour of the pool interior the cooler the pool is. Take this into consideration when sizing the overall solar system.

INDOOR / OUTDOOR POOL

When sizing the solar swimming pool system you must take into account whether the pool is under cover or outdoors. Indoor pools require a much larger amount of solar absorber panels to compensate for the lack of radiated heat from direct sunlight. Likewise an outdoor pool which is in full sunlight during the day will require less absorber to raise the water temperature to the required level. A minimum level of absorber area for an indoor swimming pool should be 100% of the pool surface area. Most solar systems in indoor pool use are supplemented with alternative heating source such as gas or electricity to ensure constant heat.

ROOF SHADING

Even if you have the ideal roof aspect there may be some shading throughout the day from trees or other obstacles such as houses. You will need to take this into account when deciding on the size of solar swimming pool system you will require.

POOL SHADING

Swimming pools that have part or full shading during the day may require extra absorber panel rolls to compensate for the lack of radiated heat from direct sunlight. Depending on the amount of shade in the swimming pool during the day can determine the amount of absorber used in a solar pool heating system.

TYPE OF SYSTEM CONFIGURATION (EQUIPMENT)

When installing a solar swimming pool system there are three ways to configure the system to operate effectively.

Each system type will effectively heat up the swimming pool provided the solar absorber panels have been located in the correct position. The difference in each type of system is as follows.

BASIC (MANUAL) SYSTEM

The basic or manual system uses your existing pool installation including the pump and filter combination. As the name says it is a manual type system where you would have to turn the solar swimming pool system on and off when you require it manually.

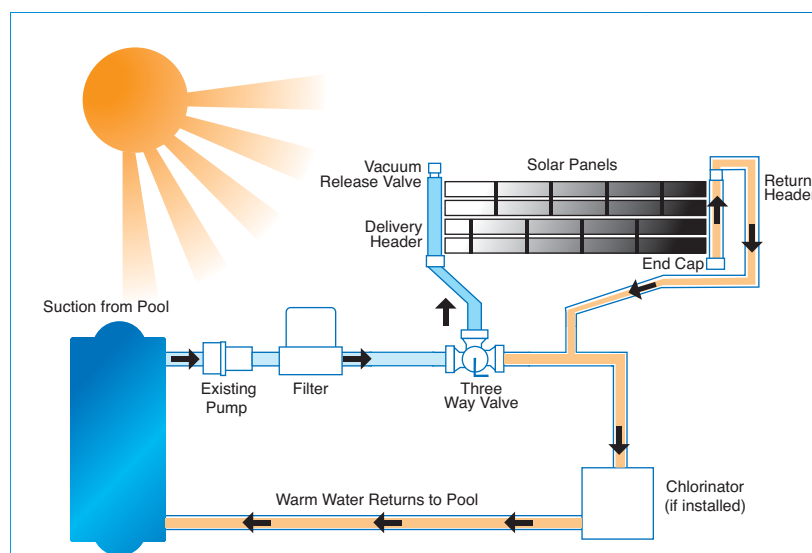
The main advantages of this type of system are:

1. No extra cost in pumps or solar controllers.
2. System is using filtered water from the existing pump and filter (ensures the solar tubes in the absorber don't block up)

This type of system requires a sufficiently large enough pump to filter the swimming pool and run the solar system at the same time.

The main disadvantages of this system are:

1. Hard to regulate the flow properly between the pool and solar system
2. Needs to be turned on and off as required.
3. Filtration system must run during the daylight hours to heat pool.
4. Cannot be automated



This system is only recommended for single storey house applications.

BOOSTED SOLAR POOL HEATING SYSTEM (filtered water)

With the boosted solar pool heating system you will utilize the existing plumbing and filtration equipment with the additional use of a booster pump to transfer the water up to the roof.

This type of system is traditionally used in swimming pools where solar provisions have not been installed into the swimming pool at time of construction.

This system is ideal for larger single storey solar pool heating systems as well as two storey installations.

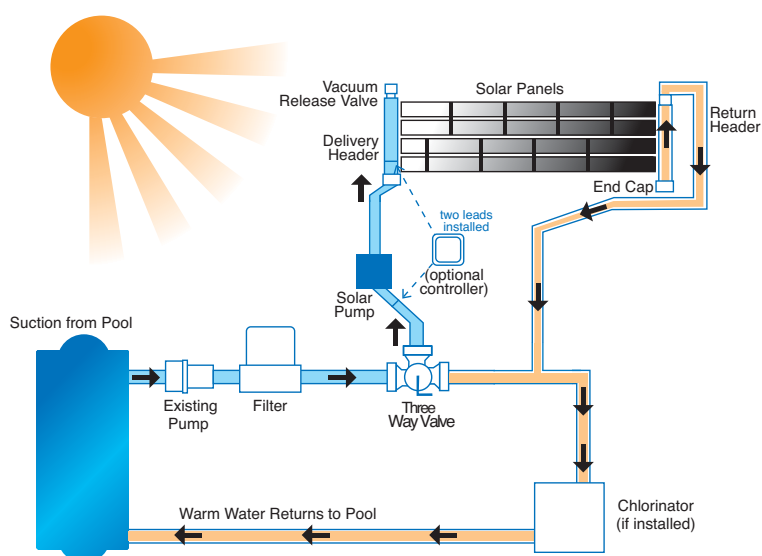
Larger single storey systems above 30 square meters usually require this type of installation.

The main benefits to installing the boosted solar pool heating systems are:

1. Uses existing plumbing and filtration system which saves on extensive re plumbing works
2. Water going to the roof is filtered so as to not clog up the absorber panel tubing
3. Can be automated

The main disadvantages of this type of systems is:

1. Requires a second pump to run



SEPARATE SOLAR POOL HEATING SYSTEM (INDEPENDENT)

The separate or independent solar pool heating system has been designed to operate independently from your existing swimming pool equipment.

To do this type of installation it requires a separate suction line other than the pool skimmer box line and preferably an independent solar warm water return. This is done at time of pool construction.

This system requires a separate pump to run the water up to the roof and return the warm water back to the pool.

The main advantages of this installation type is,

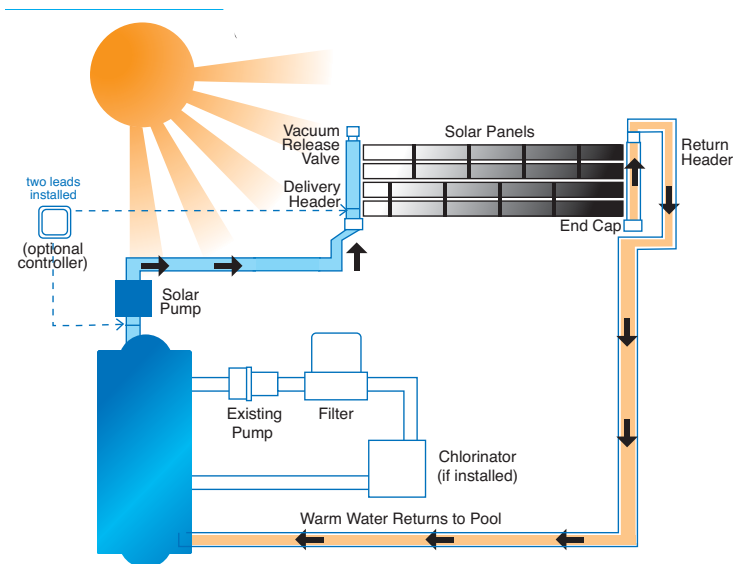
1. It can run without the use of the filter pump (saves on electricity)

The main disadvantage of this system is

1. It does not filter the water going up to the absorber panel tubes which can create blockages in the solar system.



It is essential to install either an inline mesh strainer or small cartridge type filter after the independent solar pool heating pump before it goes up to the absorber panels on the roof to avoid tube blockages. Failure to incorporate either of these devices will void warranty.



CALCULATING YOUR ABSORBER PANEL REQUIREMENTS

YOUR DIY POSEIDON™ SOLAR ABSORBER PANEL CALCULATOR

SPA SIZE	S/Mtrs	1 Ctn	2 Ctns	3 Ctns	4 Ctns	5 Ctns	6 Ctns	7 Ctns	8 Ctns	9 Ctns	
2.4 x 2.4m	6										
POOL SIZE											
5.0 x 3.0m	15										
6.0 x 3.5m	21										
7.3 x 3.6m	26	Average Pool Sizes									
8.0 x 4.0m	32										
8.2 x 4.2m	35										
9.0 x 4.5m	40										
9.5 x 4.9m	47										
11.2 x 5.5m	62										

SOLAR SYSTEM INSTALLATION TYPES

The Poseidon Solar System can be adapted to suit most roof types and shapes. It is important that you decide which type of installation you wish to place on your roof before commencing to install the Poseidon Solar System onto the roof.



PLEASE ENSURE THAT THE ROOF AREA THAT YOU WANT TO PUT THE SOLAR SYSTEM ON HAS SUFFICIENT STRENGTH TO CARRY THE WEIGHT OF THE SOLAR SYSTEM.

There are two main types of installation methods used in swimming pool solar installations these are the traditional H type where the panel roll matting is connected to the manifold headers at each end of the roof and the J type or Juxta position method where the manifold headers are on the same side as each other.

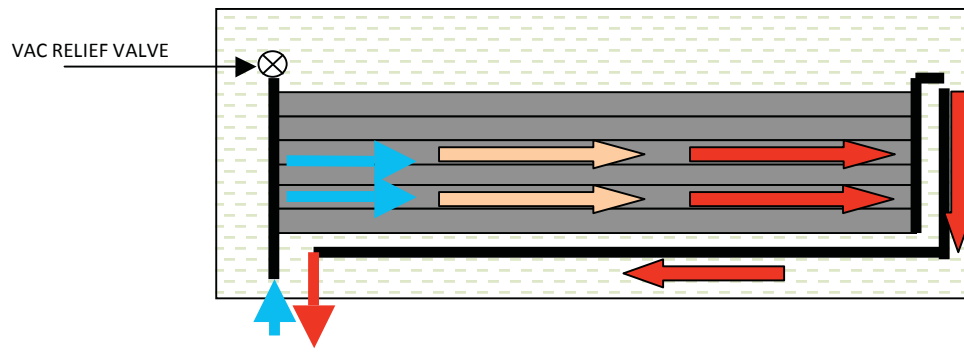
The J type system is especially good when you have roofs which are uneven or oddly shaped.

The diagrams below will assist you in the type of system that may suit you best.

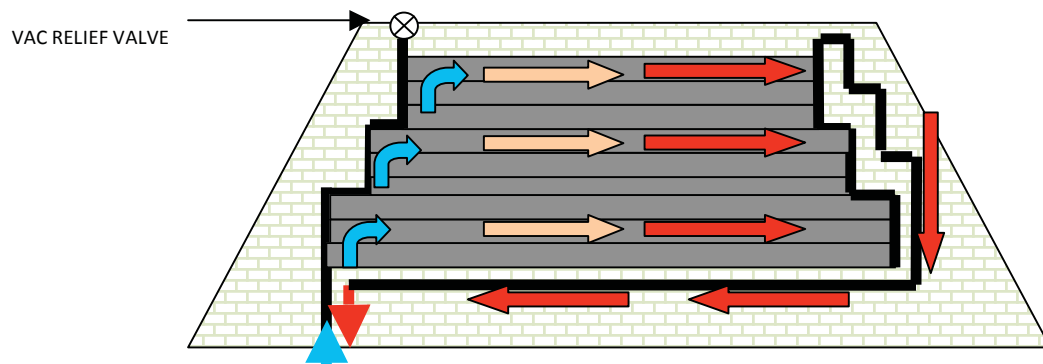


IF YOU HAVE ANY DOUBTS ABOUT YOUR INSTALLATION PLEASE CALL US ON 1800 625 123 FOR ADVICE.

CLASSIC "H" TYPE INSTALLATION



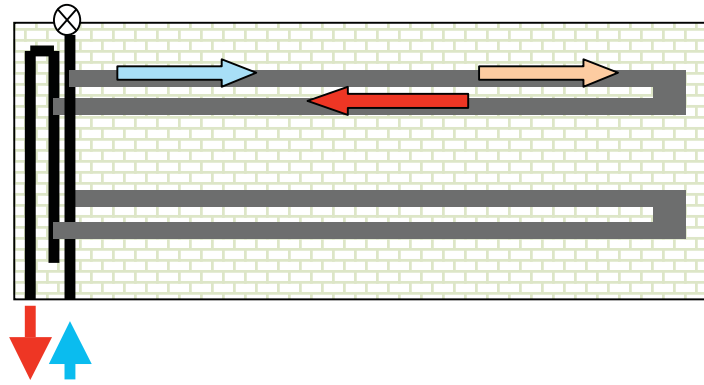
ANOTHER "H" TYPE INSTALLATION



MAXIMUM RUN LENGTH OF ABSORBER IS 25 METERS



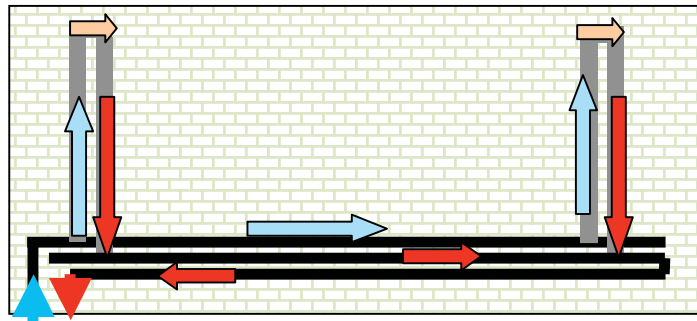
TYPICAL "J" TYPE SYSTEM



MAXIMUM RUN LENGTH OF ABSORBER IS 12.5 METERS OUT AND 12.5 METERS BACK



VERTICLE "J" TYPE SYSTEM



INSTALLATION

Once you have decided which system type and configuration you wish to install the following basic instructions need to be done to successfully install your Solar Pool heating system.



It is assumed that you have already run the UPVC pipes from the filter system to the roof gutter IN READINESS to install the system as per the diagrams provided.

1. Lay out the header manifolds in the configuration you require on the ground. This includes the amount of barbed header manifolds.
2. Once you have laid out the header manifolds glue them together using UPVC type "P" glue. Ensure that the barbs are in line with each other when gluing them together for a neat flat fit on the roof.
3. Place the glued header manifolds into position on the roof for fastening.
4. It is recommended that 40mm galvanized pipe saddles be used to fasten down the manifolds.
5. Using the galvanized pipe saddles and appropriate screw fasteners for your type roof, loosely attach the manifolds into position. Do not firmly fasten down the header manifolds at this point.
6. Glue into the inlet manifold or UPVC pipe the Vacuum relief valve. In most cases it is to be installed at the highest point of the manifold on the roof (inlet side)
7. Place the absorber panel rolls on the roof in readiness for them to be laid out and attached to the header manifolds.
8. Roll the required length out of absorber panel roll for connection to the header manifold and cut with scissors.
9. Each absorber panel roll has ten tubes which you must strip out the centre pieces for approximately 150mm to allow for easy attachment to the manifold headers. (see picture number)
10. Once you have stripped out the centre section between the absorber panels rolls (150 mm) place the silicon locking collars provided over the stripped absorber panel roll tubes.
11. Slide the stripped absorber manifold tubes onto the barbs of the header manifolds as far as possible.
12. Slide the silicon locking collars over the Absorber panel tubes and onto the barbed section. This will securely fasten the tubes to the header manifolds to prevent leaking and blowing off whilst the system is under operation.
13. Once all the required absorber has been laid out and connected to the header manifolds securely tighten down the header manifolds to the roof.
14. Using the roof straps provided evenly space them out across the laid out absorber panels and fasten to the roof. Tin kits straps are attached to the roof with self tapping screws whilst tile straps are attached to the underside of the tiles using the hooked ends on each individual strap.
15. In high wind areas it is advisable to use a high grade silicone to assist in fastening down the absorber panel runs. Do this by placing a generous amount of roofing silicon between the spaced out straps attached for added security on the roof.
16. Warning some silicone takes time to set.
17. Once you have securely fastened you Solar system to the roof you may now attach the inlet and outlet pipes to the manifold sections.
18. Allow approximately 24 hours for all glues and silicones to set before turning on the system.
19. Turn on the system and firstly check for leaks.
20. Once you are satisfied that the system is working correctly you may now commence regular use.



Make sure that you don't run the full amount of the water up to the roof if using the manual system from pump and filter. This may expand the tubes out and void warranty.

Flow rates must be controlled to the absorber panels to avoid the panel tubes from expanding out.

INSTALLATION TIPS

When installing the barbed manifold sections to the roof you should do the following

1. Measure the length of the roof that you wish to place the manifolds and ensure that the amount of barbed manifolds you need will fit within this length.
2. Assemble the barbed manifolds on the ground without gluing them if you are unsure, lift them onto the roof assembled to check if the amount of barbed manifolds will fit within the roof length.
3. If the barbed manifold lengths fit remove them from the roof and glue them together. Make sure the glue you use is UPVC TYPE P Pressure glue.
4. Use pipe saddles to fasten the manifold sections to the roof. **Do not tighten down fully until you have attached the absorber panel tubes to the barbed sections of the manifolds.**

Absorber panel rolls are heavy and they should be placed on the roof with help from another person. When installing the absorber panel rolls you should do the following

1. Place the rolls one at a time on the roof.
2. Roll the absorber panel rolls out to the required length
3. Once you have rolled the panel roll out to the required length cut the panel to allowing some slack for pushing the panel ends to the barbed parts of the manifold
4. Gently pull the tubes apart to a length of approximately 200mm maximum. This will make it easier to push the tubes onto the barbed manifold ends.
5. Before pushing the tubes onto the manifolds cut the little strip section between the tubes away.
6. Before pushing the tubes onto the barbs place the silicone locking collars (rubberized little sleeves in the manifold header box) onto the tube for approximately 10mm.
7. Push the absorber tube onto the barbs
8. Slide the silicone locking collar over the tube onto the barbs to lock the tube into place.
9. Once the absorber panels tubes have been secured to the manifold headers fasten down the manifold headers to the roof completely.

GENERAL INSTALLATION TIPS

1. If the absorber panel tubes are hard to put onto the barbs of the manifold you can heat the ends up to make the tube more pliable and easier to slip onto the barbs. You can use a heat gun or hot water to achieve this.
2. Use the roof clips to secure the absorber panel strips to the roof. If you are in a high wind area it is advisable to use a high quality roof silicone to also secure the panel strips to the roof.
3. Ensure the pump you are using is right for the job at hand, contact us 1800 625 123 if you are unsure before you commission the system.
4. When turning on the system it is advisable to have someone to turn the pump on whilst you are on the roof checking for leaks.



ALL SOLAR SYSTEMS EXPELL AIR WHEN THEY START UP IT IS VERY NORMAL. THE AIR BUBBLES IN THE POOL WATER SHOULD DISIPATE WHEN THE SYSTEM HAS RUN FOR A FEW MINUTES.

CONTACT HY-CLOR ON 1800 625 123 IF REQUIRED FOR START UP PROCEDURES IF YOU ARE UNSURE OF YOUR INSTALLATION

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