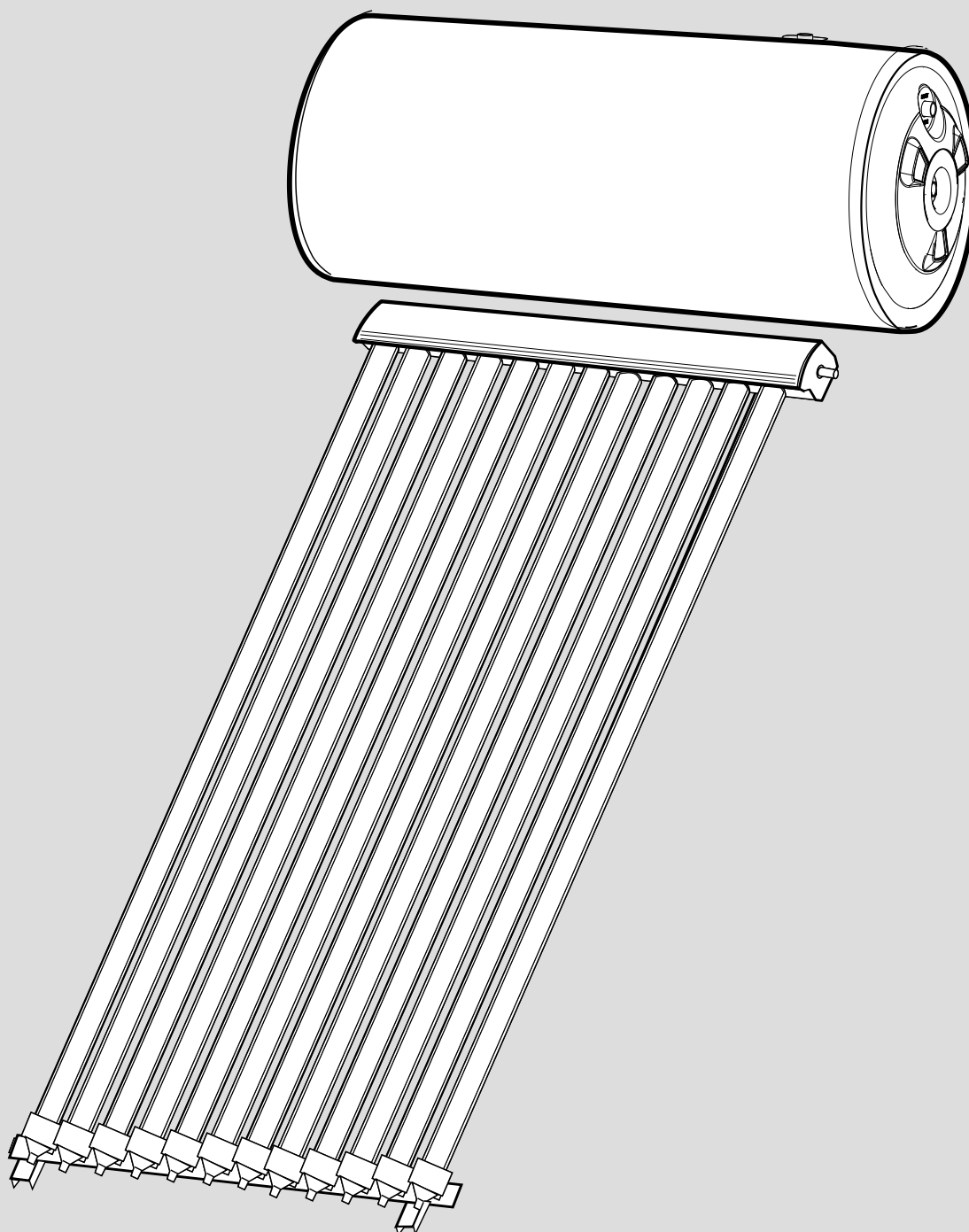


# KAIROS EVT

EN - Use instructions, for the authorised technician



## GENERAL INSTRUCTIONS

1. This manual is an integral and essential part of the appliance. It should be preserved with care and must accompany the appliance, even if the product is transferred to another owner or user and/or moved to another installation site.
2. Please read the instructions and warnings contained in this manual carefully; they provide important information for the safe installation, operation and maintenance of this new appliance.
3. Installation is the responsibility of the buyer and should be performed by qualified personnel in accordance with the instructions contained herein.
4. Using this appliance for purposes other than those specified is strictly forbidden.  
The manufacturer shall not be held responsible for any damage due to improper, incorrect and unreasonable use or due to failure to comply with the instructions set out in this manual.
5. Installation, commissioning, maintenance and any other operation must be carried out by professionally qualified personnel, in conformity with the national installation regulations in force and with any requirements established by local authorities and public health bodies. In any event, before accessing the terminals, all power supply circuits must be disconnected.
6. Incorrect installation may lead to personal injury or property damage and may harm animals; the manufacturer shall not be held responsible for such damage.
7. Keep all packaging material (clips, plastic bags, polystyrene foam, etc.) out of reach of children, as it may present a potential hazard.
8. The appliance may not be used by persons under 3 years of age, with reduced physical, sensory or mental capacity, or lacking the requisite experience and familiarity, unless under supervision or following instruction in the safe use of the appliance and the hazards attendant on such use. DO NOT permit children to play with the appliance. Children aged 3 to 8 can only operate the tap connected to the appliance. User cleaning and maintenance may not be done by unsupervised children.
9. Children must be supervised at all times, to ensure that they do not play with the appliance.
10. Do not touch the appliance while barefoot or with wet hands or feet.
11. All repairs should be performed exclusively by qualified personnel, using authentic spare parts only. Failure to comply with the above instructions could compromise safety and will exempt the manufacturer from all liability.
12. No flammable items should be left in the vicinity of the appliance.
13. The collectors may only be combined with construction elements (fixing elements, fittings, etc.) and system components supplied by the manufacturer. The use of alternative construction elements or system components is considered improper use.  
The manufacturer shall not be held liable in this regard.
14. Proper use of the appliance also includes complying with the use and installation instructions and with the supplementary documentation, in addition to the inspection and maintenance terms.
15. Any other improper use is forbidden.

## THIS PRODUCT CONFORMS TO EU DIRECTIVE 2012/19/EU





The barred dustbin symbol appearing on the device indicates that the product must be disposed of separately from household waste once it reaches the end of its lifespan, and transferred to a waste disposal site for electric and electronic equipment, or returned to the dealer when purchasing a new device of the same kind.


The user is responsible for delivering the decommissioned device to a suitable waste disposal site. Proper separated collection of the decommissioned device and its subsequent eco-compatible recycling, treatment and disposal helps to prevent negative effects on the environment and health, besides encouraging the reuse of the materials comprising the product. For further details on the available waste collection systems, contact your local waste disposal office, or the dealer from which the product was purchased.

## GENERAL SAFETY INSTRUCTIONS


Key to symbols:

 Failure to comply with this warning may result in personal injury or even death.


 Failure to comply with this warning may result in serious damage to property, plants or animals.

 Obligatory observance of general safety measures and appliance specifications.


**Do not perform procedures which involve opening the appliance.**

 Electrocutation through exposure to live components. Personal injury caused by burns due to overheated components, or wounds caused by sharp edges or protrusions.


**Do not perform procedures which involve removing the appliance from its installation space.**

 Electrocutation through exposure to live components. Flooding caused by water leaking from disconnected piping.


**Do not start or stop the appliance simply by plugging it into the electricity mains supply or unplugging it.**


 Electrocutation through contact with a damaged cable or plug, or socket.

**Do not damage the power supply cable.**


 Electrocutation from non-insulated live wires.


**Do not leave anything on top of the appliance.**

 Personal injury caused by an object falling off the appliance as a result of vibration.


 Damage to the appliance or items underneath it caused by the object falling off as a result of vibrations.

**Do not climb onto the appliance.**

 Personal injury caused by the appliance falling over.

 Damage to the appliance or any objects underneath it caused by the appliance falling away from its installation space.


**Do not climb onto chairs, stools, ladders or unstable supports to clean the appliance.**

 Personal injury caused by falling from a height or cuts (stepladders shutting accidentally).


**Do not attempt to clean the appliance without first turning it off and unplugging it or turning off the corresponding switch.**


 Electrocutation through exposure to live components.

**Install the appliance on a solid surface which is not subject to vibration.**

 Noisy operation.


**When drilling holes in the surface for installation purposes, take care not to damage any electrical wiring or existing piping.**

 Electrocutation caused by exposure to live wires. Explosions, fires or poisoning caused by gas leaking from damaged pipes.

 Damage to existing installations. Flooding due to water leaking from damaged pipes.


**When drilling holes in the surface for installation purposes, take care not to damage any electrical wiring or existing piping.**

 Electrocutation caused by exposure to live wires. Explosions, fires or poisoning caused by gas leaking from damaged pipes.

 Damage to existing installations. Flooding due to water leaking from damaged pipes.


**Protect all connection pipes and wires in order to prevent them from being damaged.**

 Electrocutation through exposure to live wires.


 Flooding due to water leaking from damaged pipes.


**Make sure that the installation site and any systems to which the appliance must be connected comply with current legislation.**

 Electrocutation through contact with incorrectly-installed live wires.


 Damage to the appliance caused by improper operating conditions.


**Use suitable manual tools and equipment (in particular, make sure that each tool is in good working condition and that its handle is securely fastened); use them correctly and make sure they do not fall from a height. Replace them once you have finished using them.**

 Personal injury caused by flying splinters or fragments, inhalation of dust, knocks, cuts, puncture wounds and abrasions.


 Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.

**Use suitable electrical equipment (make sure in particular that the electricity supply cable and the socket are in good condition and that the rotating or moving parts are attached correctly); use this equipment correctly; do not obstruct passageways with the power supply cable and make sure no equipment could fall from a height. Disconnect it and replace it safely after use .**


 Personal injury from electrocution, flying splinters or fragments, inhalation of dust, shocks, cuts, pricks, abrasions, noise and vibration.

 Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.


**Make sure that all portable ladders are positioned securely, and that they are of adequate strength. Make sure that the steps are intact and not slippery. Never move portable ladders when someone is on them. Provide constant supervision at all times.**

 Personal injury caused by falling from a height or cuts (stepladders shutting accidentally).


**Make sure that all materials, components, equipment, etc. used during installation are not liable to fall from a height**

 Personal injury or death caused by collapsing and/or falling parts.


**Make sure that any rolling ladders are positioned securely, that they are suitably sturdy, that the steps are intact and not slippery. Make sure that the ladders are fitted with handrails on either side of the ladder and parapets on the landing.**

 Personal injury caused by falling from a height.


**During all work carried out at a certain height (generally with a difference in height of more than two metres), make sure that parapets surround the work area or that individual harnesses designed to prevent falls are used. Make sure that the space potentially involved in any accidental fall is free from dangerous obstacles, and that any impact upon falling is cushioned by semi-rigid or deformable surfaces.**

 Personal injury caused by falling from a height.


**Make sure that adequate levels of hygiene and sanitation are maintained in the place of work, in terms of lighting, ventilation, solidity of structures and emergency exits.**

 Personal injury due to impact, tripping and wounds.


**During all work procedures, wear individual protective clothing and equipment.**

 Personal injury from electrocution, flying splinters or fragments, inhalation of dust, shocks, cuts, pricks, abrasions, noise and vibration.


**All procedures inside the appliance must be performed with the necessary caution in order to avoid abrupt contact with sharp parts.**

 Personal injury caused by cuts, puncture wounds and abrasions.


**Do not use insecticides, solvents or aggressive detergents to clean the appliance.**

 Damage to the plastic and painted parts.


**Do not use the appliance for anything other than normal domestic use.**

 Damage to the appliance caused by operation overload.


**Damage caused to objects treated inappropriately. Do not allow children or untrained individuals to operate the appliance.**

 Damage to the appliance caused by improper use.


**Perform all electrical connections using wires with a suitable cross section.**

 Fire caused by overheating due to electrical current passing through undersized cables.


**Protect the appliance and all areas in the vicinity of the work area using suitable material.**

 Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.


**Handle the appliance with care, using suitable protection.**

 Damage to the appliance or surrounding objects caused by shocks, knocks, incisions and crushing.


**Organise the removal of all debris and equipment in such a way as to make movement easy and safe, avoiding the creation of any piles that could yield or collapse.**

 Damage to the appliance or surrounding objects caused by shocks, knocks, incisions and crushing.

**Reset all the safety and control functions affected by any work performed on the appliance and make sure they operate correctly before restarting the appliance.**


 Damage or shutdown of the appliance caused by out-of-control operation.

**Prior to operating on roofs, structures, surfaces, etc., make sure that these are stable and suitable for the scheduled operations.**


 Personal injury or death caused by collapsing parts and/or falling from a height.


## SPECIFIC SAFETY INSTRUCTIONS FOR THIS APPLIANCE

**Before handling, empty all components which may contain hot water, performing bleeding where necessary.**

 Personal injury from burns.

**Descalcify the components, in accordance with the instructions provided on the safety data sheet of the product used. Provide adequate ventilation in the room, wear protective clothing, avoid mixing different products, and protect the appliance and surrounding objects.**

 Personal injury caused by acidic substances coming into contact with skin or eyes; inhaling or swallowing harmful chemical agents.

 Damage to the appliance or surrounding objects due to corrosion caused by acidic substances.

**Avoid operating on the product in the event of high insolation levels.**

 Personal injury caused by burn and scalding.

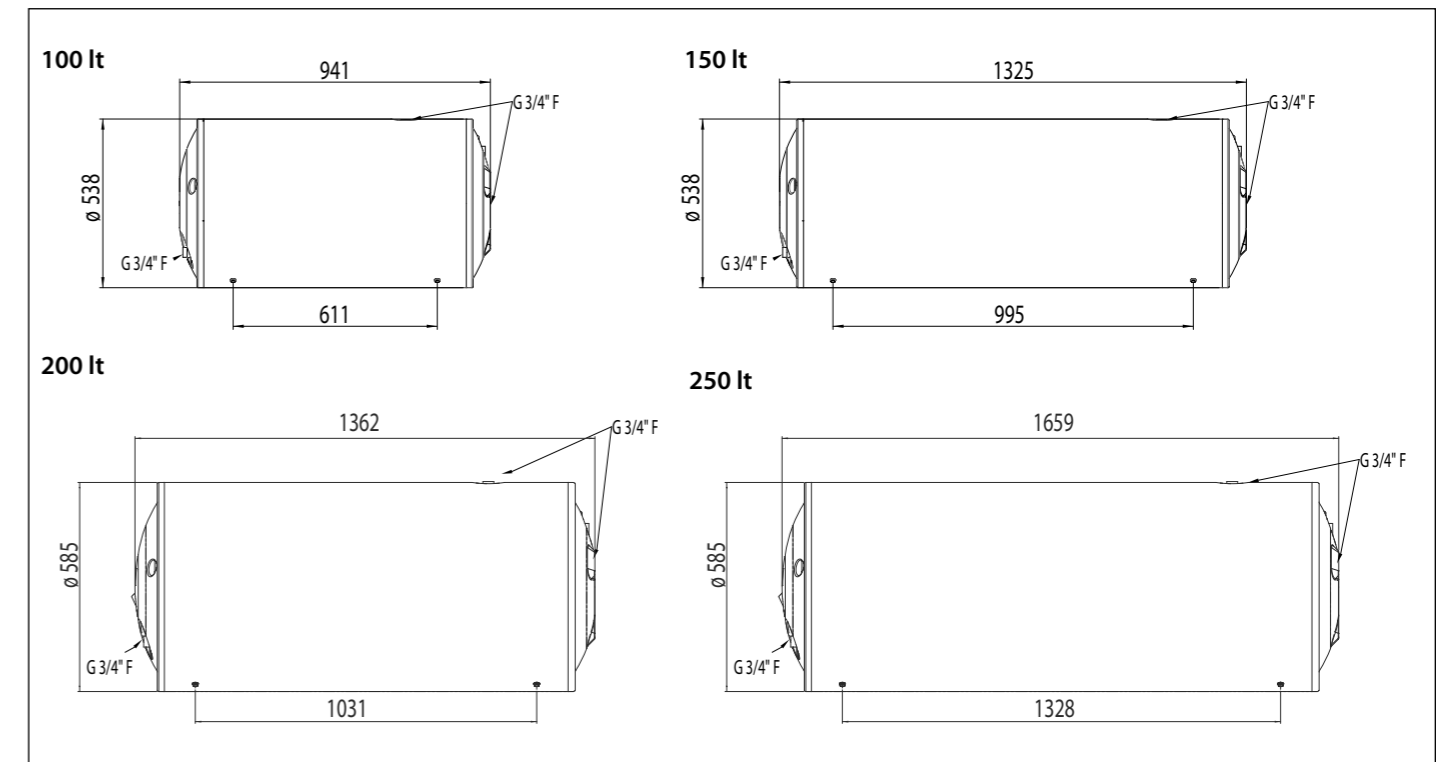
## TECHNICAL DATA

Model		KAIROS EVT 100 T12		KAIROS EVT 150 T16		KAIROS EVT 200 T20		KAIROS EVT 250 T25	
System	type	Split Direct Thermosiphon System							
Aperture area	[m <sup>2</sup> ]	1,51	(1,715x0,883)	2,03	(1,715x1,183)	2,54	(1,715x1,483)	3,19	(1,715x1,858)
Connections	collector	Ø22							
	boiler	G 3/4" F							
Dimensions flat roof (P)	[mm]	941x2330x411		1325x2330x411		1525x2330x458		1905x2330x458	
Dimensions flat roof (F)	[mm]	941x2330x1432		1325x2330x1432		1525x2330x1480		1905x2330x1480	
Working pressure	[kPa]	600 kPa						400 kPa	
Vacuum tube	type	High borosilicate (2,2 mm)							
	[mm]	Ø58x1800 2,2 thickness							
Number of tubes		12		16		20		25	
Energy rating per 50L	[MJ/day]	5		5,4		5		5	

SOLAR DIRECT CYLINDER FOR NATURAL CIRCULATION SYSTEMS				
	AXIOS 100 (Geyser only)	AXIOS 150 (Geyser only)	AXIOS 200 (Geyser only)	AXIOS 250 (Geyser only)
Capacity	100 L	150 L	200 L	250 L
Maximum operating pressure	600 kPa	600 kPa	600 kPa	400 kPa
Maximum DHW temperature	105 °C	105 °C	105 °C	105 °C
Weight	33,5 kg	45 kg	50 kg	66 kg
Insulation thickness	61,5 mm	61,5 mm	55 mm	55 mm

TABLE OF SYSTEM CONFIGURATIONS									
		Pitched Roof Installation				Flat Roof Installation			
Ariston FULL SYSTEM code		3022406	3022408	3022410	3022412	3022407	3022409	3022411	3022413
Ariston FULL SYSTEM description		KAIROS EVT 100 T12 P	KAIROS EVT 150 T16 P	KAIROS EVT 200 T20 P	KAIROS EVT 250 T25 P	KAIROS EVT 100 T12 F	KAIROS EVT 150 T16 F	KAIROS EVT 200 T20 F	KAIROS EVT 250 T25 F
Part Description	Part Code	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
EVT Tubes Box x 8	3685054		2				2		
EVT Tubes Box x 10	3685055			2	1			2	1
EVT Tubes Box x 12	3685056	1				1			
EVT Tubes Box x 15	3685058				1				1
EVT Manifold-Frame 100 x 12 Pitched	3685059	1							
EVT Manifold-Frame 100 x 16 Pitched	3685060		1						
EVT Manifold-Frame 100 x 20 Pitched	3685061			1					
EVT Manifold-Frame 100 x 25 Pitched	3685062				1				
EVT Manifold-Frame 100 x 12 Flat	3685063					1			
EVT Manifold-Frame 100 x 16 Flat	3685064						1		
EVT Manifold-Frame 100 x 20 Flat	3685065							1	
EVT Manifold-Frame 100 x 25 Flat	3685066								1

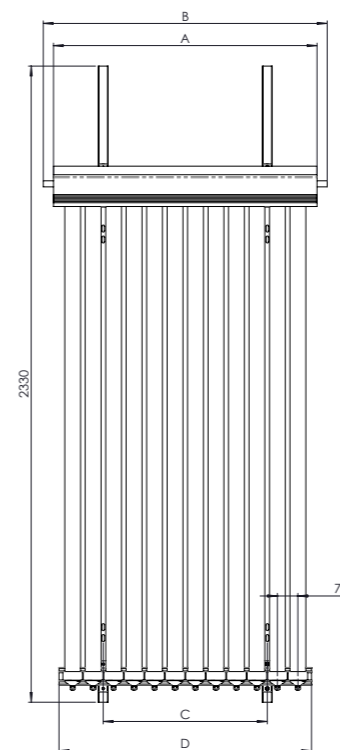
## WATER HEATER



## SOLAR COLLECTOR



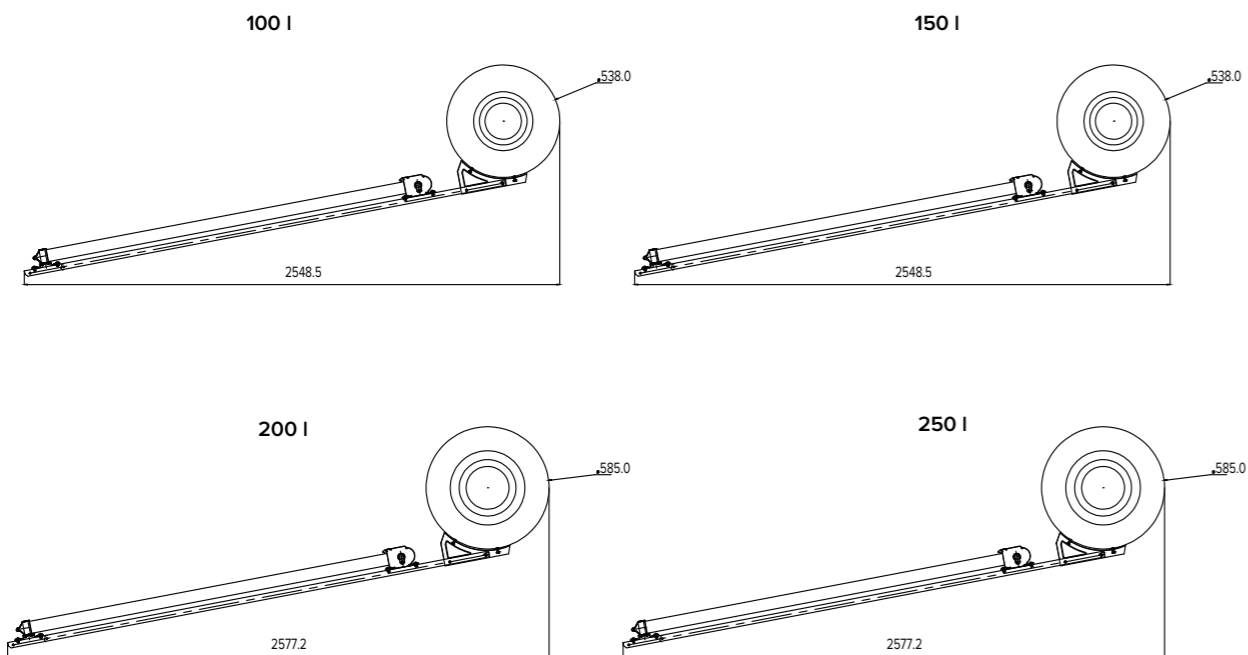
Open the tube box(es), which contain both evacuated tubes and heat pipes. Check to make sure the evacuated tubes are all intact and the bottom of each tube is still silver. If a tube has a white or clear bottom, it is damaged and should be replaced. Each evacuated tube contains a pair of metal heat transfer fins. As soon as the evacuated tubes are removed from the box, please put on the rubber tube caps, which are located in the manifold box. This will protect the bottom tip of the glass tube from being broken if knocked. Do not remove the tubes to sunlight until you install them, otherwise the inner tube and heat transfer fin will become very hot. The outer glass surface will not become hot.



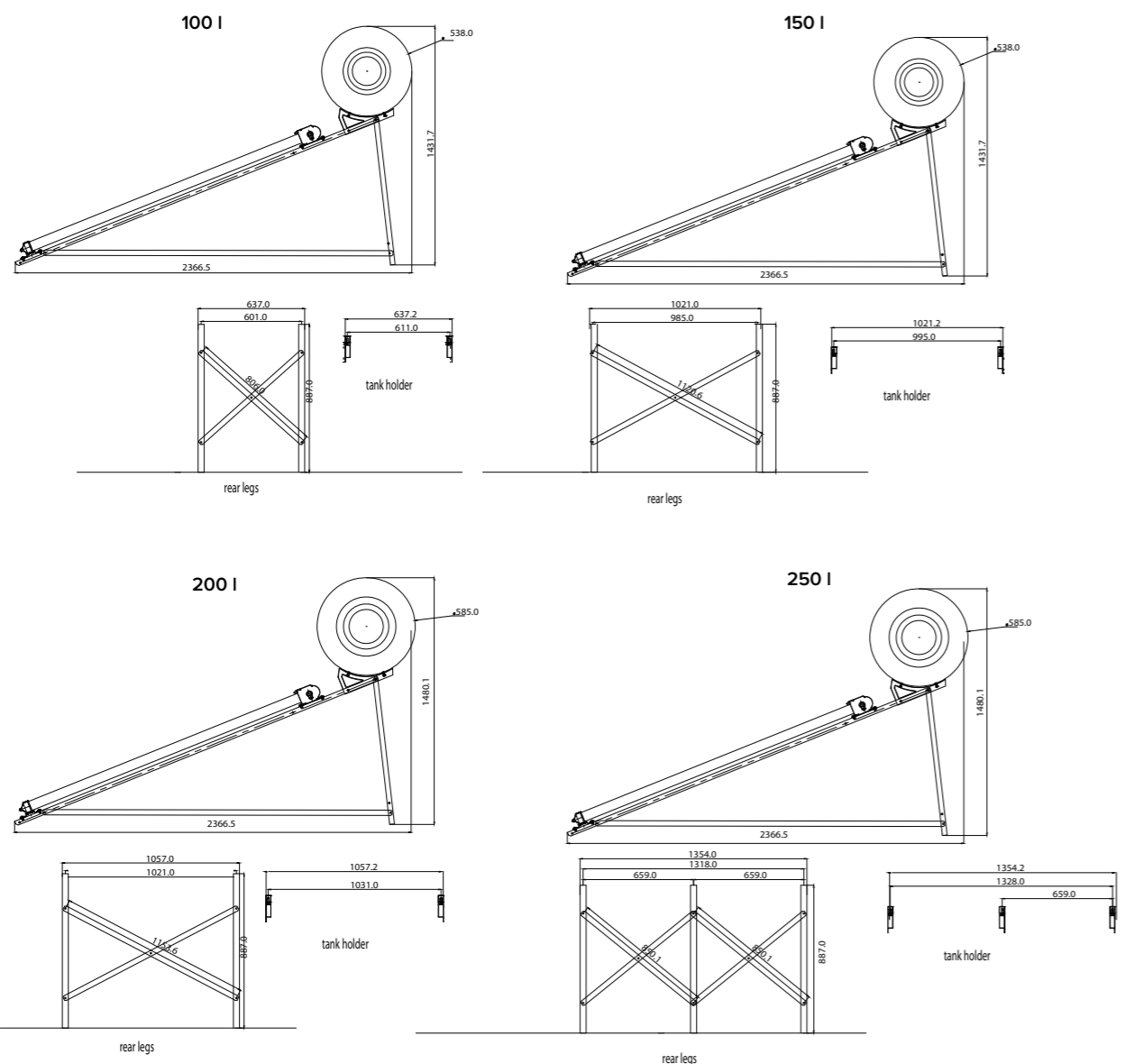
### PITCH ROOF SYSTEM - FLAT ROOF SYSTEM

	KAIROS EVT 100 T12	KAIROS EVT 150 T16	KAIROS EVT 200 T20	KAIROS EVT 250 T25
A	965	1265	1565	1940
B	1040	1340	1640	2015
C	601	985	1021	1318 (659+659)
D	925	1225	1525	1905

## PITCH ROOF SYSTEM



## FLAT ROOF SYSTEM



## UNPACK AND INSPECT

### Tube inspection

Open the tube box(es), which contain both evacuated tubes and heat pipes. Check to make sure the evacuated tubes are all intact and the bottom of each tube is still silver. If a tube has a white or clear bottom, it is damaged and should be replaced. Each evacuated tube contains a pair of metal heat transfer fins. As soon as the evacuated tubes are removed from the box, please put on the rubber tube caps, which are located in the manifold box. This will protect the bottom tip of the glass tube from being broken if knocked. Do not remove the tubes to sunlight until you install them, otherwise the inner tube and heat transfer fin will become very hot. The outer glass surface will not become hot.

## IMPORTANT INFORMATION

### Pressure and Temperature Control and Relief.

Solar loop should be designed for normal operation at <600kpa via use of a pressure limiting (pressure reduction) valve on the mains cold supply line. System design must provide means for allowing pressure release at no more than 600kPa and hot water dumping from the solar loop or storage water heater once the temperature reaches 99°C (210F). It is recommended that the lever on the pressure and temperature relief valve (PTRV) be operated once every 6 months ensure reliable operation.

### Water Quality

Water in direct flow through the manifold header must firstly meet potable water requirement and in addition the following:

Total dissolved solids	< 600mg/litre or p.p.m
Total hardness	< 200mg/litre or p.p.m
Chloride	< 250mg/litre or p.p.m
Magnesium	< 10mg/litre or p.p.m

In areas with hard water (>200ppm) lime scale may form inside in header pipe. In such regions, it is advisable to install a water-softening device to ensure the long-term efficient operation of the collector, or use a closed loop for the solar circulation loop.

### Metallic Corrosion

Both copper & stainless steel are susceptible to corrosion when high concentrations of chloride are present. The solar collector may be used for heating of spa or pool water, but levels of free chlorine must not exceed 2ppm. In addition, the warranty provided on the header when using for spa or pool heating is 2 years, which is the standard for spa and pool heaters. Chloride level present in most reticulated public potable water supplies are safe for use in the collector provided there is no use of bore waters in the reticulated supply.

### Hail Resistance

The glass-evacuated tubes are surprisingly strong and able to handle significant impact stresses once installed. Testing and impact stress modelling proves that the tubes are able to withstand impact from hail up to 25mm/1" in diameter when installed at angle of 40° or greater. The ability of the evacuated tubes to withstand impact from hail is greater influenced by the angle of impact and so installing the collectors at low angles do reduce their impact resistance. However, even when lying flat, impact by hail up to 20mm/3/4" in size will not cause breakage. It is recommended that in areas prone to large hail (>20mm3/4") the solar collector should be installed at an angle of 40° or greater to provide optimum protection. As many populated areas in the world fall within the latitude of 30° - 70° this angle is generally a common installation anyway. If in the unlikely circumstance that a tube should become broken it can be easily replaced in a matter of minutes. The solar collector can still function properly with one or more broken tubes, however a reduction in heat output will result (depending upon how many tube are broken).

### Lightning protection

The metal piping used in the solar heating circuit and parts that carry electricity must be proportionally connected to the general earthing system, with a green/yellow copper wire with a minimum section of 16 mm<sup>2</sup> (H07 VU o R). If an anti-lightning system is in place, the collectors can be connected to it. The earth connection may be performed using an earth rod. The earth conductor must be installed outside the building. The ground electrode must be connected to the general earthing system using a proportionate wire of the same section. Work must only be carried out by a company specialising in electrical circuitry.

### Pressure Levels

Regardless of the installation configuration, pressure release values, expansion vessels and/or other pressure control devices must be installed. The solar loop should be designed to operate at no more than 600kPa (PRV may be 850kPa). (600kPa = 6bar = 116psi). For installation where mains pressure water is used, the system should ideally be designed to operate at a pressure of < 500kPa, achieved by use of a pressure limiting/reduction valve.

### WARNING

Hot water supplied at a temperature above 50 °C to the taps at the point of use could cause immediate serious scalds. Children, the disabled and the elderly are more exposed to this risk. We therefore recommend the use of a thermostatic mixer valve screwed onto the appliance water outlet pipe. This device shall be able to withstand the maximum possible domestic hot water temperature from the solar system. (110°C).

### Tempering Value

It is recommended, and may be required by regulations, that a temperature control device (tempering valve) be fitted into the hot water pipe between the water heater and bathrooms and en-suites to reduce the risk of scalding. This is achieved by controlling the water temperature to below 50°C (temperature may be adjustable).

### High Temperatures

With the heat pipe installed in the evacuated tube, and good sunlight, the heat pipe condenser can reach temperatures in excess of 200°C. At this temperature touching the heat pipe will result in serious burns, so please take care when handling the evacuated tube and heat pipes.

### Temperature Sensor Insertion

The solar controller's temperature sensor should be coated with a thick layer of thermal paste and inserted into the sensor port to the full depth. If the fit is too loose, slide a piece of copper plate or wire in beside the sensor, Seal the sensor port opening with silicone sealant to prevent water ingress. Ensure that sensors used on the collector are high temperature rated (up to 250°C/486F), in particular the cable.

### Wind and Snow Load

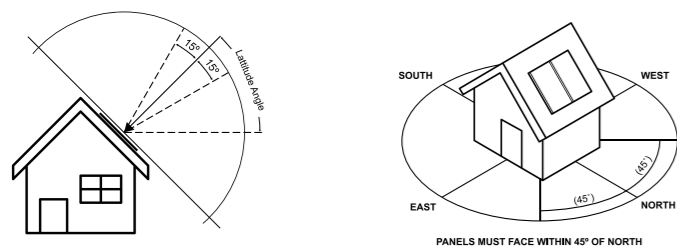
When installing the collector please consider the issue of wind resistance and the resultant stress on the attachment points. The standard frame is designed to withstand wind speeds of up to 120km/h and 30cm snow accumulation without damage. For the areas with possibility for high winds, additional reinforcement of attachment points may be required and can easily be supplied by your local installers.



## STAGNATION AND OVERHEATING

If a PTRV valve is installed on collector inlet or outlet the collector will continue to increase in temperature until the limit of the temperature relief valve is reached, at which point hot water will be dumped from the system. If a PTRV is not installed on the collector, steam will form in the header. Eventually some steam may feed back to the storage water heater via the return line. The T&P Valve on the water heater will open to release pressure or heat as required. Under such conditions, the manifold will normally reach a maximum temperature of around 160°C. Generally the heat returning from the collector in the form of steam is not enough to affect a continued increase in water heater temperature (i.e. Heat input < water heater heat losses). High water heater temperature protection should only occur when hot water is not used for several days (when on holiday) and only during strong periods of sunlight (summer). If leaving the house for an extended period of time (more than 2-3 days), it is advisable to cover the collector panel or design the system with a heat dissipation device or alternative use for the heat, thus preventing variegating of the system and collector stagnation. Stagnation of the solar collector will NOT damage the solar collector, however insulation used on the piping close to the manifold inlet and outlet should be able to withstand temperatures of up to 200°C. (E.g. Glass wool or mineral wool-with an exterior wrap of aluminium foil, thus protecting against the elements).

## INSTALLATION



### Collector Direction

The solar collectors offer maximum energy performance when the surfaces are facing directly the (therefore directly south for Northern Hemisphere installations and directly north for Southern Hemisphere installations). Different local conditions, for example the amount of shade or the direction of the roof slants, may lead to a slight variation of the equator-facing position (the maximum recommended variation is 30° in relation to the equator).

### Collector Inclination

It is common for collectors to be installed at an angle that corresponds to the latitude of the location. Installing at an angle less than 20° is not recommended as the heat pipes perform best in the range of 20-70°C. While adhering to this guideline an angle of latitude +/-10° is acceptable and will not greatly reduce solar output. Angles beyond this range may be used, but a decrease in heat output will result. An angle lower than the latitude will enhance summer output, while a greater angle will enhance winter output. Collector inclination will normally be determined by the roof pitch, or the pitch of the support frame used. Please refer to the specific mounting system for more information.

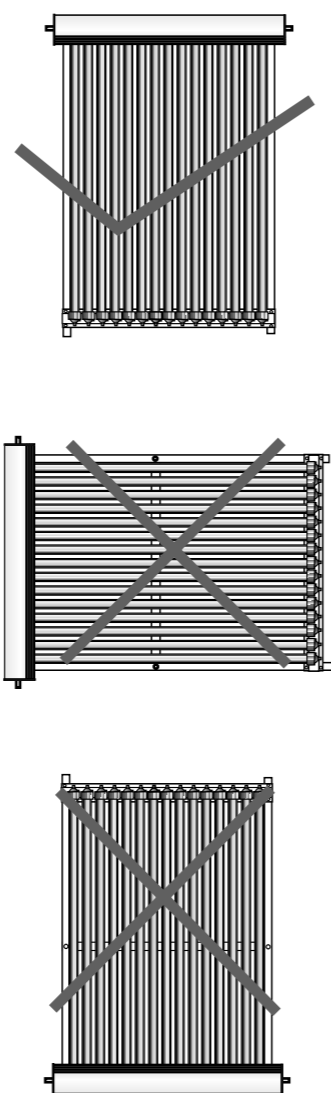
### Location

The storage cylinder should also be located as close as possible to the most frequent draw off pipe runs.

### Positioning

Before installing the solar collector you must choose its position, so that the following conditions are satisfied:

- the collector must be placed in areas that are not in the shade during hours of sunlight;
- there must be minimal wind exposure;
- it must be placed as close as possible to the storage cylinder;
- it must be accessible for any necessary maintenance work;
- it must be firmly secured in place and able to withstand wind pressure;
- in order to minimise wind loads, avoid installing the appliance on roof edges. Minimum distance: 1.2 m; increase this distance for tall buildings and heavily exposed areas.



### Support Structure

Qualified person to inspect and ensure that the installation structure can support the installation of the support frame and solar system. Strengthening of the structure may be required.

## FRAME INSTALLATION

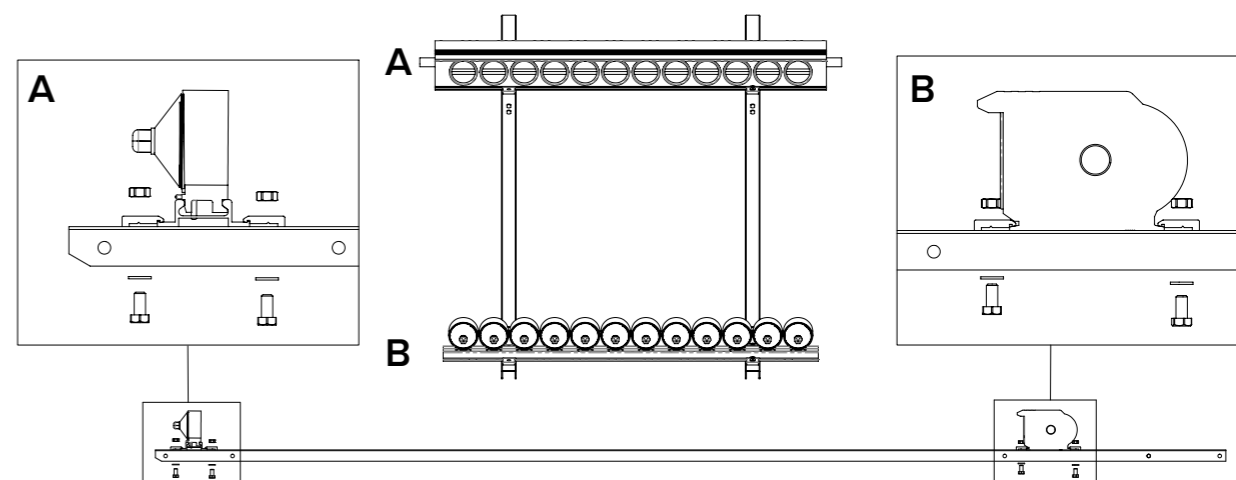
### Support Frame

Several different types are available, depending on the desired installation. The structures supplied support snow loads of 1200 Pa and wind loads of 900 Pa (130 km/h) if necessary, request the assistance of an expert in structural loads.



Always wear glove when handling the various solar collector components. All efforts have been made to make the metal components safe to handle, but there may still be some sharp edges. Be careful when handling the evacuated tubes, as they will break if knocked heavily or dropped. Wear gloves if handling any broken glass.

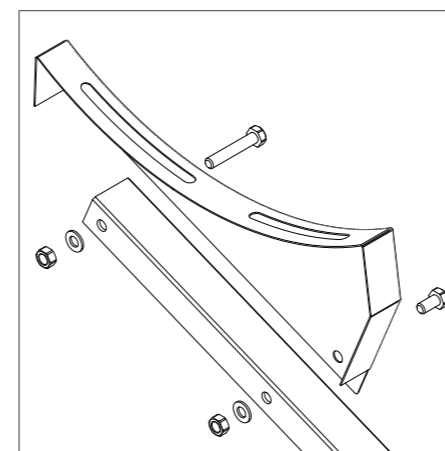
## INSTALLING THE MANIFOLD AND BOTTOM TRACK TO THE FRAME



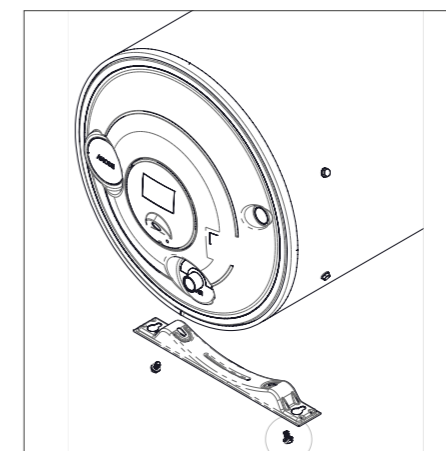
Only install the vacuum tubes after the hydraulic connection has been completed.

## WATER HEATER INSTALLATION TO FRAME

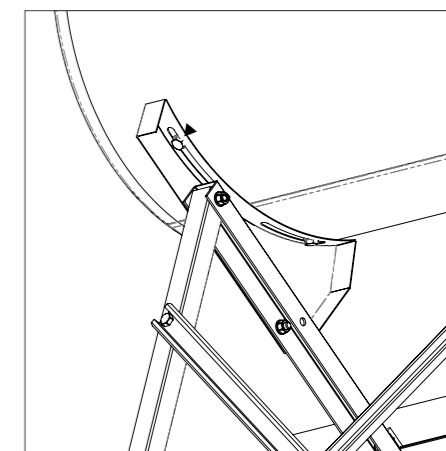
Ensure that the roof frame is securely fitted to the roof structure before mounting the water heater on the tank support



Securely mount the tank support to the frame



Remove brackets from the tank, reuse the bolts



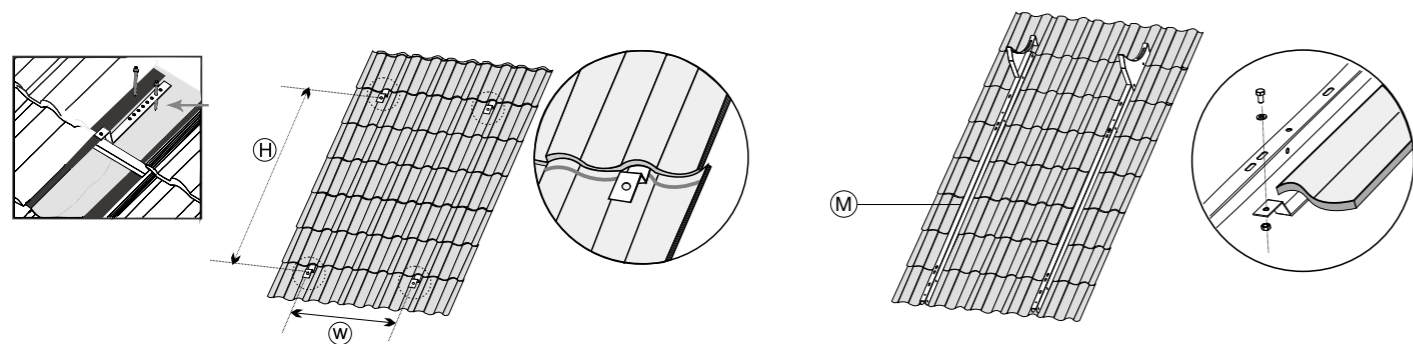
Secure the tank to the tank support using the bolts from the tank bracket



Ensure that the roof frame is securely fixed to the structure before mounting the tank

## ROOF FIXING

### INCLINED ROOF



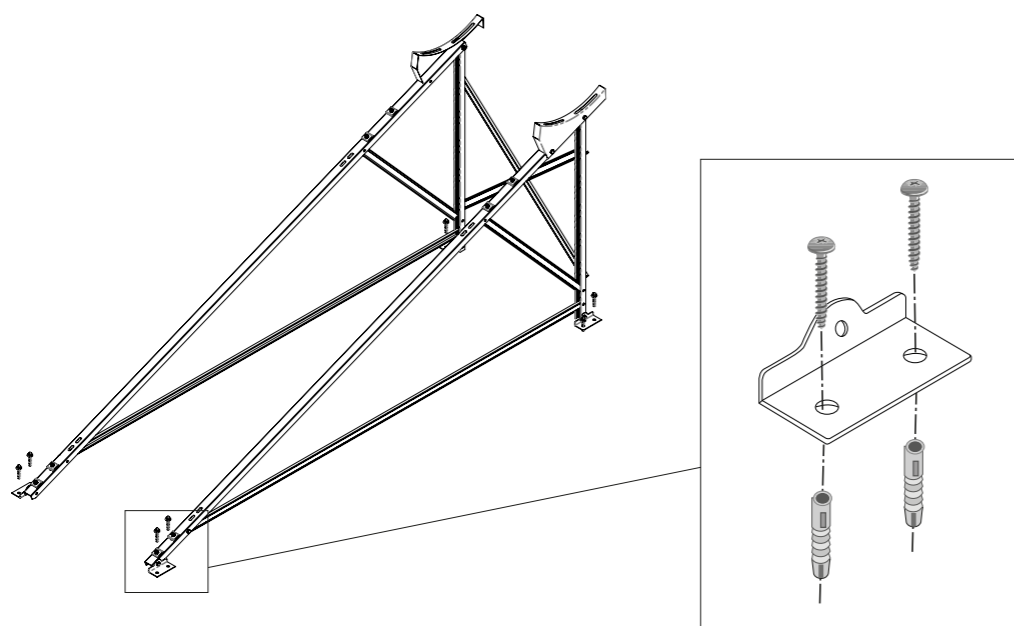
**A.** To fix the mounting sheets at the roof, (The size (H), (W) please check the table).

**B.** To fix the collectors rack (M) on the mounting sheets.

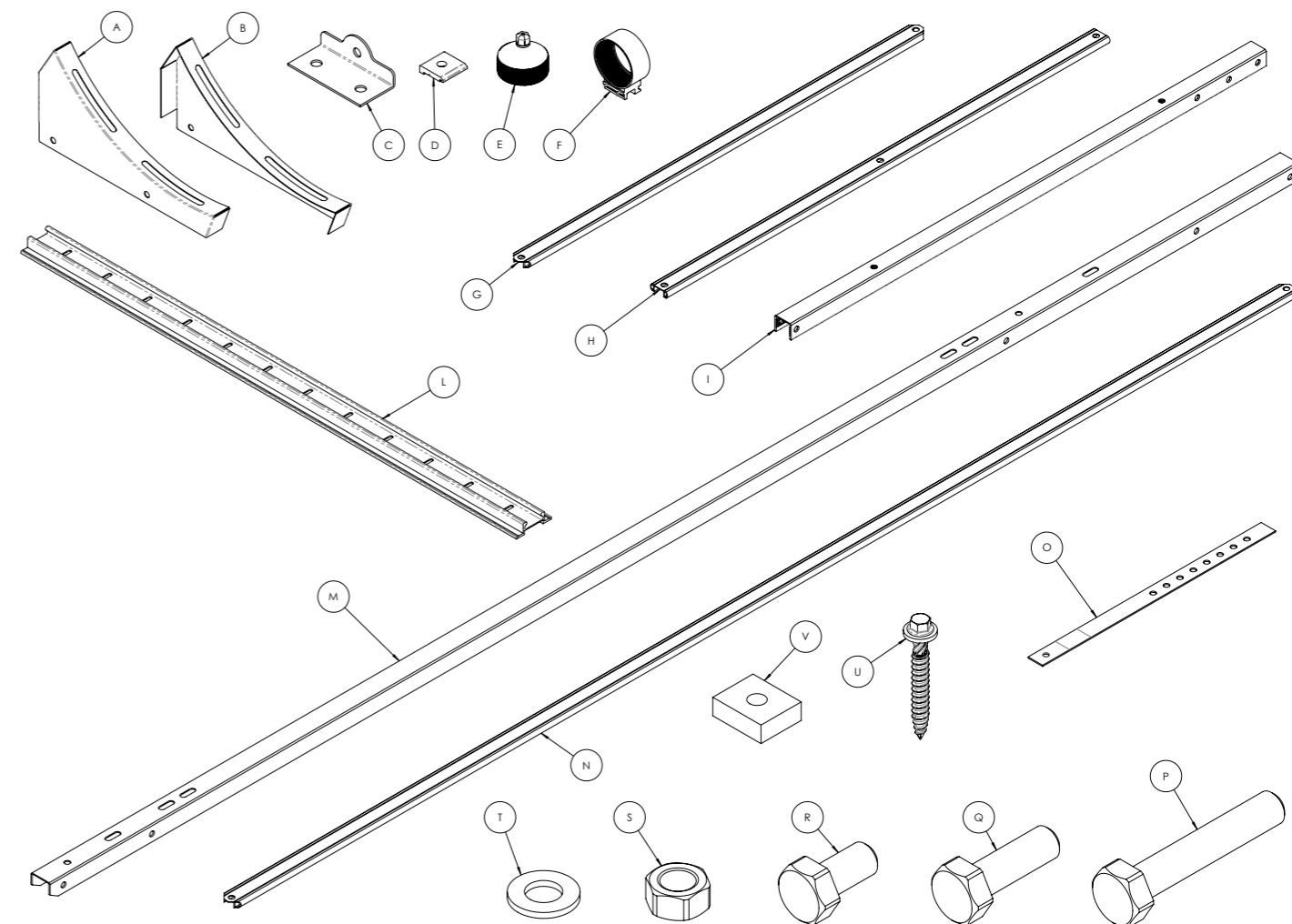
	H	W
KAIROS EVT 100 T12	1460	601
KAIROS EVT 100 T16	1460	985
KAIROS EVT 100 T20	1460	1021
KAIROS EVT 100 T25	1460	659+659

### FLAT ROOF

Ensure that the frame is securely fixed to flat roof structure using suitable fixations. Fixations to be water proofed to avoid any roof leaks.

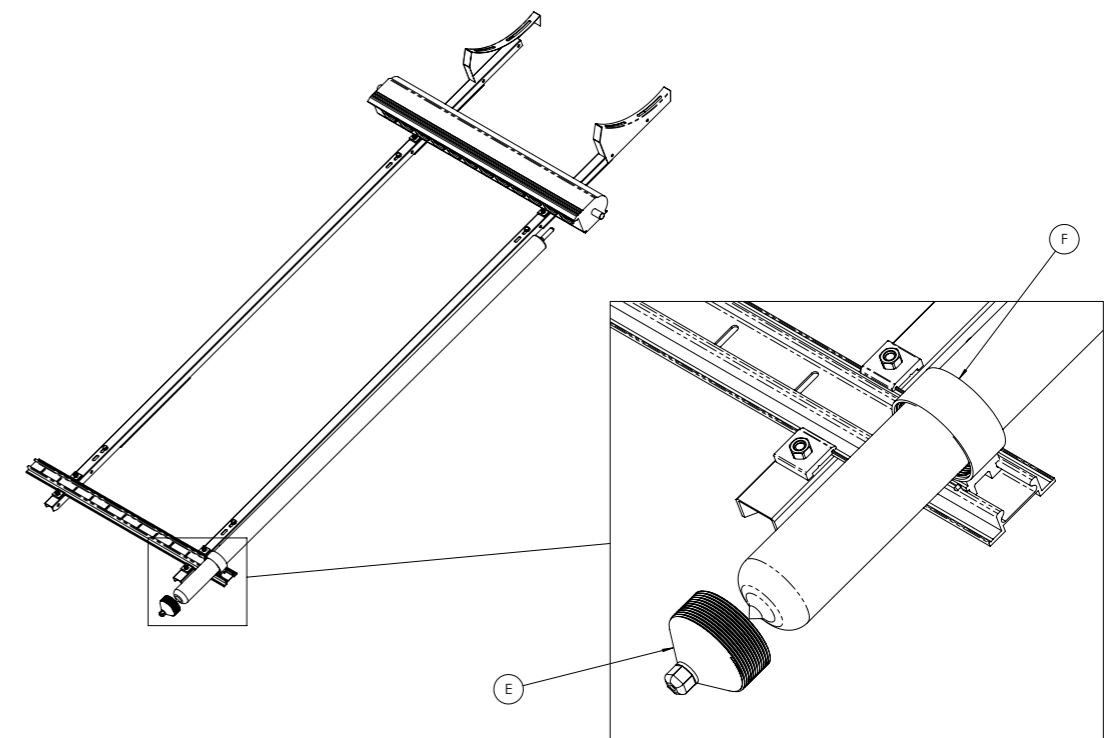
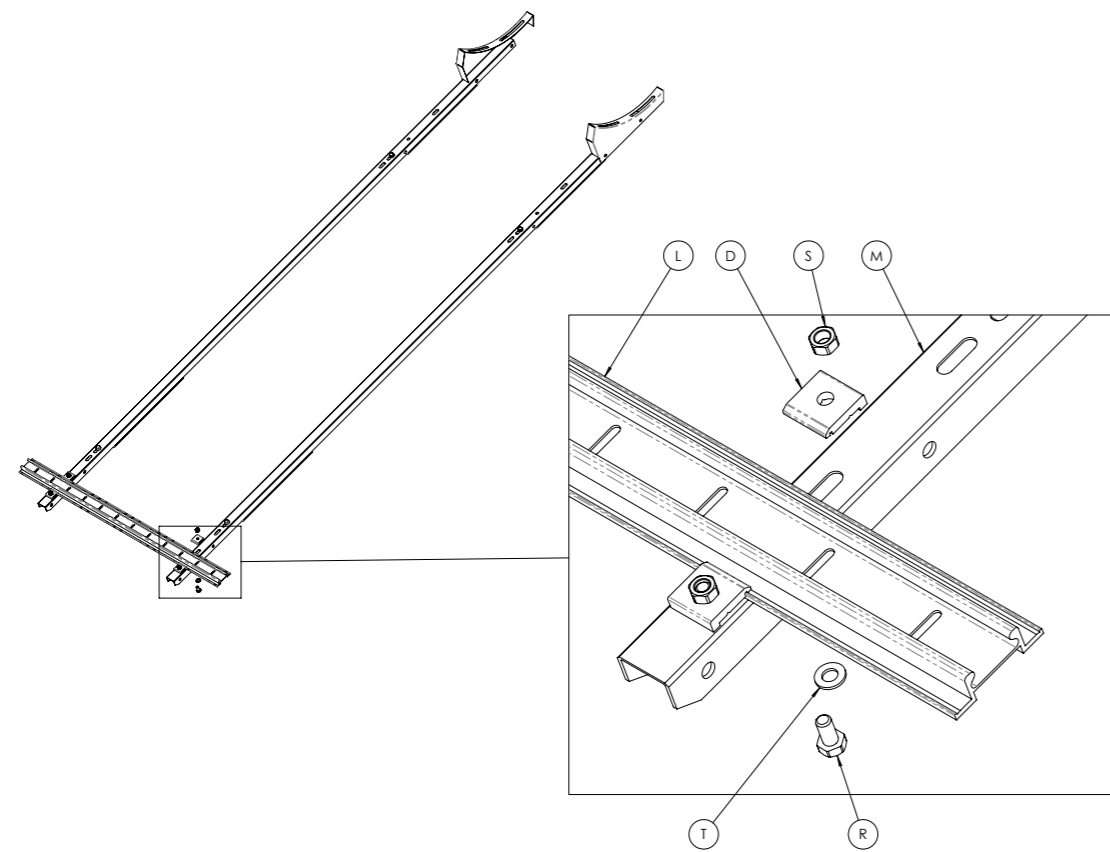
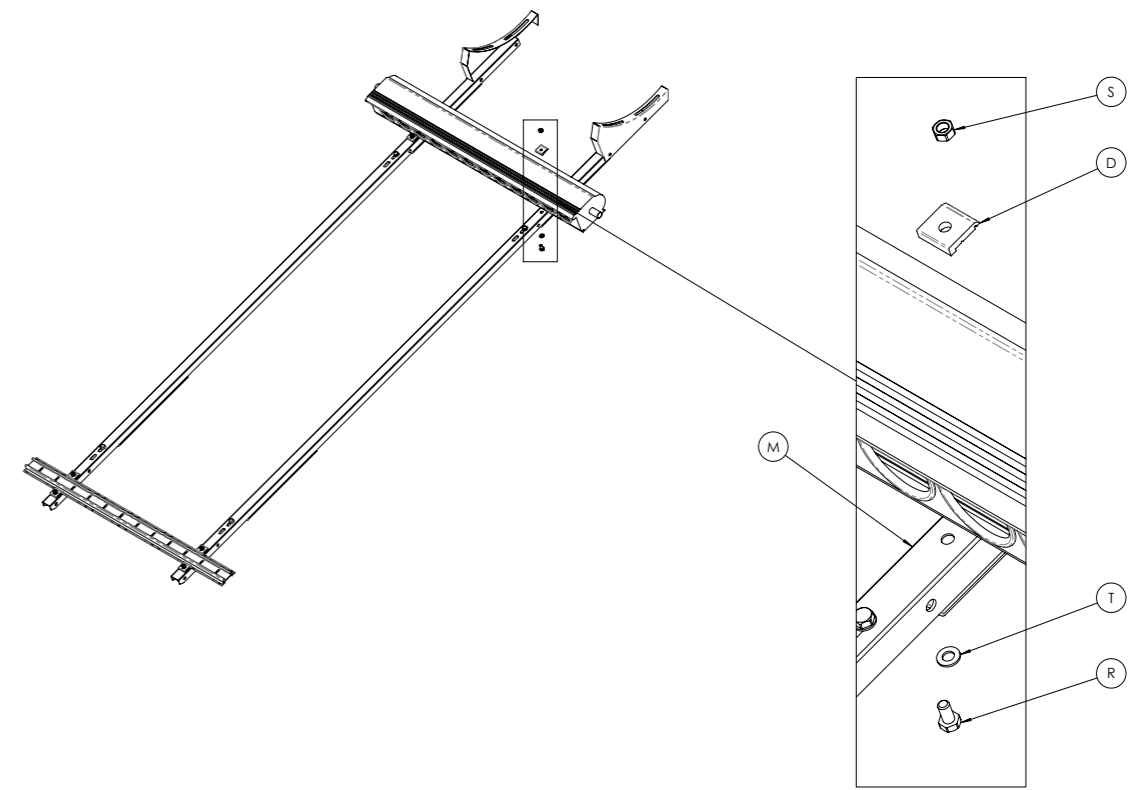
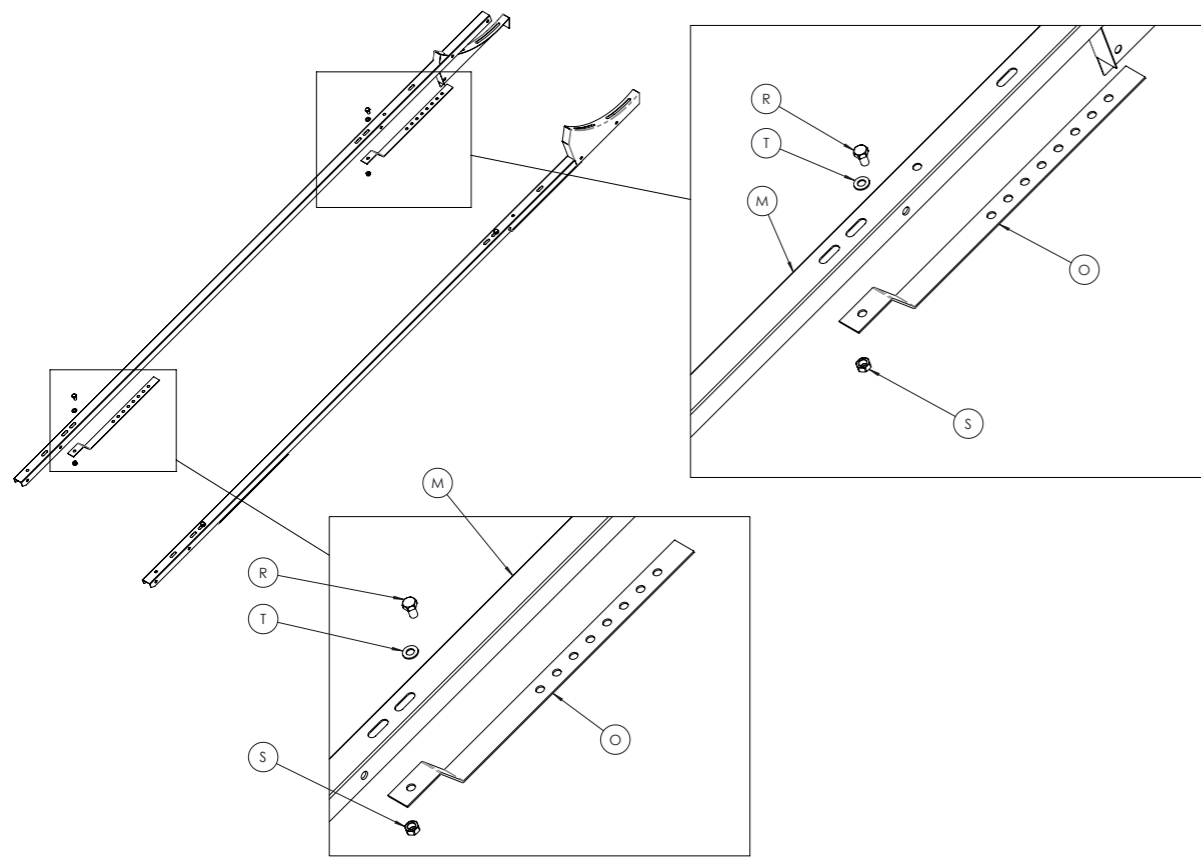


## COMPONENTS LIST

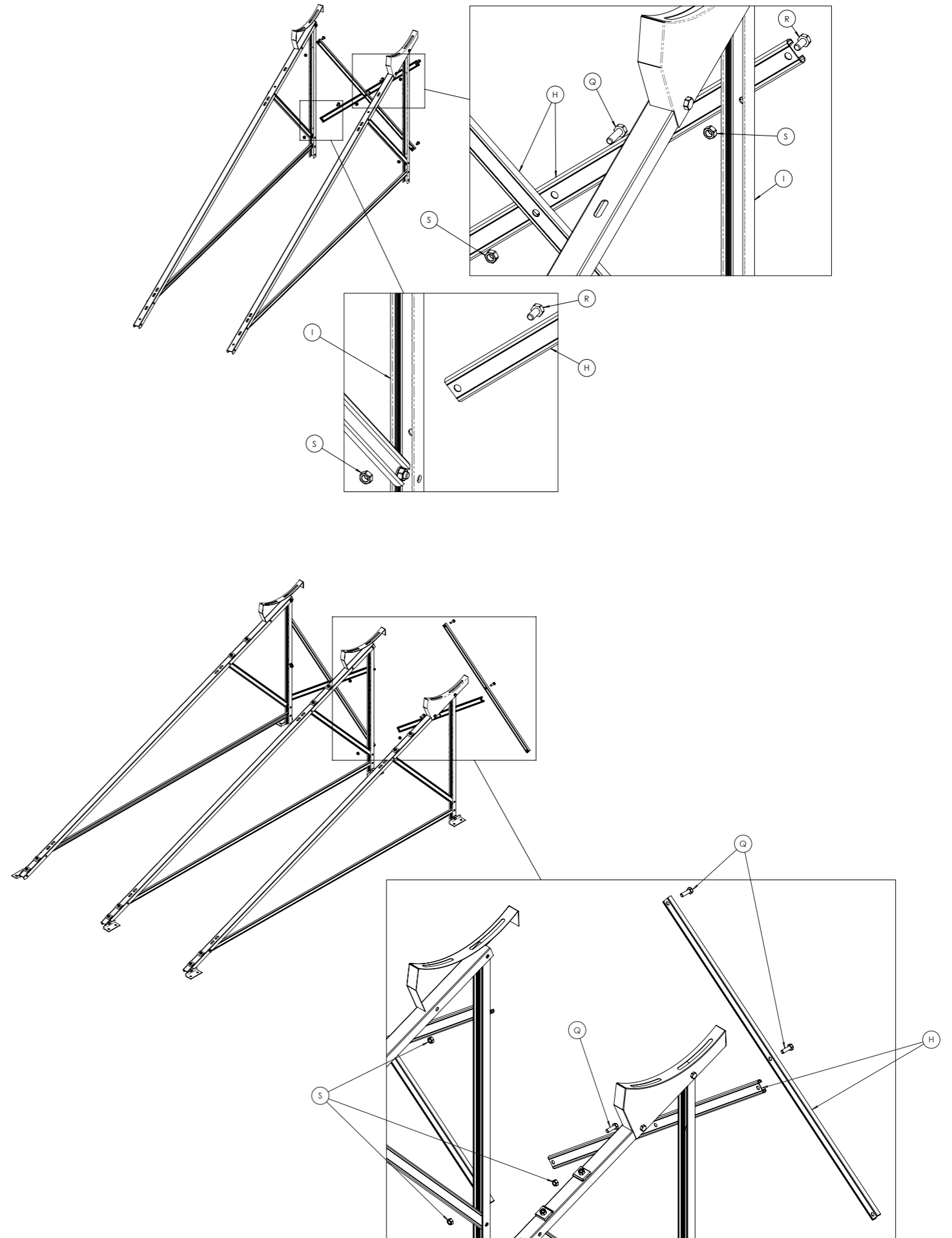
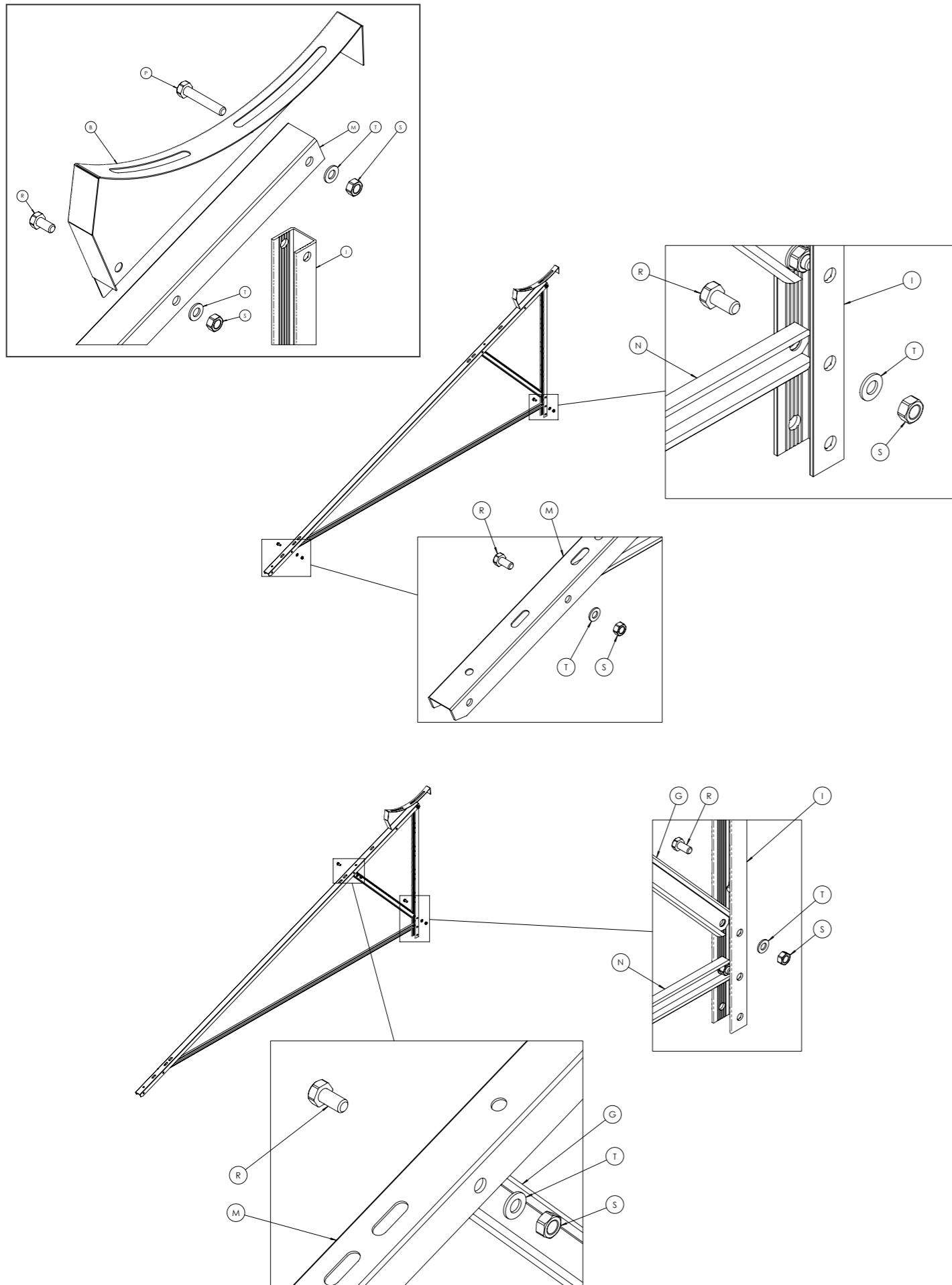


	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	V
Flat Roof	X	X	X	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X	-	-
Pitched Roof	X	X	-	X	X	X	-	-	-	X	X	-	X	X	-	X	X	X	X	X

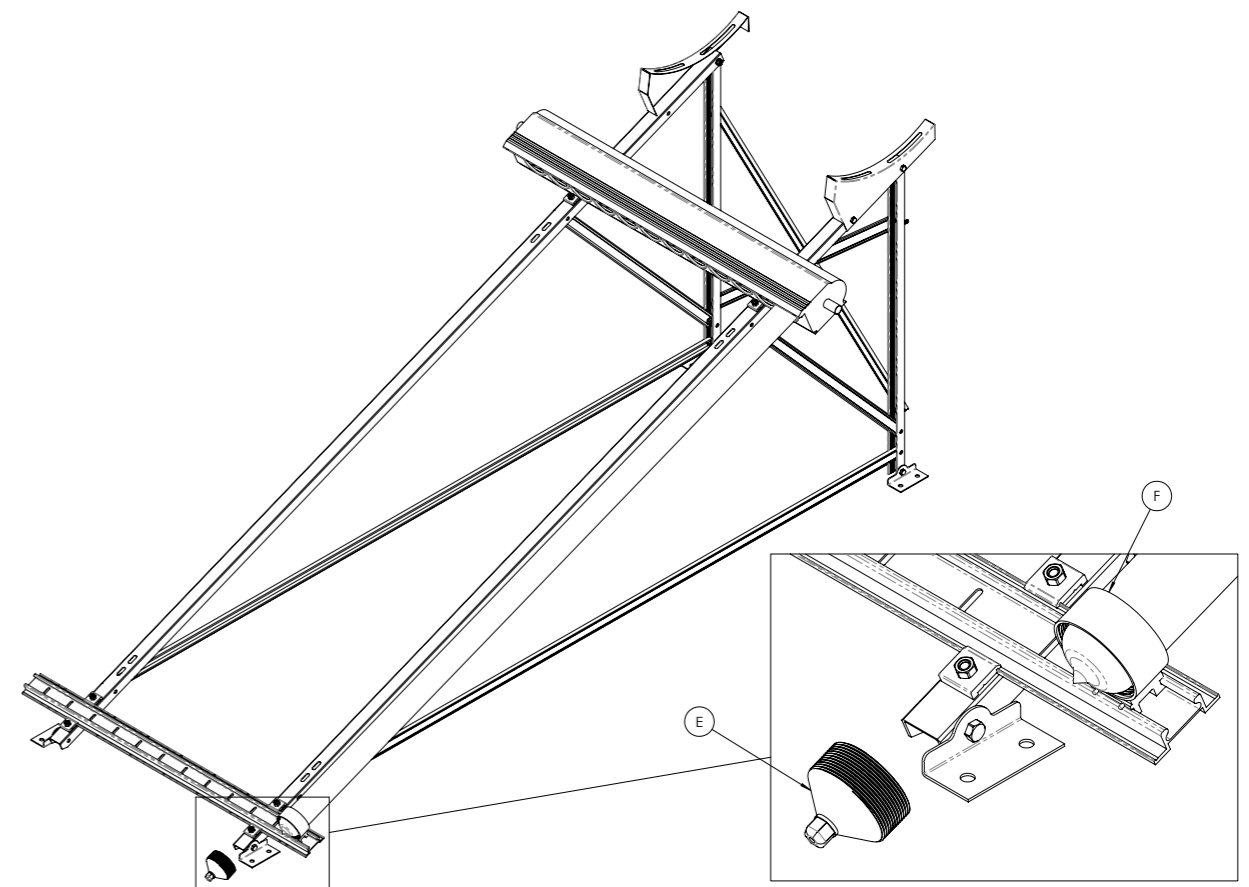
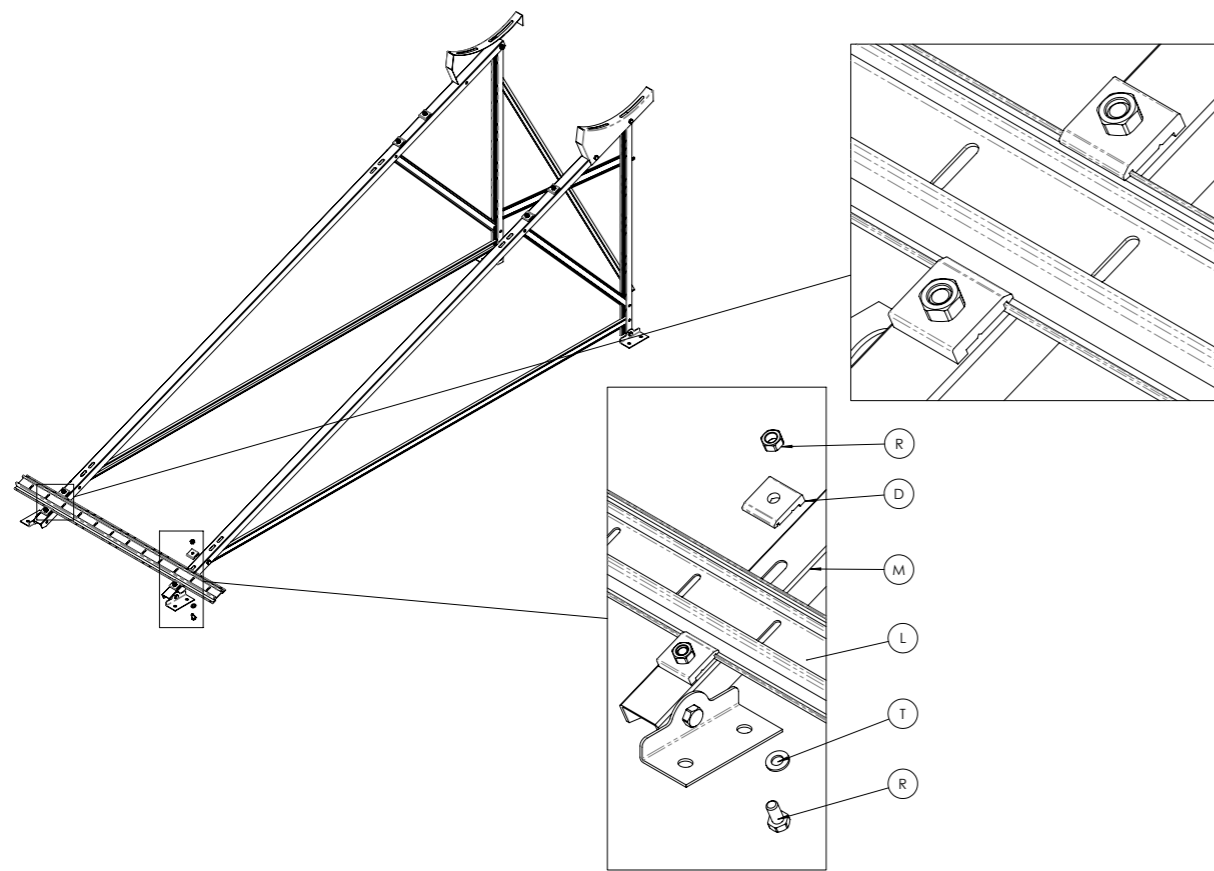
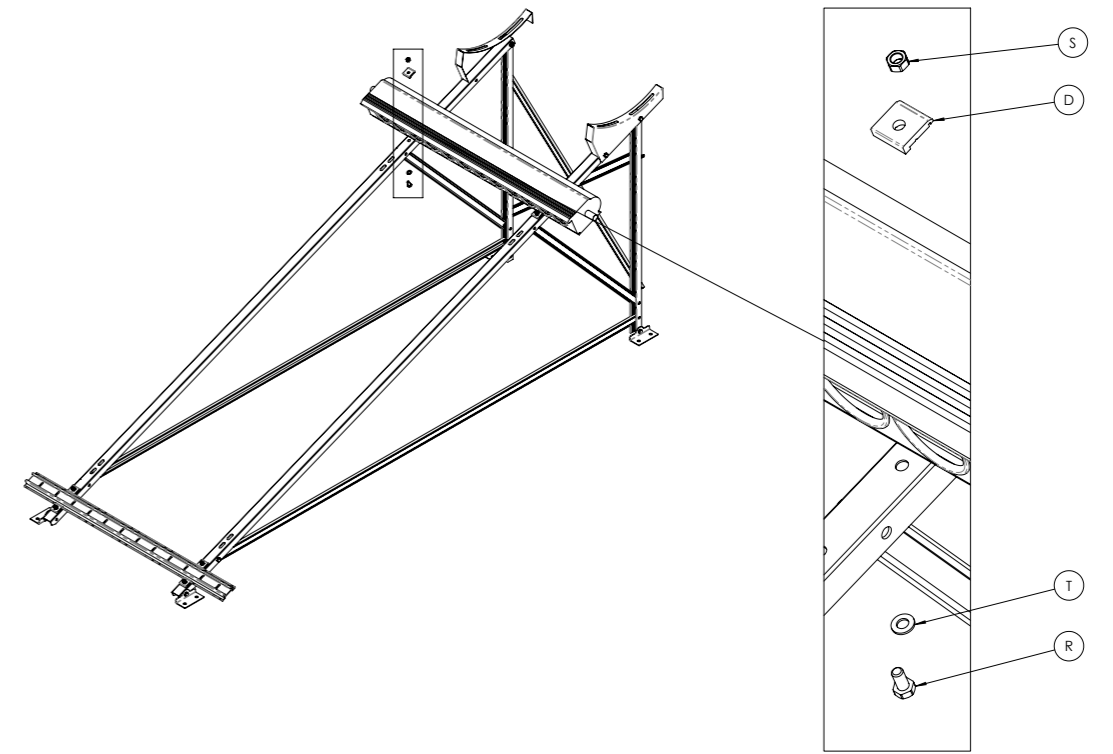
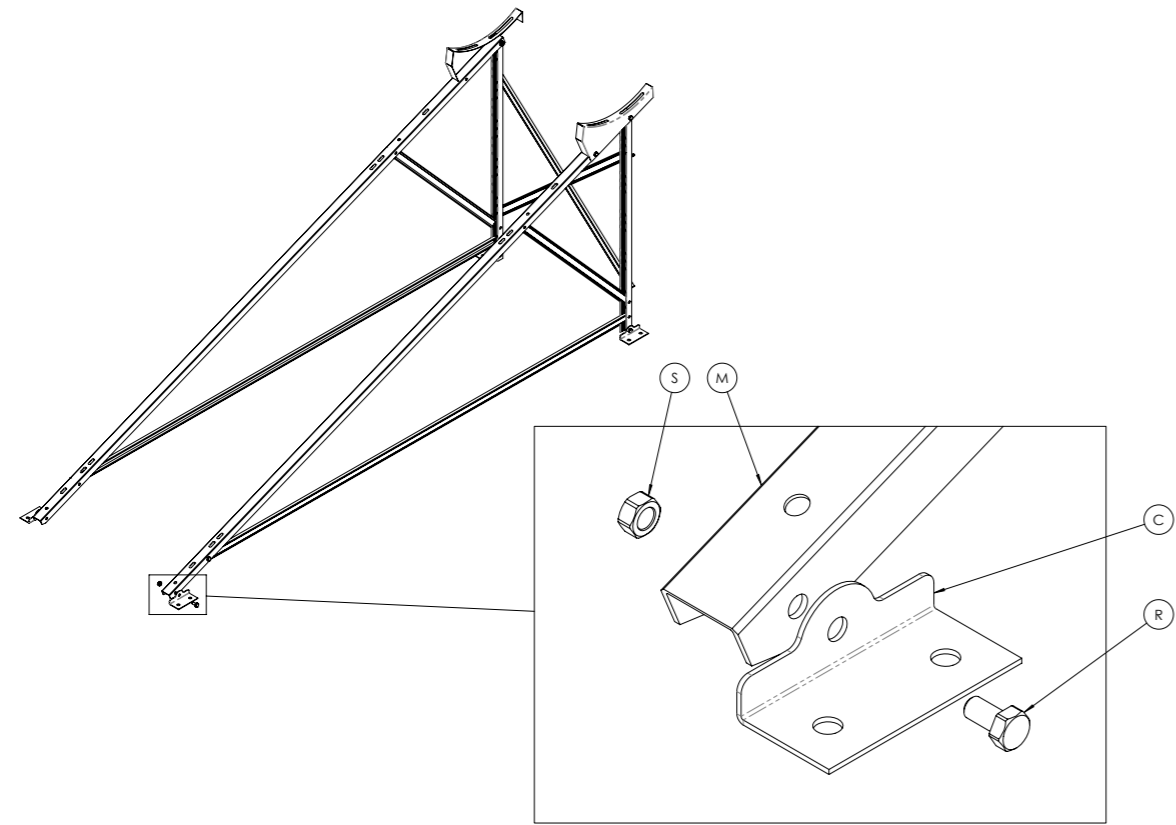
INCLINED ROOF ASSEMBLY



FLAT ROOF ASSEMBLY



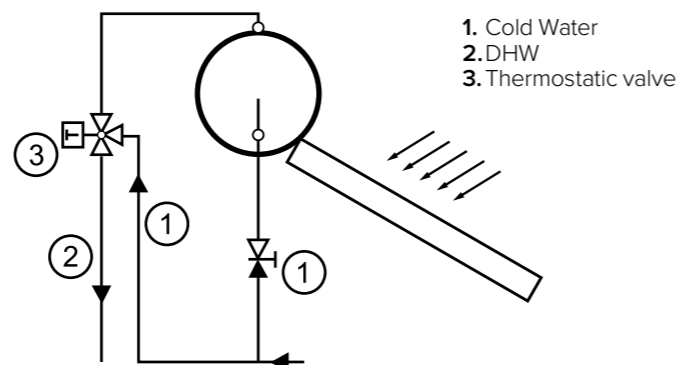




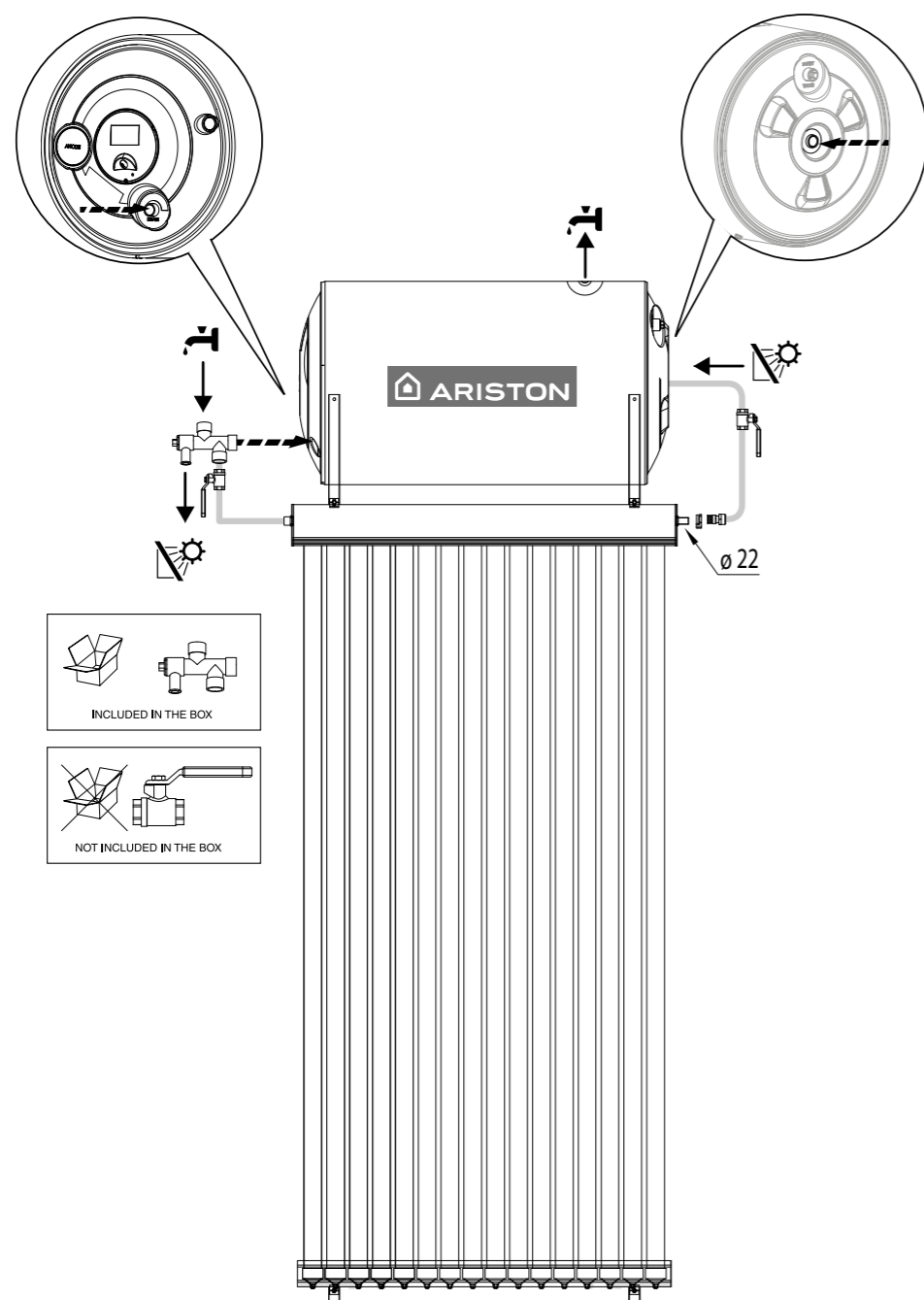
## HYDRAULIC INSTALLATION

**SOLAR INSTALLATION TO BE CARRIED OUT BY A SOLAR QUALIFIED INSTALLER ONLY. THE INSTALLATION MUST COMPLY WITH THE REQUIREMENTS OF SANS 10254, 10252-1, 10106 AND OTHER APPLICABLE LOCAL AND NATIONAL REGULATIONS.**

The installation pressure may not exceed 600kPa and all the standard installation instructions as per the water heater's installation manual has to be adhered to. Connections to the manifold must be made using compression fittings, not soldering or crimp fittings allowed. Piping between manifold and water heater must be copper. No alternative piping is allowed to be used due to the high temperatures. Piping from the flow of the water heater to the inlet at the top of the manifold must have a continuous fall and from the top of the collector to the return of the water must have continuous rise. All pipework between the solar collector and water heater must be properly insulated as per required regulations including at least two metres of the cold feed to and hot supply from the geyser. A temperature-thermostatic valve (3) must be used to control the temperature of water delivered to the points of use. This is important in the prevention of accidental scalding.



## TOP VIEW



## FILLING THE SYSTEM

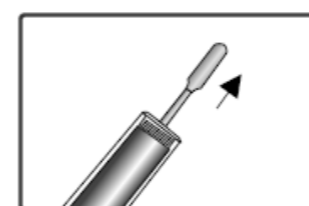
Fill the system by connecting the water mains to the cold water inlet of the water heater, until it reaches the top. Once the filling procedure is complete, hydraulically connect the uppermost pipe on water heater.

## HEAT PIPE VACUUM TUBES INSTALLATION

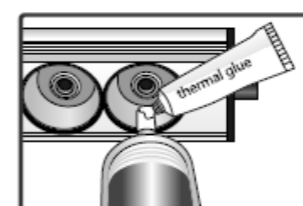


With the heat pipe installed in the evacuated tube, and good sunlight, the heat pipe condenser can reach temperatures in excess of 200°C. At this temperature touching the heat pipe will result in serious burns, so please take care when handling the evacuated tube and heat pipes.

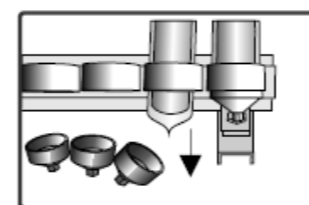
Do not remove the tubes from the packaging until you install them, otherwise the inner tube and heat transfer fin will become very hot. The outer glass surface will not become hot.



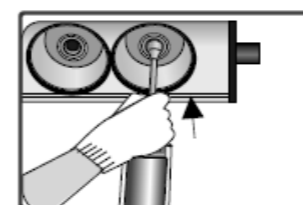
1. Pull up the heat pipe header 20-30 cm



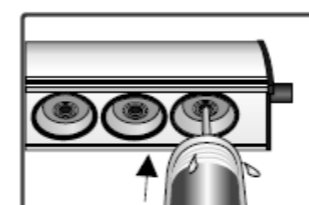
2. Evenly coat with thermal glue on the condenser



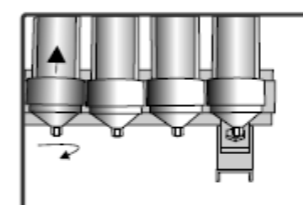
3. Vacuum tube tail into the pipe supports from top to bottom



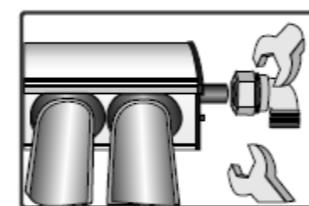
4. Holding the heat pipe, force into socket on the manifold



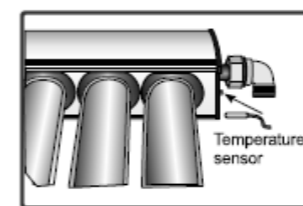
5. Lubricate the vacuum tube header, vacuum tube inserted into the manifold



6. Turn the tube holder to be tight. (To keep vacuum tube could not be moved up and down)



7. Fix the ferrule fitting connections on inlet/outlet



8. Insert the temp sensor into the socket, ensure it is located at the hot water outlet

## ELECTRICAL CONNECTION

**ELECTRICAL WORK TO BE CARRIED OUT BY A QUALIFIED ELECTRICIAN AND TO COMPLY TO THE REQUIREMENTS SANS 10142-1.**

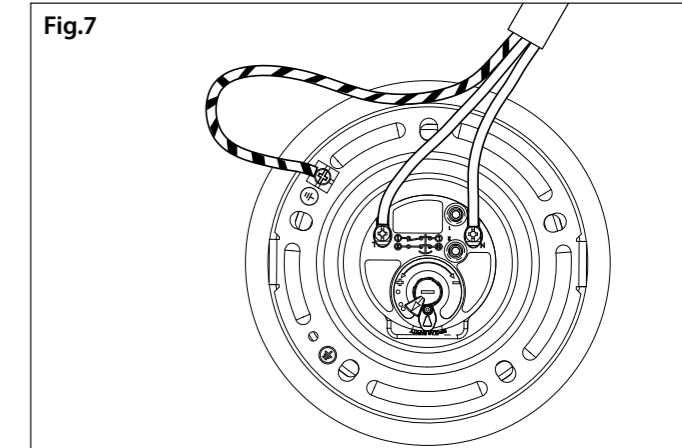
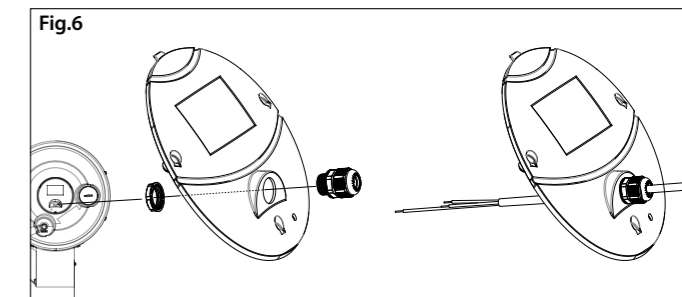
Before working on the appliance, shut off mains power with its external power switch. Before installing the appliance it is recommended to thoroughly check the electrical system to verify compliance with established regulations; the manufacturer is not liable for damage caused by lack of grounding or anomalous power supply. Check that the mains power supply is rated for the heater's maximum power draw (refer to the nameplate) and that the electrical cables are suitably rated and regulatory. Multi-plugs, extensions and adapters may not be used. Do not use the plumbing, heating or gas pipes for grounding the appliance. If the appliance has a power cord, which requires replacement, use a cable of equivalent type. **WARNING!** For information on how to replace the power cord, contact an authorised service centre or professionally qualified personnel. The power cord must



**WARNING: THIS APPLIANCE MUST BE EARTHED & BONDED**

be routed into the hole (fig.5) in the back of the appliance and connected to the thermostat terminals (fig. 6).

Use a two-pole switch conforming with CEIEN (contact gap of at least 3 mm, preferably equipped with fuses) to disconnect the appliance's power supply. The appliance must be grounded with a cable (yellow/green and longer than the phase cable) connected to the terminals marked " " (fig.6). Before starting up the appliance, check that the power rating matches that given on the nameplate. If the appliance has no power cord, it can be installed in one of the following ways: - connection to mains with a rigid pipe (if the appliance has no cable clamp); - with a flexible cable if the appliance has a cable clamp.



## OWNER'S CARE AND MAINTENANCE GUIDE

Congratulations on the purchase of your new Ariston solar water heating system.

A solar water heater is designed to provide your home or premises with a reliable supply of hot water, in an energy efficient and environmentally friendly manner.

To obtain the most efficient operation, reliability and longest service life from your solar water heating system, it is important that you care for the product by understanding how your system works, as well as undertaking some basic inspections and maintenance routines to maintain it in good working order.

Please take the time to read this document and keep it somewhere accessible for future reference.

Ariston South Africa Contact Information

Phone: 010 745 9910  
Website: www.ariston.com/en-za

Installation Information: (To be completed by installer)

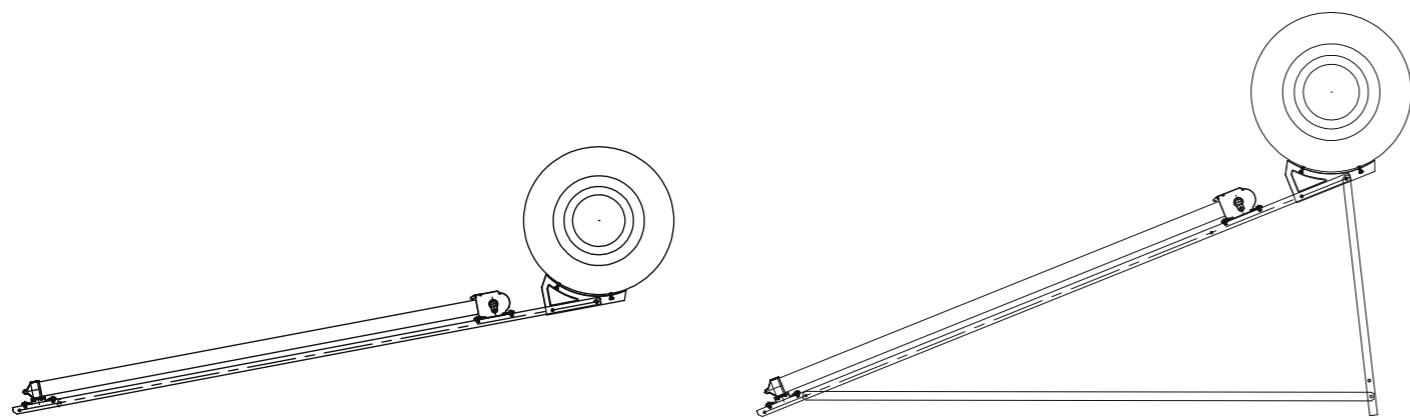
Date of Installation	dd/mm/yyyy	Installer/Company Name	
Water Heater Model Could		Water Heater Serial No.	
Solar Collector Model Could		Solar Collector Serial No.	
Year 1 Service	dd/mm/yyyy	Year 2 Service	dd/mm/yyyy
Year 3 Service	dd/mm/yyyy	Year 4 Service	dd/mm/yyyy
Year 5 Service	dd/mm/yyyy	Year 6 Service	dd/mm/yyyy

### What type of solar water heater system do you have?

For care and maintenance purposes it is important to determine what type of solar water heating system you have.

#### Thermosiphon System:

Both the water heater and solar collector is mounted on top of the roof. In this close coupled arrangement the system don't require a circulation pump as the circulation of the hot water happens naturally via the thermosiphoning of hot water from the solar collector into the water heater, pushing the cooler water out of the water heater back through the solar collector.



### Electric-boosting

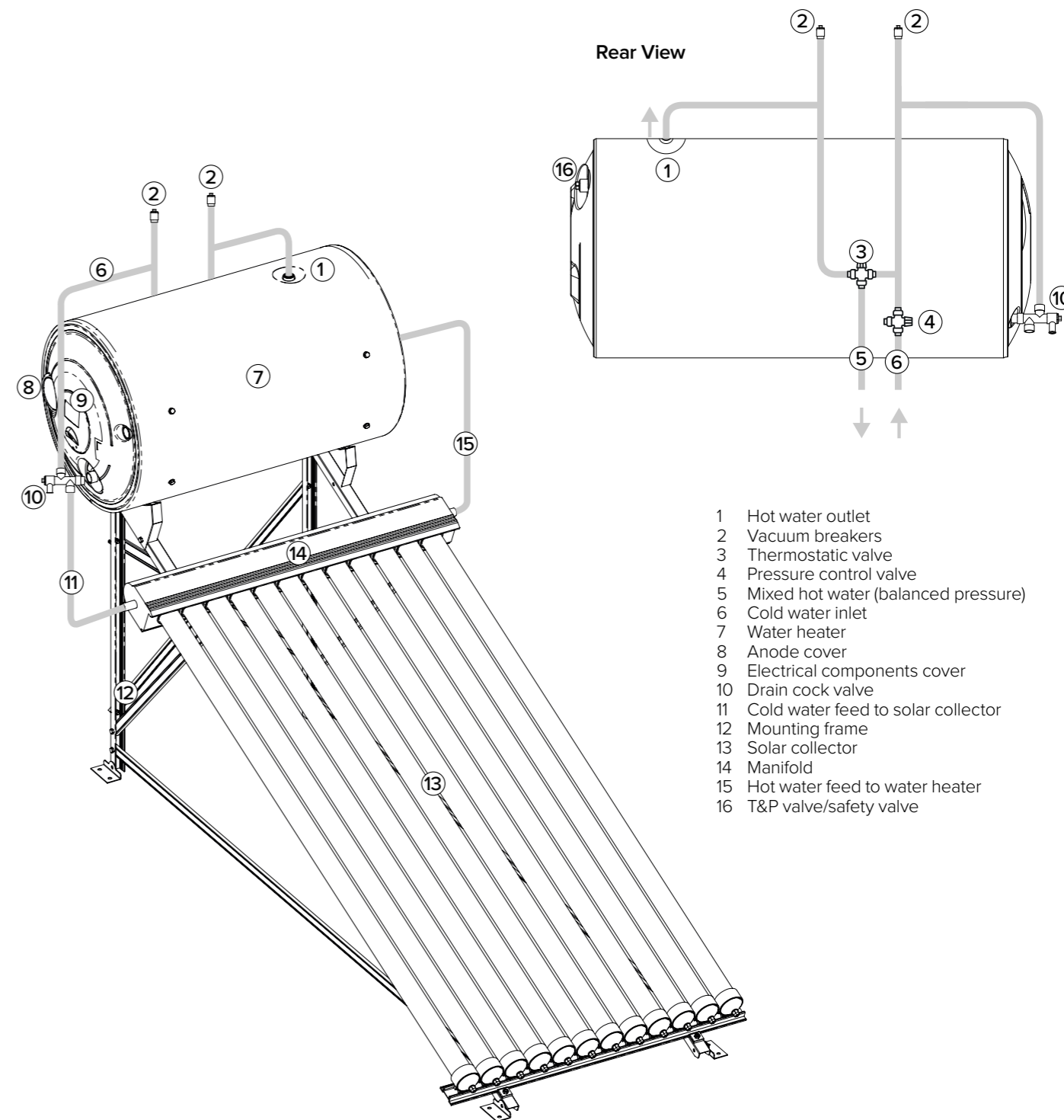
In a solar water heating system, the amount of solar energy input will vary from day to day, due to changes in weather conditions. Your solar water heating system is designed to use a combination of solar energy and electricity to ensure the availability of hot water to meet your demands.

Your solar water heater is fitted with an electrical heating element, should your solar pre-heated water be at a sufficient temperature the heating element will not activate, however if it is too cool, the heating element will automatically activate to heat the water until it reaches a sufficient temperature.

Ariston recommends that the electric element is left "ON" or controlled by a suitable timer.

### Important parts of your solar water heating system

To enable you to care for your solar water heating system, it is important that you are familiar with the main parts of the system.



### Looking after your solar hot water system

To maintain the optimal performance of your system, Ariston recommends an annual inspection of all valves and safety equipment. Please refer to other maintenance and important information regarding your system below.

#### Routine maintenance

Part/Component	Maintenance	Period
Solar Collector	Clean off dust and sediments with a hose	As necessary
Safety Valve	Flush the overflow as this will help prevent a build-up of debris and scale	Twice a year
Expansion Relief	Flush the overflow as this will help prevent a build-up of debris and scale	Twice a year
Thermostatic valve	Ensure that valve is still effectively limiting temperature as set	Once a year
Collector glass/tubes	Inspect for cracks (broken glass or tubes are not covered by the warranty)	Once a year
Drain Valve	Check and ensure that the drain mechanism is not leaking	Once a year
Waterproofing	Inspect and touch up if required	Once a year
Installation Frame	Ensure that all fixations are still tight and inspect for any deformation and corrosion	Once a year
Pipes and Fittings	Inspect for any visible leaks or corrosion and repair	Once a year
Electrical Components	Ensure all wire connections are still tight and no visible electrical burns	Once a year
Anode	Inspect degrading and condition left	Once a year
Complete system	Flush and clean	Every 2 years or as required (dependant on water supply)

#### Routine maintenance

Part/Component	Replacement period
Anode	Every 1-2 years (dependant on water supply)
T&P Valve	Every 5 years (dependant on water supply)
Pressure Control Valve	Every 5 years (dependant on water supply)

#### Collector Glass/Tubes

It is recommended that your household insurance policy cover the collector glass and/or damage to the water heater, especially in areas where hail in excess of 25mm diameter is likely to occur. Damage such as this is not covered by warranty.

#### Going on holidays / leaving the house unattended

High water heater temperature protection should only occur when hot water is not used for several days (when on holiday) and only during strong periods of sunlight( summer).If leaving the house for an extended period of time (more than 2-3 days),it is advisable to cover the collector panel or design the system with a heat dissipation device or alternative use for the heat, thus preventing variegating of the system and collector stagnation. Stagnation of the solar collector will NOT damage the solar collector, however insulation used on the piping close to the manifold inlet and outlet should be able to withstand temperatures of up to 200°C.(E.g. Glass wool or mineral wool-with an exterior wrap of aluminium foil, thus protecting against the elements).

If you are leaving your house unattended for two weeks or more, it is possible for (highly flammable) Hydrogen Gas to accumulate at the top of the water cylinder in the storage water heater. To release this gas safely, it is recommended that a hot tap at a sink or bath be turned ON to run a couple of litres of water. If hydrogen gas is discharged through the tap, it will make a sound like air escaping. When you do this, please ensure there are no open flames, electrical appliances operating or cigarettes being smoked nearby.

### TROUBLESHOOTING GUIDE

Should your solar water heating system not provide hot water, please check the following list and troubleshooting guide before requesting a service call:

1. Check that shading from trees is not excessive and is not covering the collectors for all or part of the day.
2. Check that your hot water usage is not excessive.
3. Check that hot water is not leaking from within the plumbing system.
4. Check that the electrical heating element is switched on and/or time switch is turned ON.

Contact your local Ariston Service Centre if all of the above have been checked and there is still no hot water.

Problem	Cause	Solution
The water isn't hot enough	The electrical heating element is not operating properly	Check that the hot water electric isolating switch at the distribution board is set to the "ON" position. At the water heater location check that the isolation switch is set to the "ON" position.
	Your household demand may be higher than the system can handle	Contact Ariston for advice.
	The water temperature has been "tempered" by a thermostatic valve	Thermostatic valves are required by law. If the thermostatic valve is faulty, installed incorrectly or at the wrong setting, it will need servicing or replacing.
The Temperature is fluctuating	Fluctuation is localised (i.e. Shower only)	Check flow restrictor of particular item (i.e. Shower head) for any blockages.
	Fluctuation is throughout the whole home	Contact Ariston for advice.
Water is discharging from the T&P Valve	The T&P valve is activating because the temperature in the collectors has reached a set limit and the valve is preventing the system overheating	Contact Ariston Service Centre
Water is discharging from the T&P Valve	The pipes in the collector may have burst	Contact Ariston Service Centre
Water is leaking from the roof top collectors	Damaged has occurred from blockage in the collector caused by high calcium levels	Contact Ariston Service Centre

#### Warranty

This warranty, provided by Ariston South Africa (PTY) Ltd is valid only in South Africa, Eswatini, Lesotho, Botswana and Namibia. The products and components below are warranted against faulty materials and/or workmanship, not withstanding anything to the contrary contained herein.

Item	Warranty Period	
Solar Water Heater	Model dependant*	
Solar Collectors	Flat Plate	5 years
	Evacuated Tube	5 years
Valves (supplied with system)	1 year	
Solar Electronic Control Units	1 year	
Solar Pump Groups/Circulation Pumps	1 year	
Roof Installation Kits	1 year	

Ariston gives no warranty in relation to components not supplied by Ariston, for example thermostatic valves and cold water valve assemblies supplied by installers.

Ariston South Africa will repair or replace defective products or components at its own discretion, inclusive of labour costs during the warranty period. In accordance with the terms of this warranty, the Ariston replacement product or component will be warranted for only the unexpired portion of the original warranty.



### Procedure to make a claim under the warranty

Upon discovering a suspected defect, consumers should immediately report the suspected defect:

- to the installer, if the suspected defect arises as a result of the installation of the solar water heating system or relates to any components not covered by this warranty.
- to Ariston on 010 745 9911 or email service.za@ariston.com during the relevant warranty period, if the suspected defect relates to any components covered by this warranty.

### Specific exclusions

The above is subject to an area within a 30 kilometre radius of the Ariston Distributor or Branch from where the unit was purchased. Customers outside this area will be subject to any freight costs and any travelling charges incurred by the Ariston representative whilst carrying out rectification work.

An 'after hours' service fee will apply to warranty calls made outside of normal business hours. For warranty purposes, typical business hours are classified as the hours from 7.00AM to 4.30PM Monday to Friday (excluding public holidays).

To the extent permitted by law Ariston does not accept liability under this warranty:

1. If any component of the water heater has been installed, repaired, repositioned or modified by a person other than an appropriately qualified person approved by Ariston in accordance with Ariston's installation and maintenance instructions and relevant local and statutory requirements;
2. For loss or damage caused by a fault or defect in the installation of the water heater;
3. If there is damage to the collector glass by hail or other means;
4. If corrosion has occurred because the anode has not been changed in accordance with the 'Owner's Care & Maintenance Guide';
5. If a cold water expansion valve, check valve and strainer is not fitted in areas where mains pressure is likely to exceed 500 kPa;
6. Where a thermosiphon arrestor valve is not fitted in a thermosiphon (close coupled) system;
7. For any damage arising as a result of an accident, act of god or other circumstances beyond Ariston's control;
8. If the water heater is a closed loop system and the water heater's closed circuit is not filled with heat transfer or antifreeze fluid approved by Ariston;
9. If the water heater is a closed loop system and the inner cylinder has collapsed as a result of an incorrect filling and/or commissioning procedure;
10. If the water heater is a closed loop system and the addition of water to the closed circuit has not been made in accordance with the water quality specifications (see "water quality" under section A of the installation manual);
11. For component/system failure due to poor water quality and/or high mineral content (eg CaCo3 etc);
12. For frost damage to Ariston open loop solar water heaters when installed in a frost prone area without approved frost protection valve/s;
13. For frost damage to Ariston open loop solar water heaters due to temperatures below -5°C;
14. For frost damage to Ariston open loop solar water heaters where a failure of the pump, control system or power supply results in the in-built frost protection system being unable to operate when required;
15. For components not supplied by Ariston that are used in the installation of Ariston solar water heaters eg. Thermostatic valves, cold water valve assemblies, etc.
16. For extended or implied warranties not formally provided by Ariston;
17. For external labour or equipment costs (eg. Cranes and lifting devices) required for repairs;
18. For costs incurred for rectifying faults (or perceived faults) not directly attributed to the Ariston solar water heater;
19. For travel costs of service agents that exceed 30 kilometres;
20. For all consequential loss or damage arising from defects that can lawfully be excluded;
21. For any other issues not directly attributable to defects in components supplied by Ariston including:
  - a. damage caused by incorrect commissioning;
  - b. leakage from valves not supplied by Ariston;
  - c. leakage from the PTR (Pressure & Temperature Relief) valve where the water pressure or temperature exceeds the limits specified in Ariston's installation and maintenance instructions;
  - d. water hammer;
  - e. external rust on the storage water heater;
  - f. insufficient hot water because:
    - i. the consumer refuses to use the auxiliary booster;
    - ii. of an incorrectly set or faulty tempering or thermostatic valve;
    - iii. of faulty or incomplete installation;
    - iv. the water heater is too small for its required purpose;
    - v. of insufficient water flow as a result of "water saving" tap-ware or appliances (for gas water heaters only);
    - vi. of undersized gas lines (for gas water heaters only);
    - vii. of blown fuses, "tripped" electrical switches or inadequate household electrical wiring;
    - viii. of incorrect selection of gas type (gas water heaters only); or
    - ix. of insufficient water flow caused by debris accumulating in water strainer (gas water heaters only)
    - x. damage to a system caused by calcium deposits where a water conditioner is not fitted.

### IMPORTANT NOTE

This is the only warranty given and it expressly excludes all other warranties, expressed or implied by law. The warranty expressly covers the water heater only and does NOT cover any other part or parts of the installation which may, because of the failure or defect of the water heater become damaged in any way whatsoever and under no circumstances shall the manufacturer be liable for any direct, indirect or consequential loss suffered by the consumer and/or third party.

Technical Assistance Service

**ARISTON SOUTH AFRICA (Pty) Ltd**  
294 Barolong St., Icon Park, Sunderland Ridge  
Centurion, 0157, South Africa  
T: +27 (0) 10 745 9910  
info.za@ariston.com  
www.ariston.com  
service.za@ariston.com