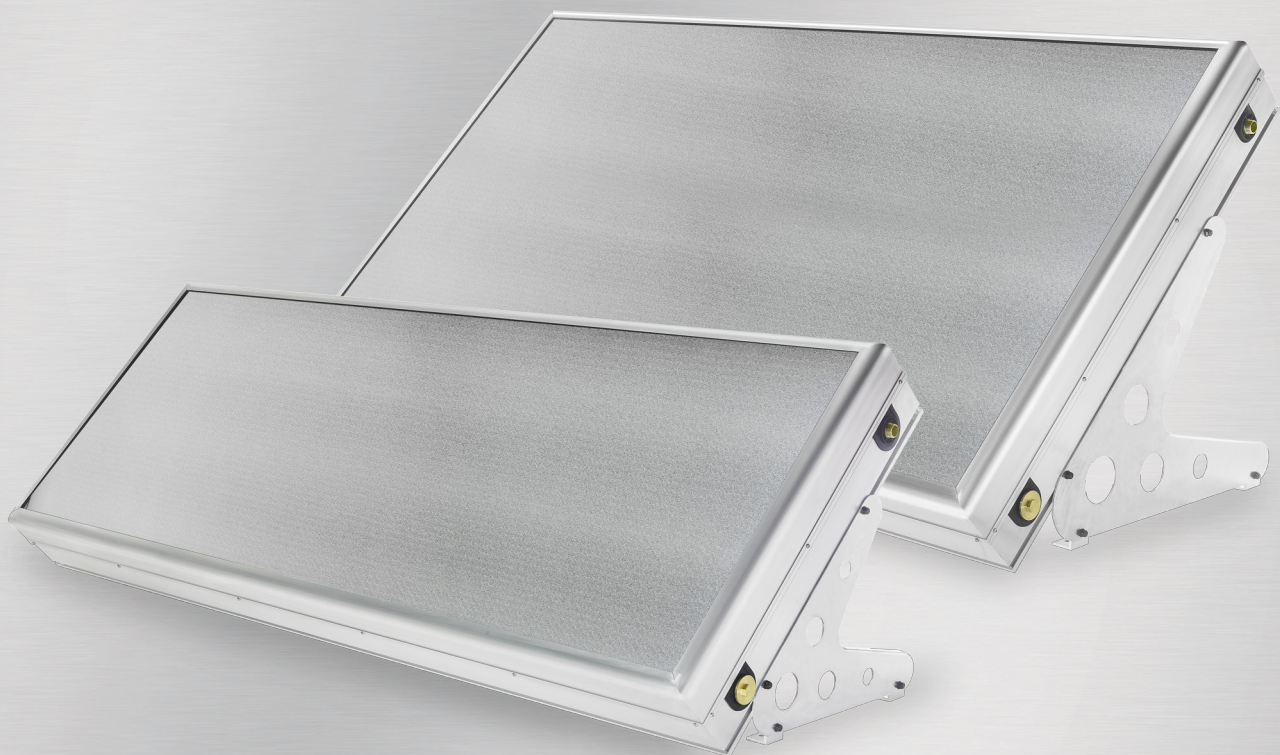




Installation and operating manual
Instrucciones de montaje











Contents Solpal L / M

Índice











• Safety instruction 3	• On-Roof Installation 21
Instrucciones de seguridad 4	Montaje paralelo sobre tejado
• Overview of Materials 5	• English
Lista de materiales	Installation Instructions 23
• Explanation of symbols 6	Warranty 24
Lista de materiales	Operating Instructions 25
• Solpal L 7	• Español
• Solpal M 8	Indicaciones para el montaje 27
• Specifications for Water Quality 7	Garantía 28
Datos sobre la calidad del agua	Notas sobre el funcionamiento 29
• Hydraulic Connection 9	• Appendix / apèndice 30
Conexión hidráulica	
• Flat Roof Installation 15	
Montaje en tejado plano	

SAFETY INSTRUCTIONS

	<p>USER MUST BE IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL BUILDING AND FIRE SAFETY LAWS, CODES, AND REGULATIONS. CHECK THE UNIT AND THE ACCESSORIES FOR ANY VISIBLE DEFECTS, CRACKS, OR OTHER DAMAGES AFTER UNPACKING AND BEFORE FIRST USE. IF YOU SEE ANY DAMAGE, DO NOT USE THE PRODUCT. CONTACT CUSTOMER SERVICE FOR HELP. CAREFULLY READ INSTALLATION INSTRUCTIONS BEFORE YOU INSTALL THE PRODUCT. ONLY OPERATE THE PRODUCT AFTER PROPER AND COMPLETE INSTALLATION AND ASSEMBLY.</p> <p>THE SOLPAL SYSTEM INCLUDING ITS PIPES MUST NOT BE INSTALLED NEXT TO A POWER OUTLET. KEEP A SAFETY CLEARANCE DISTANCE OF AT LEAST 3 INCHES BETWEEN THE UNIT AS WELL AS ITS PIPES AND ACCESSORIES AND ANY POWER OUTLETS.</p> <p>CAUTION! THE SOLPAL SYSTEM AND ITS PIPES AND ACCESSORIES CAN REACH TEMPERATURES OF UP TO 212 DEGREES FAHRENHEIT. DO NOT TOUCH ANY PARTS OF THE SOLPAL SYSTEM, ITS PIPES OR ITS ACCESSORIES DURING OPERATION OR WHEN THE SOLPAL IS EXPOSED TO SUNLIGHT.</p> <p>ASSURE THAT MINORS UNDER THE AGE OF 18, OR PERSONS WITH REDUCED PHYSICAL, SENSORY OR MENTAL ABILITIES DO NOT HAVE ACCESS TO THE SOLPAL SYSTEM. ASSURE THAT THE SOLPAL IS NOT IN DIRECT CONTACT WITH ANY ITEMS SUCH AS LEAVES, TWIGS, FLAMMABLE MATERIALS, CABLES, OR OTHER MATERIALS. KEEP A SAFETY CLEARANCE OF AT LEAST 5 FEET FROM AIR CONDITIONING SYSTEMS, HEATERS (HVAC equipment), SATELLITE DISHES OR ANY OTHER ELECTRONIC DEVICES.</p>										
	<p>Regulation-compliant, non-personal fall protection or safety netting or other catch equipment, in accordance with Roof Covering and Roof Sealing Work and Scaffolding Work with Safety Net, must be installed before starting work. See the Construction Worker Protection Ordinance, German Federal Law Gazette [BGBl] 340/1994 sections 7-10. Other country-specific regulations must be observed.</p> <p>ASSURE COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL SAFETY LAWS, CODES AND REGULATIONS PERTAINING TO ROOFING SAFETY.</p>										
	<p>Only use safety harness equipment (harnesses or belts, ropes and straps, fall arresters, rope shorteners) that has been approved by authorised testing authorities.</p>										
	<p>Do not use damaged ladders e.g. splintered stringers and rungs on wooden ladders, bent or kinked metal ladders. Do not patch up splintered or broken stringers, steps and rungs of wooden ladders.</p>										
	<p>Make sure that lean-to ladders are propped securely. Secure lean-to ladders against slipping, falling over and sinking into the ground e.g. by using wider feet, adjusting the ladder feet to the ground surface, securing/hook fixtures.</p>										
	<p>Only lean ladders against secure supporting surfaces. Cordon off ladders in traffic areas.</p>										
	<p>Only the prescribed heat transfer medium may be used.</p>										
	<p>Safety harnesses must be secured above the user if possible. Only secure safety harnesses to building elements or connection points with sufficient load-bearing capacity.</p>										
	<p>When using lean-to ladders, there is a risk of dangerous falls if the ladder sinks, slips or falls over.</p>										
	<p>If no non-personal fall protection or fall arrest system is used there is a risk of falling from a great height which can lead to serious or fatal injury if no safety harness or equipment is used.</p>										
	<p>Contact with live overhead electrical cables and wiring can lead to mortal injury.</p>										
	<p>Work in the vicinity of live, electrical cables and wiring, where contact is possible, can only be carried out if:</p> <ul style="list-style-type: none"> • they are voltage-free and it is ensured that they remain so for the duration of the work to be carried out • the live elements are secured by being covered up or cordoned off • safety distances are observed <p>Voltage radius</p> <table border="0"> <tr> <td>3,5 ft</td> <td>up to 1000 V</td> </tr> <tr> <td>7 ft</td> <td>1000 V to 11000 V</td> </tr> <tr> <td>10 ft</td> <td>11000 V to 22000 V</td> </tr> <tr> <td>14 ft</td> <td>22000 V to 38000 V</td> </tr> <tr> <td>> 16 ft</td> <td>if the voltage is not known</td> </tr> </table>	3,5 ft	up to 1000 V	7 ft	1000 V to 11000 V	10 ft	11000 V to 22000 V	14 ft	22000 V to 38000 V	> 16 ft	if the voltage is not known
3,5 ft	up to 1000 V										
7 ft	1000 V to 11000 V										
10 ft	11000 V to 22000 V										
14 ft	22000 V to 38000 V										
> 16 ft	if the voltage is not known										
	<p>Wear protective goggles when drilling or handling collectors</p>										
	<p>Wear safety shoes when carrying out installation work</p>										
	<p>Wear cut-proof safety gloves when carrying out installation work or handling collectors.</p>										
	<p>Wear a helmet when carrying out installation work.</p>										
	<p>If no non-personal fall protection or fall arrest system or equipment has been installed for technical reasons, safety harnesses must be worn.</p>										

Instrucciones de seguridad

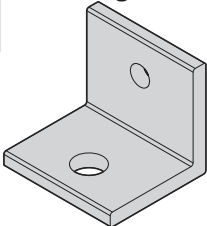
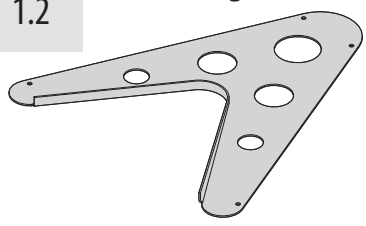
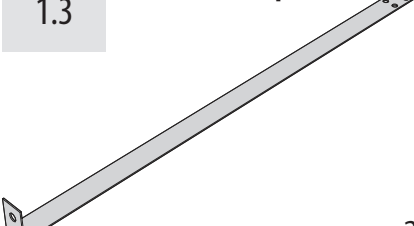
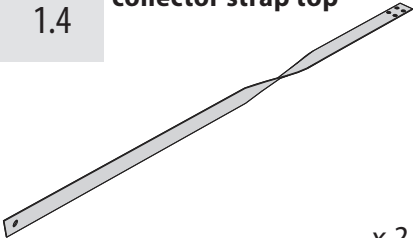
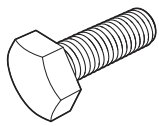
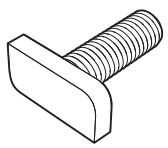
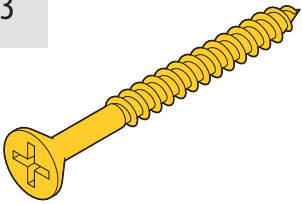
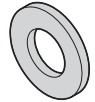
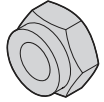
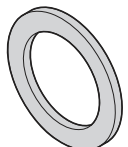
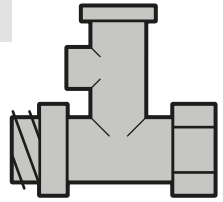
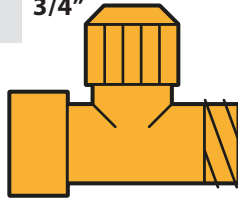
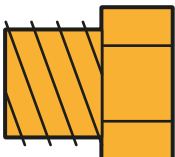
	<p>Para el montaje sobre tejados, es estrictamente necesario instalar antes de iniciar los trabajos, protecciones anticaídas o dispositivos de protección según la norma DIN 18338 referente a trabajos de revestimiento y de impermeabilización de tejados, y redes de seguridad para trabajos con andamios según la norma DIN 18451. Reglamento federal de protección laboral BGBL 340/1994 §7-10. Se deben observar estrictamente las demás disposiciones específicas de los países.</p> <p>Utilizar únicamente trajes con eslingas (con correas de sujeción o de seguridad, amortiguadores de caída, reductores de correa).</p> <p>No utilice escaleras deterioradas, p. ej., con largueros y peldaños de madera rotos, ni escaleras de metal dobladas o deformadas. No trate de reparar largueros, segmentos o peldaños rotos de las escaleras de madera.</p> <p>Coloque de forma segura la escalera de apoyo. Observe el ángulo de apoyo correcto (68° - 75°). Asegure las escaleras de mano contra el deslizamiento, caída, resbalamiento y hundimiento, p. ej., mediante ampliaciones de los pies de la escalera, con pies guía adecuados para el suelo o dispositivos de suspensión</p> <p>Apoye las escaleras sólo en puntos de apoyo seguros. Asegure las escaleras en zonas transitadas mediante acordonamiento.</p> <p>El fabricante se compromete a aceptar los productos y materiales marcados con el signo del medio ambiente y llevarlos a un punto de reciclaje. Sólo se pueden utilizar los fluidos portadores térmicos prescritos</p>	 <p>El contacto con conductores eléctricos en tensión no cubiertos puede tener consecuencias mortales.</p> <p>Efectuar trabajos en cercanías de cables eléctricos de tensión que no se encuentren cubiertos está permitido únicamente cuando</p> <ul style="list-style-type: none"> • Se ha eliminado la tensión en los conductores y se ha asegurado este estado durante toda la ejecución del trabajo. • Las partes en tensión han sido protegidas cubriéndolas o colocando una barra de separación • Se respeta la distancia de seguridad. <p>Radio de tensión:</p> <p>3,5 ft 1000 voltios de tensión 7 ft..... 1000 a 11000 voltios de tensión 10 ft..... 11000 a 22000 voltios de tensión 14 ft..... 22000 a 38000 voltios de tensión > 16 ft si se desconoce la tensión</p>
	<p>A ser posible, fije el traje con eslingas por encima del usuario. Fije el traje con eslingas sólo a los componentes o puntos de fijación que soporten la carga.</p> <p>Cuando se utilizan escaleras de mano pueden producirse peligrosas caídas si la escalera se hunde, se escurre o se cae.</p> <p>Si no se dispone de dispositivos anticaídas, de protección o trajes con eslingas, existe el riesgo de sufrir caídas desde gran altura, originando graves lesiones o incluso la muerte.</p>	 <p>A la hora de realizar trabajos de taladrado y de manipular captadores, utilice gafas de protección</p>  <p>Durante el montaje, lleve calzado de seguridad.</p>  <p>A la hora de realizar trabajos de montaje y de manipular captadores, utilice guantes de protección resistentes a los cortes.</p>  <p>Durante el montaje, lleve un casco.</p>  <p>Si por motivos técnicos no se dispone de dispositivos anticaídas o de protección, se deben utilizar trajes con eslingas</p>

Overview of Materials

Lista de materiales

Note: Check package contents to make sure that you have received all components listed below.

Nota: Compruebe la integridad del contenido del paquete. Todos los componentes de acceso para su mantenimiento y servicio.

1.1 mounting bracket  x 4	1.2 collector leg  x 2	1.3 collector strap bottom  x 2
1.4 collector strap top  x 2	2.1 metric bolt M8x20  x 4	2.2 metric T-head bolt M8x20  x 4
2.3 wood screw  x 8	4.1 flat washer M8  x 8	5.1 metric nut 8mm M8  x 8
6.1 flat seal  x 2	6.2 safety valve 3/4"  x 1	6.3 ventilation valve 3/4"  x 1
6.4 thread adapter  x 3		

If you need spare parts (see list «Overview of materials» above) please contact your local Solpal partner:

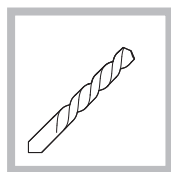
Company: Heliodyne, Inc.

Address: 4910 Seaport Avenue
Richmond, CA 94804

Phone Number: 1.888.878.8750
info@heliodyne.com

Explanation of Symbols

Lista de materiales



Drilling/pre-drilling

Taladrado/Taladrado previo



Risk of scalding!

¡Peligro de escaldaduras!



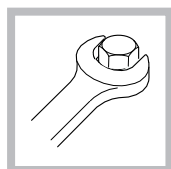
See page

Véase página



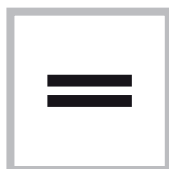
Important note

Nota importante



Secure tightly

Apretar



Parallel

Paralelo



Hand-tight

Apretar a mano



Material to be provided on-site

Material a aportar por el cliente



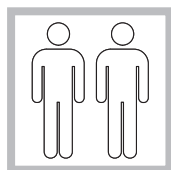
Right angle

Ángulo recto



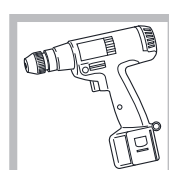
Open water supply

XXX



Two persons are needed for this installation step

XXX



Drilling machine

XXX

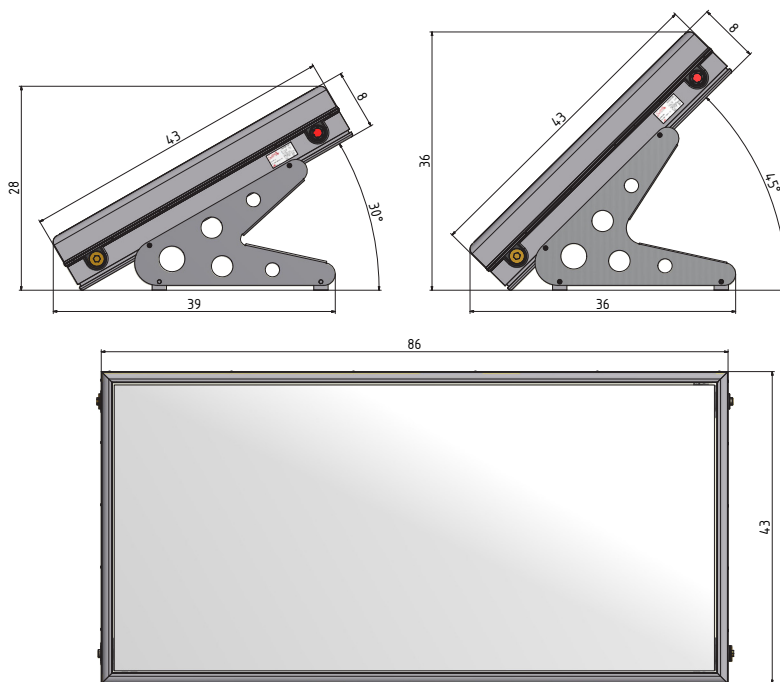
Technical Data Datos técnicos

Gross area Superficie bruta	26 ft ²	Net area Superficie neta	23 ft ²
Max. height, mount 45°/ 30° Altura máx., soporte de 45 °/ 30°	36/28 in	Collector outer dimensions Dimensiones exteriores del captador	86 x 43 in
Volume hot water storage tank Volumen del acumulador de agua caliente sanitaria	51 gal	Collector/incline angle Captador / Ángulo de inclinación	10° - 75°
Weight (with mount, no water) Peso (con soporte, sin agua)	165 lbs	Max. working pressure* Sobrepresión máx. de servicio	60 psi 4 bar
Weight (with mount, with water) Peso (con soporte, con agua)	595 lbs	Cold/hot water connections Conexiones de agua fría/agua caliente sanitaria	3/4" male thread 3/4 RE
Thermal insulation - storage tank Aislamiento del acumulador	PUR (1,2 in)	Storage tank material Material del acumulador	stainless steel 1.4521 Inoxidable 1.4521
Recommended load range for water temperature of 113°F Rango de carga recomendado a 113 °F de temperatura del agua	37 gal/day	Heat transfer medium Fluido portador térmico	Water Agua

*Max. system pressure under test conditions: 150 psi

Measurements (in inch) Dimensiones (en inch)

TO AVOID SERIOUS BODILY HARM AND/OR PROPERTY DAMAGE, ASSURE THAT THE WORKING PRESSURE OF THE SOLPAL SYSTEM DOES NOT EXCEED 60 PSI AT ANY TIME.



Dimensions in INCH

Mount on the long side. / Colóquese horizontal sobre el lado longitudinal

Solpal M

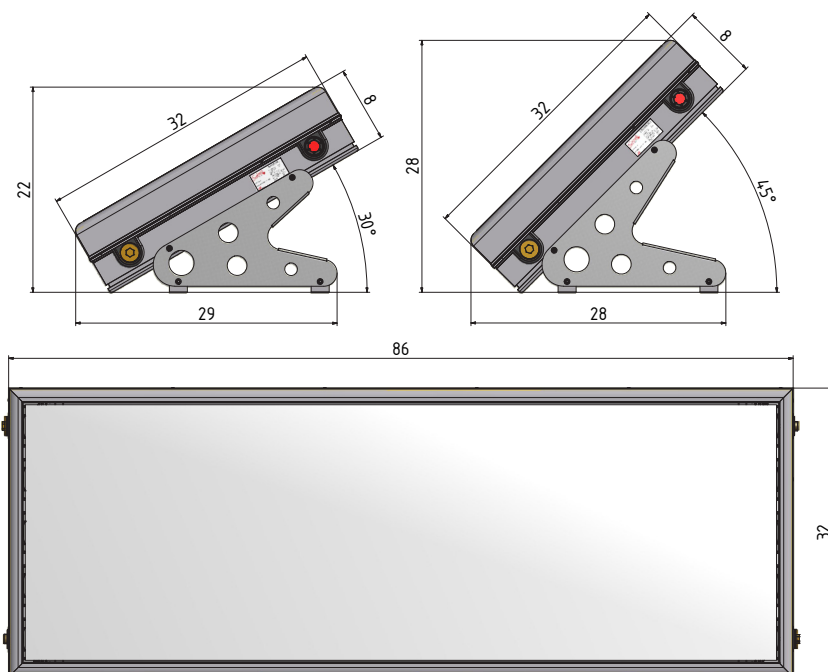
Technical Data Datos técnicos

Gross area Superficie bruta	19 ft ²	Net area Superficie neta	17 ft ²
Max. height, mount 45°/ 30° Altura máx., soporte de 45 °/ 30°	27.5/22.5 in	Collector outer dimensions Dimensiones exteriores del captador	86 x 32 in
Volume hot water storage tank Volumen del acumulador de agua caliente sanitaria	38 gal	Collector/incline angle Captador / Ángulo de inclinación	10° - 75 °
Weight (with mount, no water) Peso (con soporte, sin agua)	132 lbs	Max. working pressure* Sobrepresión máx. de servicio	60 psi 4 bar
Weight (with mount, with water) Peso (con soporte, con agua)	452 lbs	Cold/hot water connections Conexiones de agua fría/agua caliente sanitaria	3/4" male thread 3/4 RE
Thermal insulation - storage tank Aislamiento del acumulador	PUR (1,2 in)	Storage tank material Material del acumulador	stainless steel 1.4521 Inoxidable 1.4521
Recommended load range for water temperature of 113°F Rango de carga recomendado a 113 °F de temperatura del agua	24 gal/day	Heat transfer medium Fluido portador térmico	Water Agua

*Max. system pressure under test conditions: 150 psi

TO AVOID SERIOUS BODILY HARM AND/OR PROPERTY DAMAGE, ASSURE THAT THE WORKING PRESSURE OF THE SOLPAL SYSTEM DOES NOT EXCEED 60 PSI AT ANY TIME.

Measurements (in inch) Dimensiones (en inch)



Dimension in INCH

Specifications for water quality

Datos sobre la calidad del agua

Required water qualities*

Valores de agua recomendados

Water Substance Sustancias contenidas en el agua	Units of Measurement Unidad	Parameter Valor característico
pH value Valor de pH	-	7 - 9 (under observance of SI Index) 7 - 9 (bajo observación del índice SI)
Total hardness Dureza total	gpg	6 - 15
Chlorides Cloruro	ppm	< 250
Free chlorine Cloro libre	ppm	< 0,2
Sulfate Sulfato	ppm	< 100
Iron Hierro	ppm	< 0,5



***NOTE:**

TO AVOID SYSTEM FAILURE AND DAMAGES, ASSURE THAT THE WATER QUALITY FALLS WITHIN THE RANGE OF THE WATER VALUES AS WRITTEN ABOVE.

WARNING: YOUR WARRANTY IS VOID IF YOU OPERATE THE SOLPAL SYSTEM USING WATER WHICH DOES NOT FALL WITHIN THE RANGE OF THE WATER VALUES AS WRITTEN ABOVE.

Nota: Si la calidad del agua no se encuentra dentro de los valores límite indicados, Solpal no se debe instalar o se perderán los derechos de garantía en cuanto se instale Solpal.

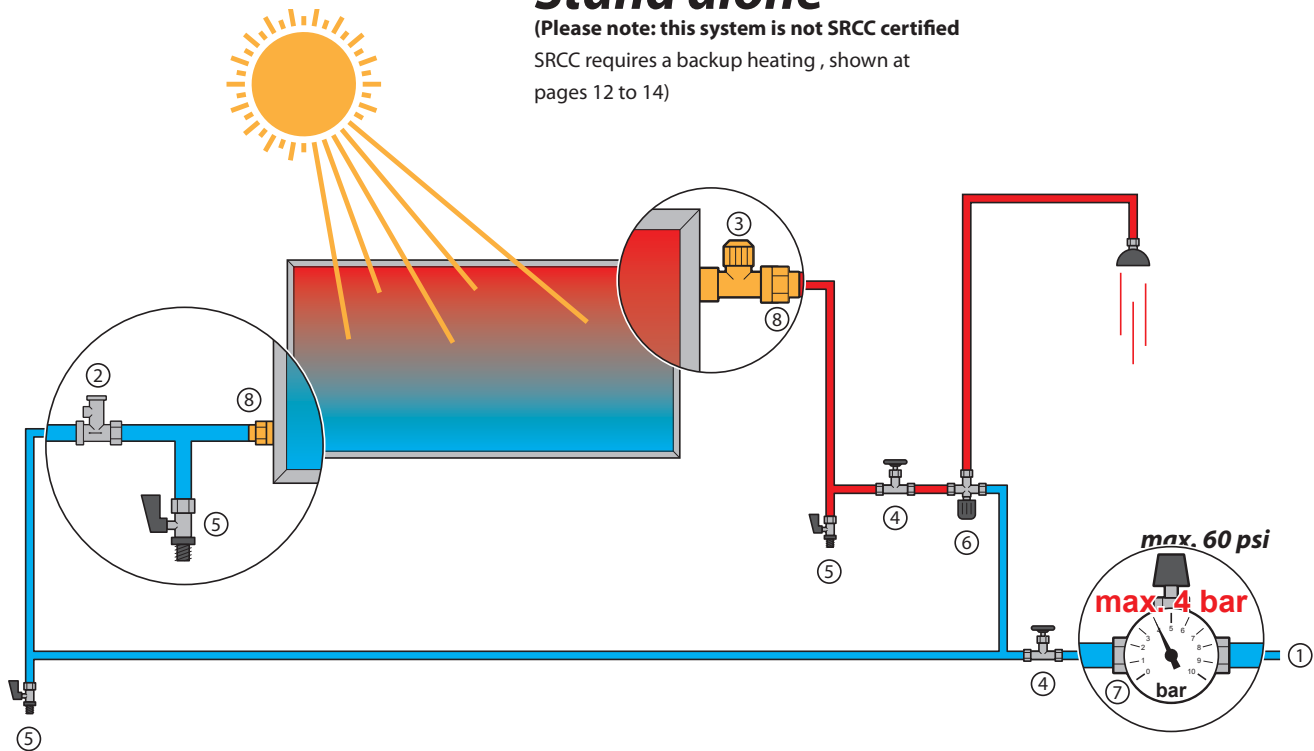
Hydraulic Connection

Esquema hidráulico

Stand alone

(Please note: this system is not SRCC certified)

SRCC requires a backup heating, shown at pages 12 to 14)



1*	<p>Collector loop piping: (material: copper, operating temperature 220°F or higher; diameter: not less than 3/4")</p> <p>Collector loop pipe insulation: the cold and hot lines shall be insulated with a flexible closed cell insulation with a minimum wall thickness of 1 inch.</p> <p>Colector de tubería circular: (material: cobre o plástico, que opera TEMPERATURA 220° F o más alta; diámetro no inferior a 3/4")</p> <p>Circuito del colector aislamiento de tuberías: las líneas frías y calientes deben estar aislados con un aislamiento de células flexibles cerrado con un espesor mínimo de 1 pulgada.</p>		
2	<p>Combined non-return/safety valve</p> <p>Válvula de seguridad</p>	6*	<p>Service water mixer (preset to max 140 °F) (Exposed components are maintained below 140 °F or insulated/isolated)</p> <p>Mezclador de agua caliente (preajustado a máx. 140 °F) (Los componentes expuestos a tráfico pública se mantienen por debajo de 140 ° F o aislado / aislados)</p>
3	<p>Ventilation Valve</p> <p>Soupape de ventilation</p>	7*	<p>Pressure reducing valve</p> <p>Válvula de sobrepresión</p>
4*	<p>Shut-off valve</p> <p>Grifo de vaciado</p>	8	<p>Flat sealing connection</p> <p>Conexión con junta plana</p>
5*	<p>Drain tap</p> <p>Grifo de vaciado</p>		<p>Please note that a thread adapter (see page 5, part 6.4) has to be used for American NPT threads in combination with Solpal connections and valves.</p>

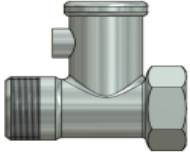
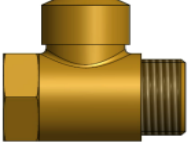
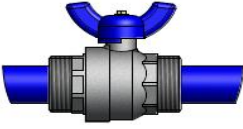
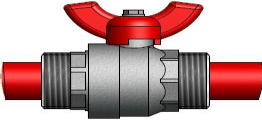
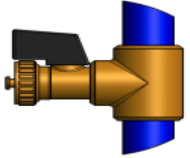

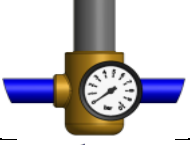
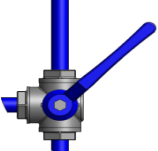

WARNING: TO AVOID SERIOUS BODILY INJURY OR DAMAGE, ALL COMPONENTS SHOWN IN THE DRAWING ABOVE MUST BE INSTALLED.
Es necesario montar los componentes representados en el esquema.



* **Material to be provided on-site**
Material a aportar por el cliente

Overview of components

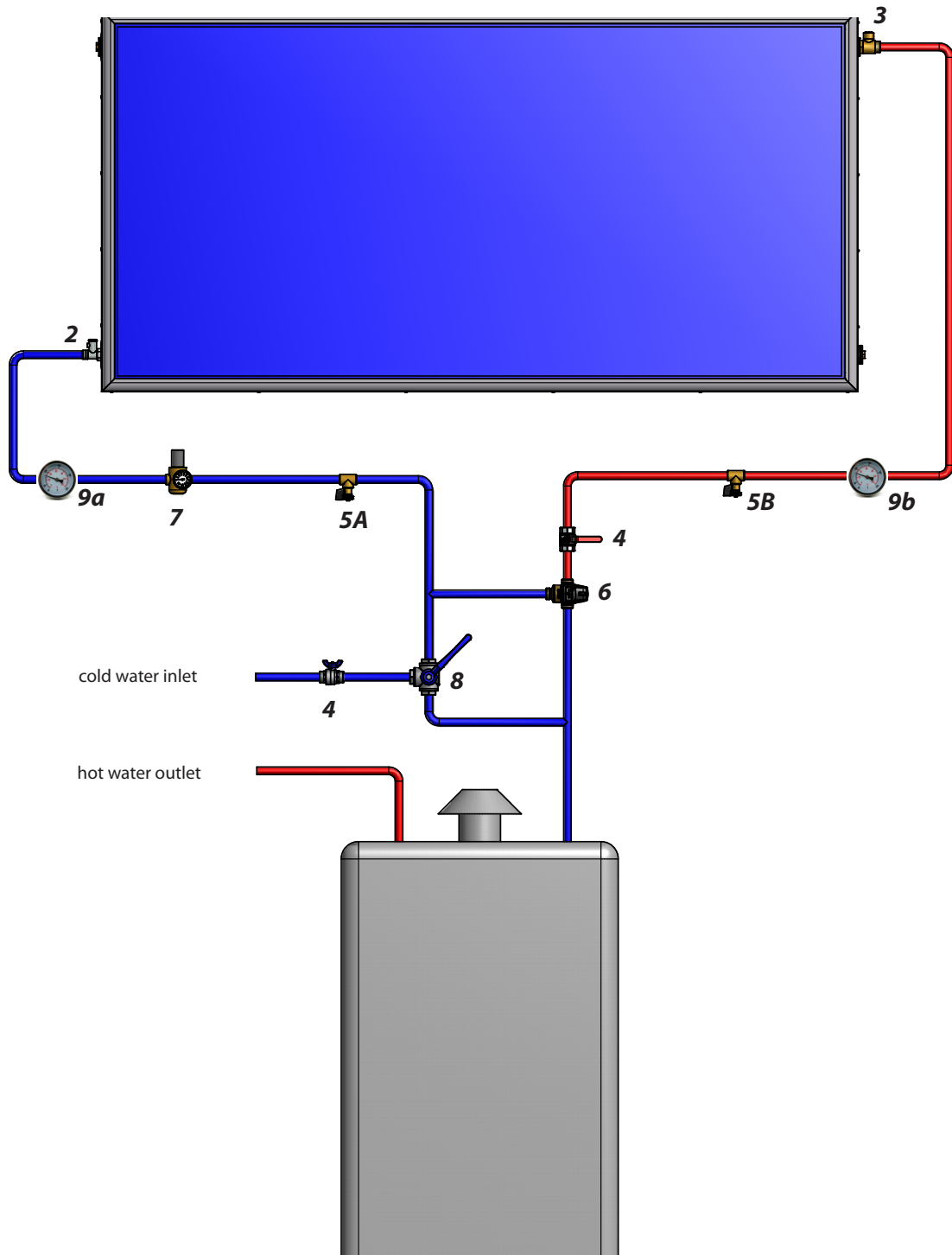
título de los componentes

2		<p>SAFETY VALVE</p> <p>This valve is a pressure release mechanisms used in pressure systems. It has a non-return valve integrated. The use of these valves is strictly required due to safety regulations. The safety valve opens at a pressure of 90 psi to reduce excess pressure.</p>	<p>Recommended safety valve with non-return for water heater:</p> <p>¾", opening at 90 PSI pressure UV- resistant, Material: hot molded BRASS UNI EN 12165CW617N, nickel plated surface max. working temperature: 250°F</p>
3		<p>VENTILATION VALVE</p> <p>This valve ensures that no vacuum is created when draining the water tank.</p> <p>In the event of negative pressure, the ventilation valve automatically supplies the system with air.</p>	<p>Recommended ventilation valve:</p> <p>¾", with DN15 solar neoperl backflow preventer, UV-resistant Material: brass max. working temperature: 250°F</p>
4		<p>COLD WATER SUPPLY ISOLATION VALVE</p> <p>This valve should stay open to allow water from the public water system to fill the Solpal water tank. When this valve is closed, the Solpal and the supplemental water heater are disconnected from the pressurized mains of the public water system.</p>	<p>Recommended ball valve:</p> <p>¾" fully ported Brass Ball Valve for heating, plumbing, and industrial applications max. safe operating pressure 600 psi temperature Range up to 250° F</p>
4		<p>HOT WATER SUPPLY ISOLATION VALVE</p> <p>Keep this valve open to assure that hot water can drain or escape in case of overheating. This valve can temporarily be closed for maintenance purposes.</p>	<p>Recommended ball valve:</p> <p>¾" fully ported Brass Ball Valve for heating, plumbing, and industrial applications max. safe operating pressure 600 psi temperature range up to 250° F</p>
5		<p>DRAIN VALVE</p> <p>This boiler drains are normally closed and capped. Use these valves to drain the Solpal. Attach a garden hose to both drain valves. Terminate the hoses in either a service basin or an appropriate spot outside the house. Open both boiler drains at once to drain the unit. WARNING: WATER MAY BE DISCHARGED AT VERY HIGH TEMPERATURES. TO AVOID SCALDING, EXERCISE MAXIMUM CAUTION WHEN DRAINING THE HOT WATER FROM THE SOLPAL. DO NOT POINT HOSE AT PERSONS OR PETS. ALWAYS DISCHARGE THE HOT WATER TO A SAFE PLACE.</p>	<p>Recommended drain valve:</p> <p>¾" unibody ball valve max. temperature: 250°F Standard Port Opening with hose union and cap delivered separately</p>
6		<p>THERMOSTATIC MIXING VALVE</p> <p>This valve controls the temperature of the warm water output. According to local standards the valve must have a scald safe function. Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.</p>	<p>Recommended mixing valve:</p> <p>ESBE VTA 322, 95 - 140°F, G 1", PN10</p> <p>External thread, ISO 228/1</p>
7		<p>PRESSURE REDUCING VALVE</p> <p>This valve should ensure a constant output pressure of 60 psi independent of the input pressure delivered from any source.</p>	<p>Recommended pressure reducing valve:</p> <p>Honeywell D06F-1A, G 1", brass, dezincification resistant</p> <p>Pressure setpoint range: 20 to 90 psi</p>
8		<p>3 WAY BALL VALVE</p> <p>This valve provides solar system cold water shut off without interrupting normal cold water service.</p>	<p>Recommended 3-way ball valve:</p> <p>Honeywell ¾" 3-way globe mixing valve, V5013N max. pressure: 240 psi Material: Brass temperature Range: up to 250°F threaded (IPS)</p>
9		<p>Thermometer</p> <p>To determine whether the solar system is working, it is necessary to install a thermometer.</p>	<p>Recommended thermometer:</p> <p>Temperature Range: 32 °F to 250 °F</p>

Hydraulic Connection

Esquema hidráulico

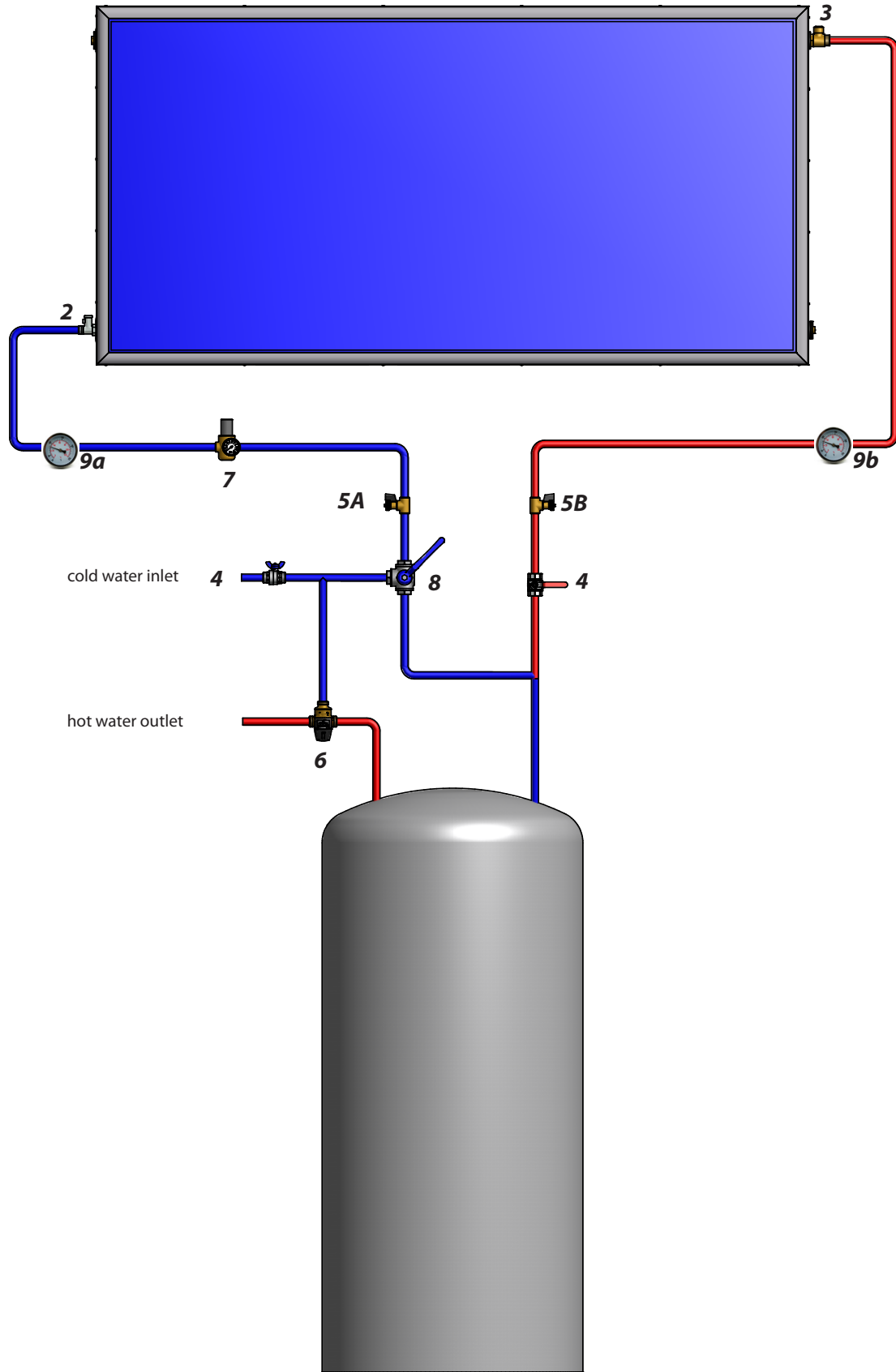
Pre-heater tankless gas



Auxilliary Water Heating Equipment

Auxilliary water heater must have adequate capacity, listed and labeled by an accredited listing organization

Pre-heater gas boiler



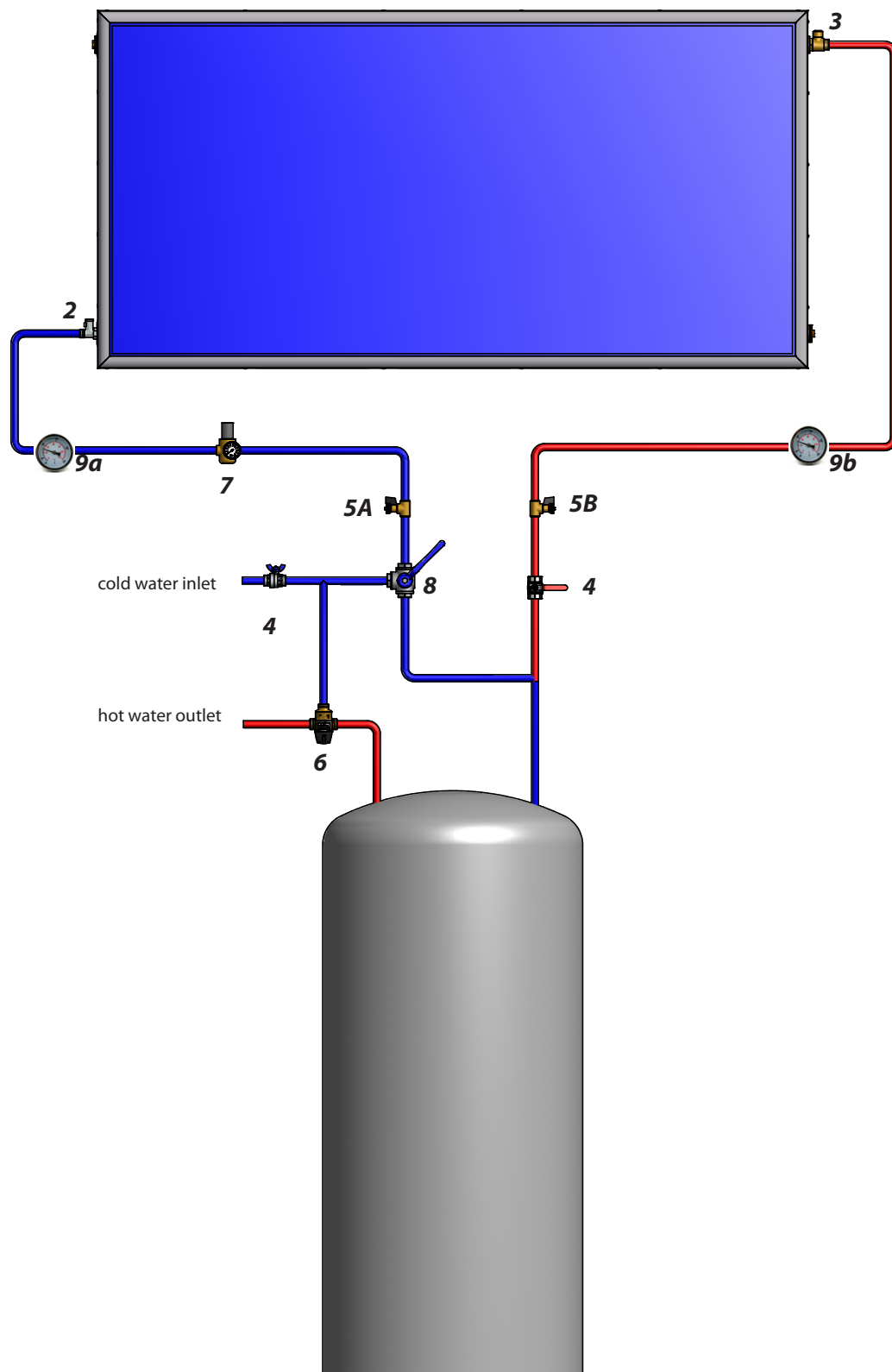
Auxilliary Water Heating Equipment

Auxilliary water heater must have adequate capacity, listed and labeled by an accredited listing organization

Hydraulic Connection

Esquema hidráulico

Pre-heater electric boiler



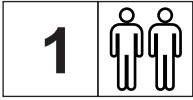
Auxilliary Water Heating Equipment

Auxilliary water heater must have adequate capacity, listed and labeled by an accredited listing organization

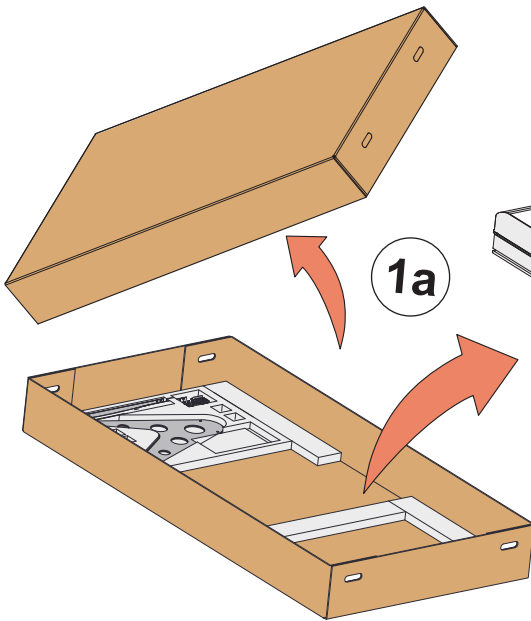
Flat Roof Installation

Montaje en tejado plano

i THE FOLLOWING STEPS MUST BE PERFORMED BY A LICENSED ROOFING CONTRACTOR

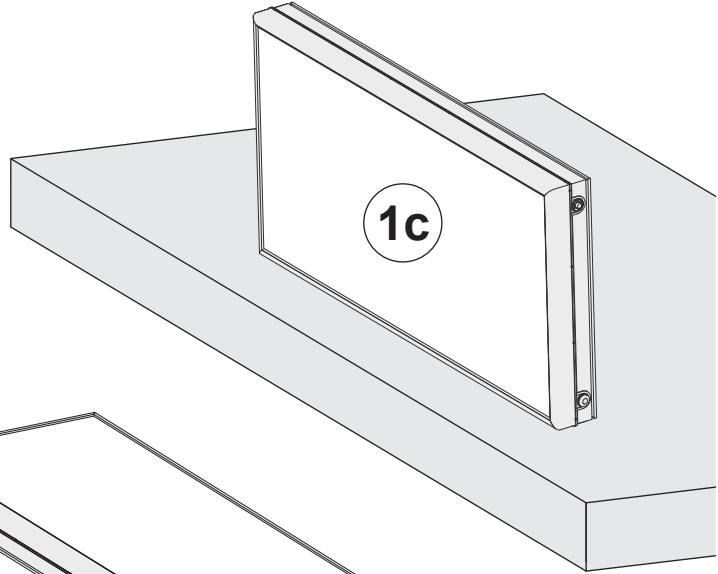


WARNING: TO AVOID BODILY HARM AND/OR PROPERTY DAMAGE, HAVE TWO PERSONS JOINTLY INSTALL THE PRODUCT. FRAGILE PRODUCT - HANDLE WITH CARE!



1a

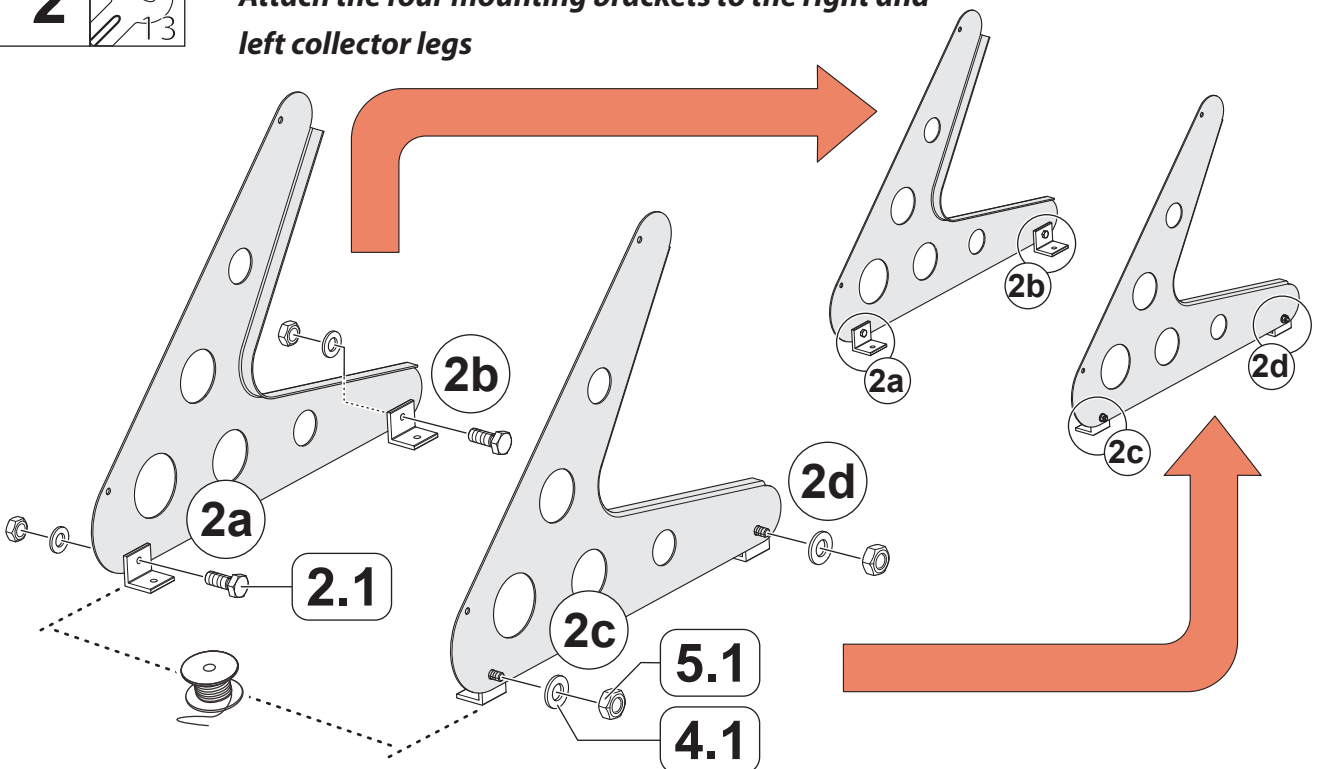
1b



1c



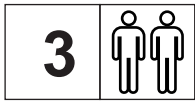
Attach the four mounting brackets to the right and left collector legs



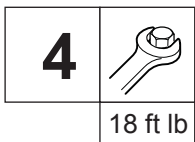
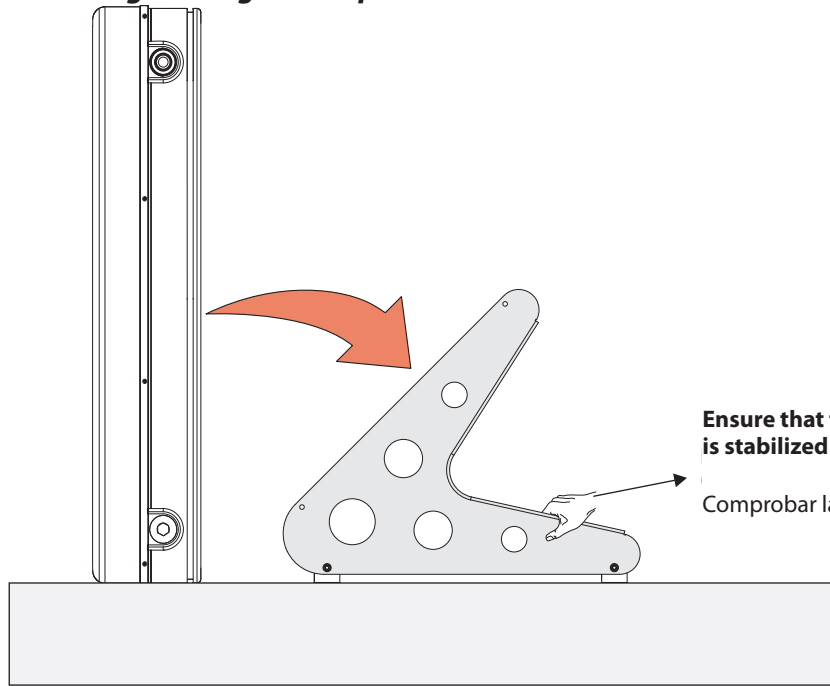
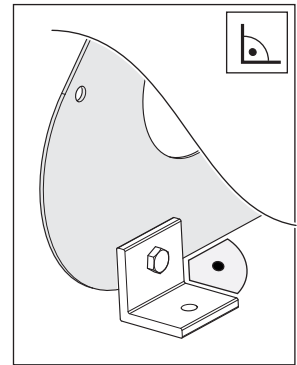
COLLECTOR LEGS MAY HAVE SHARP EDGES. HANDLE WITH CARE TO AVOID BODILY HARM AND/OR PROPERTY DAMAGE.

Flat Roof Installation

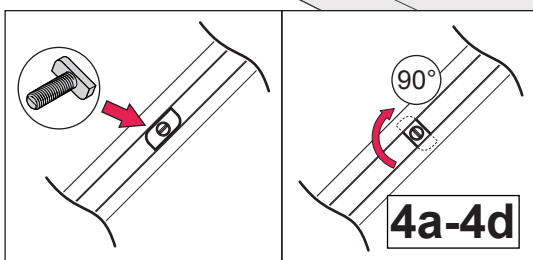
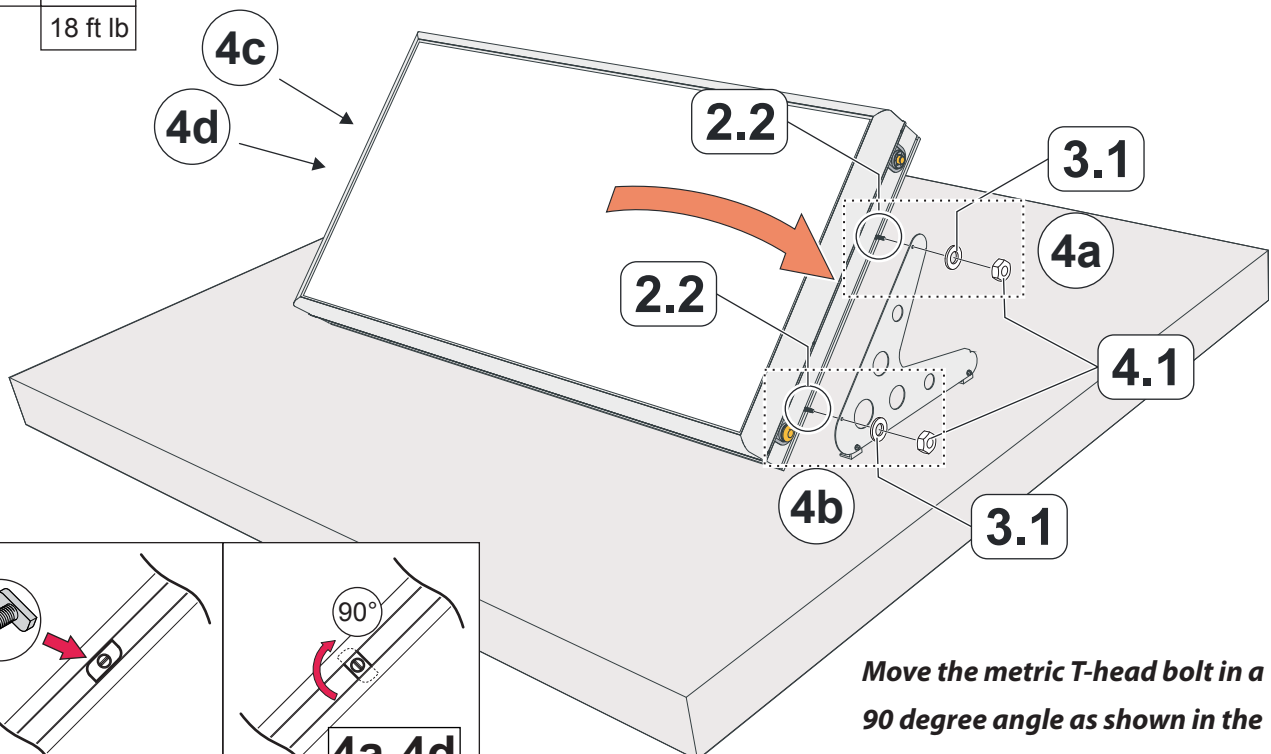
Montaje en tejado plano



Two persons are required for this procedure: One person should tilt the product slowly while the second person should attach the collector legs using the special metric T-head bolts.



Tighten all four bolts with a torque of 18 ft lb



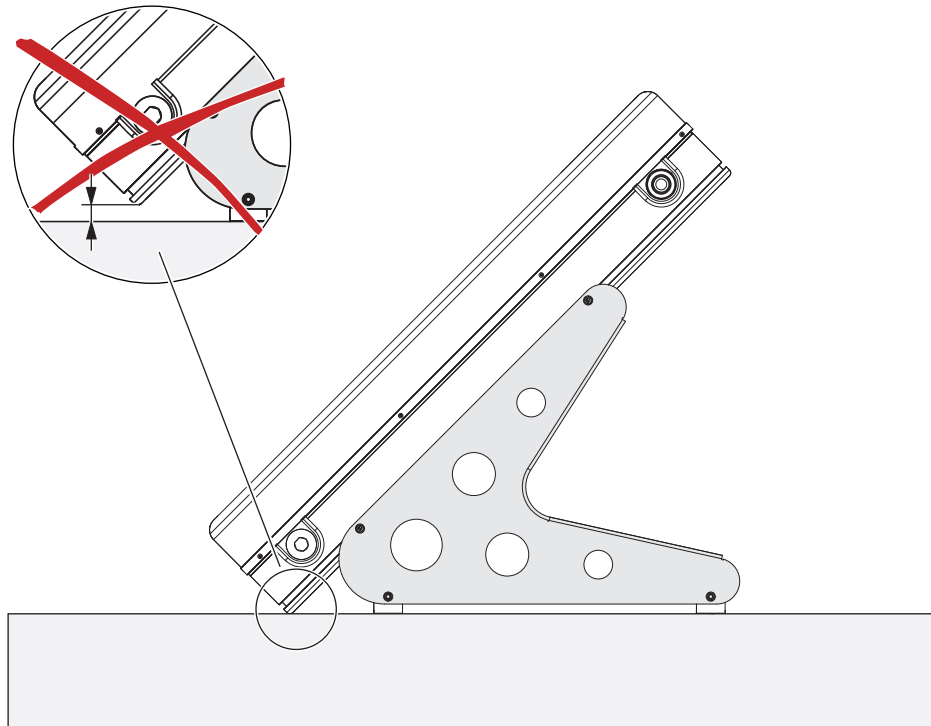
Move the metric T-head bolt in a 90 degree angle as shown in the diagram

Flat Roof Installation

Montaje en tejado plano

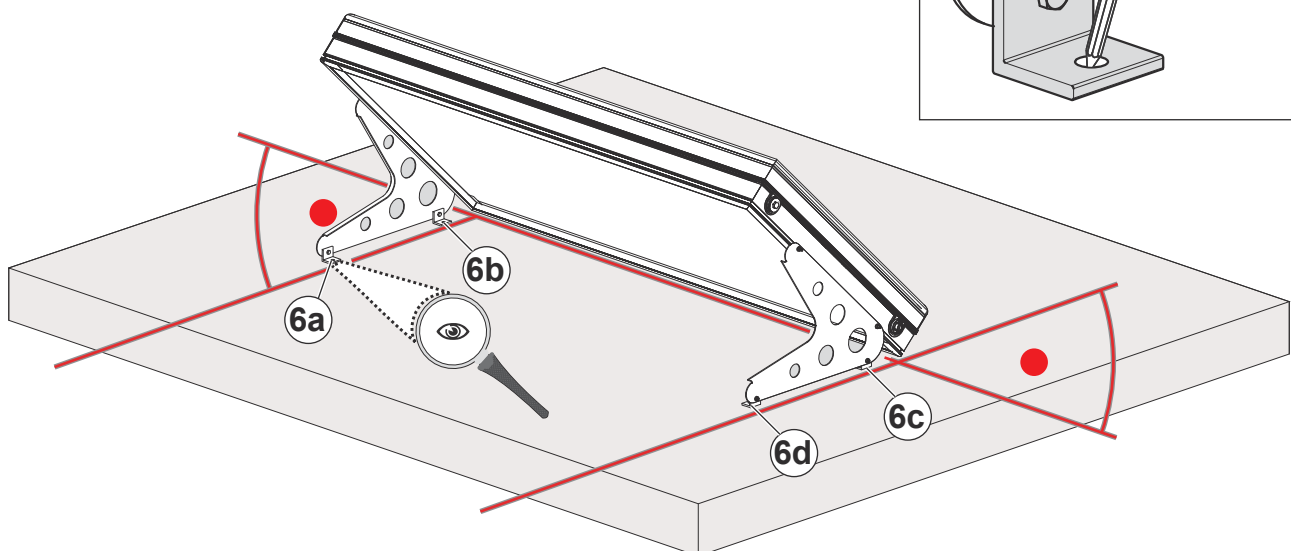
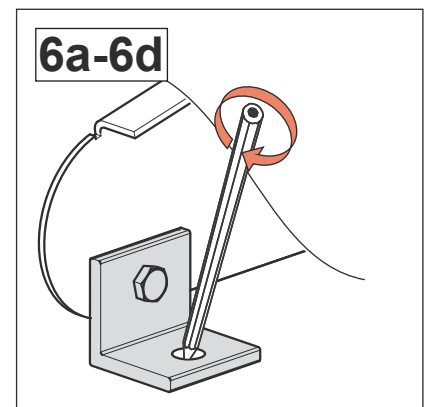
5 **i**

Make sure that the bottom edge of the product touches the surface for support



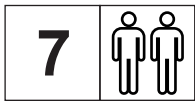
6

Mark the attachment points.
Make sure the collector legs are parallel.

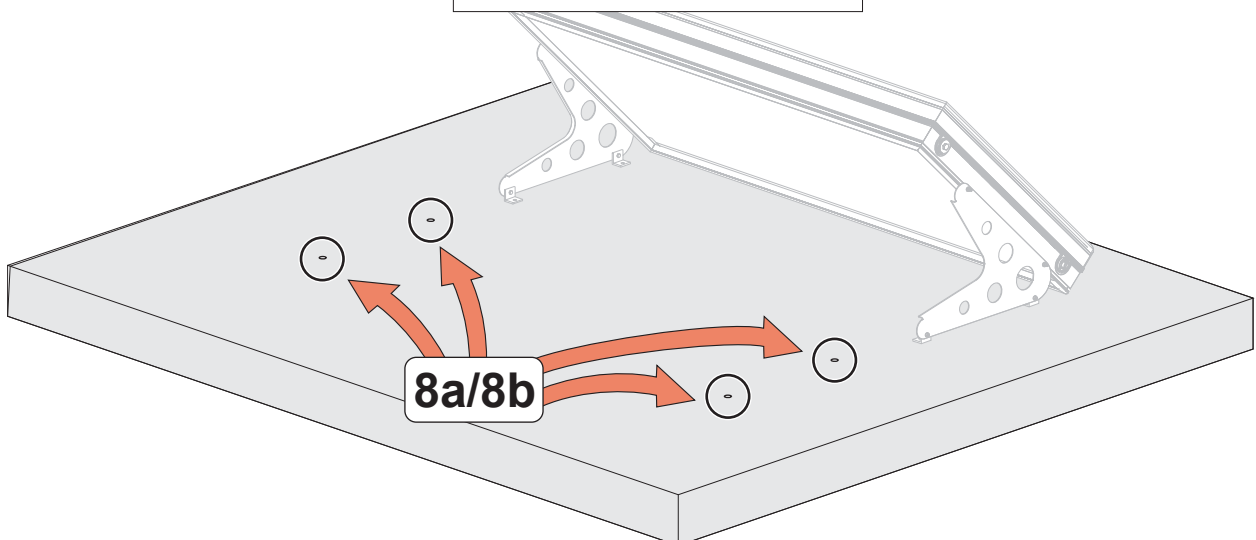
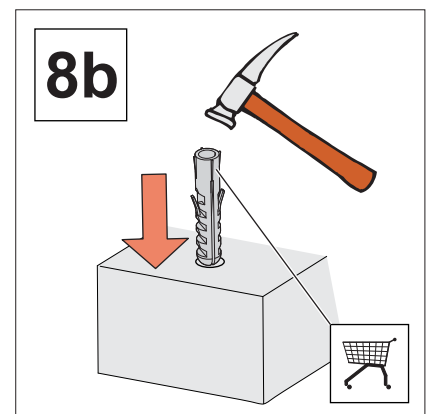
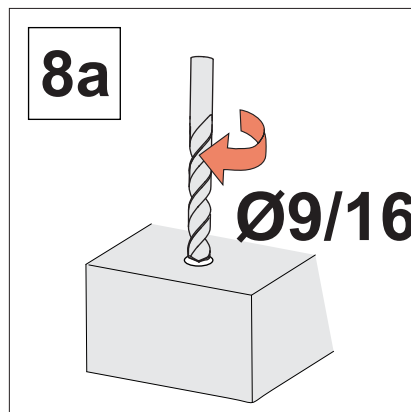
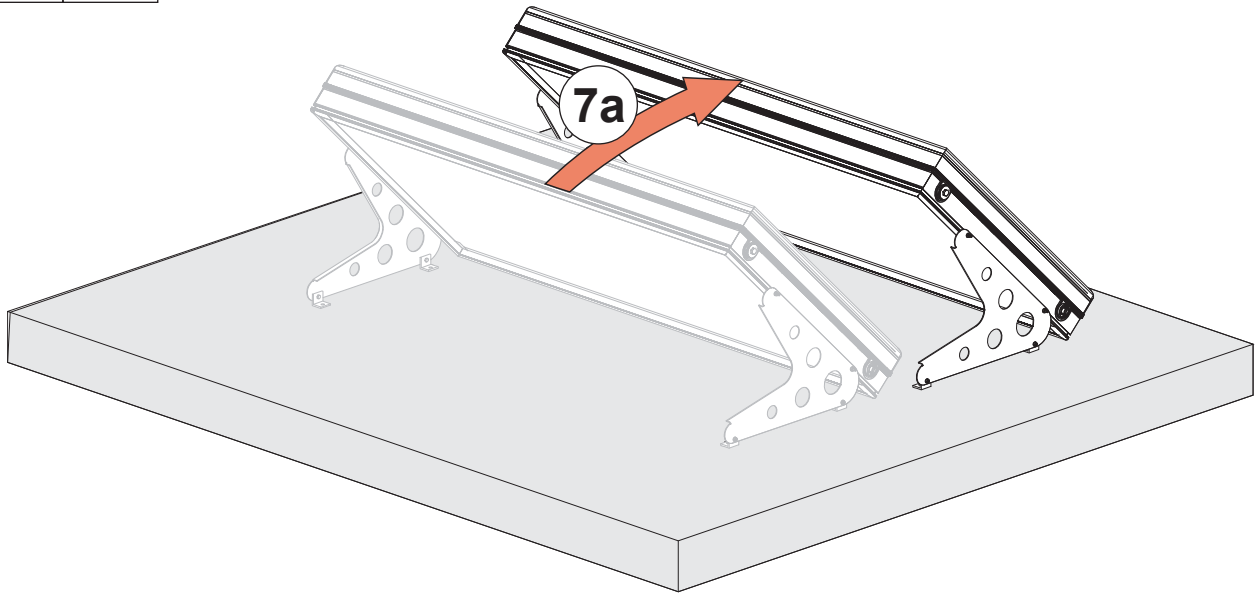


Flat Roof Installation

Montaje en tejado plano




Carefully move product. Drill holes. Put product back and attach to roof surface.




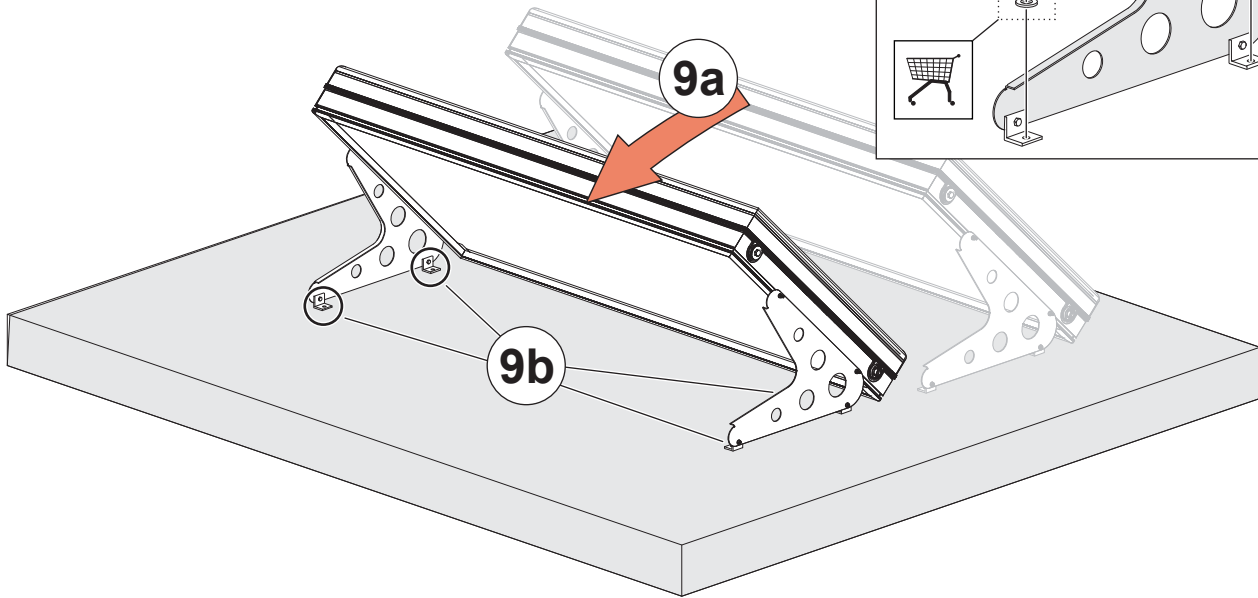
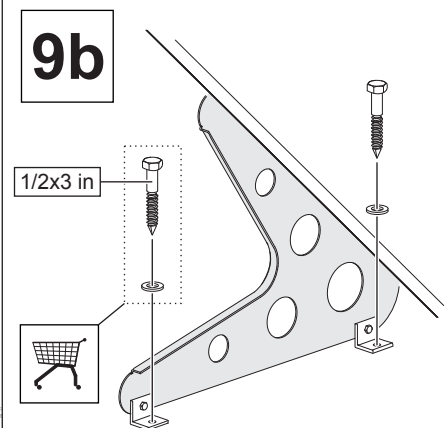
Flat Roof Installation


Montaje en tejado plano

9 
18 ft lb

Securely tighten the four bolts with a torque of 18 ft lb

9b 
1/2x3 in



10 

Connect the cold water inlet and fill the collector

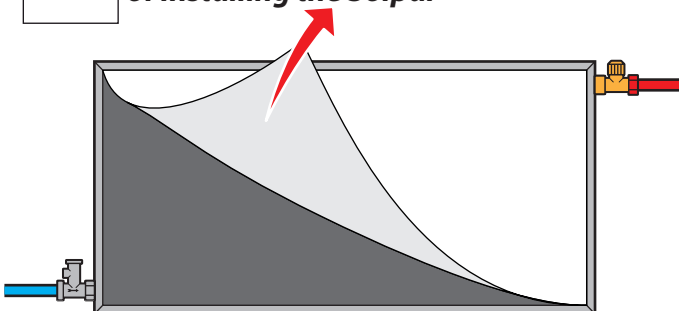


11

Connect the hot water outlet



12 Remove the foil within 14 days of installing the Solpal



13  **WARNING: TO AVOID DAMAGE, DO NOT INSULATE VALVES!**



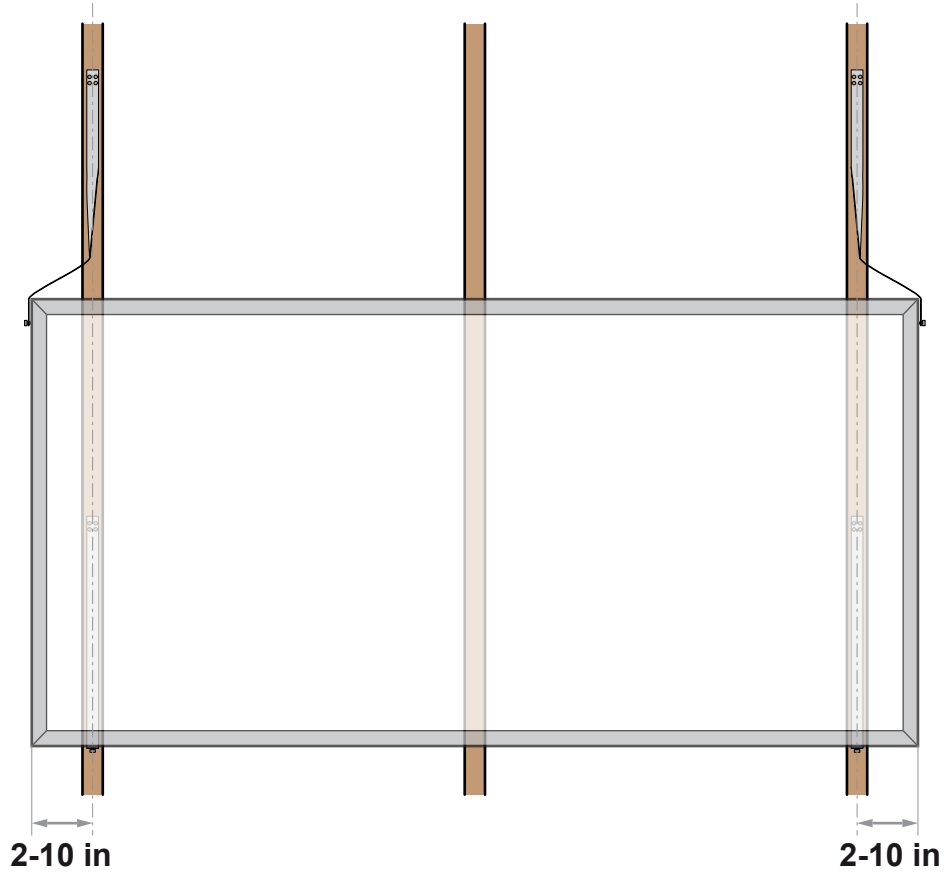
On-Roof Installation

Montaje sobre tejado



THE FOLLOWING STEPS MUST
BE PERFORMED BY A LICENSED
ROOFING CONTRACTOR

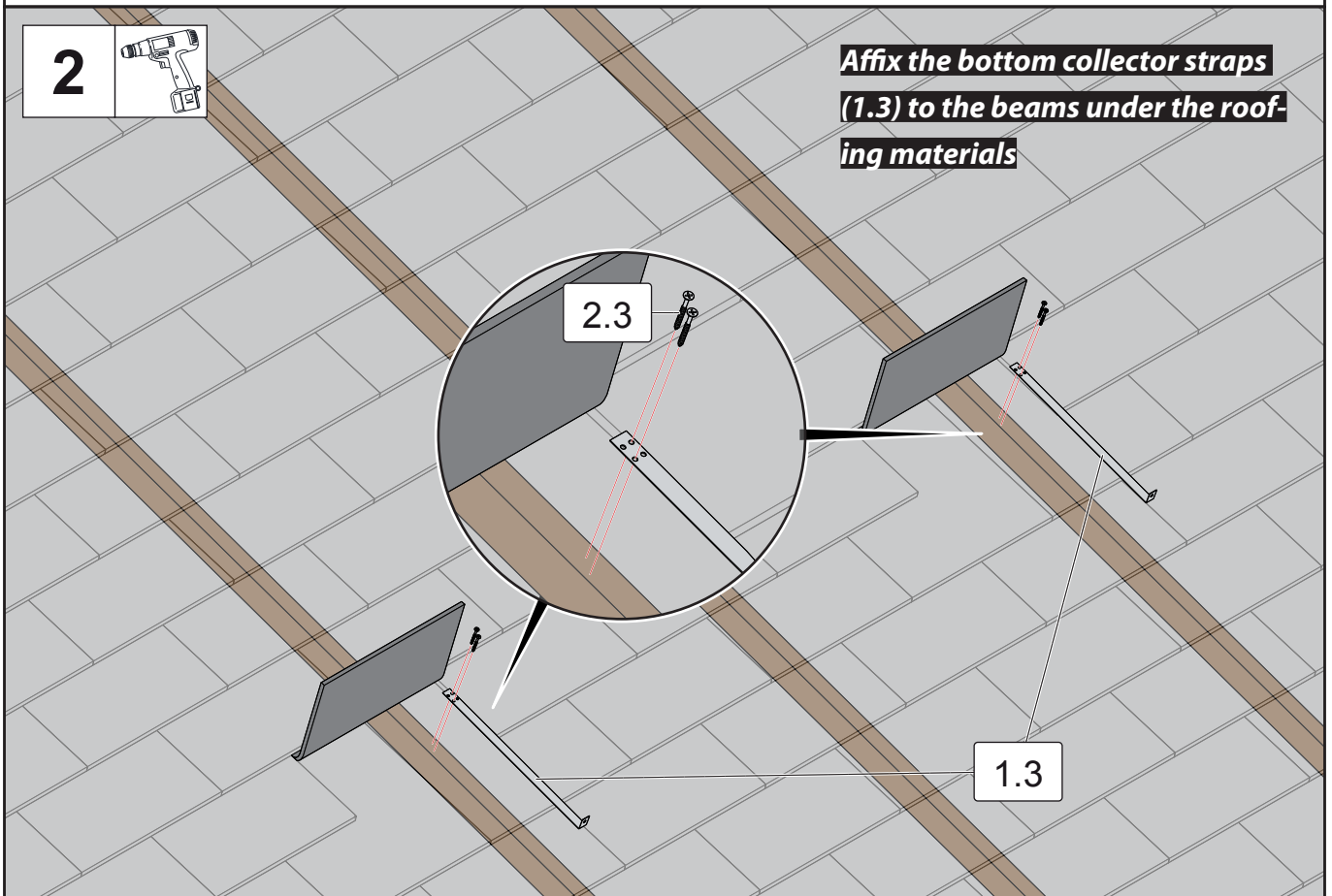
1



2

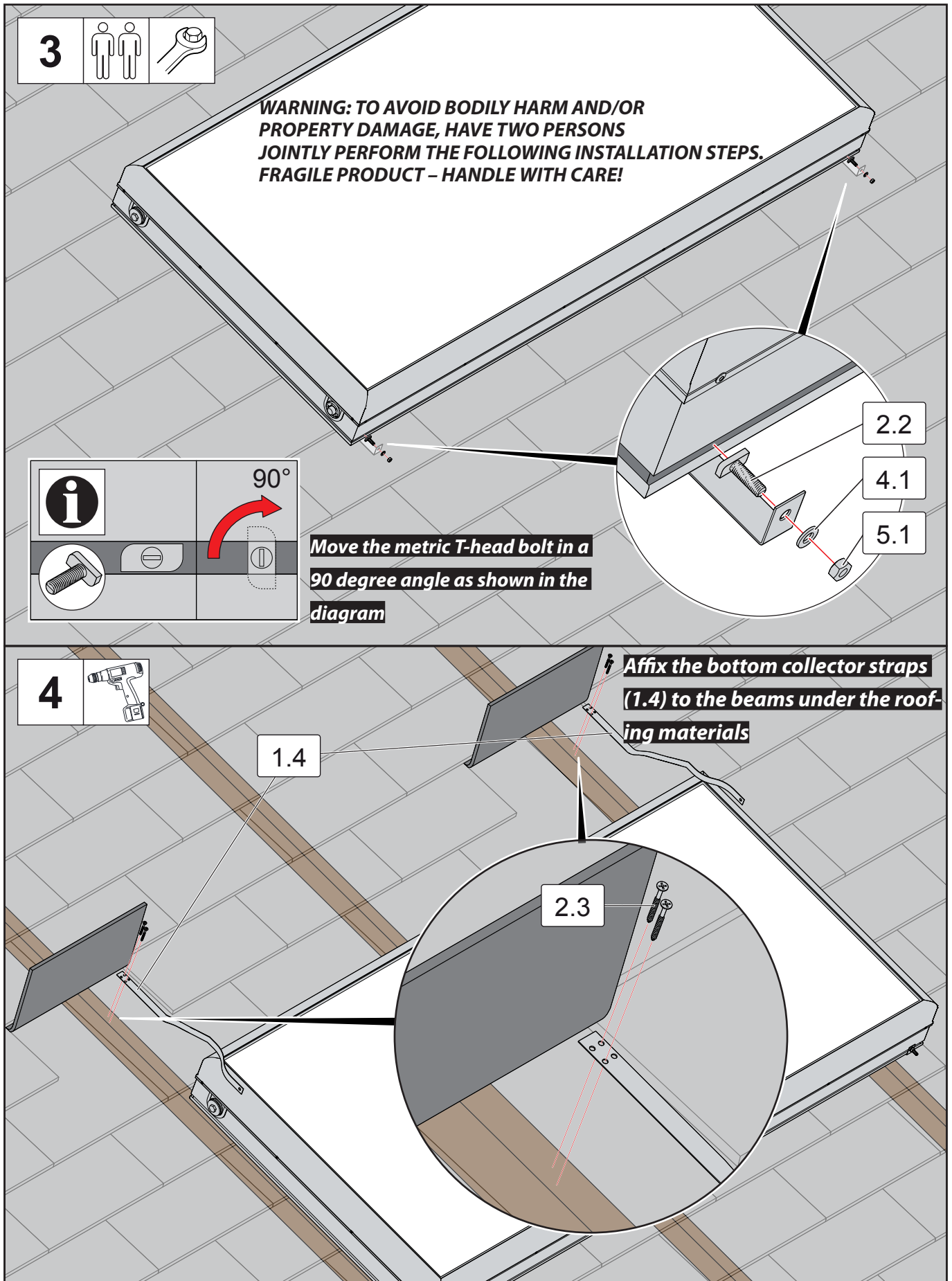


**Affix the bottom collector straps
(1.3) to the beams under the roof-
ing materials**



On-Roof Installation

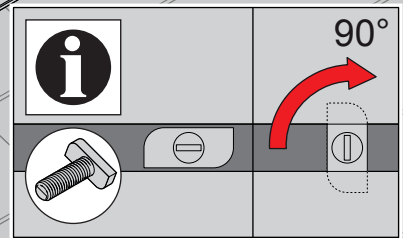
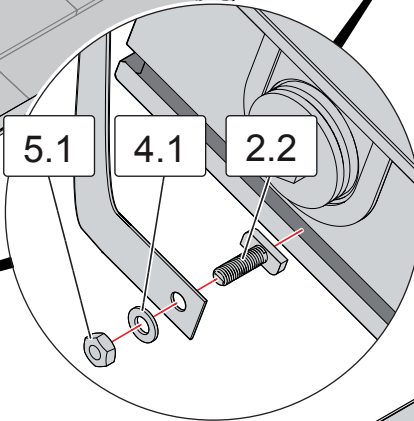
Montaje sobre tejado



5



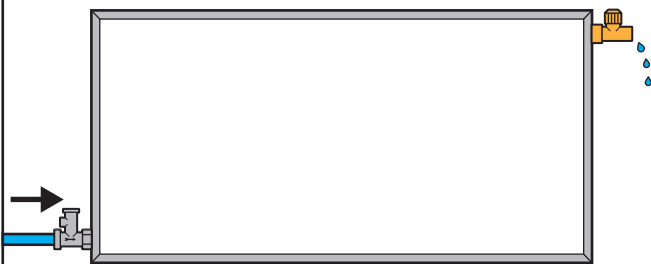
Move the metric T-head bolt in a 90 degree angle as shown in the diagram



6

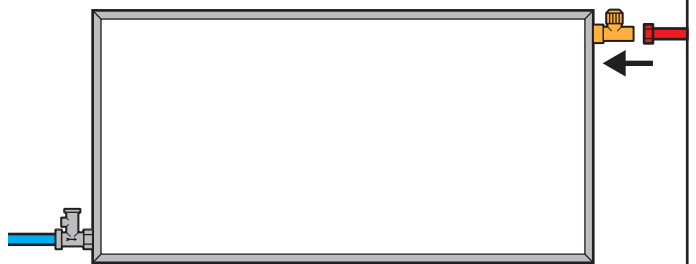


Connect the cold water inlet and fill the collector



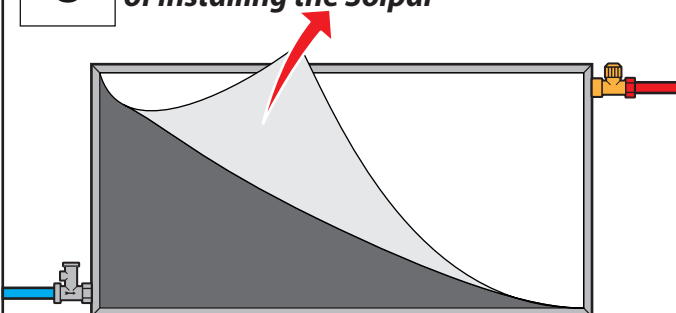
7

Connect the hot water outlet



8

Remove the foil within 14 days of installing the Solpal



9



WARNING: TO AVOID DAMAGE, DO NOT INSULATE VALVES!



Installation Instructions

General Installation and Transport Instructions

Installation, maintenance, cleaning and all other procedures listed in this manual shall only be performed by fully and properly instructed, qualified and authorized personnel, which means licensed installers, contractors, plumbers, HVAC and solar contractors. The materials supplied must be used for installation. Before any installation or operation of the Solpal system you have to familiarize yourself with and then comply with all national, state and local laws and regulations that apply.

Lift the Solpal system only by its frame and NEVER by any of the water connections or bolts. Incorrect lifting can damage the Solpal system. Always be careful to avoid any physical damage, especially to the solar glass, back wall and pipe connections. The manufacturer is not liable for structural damage or any other damage caused by improper handling or incorrect installation.

Flat roof installation

Installation shall only be carried out on roof surfaces or substructures with sufficient load bearing capacity. The structural load bearing capacity of the roof or substructure must be inspected, tested and approved in accordance with local and regional conditions by a structural engineer before the Solpal system can be installed.

During inspection the structural engineer must pay particular attention to the quality of the substructure for proper anchoring of the retaining screw connections used to secure the installation materials for the Solpal system. Inspection of the entire installation structure in accordance national and local regulations is particularly necessary in areas with heavy snowfall that can lead to increased load. When choosing the installation location, make sure that maximum loads are not exceeded by snowfall or wind forces.

There must be at a distance of at least 3 ft to the roof ridging or edge.

Note: Installing a Solpal system means changing the structure of an (existing) roof. Extended and inhabited lofts or inadequate minimum roof inclinations often require additional measures carried out on-site by a licensed roofing contractor e.g. sarking, to secure against water penetrating as a result of wind pressure and drifting snow. For larger systems, it is recommended to secure sarking on a separately mounted construction of steel bars. Using concrete ballast blocks and cable bracing as a means of securing system components protects the roof membrane from being perforated during installation. Rubber mats should be used if necessary to increase the friction between the roof and concrete ballast blocks and avoid damage to the roof membrane. For additional security against peak wind loads, steel cables of a suitable thickness (typically 0.2 in) are required.

On roof installation

Installation shall only be carried out on roof surfaces or substructures with sufficient load bearing capacity. The structural load bearing capacity of the roof or substructure must be tested in terms of local and regional conditions by a structural engineer before installing the Solpal system.

During inspection pay particular attention to the quality of the substructure for retaining screw connections used to secure the installation materials for the Solpal system. Inspection of the entire installation structure in accordance national and local regulations is particularly necessary in areas with heavy snowfall that can lead to increased load. When choosing the installation location, make sure that maximum loads are not exceeded by snowfall or wind forces.

The inspection should also take into account any particularities of the installation location, e.g. air jets, eddies etc. that can lead to increased load. When choosing the installation location, make sure that maximum loads are not exceeded due to snowfall or wind forces. There must be a distance of at least 3 ft to the roof ridging or edge. Structural members penetrated by solar system components must meet code. Building materials adjacent to solar components must not be not exposed to elevated temperatures.

Penetration through fire-rated assemblies do not reduce fire resistance below code.

Meet applicable codes and national Roofing Contractors Assoc. practices.

Do not impair enclosure function.

Do not allow vermin intrusion.

Connections and piping

The Solpal system shall be connected to the connection piping with a 3/4" external thread screw, flat-sealing. Before tightening the connection, check to make sure that seals are positioned properly. Use a torque wrench to tighten the connection and do not exceed a torque of 30 ft. lbs. It is best to use flexible connection elements to allow for heat expansion and contraction due to fluctuating temperatures. In the alternative, the use of suitable expansion bends and flexible piping is a way to compensate for the heat expansion and contraction due to temperature fluctuations.

Only use pipes suited for use in sanitary facilities and which can withstand temperatures of at least 212 °F. The Solpal system requires the use of all copper or brass fittings in the collector loop plumbing. Couplings rather than unions should be used to join the collectors to avoid leaks and fluid loss. Use only lead-free solder. **Note:** the piping supports must not compress the insulation. If this is not possible, insulate the piping supports as well.

To prevent dielectric corrosion, make sure that there is no connection between stainless or galvanized steel pipes and copper pipes.

Collector Loop Pipe Insulation

The collector loop cold water supply and hot return lines shall be well insulated with high quality flexible closed cell insulation to minimize heat loss. Use closed-cell tube insulation with a wall thickness of 3/4" such as Armaflex, Rubatex or Insul-tube in mild climates. In cold climates, where freezing occurs, use insulation with 1 1/2" wall thickness. Any above ground exterior pipe insulation is subject to UV degradation and must be jacketed, wrapped with aluminum foil tape, or painted with two coats of high quality water-based acrylic resin coating as supplied by the insulation manufacturer. To the extent possible, slide the insulation material over the pipe without cutting or taping. Seal all butt joints with contact adhesive. Do not use rigid polyethylene pipe insulation. Insulate the cold and hot water lines with flexible closed-cell tube insulation with a wall thickness of 1". Insulate the pipes with a suitable material of appropriate thickness in order to reduce heat loss and protect the pipes from freezing. Do not insulate the valves (see page 5, part 6.2 and 6.3).

Inclination of the Solpal system/General

Use the Solpal system only if it can be installed so that it has an inclination of at least 10° but no more than 75°. Protect the system connections from contaminants entering the system, like dust etc.

Warranty

The manufacturer provides a limited warranty for 10 years. Please refer to the enclosed Kyoto Clear Energy AG Liability Policy for details (see chapter appendix).

The solar energy system described by this manual, when properly installed and maintained, meets the minimum standards established by the SRCC. This certification does not imply endorsement or warranty of this product by SRCC.

How to obtain warranty

Pursuant to this Limited Warranty, Heliodyne, Inc. will, at its option, (i) repair the product using new or refurbished parts, or (ii) replace the product with a new or refurbished product. For purposes of this Limited Warranty, "refurbished" means a product or part that has been returned to its original specifications. In the event of a defect, these are your exclusive remedies. In case Heliodyne, Inc. replaces the product, the shape and color may vary slightly from the original unit.

To obtain warranty service, you must notify Heliodyne, Inc. within 90 days of discovery of the defect, and deliver the product, freight pre-paid, in either its original packaging or packaging affording an equal degree of protection to the Heliodyne, Inc. authorized service facility specified. A dated purchase receipt or bill of sale and a detailed error description are required. For specific instructions on how to obtain warranty service for your product, visit Heliodyne, Inc. Web Site: www.heliodyne.com or call the Heliodyne, Inc. Information Service Center, toll free number: 1.888.878.8750

This Limited Warranty shall apply to any repair, replacement part or replacement product for the remainder of the original Limited Warranty period. Any parts or product replaced under this Limited Warranty will become the property of Heliodyne, Inc..

This Limited Warranty does not cover Heliodyne, Inc. products sold AS IS or WITH ALL FAULTS or consumables or wearing parts (such as fuses or batteries). This Limited Warranty is invalid if the factory-applied serial number has been altered or removed from the product.

Operating Instructions



General

The Solpal system only offers unlimited performance when installed in frost-free zones. **If the temperature falls below 20°F for 18 consecutive hours or 10°F for 6 consecutive hours, the Solpal system must be drained and covered.** The Limited Warranty is void, if you do not drain and cover the Solpal under the temperature conditions described above. Appropriate insulation or pipe heat tracing must be provided on-site to prevent hot and cold water pipes from freezing. A thermal mixer, at which the required water temperature can be set, must always be installed at the hot water outlet.

The safety valve provided must be installed at the cold water connection of the Solpal system to limit positive pressure in the water circuit. The freeze tolerance limits are based upon an assumed set of environmental conditions. Extended periods of cold weather, including ambient air temperatures below the specified limit, may cause freezing in exposed parts of the system. It is the owner's responsibility to protect the Solpal system in accordance with the manufacturer's instructions if the air temperature is anticipated to approach the specified freeze tolerance limits.

Operating and Filling Instructions

The Solpal system is delivered with a protective film on the solar glass. Do not remove this film, which blocks the sunlight, until after the system has been filled with water. Otherwise the system components can be damaged because the unblocked sunlight heats up the empty system which lacks water to absorb the heat. Remove the protective film after the system has been filled, as it serves no other purpose. It is recommended that you fill the system within 2 weeks after installation, as otherwise residue from the film may adhere to the solar glass. Repeat filling and flushing until you are sure that all air has been removed from the system. Make sure that the maximum operating pressure stated on the type plate or in the installation instructions is not exceeded. Check to make sure that all safety components have been installed in accordance with the hydraulic diagram (in the chapter "Hydraulic Connection" in this manual) before you open the water supply and fill the system before initial start-up.

1. If possible, fill the collector in the morning before sun light heats up the absorber.
2. It is recommended that you fill the collector before you connect the return piping to the collector outlet, or open the pressure relief valve or open the boiler drain on the return line, or that you make in some other fashion sure that the system is vented to the atmosphere. Failure to follow these instructions could void the warranty and damage the system.
3. Set the flow control valves to the solar pre-heat position. Consult system valve position drawings. Close the boiler drain on the supply side to the solar loop piping. Open the boiler drain on the return side.
4. It is most important that the unit be vented to the atmosphere before and while being filled. It is recommended that the collector be filled before connecting the return piping to the collector outlet, or open the pressure relief valve or open the boiler drain on the return line, or in some other fashion make sure the unit is vented to the atmosphere. Failure to follow these instructions could void the warranty and damage the unit.
5. Open the cold water shut-off valve to fill the collector. Allow the air to be purged from the system through the open boiler drain on the return side of the solar loop piping.
6. Allow water to flow from the system for several minutes to flush out the collector and the piping.
7. Close the open boiler drain. **Carefully inspect the system for leaks.** Open the 2-way ball valve (#4 in the plumbing drawings).
8. Turn on a hot water faucet in the house to purge any remaining air from the system.
9. Make sure all FSEC, SRCC and manufacturer required labels are placed on the system. Consult FSEC or SRCC appendix for required labels and their placements.
10. For installation and operation of the instantaneous water heater, please follow the manufacturer operation manual

Instructions on Maintenance/Draining the System

Conduct an inspection of the Solpal system at least annually for any damage, leakage and soiling. The manufacturer recommends annual maintenance by a qualified specialist (licensed installer, contractor, plumber, HVAC and solar contractor). For maintenance or repair work on the Solpal system that requires the water content to be drained off, the entire system must be covered by a light-reflective cloth or foil to prevent damage by possible over heating. A original cover is available at your Solpal partner.

Please have a look at the diagram shown on page 10.

1. Close cold and hot water supply page 10 (No. 4)
2. Attach hoses to both boiler drains and terminate the hoses in either a service basin or an appropriate spot outside the house.
3. Open both boiler drains at the same time to drain the Solpal system (No. 5),



WARNING: WATER MAY BE DISCHARGED AT VERY HIGH TEMPERATURES OF UP TO OR EXCEEDING 212 DEGREES FAHRENHEIT. TO AVOID SCALDING, EXERCISE MAXIMUM CAUTION WHEN DRAINING THE HOT WATER FROM THE SOLPAL. DO NOT POINT HOSE AT PERSONS OR PETS. ALWAYS DISCHARGE THE HOT WATER TO A SAFE PLACE.

4. After all water has been drained from the collector, close both boiler drains (No. 5) and remove hoses

The conventional water heater will continue to provide hot water to the household when the Solpal system is by-passed and drained.

Operating

If the homeowner cannot get water to flow from the hot water lines, the problem is probably with the local water source and not the system. Check the cold water supply. To determine whether the Solpal system is working, observe the thermometer when hot water is being used in the house. The water returning from the Solpal on a sunny day (No. 9b on page 12) should be at least 15 K warmer than the water going up to the Solpal (No. 9a on page 12).



Don't touch the hot pipes!

Increasing Efficiency

To increase the efficiency of the Solpal system:

- If possible, use hot water in the evening. For example take showers in the evening rather than during the day.
- The performance of Solpal system in the Northern Hemisphere is optimized when the Solpal is mounted facing true south. Performance, however, suffers very little when the Solpal is oriented no more than 45° East or 45° West of True South.
- The collector should be in unobstructed direct sunlight between 9:00 a.m. and 3:00 p.m. on any day of the year.

System operating Pressure

The maximum operating pressure in the water circuit must be limited to 60 psi at all times. Install a pressure reducer if necessary.

Leaving the system unused

If the Solpal system is to be unused for a long period of time, such as absence due to vacation, it is best to leave the Solpal system filled with water and in the solar pre-heat mode. If unused for long periods of time during winter months in freezing climates, it is best to drain the collector and the solar loop piping. The entire system must be covered by a light-reflective cloth or foil to prevent damage due to over heating. A original cover is available at your Solpal partner.

Indicaciones para el montaje

Indicaciones generales y de transporte

El montaje, mantenimiento y limpieza sólo deben ser realizados por empresas especializadas. Todas las indicaciones de estas instrucciones van dirigidas exclusivamente a tales empresas especializadas. De forma general, el montaje se debe realizar con el material suministrado. Infórmese antes del montaje y uso del Solpal sobre las normas y directivas locales vigentes al respecto. El sistema de agua caliente sanitaria no se debe levantar tomándolo por las conexiones ni por las uniones de rosca. Evite los golpes y los efectos mecánicos en el sistema de agua caliente sanitaria, especialmente en el vidrio solar, en la pared posterior y en las conexiones de los tubos. Si el montaje no se realiza correctamente, el fabricante no se responsabilizará por deterioros en la obra, en los aparatos, etc.

Estática - Tejado plano

El montaje se debe realizar sólo sobre superficies de tejado o subestructuras con suficiente capacidad de carga. Siempre con la ayuda de un especialista en cálculos estáticos, el cliente debe comprobar la capacidad de carga del tejado o de la subestructura en cuanto a las circunstancias locales y regionales, antes de montar el Solpal. Al hacerlo, se debe prestar especial atención a la calidad de la subestructura en lo relativo a la durabilidad de las uniones atornilladas para la fijación de dispositivos de montaje del Solpal. La comprobación de la estructura total conforme según las disposiciones vigentes específicas de cada país es especialmente necesaria en zonas de mucha nieve o en zonas con altas velocidades del viento. Se deben tener también en cuenta las características específicas del lugar de instalación (viento seco, chorros de aire, formación de remolinos, etc.) que pueden dar lugar a una carga mayor. A la hora de elegir el lugar de montaje, se debe tener en cuenta que las cargas máximas no se deben superar ni por la fuerza de la nieve, ni por la del viento. La distancia a las cumbreras/bordes del tejado debe ser de 3 ft como mínimo.

Nota: El montaje de Solpal supone la intervención en un tejado (existente), especialmente en el caso de áticos acondicionados y habitados o cuando no se alcanzan las pendientes mínimas del tejado, el cliente deberá tomar medidas adicionales (p. ej., membranas protectoras bajo la cubrición del tejado) para asegurar la cubrición contra la penetración de agua provocada por la presión del viento y la nieve volátil. Para la instalaciones de mayor tamaño se recomienda el montaje sobre una construcción portadora propia de perfiles de acero. La variante de fijación con bloques de lastre de hormigón y arriostamiento de cable posibilita el montaje sin necesidad de perforar la cubierta del tejado. A fin de aumentar la fricción estática entre el tejado y los bloques de lastre de hormigón, así como para evitar deterioros en la cubierta del tejado, se deben utilizar, de ser necesario, mantas de asiento de goma. Para la absorción de cargas producidas por ráfagas de viento es necesaria una fijación adicional con cables de acero del grosor correspondiente (media de 0,2 in).

Estática - Techados inclinados

El montaje se debe realizar sólo sobre superficies de tejado o subestructuras con suficiente capacidad de carga. Siempre con la ayuda de un especialista en cálculos estáticos, el cliente debe comprobar la capacidad de carga del tejado o de la subestructura en cuanto a las circunstancias locales y regionales, antes de montar el Solpal. Al hacerlo, se debe prestar especial atención a la calidad de la subestructura en lo relativo a la durabilidad de las uniones atornilladas para la fijación de dispositivos de montaje del Solpal. La comprobación de la estructura total del sistema conforme según las disposiciones vigentes específicas de cada país es especialmente necesaria en zonas de mucha nieve o en zonas con altas velocidades del viento. Se deben tener también en cuenta las características específicas del lugar de instalación (viento seco, chorros de aire, formación de remolinos, etc.) que pueden dar lugar a una carga mayor. A la hora de elegir el lugar de montaje, se debe tener en cuenta que las cargas máximas no se deben superar ni por la fuerza de la nieve, ni por la del viento. La distancia a las cumbreras/bordes del tejado debe ser de 3 ft como mínimo.

Conexiones

Solpal está equipado con una unión roscada de 3/4" RE y se debe unir a la tubería de conexión mediante junta plana. Antes de apretar, compruebe la correcta colocación de las juntas, utilice una llave dinamométrica y no sobrepase el par de 30 lb/ft. En el caso de que no se hayan previsto mangueras flexibles como elementos de unión, al conectar las tuberías se deben tomar medidas para compensar la dilatación por calor causada por las fluctuaciones de temperatura (p. ej., arcos de dilatación, tuberías flexibles). Utilice tubos adecuados para el ámbito sanitario y que resistan temperaturas de 212 °F como mínimo. Aísle los tubos con un material adecuado de suficiente grosor para reducir las pérdidas por calor y para protegerlos contra las heladas.

Inclinación del Solpal / Generalidades

Solpal es adecuado para pendientes entre 10 ° y 75 °. Las conexiones del sistema se deben proteger contra la suciedad, como la entrada de polvo, etc.

Garantía

La garantía se extiende a 5 años siempre que se pueda demostrar que los trabajos de mantenimiento han sido correctamente realizados por una empresa especializada. Para poder disfrutar de los derechos de la garantía, es condición también que el montaje lo haya realizado una empresa especializada siguiendo estrictamente las instrucciones. El plazo de garantía comienza con la entrega al socio contractual o con la aceptación por parte del mismo. La calidad del agua varía notablemente de una región a otra, por lo que en algunos casos la corrosión o la cal pueden suponer un problema. El fabricante no puede aceptar reclamaciones de garantía por la corrosión ocasionada por el agua. Debemos subrayar aquí que el establecimiento de una determinada calidad del agua no constituye ninguna garantía contra la corrosión - se debe ver como un auxiliar para evitar aplicaciones críticas del agua. En el capítulo "Información sobre la calidad del agua" de este manual encontrará una sinopsis de los parámetros críticos del agua y de sus valores límite recomendados.

Generalidades

El Solpal se puede utilizar sin restricciones sólo en zonas libres de heladas. Si las temperaturas bajan Si la temperatura cae por debajo de 20 ° F durante 18 horas consecutivas o 10 ° F durante 6 horas consecutivas, el sistema Solpal debe ser drenado y cubierto. A la salida de agua caliente se debe postconectar siempre un mezclador térmico en el que se pueda ajustar la temperatura deseada del agua caliente. Para limitar la sobrepresión en el circuito de agua, se debe montar la válvula de seguridad suministrada en la conexión de agua fría del Solpal.

Notas sobre la puesta en servicio y el llenado

Solpal se suministra con una lámina protectora en el vidrio. Ésta se debe retirar sólo después de haber llenado la instalación para evitar un deterioro de los componentes en estado vacío por la posible formación de calor. Después de llenar el sistema, la lámina protectora se debe retirar ya que, de otro modo, el sistema no puede funcionar. Se recomienda llenar el sistema en las 2 semanas siguientes al montaje para evitar que en el vidrio queden restos de lámina. El llenado y el lavado se deben realizar hasta que quede garantizado que el sistema está completamente purgado de aire. No se debe superar la presión de servicio indicada en la placa de características o en las instrucciones de montaje. Antes de la puesta en servicio se debe comprobar si todos los componentes de seguridad se han instalado en conformidad con el esquema hidráulico (en el capítulo "Conexión hidráulica" de este manual) de las instrucciones de montaje antes de abrir la entrada de agua para llenar el acumulador. Se recomienda esperar 2 semanas desde el primer llenado del sistema antes de utilizar el agua como agua potable.

Notas sobre el mantenimiento y el vaciado del sistema

Solpal se debe someter anualmente a un control óptico en cuanto a diversos daños, estanqueidad y suciedad, recomendándose también un mantenimiento anual por parte de una empresa especializada. A la hora de realizar trabajos de mantenimiento o reparación en el Solpal que requieran vaciar el contenido de agua, todo el sistema se deberá cubrir con un textil o lámina que no deje pasar la luz para evitar el deterioro del sistema por la posible formación de calor.

Aumento de la eficiencia

Para aumentar la eficiencia del Solpal, se deben observar los siguientes puntos:

- Consumir el agua caliente preferentemente por la noche (p. ej., en la ducha).

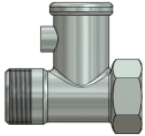
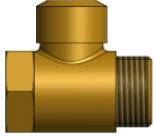

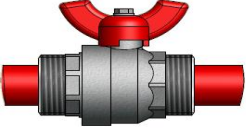
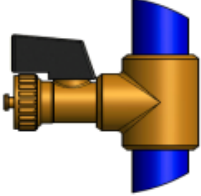
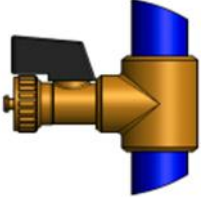
Presión de servicio

La presión de servicio máxima en el circuito de agua no debe superar los 4 bares, en caso necesario, se debe utilizar un reductor de presión.

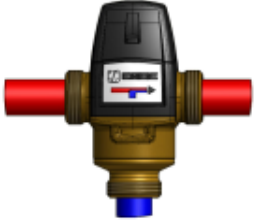
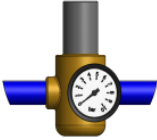

Appendix / apéndice

Labels

The following labels/tags must be attached to the relevant valves in the systems in order for it to be considered OG-300 compliant. The page should be laminated, each label cut from it, punched in the margin at the left hand side and affixed to the appropriate valve with a wire tie, plastic ties are inappropriate due to high operating temperatures and UV-radiation. Failure to affix these labels will void the SRCC OG-300 system certification.

2		<p align="center">SAFETY VALVE</p> <p>This valve is a pressure release mechanisms used in pressure systems. It has a non-return valve integrated. The use of these valves is strictly required due to safety regulations. The safety valve opens at a pressure of 90 psi to reduce excess pressure.</p>
3		<p align="center">VENTILATION VALVE</p> <p>This valve ensures that no vacuum is created when draining the water tank.</p> <p>In the event of negative pressure, the ventilation valve automatically supplies the system with air.</p>
4		<p align="center">COLD WATER SUPPLY ISOLATION VALVE</p> <p>This valve should stay open to allow water from the public water system to fill the Solpal water tank. When this valve is closed, the Solpal and the supplemental water heater are disconnected from the pressurized mains of the public water system.</p>
4		<p align="center">HOT WATER SUPPLY ISOLATION VALVE</p> <p>Keep this valve open to assure that hot water can drain or escape in case of overheating. This valve can temporarily be closed for maintenance purposes.</p>
5		<p align="center">DRAIN VALVE</p> <p>This boiler drains are normally closed and capped. Use these valves to drain the Solpal. Attach a garden hose to both drain valves. Terminate the hoses in either a service basin or an appropriate spot outside the house. Open both boiler drains at once to drain the unit. WARNING: WATER MAY BE DISCHARGED AT VERY HIGH TEMPERATURES. TO AVOID SCALDING, EXERCISE MAXIMUM CAUTION WHEN DRAINING THE HOT WATER FROM THE SOLPAL. DO NOT POINT HOSE AT PERSONS OR PETS. ALWAYS DISCHARGE THE HOT WATER TO A SAFE PLACE.</p>
5		<p align="center">DRAIN VALVE</p> <p>This boiler drains are normally closed and capped. Use these valves to drain the Solpal. Attach a garden hose to both drain valves. Terminate the hoses in either a service basin or an appropriate spot outside the house. Open both boiler drains at once to drain the unit. WARNING: WATER MAY BE DISCHARGED AT VERY HIGH TEMPERATURES. TO AVOID SCALDING, EXERCISE MAXIMUM CAUTION WHEN DRAINING THE HOT WATER FROM THE SOLPAL. DO NOT POINT HOSE AT PERSONS OR PETS. ALWAYS DISCHARGE THE HOT WATER TO A SAFE PLACE.</p>



<p>6</p>		<p>THERMOSTATIC MIXING VALVE</p> <p>This valve controls the temperature of the warm water output. According to local standards the valve must have a scald safe function.</p> <p>Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.</p>
<p>7</p>		<p>PRESSURE REDUCING VALVE</p> <p>This valve should ensure a constant output pressure of 60 psi independent of the input pressure delivered from any source.</p>
<p>8</p>		<p>3 WAY BALL VALVE</p> <p>This valve provides solar system cold water shut off without interrupting normal cold water service.</p>



Appendix / apéndice

Freeze Protection:

The following labels must be attached to the relevant valves in the systems in order for it to be considered OG-300 compliant. The page should be laminated, each label cut from it, punched in the margin at the left hand side and affixed to the appropriate valve with a wire tie, plastic ties are inappropriate due to high operating temperatures and UV-radiation. Failure to affix these labels will void the SRCC OG-300 system certification.

Solpal may be installed in areas within the United States that experience mild winter climates. Because of the huge mass of water inside the Solpal, the system does not freeze. However, the Solpal must be drained if the temperatures have ever fallen to:

10°F for 6 consecutive hours, or

20°F for 18 consecutive hours

When these environmental conditions are met or exceed the Solpal must be manually drained in accordance with the installation instruction. Failure to do so will void the warranty coverage.

Freeze Protection:



10°F for 6 consecutive hours, or

20°F for 18 consecutive hours

When these environmental conditions are met or exceed the Solpal must be manually drained in accordance with the installation instruction.

DRAIN Procedure:

VALVE 4 COLD WATER SUPPLY ISOLATION VALVE

VALVE 5 DRAIN VALVE




Valve 4 is normally open and allows cold water to fill the Solpal. When close the valve the Solpal is isolated from the pressurized city cold water supply line piping. To drain the system from the water, it is necessary to open valve 5, now the system is empty. **WARNING: WATER MAY BE DISCHARGED AT VERY HIGH TEMPERATURE OF UP TO OR EXCEEDING 212 °F.**



Labeling for all fill and drain ports:

The following labels must be attached to the relevant valves in the systems in order for it to be considered OG-300 complaint. The page should be laminated, each label cut from it, punched in the margin at the left hand side and affixed to the appropriate valve with a wire tie, plastic ties are inappropriate due to high operating temperatures and UV-radiation. Failure to affix these labels will void the SRCC OG-300 system certification.

All fill and drain ports must be labeled with the following:

 <p>No other fluid shall be used that would change the original classification of this system. Unauthorized alterations to this system could result in a hazardous health condition. Be careful when draining the hot water from the Solpal, because the water may be discharged at a very high temperature and pressure</p>
<p>No other fluid shall be used that would change the original classification of this system. Unauthorized alterations to this system could result in a hazardous health condition. Be careful when draining the hot water from the Solpal, because the water may be discharged at a very high temperature and pressure</p> 
<p>No other fluid shall be used that would change the original classification of this system. Unauthorized alterations to this system could result in a hazardous health condition. Be careful when draining the hot water from the Solpal, because the water may be discharged at a very high temperature and pressure</p>
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SRCC OG-300 Certification Page

The solar system installer is to indicate (circle, check, etc.) the system that was actually installed.

	<p>This product certified by: Solar Rating & Certification Corporation™ www.Solar-Rating.org</p>	<p>KIOTO Clear Energy AG - Austria Solarstrasse 1 St. Veit a.d. Glan, AUSTRIA A-9300 Austria</p>
<p>Solar Energy Factor (SEF_D)</p> <p>1.20 1.30 1.10 0.80 1 0.80</p>	<p>SRCC Cert. No.</p> <p>2012011A 2012011B 2012012D 2012012B 2012012C 2012012A</p>	<p>System Model:</p> <p>SOLPAL M-E SOLPAL L-E SOLPAL L-GT SOLPAL L-G SOLPAL M-GT SOLPAL M-G</p>
<p>The installed system is marked above.</p>		

Kioto Clear Energy AG Liability Policy

Kioto Clear Energy AG offers a range of integrated collector-storage systems for residential and commercial use. The products are designed by Kioto Clear Energy AG and Heliodyne Corporation is its sole distributor in the United States, selling to retailers and end-users among other clients. This document serves as a statement of our limitation of liability at Kioto Clear Energy AG.

Kioto Clear Energy AG provides a collection of products, and we are responsible for the products being free of defects in materials and workmanship for a period of ten years from the date of the original purchase, subject to the conditions, limitations and exclusions set forth below. This responsibility extends to the first buyer and to any subsequent owner(s) as long as the water heater remains installed at its original place of installation.

This warranty is valid only if the installation and the maintenance of the products are performed by a duly licensed professional (solar contractor, installer, contractor, plumber, HVAC or other solar specialist) and if all such work is documented properly. The installation by a duly licensed solar contractor and the observance of and adherence to all installation instructions is, without exception, a prerequisite for any warranty claim.

EXCEPT FOR THE WARRANTIES EXPRESSED IN THIS AGREEMENT, KIOTO CLEAR ENERGY AG DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OTHER THAN THOSE WARRANTIES IMPLIED BY AND INCAPABLE OF EXCLUSION, RESTRICTION OR MODIFICATION UNDER APPLICABLE LAW.

IN NO EVENT SHALL KIOTO CLEAR ENERGY AG BE LIABLE TO ANY BUYER OF THE PRODUCT, REGARDLESS OF THE FORM OF ACTION, FOR ANY INCIDENTAL, INDIRECT, OR SPECIAL DAMAGES OR LOST PROFITS, OF ANY NATURE WHATSOEVER. UNDER NO CIRCUMSTANCES SHALL KIOTO CLEAR ENERGY AG'S ARISING FROM OR RELATING TO THE PURCHASE OF THIS PRODUCT EXCEED, IN THE AGGREGATE, THE PURCHASE PRICE FOR THE GOODS ORDERED HEREUNDER.

Liability is specifically disclaimed for consequential damages. Consequential damages are losses that are suffered by the customer or other third parties as a result of the failure of a Kioto Clear Energy AG product that was incorrectly installed by any contractor or any other person or for any other reason other than design or manufacturing. These kinds of losses can include physical injury or death and can include damage to real or personal property by fire or other means.

If any of these products is found to be not in accordance with the requirements of this Policy, Kioto Clear Energy AG shall, at its option and at its own expense repair or replace any defective or nonconforming products upon timely (within 90 days of discovery thereof) notification thereof.

This Limited Warranty only covers claims caused by defects in material or workmanship during ordinary use; it does not cover product issues caused by any other cause or reason, including but not limited to misuse, abuse, neglect, acts of God including but not limited to floods, earthquakes, winds, fire, and lightning, or alteration by anyone other than an authorized representative of Kioto Clear Energy AG.

Liability is specifically excluded for damages caused by (i) conditions resulting from a defect in a component or part which is not manufactured by Kioto Clear Energy AG; (ii) water freezing in tanks, pipes, or other product components; (iii) breakage of glass surface of any product component; (iv) conditions resulting from the introduction or injection of harmful chemicals, caustic fluids, or liquids deleterious to stainless steel tubing, including improperly applied or maintained heat transfer fluids or chlorinated pool or spa water; (v) water related corrosion; (vi) excessive pressure; (vii) improper plumbing configurations that do not conform to the installation instructions provided by Kioto Clear Energy AG; (viii) clouding or condensation naturally resulting from temporary intrusions of moisture into the product; (ix) failure to provide reasonable and necessary maintenance in accordance with the manual; or (x) faulty installation including but not limited to mounting, that does not conform to relevant federal, state or local codes and ordinances, good industry practices, or to current applicable diagrams, technical bulletins, or written installation instructions provided by Kioto Clear Energy AG. Further, we are specifically not liable for cosmetic discoloration of the product frame wall, insulation, or glazing over time.

continuation of Kioto Clear Energy AG Liability Policy

Kioto Clear Energy AG does not offer installation services for its collection, and as such, is not liable for damages occurring during installation or for faulty installation by any party; including professional contractors or the end-users themselves. Further, since we will not be on site, there is no risk that we will cause injury to persons or damages to property resulting from the physical actions of our employees on the customer's site.

We at Kioto Clear Energy AG do not ship the products ourselves and for this reason, we are not liable for the negligence or errors of common carriers that cause damage during shipping that may lead to such injuries or property losses.

With every purchase we provide a User Manual that explains the correct mode of installation, the basic risk of using the product, detailing the ideal use conditions as well as warning of the dangers that accompany improper use. It is the sole responsibility of the customer of any product sold by Kioto Clear Energy AG or its resellers to obtain proper instruction from the User Manual and to always act safely, prudently and with caution while using our products. All warranties are only valid and operative when the User Manual is followed at all times.

Kioto Clear Energy AG and Heliodyne Corporation maintain international insurance for product liability in the sum of 1 Million USD. Kioto Clear Energy AG's liability is limited to the company policy described here, that being acts or omissions in the design or manufacturing process.

Purchasers of a Kioto Clear Energy AG product are encouraged to insure themselves for the various exposure they may face as a result of fire or other on site-loss. Typically architects, designers, building contractors, property management companies and other such parties are insured for such potential losses.

If you have further question or comments about our Liability Policy, do not hesitate to contact Kioto Clear Energy AG directly.

