

Helio-Flo Solar Water Heaters

Highly Efficient Open-Loop Pumped Systems

Skylight Good Looks

No unsightly storage on the roof, only the low profile attractive Gobi collectors with bronze anodized aluminum extrusion frames that are tapered for good looks and strength, and a non-glare solar glass cover.

For Home or Business

Heliodyne's Helio-Flo Solar Water Heaters are of simple and efficient design and are available in different sizes to accommodate small or large hot water uses. This active principle of water pumped through the solar collector(s) delivers more heat and with fewer collectors. One or several attractive Gobi collectors are mounted on the roof, piping is connected from the collectors to the storage or water heater in the house or garage. A small low flow pump circulates the storage water through the collectors picking up heat for later household use. Its operation is fully automatic.

The Right Choice for Mild Areas

Install this system in all areas without freezing and where water quality is good. An option for mild freeze protection is available, which activates flow through the collector when temperatures drop. A dribble valve provides added protection. Where water is hard and might reduce collector efficiency with deposits, or where freezing is a regular and serious concern, our Helio-Pak systems are recommended for full protection.

Highly Efficient

Helio-Flo pumped systems produce more hot water than "passive" systems, which transfer heat slowly. In addition, these systems use the very highly rated *Gobi collectors*. Any Helio-Flo system can therefore easily outperform even a larger alternative system.

Safety with Reduced Roof Load

Unlike systems which store solar heated water on the roof and may pose roof load and safety hazards, these Helio-Flo systems keep the heavy water on the ground. In fact, a Helio-Flo system can be connected directly to a water heater or storage tank in a single or dual tank installation.

Packaged System

Packaged Helio-Flo systems are available for small or large systems and include one or more Gobi collectors, easy mounting hardware, a small pump, differential control with two sensors and optional freeze protection, a solar storage tank if needed, and a Cal Code kit for safety, consisting of a cold water mixing valve to avoid scalding, an air vent, and a thermometer to let you check the operation of the system.

Easy Hardware

Helio-Clips attach to the built-in Gobi mounting flange and make the transition to modular hardware for any tilt, whether Flush (parallel to a tilted roof) or Rack (for flat roofs or ground), certified against high wind loads.



Simple Installation

The few components needed for this system assure simple and reliable operation. No roof reinforcement is required to receive the Gobi collectors and its smart hardware. Plumbing lines are quickly installed and connected to the pump and tank or water heater.

Unlike "passive", drain-down or drain-back systems, this system is totally versatile: the collectors can be installed above or below the tank, and the distance from one to the other is not critical.

Photovoltaic Option

This grid-independent Helio-Flo PV system is ideal for areas without freezing and with good water quality. Entirely powered by the sun, it features a solar electric (photovoltaic) panel which directly powers a 12V DC pump for efficient pickup and storage for later use of the heat generated in the Gobi solar collectors.

Sensible Technology™ since 1976



HELIODYNE, INC.

Richmond, Ca.

Tel: 510-237-9614

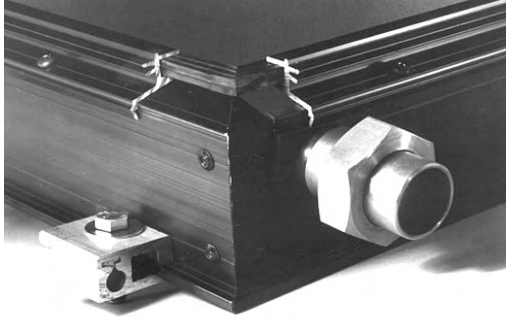
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Helio-Flo R Applications

The Helio-Flo R-Series are highly efficient systems designed to heat domestic hot water in homes, offices, warehouses, campgrounds, firehouses, or apartments. Easy to retrofit to existing homes and structures, the attractive Gobi collectors are also readily integrated into new construction.

Direct water circulation efficiently and quickly transfers the solar radiation collected in the Gobi collectors to a solar storage tank or water heater.

Helio-Flo systems are available with varying numbers and three sizes of Gobi collectors for small and large hot water loads. Pump sizes and storage will vary accordingly.



Gobi collector with Helio-Clip and Dyn-0-Seal Union

Mild Climate Freeze Protection

Helio-Flo systems should be installed in non-freezing or mild climates only and are most durable in areas with good water quality.

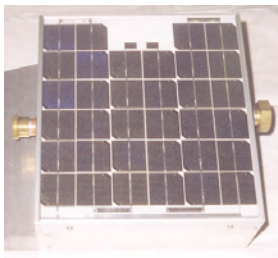
Mild protection is included. The collector sensor acts as freeze sensor and signals to the control to start the pump for a moment of circulation when temperatures drop to 41°F or less.

Redundant freeze protection is provided with the Dole FP35 freeze dribble valve, which installs at Gobi hot return and requires a check valve.

Helix PV Option

The grid independent Helio-Flo HX PV version derives all pumping from the entirely solar powered Helix PV Power Station, which attaches to the Gobi collector hot outlet and return piping without any control, sensors, wiring. Designed for small systems only, the HF HX PV system is extremely simple to install, major items are just one or two Gobi collector(s), mounting hardware, and Helix PV Pump Station.

Connecting piping and storage are to be supplied by the installer.



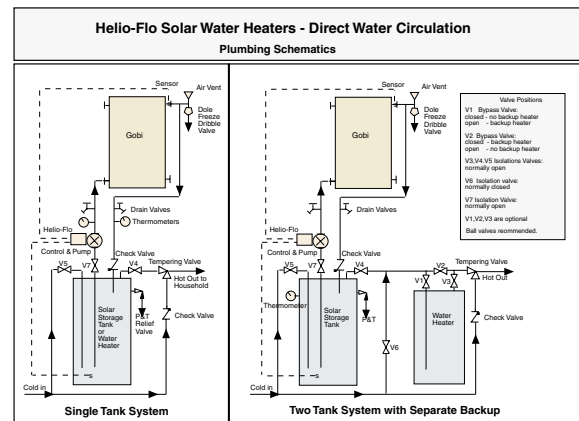
Helix PV Pump Station attaches to Gobi

Description and Operation

Helio-Flo Systems include the attractive highly efficient Gobi collectors to collect solar radiation, Flush or Rack mounting hardware to install the Gobi collectors on a sloped or flat roof or on the ground, Blind Union end pieces for capping off and connecting Gobi collector plumbing lines, a Helio-Flo R pump and control kit to be installed on the solar tank or water heater, a couple of sensors, to be installed on the Gobi and the storage, and a Dole freeze dribble valve. Storage tanks are available from Heliodyne or can be supplied locally. Optional sensor wire and an optional Cal Code Kit consisting of a tempering valve, an air vent and a thermometer are recommended. Other materials needed for an installation of this simple system is piping (usually copper) and pipe insulation, possible isolation valves, miscellaneous hardware and sealant.

Automatic Operation

The Helio-Flo pump and control kit features a DTT-94 differential temperature thermostat that integrates the readings of a sensor each on the Gobi collector and on the tank to start solar collection automatically when the Gobi is hotter than the tank, and stops when the tank is hot or the sun is obscured or has set.



Collector Tilt and Storage

For domestic hot water, where the heating load is about the same for all months, the optimum angle is equal to latitude. However, the collector orientation is not critical. Deviations by as much as 15° have little effect on annual performance. It is therefore recommended to use tilt-up racks sparingly, and instead install "Flush", parallel to a sloped roof whenever possible. However, in snow country, tilt will be steeper to allow the snow to slide off easily. Snow build-up between Gobi collectors can be prevented by sliding a width of sheet metal in the trim groove of the Gobi. Protect from the rear when using racking.

Appropriate size storage is important for optimal system efficiency and to minimize "stagnation". The high-efficiency Gobi collectors therefore require storage of no less than 1.5 gallons per square foot of Gobi collector (40 gallons per Gobi 3366, 50 per Gobi 408, 65 gallons per Gobi 410). Very sunny climates require as much as 2 gallons per Gobi square foot.

Exceptions are situations with heavy day usage, which creates storage.

Helio-Pak HX PV

Closed Loop Solar Water Heaters

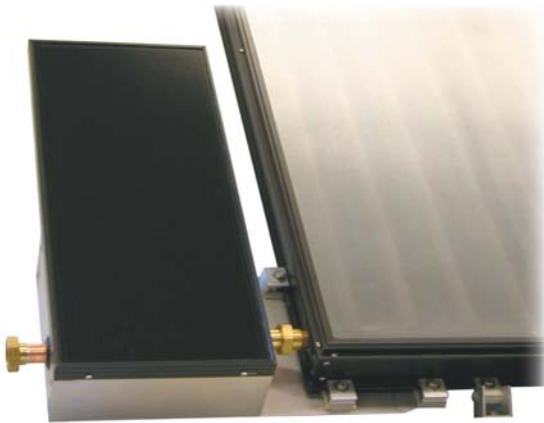
Ideal for all locations. Independent of the power grid, produces its own electricity from the sun for the collector loop pump. Non-freezing heat transfer fluid protects the collectors in cold climates for yearround operation. Separate heat transfer fluid also keeps the collectors clean of hard water deposits for long-term efficiency. HP Helix SW CL with new Helix Stainless Steel heat exchanger performs comparable to dual pumped systems.

Helix SW CL Heat Transfer Appliance

- New Helix SS heat exchanger
- Developed for high thermosyphon performance
- Adapts to solar tanks or water heaters
- Increased system performance
- Single pump design
- Protects collectors from freezing
- Optional attractive shield
- Complete and compact package
- 150 psi rated for boilout protection

Energy Smart Water Heater

- Dual 4.5 kW elements
- Increased 3" of insulation
- Controller heats to usage patterns
- Minimizes electricity use

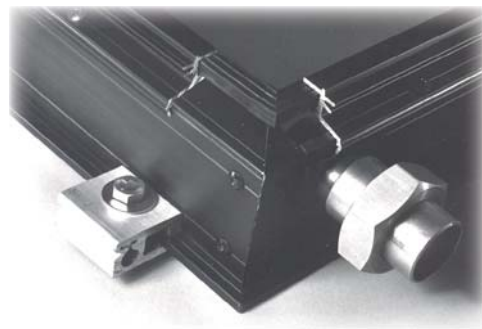


Helix PV Pump Station

- Connects to Gobi Collector and supply line
- Contains both pump and power from sun
- Automatic solar collection, no wiring or sensors

Gobi Solar Collectors

- Three convenient sizes
- High performance SRCC rated
- Strong and lasting construction
- Easy mounting hardware for any tilt



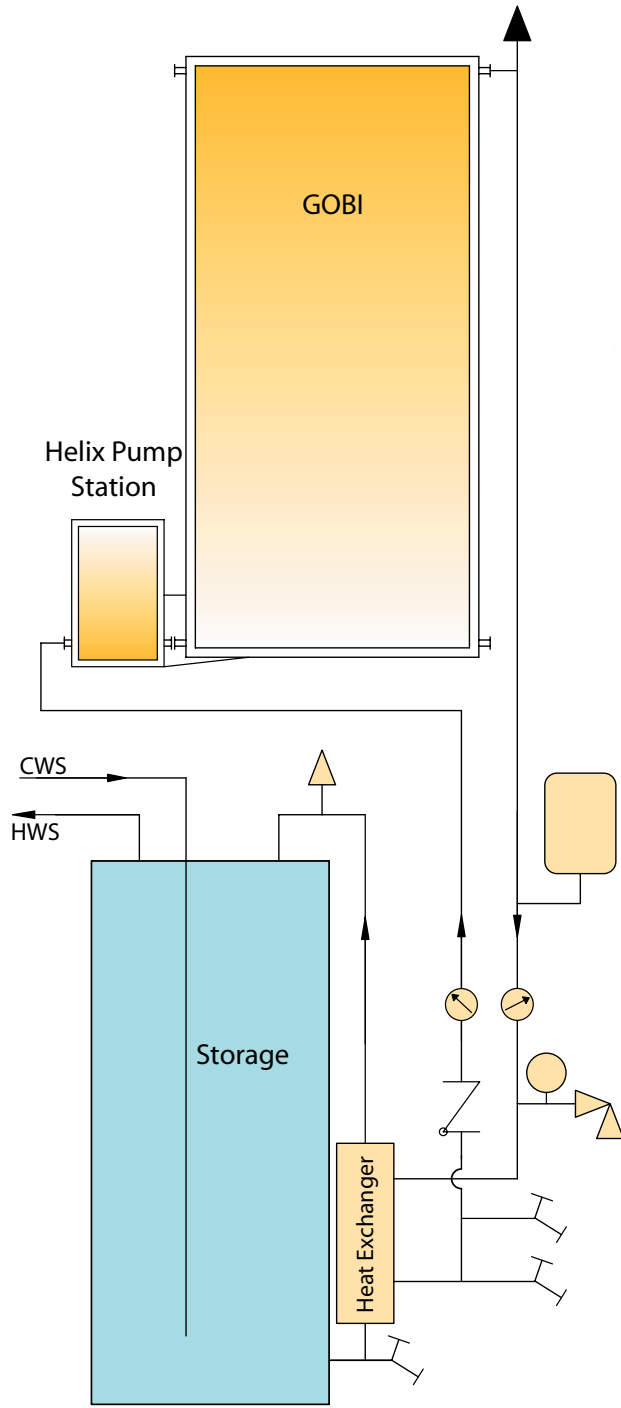
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HELIO-PAK HX SS SW CL G PV

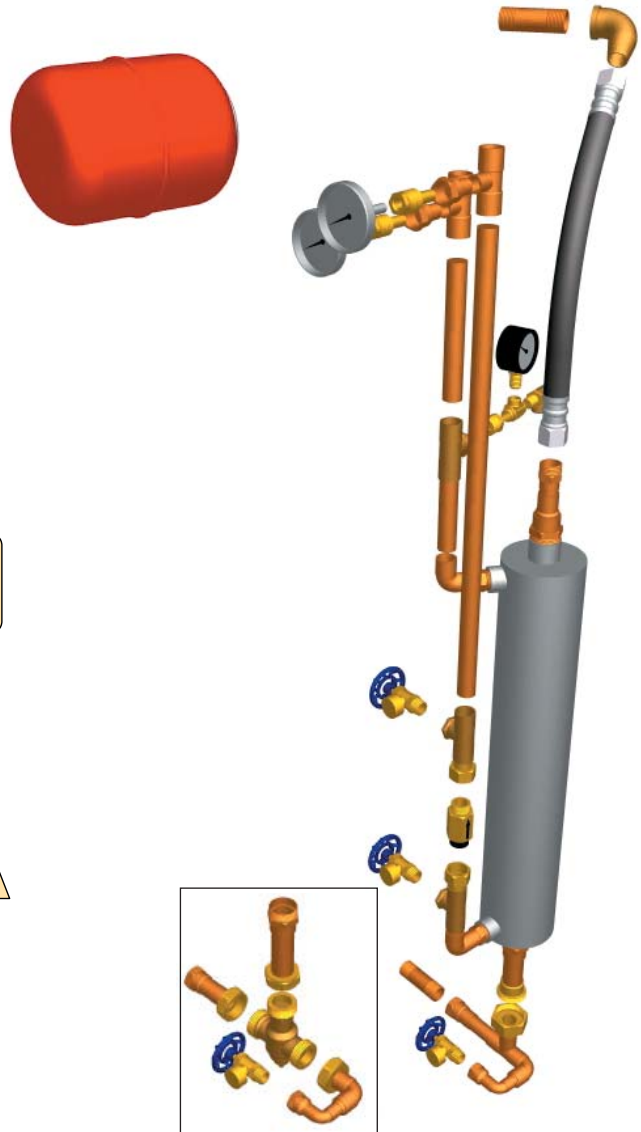
Solar Water Heater

Solar electric powered closed loop glycol system with thermosyphon heat exchanger and pv powered pump station



Complete system schematic

HP HX SS SW CL heat transfer appliance shown below, as shipped with complete HP HX SS G PV system.



Optional tank temperature limiting valve

*Copper pipe is not included



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Helio-Pak Solar Water Heaters

Sensible Technology™ from Heliodyne, the Leading Manufacturer since 1976

Closed-Loop Systems with High-Efficiency Heat Exchangers
for Safe Installation and Year-round Operation in All Areas

No Collector Freezing or Boilout

Specified and Installed on Homes, Businesses, National and State Parks



Helio-Pak DW CL Appliance

Proven, Non-Freezing, Smart

- Modular and easy to install
- Solid and clean appearance
- Copper double wall heat exchanger
- Efficient counterflow design
- Food-grade heat transfer fluid
- Automatic operation
- Electronic tank temperature setting
- Adapts to standard tank sizes
- Several sizes to fit collector needs
- 150 psi rated for boilout protection

Gobi Solar Collectors

Favorites of Installers and Homeowners

- Skylight appearance, attractive looks
- Solid and built to last
- Certified high performance
- All-copper blackchrome absorber plate
- Durable tube-to-fin absorber bond
- Double strength tempered solar glass
- Anti-glare finish
- Modular hardware for any tilt
- Wind and impact resistant
- Structural certification
- High output even on marginal days
- Sold and installed in many countries



Photo courtesy *In Hot Water*

Made in the USA

SRCC OG-100 and OG-300 certified



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Benefits of the Helio-Pak Solar Water Heater

Attractive

Skylight looks of attractively styled Gobi Collectors, with a bronze anodized frame and anti-glare glass finish, grace any home and easily adapt to any roof style.

In Hot or Cold Climates

The closed-loop Helio-Pak system with antifreeze is safe in coastal, mountainous or cold inland regions and works in both summer and winter.

Any Water Quality

The closed-loop Helio-Pak design with separate collector fluid keeps the Gobi Collectors free from hard water deposits for undiminished efficiency over the years.

All Installation Situations

Because it does not depend on fluid draining from the collectors for protection, the Helio-Pak system is truly versatile: install the collectors below the storage tank, or one or more stories above the tank, with long or short pipe runs, collectors can be vertical or on their sides.

Efficient

The counter-flow design of the Helio-Pak is the most efficient heat transfer known. Coupled with the large copper surface and heat transfer enhancing construction of the heat exchanger and the highly efficient Gobi blackchrome collectors, output is lasting and superior to other systems.



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Safe

The recommended collector loop fluid is a food-grade propylene glycol with inhibitors for durability. It is not flammable. In addition, the Helio-Pak features a double wall heat exchanger for extra safety.

Non-Freezing

The collectors are protected with an antifreeze / water mixture for safe operation, even in winter. However, the storage tank and Helio-Pak heat transfer appliance must not be located in a freezing environment.

No Overheating

The 150 psi design and construction of the Gobi Collectors and the Helio-Pak appliance protect the system from overheating or boilout during times of stagnation. The storage tank temperature is protected electronically with the temperature preset to a maximum of 180°F (160°F optional).

Single or Dual Tank

Connect the Gobi Collector and Helio-Pak to a solar storage tank with electric element for backup in inclement weather in a single tank installation. Or, use a natural gas or propane water heater in line and after the solar storage tank for backup with a bypass for solar only usage.

Your authorized representative

Helio-Pak HX PV

Closed Loop Solar Water Heaters

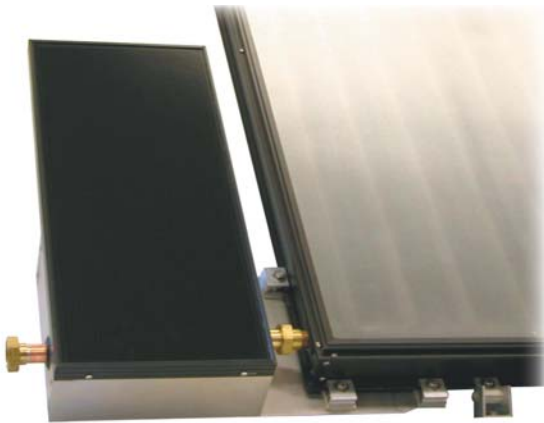
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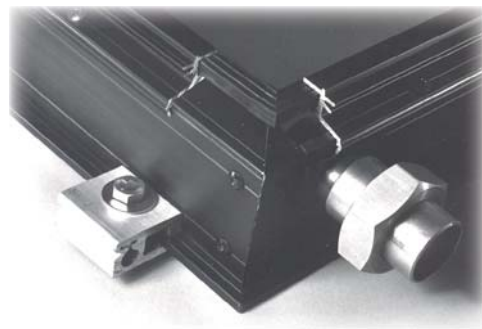


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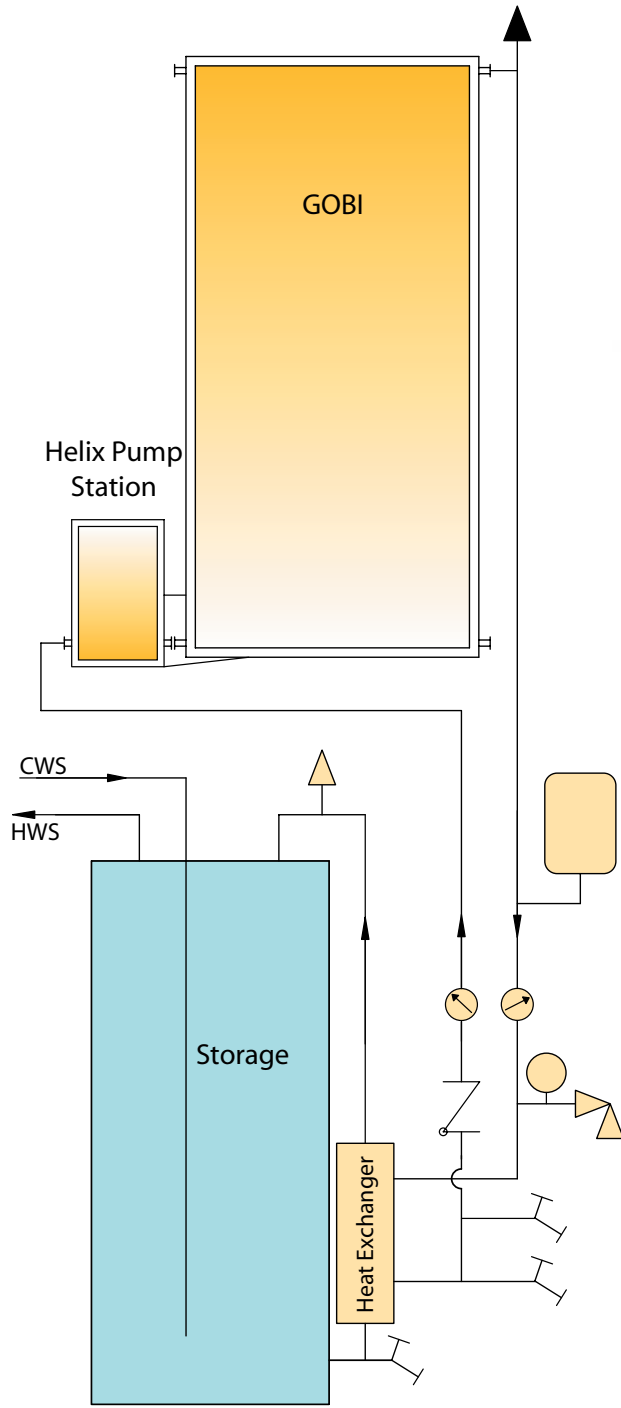
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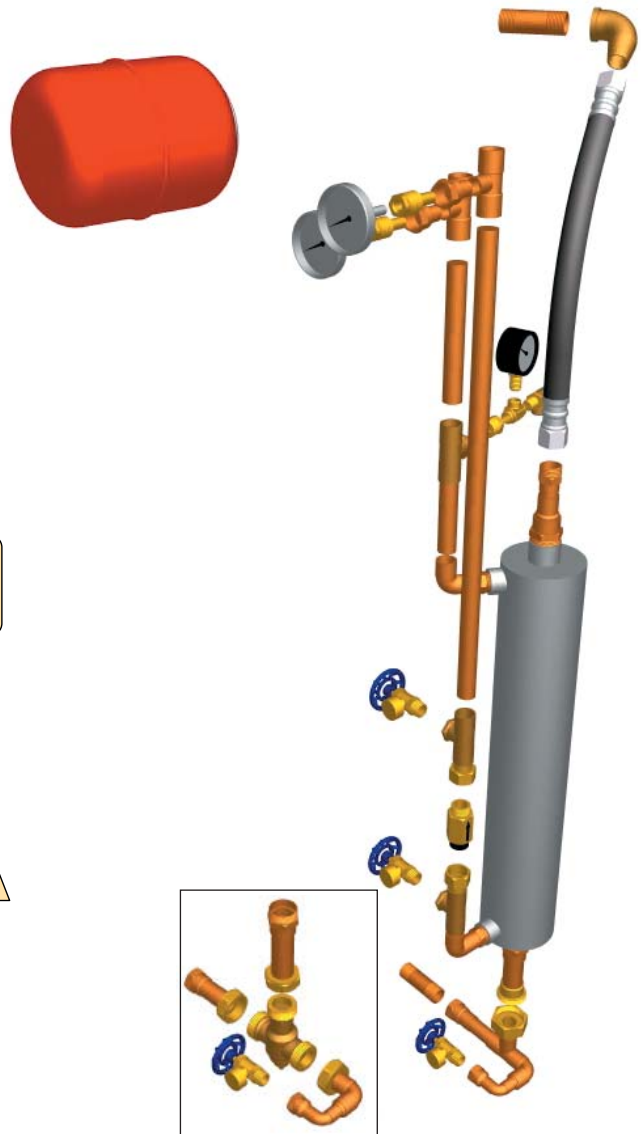
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