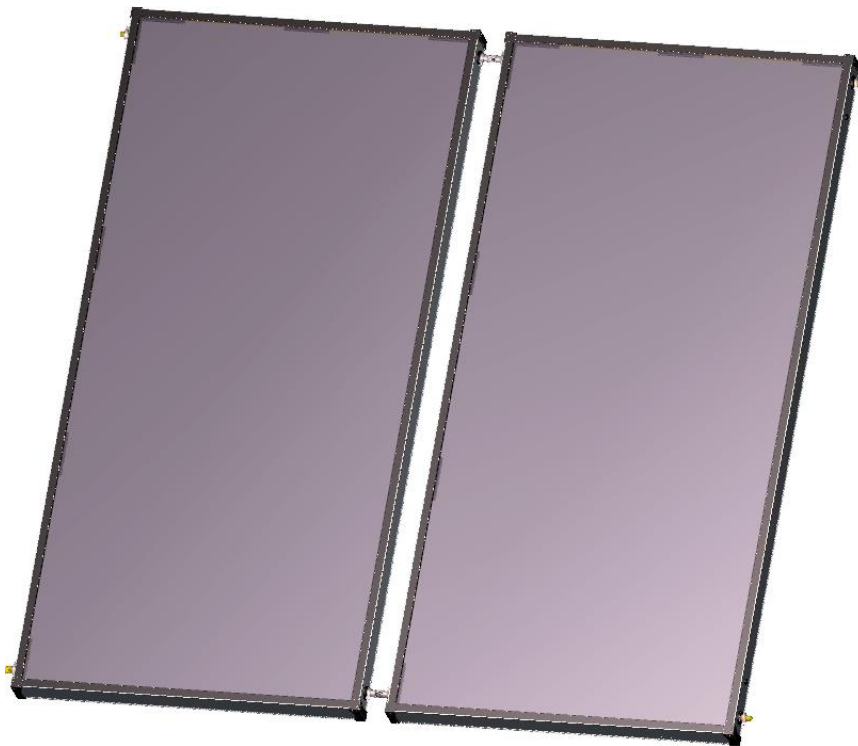




General Collector Installation Instructions

Model: TitanPowerPlus-ALDH29- V3



WARNING!

For your safety, please read through this manual carefully before installation to minimize the risk of fire, property damage, and personal injury!



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General and Security

Collector Connections

Each collector is fitted with (4) proprietary connections designed to be used only with SunMaxx Solar TitanPowerPlus-ALDH29-V3 connection sets. Use of other connection sets will void all collector warranties.

Mounting Angle

To avoid optical interference (fog, condensate, etc.), the collectors are designed with a chimney vent system. They must be mounted with a minimum angle of 5° for this system to operate and ventilate properly. Mounting at an inappropriate angle will void the warranty. Condensation may be present inside of the collector during commissioning, depending on the environment in which the collectors are installed. If condensation is present inside of a collector for more than three (3) consecutive days, please contact SunMaxx Solar to review site photos and conditions. Please see collector series mounting manuals for detailed installation instructions.

Safety:

Working fluids can get very hot. Use care when handling/installing hydronic components and filling/leak-checking. Allow collectors to cool down, if necessary. Never carry collectors by the pipe ends.

Rinsing, Filling and Maintenance:

During installation and setup of the collectors, keep the protective film on the solar collectors to allow for safe and easy system commissioning. Prior to installation, check that all collector connections are free of debris. Use only water-glycol mixtures that are recommended by SunMaxx Solar for use with the solar collectors. Use of glycol which has not been approved by SunMaxx Solar will void all collector warranties.

Operating Parameters and Maintenance:

The recommended operating pressure should be in a range between 20 and 75 PSI. The suggested volumetric flow rate is between 0.15-0.36 GPM. The highest approved working pressure is 75 PSI. Solar collectors are usually maintenance-free, but the solar system should be checked for damages and irregularities every five (5) years by a solar thermal installer.

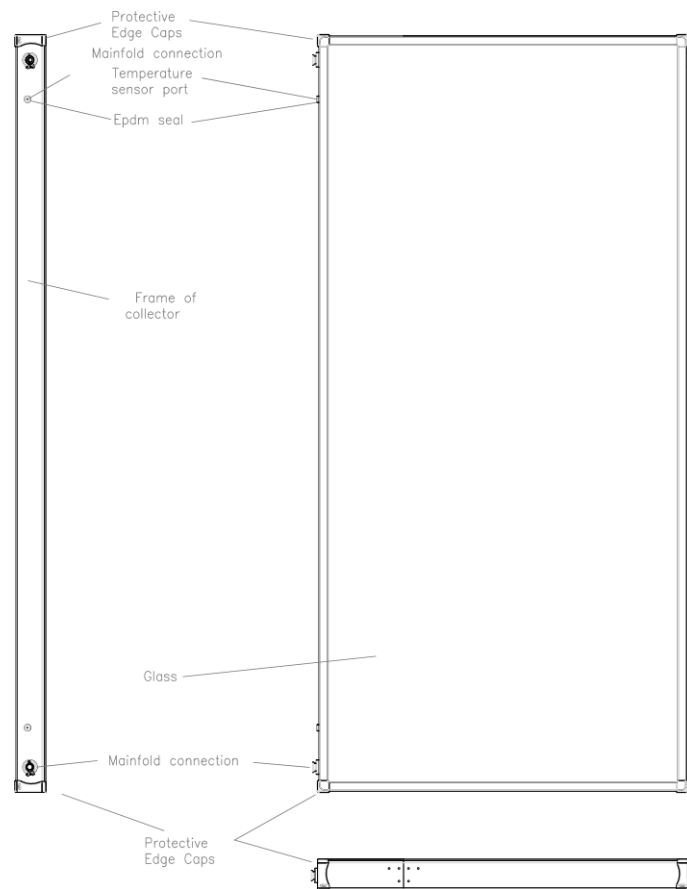
Transport and Handling:

Carry collectors with the glass side facing up. Don't damage the pipe ends. Don't throw any materials at the glass plate, and be careful of the glass edges. Never touch pipes, as this can result in burns.

General:

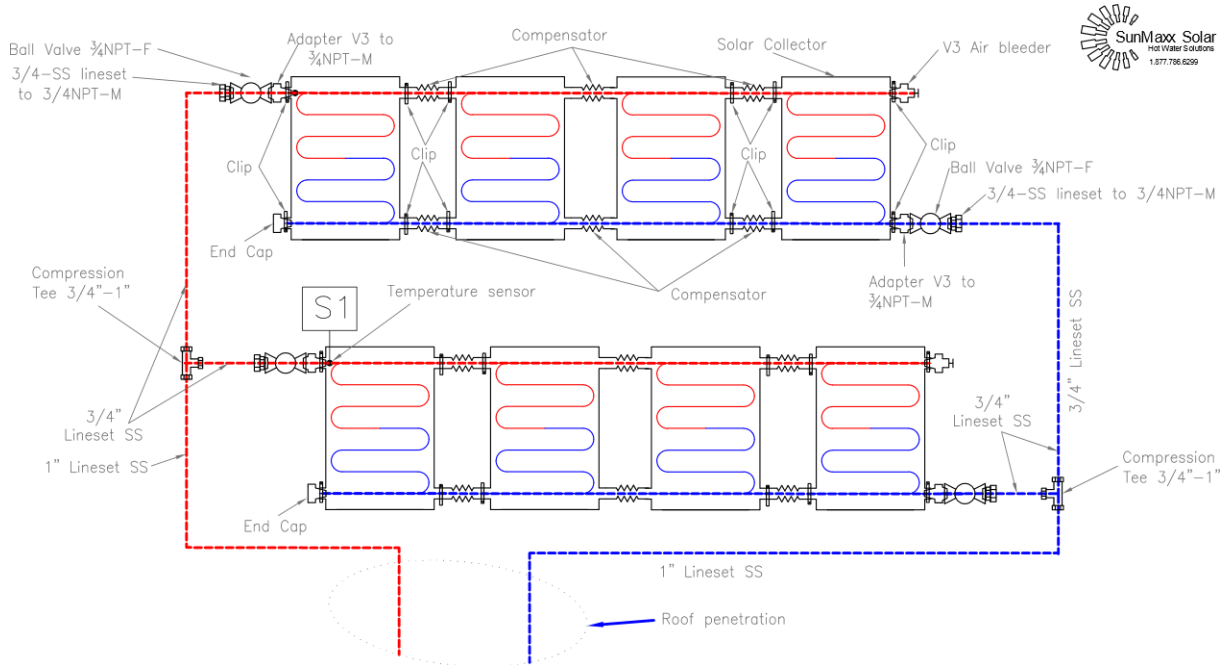
The references shown make no pretense of completeness.

Solar Collector Detail – Components of Solar Collector



1. **Collector Edge Caps:** Collector edge caps are protective edge caps which can be easily removed and re-installed. Missing collector edge caps will not void the collector warranty or reduce the performance of the solar collector.
2. **Aluminum Frame:** The aluminum frame is a structural profile allowing the mounting frame to be used as part of the mounting system. The entire profile is equipped with an M8 channel (threaded), which allows for fastening of solar piping, sensor wires, and other collector field accessories.
3. **Tempered Low-Iron Glass:** Tempered low-iron solar glass reduces transmission losses while providing a strong protective barrier from the environment.
4. **Temperature Sensor Well:** The temperature sensor port has inline temperature well which is brazed to the riser pipe inside of the collector. All temperature sensors shall be installed inside of the temperature well (not externally, on outside of collector piping). When installing temperature sensor, check that it is inserted all the way to ensure accurate temperature readings.
5. **Temperature Sensor Gasket:** The temperature sensor gasket shall be installed to help hold the sensor in place (the wire jacket of sensor) and reduce moisture/corrosion inside of the temperature well.
6. **Collector Ventilation:** Collector ventilation channels are located within the upper section of the aluminum profile, and allow for the collector to naturally “breathe” during normal operation. The corner of each collector has machined ventilation ports within the collector profile. These channels can be viewed by opening the edge caps at all four corners.

General System Schematic – Recommended Installation Configuration for Single and Multi-bank Collector Arrays



Note: All components used in collector field shall be approved by SunMaxx Solar prior to use within the solar circulation circuit.

7. **Compensators:** Compensators are used to allow the system arrays to expand and contract without causing internal damage to the solar collectors.
8. **Compensator Clips:** Compensator clips shall be installed on all end connections of collector field, and between first collector in collector field. Compensator clips are not required on connections on panels in between collector field.
9. **Isolation / Balancing Valve:** Isolation/balancing valves should be installed to allow for multi-bank collector balancing. NOTE: Both isolation valve should not be closed at the same time, as this could result in damage of the solar thermal collectors. Air vent shall be opened in the event both isolation valves are closed for system servicing.
10. **Air Vent:** Air vent is required on all solar collector system installations. The air vent shall be closed upon system commissioning after full bleeding of air within the solar array. The air vent may be opened after system commissioning (manually) to allow for air to purge out of the collector field.

Array Planning

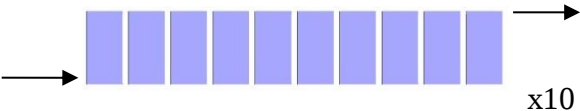
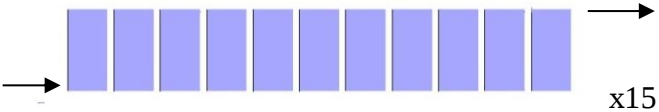
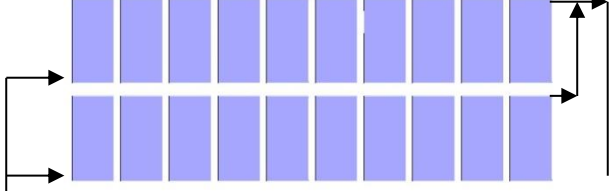
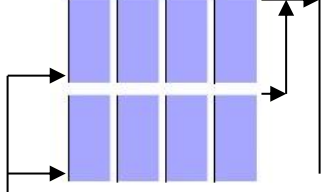
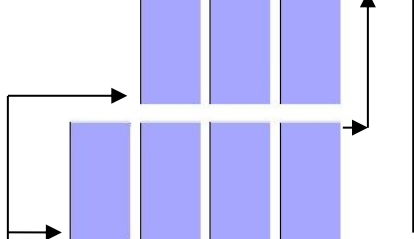
Before you begin any kind of installation, it is important to have a roof layout prepared. This will make installation go more smoothly and involve fewer man-hours.

1. Determine array layout.

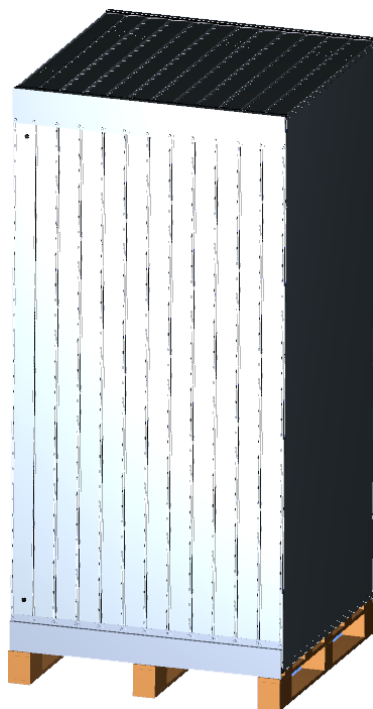
Maximize the efficiency from your solar thermal system by designing your collector field properly.

At most, fourteen (14) collectors can be mounted together in series. If your total number of collectors exceeds this amount, you will need to make separate arrays piped in parallel. All arrays should contain the same number of collectors and use reverse return piping.

EXAMPLES

	OK
	NOT OK- TOO MANY IN SERIES
	OK
	OK
	Please verify arrays are properly balanced with flow and temperature

Collector Packaging— Collectors Are Packaged Up to 12pcs Per Pallet.

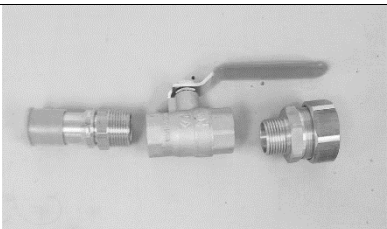
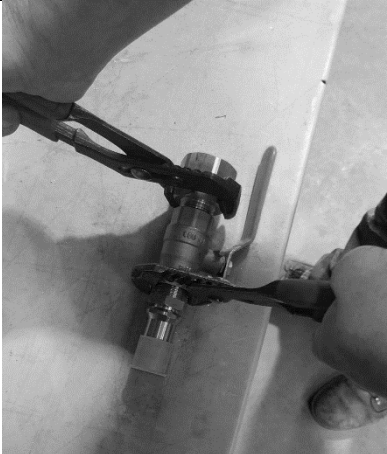


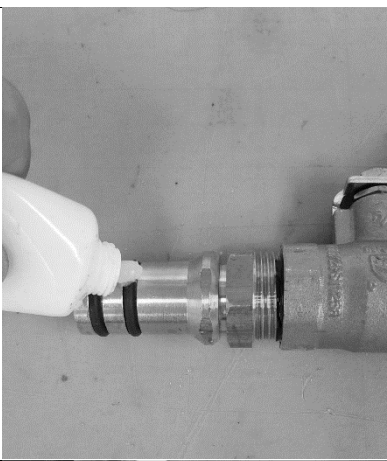
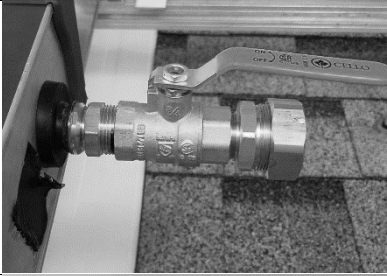
1. **Protective Film:** Each collector is installed with a protective film which allows for safe installation of the solar collector. The film shields the collector surface from sunlight, limiting the collectors' temperatures.
2. **Eco-friendly Packaging:** All metal and stainless-steel hardware may be recycled upon completion of installation. Metal supports are fitted with m8 stainless-steel bolts into profile of collector.

Solar Collector Field Accessories

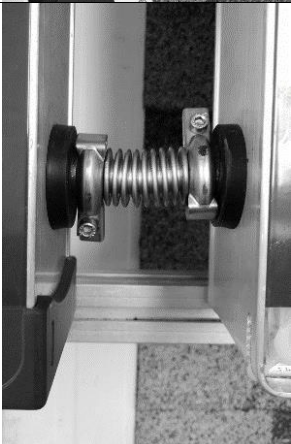
Description	Part #
Air vent (1pc), adapter kit (to 3/4" NPT) (2pcs), End cap (1pc)	TitanPower-A-ALDH-V3-ADPKIT-3/4NPT
Ball Valve for manifold	TitanPowerPlus-A-ALDH-3/4IN-FNPT-BV
Compensators	TitanPower-A-ALDH-COUPLING-V3
Compensator Clamps	TitanPower-A-ALDH-Clip-V3
Replacement Edge Caps	TitanPowerPlus-ALDH29-V3-EDCAP
Line set connector	FlowMaxx-A-3/4IN-3/4IN-PF-M

Manifold Assembly

1. Lay out parts of manifold assembly: a. Collector connector b. Ball valve c. Line set connector	
2. Use two channel locks to tighten down collector port to ball valve.	
3. Use two channel locks to tighten down line set connector to ball valve	

4. Apply grease to viton rings on collector port	
5. Insert manifold assembly into collector	
6. Secure manifold in place using c-clamp	
7. Complete manifold assembly; secure in panel.	

Compensator Assembly

1. Apply grease to viton rings on compensators	
2. Ensure uniform coverage of grease (can be achieved using compensator caps).	
3. Insert compensator into collector. Clamp down using c-clamp.	
4. Slide panel into place while feeding compensator into collector. Clamp compensator into place using c-clamp.	

5. Verify distance between panels of 2.5"-2.75".

