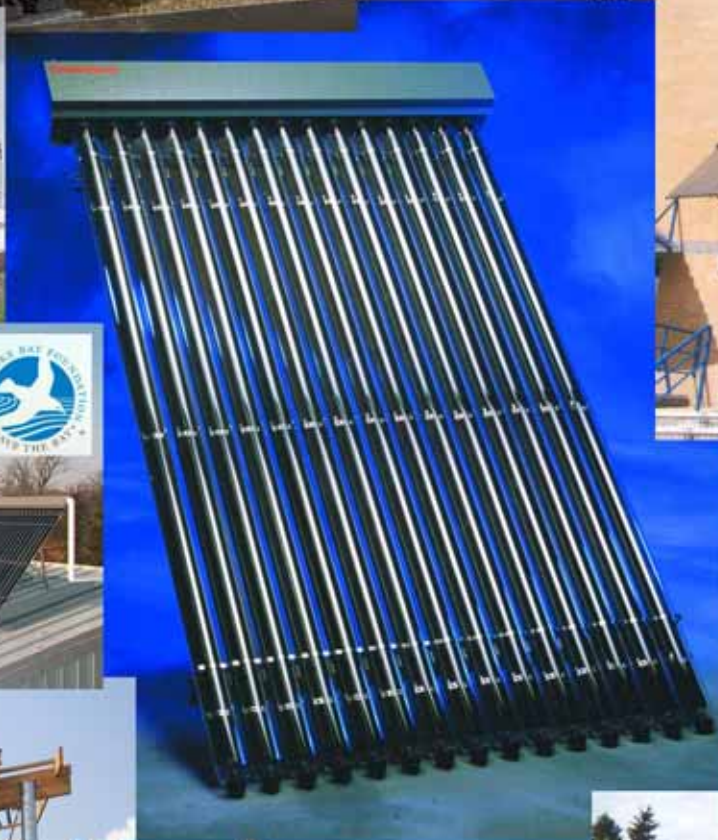




# THERMOMAX

*Worldwide Leaders in Solar Heating Systems and Services*

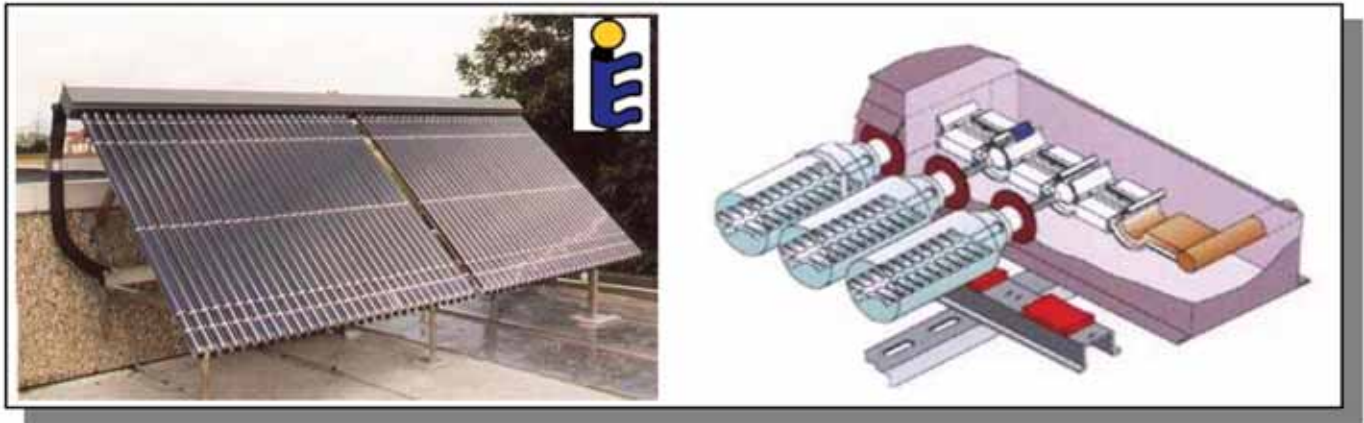


*2,000,000 solar tubes in daily use in over 40 countries*



# THERMOMAX

The MAZDON<sup>®</sup> system is a solar thermal collector designed with state of the art heat-pipe technology. The heat-pipe operating temperatures are controlled by passive snap-disks to an upper limit of 130 °C by shutting down the thermal cycle. However stagnation temperatures of the system have been recorded at 184 °C (1000 Wm<sup>-2</sup> at 30 °C).



Mazdon installation with a schematic of the system (Solar Keymark Product 011-7S003-R)

## The Thermal Cycle

The Sun generates Vapour in Heat pipe

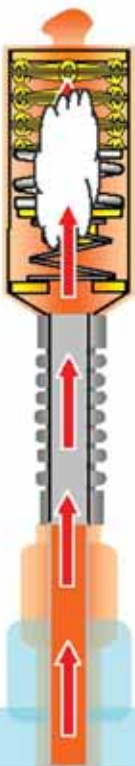
Vapour condenses transferring heat to manifold

Latent heat transfer occurs until condenser reaches 130 °C

Snap disks operate and shut down the heat-pipe

Condenser temperature falls below 130 °C allowing heat-pipe to operate

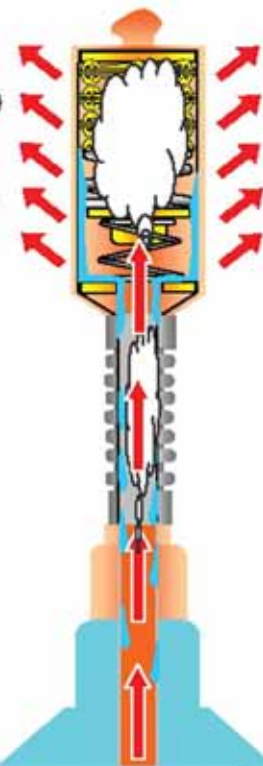
Heat pipe functions as normal



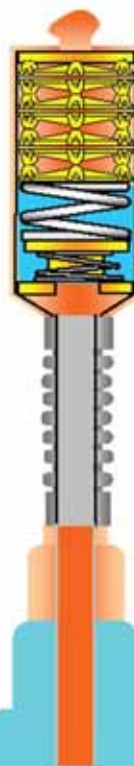
Heating



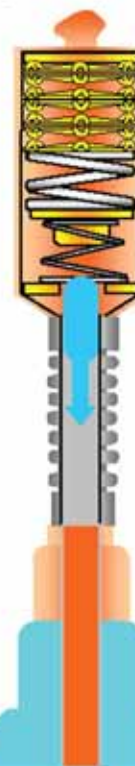
Heat Transfer



Heat Transfer to 130 °C



Heat-Pipe Shut down

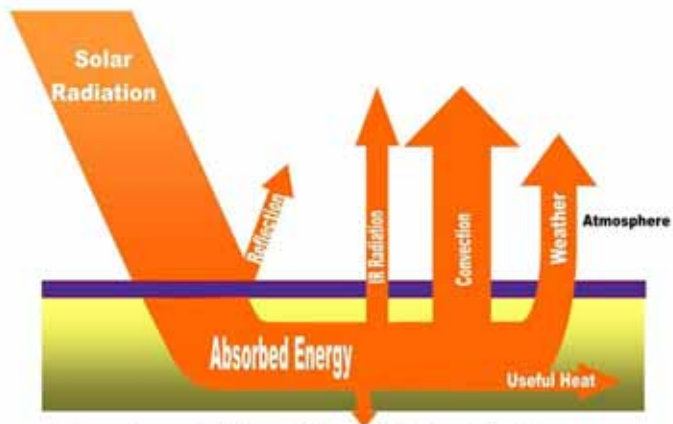


Heat-Pipe Start-up

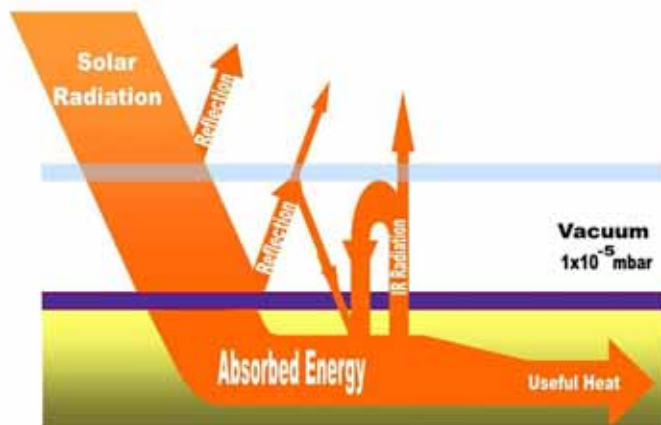


Heating

**Thermomax evacuated tube solar collectors are much more efficient than standard flat plate solar collectors. In addition to being unaffected by ambient temperature, they are more absorbent than other types of collectors.**



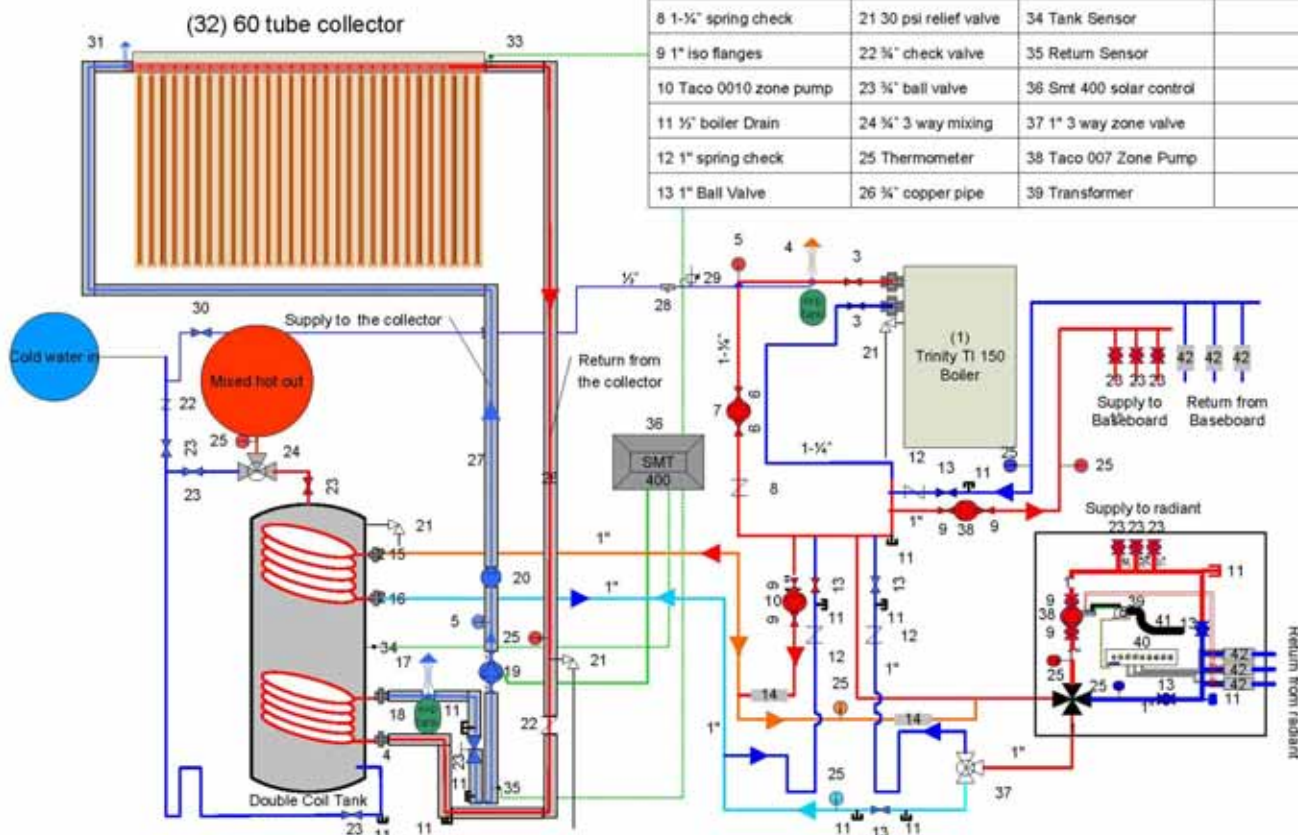
**Standard Flat Plate Solar Collectors**



**Evacuated Tube Solar Collectors**

**There are ways to incorporate solar heat into any application. Each system is designed specifically for the needs of the project.**

1 Trinity boiler	14 1" zone valve	27 ¾" x 1" wall insulation	40 8 zone control box
2 1" union	15 1" supply	28 Back flow preventer	41 Power Cord
3 1-½" ball valves	16 1" return	29 Fill Valve	42 ¾" Zone Valve
4 Sparco PV 125S	17 ¾" Sparco PV075	30 ½" ball valve	
5 Temp/Press Gauge	18 Flexcon ht 30	31 ½" solar air vent	
6 1-½" iso flanges	19 GF Ups 15-58	32 60 tube collector	
7 Taco 009F	20 ¾" flow meter	33 Collector sensor	
8 1-½" spring check	21 30 psi relief valve	34 Tank Sensor	
9 1" iso flanges	22 ¾" check valve	35 Return Sensor	
10 Taco 0010 zone pump	23 ¾" ball valve	36 Smt 400 solar control	
11 ½" boiler Drain	24 ¾" 3 way mixing	37 1" 3 way zone valve	
12 1" spring check	25 Thermometer	38 Taco 007 Zone Pump	
13 1" Ball Valve	26 ¾" copper pipe	39 Transformer	





# THERMOMAX

## Hourly Thermomax Output – BTUs/hr

15 Tube Collector = 16.14 ft<sup>2</sup>

Water Inlet Temp. = 160°F

	<u>OUTSIDE TEMPERATURES</u>			
	-20 °F	0°F	30°F	60°F
Bright Sun 300 BTU/ft <sup>2</sup> hr	3330	3390	3495	3600
Typical Clear Day 250 BTU/ft <sup>2</sup> hr	2670	2730	2835	2940
Bright Overcast 150 BTU/ft <sup>2</sup> hr	1320	1395	1500	1590

As can be seen from the table above, the collector output varies less than 10% from outside air temperatures of -20°F to +60°F even with hot water temperatures above 160°F.

Decreasing the inlet temperature to 100°F increases the output less than 10%.

The collector performance is excellent regardless of outside air temperature.



- Thermomax Collectors work in all weather - they do not need direct sunlight to operate. That's because Thermomax takes advantage of diffuse radiation, as well as direct radiation, delivering the sun's energy even on cold, cloudy or foggy days.
- The key is a vacuum tube - the outside air temperature has little influence - this means you can get hot water even in bad weather and add heat to a tank that is already hot.
- The Thermomax system integrates easily with your existing hot water system. Major alterations are not required. Position is not critical and it can be mounted to suit your situation. It does not need to point straight south.

Represented By

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 and Solar Thermal Systems

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