



SOLAR ENERGY

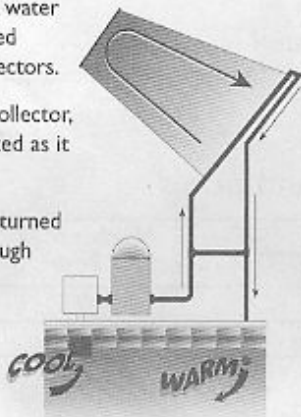
Heating system for swimming pools

Product Number: 083020

INSTALLATION & OPERATION MANUAL

How Solar Pool Heating Works

- Using your pool pump, water is automatically pumped through the solar collectors.
- As sun shines on the collector, the water is then heated as it moves through it.
- The heated water is returned back to the pool, through your return lines.
- You enjoy your own heated pool with no fuel costs.



Why Solar Energy Works Best



- Water is heated as it moves through the many tubes in the solar collectors.
- Tube and web design traps heat and catches light as the sun moves across the sky.
- Tough polypropylene material won't rust, corrode or scale. Plus, the collector is reversible.

PLEASE READ THIS MANUAL CAREFULLY. YOUR ENJOYMENT OF YOUR SOLAR HEATED POOL AND YOUR WARRANTY ARE AFFECTED BY HOW YOUR SOLAR HEATING SYSTEM IS INSTALLED

CAUTION: a) Solar collectors are often installed on the roofs of buildings. Unless you are very familiar with working on roofs and have the proper ladders and safety equipment for such work, you should hire someone with the necessary experience to do the installation. Failure to observe safe practices on a roof or other elevated structure may result in falling, leading to serious injury to you.

b) When installing collectors on the ground, do not build a rack support that could allow children access into the pool.

IMPORTANT

READ THIS ENTIRE MANUAL BEFORE STARTING

How Well Does Solar Heating Work?

A properly sized and installed system will raise pool temperatures up to 10° F/6° C during the season. You will only want to circulate water through the solar collector when the sun is shining. When it's cloudy or rainy, solar won't work as well (and you probably won't be swimming during those times), but your water will be back up to temperature after one or two warm days.

Do I Need A Special Pump?

If your pool pump is in good working condition, there shouldn't be any problem using your existing pump. A one HP pump will handle installations up to 30 feet (9 meters) away from the pool equipment and one story up. If the collectors are cool to touch when the water is running through them on a warm sunny day, you are getting enough flow.

Where Can I Put The Solar Collectors?

Anywhere you get at least 6 hours of full sun during the day. The longer the collectors are in full sun, the better they will work. If you are mounting the solar on an angle (like a roof or rack), the collectors should face in a southerly direction.

What Tools Will I Need?

- Flat head screwdriver or 5/16" (8mm) nut driver
- For roof or rack mounting you will also need:
- Power drill
- 1/8" (3 mm) drill bit and a Phillips head bit
- Silicone sealant (GEL or equivalent)

What additional parts will I need to install the solar system on the ground or on a rack?

- For a ground mount installation you will require 2 hoses - one that will reach from the pool equipment to the collector and one that reaches from the collector back to the pool.

WARNING! POSITION THE RACK SO THAT IT DOES NOT PROVIDE ACCESS TO THE POOL FOR CHILDREN.

How much will the solar system weigh when filled with water?

Each solar box will weigh approximately 40 lbs (18 kg), when filled with water. There is very little additional load on your roof since the weight is dispersed over a large area.

For aboveground pools

Pool Sizes		Number of Solar Boxes	Area Needed
Round	Oval		
12' - 18' (3.7 m - 5.5 m)	12' x 24' (3.7 m x 7.3 m)	1	3 ft x 21 ft (1 m x 6.5 m)
21' - 24' (6.4 m - 7.3 m)	15' x 30' (4.6 m x 9.1 m) - 16' x 25' (4.9 m x 7.6 m)	2	5 ft x 21 ft (1.5 m x 6.5 m)
27' - 28' (4.9 m - 9.8 m)	16' x 32' (4.9 m x 9.8 m) - 18' x 34' (5.5 m x 10.4 m)	3	7 ft x 21 ft (2.1 m x 6.5 m)

Use a solar blanket to hold in heat at night or during cool weather.

For inground pools

Inground Pools up to	Number of Solar Boxes
15 x 30' (4.6 m x 9.1 m)	2
16 x 36' (4.9 m x 11 m)	3
20 x 40' (6.1 m x 12.2 m)	4

Use a solar blanket to hold in heat at night or during cool weather.

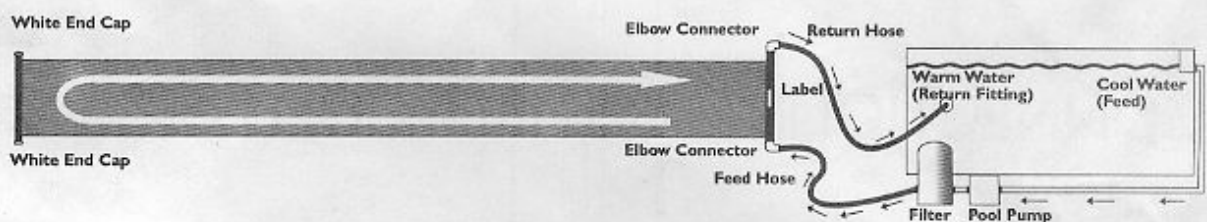
SYSTEM LAYOUT

Single System

for aboveground pools

Required:

- Flathead screwdriver or 5/16" (8 mm) nut driver.
- To install your solar heating system you will require 2 hoses - one that will reach from the pool equipment to the collector and one that reaches from the collector back to the pool.



1. Provide an area that is free of any sharp objects with at least 6 hours of full sunlight a day.
2. Remove strap from collector and unroll it placing the headers with the serial number label closest to your pool equipment.
3. Allow the collector to relax in the sun (30 minutes to an hour). **DO NOT LAY COLLECTOR ON THE GRASS IT CAN DAMAGE THE LAWN UNDERNEATH! DO NOT WALK ON COLLECTOR.**
4. Remove and discard the black protective end caps covering the threaded ends of the header pipes.
5. Wrap the threaded ends of the headers with Teflon tape provided (as shown) for a watertight seal.
6. On the header without the label, thread white end caps on the open ends (as shown). Be careful not to cross-thread.
7. Thread elbow connectors on the open ends of the header with the label (as shown). Be careful not to cross-thread.
8. Turn off pool pump.
9. Go to pool and plug the round return fitting on the pool wall from the inside, so the water won't drain through (a winter plug works well).
10. Connect a hose from the filter to the lower elbow connector. Always fill the system from the bottom.
11. Connect another hose from pool return fitting to other elbow connector.
12. From the inside of the pool wall, remove the plug you placed in the round return fitting.

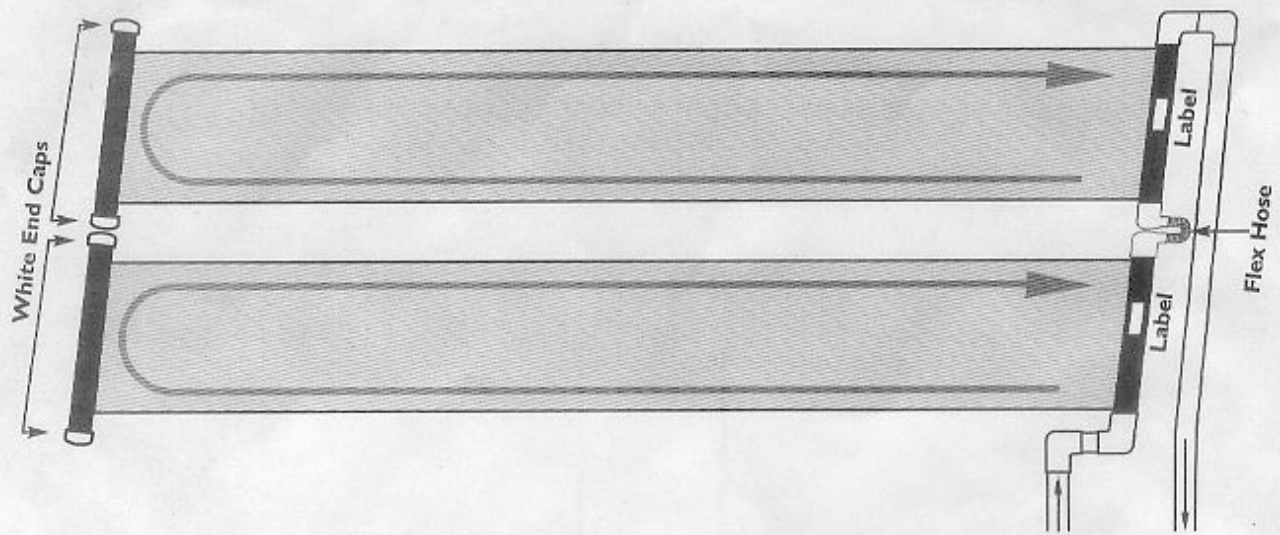
YOU ARE NOW READY TO START-UP YOUR SOLAR POOL HEATER

13. Turn on the pump. Check for leaks and tighten the connections that need attention.

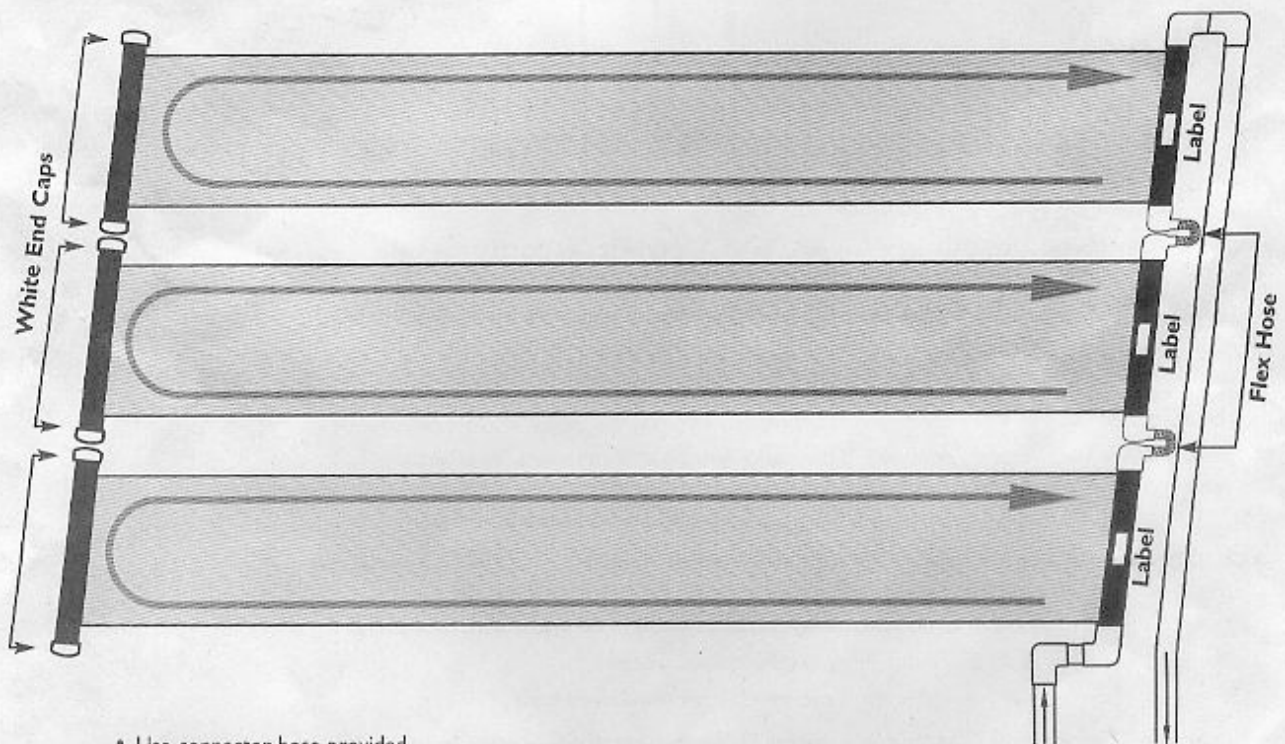
Note: Upon start-up you will see air bubbles come through the return hose. This is normal and will stop after all the air has been purged from the solar heating system.



CONNECTIONS FOR TWO COLLECTORS



CONNECTIONS FOR THREE COLLECTORS



- Use connector hose provided.
- Maximum of three collectors may be plumbed in series.
- Pitch the collectors slightly toward the end caps for winterizing and draining - 1" (25 mm) - 2" (50 mm).
- Do not add additional mounting hardware other than DPL POOL EQUIPMENT approved kits.

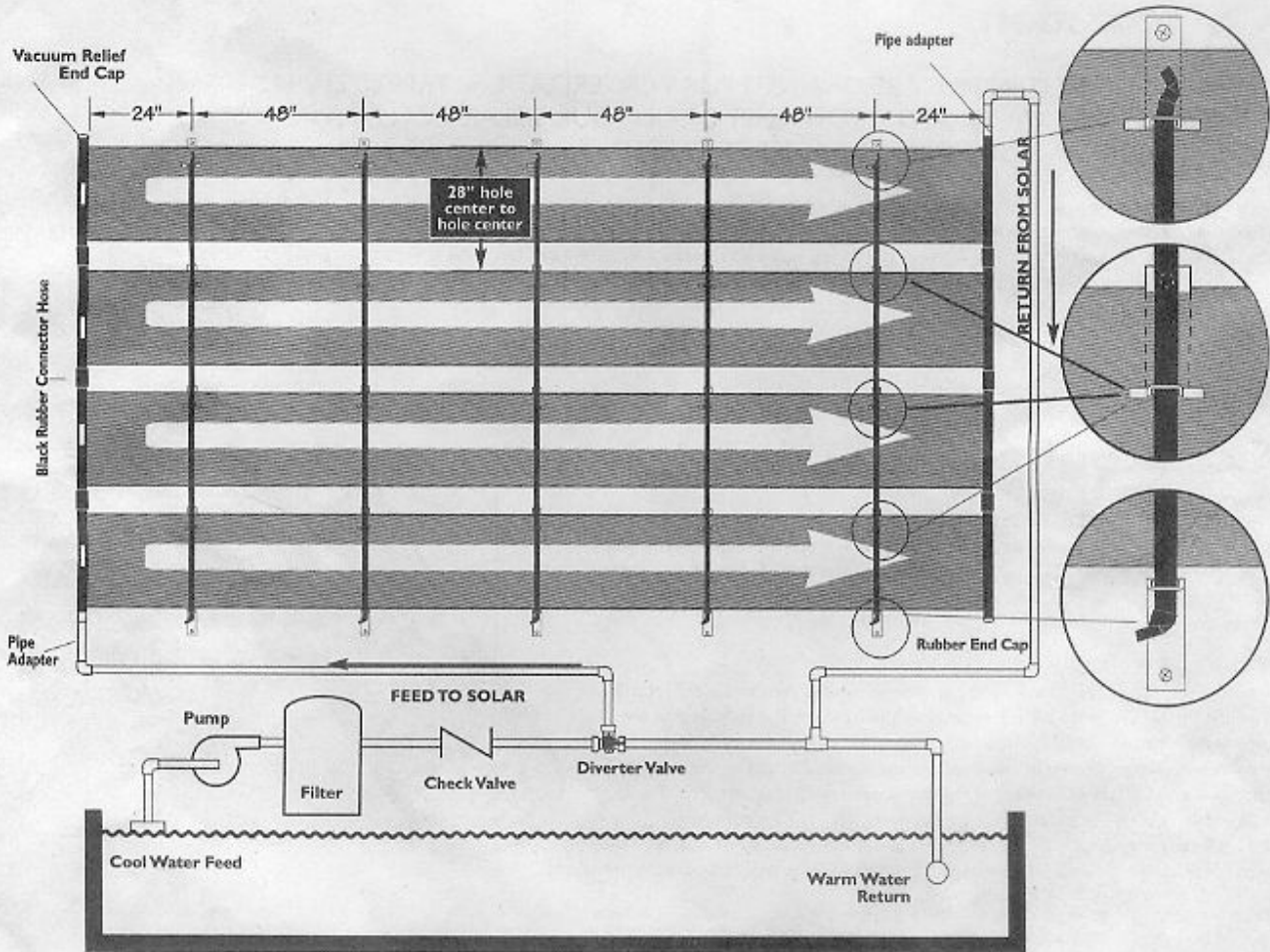
SYSTEM LAYOUT

for inground pools

CAUTION: Unless you are familiar with working on roofs and have the proper ladders and safety equipment for such work, you should hire someone with the necessary experience to do the installation. Failure to observe safe practices on a roof or other elevated structure may result in falling, leading to serious injury to you.

Required:

- Flathead screwdriver or 5/16" (8 mm) nut driver
- Power Drill
- 1/8" (3 mm) drill bit and Phillips head bit
- Silicone sealant (GE II or equivalent)
- Enough 1 1/2" (38 mm) Schedule 40 PVC pipe for the plumbing going to and from your pool equipment and fittings.
- PVC Primer and Glue



OPERATION & MAINTENANCE

Operation

1. The collector should feel cool to the touch when the sun is shining on the collector and water is passing through. This means that the heat is being transferred to the water.
2. The water returning to your pool will be a few degrees (3-5° F/2-3° C) warmer than the pool itself. This is the most efficient way to heat a large body of water like a pool. Keep circulating the water and add a few degrees each pass.
3. Circulate water through the solar collector at least 6 hours per day during the daylight hours on sunny days. If you circulate your water through the collector at night, or when it's overcast or on chilly days, you will cool your pool water rather than heat it. If you need to run your pump at night, divert the water directly back to the pool and bypass the solar system.

Winterization

YOUR SOLAR SYSTEM MUST BE DRAINED FOR WINTERIZATION! FREEZE DAMAGE IS NOT COVERED UNDER WARRANTY! YOU MUST DRAIN YOUR SOLAR COLLECTORS JUST LIKE YOU DRAIN THE REST OF YOUR POOL EQUIPMENT!

Remove the white end cap at the top of the solar system. Remove the white end cap at the bottom and be sure ALL the water is drained out of the system. Replace end caps and blow pressurized air through the system. After blowing them out, remove and store the bottom end cap for use again in the spring when you start up again. You can leave the collectors in place (as long as they are completely drained) and they will withstand even the harshest winters. SmartPool recommends that you store your collectors inside in a warm dry place.

Collector Repair

IF THE COLLECTOR DEVELOPS A LEAK

Your solar collector is warranted against defects in materials and workmanship (see warranty for details and limitations). If a leak develops for any other reason, you may use the repair method shown. The collector is not warranted against freeze damage.

SOLAR COLLECTOR REPAIR

This method allows for an easy and permanent, on-site repair of a collector by isolating the leading riser tube. Referring to the figure at the right, locate the tube to be isolated. (End tube has been shown for clarity). Using a sharp utility knife, very carefully cut away approximately 1" (25 mm) of the tube at both headers. Drive a #10 sheet metal screw, preferably stainless, into the hole in the header. The screw must be between 1/2" (12.7 mm) and 3/4" (19 mm) long. **DO NOT OVERTIGHTEN!** If the screw strips out, or if the repair leaks, use a #12 screw. This repair method will not void the collector warranty.

With proper care and winterization, you will enjoy your solar collectors for many years.

