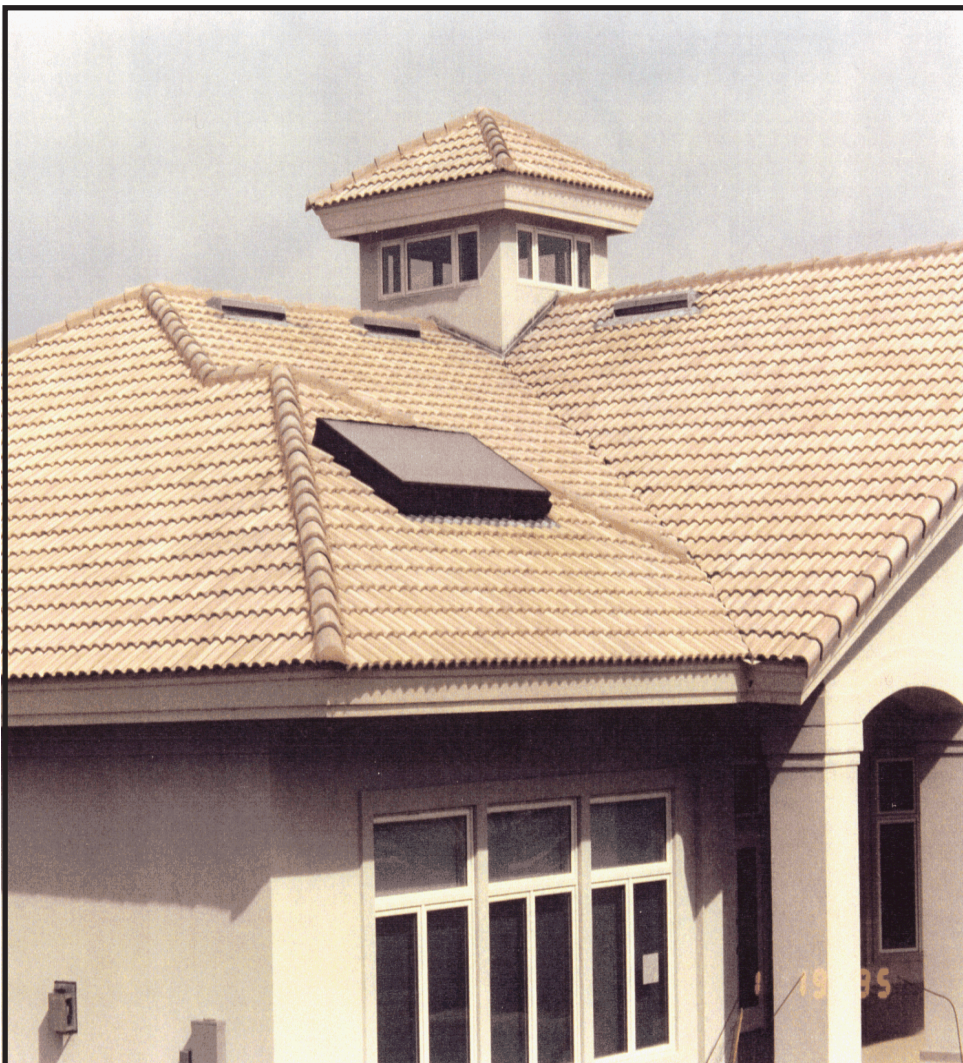
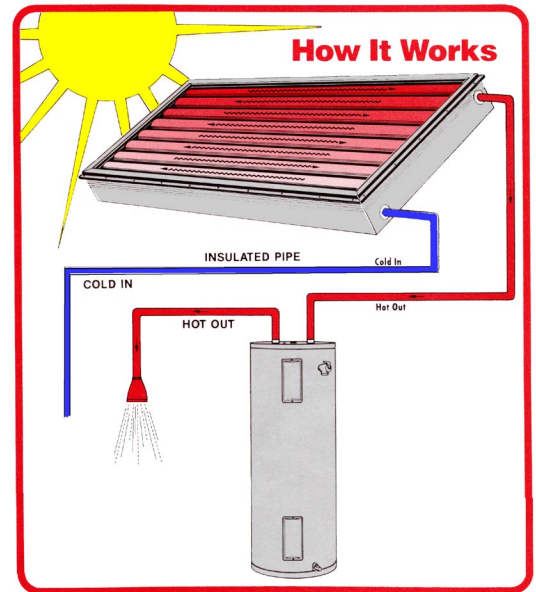


# ProgressivTube®

## SOLAR WATER HEATER

The **ProgressivTube® Passive Solar Water Heater** is a self-contained unit that acts as a solar collector and storage tank integrated into one piece of equipment. In most systems the unit is utilized as a pre-heater to a instantaneous or conventional water heater. It can also be used as a stand-alone heater when no backup is required.

The **ProgressivTube®** is a passive system because it has no moving parts and operates on local water pressure and solar radiation. There are no pumps or controls to maintain and no electrical energy is required to make it function. Once installed the system will operate automatically. When hot water is used in the household, solar pre-heated water is drawn into the conventional water heater (reducing or eliminating electricity or gas usage for heating water) or directly to the tap. However, as with all solar water heaters, the total amount of solar contribution to the system is dependent upon the hot water consumption pattern, daily weather conditions, and variable amounts of available sunlight throughout the year.



The collector/storage tank of the **ProgressivTube®** absorbs solar radiation through its selective surface coating which raises the temperature of the water stored in the collector. It is well insulated with closed cell foam and the unit is double glazed for increased heat retention. The eight copper tubes are welded into a series flow pattern so that the top of the lower tube feeds the bottom of the next tube. This allows the **ProgressivTube®** to contain the colder replacement water in the lower tubes where it is heated by the sun as it flows from one tube to the next. Each time hot water is used, the **ProgressivTube's®** innovative design eliminates the cooling down of the remaining heated water that normally occurs in other types of batch heaters. Not only does this design ensure the delivery of the hottest water, but is also provides more hot water at a higher temperature and with a faster recovery time than solar systems of similar capacity.

## SUPERIOR CONSTRUCTION

### FLUID CONNECTIONS:

Inlet and outlet connections are made of nominal 3/4" diameter hard copper pipes. This allows for fast, leak-free plumbing hook-ups.

### GLAZING:

Outer glazing is tempered low-iron solar glass with 91% transmittance. Inner glazing is Teflon® film, known for its high temperature tolerance (525°F) and its long term durability and stability, transmittance 96%. The 1" air space between glazings reduces heat loss.

### GLAZING GASKETS:

A continuous gasket made of special long life EPDM synthetic rubber is compressed by the glazing caps to seal out the weather. The inner glazing spline is made of high-temperature tolerant EPDM.

### CASE:

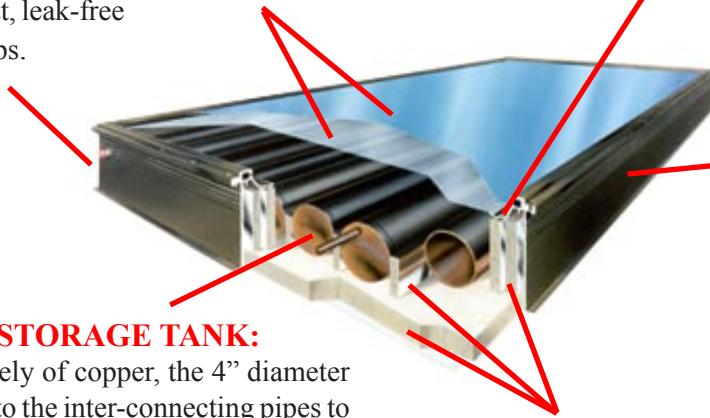
The baked-on bronze acrylic finish of the hard temper extruded aluminum framewall and glazing caps assures years of attractive rust-free appearance. All rivets and bolts are aluminum or stainless steel. Aluminum back sheet .025".

### ABSORBER / STORAGE TANK:

Constructed entirely of copper, the 4" diameter tubes are welded to the inter-connecting pipes to form a series flow pattern. The tank is pressure rated to 300 psi, holds 41.13 gallons of water, and is coated with a high-temperature "selective" solar radiation absorption surface that maximizes heat gain and reduces heat loss.

### INSULATION:

Rigid phenolic foam board, the most efficient insulation available, is used to maximize heat retention. Sides and ends of the unit have 1.5" board, R-value 12.5; bottom has 2" board, R-value 16.7; between tank tubes has 1.5" board, R-value 12.5.



## REASONS FOR INSTALLING THE PROGRESSIVTUBE®

1. Solar water heating reduces the monthly operating expense of the household.
2. Reduced operating expenses give homeowners more cash for discretionary purposes, savings, etc.
3. Solar water heaters are the only home appliance that saves money without reducing comfort or convenience.
4. Solar water heating is a hedge against higher future energy costs, which are a certainty.
5. Reduce dependence on foreign oil and the need to build expensive new power plants.
6. Solar is environmentally safe, conserves resources and reduces air pollution which causes acid rain, the "Greenhouse Effect" and respiratory health problems.
7. The **ProgressivTube®** has no moving parts to fail or maintain.
8. The unit doubles the hot water supply of the house when added to an existing water heater.
9. The **ProgressivTube®** unit comes with a Ten Year Factory Warranty, including freeze damage and has a minimum design life of 30 years.
10. Solar Energy is technology that contains the cost of the fuel in the initial price of the equipment.
11. Can be used as a stand alone heater; great for remote areas or where no electric is available for heating water.
12. Can be installed on almost any house as a retrofit, connecting to the existing water heater.
13. Can be installed on the roof or the ground.
14. The best time to install a solar water heater is when a home is being built. The homeowner is immediately in a positive cash flow position because the utility savings are far greater than the mortgage payment increment for the solar water heater.



## WHAT SIZE DO I NEED?

First estimate your hot water demand in gallons per day; use the chart below for an average figure (Note: add 15 gallons per additional person or 20 gallons per additional room). It varies widely with lifestyle (from 10 to 30 gallons or more per person) and with season (most people take longer and hotter showers in the

| People | Gallons | Bedrooms | Gallons |
|--------|---------|----------|---------|
| 1      | 20      | 1        | 30      |
| 2      | 40      | 2        | 50      |
| 3      | 55      | 3        | 70      |
| 4      | 70      | 4        | 90      |
| 5      | 85      | 5        | 110     |

winter). For situations involving small families in a large house, the number of bedrooms should be considered in sizing a solar water heater. A system sized to meet the needs of two people in a five bedroom house today will likely be inadequate for a family of five living in the same house tomorrow.

Next, choose a system from the following chart based on the gallons required. Note that multiple units may be combined to achieve the total gallons desired. It is generally wise to slightly oversize the system to help reduce backup requirements.

| Model                    | PT-20 | PT-30 | PT-40 | PT50 |
|--------------------------|-------|-------|-------|------|
| Average Output (gallons) | 40    | 60    | 80    | 100  |

## SPECIFICATIONS & TYPICAL INSTALLATION METHODS

Performance System Ratings:

|         |                |          |
|---------|----------------|----------|
| PT-20CN | 11,600 BTU/Day | 3.40 kWh |
| PT-30CN | 22,100 BTU/Day | 6.48 kWh |
| PT-40CN | 28,400 BTU/Day | 8.33 kWh |
| PT-50CN | 28,700 BTU/Day | 8.42 kWh |

Flow Pattern: Series

Test Pressure: 300 PSI

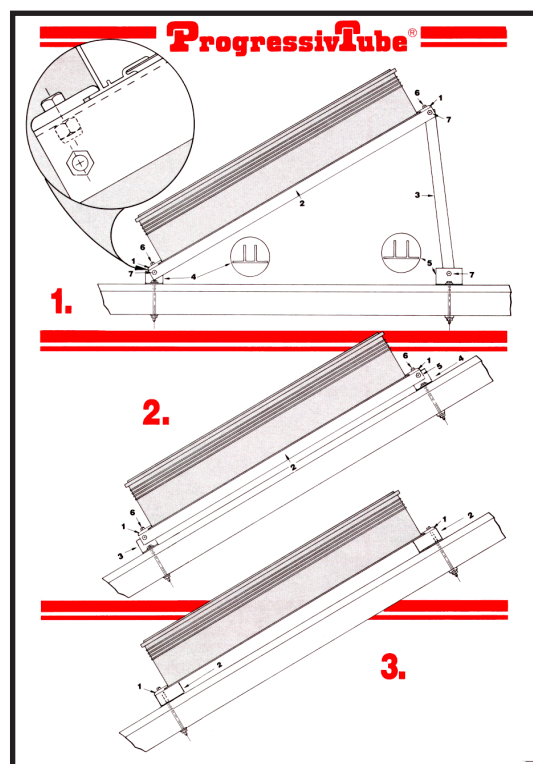
Design Pressure: 150 PSI

Maximum Design Temperature: 350°F

Normal Operating Temperature: 40 - 200°F

Wind Loading Testing to 180 MPH

| Model              | PT-20 | PT-30 | PT-40 | PT-50 |
|--------------------|-------|-------|-------|-------|
| Capacity (Gal)     | 17.9  | 30.84 | 41.13 | 51.40 |
| Length (Inches)    | 83.64 | 97.44 | 97.44 | 97.44 |
| Width (Inches)     | 21.6  | 35.44 | 47.44 | 47.44 |
| Depth (Inches)     | 7.8   | 8.44  | 8.44  | 8.44  |
| Gross Area (Sq Ft) | 12.56 | 23.98 | 32.10 | 32.10 |
| Dry Weight (Lbs)   | 92    | 174   | 220   | 265   |
| Wet Weight (Lbs)   | 235.2 | 425   | 563   | 664   |



## WHAT IS THE COST?

| Model | Description                | MSRP Installed | Your Cost <sup>1</sup> |
|-------|----------------------------|----------------|------------------------|
| PT-50 | ProgressivTube 50 Gal Unit | \$6650.00      | \$5500.00              |
| PT-40 | ProgressivTube 40 Gal Unit | \$6450.00      | \$5000.00              |
| PT-30 | ProgressivTube 30 Gal Unit | \$5950.00      | \$4500.00              |

## SAVINGS & RETURN ON INVESTMENT

An average family of four uses 70 gallons of hot water per day at a cost of \$535<sup>2</sup> per year. The typical Solar Water Heater will **save 90% or more of the heating costs, or \$482.00 per year.** A typical heater of this size (PT-40CN) with installation averages \$6650 minus a 30% tax credit; your net cost is \$4655.00

The **tax-free return** on this investment would be 9.6% ROI (\$482 / \$4655)

### Calculate your own Tax-Free Return On Investment (ROI):

Estimated Savings \_\_\_\_\_ divided by Your Cost<sup>1</sup> \_\_\_\_\_ equals \_\_\_\_\_ % ROI

<sup>1</sup> Call for "Your Cost" on a Complete Do-It-Yourself Kit or Installation.

<sup>2</sup> Based on 72°F incoming water heated to 140°F in Florida with an electric rate of \$0.10 per kilowatt plus standby heat loss from a new electric water heater. As the age of the tank increases, the cost of operation increases. Your savings may vary based on your usage, water temperature, climate and electric rate.

For more information  
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