What Is Solar Air Heater

Solar air heater is a type of system driving outdoor air through a sealed, sun-heated collector mounted on an exterior wall or roof, returning the warmed air back to the living space. The solar collectors are made with high thermal-absorption, black aluminum plates enclosed beneath highly transmissive sun sheet.

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Air drawn through the system absorbs the collector’s heat, rising in temperature by as much as 50-60 ºC. This process is similar to how a solar water collector heats up in the sun. All the system needs is some sunlight—it can even be partially overcast—and it will boost the temperature of your home.

How It Works

When sun arises and sunlight radiates on the solar air heating collector, solar absorber inside begin to absorb thermal energy from sunlight. Interior temperature reaches setting value immediately, the temp. Sensor inside collector will send signal to drive fan to work. Cold air enters into collector through the air inlet, and then is heated circularly by heat absorber (heat exchanger), and finally hot air is drove out of collector by the fan, and enters into the house through air outlet. The heat collector is fitted with thermal absorber, heating insulator and drive device, etc.

Solar absorber uses high performance selective coating, whose efficiency runs up to as much as 75%. Transparent cover adopts sun sheet from Germany BAYER, which has a better heat preservation effect and high transmission.

Insulation is done by integrated and sealing foam formation, which has a high preservation and better sealing effect.

Air flow is designed according to advanced principle of aerodynamic (hierarchical design), which can make air absorb maximum heating when it pass through the collector.

Environmental-protection and energy-saving product; its power is less than 50W. Easy and convenient installation; flexible operation and control. Strong heating supply ability: 2M2of collector can offer heating for a 24M2room. High heating capacity: its heating capacity is equal to 3500W air conditioner. Long life span: more than 15-20 years operation time.

Application for Solar Air Heater

The heated air that solar air heater produce can be used for:

- **Industrial purposes:** Air pre-heating for combustion processes, that means thousands of applications
  - Drying minerals, coal, paper, bricks, food industry products, etc. Especially the drying of brown coal would be very important for power plants.
  - Space heating for warehouses, factories, etc.

- **Agricultural purposes:**
  - Crop drying: grains, fruit, vegetables, meat, etc.
  - Important benefits can be gained by harvesting the crop early and drying it with solar heat to protect it from rodents, mildew, etc. and to free the land for a second, brief crop space heating for greenhouses, warehouses and animal farms. Fruit and other produce dryers.

- **Household purposes:**
  - Space heating small driers

- **Community and commercial purposes:**
  - Space heating for public buildings, office buildings, shopping centers

- **Camp or camping purposes:**
  - Space heating for emergency relief camps or military camps
  - Space heating for recreational camping and expeditions in cold climate
We recommend that solar air collector systems be tilted at an angle equal to your location’s latitude plus 15° to optimize their production of heat in the winter. You may wish to mount the collectors vertically on a south facing wall. While this is not optimal, it is acceptable as the collectors will turn on earlier and off later even though they will not produce as much heat, because the sun is most intense at noon every day when it is highest in the sky.

If a choice of east or west is available it is usually best to orient the collectors to the west. The outside temperatures are almost always warmer in the afternoon. Prevailing local weather patterns should also be considered in mounting the collector. For instance, if you are in an area where mornings are normally clear and afternoons are cloudy, it would be best to face the collector in a more easterly direction. A properly orientated solar collector can increase system payback up to fifty percent quicker than a haphazardly installed system.