



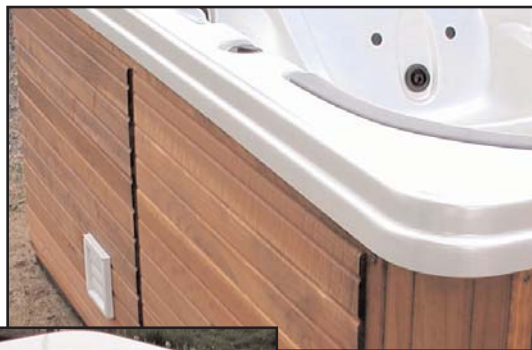
These photos depict the level of quality that Haven Spas show the world. It is no wonder Haven is quickly becoming the name for quality and modern engineering. In Haven spas the finest components, plumbing parts and electronics are installed. The major difference in Haven is tremendous therapy and power at the lowest possible electric consumption and longest equipment life. This is true engineering; something rarely seen in the spa industry.



Testing and more testing. In the factory the spas are tested to temperature. Then after they reach the staging facility, where the DAIT is installed, they are tested again. The equipment is tested three times. This photo shows testing before the insulation is applied.

The only spa shells worth considering are fiberglass. We use a bonding agent and hand rolled fiberglass. The worker is rolling the glass.

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If you are looking for the finest spas made to day, with the highest degree, state of the art engineering, saving you a lot of money, then you deserve a Haven Spa. Haven Spas are sold direct to consumers all across the continental US with special shipping arrangements outside the US:



Direct to you saves you money. Spas from \$8995 and up to \$32,990 with stereos, TV's. and fiberoptic lights and special custom plumbing.

The most informative web site:
www.spaspecialist.com
www.havenspasp.com
Broomfield , Colorado
303-404-2224

The Haven Spas D.A.I.T. Insulation

Dynamic Automatic Insulation Technology automatically adjust the effective insulation of the spa, seasonally by trapping heated air from the equipment and moving heated air in and through the cabinet. The range of effective insulation varies from R-87 in full winter to R-11 or less in summer. It involves using thermal sensors and a proprietary logic control system to make all the adjustments. The DAIT has multiple sensors and external sensing of the thermal conditions inside and outside of the cabinet.

The advantages for this are numerous in the effective use of the pump heat, for thermal barrier insulation and less use of the electric heater.

Pump overheat in spas with equipment boxes with poor cooling dynamics on these out of date designs (all other spas in current production), is

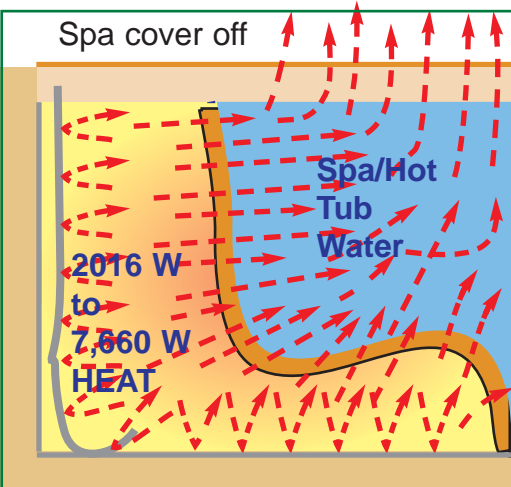
what causes premature failures on the motors. In our standard thermally closed design the heat is spread out in a much larger enclosure, and that heat is rapidly dissipated into the spa water. The spa water in the vessel acts as a huge pump cooling "radiator". This is a symbiotic relationship between the spa vessel and the pumps. This DAIT is unique to Haven Spas.

The only time the pumps produce high heat is during spa use; the cover is off and the spa is losing heat "like crazy" (jets on full) out the top of the spa. That is a time when the thermally closed DAIT spa is very energy efficient and the heater use is extremely limited or eliminated by the pump heat going into the water.

If you extract the normally wasted motor heat, form a heat barrier and make that heat enter the

water while the cover is off, the electric 4,000 to 6,000 watt heater will not operate for a long time, even with very cold weather. The savings in electric consumption and thermal wear and tear on the motors is great! This increases the longevity of Haven Spas drastically over the standard designs and makes them the most energy efficient of all spas using any similar equipment (in some cases 1/3 the KWH).

The environmental impact of using a lot less energy and the fact that The Spa Specialist has the most earth friendly ways to care for water, gives them the edge over all the competitors. The engineer of the Haven spas, James Arjuna says: "We have no real competition. Once the spa shopper realizes what we have, then it becomes which model to choose."



In this illustration depicting the inside cut away of a DAIT equipped spa cabinet we demonstrate the function of the heat energy from the jet pumps running on "high speed" to show the amounts of heat generated and being transferred into the spa water during the spa use.

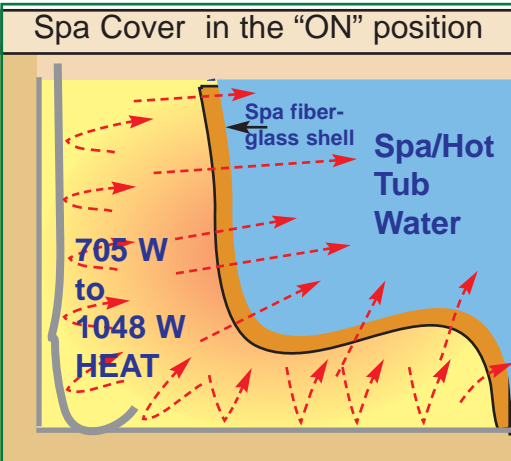
It shows the cover off and the normal heat loss out the top of the spa. However, most of the heat loss out the top is overcome by the heat transfer rate exceeding the heat loss.

At this moment of use other spas will use the electric heater and the jet pumps at the same time. On the majority of our models we turn off the, 5,500 Watt heater at this time because it is not needed. Fully foamed spas vent this heat into the yard or overheat the equipment while the pumps run.

The smallest pump we use in our smaller spas produces the equivalent of 2,016 Watts of heat energy and the largest produces 7660 Watts with twin 6 HP pumps. All Haven jet pumps are 2 speed. There are thermal sensors inside the cabinet to insure the pumps never overheat, in case the water is not extracting the heat energy fast enough. In summer we set the temperature points lower to insure the water never reaches any unsafe temperatures.

All the other spas with full foam will waste the energy of the pumps by blocking any thermal contact. They also over heat from the lack of air movement in those boxed in areas. This is why our service company replaces so many pumps in other brands of spas.

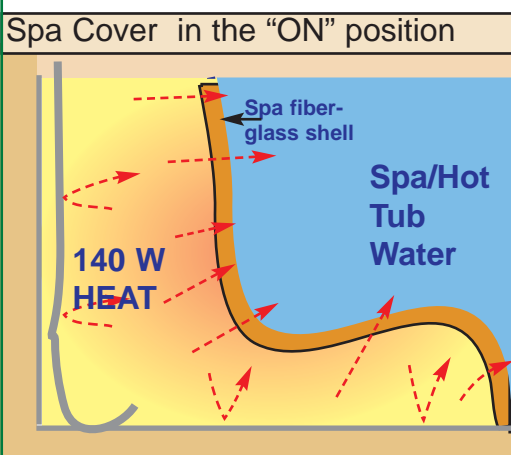
DAIT is the true "State Of The Art"



In this illustration, depicting the inside cut away of a DAIT equipped spa cabinet, we demonstrate the function of the heat energy from the jet pumps running on "low speed filtering" to show the amounts of heat generated and being transferred into the spa water.

It shows the spa cover on top of the spa, and the normal heat loss out the top of the spa is restricted by the insulation of the cover. This is another time when most other brands of spas will use both the jet pump and the heater. They isolate the pump's heat from the spa water. One of the basic laws of thermodynamics is: "heat travels from warm to cool and only from warm to cool". If the air inside the cabinet is warmer than the water, there is ZERO heat loss from the

vessel while the pumps run. There is actually the opposite of heat loss because the heat is transferring into the spa vessel in direct proportion to the energy the pumps produce. There is one "problem" with this in that in summer the spas are too heat energy saving and too heat retentive, so with the DAIT we allow the use of a "forced convection" cooling to operate automatically. It is all automatic and very safe. Under all but the coldest weather, the heater will almost never function when the spa is filtering. In between "filter cycles" the spa vessel has stored up heat, like a heat battery. It then helps to maintain the thermal warm air barrier. Read Online article on heat transfer. Click Here <http://www.spaspecialist.com/aug2000.html>



In this illustration, depicting the inside cut away of a DAIT equipped spa cabinet, we demonstrate the function of the heat energy from the "24 Hr. 48 Frame Circulation Pump" to show the amounts of heat generated and being transferred into the spa water.

It shows the spa cover on and the normal heat loss out the top of the spa is restricted by the R-value of the Cover(s). It is at this moment that all other brands of spas will use the electric heater and the their filter pump at the same time also, because the pump is relatively isolated from the spa water. Other spas heat only comes from the electric heater.

With this filter pump we adjust the flow to an average of 30 GPM with a specially designed

low pressure higher volume pump. These are modern pumps that produce the most water flow with the least energy. The competition with all the heat waste cannot use this large of a pump with out it costing way too much so that lack in clean water from poor filtering.

In the DAIT equipped Haven spa we have 24 hours of 100% heat barrier insulation. This is the most energy efficient cold weather design in the world. If you look you can see, as signified by the fewer heat arrows and the density of the lines, there is less heat transfer, but still enough to stop heat loss. Since this pump runs all the time it does not need the battery effect as used in the higher amp, low speed of the regular pumps.