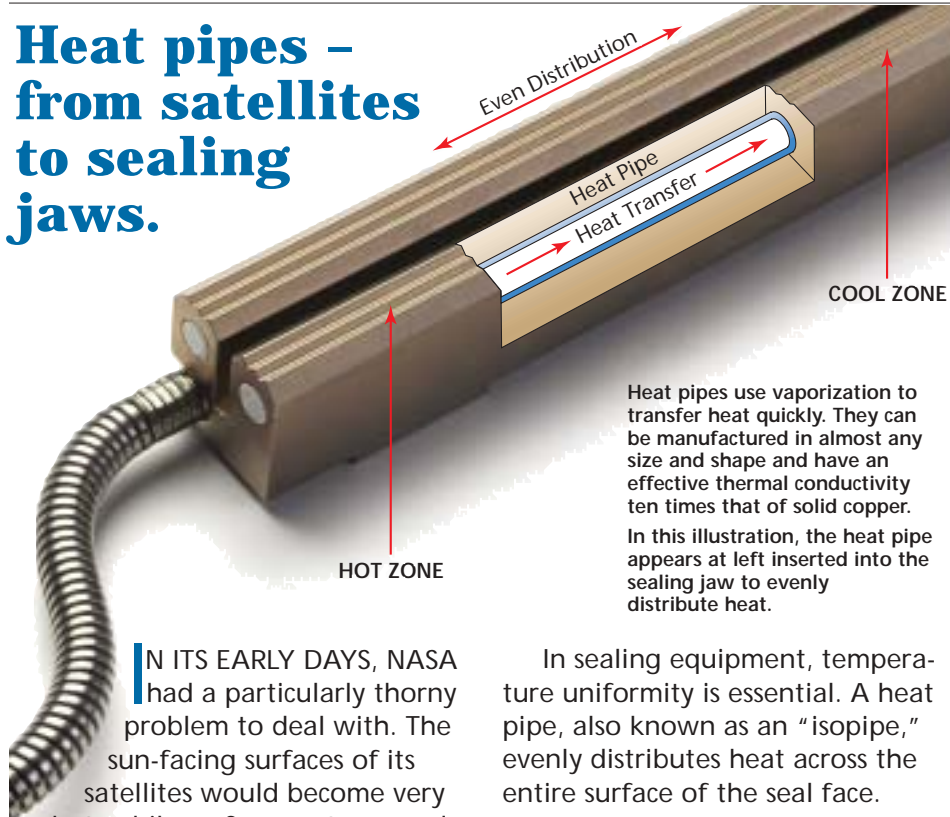


Heat pipes – from satellites to sealing jaws.



Heat pipes use vaporization to transfer heat quickly. They can be manufactured in almost any size and shape and have an effective thermal conductivity ten times that of solid copper. In this illustration, the heat pipe appears at left inserted into the sealing jaw to evenly distribute heat.

IN ITS EARLY DAYS, NASA had a particularly thorny problem to deal with. The sun-facing surfaces of its satellites would become very hot, while surfaces not exposed to sun would get extremely cold. The wide temperature variations threatened to derail the satellites' entire electronic systems.

The solution? NASA worked with Los Alamos Scientific Laboratory to develop heat pipe technology.

A heat pipe is a tubular device in which a fluid alternately evaporates and condenses, transferring heat from one region of the tube to another. Heat pipe technology is now used in almost all spacecraft.

Meanwhile, back on Earth

Like other spinoff applications from NASA, heat pipe technology found a broad range of applications closer to home. It is an especially practical solution within the package seal industry.

In sealing equipment, temperature uniformity is essential. A heat pipe, also known as an "isopipe," evenly distributes heat across the entire surface of the seal face.

Southwest Endseals – your heat pipe experts

Heat pipe technology is the very best way to achieve temperature consistency in sealing jaws. With no moving parts, heat pipes are highly reliable, offering significant maintenance economies and improved efficiencies over variable-wound cartridge heaters. And they can be installed in almost any jaw relatively quickly.

At Southwest Endseals, we are knowledgeable in this technology. Rely on us for advice about which applications are most appropriate for your sealing needs. Whether you're having difficulty maintaining even heat distribution or just want to know more about heat pipes, give us a call at **866-832-1454**.

HEAT PIPES – WHAT'S AT STAKE?

- * More consistent sealing
- * Lower operating temperatures
- * Thermal stability
- * Higher productivity
- * Fewer seal failures

Ask SWE

How can I check to see if heat is being distributed evenly along the sealing jaws?

ONE METHOD involves using a digital temperature probe or an infrared thermometer to measure the temperature of the sealing face in two-inch increments.

Another, more visual, test is to use heat-sensitive "tipi" paper. This paper changes color when it comes in contact with heat. You can obtain this visual representation of your heat profile by placing a sheet of tipi paper between the heated sealing jaws as the jaws close. The resulting blue-shaded impression gives you an indication of the heat profile. A uniformly shaded paper indicates a uniformly heated jaw. If some areas are darker or lighter than other areas, it's time to consider making a change to your sealing jaws. Note: Please use extreme caution when working around heated jaws. These jaws are a burn hazard, as well as a crush hazard.

Make heat testing a routine part of your seal maintenance program. And if you have questions or need help, call Southwest Endseals. We're here to help!

Call Southwest Endseals for consulting services

Let us put our knowledge to work for you. Here are just a few of the ways we can support your business:

- If you have a particular seal or hole punch issue, send us the film and let us evaluate it and make recommendations.
- Let us test your sealing patterns to determine the best ones for your applications.
- Our superior design and engineering capabilities allow us to completely redesign a sealing jaw assembly if necessary.
- We can also conduct sealing jaw seminars to keep your staff up to speed.

Our capabilities range from engineering to mechanics and our expertise ranges from materials to computer-aided design.

Over our years in the industry, there's hardly a packaging problem we haven't seen – and solved.

