



Heat Transfer Research, Inc.

Standard vapor infusion system trial program

The standard vapor infusion system applies to most heat exchangers with cooling water mass flow less than 300kg/s (~4750gpm), pressures up to 60 psig and cooling water inlet pipe sizes of 2-20 inches.

HTRI offers a six (6) month trial using a single standard ½" vapor infusion system to determine efficacy in your heat exchanger's unique environment, including your ambient conditions, type of fouling, heat exchanger operating conditions, upstream and downstream system water flow affects, etc.

Program:

HTRI provides a standard vapor infusion control device and ½" installation kit for the system free of charge (no rental fee) for the term of the trial. System components that are customer application specific including air regulator/filter drying system, infusion wand, cartridges and specialized installation kits are purchased by the customer*. The standard vapor infusion control device includes a ¾"-2-way stainless steel ball valve, Premier electric actuator, electronic timer, stainless steel cartridge housing, NEMA 4X polycarbonate device enclosure meeting IP65 & IP67 specifications. At the end of the trial, and results are acceptable, customer may continue use of the vapor infusion system by paying the first annual rental fee for the vapor infusion control device. If results are not satisfactory, the customer sends the vapor infusion control device back to HTRI and disposes of the other system components and cartridges.

Customer provides:

- 110-volt or 220-volt electric service,
- a dry (entrained water removed), oil free, regulated air source with pressure great enough to provide 10-30 psi difference between the air supply and heat exchanger water stream to drive the desired air flow rate. A pressure regulator is needed prior to entry into the infusion system,
- ½ to 1-inch female NPT connection at the cooling water inlet injection site of the heat exchanger approximately 4 feet (1.22 meters) from the exchanger inlet,
- personnel to replace cartridges monthly,
- vapor infusion application questionnaire/checklist and heat exchanger information, and
- heat exchanger performance data including heat exchanger process fluid and cooling water flow rate, temperature and pressure of the inlet and outlet heating and cooling streams, before installation and, at least, for each month after treatment begins during the trial to HTRI.

The customer is responsible for installation of the vapor infusion system onto the customer's heat exchanger cooling water inlet piping (injection site) and any tubing between the vapor infusion control device and onto the customer's heat exchanger. The customer may choose to have an HTRI representative at the site, or available virtually, during installation. Hourly consultation fee and travel expenses (airfare, hotel, meals, transportation, visas, etc.) apply to on-site installation consulting.

We will send you an HTRI vapor infusion application questionnaire/checklist for you to provide information that will allow us to assess your unique heat exchanger application. The vapor infusion system operating conditions, including airflow to the vapor infusion system, is determined by the heat exchanger specifications, operating conditions and cooling system information supplied to HTRI via the vapor infusion application questionnaire/checklist. We will analyze the information provided and prepare vapor infusion system proposal and price for your trial. If you agree, we will prepare a Vapor Infusion Lease, License and Sales Agreement to facilitate your vapor infusion implementation. Once the Lease, License and Sales Agreement is signed, we will ship the vapor infusion system and cartridges to you for your installation and provide you with the *Vapor Infusion System Description, Installation, and Maintenance* document.

See more information about vapor infusion at our website <https://www.htri.net/vapor-infusion>.

**Additional costs apply to customer applications requiring a) custom infusion adaptations such as longer or Hastelloy infusion wands, b) larger size or special installations kits, c) spargers or slip stream infusion, d) special ingress protection for system enclosures, e) dual wand kits, or f) supplemental air conditioning devices.*

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