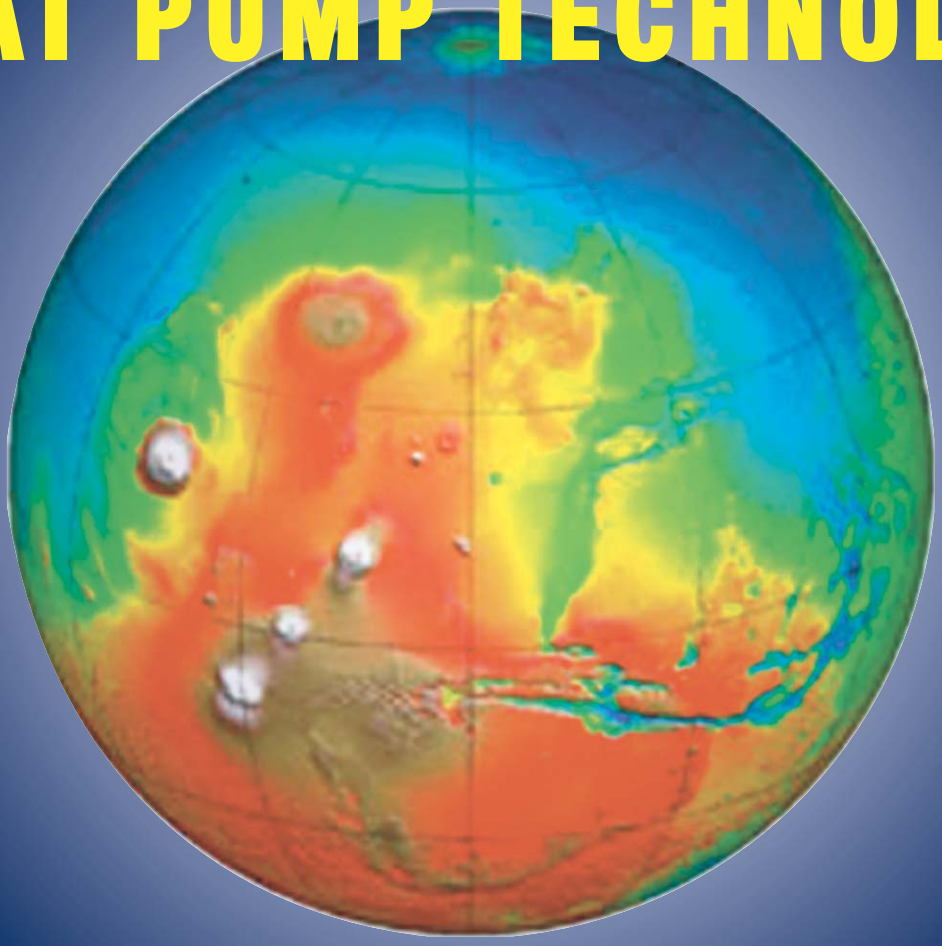
THE NEWEST IN HEAT PUMP TECHNOLOGY



ISO 9001:2015

Hampden®
ENGINEERING CORPORATION

MADE IN U.S.A.

THE NEWEST IN HEAT PUMP TECHNOLOGY

Heat pump theory is based on the principle that heat will move from a high temperature to a lower temperature. This means that if a heat transfer coil can be kept at a lower temperature than its surroundings, it will pick up heat from those surroundings.



The Hampden **Model H-RST-8 Heat Pump Trainer** provides students with an introduction to the principal components of heat pump systems.

The instructor is able to insert eighteen electrical faults, including:

- Defective fan motor
- Switches
- Relay
- Compressor faults

The Hampden **Model H-RST-8** contains:

- One environmental enclosure
- Fan cooled evaporator
- Emergency heat
- Thermal cutout switch
- Manual thermostat
- Digital thermostat
- Defrost timer
- Reversing valve
- Hermetic compressor with condenser
- Liquid receiver
- Gauges
- Valves
- Check valves
- High and low pressure switch
- Filter-drier
- Sight glass moisture indicator
- Thermostatic expansion valves
- Lockable storage cabinet

Charged with R-134a HFC refrigerant.

Option*

H-RST-8-CDL Heat Pump Trainer with Computer Data Logging Package, allows monitoring of the Temperature and Pressure.

*Option must be specified at time of original order.

The Hampden **H-MACK-HP Heat Pump Trainer Kit** Includes:



- 1/4 HP open type belt driven compressor with motor
- Fan-cooled condenser
- Fan-cooled evaporator
- Two check valves
- Two capillary tubes
- 4-way reversing valve
- Reversing valve switch
- Filter-drier - dual flow
- High pressure control
- Main circuit breaker
- Duplex receptacle
- Compressor switch
- Pilot light
- Evaporator fan speed control
- Hardware kit
- Cold box and courseware.



The Hampden **Model H-HP-3 Heat Pump Demonstrator** provides students with the ability to observe and operate a full-size combination air conditioning/heat pump unit.

The **Model H-HP-3** is charged with a non-CFC refrigerant.

Having The Power To Make Informed Decisions Through Knowledge

Used in homes and in some industries, the "heat pump" is a heat-moving mechanism. Heat is absorbed into an evaporator from one location and released through a condenser in another location. Some systems use a special reversing valve to reverse the operation so that the evaporator becomes the condenser and the condenser becomes the evaporator—heat flow is reversed. The system either heats or cools the conditioned space.



The Hampden **MODEL H-HPT-3 Heat Pump Trainer** simulates the split system heat pump. Split system heat pump units are designed for use with a wide variety of fossil fuel furnaces, electric furnaces, air handlers, and evaporator coil combinations.

A heat pump is a heat moving mechanism. Heat is absorbed in an evaporator in one location and released through a condenser in another location. The system can reverse its operation so that the evaporator becomes the condenser and the condenser becomes the evaporator. Heat flow is reversed. By using a special reversing valve, the mechanism either heats or cools the conditioned space. The flow through the compressor is always in the same direction. Heat pumps use a compression type refrigerating mechanism, similar to a regular refrigerating mechanism. They have two heat transfer surfaces—one located inside the conditioned space and one located outdoors.

MODEL H-RST-17 Heat Pump Trainer consists of commercial components completely plumbed and wired for demonstration.

The student will study the thermodynamic cycle of the typical heat pump.

This system supplies either heating or cooling for a separate closed circuit air handler.





The Hampden **Model H-RST-12 Heat Pump Trainer** with water cooled condenser provides the student with an introduction to the principle components of heat pump systems.

For practical electrical troubleshooting, the instructor has the ability to insert *eighteen* commonly found electrical faults such as:

- defective capacitor
- motor
- timer

The instructor may also insert two mechanical faults such as a defective thermal expansion valve and defective filter-drier.

Standard Products…Designed to Meet Your Growing Needs!

Hampden Engineering Corporation

THE NEWEST IN HEAT PUMP TECHNOLOGY

The Hampden **Model H-ACCS-2 Air Conditioner/Heat Pump Controls Trainer** provides students with the opportunity to operate, test, and troubleshoot the electrical controls of a motel-type air conditioning unit that includes a heat pump. It contains the actual control components and devices. The compressor, fan motors and heater are simulated with suitable resistances.

The twenty fault switches located behind a lockable panel permit the instructor to introduce a malfunction for student troubleshooting experience. Power is never applied externally to any of the binding post test points. When the trainer is energized, realistic voltages appear across the actual and simulated devices. When de-energized, all components and devices may easily be isolated for resistance and continuity tests.



The Hampden **Model H-HPT-1D Heat Pump Controls Trainer** provides students with the opportunity to operate, test and troubleshoot the electrical controls found in large heat pump installations.



- Control components are surface mounted for visibility and accessibility
- A complete circuit diagram and numerous test points are provided on the panel
- Twenty-four fault switches allow the instructor to introduce a variety of malfunctions for student troubleshooting experience
- The student never applies power to any test points
- When the unit is energized, realistic system voltages display across actual and simulated devices.
- Combined audio and visual signals indicate a running compressor
- When de-energized, all components and devices may be easily isolated for resistance and continuity test.

The Hampden **MODEL H-HPT-2 Advanced Heat Pump Control Trainer** is designed to facilitate instruction in the understanding and troubleshooting of the electrical controls of a heat pump system. It makes use of actual "live" components wired into an operating electrical controls system.



- The compressor and heaters are simulated by means of indicator lights
- Easy to read electrical circuit legends
- Diagram of the refrigerant system is silkscreened on the panel face
- Components can be easily disconnected for testing
- Mounting on rear for an input circuit breaker
- Mounting on rear for twenty-four fault injection switches



Hampden is committed to providing industry-leading technology.

For the latest from Hampden, visit our home page at http://www.hampden.com or e-mail us at sales@hampden.com

Hampden® ENGINEERING CORPORATION

99 Shaker Road P.O. Box 563, East Longmeadow, MA 01028-0563 • TEL. (413) 525-3981 • (888) HEC-CORP • FAX (413) 525-4741

042821