



# Hydronic Heating Source Residential Space/Water Heating 5-, 7-, 9-, 11-, 14-, 18-, 22-, 28-KW Models

## 10-Year Limited Warranty\*

### Chamber and Parts

### Features & Benefits

**High Efficiency Compact Design**—The SEISCO Hydronic Heating Source provides unlimited space and/or water heating while operating within its designed BTU output and gallons per minute range, providing the perfect source of heat for radiant floor heating systems, and combination water/space heating systems. The SEISCO Hydronic Heating Source is the ideal replacement for traditional boilers and tank-type water heaters for applications requiring up to 155°F water temperature. When installed as part of a total system energy conservation solution, it can facilitate the use of active renewable energy sources such as solar and geothermal. The SEISCO Hydronic Heating Source can be used in potable water systems (specify when ordering) or with glycol-based low pressure/low temperature hydronic heating systems. The SEISCO Hydronic Heating Source is compact in size and easily mounted where space is limited. Heat is provided only on demand, virtually eliminating standby heat loss, resulting in over 99% efficiency.

**Microprocessor Controlled**—On-board computer logic controls temperature through a modified proportional, integral, derivative (PID) control scheme. The control also provides self-diagnostics, alerts the homeowner in case of a leak inside the unit, incorporates optional off-peak control capabilities for local utilities, and intelligently controls power distribution to the heating elements while continuously monitoring critical functions in order to shut down the unit if a failure occurs.

**PowerShare™ Technology**—Patented power distribution control technology utilizes computer algorithms and electronic TRIACs with patented cooling technology to pulse power on and off to all heating elements resulting in uniform temperature modulation between 1-100% of the element's range. PowerShare also eliminates electrical disturbances in the home from the water heater, such as flickering lights.



*Two- and Four-Chamber Models Shown*

**Thermistor Temperature Sensing**—Multiple electronic temperature sensors called thermistors continuously monitor inlet temperature and the temperature in each heating chamber. Outlet water temperature is factory set to 120°F and is field adjustable between 105 and 145°F (155°F by special order). In addition, water flow is sensed using the same thermistors, eliminating the need for troublesome flow switches. The SEISCO Hydronic Heating Source works independently of circulating pumps and auxiliary wall thermostats.

**Heating Elements**—Industry standard 1½" hex head, direct immersion, heating elements utilize PowerShare technology to help eliminate scale build-up and prolong element life far beyond that of competing heating sources. If an element fails, a replacement can be purchased from virtually any plumbing distributor.

**Redundant Safety Features**—Two water level sensors are located at the top of the unit preventing power to the heating elements if sufficient fluid level is not detected. In addition, two safety cutoff switches, one manual and one automatic reset, shut down power to the heating elements should an unsafe condition occur.

**Code Approvals**—UL/CUL 834/165, HUD Mobile Home-Ref. NFPA 70, ISRAEL, NOM, and NEC. Hydrostatically tested to 300 psi.

\*Limited Warranty—See Written Warranty for Details

*For Additional Features See Inside Page*

# Hydronic Heating Source Residential Space/Water Heating 5-, 7-, 9-, 11-, 14-, 18-, 22-, 28-KW Models



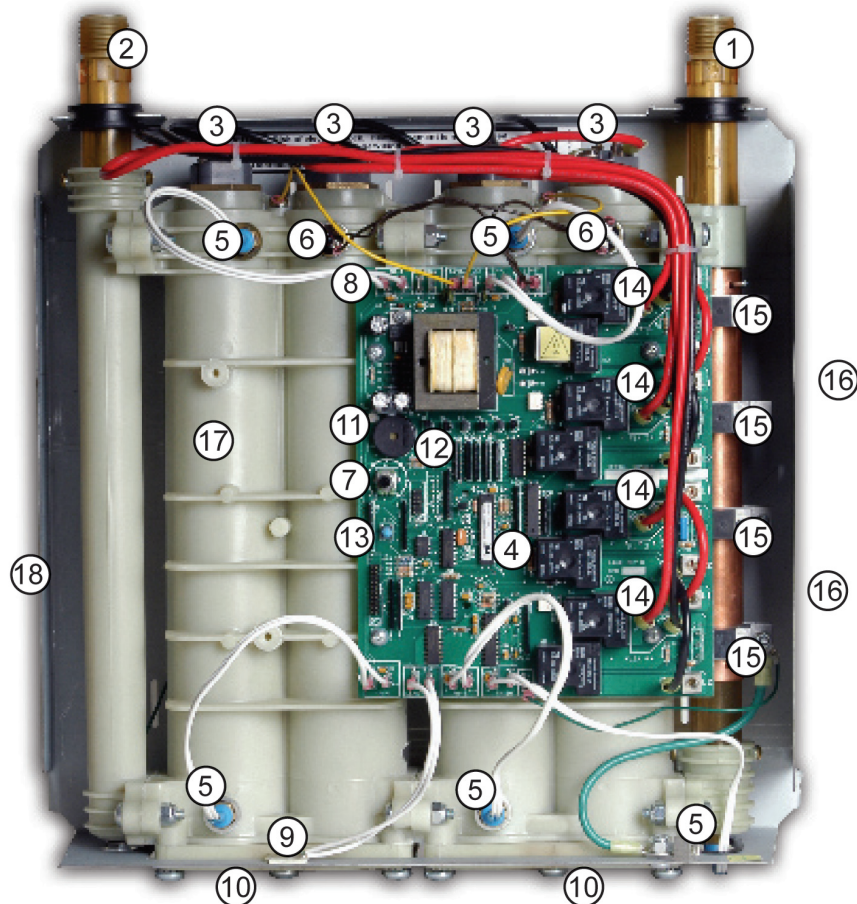
## Do You Know?

...for every three degrees the heating fluid temperature in a hydronic heating system is dropped, an additional 1% is saved in heating the space... SEISCO models are designed to operate **EFFICIENTLY** at the full range of temperatures.

... radiant floor heating systems operating at low temperature are the only heating systems where the temperature at the ceiling is lower than at the floor. High ceiling temperatures associated with other types of space heating contributes to substantially higher heat loss from the home and higher space heating bills.

... the SEISCO Hydronic Heating Source virtually eliminates standby heat loss and is 99+% efficient compared to industry standard boilers that operate at high temperatures with high standby heat losses while idle.

... **TWO FOR ONE**...now there is a hydronic heating source that can be used to replace both a furnace or boiler as well as a water heater to provide for space heating as well normal domestic hot water needs. Best of all you can enjoy a significant overall efficiency gain.



- |                                  |                                     |
|----------------------------------|-------------------------------------|
| 1 Cold Water Inlet               | 10 Cleanout Plates                  |
| 2 Hot Water Outlet               | 11 LED Indicator Light              |
| 3 Heating Elements               | 12 Speaker                          |
| 4 Microprocessor                 | 13 Service Button                   |
| 5 Thermistor Temperature Sensors | 14 Power Lugs                       |
| 6 Safety Cutoff Switches         | 15 Triacs                           |
| 7 Temperature Control Knob       | 16 3/4" Conduit Connections         |
| 8 Off-Peak Control Connection    | 17 Non-Ferrous Water Passages       |
| 9 Water Leak Detector            | 18 Heavy Gauge Steel Mounting Panel |



# Hydronic Heating Source

## Residential Space/Water Heating

### 5-, 7-, 9-, 11-, 14-, 18-, 22-, 28-KW Models

#### Additional Features & Benefits

**Service Button/LED Light/Speaker**—While on the phone with a technician, the service agent pushes a service button in order to activate an audible diagnostic sequence. The service agent can also diagnose a problem through observing an LED that indicates service issues through a series of flashes.

**Rust and Corrosion Resistant Engineering Composite Material**—All water passages are constructed of a high temperature resistant DuPont® resin. Grades of the same resin family are so strong that they are used as the “header” for automobile radiators. Ability to resist extreme temperature changes, far above those found inside the unit, and superior chemical resistance make DuPont’s engineering composite material the ideal material for the SEISCO Hydronic Heating Source.

**Continuous Venting Design**—As water is heated, dissolved gases are released. Tiny bypass air passages at the top of each water chamber allow air and dissolved gases to exit unnoticed through the hot water outlet as hot water is heated.

**Demand Side Management Utility Connection**—Allows local utility to remotely control the water heater during periods of peak demand.

**Cleanout Plates**—Should sediment such as sand or silt from the water supply accumulate inside the water chambers, removable plates sealed with reusable gaskets allow access for cleaning without disconnecting wires or removing the heating module and control board. It is also a convenient way to drain the heater for service or winterization.

**¾” Non-Ferrous Inlet/Outlet Connections**—Factory-installed ¾” MNPT thermoplastic nipples allow easy plumbing connections and eliminate the need for dielectric fittings

**Heavy Gauge Steel Mounting Panel**—Modular water passages, the control board, and other components are assembled and then mounted to a heavy gauge steel back panel that includes four tabs with rubber feet for mounting the unit to the wall. A protective plastic cover encloses all components.

**¾” Electrical Conduit Connection**—Standard ¾” electrical conduit connections allow fast wiring of the water heater.

#### Do You Know?

*...by using a SEISCO Hydronic Heating Source with low temperature radiant floor heating, traditional I=B=R heat loss can be de-rated by 15%.*

*...water can carry approximately 3,500 times as much heat as the same volume of air... a duct with 180 square inches in cross section would be required to carry as much heat in a forced air system as a 1” diameter pipe.*

*...The SEISCO Hydronic Heating Source is the perfect appliance for heating an addition to a home, commercial hydronic heating, snow melting, or space heating for an entire home.*

*...in non-potable hydronic systems, the SEISCO Hydronic Heating Source can be used in conjunction with a plate heat exchanger to meet both water and space heating requirements.*

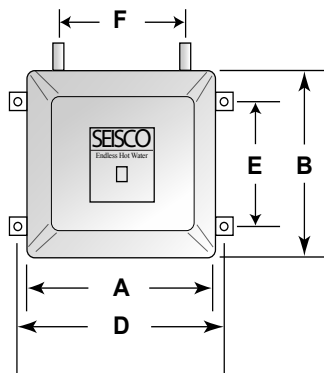
*...most people feel that radiant floor heat provides the most comfort and warmth of any heating system.*

*...a 90,000 BTU gas furnace operating at 83.5% efficiency can be replaced by a 75,000 BTU (22KW) hydronic heating source.*





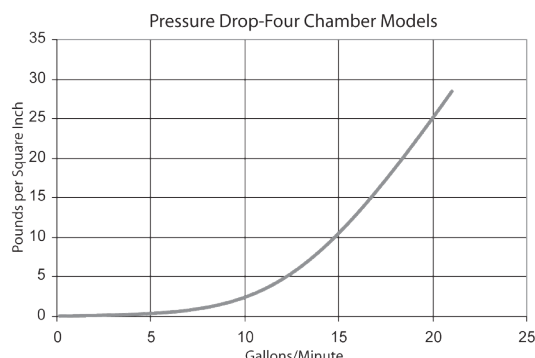
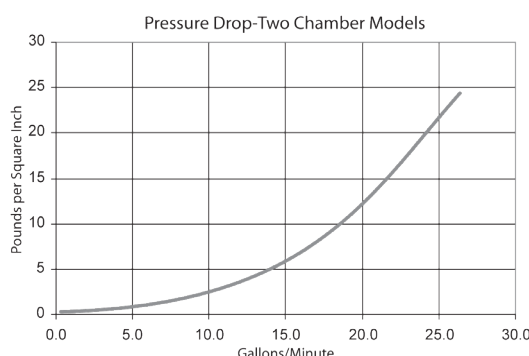
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Note: (E=13" on all models)

Model	SH-5	SH-7	SH-9	SH-11	SH-14	SH-18	SH-22	SH-28
KW Input	5	7	9	11	14	18	22	28
BTU Input	17,065	23,891	30,717	37,543	47,782	61,434	75,086	95,564
A	10 1/4"	10 1/4"	10 1/4"	10 1/4"	10 1/4"	15 3/4"	15 3/4"	15 3/4"
B	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"
C*	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"
D	10 7/8"	10 7/8"	10 7/8"	10 7/8"	10 7/8"	16 1/8"	16 1/8"	16 1/8"
F	7"	7"	7"	7"	7"	12 1/2"	12 1/2"	12 1/2"
Weight (lbs)	15	15	15	15	15	23	23	23
240V. Amp. Draw	20.8	29.2	37.5	45.8	58.3	75.0	91.7	116.7
# Elements	2	2	2	2	2	4	4	4
Element KW	2.5	3.5	4.5	5.5	7	4.5	5.5	7
# Breakers (240V)	1	1	1	1	2	2	2	4
Breaker (amps)	30	40	50	60	40	50	60	40

\*Depth: Not Shown on Drawing. All Models Are 99+% Efficient



## Suggested Written Specification

Electric water/space heater(s) shall be a SEISCO model \_\_\_\_\_ as manufactured by SEISCO International Limited, or an approved equal and shall have a 10-year limited warranty\* when installed in a residential application. Hydronic heat source shall have a rated input of \_\_\_\_\_ KW at 240 Volts. Electrical control of the unit must be accomplished using an integrated microprocessor that employs a proportional/integral/derivative (PID) control scheme using thermistors for sensing temperature and flow. Heating elements must use PowerShare technology to simultaneously vary KW input evenly across all heating elements from 1% to maximum input. Stepping individual elements on and off at full power is not acceptable. Flow switches that restrict the flow of water in any way are not acceptable. The hydronic heat source shall include an electrical connection for off-peak control by local utility companies, shall include dual water level sensors, high limit control via the microprocessor, and dual high limit cutoff switches, one manual and one automatic reset. The hydronic heat source shall have built-in self-diagnostics with an LED and speaker and must visually and audibly signal the status of all monitored functions including a built-in fluid leak detector. All fluid passages must be constructed of a high temperature resistant DuPont® resin. Clean-out access for removing sediment must be provided without removing plumbing connections or exposing electrical components of the unit. Hydronic heat sources are listed UL/CUL 834, HUD-Mobile Home, and NEC approved.

*Contact your dealer for more information:*

\*Limited Warranty—See Written Warranty for Details

Written specifications subject to change without notice

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