

# P-K COMPACT® SEMI-INSTANTANEOUS INDIRECT WATER HEATERS



**HARSCO**  
INDUSTRIAL  
Patterson-Kelley

# Harsco Industrial Patterson-Kelley

delivers the  
industry's most  
reliable, water  
heaters in  
the business.



## The Harsco Industrial Patterson-Kelley difference.

Access to best-in-class technology, the strength of our people, and the reliability of our products are reasons alone to partner with Harsco Industrial Patterson-Kelley. But ultimately, customers rely on us for our commitment to provide the **right** solution with the lowest total cost of ownership in the industry.

### Our Approach

- > Customized solutions through in-depth discovery; focused on customer needs
- > Deployed through experienced Harsco Industrial Patterson-Kelley employees and our authorized resellers

We use a consultative approach. First, we understand your needs, then apply and integrate the best solution to address the hot water heating demand. We ensure that our customers consistently receive the highest level of technical and application support by utilizing over 135 years of experience. Our dedicated employees and local representatives are always available to deploy solutions.

## PROVEN LONG-TERM RELIABILITY—

Built to last, the P-K COMPACT delivers unmatched savings year after year.

**P-K COMPACT®** semi-instantaneous water heaters continue to reinforce our commitment to provide dependable, long term, trouble-free operation in thousands of installations in all types of commercial, institutional and industrial buildings. Its present design, which focuses on a small heater that produces high hot water output at a closely controlled temperature, makes it the ideal water heater for new or existing installations.



### HIGH-OUTPUT HEATER AT ONLY 8 SQUARE FEET

Operating on steam, boiler water or high-temperature boiler water, the P-K COMPACT produces up to 250 gpm at 40°F to 140°F. Though the largest unit has a footprint of only 8 sq. ft., the heater can handle any building's water heating requirements, either singly or via multiple-unit installation.



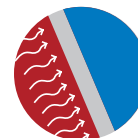
### CONSTRUCTED FOR LONG SERVICE LIFE

The P-K COMPACT is built to last. Potable water in the shell contacts only nonferrous materials, preventing contamination. The shell is constructed of solid 90-10 copper nickel, the premium corrosion-resistant material for potable water service. Standard heat exchanger construction is copper nickel, which will handle most water conditions. Our products are NSF-61 compliant.



### PRECISE TEMPERATURE CONTROL

The heater features our unique ANTICIPATOR® control, which continuously meters heating medium demand to exact proportions of hot water requirements and regulates the hot water outlet temperature to a close tolerance of  $\pm 4^\circ\text{F}$  of set point, even with sudden fluctuating draws.



### PREVENTS SCALING

Constantly pumped circulation prevents scale formation and accumulation of foreign matter on the heating surfaces in most water conditions (water softening may be required with extremely hard water). The constant circulation assists with our anticipator control which continually monitors water temperature, stabilizing temperature control at all draw rates.



## P-K SIMPLE—

Designed with the customer in mind, we engineer features with true value.

### TEMPERATURE LIMIT SYSTEM

The P-K COMPACT water heater is protected by a double solenoid temperature limit system with a hot water dump valve. Should any overheating of water occur, the temperature limit system immediately kicks in to shut off the heat source and dump overheated water into the drain. The valve controlling the heat source shuts off until normal hot water temperature is restored; the unit then resumes normal operating conditions. Optional alarm and/or dry contact relay is available for remote service.

### NO OVERHEAD CLEARANCE

The P-K COMPACT water heater is the easiest to service of the semi-instantaneous water heaters on the market today. The shell always remains in place, so no overhead clearance is required for service. The tube sheets have drilled and tapped bolt holes for independent bolting, enabling the bonnet to be removed without breaking the domestic water gaskets. The steam or water chamber is easily removed without disturbing the piping to the unit, and there is ready access to the tube bundle.

### DOUBLE WALL DESIGN

The P-K COMPACT is also available with a vented double-wall tube bundle with double tube sheets. This design offers the ultimate protection against cross-contamination of potable water and meets both health department and building codes. The double wall tube design of the P-K COMPACT water heater creates maximum contact between inner and outer tubes to produce effective heat transfer, while providing a vented leak path as a visual means to indicate tube failure. The double wall heat exchanger can be installed in an existing P-K COMPACT water heater originally supplied with single wall tubing. Contact the factory or your local Harsco Industrial Patterson-Kelley representative to obtain further information, including the new rating.

### A.S.M.E. CONSTRUCTION

The P-K COMPACT water heater is constructed in accordance with A.S.M.E. Code, Section VIII, Div. 1, and comes with an insurance company certificate of inspection and test.

**10,000+**  
INSTALLATIONS

**20**  
**YEAR**  
GUARANTEE  
AGAINST LEAKAGE



**IF YOUR SPACE IS UNIQUE,  
OUR HORIZONTAL COMPACT  
MAY BE JUST THE  
CONFIGURATION YOU NEED!**



## ANTICIPATOR® CONTROL SYSTEM PRODUCES CLOSE TEMPERATURE CONTROL

The P-K COMPACT water heater features the ANTICIPATOR® integral control system which meters the heating medium demand to exact proportions of hot water requirements and regulates hot water outlet temperature to a close tolerance of  $\pm 4^{\circ}\text{F}$  from the set point. Steam passes through the tubes of the heat exchanger bundle. The water is rapidly heated as it is directed over the tubes by segmental baffles inside a cylindrical wrapper. Above the wrapped tube bundle, minimum storage volume is provided to give the controls sufficient time to produce the close temperature control.

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### Features

- High quality design and construction
- Complete package with only four piping connections
- High capacity output
- ANTICIPATOR temperature control regulates hot water outlet temperatures  $\pm 4^{\circ}\text{F}$
- Constant circulation by the pump improves temperature control and minimizes scale
- Copper-nickel shell, naval brass tubesheet
- Double solenoid temperature-limit system prevents overheated water from entering the distribution system
- Option stand available to meet seismic Zone 4 requirements
- Built to ASME standards; meets code requirements
- Meets BOCA and IAPMO code requirements
- Heat transfer rates verified by independent testing agency

### Advantages:

- Unique independently bolted tubesheet construction allows for quick inspection
- No overhead clearance required for service
- Reliable performance and long service
- Quick, easy installation
- Saves valuable floor space
- Meets the hot water requirements of almost any building
- Performs equally well with steam, boiler water or high-temperature boiler water
- Improved valve performance and configurable to suit customer requirements

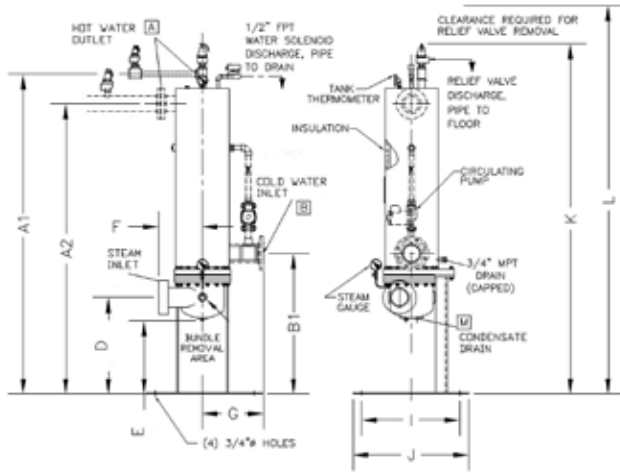


## THE HIP-K GUARANTEE

Harsco Industrial Patterson-Kelley guarantees that each P-K COMPACT® water heater will perform at the rated capacity. P-K COMPACT® water heater capacity tables are based on data developed by Heat Transfer and Fluid Flow Service of Atomic Energy of Canada, Ltd. The water heater's capacities have been verified by Chalk River Nuclear Laboratories, Chalk River, Ontario, using an actual production unit. This is your assurance of the water heater's performance. We also guarantee that all materials, components and workmanship in the construction of each heater are of the highest quality. If any part should prove defective within one year after start-up, a new part will be supplied without charge, provided the water heater is started within six months from the date of shipment.

## THE EXTENDED NON-PRORATED GUARANTEES

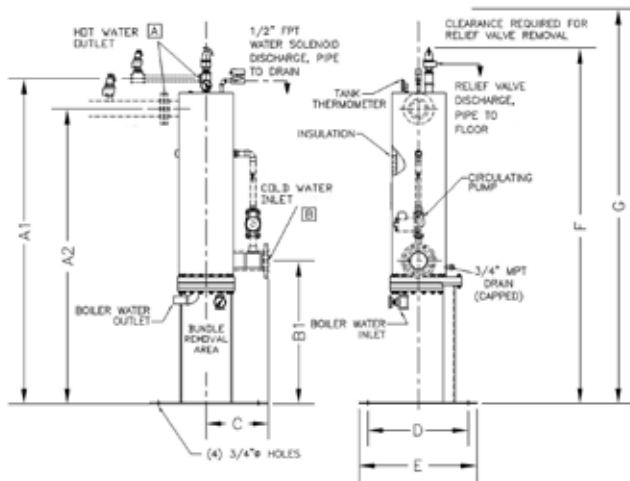
The following components carry an extended, unconditional, non-prorated guarantee, included in the submittal: Tube Bundle 10 year guarantee against failure caused by thermal shock or mechanical failure Pressure Vessel 20 year guarantee against leakage ANTICIPATOR® Temperature control 20 year guarantee against any failure.



### STEAM TO WATER: DIMENSIONS IN INCHES

MODEL No.	A	A1	A2	B	B1	D	E	F	G	I	J	K	L	M	WEIGHT (LBS)
PK06S	1-1/2	69-1/8	X	2	31-1/8	22-1/4	18-1/8	8	12	15	20	78	85	3/4	630
PK06D	1-1/2	69-1/8	X	2	31-1/8	20-5/8	16-1/2	8	12	15	20	78	85	3/4	650
PK08S	2	69-1/4	X	3	31-3/8	22-1/2	18	8-3/4	13-3/4	15	20	78	84	1-1/2	730
PK08D	2	69-1/4	X	3	31-3/8	21-1/2	17	8-3/4	13-3/4	15	20	78	84	1-1/2	760
PK10S	2-1/2	72-3/4	X	3	33-1/2	22-5/8	17	12	14-3/4	19	24	81-1/2	89	2	960
PK10D	2-1/2	72-3/4	X	3	33-1/2	21-5/8	16	12	14-3/4	19	24	81-1/2	89	2	1040
PK12S	4	X	85-1/2	5	41-3/8	29	23	11-1/4	18	29	34	97-3/7	101	2	1200
PK12D	4	X	85-1/2	5	41-3/8	27-7/8	21-7/8	11-1/4	18	29	34	97-3/7	101	2	1300

\* F.P.T.\*\* 150# FLANGE



### BOILER WATER TO WATER: DIMENSIONS IN INCHES

MODEL No.	A	A1	A2	B	B1	D	E	F	G	Weight (lbs)
PK06S	1-1/2	69-1/8	X	2	31-1/8	15	20	78	85	630
PK06D	1-1/2	69-1/8	X	2	31-1/8	15	20	78	85	650
PK08S	2	69-1/4	X	3	31-3/8	15	20	78	84	730
PK08D	2	69-1/4	X	3	31-3/8	15	20	78	84	760
PK10S	2-1/2	72-3/4	X	3	33-1/2	19	24	81-1/2	89	990
PK10D	2-1/2	72-3/4	X	3	33-1/2	19	24	81-1/2	89	1040
PK12S	4	X	85-1/2	5	41-3/8	29	34	97-3/7	101	1200
PK12D	4	X	85-1/2	5	41-3/8	29	34	97-3/7	101	1300

\* F.P.T.\*\* 150# FLANGE

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PROUDLY  
DESIGNED & ASSEMBLED  
IN THE U.S.A.

