

# KEMCO SYSTEMS

## Direct Contact Water Heater



SINCE



1969



R & B WHITEMAN (Sales) Pty Ltd ■ PO Box 1214, Hawksburn ■ VIC 3142 AUSTRALIA  
P: 61 3 9525 0222 ■ F: 61 3 9525 0244 ■ [info@rbwhiteman.com.au](mailto:info@rbwhiteman.com.au) ■ [www.rbwhiteman.com.au](http://www.rbwhiteman.com.au)



# KEMCO DIRECT CONTACT WATER HEATER

**The Kemco difference** More than just highest fuel dollar savings!

**KEMCO'S DIRECT CONTACT WATER HEATER - THE KEY ELEMENT IN THE FINEST, FULLY INTEGRATED HOT WATER SYSTEMS** - Kemco designs, engineers and manufactures *fully integrated* water systems to match your plant requirements. Water heating is simply the first step in unsurpassed fuel savings, wastewater heat energy reclamation, water conservation, and sewer cost savings! All, full-matching components of a fully integrated system.

**FASTEST PAYBACK OF ALL WATER HEATING DEVICES - BAR NONE!** - Kemco's guaranteed 99.7% fuel efficiency means that for every \$100 spent on gas fuel to heat water, you are guaranteed a return of \$99.70 in energy efficiency. Conventional gas water heaters operate at about 70% efficiency, returning only \$70. for every \$100 spent on fuel. And a Steam boiler, even with a heat exchanger to boost its efficiency, returns only about 65% or \$65.00 for every \$100 spent!

For full \$100.00 benefit of gas water heating you would spend:  
 Kemco Direct Contact Water Heater at 99.7% efficiency \$100.30  
 Conventional Gas Water Heater at 70% efficiency \$142.86  
 Steam Boiler and Heat Exchanger at 65% efficiency \$153.85

**NON-PRESSURE VESSEL** - Does not require licensed operator or high pressure insurance. Does not require boiler feed chemicals or boiler's high maintenance costs. In many cases, the Kemco Direct Contact Water Heater eliminates the need for steam entirely. It gives you a water system 100% free of your steam system.

**REDUCED OXYGEN IN HEATED WATER REDUCES CORROSION** - Kemco's patented Direct Contact between flame and water burns up a higher portion of the oxygen in the water - as much as 80% compared to conventional heating - reducing oxidation that causes corrosion in pipes and plumbing.

**KEMCO'S ON-SITE EVALUATION AND TECHNICAL SUPPORT IS PRICELESS!** - Kemco field engineers evaluate your plant needs, on-site - from water supply to existing equipment to processing goals to sewer requirements - to assure that correct sizing and all technical specifications are met prior to installation. Kemco pre-pipes all equipment in special 304 stainless steel to assure years and years of trouble-free service. And we include factory start-up and training with every system we sell!

**UNLIMITED CAPABILITIES** - Sizes from 10 GPM to 400 GPM or more. Low NOX available.

**USDA, CSA, FDA, U.L., MEA APPROVED** in every state and in Mexico and Canada.

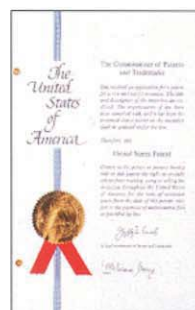
**CERTIFIED POTABLE WATER** - In an independent test, it has been certified that water discharged from the KEMCO heater fully meets Drinking Water Standards for potability.

**NSF CERTIFIED** - KEMCO's TE-100 Direct Contact Water Heater has been certified by NSF to NSF/ANSI 3-A & 5 Standards for units having capacity from 750,000 to 37.5 million BTU/hour.

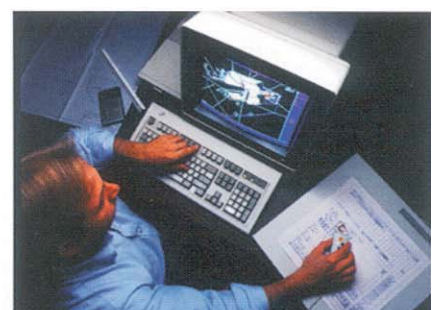
**GUARANTEED!**  
**99.7%**  
**EFFICIENCY**



Certified to  
 NSF/ANSI 3-A & 5



**FIRST** Kemco was first to introduce the Direct Contact Water Heater.



**BEST** Kemco continuously refines and improves the best-engineered Water Heater in the world!



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# KEMCO DIRECT CONTACT WATER HEATER

## Superior KEMCO Features

- **STAINLESS STEEL CONSTRUCTION** High alloy Stainless Steel inside and outside assures long life. Stainless Steel body and heat transfer zone maintain water quality. Kemco also incorporates an exclusive Stainless Steel water-cooled burner discharge sleeve into every unit.
- **MAXON® CAST IRON BURNER** Kemco provides 40-to-1 turndown (competitive units offer only 3-to-1 or 4-to-1) with 1° F water temperature control throughout full turndown range for optimum performance and efficiency. Short flame length prevents damage to internal parts.
- **ALLEN-BRADLEY® ADVANCED PROCESS LOGIC CONTROLLER** Operates and controls all water heater functions and can be integrated with Kemco's MONARCH® Electronic Controls for full-system monitoring/controlling.
- **FIREYE BURNER MANAGEMENT SYSTEM** Microprocessor based with self diagnostics vocabulary of up to 42 different messages indicating status and failure mode information.
- **FULL MODULATING HEATER DISCHARGE VALVE** Hydromatic controller modulates heater water level to within  $\pm 1$ " at any inlet pressure or flow rate. Safeguards against loss of prime to pump, cavitation of pump, or loss of water to water well.
- **DUAL INLET HEATER PRESSURE SENSORS** Ensure double-safe operation!
- **309 STAINLESS STEEL WALL** Special 309 Stainless Steel construction surrounds combustion zone and will withstand flame temperatures of up to 1900° F. Guaranteed for 5 years.
- **DUAL BURNERS over 9 Million BTU/HOUR CAPACITY** All Kemco Water Heaters over 9 million BTU per hour capacity are designed with dual burners. Short flame length prevents damage to internal parts.
- **LOW NOX AVAILABLE** All Kemco Water Heaters can be fitted for Low NOX where required and feature single digit NOX compliance.

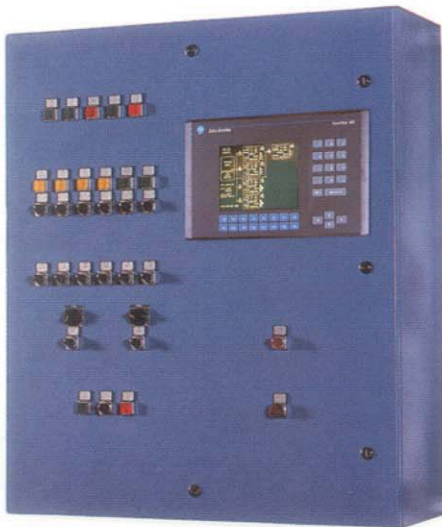


## Control Panel

Advanced Process Logic Controller designed by Kemco, and produced by Allen-Bradley, operates and controls all water heater functions. Control panels are also available with the Allen-Bradley Panel View interface pictured above.

Kemco Control Panel can be integrated with Kemco's **MONARCH® Electronic Controls** - Today's computer-right/jobsite right system for monitoring (phone modem capable) and controlling any and all these companion Kemco Systems:

- **Wastewater Heat Reclamation System**  
The most efficient balanced energy recovery system.
- **Hot and Cold Water Distribution Systems**  
Balanced hot/cold water distribution systems.
- **Total System Responsibility**  
From fresh water meter to sewer discharge - Kemco offers guaranteed solutions, total responsibility!





## The **ONLY** way to capture **ALL** the flame's heat energy

- **LOWEST TEMPERATURE Exhaust** Guaranteed within 10° F of incoming water temperature. In most cases this is lower than room or ambient temperature! Proof of Kemco's extremely high thermal efficiency!
- **COLD Fresh Water** enters the KEMCO Direct Contact Water Heater at rates of from 10 to 400 GPM or more to match your needs. Depending upon your water source, the incoming temperatures range from 40° F to 55° F.
- **99.7% EFFICIENCY Guaranteed** Specially designed and manufactured by Kemco, high temperature stainless steel packings form a dense maze of searing hot channels to (1) quickly break up the water flow into microscopic droplets, and (2) heat them as rapidly as they fall - up to hundreds of gallons-per-minute!
- **DIRECT CONTACT** Preheated water passes directly through Kemco's wall of fire - capturing *all the flame's heat energy* - for the fastest, and most efficient water heating known.
- **INSTANTANEOUS Hot Water** Always available within seconds, not hours, after start-up. No need to plan production around water schedule availability, or heat during high peak utility periods. Stored, or directed-to-process, no other heating method even comes close to Kemco's Direct Contact system.

## KEMCO DIRECT CONTACT WATER HEATERS: THE CHOICE OF INDUSTRY LEADERS



Assembly Plant in Edison, New Jersey. "Bottom line savings to Ford is a minimum of \$400,000 per year!"

**MANUFACTURING** - A Kemco 15 x 10' BTU/HR Hot Water Heater, installed for large scale hot water applications including phosphate degreasing, replaced steam boilers at the Ford Motor Company's Automotive

**FORD MOTOR COMPANY**  
Automotive Assembly Plant, Edison, NJ



wisconsin valley concrete products co.

**CONCRETE PRODUCTION** - "We bought the Kemco Direct Contact Water Heater for fuel efficiency and savings," says Steven Knorr, President of Wisconsin Valley Concrete, who depends upon hot water for full 12-month concrete production. "We figure a minimum fuel savings of 15 cents per cubic yard! But that doesn't include other costs saved by replacing our boiler, like: insurance, annual inspections and boiler treatment and chemicals."

**WISCONSIN VALLEY CONCRETE**  
Steven Knorr, President, Wisconsin Rapids, WI



**LAUNDRY** - "Coayne has Kemco Direct Contact Water Heaters operating in a number of facilities providing hot water at 99.7% efficiency."

**COYNE TEXTILE SERVICES**



**FOOD PROCESSING** - The larger their water heating volume, the more Kemco customers save. More than 50 Kemco heaters are operating in Tyson Foods, Inc. hatcheries and processing plants. The reliability and efficiency of these units have been proven over and over.

**TYSON FOODS, INC.**



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