



WATER & ENERGY SOLUTIONS SINCE 1969



Concrete

Our Story

Kemco Systems, the industry leader since 1969, designs custom systems that are built to the highest standards of excellence. Whatever your water handling requirements, your savings begin with low installation costs and continue with significantly lower operating costs. Kemco Systems offers outstanding quality, exceptional reliability, and top value for your energy dollar.

Satisfying your energy and water needs means choosing the best solution specific to your industry. Kemco Systems specifies, designs and manufactures full systems including: Water Reuse/ Recycling, Wastewater Treatment, Wastewater Filtration, Efficient Water Heating, High Pressure Pumping, Wastewater Heat Recovery, Stack Heat Recovery, Industrial Chilling, and Total System Monitoring with turnkey solutions.

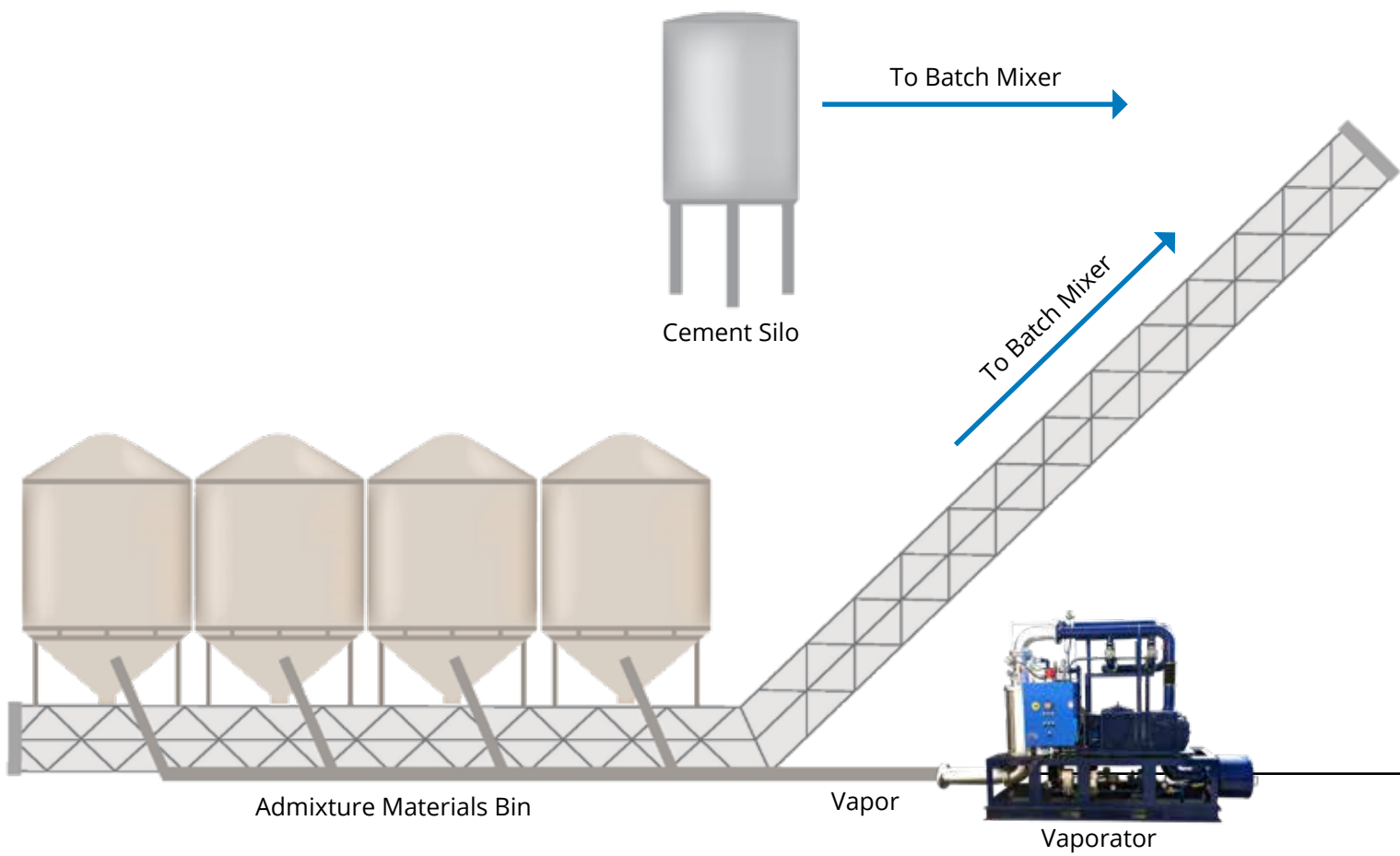
Kemco’s knowledge and experience has provided over 5,000 systems worldwide to the laundry, food, concrete, textile and automotive industries.



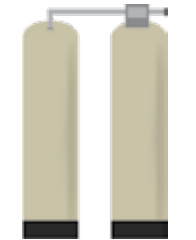
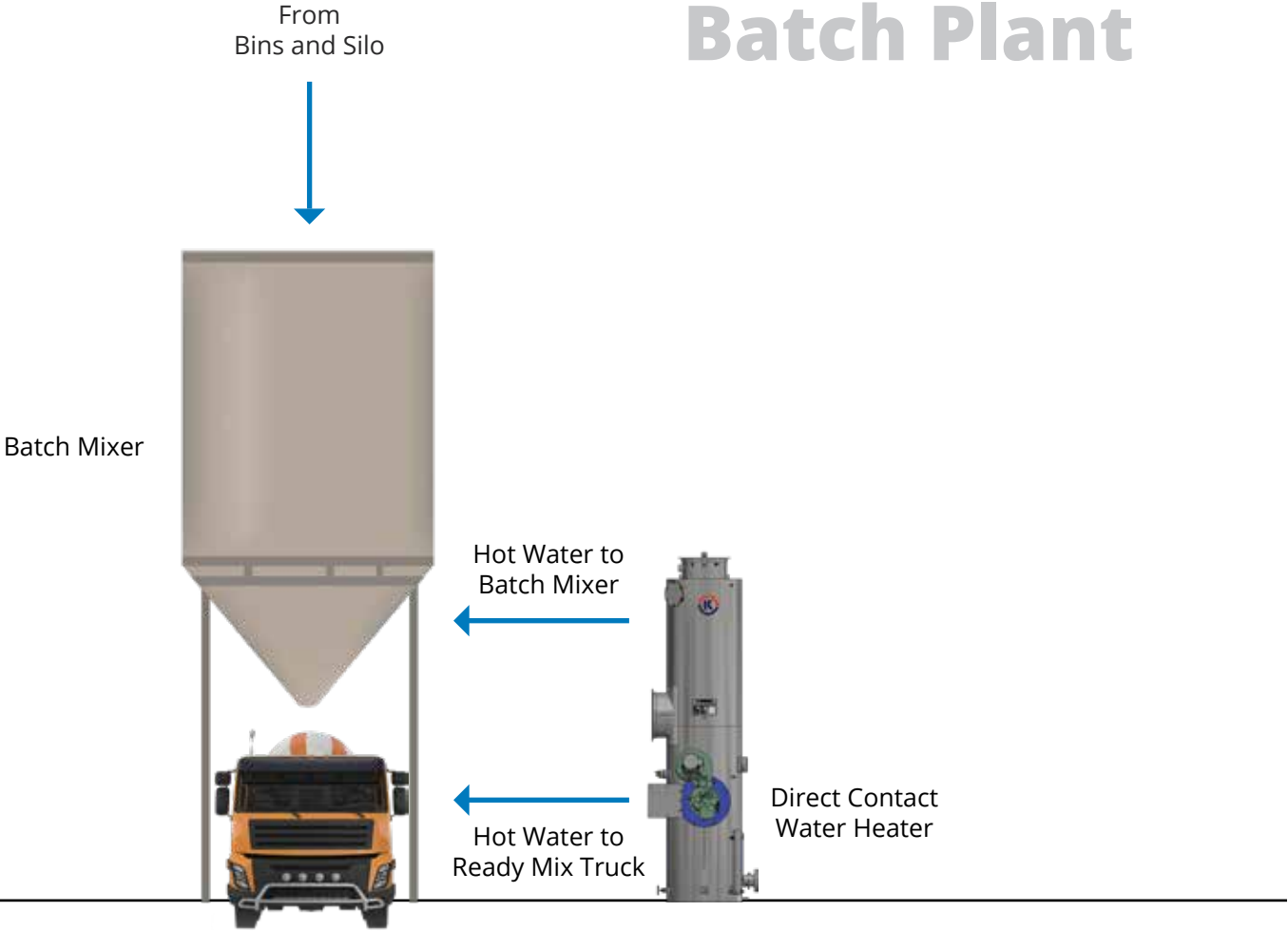
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Standard Ready-Mix Plant Flow



Concrete Batch Plant

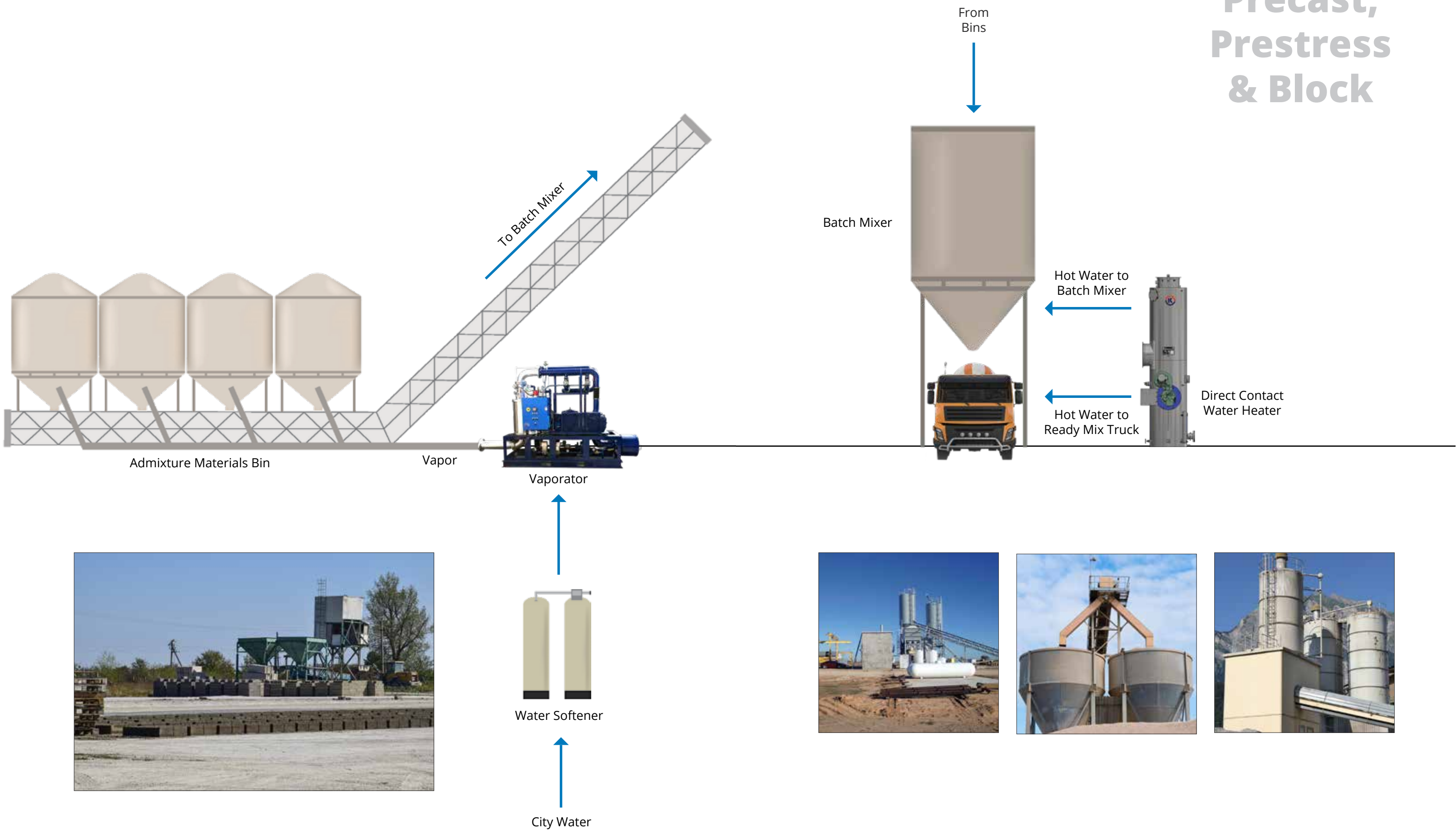


Water Softener

City Water



Standard Precast Plant Flow



Precast, Prestress & Block





Water Conditioning



Water Softeners

Water Softeners

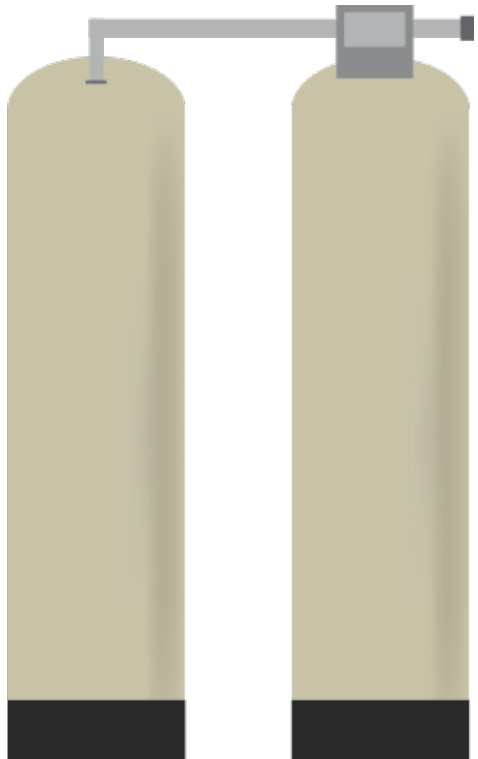
Kemco water softeners are fully-loaded, using industrial-grade components designed and selected for optimum performance and reliability. High-capacity resin is used to remove calcium and magnesium ions from water supplied to the facility. This greatly improves the effectiveness in the processes and minimizes damage to downstream equipment, fouling, scaling and thermal efficiency loss.

Features:

- FRP or Epoxy-Lined Steel Resin Tanks
- Non-Coded or ASME-Coded Resin Tanks
- NSF/ANSI Standard 61 Certified Lining
- Stainless Steel or CPVC Piping
- Flow-Initiated Regeneration
- Automatic Valves
- Single, Duplex and Triplex Design

Applications:

- City Water Conditioning
- Well Water Conditioning
- Boiler Feed Water Makeup
- Vaporator/Vapormite Feed Water



Specifications:

Tank Size (D x H)	Capacity (grains)	Brine Tank	Resin (cu. ft.)	Inlet	Outlet	Drain	Backwash (gpm)	Skid Dimensions (L x W x H)		
7" x 44"	15,000	18" x 33"	0.5	¾"	¾"	½"	1.2	38"	18"	52"
9" x 48"	30,000	18" x 33"	1.0	¾"	¾"	½"	2.0	42"	18"	56"
10" x 54"	45,000	18" x 40"	1.5	¾"	¾"	½"	3.0	45"	18"	62"
12" x 54"	60,000	18" x 40"	2.0	1"	1"	½"	3.5	49"	18"	60"
14" x 65"	90,000	18" x 40"	3.0	1"	1"	½"	5.0	54"	18"	73"
16" x 65"	120,000	24" x 40"	4.0	1"	1"	½"	6.0	64"	24"	73"
18" x 65"	150,000	24" x 40"	5.0	1 ½"	1 ½"	1"	8.0	72"	24"	75"
21" x 62"	210,000	24" x 50"	7.0	1 ½"	1 ½"	1"	12.0	78"	24"	75"
24" x 72"	240,000	24" x 50"	8.0	1 ½"	1 ½"	1"	15.0	84"	24"	82"
30" x 54"	300,000	24" x 60"	10.0	2"	2"	1 ½"	25.0	108"	44"	76"
30" x 60"	450,000	30" x 60"	15.0	3"	3"	1 ½"	25.0	114"	44"	82"
36" x 60"	600,000	39" x 60"	20.0	3"	3"	1 ½"	35.0	135"	50"	89"
36" x 72"	750,000	39" x 60"	25.0	3"	3"	1 ½"	35.0	135"	50"	101"
42" x 60"	900,000	42" x 60"	30.0	3"	3"	2"	45.0	150"	56"	94"
42" x 72"	1,050,000	50" x 60"	35.0	3"	3"	2"	45.0	158"	56"	106"
48" x 60"	1,200,000	50" x 60"	40.0	4"	4"	2"	60.0	190"	72"	98"

Reverse Osmosis

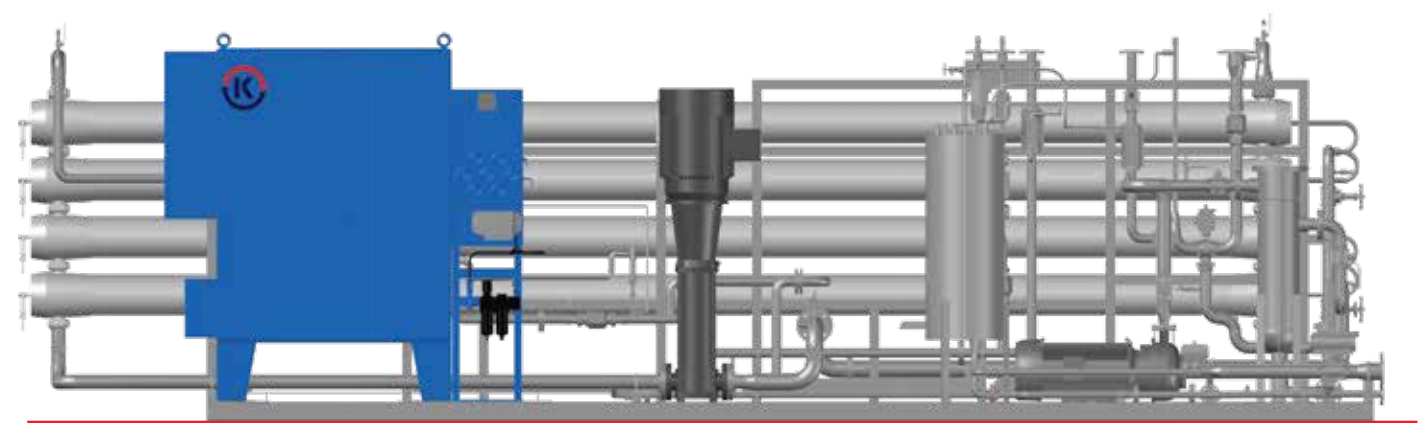
When used with water entering a facility, the reverse osmosis unit conditions the water, removing hardness ions, such as calcium and magnesium, as well as ions like salts. These impurities can cause fouling, scaling, oxidation damage, decrease efficiency and contaminate processes.

Features:

- Fully Packaged
- Low Pressure Design
- Flexible Design
- Membrane Housings
- Modular Design

Applications:

- Process Water Softening
- Domestic Water Softening
- Boiler Feed Water Makeup
- Alternative to Traditional Ion Exchangers for Softening of Water
- Vaporator/Vapormite Feed Water Makeup



Specifications:

Design (gpm)	Capacity (gpd)	RO Feed (gpm)	RO Reject (gpm)	Inlet Feed	Product	Reject	Nominal Operating Pressure (psi)	Pump (hp)	Shipping Weight (lbs)	Operating Weight (lbs)	Skid Dimensions (L x W x H)		
2.5	3,600	3.3-3.8	0.8-1.3	¾"	½"	½"	125	1.0	375	425	56"	17"	57"
3.8	5,400	5.0-5.8	1.2-2.0	¾"	½"	½"	125	1.0	425	475	56"	17"	57"
5.0	7,200	6.7-7.7	1.7-2.7	¾"	½"	½"	125	1.0	475	525	56"	17"	57"
6.3	9,000	8.4-9.7	2.1-3.4	¾"	½"	½"	125	1.0	525	575	56"	17"	57"
7.5	10,800	10.0-11.5	2.5-4.0	1"	1"	1"	125	1.5	575	650	56"	18"	66"
8.8	12,600	11.7-13.5	2.9-4.7	1"	1"	1"	125	1.5	625	700	56"	18"	66"
10.0	14,400	13.3-15.4	3.3-5.4	1"	1"	1"	125	1.5	675	750	56"	18"	66"
11.3	16,200	15.0-17.4	3.7-6.1	1"	1"	1"	125	1.5	725	800	56"	18"	66"



Reverse Osmosis



Open Tank Water Distribution

Open Water Distribution

Kemco open water systems readily provide flywheel volume at pressures and temperatures needed by production equipment. This eliminates the sags in pressure and time lost while “waiting for water” as experienced in older, pressurized systems. Our stainless steel tank can be flat bottom, conical bottom, horizontal, vertical, cylindrical, oblong, or rectangular. The systems also include level control and the ability to start or stop fluid flow to the storage tank. The storage volume is normally designed to absorb batch loads in combination with continuous loads.

Features:

- Stainless Steel Construction
- Level Monitoring and Control
- Inlet Valve(s)
- Pumps and VFDs
- Stands

Applications:

- Cold Water Storage and Pressure Boosting
- Hot Water Storage and Delivery



Specifications:

Various shapes and sizes up to 200,000 gallons

- Flat or Conical Bottom Tank
- Horizontal or Vertical Tank
- Cylindrical Tank
- Oblong Tank
- Rectangular Tank



Open Water Systems

Low Pressure Pumps

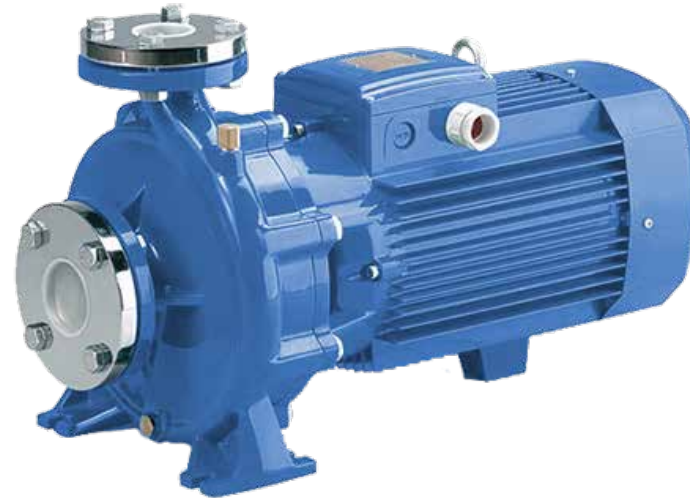
Ensuring rapid machine fill times can improve batch mixer efficiencies. Kemco's low-pressure pump systems are designed to provide a consistent pressure and volume of water to the batch mixer(s) and truck(s), while requiring a minimum of electric power. Our designs consider both the total batch average, as well as peak demands, and strive to minimize fill times, giving the highest production capability possible.

Features:

- High-Capacity Pumps
- Stainless Steel Prepipng
- Stainless Steel Skids
- Monarch Integration
- Variable Speed Drives

Applications:

- Cold Water Pressure Boosting
- Hot Water Delivery
- Boiler Feed Water Systems



Specifications:

Processed Water:

Close-coupled, end-suction, horizontally-mounted centrifugal pumps

Wastewater:

Self-priming centrifugal pumps and air-operated diaphragm pumps



Open Water Systems



Vapor Energy

Vaporator

The Kemco Vaporator Series is the highest quality steam generator available for concrete curing. Designed to incorporate the latest proven advances in combustion, electronics and automation engineering, the Vaporator is available as multi-speed units in sizes, ranging from 1.0 to 8.0 million BTU/hr, meeting the needs of even the largest and most complex concrete curing operations.

Features:

- 98% Fuel Efficiency
- On-Demand Steam Production
- 35 - 40% Fuel Avoidance
- Low Pressure Operation
- PLC-Based System Control Panel
- High Early Compression Strengths
- Multi-Speed/Multi-Output

Applications:

- Aggregate Bin Heating
- Concrete Pad Heating
- Precast/Prestress Concrete Curing
- Block Kiln Heating

Specifications:

Specification	Model 25/2B	Model 30/2B	Model 35/2B	Model 50/2B	Model 70/4B
Output of Unit (mmbtu/hr)	1.25/2.50	1.50/3.0	1.75/3.50	2.50/5.0	3.50/4.65/5.80/7.0
Steam/hr (lbs)	2,500	3,000	3,500	5,000	7,000
Boiler Equivalent (hp)	75	90	105	150	210
Dimensions (L x W x H)	112" x 52" x 90"	112" x 52" x 90"	112" x 52" x 90"	112" x 52" x 90"	130" x 66" x 102"
Air Blower Type	Positive Displacement	Positive Displacement	Positive Displacement	Positive Displacement	Positive Displacement
Electric Motor (hp)	40	40	50	60	100
Shipping Weight (lbs)	2,300	2,700	2,800	3,200	3,600
Water Hardness (grains/gal)	< 3	< 3	< 3	< 3	< 3
Utility Requirements					
Natural Gas at 12 psig (cu. ft./hr)	2,500	3,000	3,500	5,000	7,000
Propane vaporized at 12 psig (gal/hr)	27.5	33.0	38.5	55.0	77.0
Power Supply Required 240/480 VAC at 60 Hz 3-phase (amps)	134/67	134/67	166/83	196/98	312/156
Water at 40 psig (gal/min)	5	6	7	10	14
Utility Connection					
Fuel	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Water	¾"	¾"	¾"	¾"	1"
Steam Line	4"	5"	5"	6"	8"



Vaporator

Vapormite

The Kemco Vapormite is designed to provide the highest quality concrete steam curing equipment at an economical price. Built to the same high quality standards as our Vaporator series, the Vapormite is available in four sizes, all single speed for the greatest flexibility, ease of operation and minimum maintenance.

Features:

- 98% Fuel Efficiency
- On-Demand Steam Production
- 40 - 60% Fuel Avoidance
- Low Pressure Operation
- PLC-Based System Control Panel
- High Early Compression Strengths

Applications:

- Aggregate Bin Heating
- Concrete Pad Heating
- Precast/Prestress Concrete Curing
- Block Kiln Heating

Specifications:

Specification	Model 0.5	Model 1.0	Model 1.5	Model 2.0
Output of Unit (mmbtu/hr)	0.5	1.0	1.5	2.0
Steam/hr (lbs)	500	1,000	1,500	2,000
Boiler Equivalent (hp)	15	30	45	60
Dimensions (L x W x H)	42" x 66" x 36"	78" x 72" x 25"	78" x 72" x 25"	82" x 72" x 29"
Air Blower Type	Positive Displacement	Positive Displacement	Positive Displacement	Positive Displacement
Electric Motor (hp)	7.5	15.0	20.0	30.0
Shipping Weight (lbs)	1,250	1,850	1,900	2,000
Water Hardness (grains/gal)	< 3	< 3	< 3	< 3
Utility Requirements				
Natural Gas at 12 psig (cu. ft./hr)	500	1,000	1,500	2,000
Propane vaporized at 12 psig (gal/hr)	5.5	11.0	16.5	22.0
Power Supply Required 240/480 VAC at 60 Hz 3-phase (amps)	22/11	42/21	54/27	80/40
Water at 40 psig (gal/min)	1	2	3	4
Utility Connection				
Fuel	¾"	¾"	¾"	1 ¼"
Water	¾"	¾"	¾"	¾"
Steam Line	2 ½"	3"	3"	4"



Vapormite

Emissions

Approximate Emissions at Full Output.

Vaporator:

	Model 25/2B	Model 30/2B	Model 35/2B	Model 50/2B	Model 70/4B
Combustibles (%) (lbs/hr)	0 - 0.04 0 - 0.04	0 - 0.04 0 - 0.05	0 - 0.04 0 - 0.06	0 - 0.04 0 - 0.08	0 - 0.04 0 - 0.12
Carbon Monoxide (PPM) (lbs/hr)	150 - 300 0.33 - 0.66	150 - 300 0.39 - 0.79	150 - 300 0.46 - 0.92	150 - 300 0.65 - 1.31	150 - 300 0.91 - 1.83
Oxygen (%) (lbs/hr)	3.5 - 5.0 87 - 125	3.5 - 5.0 104 - 149	3.5 - 5.0 122 - 175	3.5 - 5.0 174 - 249	3.5 - 5.0 244 - 349
NOx (PPM) (lbs/hr)	11 - 26 0.04 - 0.09	11 - 26 0.05 - 0.11	11 - 26 0.06 - 0.13	11 - 26 0.08 - 0.18	11 - 26 0.112 - 0.26
CO ₂ (lbs/hr)	287.8	345.3	402.9	575.5	805.7
SO ₂ (lbs/hr)	0 - 0.01	0 - 0.02	0 - 0.03	0 - 0.04	0 - 0.06
H ₂ O (lbs/hr)	88.3	106	123.6	176.5	247.3

Vapormite:

	Model 0.5	Model 1.0	Model 1.5	Model 2.0
Combustibles (%) (lbs/hr)	0 - 0.04 0 - 0.01	0 - 0.04 0 - 0.02	0 - 0.04 0 - 0.03	0 - 0.04 0 - 0.03
Carbon Monoxide (PPM) (lbs/hr)	150 - 300 0.07 - 0.13	150 - 300 0.13 - 0.26	150 - 300 0.20 - 0.39	150 - 300 0.26 - 0.52
Oxygen (%) (lbs/hr)	3.5 - 5.0 17.5 - 26.5	3.5 - 5.0 34.8 - 49.8	3.5 - 5.0 52.2 - 74.2	3.5 - 5.0 69.7 - 99.7
NO _x (PPM) (lbs/hr)	11 - 26 0.01 - 0.02	11 - 26 0.02 - 0.04	11 - 26 0.02 - 0.06	11 - 26 0.03 - 0.07
CO ₂ (lbs/hr)	57.7	115.1	172.6	230.2
SO ₂ (lbs/hr)	0 - 0.01	0 - 0.01	0 - 0.01	0 - 0.02
H ₂ O (lbs/hr)	17.6	35.3	53.0	70.7



Emissions

Vaporcure

Kemco's Vaporcure is designed to provide concrete curing operations with the ability to automatically control the concrete temperature by controlling the operation of the direct-fired steam generator. This provides precise control of the concrete curing profile and eliminates manual cure temperature operation.

Features:

- Integrated Vapor Control Valves
- Automated PLC Zone Controls
- Touch Screen Display
- Systems Trending Capabilities

Applications:

- Aggregate Bin Heating
- Precast/Prestress Form Curing
- Block Kiln Curing Controls



Specifications:

- 120 VAC
- NEMA 12, NEMA 3R or 4(x) standard
- Color HMI



Vaporcure



Direct Contact Water Heaters

RM 99 Series

Kemco's RM 99 is a total hot water package, specifically designed and engineered for the Ready-Mix industry. Operating at atmospheric pressure, the unit does not have to meet the regulations of pressurized vessels and it is available with programmable logic controls (PLC). Kemco heaters are sized, based on total yards per hour in peak production time. This ensures that the heater will generate the hot water needed for batching operations.

Features:

- On-Demand Hot Water
- 99.7% Efficiency
- Stainless Steel Construction
- Non-Pressure Vessel
- Temperature as High as 199°F
- Insurance-Rated Gas Trains
- Economical Choice
- PLC-Based System Control Panel

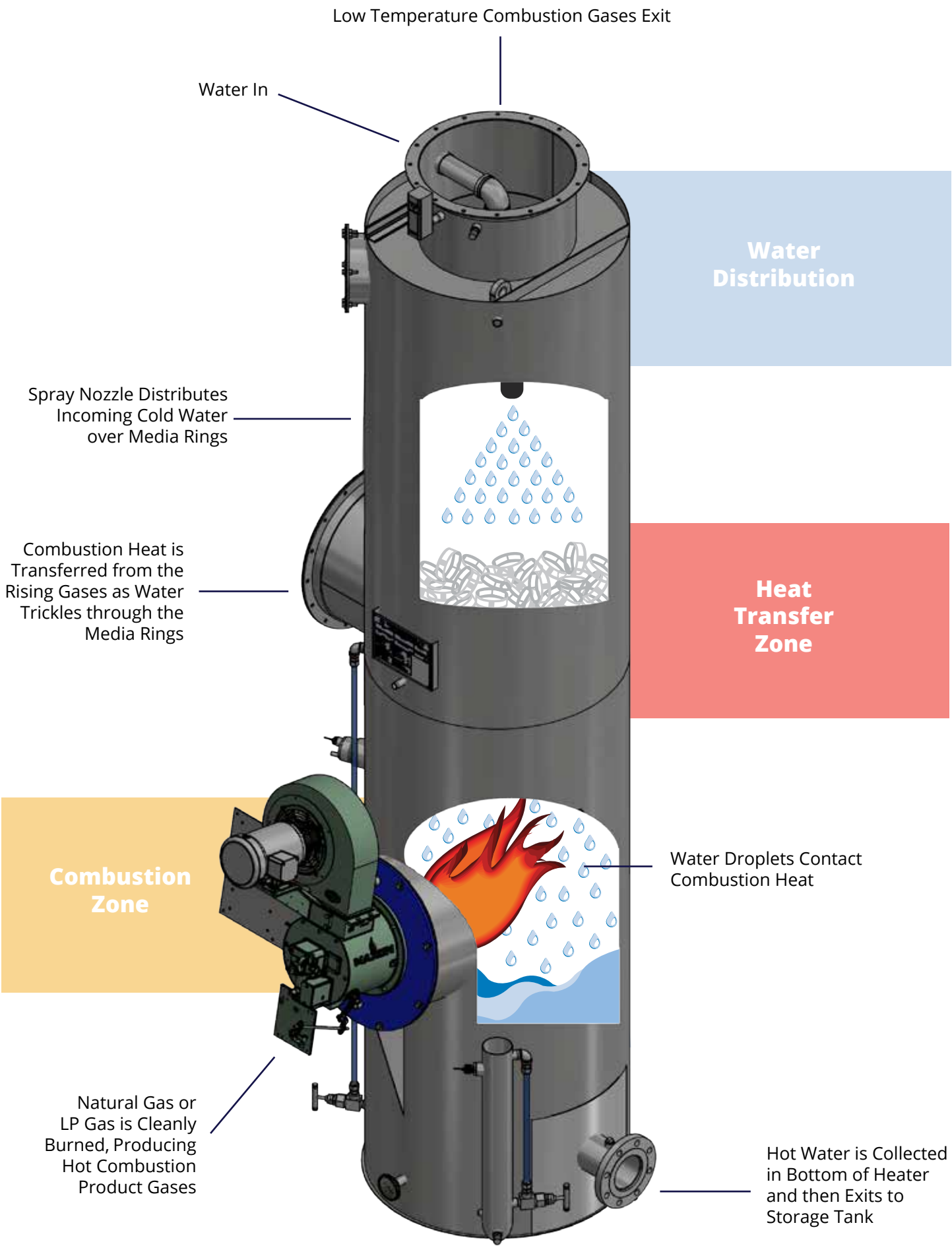
Applications:

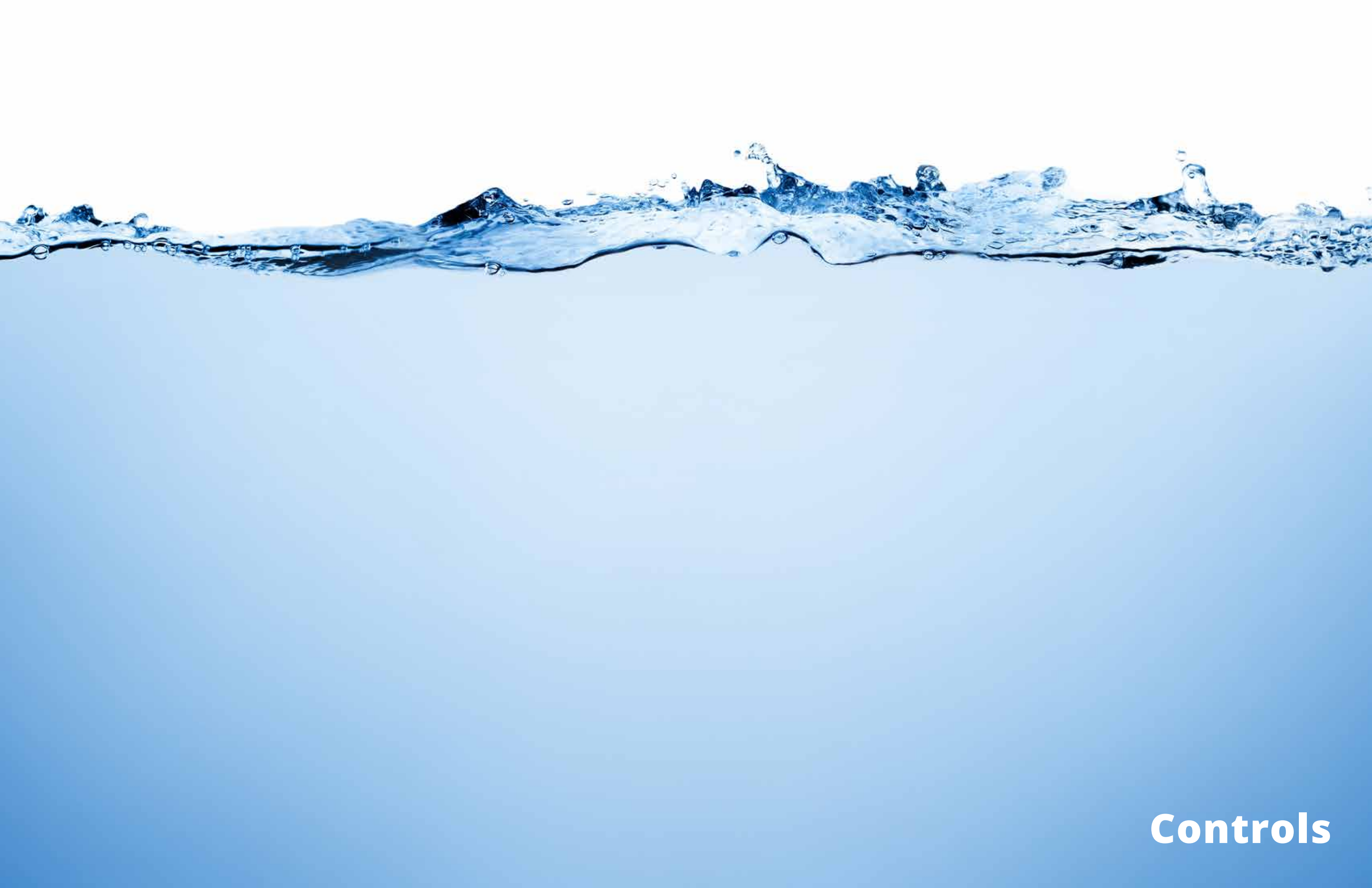
- Process Hot Water

Specifications:

Heater Size (mbtu)	Water Heating Capacity at ΔT 100°F (gph)	Dimensions (D X H)	Weight Empty (lbs)	Weight Flooded (lbs)	Water Inlet	Water Outlet	Gas Inlet	Min. Typical Connected Load (FLA)
2.0	1,714	30" x 10'	2,400	3,100	1 ¼" - 2"	3"	1 ½"	5.0
3.0	2,571	30" x 10'	2,400	3,100	1 ½" - 2"	3"	1 ½"	6.5
4.5	3,857	42" x 10'	2,650	3,850	2" - 2 ½"	4"	2"	6.5
5.5	4,714	42" x 10'	3,000	4,250	2" - 3"	4"	2"	8.0
7.0	6,000	54" x 11'	3,200	5,800	2 ½" - 3"	4"	2"	14.5
9.0	7,714	54" x 11'	3,200	5,800	3" - 4"	4"	2"	17.5
10.0	8,571	54" x 11'	3,200	5,800	3" - 4"	4" - 6"	2 ½"	24.5

*sizes larger than 10.0 mbtu/hr available





Controls

Monarch

The Monarch system optimizes process variables through perfectly balancing water and energy processing equipment. Monarch Controls can acquire, store, and log data efficiently. This allows for most process variables to be trended, providing you with a true efficiency evaluation. With Monarch Controls, you operate at optimal design efficiency, and realize 100% of your ROI throughout the life of your system.

Features:

- Data Logging
- Remote Access and Control
- Track Process Variables
- Monitor System Operation
- Alerts with Troubleshooting
- Building Management Control System Interface Available

Applications:

- Complete Water System Control and Monitoring

Specifications:

- Allen-Bradley Micrologix 1400 or Compact Logix PLC
- Industrial Computer or Magelis Color HMI



Relay Logic

A cost-effective electrical control method used on smaller systems, where the output of the control circuit is strictly dependent on the action of the input devices. Circuits are populated with relays which, dependent on position or type, provide the designated output.

Features:

- Simple
- Economical
- Compact
- Easy to Service

Applications:

- Equipment Control Circuits

Specifications:

- Designed to UL508A specs

Programmable Logic Controller (PLC)

A method of electrical control logic where a central processing unit reads and evaluates system parameters and can compare these inputs to current and historical values (sequential logic) and provide single or multiple outputs based on a programmed solution. The major differences between relay and PLC logic are combinational versus sequential logic and the speed under which similar tasking can be accomplished.

Features:

- Flexibility
- Easy to Modify
- No Wiring Change
- Expandable

Applications:

- Equipment Control Circuits
- Facility Utility Monitoring and SCADA or SQL Interface

Specifications:

- 120VAC or 24 VDC



Quality Service and Support

Well after the initial installation, Kemco continues to act as a partner delivering superior value and exceptional customer service. We support and service our complete product offering and have extensive knowledge and training available for the products that are integrated into your facility.

With our care, your equipment gets the treatment it needs from the people who know it best.

Questions about your equipment? Time for your next scheduled maintenance? Our well-trained service staff are here to provide you with the highest levels of customer service.

Product Support Services:

- 24/7 emergency service HOTLINE
- Startup and commissioning
- Troubleshooting
- Quick-ship delivery of parts

Maintenance Programs:

- Comprehensive preventative maintenance plans
- Planned, non-emergency corrective maintenance
- Emergency on-site response
- Remote monitoring and diagnosis of internet connected PLC controlled systems
- Monthly reporting plans as part of extended service plans for internet connected PLC controlled systems

Design and Build Services:

- Project management
- Mechanical room design and layout
- Turnkey installation services

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