

KEMCO VAPORENERGY

VAPORATOR™ Direct Fired Steam Generators for Precast, Prestressed and Block Operations

The 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 the premium direct-fired steam

generator available from KEMCO/VAPORENERGY. The VAPORATOR™ SERIES is available as multi-speed units in sizes ranging from 1.0 to 8.0 million BTU/Hr in order to meet the needs of even the largest and most complex concrete curing operations.

Vaporator™ Series:

Model VE 25/2B

2.5 Million BTU/Hr

Model VE 30/2B

3.0 Million BTU/Hr

Model VE 35/2B

3.5 Million BTU/Hr

Model VE 50/2B

5.0 Million BTU/Hr

Model VE 70/4B

7.0 Million BTU/Hr

Featuring Allen-Bradley
PanelView PLC
Interface.



FEATURE: 98% Efficient Direct-Fired Technology, Clean Burning Combustion Burner Process

BENEFIT:

- Fuel savings of 40% - 60%
- Meets all air quality/emissions guidelines

FEATURE: Steam Is Created Instantly - 10 Seconds

BENEFIT:

- Equipment is operated only when heat is required

FEATURE: Multi-Speed/Multi Output

BENEFIT:

- Greater curing flexibility in large concrete yards

FEATURE: UL Listed Controls Available

BENEFIT:

- Quality assurance

FEATURE: Protective Formed Steel Frame

BENEFIT:

- Lightweight reinforced frame reduces weight, provides stability and strength
- Frame provides protection for components

FEATURE: Automatic Steam Temperature/Moisture Control

BENEFIT:

- Allows for simple and precise control of steam quality
- Compensates for fluctuations in supply water pressure
- Allows for "DRY" or "WET" steam - 212° F to 550° F

FEATURE: Optional Environmental Cabinet Enclosure

BENEFIT:

- Provides noise reduction and environmental protection

FEATURE: Control Panel Is PLC Based

BENEFIT:

- Displays equipment fault codes - i.e. dirty air filter, high and low gas pressure, low water pressure, etc.

FEATURE: ASME Coded Stainless Steel Water-cooled Combustion Chamber

BENEFIT:

- 10-year warranty



Vaporator™ Series Equipment Specifications

Specification	MODEL 25/2B	MODEL 30/2B	MODEL 35/2B	MODEL 50/2B	MODEL 70/4B
Output of Unit (MM BTU/HR)	1.25/2.50	1.50/3.0	1.75/3.50	2.50/5.0	3.5/4.65/5.8/7.0
Lbs. of Steam/Hr. (Max.)	2,500	3,000	3,500	5,000	7,000
Boiler Equivalent	75HP	90HP	105HP	150HP	210HP
Physical Dimensions	112Lx52Wx90H	112Lx52Wx90H	112Lx52Wx90H	112Lx52Wx90H	130Lx66Wx102H
Air Blower Type	Positive Displacement	Positive Displacement	Positive Displacement	Positive Displacement	Positive Displacement
Electric Motor HP	40	40	50	60	100
Mixer/Burner Type	Premix 2.5 MMBTU	Premix 3.0 MMBTU	Premix 3.5 MMBTU	Premix 5.0 MMBTU	Premix 7.0 MMBTU
Shipping Weight (Lbs.)	2,300	2,700	2,800	3,200	3,600
Water Hardness	<3 Grains/Gal.	<3 Grains/Gal.	<3 Grains/Gal.	<3 Grains/Gal.	<3 Grains/Gal.
Utility Requirements					
Natural Gas (at 12 PSIG)	2,500 Cuft/Hr	3,000 Cuft/Hr	3,500 Cuft/Hr	5,000 Cuft/Hr	7,000 Cuft/Hr
Propane (vaporized at 12 PSIG)	27.5 Gal/Hr	33 Gal/Hr	38.5 Gal/Hr	55 Gal/Hr	77 Gal/Hr
Power Supply Required					
240/480 VAC at 60 Hz, 3-phase	134/67 Amps	134/67 Amps	166/83 Amps	196/98 Amps	312/156 Amps
Water (at 40 PSIG)	5 Gal/Min	6 Gal/Min	7 Gal/Min	10 Gal/Min	14 Gal/Min
Utility Connection					
Fuel	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Water	3/4"	3/4"	3/4"	3/4"	1"
Steam Line	4"	5"	5"	6"	8"

General Concrete Curing Operation

The VAPORATOR™ SERIES, including the most popular units listed above, offers over ten sizes of Vaporator Direct-Fired Steam Generators. The main benefits of the VAPORATOR™ SERIES include: fuel savings of 40%-60%, ease of installation, operation and maintenance and steam quality.

Installation:

The VAPORATOR™ is approximately the size of two office desks and weighs under 3,600 lbs. It is designed to be located central to the entire production yard, however, because of its oversized positive displacement blower, it may also be located remote of the production area. The VAPORATOR™ requires connection to standard water, fuel and electrical utilities. A water softener is the only form of water treatment necessary if the water is especially hard (see the above chart). The steam distribution piping should be constructed of standard black pipe or high temperature steam hose installed according to supplied drawings.

Operation:

The VAPORATOR™ SERIES includes two, three and four speed units, which allows the user to regulate the amount of steam going to any one production area. The VAPORATOR™ may be operated manually or automatically, although a large, multi-production yard is

best served with the addition of the VAPORCURE Automatic Curing Control System (not included). The VaporCure automatically selects the correct speed by determining how much concrete is being cured at any given minute. Due to its ability to generate steam in ten seconds, the VAPORATOR™ simply shuts off when steam is not required.

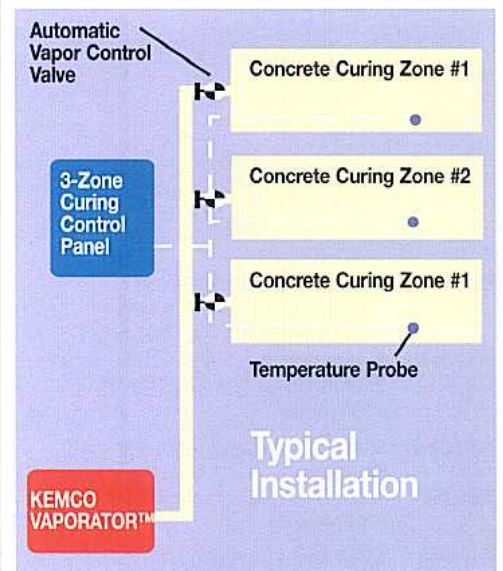
Maintenance:

The VAPORATOR™ requires periodic replacement of the air filter and air blower; oil — approximately every 500 hours of operation. No retubing, blowdown, inspections or burner repairs required.

Steam Quality:

Unlike boilers or other steam generators, because of its premix burner design and positive displacement blower, the VAPORATOR™ produces high quality, moisture variable steam with drastic reduction in the emission of CO and NOx. All KEMCO/VAPORENERGY equipment complies with the most stringent air quality guidelines found on the West Coast. All KEMCO/VAPORENERGY equipment, due to its design, is incapable, under any parameters, of producing soot that can discolor concrete. Also, the low level of oxygen present in the steam will reduce the rate of corrosion in steel distribution pipe, forms, molds, pallets

and transport equipment. Finally, the combination of combustion gases and low oxygen result in a dramatic reduction in efflorescence, and will aid in establishing product integrity and color consistency.



KEMCO SYSTEMS, INC. VAPORENERGY

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Due to product enhancements, all specifications are subject to change without notice.

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KEMCO VAPORENERGY

VAPORMITE™ Direct Fired Steam Generators for Precast, Prestressed and Block Operations

The VAPORMITE™ SERIES 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™ SERIES is available in four sizes, all single speed for the greatest flexibility, ease of operation and minimum maintenance.

VaporMite™ Series:

Model .5

.5 Million BTU/Hr

Model 1.0

1.0 Million BTU/Hr

Model 1.5

1.5 Million BTU/Hr

Model 2.0

2.0 Million BTU/Hr



Featuring Allen-Bradley PanelView PLC Interface.

FEATURE: 98% Efficient Direct-Fired Technology, Clean Burning Combustion Burner Process

BENEFT:

- Fuel savings of 40% - 60%
- Meets all air quality/emissions guidelines

FEATURE: Steam Is Created Instantly - 10 Seconds

BENEFT:

- Equipment is operated only when heat is required
- VaporMite™ may be operated using manual or automatic controls

FEATURE: Water-cooled Exhaust Elbow

BENEFT:

- Long component life

FEATURE: Positive Displacement Air Blower

BENEFT:

- Better distribution
- Longer pipe runs

FEATURE: Protective Formed Steel Frame

BENEFT:

- Lightweight reinforced frame reduces weight, provides stability and strength
- Frame provides protection for components
- Cutouts provide easy access to valves, gauges and regulators

FEATURE: Steam Temperature/Moisture Control

BENEFT:

- Control amount of moisture to prevent water build-up or add more water to prevent fading colored block
- Allows for "DRY" or "WET" steam - 212° F to 550° F

FEATURE: UL Listed Controls Available

BENEFT:

- Quality assurance

FEATURE: Lifting Points

BENEFT:

- Ease of installation and relocation

FEATURE: Stainless Steel, Water-Cooled Mixer Burner

BENEFT:

- No sooting
- Longer life

FEATURE: Control Panel Is PLC Based

BENEFT:

- Displays equipment fault codes - i.e. dirty air filter, high and low gas pressure, low water pressure, etc.

FEATURE: ASME Coded Stainless Steel Water-cooled Combustion Chamber

BENEFT:

- 10-year warranty

FEATURE: Optional Environmental Cabinet Enclosure

BENEFT:

- Provides noise reduction and environmental protection



VaporMite™ Series Equipment Specifications

Specification	MODEL .5	MODEL 1.0	MODEL 1.5	MODEL 2.0
Output of Unit (MM BTU/HR)	0.5	1.0	1.5	2.0
Lbs. of Steam/Hr.	500	1,000	1,500	2,000
Boiler Equivalent	15HP	30HP	45HP	60HP
Physical Dimensions	42"L x 66"H x 36"W	78"L x 72"H x 25"W	78"L x 72"H x 25"W	82"L x 72"H x 29"W
Air Blower Type	Positive Displacement	Positive Displacement	Positive Displacement	Positive Displacement
Electric Motor HP	7½"	15	20	30
Mixer/Burner Type	Premix 0.5 MMBTU	Premix 1.0 MMBTU	Premix 1.5 MMBTU	Premix 2.0 MMBTU
Shipping Weight (Lbs.)	1,250	1,850	1,900	2,000
Water Hardness	Less than 3 Grains/Gal.	Less than 3 Grains/Gal.	Less than 3 Grains/Gal.	Less than 3 Grains/Gal.
Utility Requirements				
Natural Gas (12 PSIG)	500 Cuft/Hr	1,000 Cuft/Hr	1,500 Cuft/Hr	2,000 Cuft/Hr
Propane/Butane (12 PSIG)	5.5 Gal/Hr	11.0 Gal/Hr	16.5 Gal/Hr	22 Gal/Hr
Water (40 PSI)	1.0 Gal/Min	2.0 Gal/Min	3.0 Gal/Min	4.0 Gal/Min
Power Supply Required				
240/480 VAC at 60 Hz, 3-phase	22/11 Amps	42/21 Amps	54/27 Amps	80/40 Amps
110 VAC at 60 Hz, 1-PH	5 Amps	5 Amps	5 Amps	5 Amps
Utility Connection				
Fuel	¾"	¾"	¾"	1¼"
Water	¾"	¾"	¾"	¾"
Steam Line	2½"	3"	3"	4"

General Concrete Curing Operation

The VAPORMITE™ SERIES offers four different sized units for concrete curing, based on the amount of concrete produced. The main benefits of the VAPORMITE™ SERIES include: fuel savings of 40%-60%, ease of installation, operation and maintenance and steam quality control.

Installation:

The VAPORMITE™ is approximately the size of the average office desk and weighs less than 2,000 lbs. It requires connection to standard water, fuel and electrical utilities. A water softener is the only form of water treatment necessary if the water is especially hard (see the above chart). The steam distribution piping should be constructed of standard black pipe or high temperature steam hose installed according to KEMCO/VAPORENERGY supplied drawings.

Operation:

The VAPORMITE™ SERIES includes all single speed models that may be operated manually or automatically - using the VAPORCURE Automatic Curing Control System (not included). Since the VAPORMITE™ can produce steam in ten seconds, its operation is determined by the temperature requirements of

the concrete. If the concrete temperature is too low, the steam generator runs until the concrete is at the desired temperature. The unit turns on and off the entire curing period to maintain the desired temperature.

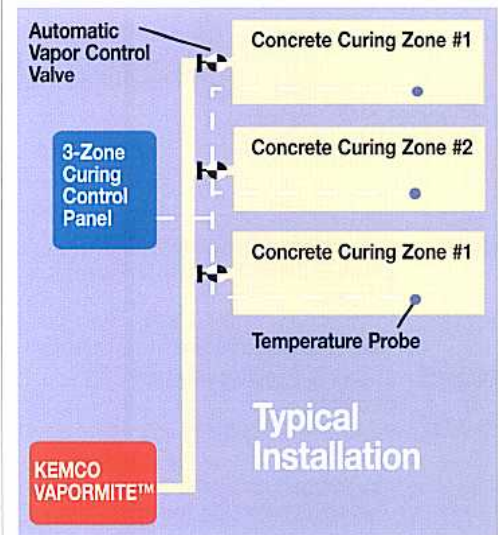
Maintenance:

The VAPORMITE™ requires periodic replacement of the air filter and air blower oil — approximately every 500 hours of operation. No retubing, blowdown, inspections or burner repairs required.

Vapor/Steam Quality:

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combustion gases and low oxygen result in a dramatic reduction in efflorescence, and will aid in establishing product integrity and color consistency.



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