



The standard of excellence in heating, cooling and air cleaning equipment

Heating units up to 5,000,000 BTU input
and cooling units up to 220 Tons.

The Powrmatic TE Series.

Thermal Economizer

Energy Efficient Large Area
Heating & Cooling Solutions
TE Series



TE Large Space Heating & Cooling



Customized. Power. Efficiency.

Energy-Efficient Heating

Powrmatic's Thermal Economizer (TE's) employs advanced engineering for high air flow, even- temperature efficiency heating of large, enclosed areas. The TE units are specifically designed to heat and cool a wide range of large spaces (Warehouses, Distribution Centers, Manufacturing Facilities, Athletic Centers, etc.).

The TE units attain this high airflow by utilizing propeller – type fans, which operate at greatly reduced horsepower as compared to conventional centrifugal type blowers. Conditioned air is distributed with a uniformity that cannot be achieved by conventional HVAC equipment.

Our TE units provide a constant high volume, low velocity airflow throughout the space. This constant airflow with ground level return air is the key to even temperatures and the lowest possible energy cost.

The TE Series from Powrmatic Inc.

Design

The TE series of gas , oil and combination gas – oil units are designed to meet the majority of commercial and industrial applications. Each unit of the TE series is designed for easy installations and reliable, cost –efficient performance. Every THERMAL ECONOMIZER is pre-wired and flame tested at the factory before shipment.

Energy-Efficient Cooling

The same principle of constant high volume airflow providing even temperatures also applies to our cooling units. Cooling coils are available in DX or Chilled Water. Powrmatics use of propeller fans provide our TE units with a 50% reduction in fan horsepower when compared to conventional package units. Not only does this reduction in horsepower lower your utility costs but it also reduces installation costs. With less units installed on the ground level along with the electrical savings, the Powrmatic TE cooling units have a low first cost installation.

Overview Specification

- *Floor-mounted and free-blowing*
- *Direct-drive induced draft fan on all models*
- *Available for use with a variety of fuels - natural gas, oil, propane, electric, hot water or steam*
- *DX or chilled water cooling coils*
- *Rigid construction with integral Formex framing for floor mounting*
- *Heat exchanger with 4-pass construction and stainless steel primary with extra large combustion area. Secondary heat exchanger, headers and collector boxes also of type 400 stainless steel are standard*
- *All models pre-wired and flame tested before shipping*
- *Propeller-type fans for reduced horsepower requirements*
- *Extra-large screened air intake and discharge openings*
- *No duct work required*
- *Industrial safety and temperature control components*
- *Acoustically insulated fan section panels*
- *Tamper proof thermostats, mounted in lock box or electronically lockable*

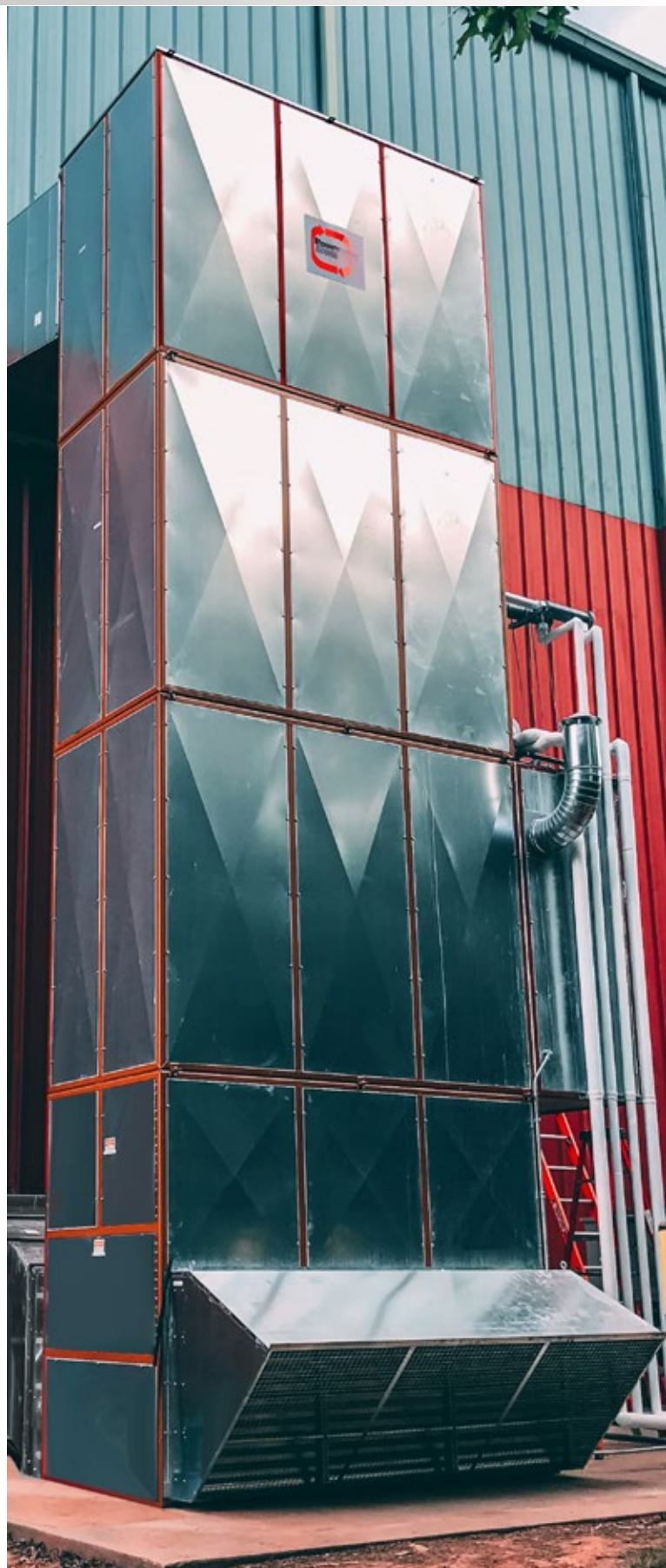
Applications

The superior heating and cooling characteristics of the Thermal Economizers are ideally suited for such spaces as:

- Manufacturing
- Warehouses
- Distribution Centers
- High Bay Production Facilities
- Athletic Centers
- Aircraft Hangars
- Pharmaceutical Storage
- Sports Practice Facilities
- Community Centers

Component Packaging

All sections are pre-assembled and palletized for shipping in separate packages - fan assembly, heat exchanger, cooling coils, and discharge plenum. All component packages are 8' tall or less. All units are internally pre-wired, with field mounting and external wiring not provided.



Product Features

TE Series

Cabinet Frame

Heavy gauge, steel finish with heat and corrosion resistant enamel. Frame of patented FORMEX, specially channeled, roll-formed heavy steel, corner-welded for exceptional strength and light weight. All panels are removable for ease of service.



Cooling Coils

Cooling coils available up to 220 tons DX or Chilled Water. The cooling coils can be arranged in either a "Blow-through" or a "Drawthrough" configuration.



Direct-Drive Exhauster

This induced draft fan has a double inlet industrial designed blower wheel for extremely low maintenance of moving parts in a high temperature operating environment. Single-phase induced draft motors are standard for model TE-11 thru TE-31. Three-phase motors are supplied with higher capacity models. Vertical or horizontal venting available.



Burner Options

Gas Fired

High efficiency UL approved gas burners are available for natural gas, L.P. gas, manufactured gas, or mixed gas. Standard gas pressure range is 6" to 13" W.C. Optional high pressure regulators are required when pressure exceeds this range.

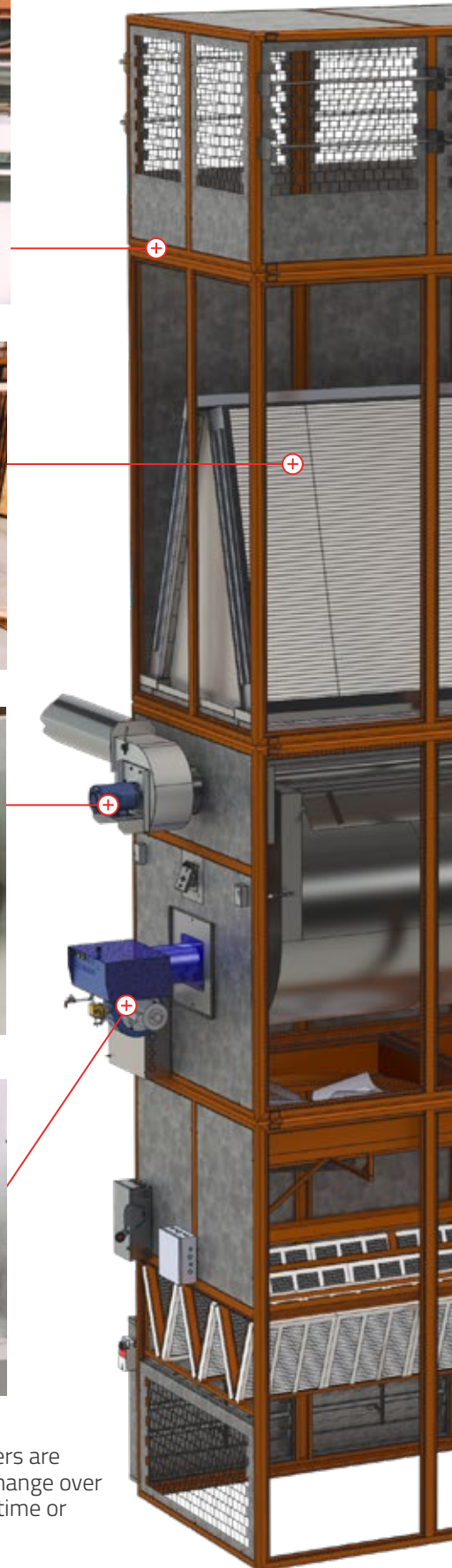
Oil Fired

High efficiency UL approved oil burners are available for #1 or #2 fuel oils. On/Off firing is standard on TE-11 with 2 stage operation furnished on all other sizes.



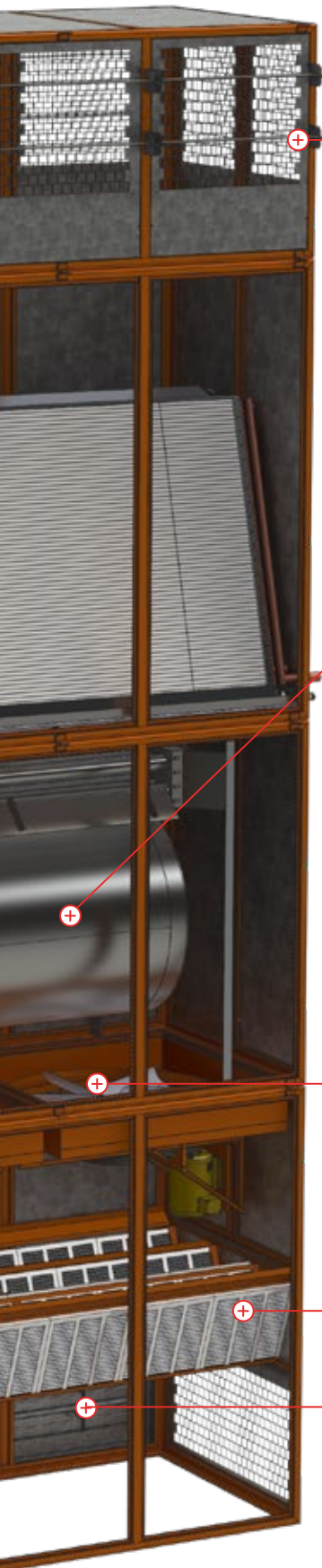
Gas/Oil Fired

Combination UL approved gas/oil burners are available for dual fuel operation. Fuel change over can be manual or automatic, based on time or temperature.



Product Features

TE Series



Discharge Plenums

Fully assembled with screened discharge plenums are standard. Optional single or dual directional discharges with extensions to meet special height requirements are also available.



Heat Exchangers

The entire Heat Exchanger surface is manufactured from 400 series stainless steel - both primary and secondary. See our 2-5-30 warranty. Heat Exchangers are available in other materials on specified and or customized basis. This may have an effect on the warranty. Contact the factory for the specific requirements.



Fan Assemblies

Standard main supply propeller-type fans are of heavy duty 10 gauge steel construction. Motor assembly includes twin 3-phase motors, which meet NEMA B open design requirements and have rigid frames attached to an adjustable motor base. ADJUSTABLE DRIVE MOTOR SHEAVES ARE STANDARD. All bearings are of pillow block design. Connecting shaft is fabricated of cold rolled steel, and is turned, ground and polished.



V-Bank Filters

V-Bank air filter racks available on request from the factory.

Motorized Outside Air Damper/Economizer

Product Benefits

Why choose the Powrmatic Thermal Economizer?



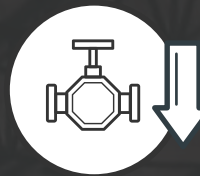
REDUCE ENERGY BILLS

Save your business between 50 and 70% on heating and cooling.



LESS EQUIPMENT INSTALLED

Significantly save on installation costs compared to multiple unit installations.



LESS GAS PIPING

Less units, results in less expensive gas piping around the building saving time and money.



LESS ELECTRICAL CONNECTIONS & COSTS

Reduce the amount of electrical points due to one system being installed.



LESS BUILDING PENETRATIONS

With one system there are a reduced number of building penetrations throughout.



NO ROOF WEIGHT OR PENETRATIONS

Floor mounting and horizontal flue options requires no roof weight or roof outlets.



NO DUCTWORK REQUIRED

Installation cost is low because no additional duct distribution system is needed.



INCREASE COMFORT WITH EVEN BUILDING TEMPERATURES

Give internal staff even temperatures and keep them happy and more productive.

***The most
extensive
warranty in
the business!***

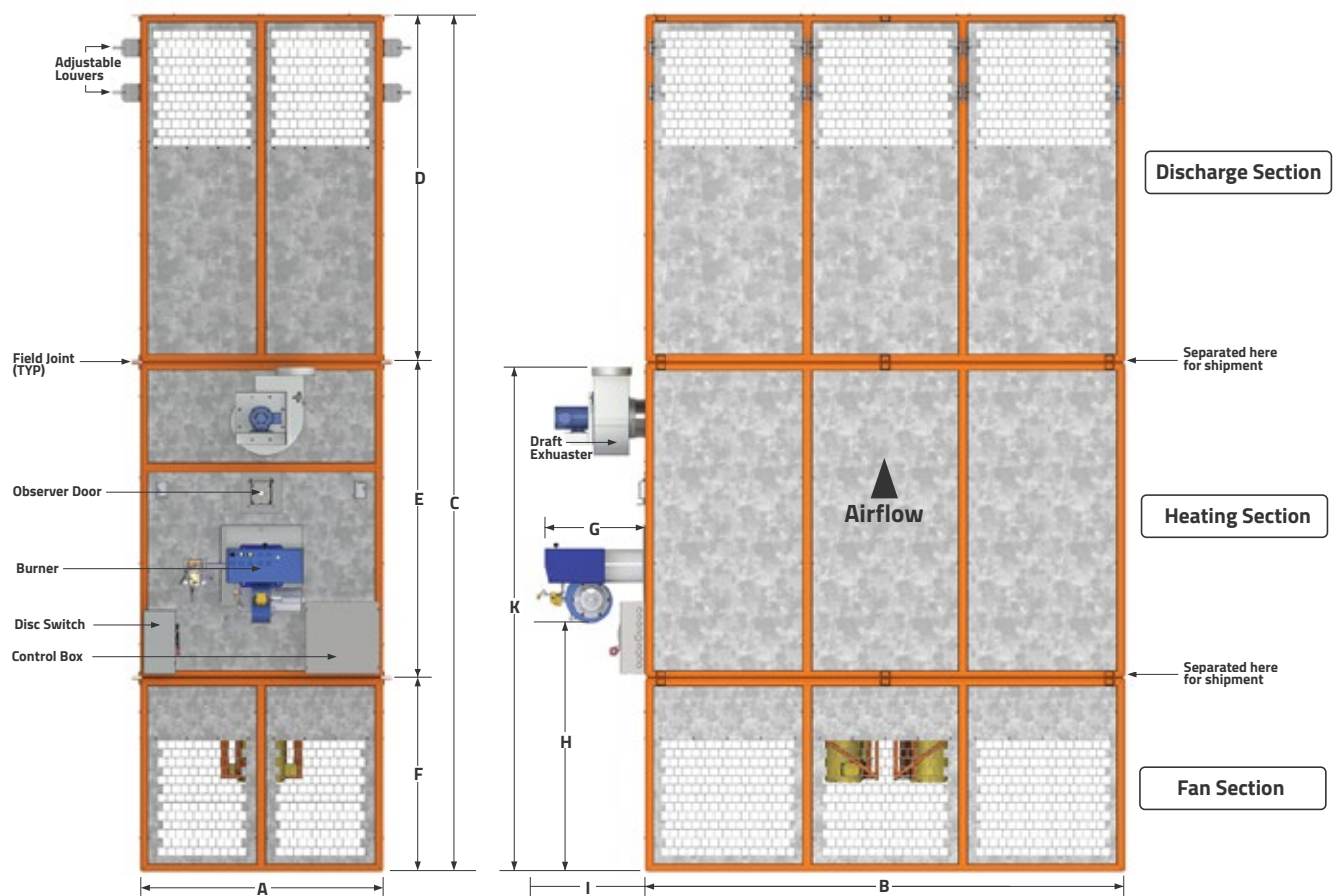


***5 Years
on Motors.
2Years
on Electrical.***

One Solution. Engineered to last. Built in the USA.



Technical Specification



Model		TE-11	TE-21	TE-31	TE-41	TE-51	TE-61	TE-61S
Standard MBH Output *		400	700	1,000	1,750	2,400	3,250	4,000
Total Fan H.P.		1.5	2	3	6	6	10	15
A	Width	46"	46"	55"	60"	70"	80"	82"
B	Length	46"	80"	98"	118"	160"	160"	162"
C	Height	11' 4"	11' 7"	13' 4"	13' 8"	15' 6"	18' 6"	18' 6"
D	Air Outlet Height	90"	88"	30"	38"	44"	58"	58"
E	Heater Height			72"	78"	78"	96"	96"
F	Air Mover - Inlet Height	46"	51"	58"	48"	64"	68"	68"
G	Burner Length - Max	30"	30"	30"	34"	34"	34"	34"
H	Burner Clearance - Min	55"	61"	68"	70"	69"	118"	118"
I	Service Clearance - Min	72"						
J	Flue Gas Vent - I.D	8"	8"	10"	10"	14"	14"	14"
K	Flue Outlet Height - Min	111"	109"	125"	123"	138"	167"	167"
Total TE Weight - Max		1,200 lbs	2,300 lbs	3,000 lbs	4,150 lbs	5,500 lbs	7,500 lbs	8,000 lbs
Heaviest TE Weight - Max		800 lbs	1,000 lbs	1,500 lbs	2,000 lbs	2,700 lbs	3,500 lbs	4,000 lbs

Notes:

- CFM capabilities are supplied to each model unit to provide the correct air exchanges per hour according to size and arrangement of space to be heated.
- These dimensions may vary due to special application.
- Flue vent size shown allows for two 45° elbows and rain cap. Diameter should be increased if resistance increases. Flue gas vent must be supported separately of TE.
- Unit location with long side to non-combustible wall should be with 0" clearance, end opposite burner with 30" clearance.

***Other outputs available - Consult the factory for your custom equipment.**

TE Series Controls

Flame Safeguard Controls

Microprocessor-based integrated burner control for automatic burner operation.

Pre-Purge Timer

Provides four complete internal air changes before ignition.

Fan and Limit Switch

Allows automatic or continuous fan operation and burner shutdown.

Draft Switch

Monitors exhauster airflow and shuts down burner in event of draft loss.

Combustion Air Switch

Monitors combustion airflow and shuts down burner in event of combustion air loss.

Burner Switch

Disconnects burner circuitry.

Motor Starter(s)

Magnetic three-phase across the line contactors w/ overload protection.

Fused Disconnect Switch

Disconnects electrical service to entire unit.

Thermostat

Maintains desired space temperature.

Options

Some optional items such as shutoff valves, regulators, filters or strainers, gauges and fusible link valves are offered upon request. Consult factory for availability.

- Iri controls
- High pressure gas regulator
- Motor capacitor (*for reduced current requirements*) modulating burners –
- Hi/lo/off or full modulation (*except te-11*)
- 7-Day time clock (night setback)
- Remote control stations
- Nema 12 (oil-proof) control box
- Ventilation with outside dampers
- Smoke detector
- Co2 detector
- Jic wiring
- Electric coils
- Hot water or steam coils
- DX or chilled water coils

Full Load Amps and Minimum Circuit Ampacity (Standard Horsepower)

Model	208-3-60				230-3-60				460-3-60			
	Gas		Oil		Gas		Oil		Gas		Oil	
	FLA	MCA	FLA	MCA	FLA	MCA	FLA	MCA	FLA	MCA	FLA	MCA
TE-11	11	15	13	20	10	15	12	15	5	10	6	10
TE-21	13	15	15	20	12	15	14	20	6	10	7	10
TE-31	17	20	19	25	16	20	18	25	8	10	9	15
TE-41	25	30	27	35	24	30	26	30	15	15	13	20
TE-51	28	35	30	35	27	30	29	35	20	20	15	20
TE-61	43	50	45	50	41	50	43	50	25	25	22	30
TE-61S	58	65	64	70	56	65	62	70	35	35	31	35

Standard Electric Motor Horsepower

Model	Draft Exhauster Motor		Oil Burner Motor		Gas Burner Motor		Main Fan Motor (each)	
	HP	PHASE	HP	PHASE	HP	PHASE	HP	PHA
TE-11	1/4	1	1/4	1	1/4	1	1-1/2	3
TE-21	1/3	1	1/2	1	1/3	1	1	3
TE-31	1/2	1	1/2	1	1/3	1	1-1/2	3
TE-41	1	3	3/4	1	1/3	1	3	3
TE-51	2	3	1	3	3/4	1	3	3
TE-61	2	3	1	3	1-1/2	3	5	3
TE-61S	3	3	1-1/2	3	1-1/2	3	7-1/2	3

Project Case Studies

Heating & Cooling



Tractor Manufacturer

Wendell, NC
165,000 SQ. FT.
2 x TE-61
3,000 MBH Input



Chocolate Storage

Carlisle, PA
450,000 SQ. FT.
9 x TE-41HC
70 Tons chilled water
875 MBH Natural gas



Furniture Warehouse

Rocky mount, VA
150,000 SQ. FT.
TE-61S
4125 MBH Input



Apparel Manufacturer

York, PA
35,000 SQ. FT.
2 x TE-41HC
80 Tons DX
1250 MBH Input



Military Storage Facility

Atlanta, GA
15,000 SQ. FT.
TE-11HC
20 Tons DX Economizer



Airforce Base

Dover, DE
100,000 SQ. FT.
TE-61S
4125 MBH Input

Project Case Studies

Heating & Cooling



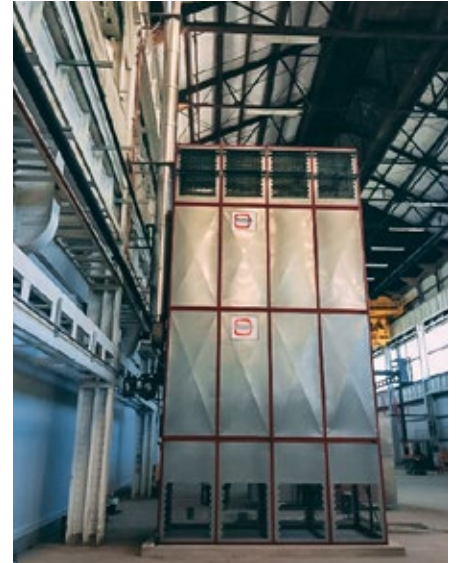
Automated Storage Facility

Dayton, OH
50,000 SQ. FT.
TE-51HC
120 Tons DX
2187 MBH Input



NFL Practice facility

Flowery Branch, GA
85,000 SQ. FT.
2 TE-41HC
2187 MBH Input
100 Tons DX
Economizer



Siding Manufacturer

Pittsburgh, PA
165,000 SQ. FT.
TE-61S
5,000 MBH Input



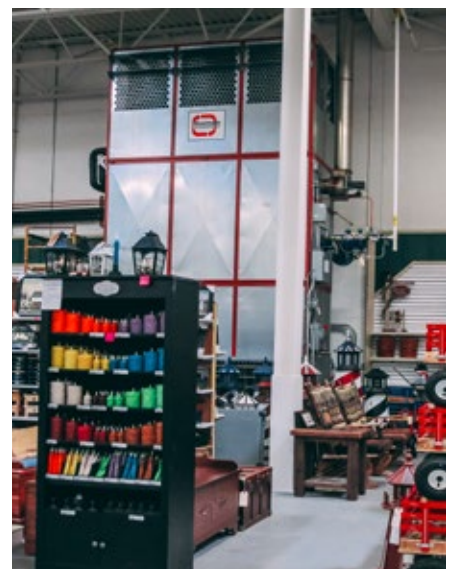
Machine Shop

Murfreesboro, TN
65,000 SQ. FT.
TE-51HC
2187 MBH Input
120 Tons DX
Economizer



Auto Parts Distribution Center

Nashville, TN
450,000 SQ. FT.
3 x TE-61S
4125 MBH Input



Amish Market

Hanover, PA
55,000 SQ. FT.
TE-41HC
100 Tons DX
2187 MBH Input



Aircraft Hangar

Smyrna, TN

- 130' X 230' X 35' to 44'
- 29,900 SQ. FT.
- R-13 walls & roof
- Natural gas + 16 to 50



Manufacturing Facility Vicksburg, MS

- 420' X 640' X 25' to 32'
- 268,800 Sq. Ft.
- R-10 Roof & Uninsulated Tilt Wall
- 32,000 CFM/Process Exhaust
- 850 Tons DX Maintains 80°F
- Natural Gas Heat +/- 21°F to 60°F



Thermal Economizer Warranty

***The most
extensive
warranty in
the business!***



***5 Years
on Motors.
2Years
on Electrical.***

(The Seller is Powrmatic, Incorporated Seller warrants its equipment to be free from defects in material and workmanship under normal use and service as follows)

- 1.** Electrical components (fan and exhauster motors excepted) and controls for a period of twenty-four (24) months from start-up or thirty (30) months from shipment.
- 2.** Fan Motor(s) and power exhauster motor for a period of sixty-two (62) months from shipment or sixty months (5 years) from start-up, whichever occurs first.
 - (a)** Motors, fuel units, controls, and transformers should be sent for repair or replacement to an authorized service point or distributor of the manufacturer of such component when reasonably available in Customer's locality.
 - (b)** Where such local service is not available with respect to the above listed components, or where other components (heat exchangers, etc.) are involved, such defective equipment should be returned, freight prepaid, to the home office of Seller.
- 3.** The heat exchanger shall be warranted on a limited basis (on a non-prorated basis) against the use of defective material and workmanship for a period THIRTY (30) YEARS from start-up by the Seller's factory technician.
 - (a)** Failure of the heat exchanger due to conditions beyond the control of the seller such as improper burner adjustment, corrosive atmosphere, building under negative pressure, etc., shall be covered under a thirty (30) year pro rated basis. This limited warranty becomes effective only after initial start-up has been completed by the Seller's factory technician.
- 4.** Seller is not responsible for any labor cost for removal and/or replacement of any equipment found to be defective.
- 5.** Equipment may be repaired or replaced at the option of the Seller. Equipment which is repaired or replaced will carry a warranty equal to the unexpired portion of the original equipment warranty.

This warranty is limited to the precise terms set forth above and provides exclusive remedies, expressly in lieu of all other remedies. In no event will seller be liable for any incidental or consequential damages of any nature. Seller neither assumes nor authorizes any person to assume for seller any other liability or obligation in connection with the sale of this equipment. Seller's liability and customer's exclusive remedy being limited to repairs or replacement as set forth above.

Other Powrmatic Products

CA/MA Series Industrial/Commercial Heaters

These gas, oil and combination gas/oil fired heaters are available in units ranging from standard smaller capacity commercial furnaces - CA/MA 20 through CA/MA 40 - and upward to include units for larger commercial and industrial applications, with capacities ranging from 450,000 BTU/HR through 4,000,000 BTU/HR. CA Series Commercial/Industrial Heaters and MA Series Make-Up Air Heaters are enclosed in heavy gauge, bolt-on panels and corner-welded frames which add ruggedness without increasing weight.

GA Series Direct Fired Gas Make-Up Air Heaters

Capacities range from 3,000 through 50,000 CFM. They can be used in applications requiring air pressure equalization, tempered replacement air, and/or air humidity control. Available for indoor or outdoor installations and can be installed vertically or horizontally.

Air Cleaning Equipment

Designed for heavy duty industrial applications with CFM capacities ranging from 750 CFM to 50,000 CFM. These powerful air cleaners can boost employee health, productivity and heating and cooling efficiency. Powrmatic manufactures a variety of air cleaners designed for different spaces and industries.

CIRC-AIR®

The Powrmatic CIRC-AIR heaters can heat up to 50,000 sq. ft. per unit. These units are designed to efficiently heat open areas by moving large volumes of air. This high volume of constant air flow will achieve very even temperatures resulting in significantly lower operating costs. CIRC AIR heaters can reduce operating costs up to 70% when compared to other heating equipment.

About Us

Located outside Baltimore, Maryland, Powrmatic, Inc. is a well-known, long-established manufacturer of heating, cooling and air cleaning equipment for the industrial and commercial marketplace. A subsidiary of the Stamm International Group, Powrmatic manufactures a complete line of direct-fired and indirect-fired heaters, cooling systems and media and electrostatic air cleaners that can be customized to fit customer needs.

Our specialized HVAC divisions:

Heating

Commercial and industrial heating, offering customized heating solutions for large spaces up to 250,000 square feet per unit, saving businesses energy and increasing productivity. Available in natural gas, propane, hot water, steam or electric, with or without chilled water or DX cooling.

Cooling

Besides heating, Powrmatic offers highly efficient systems to cool large industrial and commercial spaces, saving energy costs and improving productivity in hot summer months.

Air Cleaning

A powerful range of air cleaning equipment that boost employee health, productivity and heating and cooling efficiency. Powrmatic manufactures a variety of air cleaners designed for different spaces and industries.

Heat Exchangers

We build heat exchangers to fit any facility size or need. While Powrmatic offers a broad range of standard heat exchangers (from 20,000 to 4,000,000 BTUs), we can also custom design and manufacture non-standard heat exchangers.

Contact Us

Address

P.O. Box 539
Finksburg, MD 21048

Tel: (800) 966-9100

Tel: (410) 833-9100

Fax: (410) 833-7971

Mail: info@powrmatic.com

Web: www.powrmatic.com

We look forward to answering any questions you have about Powrmatic's line of commercial heating, cooling and air circulation products.

Powrmatic pursues a policy of continued improvement in both design and performance of its products and therefore reserves the right to change, amend or vary specifications without notice. Whilst the details contained herein are believed to be correct they do not form the basis of any contract and interested parties should contact the Company to confirm whether any material alterations have been made since publication of this brochure.