

# HEATING SOLUTIONS GUIDE

najian



flagro

admarsupply.com

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**HONDA** 



# Things To Consider Regarding Your Heating Needs

# PHYSICAL CHARACTERISTICS OF THE BUILDING

# 1. What size (in cubic feet) is the building?

- Single Story: Length x Width x Height (to roof deck).
- Multi-Story\*: Length x Width x Height (to next floor) of each floor.

\* You cannot calculate the cubic feet in a multi-story building based on the interior volume alone because heat rises from floor to floor, reducing the amount of BTUs required on upper floors.

# 2. Is it a multi-story building?

 Are there openings between floors (elevator shafts, stairwells, open DWV & HVAC) where heat can rise? If so, a lot less heat will be needed on upper floors.
 Example: a four-story building with a lot of openings between floors may require no heat on the fourth floor.

# 3. Does the building have a lot of partitions?

• Significant interior partitioning, like that found in dormitories, can significantly increase the amount of BTUs required. In cases like this, fans are needed to circulate the warm air.

# 4. How tight is the building?

- Looseness (number of openings like windows and doors) significantly impacts the number of BTUs required.
- It may be possible some heat could actually be removed as the building gets tighter.

# 5. Pressurizing building

• Setting up a heater outside the building and blowing hot air into the building will pressurize the building, preventing cold air infiltration. However this method is less fuel efficient than setting up an indirect fired heater inside the building and venting combustion out.

# OTHER CONSIDERATIONS

# 1. When will you need heat? (Start & end dates)

# 2. For the time period above, what is the average outside low temperature?

- A typical average low temperature is 29 °F.
- Theoretically, the outside temperature in Watertown, NY could reach -50 °F. But to design a temporary heating system around that parameter would be cost-prohibitive. It's important to choose a low temperature that will determine if supplemental heat is necessary.

# 3. What is the desired indoor temperature?

- If worker comfort is the goal, 50-55 is typical.
- For the finished phases of a project, 60-65 degrees is typical.\*
  - \* ADMAR cannot "guarantee" an indoor temperature.

# 4. Open flame issues

- Some towns do not allow a "torpedo" heater because of open flame restrictions. Therefore indirect heat may be the best solution because it has a heat exchanger and no open flame is visible.
- Many towns will not allow a heater inside at all.

# 5. Fuel source

- How important is fuel consumption?
- Natural gas
  - What is the size of the line?
  - What is the water column?
  - Where is the gas riser located?
- Liquid propane
  - Propane tanks have to be sized properly
- Oil
- Diesel

# 6. Heating options

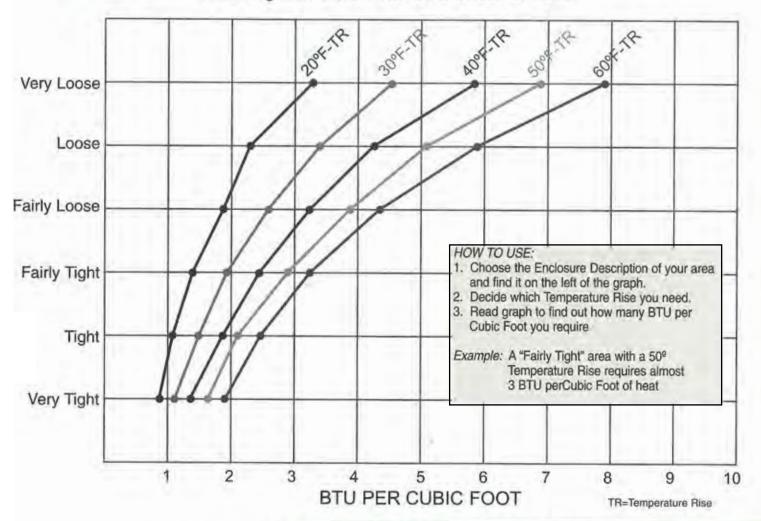
- Direct fired
  - Is least expensive to rent
  - By-products of combustion and moisture go into building
- Indirect fired (HeatWagon VG400, VG1000)
  - Burns clean & dry
  - Can be used outside or inside building (must be vented)
- Hydronic heat (Sahara, PureHeat)
  - Burns clean & dry
  - Uses boiler outside building

# ENGINEERING GUIDE

**CHART 6** 

# **Heat Requirement Estimator**

Building Condition vs. BTU/CUBIC FOOT



The heat requirement calculator provides general guidelines and is based upon a temperature rise from 20° - 60°F. On-the-job-site experience is a factor in final estimates. A job log is helpful for comparison of the estimates and final requirements, and further facilitates similar structure estimates.

Heating requirements are governed by the type of temporary enclosure that exists. Less heat is required for a tight enclosure.

Additional heating capacity is necessary to reach the desired temperature of a frozen space. The amount of frost in a structure determines the additional heating capacity, which can be terminated when frost and water vapor are no longer factors.

# **ENCLOSURE DESCRIPTION**

# **VERY TIGHT**

Structural enclosure - windows, doors, and elevators installed, walls exist (not drywalled) -no partitioning\*

# TIGHT

Structural enclosure - windows, doors, and elevators installed, walls exist (not drywalled) -medium partitioning\*

# **FAIRLY TIGHT**

Structural enclosure - tight roof and completed walls without insulation, window and door openings enclosed with canvas or plastic - medium to heavy partitioning\*

# **FAIRLY LOOSE**

Structural enclosure - tight roof and nearly completed walls; door, window and other openings covered with plastic or canvas medium partitioning\*

# LOOSE

Structural enclosure - tight roof and nearly completed walls; door, window and other openings covered with plastic or canvas - heavy partitioning\*

# **VERY LOOSE**

Structural enclosure - tight roof, sheet plastic or canvas walls - space is clear of significant partitioning\*

\*When heat is supplied from the beginning of the heating season, or if a space is well heated, partitioning isn't a vital factor.



# WHAT BTU/H IS NEEDED TO HEAT A GIVEN AREA?

- 1. Multiply room length x width x height to determine total cubic feet.
- 2. Locate desired rise in temperature.

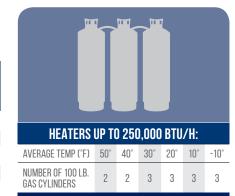
Example: Room is  $10^{\circ}$ C /  $50^{\circ}$ F, desired temperature is  $21^{\circ}$ C /  $70^{\circ}$ F =  $11^{\circ}$ C /  $20^{\circ}$ F rise in temperature

3. Read Btu/h

CUBIC	RISE IN TEMPERATURE								
FEET	6°C / 10°F	11°C / 20°F	17°C / 30°F	22°C / 40°F	28°C / 50°F	33°C / 60°F	39°C / 70°F	44°C / 80°F	
4,000	5,320	10,640	15,960	21,280	26,600	31,920	37,240	42,560	
8,000	10,640	21,280	31,920	42,560	53,200	63,840	74,480	85,120	
12,000	15,960	31,920	47,880	63,840	79,800	95,760	111,720	127,680	
16,000	21,280	42,560	63,840	85,120	106,400	127,680	148,960	170,240	
20,000	26,600	53,200	79,800	106,400	133,000	159,600	186,200	212,800	
24,000	31,920	63,840	95,760	127,680	159,600	191,520	223,440	255,360	
28,000	37,240	74,480	111,720	148,960	186,200	223,440	260,680	297,920	
32,000	42,560	85,120	127,680	170,240	212,800	255,360	297,920	340,480	
36,000	47,880	95,760	143,640	191,520	239,400	287,280	335,160	383,040	
40,000	53,200	106,400	159,600	212,800	266,000	319,200	372,400	425,600	
44,000	58,520	117,040	175,560	234,080	292,600	351,120	409,640	468,160	
48,000	63,840	127,680	191,520	255,360	319,200	383,040	446,880	510,720	
52,000	69,160	138,320	207,480	276,640	345,800	414,960	484,120	553,280	
56,000	74,480	148,960	223,440	297,920	372,400	446,880	521,360	595,840	
60,000	79,800	159,600	239,400	319,200	399,000	478,800	558,600	638,400	
64,000	85,120	170,240	255,360	340,480	425,600	510,720	595,840	680,960	
68,000	90,440	180,880	271,320	361,760	452,200	542,640	633,080	723,520	
72,000	95,760	191,520	287,280	383,040	478,800	574,560	670,320	766,080	
76,000	101,080	202,160	303,240	404,320	505,400	606,480	707,560	808,640	
80,000	106,400	212,800	319,200	425,600	532,000	638,400	744,800	851,200	
84,000	111,720	223,440	335,160	446,880	558,600	670,320	782,040	893,760	
88,000	117,040	234,080	351,120	468,160	585,200	702,240	819,280	936,320	
92,000	122,360	244,720	367,080	489,440	611,800	734,160	856,520	978,880	
96,000	127,680	255,360	383,040	510,720	638,400	766,080	893,760	1,021,440	
100,000	133,000	266,000	399,000	532,000	665,000	798,000	931,000	1,064,000	
104,000	138,320	276,640	414,960	553,280	691,600	829,920	968,240	1,106,560	
108,000	143,640	287,280	430,920	574,560	718,200	861,840	1,005,480	1,149,120	
112,000	148,960	297,920	446,880	595,840	744,800	893,760	1,042,720	1,191,680	
116,000	154,280	308,560	462,840	617,120	771,400	925,680	1,079,960	1,234,240	
120,000	159,600	319,200	478,800	638,400	798,000	957,600	1,117,200	1,276,800	

The number of Btu/h may vary from the chart due to building configurations, materials, and weather variables.

# WHAT SIZE GAS SUPPLY IS NEEDED FOR MY HEATER?



CYLINDERS MUST BE MANIFOLDED TOGETHER TO ALLOW Simultaneous vapor Withdrawal From All Cylinders.



500 GALLON TANK - 1 HEATER PER TANK

1000 GALLON TANK - 2 HEATERS PER TANK

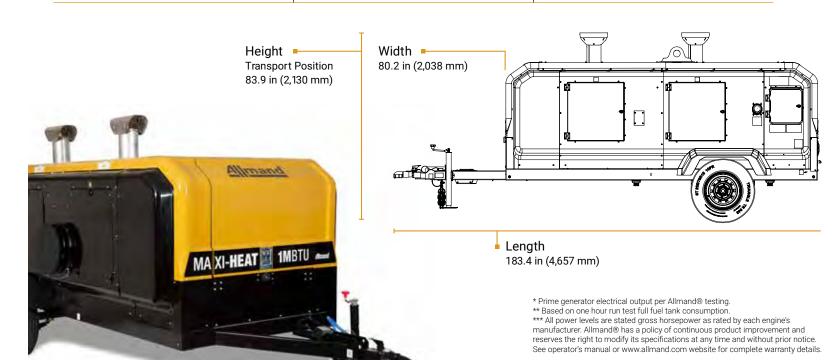
(100LB. OF PROPANE = 23.6 GAL [100/4.24])



# Maxi-Heat®

# TECHNICAL SPECS

Model	Maxi-Heat ® 1MBTU	Maxi-Heat ® 1MBTU
Engine Brand	Kubota D1005	CAT C1.1
Engine Model	D1005	C1.1
Frequency	60 Hz	60 Hz
Ducting Length - Continuous Heating	3,354 cfm with 96¡F rise over ambient @125 ft	3,354 cfm with 96¡F rise over ambient @125 ft
Sound Level @ 23ft (FULL LOAD) dBA	67.1 dBA	65.7 dBA
Sound Level @ 23ft (NO LOAD) dBA	62.9 dBA	62.4 dBA
Phase	1-phase	1-phase
Prime Power (kW)*	8	8
BTU per Hour	1,000,000	1,000,000
Heated Air Output Maximum (cfm)	7,060	7,060
Horsepower (@ 1,800 RPM) ****	11.6	13.8
Oil Change Interval (hr)	200	1,000
Engine Tier	Tier 4 Final	Tier 4 Final
Fuel Tank - Single		
Fuel Capacity gal (L)	210 (794.9)	210 (794.9)
Operating Time - 1 Heater @ Full Load (hrs)	67.5	67.8
Operating Time - 2 Heater @ Full Load (hrs)	35.1	34.6
Fuel Tank - Multi (optional)		
Heater Fuel Tank - 1 Capacity gal (L)	116 (439.1)	116 (439.1)
Heater Fuel Tank - 2 Capacity gal (L)	116 (439.1)	116 (439.1)
Engine Fuel Tank Capacity gal (L)	50 (189.2)	50 (189.2)
Total Fuel Tank Capacity gal (L)	281.6 (1,065.9)	281.6 (1,065.9)
Operating Time - 1 Heater @ Full Load (hrs)	42.1	42.1
Operating Time - 2 Heater @ Full Load (hrs)	42.1	42.1
Weights & Shipping		
Operating Weight NO Fuel (lbs) Multi Tank	3,805	3,774
Operating Weight NO Fuel (lbs) Single Tank	3,760	3,774
Operating Weight FULL Fuel (lbs) Multi Tank	5,855	5,869
Operating Weight FULL Fuel (lbs) Single Tank	5,810	5,824
Number of Units on 48' Flatbed	4	4
Number of Units on 53' Flatbed	4	4



# NEW

External Control
Panel Provides the
operator with the
necessary operating
parameters needed
during operation
eliminating the need to
open the heater door.

Flexible Applications Twin Heater units on the 1M BTU model providing flexibility of heat needed for the jobsite.

Lifting Eye

Reversible Coupler Adjustable height 2" Bulldog and 3" pintle

iQ System Automatically calibrates burner for temperature, humidity and barometric pressure. Provides damper setting on color display, and information on efficiency, target and actual outlet temperatures.



■ 16", 12" or 20" Duct Flange Outlets

# NEW

Fluid Containment

System (FCS) Provides
130%+ fluid containment
for all on-board fluids.

 Recirculation standard and results in increased efficiency of the heater and less fuel consumed.

## **NEW**

Centrifugal Fan Provides decreased dBA output and increased air flow efficiency.

- Durable Steel
   Enclosure is built to
   last through the toughest
   environments and conditions.
- Sleek Design allowing for ease of transport and maneuverability.
- CSA Approved (Multi Tank only)

# PHOENIX

# **500 CFM WITH 50% LONGER HEPA FILTER LIFE**

# **Phoenix Guardian R - Air Scrubber**

# **MOST PORTABLE HEPA SYSTEM ON THE MARKET**

The Phoenix Guardian R HEPA System is the most compact, portable True HEPA air filtration device made. Its energy-efficient rotomold design is durable, lightweight and stackable, making it the ultimate in both portability and performance.

Whether set-up as an air scrubber or negative air machine, the Phoenix Guardian R HEPA System design has been independently tested to verify True HEPA performance of not just the filter but of the entire device while delivering over 500 CFM of filtered airflow. With variable speed control, the Guardian R delivers just the right amount of desired airflow. The efficiency doesn't end with the filter performance and airflow; the Guardian R draws less than 2.5 amps of power. This makes the Guardian R HEPA System perfect for a variety of remediation projects where space and power are at a premium. A single Guardian R will provide 4 air changes per hour (the recommended minimum) on 7500 cubic feet (more than a 30' x 30'x 8' room).

# **FEATURES**

- Up to 500 CFM airflow; 2.4 amps
- Compact design
- Variable speed flow
- Multiple ducting options
- Tough, rotomold cabinet
- Optional carbon/potassium permanganate
- On-board duplex GFCI and circuit breaker
- Large horizontal inlet maximizes capture zone
- 30% more filter media maximizes filter life
- True HEPA filtration with 2-stage filtration design

**Xactimate Code: WTRNAFAN** 



# **EFFICIENT, POWERFUL XL PERFORMANCE**

# **Phoenix 250 MAX - LGR Dehumidifier**

# **HIGH TEMPERATURE, HIGH CAPACITY LGR DEHUMIDIFIER**

The 250 MAX combines the latest in Phoenix technology with a lineage dating back to the original Phoenix 200. The Phoenix 200, the first dehumidifier to be described as an LGR (Low Grain Refrigerant) dehumidifier, revolutionized the restoration industry. Next Phoenix introduced the legendary 200 MAX, which has been a top seller for almost 2 decades, followed by the addition of the Phoenix 200 HT featuring excellent hightemperature performance. With the 250 MAX, Phoenix has now combined the best features of the 200 MAX and the 200 HT into one unit.

The 250 MAX out performs its competitors at all temperature conditions without bypass or the need for any adjustment during operation on the jobsite. It also is one of our the most energy efficient units in terms of pints per kilowatt-hour, even beating the beloved 200 MAX.

# **FEATURES**

- Improved water removal 145 pints/day AHAM (80°F, 60%) 31 gals/day maximum
- Improved grain depression The driest air from an LGR
- Multiple air filter options Standard 65% MERV-11, or 57% MERV-8
- Multiple ducting options 12" intake, 10" layflat supply
- Less than 8.2 amps Removes the most pints of water per kilowatt-hour
- Stainless steel cabinet
- Internal pump with 30 feet of hose
- Five-year warranty on the sealed refrigeration system

Xactimate Code: WTRDHM>>





# FLAGRO

# **INDIRECT FIRED HEATERS**





FVNP-400

Model	FVO-400 Oil	FVOHC-400 Oil	FVNP-400 Dual Fuel
Heat Capacity	up to 390,000 btuh	up to 390,000 btuh	390,000 btuh
Fuel Tank Capacity	42 US gallons	42 US gallons	External
Operating Time/	14 hours	14 hours	Propane - 4.26 GPH
<b>Fuel Consumption</b>	2.81 GPH	2.81 GPH	Natural Gas - 390 CFH
LxWxH	70" x 29" x 52"	70" x 29" x 52"	70" x 29" x 47"
Heat Exchanger	16 gauge 304 Stainless Steel	16 gauge 304 Stainless Steel	16 gauge 304 Stainless Steel
Fan Motor	3/4 HP @ 1,725 rpm 2,500 CFM	1-1/2 HP @ 3,450 rpm 3,000 CFM	3/4 HP @ 1,725 rpm 2,500 CFM
Ignition	Direct Spark Ignition	Direct Spark Ignition	Direct Spark Ignition
Nozzle Size / Gas Pressure	2.00 x 60B @ 170 PSI	2.00 x 60B @ 170 PSI	Propane - 1.5" WC Natural Gas - 2.0" WC
Air Outlet (optional)	Two 12" diameter One 16" diameter	Two 12" diameter One 16" diameter	Two 12" diameter One 16" diameter
Wheels	Two 16" diameter Pneumatic Tubed Wheels	Two 16" diameter Pneumatic Tubed Wheels	Two 16" diameter Pneumatic Tubed Wheels
Power Requirements	115V/60Hz/1Ph/15Amp	115V/60Hz/1Ph/20Amp	115V/60Hz/1Ph/15Amp
Approvals	cETLus	cETLus	cETLus
Weight	450 lbs	450 lbs	450 lbs





FVO-200

FVP-200

Model	FVO-200 Oil	FVN-200 Natural Gas	FVP-200 Propane
Heat Capacity	200,000 btuh	200,000 btuh	200,000 btuh
<b>Fuel Tank Capacity</b>	23 US gallons	External N/A	External N/A
Operating Time	15 hours		
<b>Fuel Consumption</b>	1.50 GPH	200 CFH	2.18 GPH
<b>Power Requirement</b>	115 Volt / 15 Amp	115 Volt / 15 Amp	115 Volt / 15 Amp
Heat Exchanger	16 Gauge Fully Welded 304 Stainless Steal	16 Gauge Fully Welded 304 Stainless Steal	16 Gauge Fully Welded 304 Stainless Steal
Fan Motor	1/2 HP @ 1,725 rpm 1,500 CFM	1/2 HP @ 1,725 rpm 1,500 CFM	1/2 HP @ 1,725 rpm 1,500 CFM
Ignition	Direct Spark Ignition	Direct Spark Ignition	Direct Spark Ignition
Air Outlet	One 12" diameter	One 12" diameter	One 12" diameter
Wheels	Two 12" pneumatic Two 6" swivel Lockable casters	Two 12" pneumatic Two 6" swivel Lockable casters	Two 12" pneumatic Two 6" swivel Lockable casters
Approval	cETLus	cETLus	cETLus
LxWXH	51.5" x 27" x 43.5"	53.5" x 27" x 39.5"	53.5" x 27" x 39.5"
Weight	330 lbs	280 lbs	280 lbs
Nozzle Size/ Gas Pressure	1.10 x 70A @ 145PSI	3.5" W.C.	3.5" W.C.



ED.



12" x 12 ft Hitex Ducting



Remote Thermostat Control with 25 ft Cord

# floo

# PORTABLE HEAT AND POWER ANYWHERE YOU NEED IT



# **FVO-1000TR STANDARD EQUIPMENT**

Two Flagro FVO-400HC Indirect Fired Heating Units
2 x 3500 lbs Dual Axle, 4 x 15" Galvanized Rims with Radial Tires
Solid Steel Welded Channel Frame and Floor
Electric Emergency Second Axle Brakes
Duct Storage Cabinet
Full Fuel Containment

# **FVO-400TRL STANDARD EQUIPMENT**

One Flagro FVO-400HC Indirect Fired Heating Unit
3500 lbs Single Axle, 2 x 15" Galvanized Rims with Radial Tires
2 x 1000W Light Tower
Solid Steel Welded Channel Frame and Floor
Electric Emergency Brake
Full Fuel Containment



# **SELF CONTAINED HEATER TRAILERS**

# **DIRECT FIRED CONSTRUCTION HEATERS**



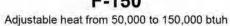


Models	FVO-1000TR	FVO-400TRL
Heaters	2 x FVOHC-400 Flagro Indirect Fired Heaters	1 x FVOHC-400 Flagro Indirect Fired Heaters
<b>Fuel Consumption</b>	Engine- 1.08 GPH at full load	Engine- 1.08 GPH at full load
	Heaters - 2 x 390,000 BTU/hr @ 2.81 GPH each	Heaters - 1 x 390,000 BTU/hr @ 2.81 GPH
	44 hours run time before refueling	78 hours run time before refueling
<b>Duct Cabinet</b>	Included	N/A
Generators	Stamford Newage Generator	Stamford Newage Generator
	Single Phase - 120 V	Single Phase - 120 V
	Instrument Panel includes keyed ignition and	Instrument Panel includes keyed ignition
	hour meter	and hour meter
	8 kw @ 1800 rpm (14 HP)	8 kw @ 1800 rpm (14 HP)
Fuel Tanks	1100 liters / 299 US gallons	1100 liters / 299 US gallons
	Polythylene construction	Polythylene construction
	Fuel sight gauge and door	Fuel sight gauge and door
	4" fuel inlet nozzle mounted at the side of the	4" fuel inlet nozzle mounted at the side of
	trailers for ground access refueling	the trailers for ground access refueling
LxWxH	12' x 7'4" x 7'	12' x 7'4" x 7'
Weight	4000 lbs (empty)	2900 lbs (empty)
Light Tower		2 x 1000W lights
		9 ft - 2 stage mast
		Light bulb storage cabinet - standard
Approvals	CSA & ESA approved	CSA & ESA approved
	DOT approved trailer	DOT approved trailer











F-375
Adjustable heat from 220,000 to 375,000 btuh

Model	F-150	F-375
Heat Capacity		
High Fire	150,000 btuh	375,000 btuh
Low Fire	50,000 btuh	220,000 btuh
Fuel	Propane	Propane
Fuel Consumption	0.55 to 1.64 GPH	2.40 to 4.09 GPH
Manifold Pressure	2-1/4 to 20 PSI	7 to 20 PSI
Hose Length	20 ft is standard	20 ft is standard
Regulator with POL	Adjustable to 20 PSI max	Adjustable to 20 PSI max
Approval	UL of Canada Listed	UL of Canada Listed
Air Outlet	8" Diameter	13" Diameter
Ignition	Manual	Manual
LxWXH	30" x 11.25" x 14"	42" x 17" x 22"
Weight	32 lbs	65 lbs
Optional Fan	N/A	800 CFM fan assembly (120V)





# **DEPENDABLE HEAT WHENEVER YOU NEED IT**

Engineered for simple operation and minimal servicing
Light and highly portable
Stackable for easy transportation and storage
Designed to operate without a fan or electricity
Temporary heat for use during construction and maintenance







# **DUAL FUEL CONSTRUCTION HEATERS**





F-400T

Model	F-400T	F-1000T	F-1500T
Heat Capacity High Fire Low Fire	400,000 btuh N/A	1,000,000 btuh N/A	1,500,000 btu 650,000 btuh
Fuel	Propane or Natural Gas	Propane or Natural Gas	Propane or Natural Gas
	4.37 GPH 400 CFH	10.92 GPH 1,000 CFH	16.38 GPH 1,500 CFH
Inlet Pressure Propane Natural Gas	11" W.C. Max 4.0" W.C. Min	11" W.C. Max 10" W.C. Min	11" W.C. Max 10" W.C. Min
<b>Power Requirement</b>	115 Volt/60Hz/1PH/15Amp	115 Volt/60Hz/1PH/20Amp	115 Volt/60Hz/1PH/20Amp
Fan Motor	1/3 HP	1 HP	1 HP
Ignition	Direct Spark Ignition	Direct Spark Ignition	Direct Spark Ignition
Air Circulation	2,000 CFM	7,000 CFM	7,000 CFM
<b>Thermostat Control</b>	Yes	Yes	Yes
LxWXH	48" x 22" x 24"	61" x 29" x 38"	61" x 29" x 38"
Air Outlet	15" Diameter	26" Diameter	26" Diameter
Weight	90 lbs	356 lbs	360 lbs

# REQUIRED EQUIPMENT FOR HEATER INSTALLATIONS

Model	F-400T	F-1000T	F-1500T B31R1 .25 (1-1/4" NPT) S54180-20 1-1/4" x 15ft Hose Assembly	
Second Stage Regulator	B42RO .75 (3/4" NPT)	B42R1 .25 (1-1/4" NPT)		
Typical Hose Assembly	S52180-12 3/4' x 15ft Hose Assembly	S54180-20 1-1/4" x 15ft Hose Assembly		





Ventless regulator available on request

# L.B. WHITE



# Indirect-fired heat with reliable CFM

Vented to provide clean, dry heat

- **✓ Fuel-conscience design** with options to recirculate heated air and use remote thermostat
- ✓ Quiet with less than 70 dB operation
- ✓ Optimal portability with wheels, handle, fit through standard 36" door frame, single point lifting bail and forklift pocket\*
- ✓ Built to last with fully welded heat exchangers and powder-coated frame
- Dual Fuel (DF) models can quickly switch from NG to LP
- Oil models have an onboard fuel tank and option to run diesel #1 or #2
- Saves storage space with option to stack\*or store on end\*\*

\*Foreman 500 and 750 models only

\*\*Foreman 230 only















Foreman°	230 DF	230 Oil	500 DF	500 Oil	750 DF	750 Oil
Btu/h Rating	230,000	230,000	500,000	500,000	750,000	750,000
Fuel type	LP/NG	#1 or #2 diesel	LP/NG	#1 or #2 diesel	LP/NG	#1 or #2 diesel
Fuel consumption max LP (lbs./hr)	10.6	-	23.0	-	34.5	-
NG (cu.ft/hr)	230	-	500.0	-	750.0	-
Diesel 1 or 2 (g/hr)	-	1.7	-	3.6	-	5.4
Inlet gas pressure min/max LP (in W.C.)	7/13.5	-	8/13.5	-	8/13.5	-
NG (in W.C.)	7/13.5	-	8/13.5	-	8/13.5	-
Burner type	BECKETT*	BECKETT*	RIELLO°	BECKETT*	RIELLO*	BECKETT*
Tank capacity (gal)	-	42	-	62	-	62
Blower fan output (CFM)	1900	1900	3457	3457	4280	4280
Outlet static pressure (in W.C.)	2.5	2.5	2.5	2.5	2.5	2.5
Motor horsepower	1/2	1/2	1.5	1.5	2.0	2.0
Electrical supply (volts/hz/phase)	120/60/1	120/60/1	120/60/1	120/60/1	240/60/1	240/60/1
Outlet duct diameter (in)	12	12	12	12	12	12
Outlet duct connections	1	1	2**	2**	2**	2**
Outlet duct max length (ft)	100	100	100	100	100	100
Air recirculation inlet dia. (in)	16	16	20	20	20	20
Running amps	9	9	13.5	13.5	12	12
Unit length (in)	60.2	60.2	94.0	94.0	94.0	94.0
Unit width (in)	26.6	26.6	32.0	32.0	32.0	32.0
Unit height (in)	43.3	43.3	53.0	53.0	53.0	53.0
Ship weight (lbs)*	421	516	852	960	870	970
Single point lifting bale	S	S	S	S	S	S
Fork lift pockets	-	-	S	S	S	S
LINK™ capable	S	S	S	S	S	S
LINK™ ready	0	0	0	0	0	0
Certified to ANSI/CSA standards	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA

S=Standard O=Optional

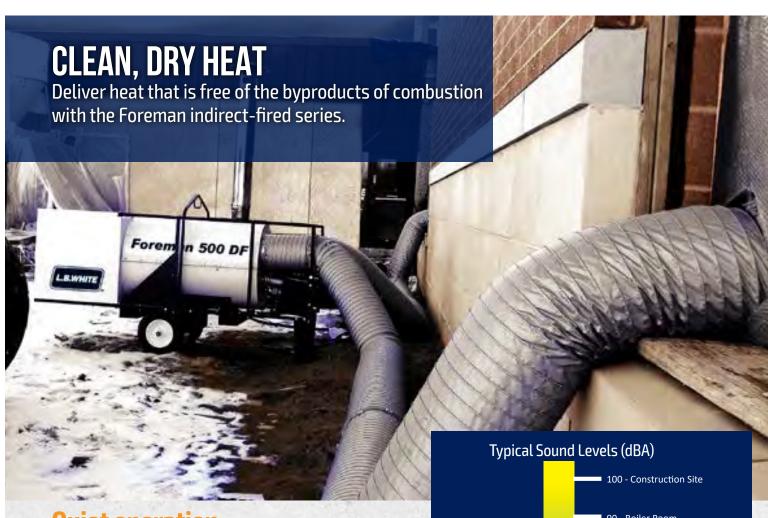
# Accessories (sold separately): • Thermostat, Nema 4X w/ 25 ft. cord, 30125 • Duct, 12" x 25', Gray, Fire-retardant, w/ Clamp, 30052

- Duct, 20" x 25', Gray, Recirculating, w/ Clamp, 30053
- Duct, 16" x 25', Gray, Fire-retardant, w/ Clamp, 30076 Rain Cap, Foreman 230s/500s/750 DF, 30162
- Rain Cap, Foreman 750 Oil, 30162A
- Exhaust Pipe Extension, Steel, Foreman 230s/500s/750 DF, 6"dia., 30161
- Exhaust Pipe Extension, Steel, Foreman 750 Oil, 8"dia., 30161A
- Gas Hose, 3/4" x 15', Foreman 230/500, 25965
- Gas Hose, 1" x 15', Foreman 750, 132047
- Regulator, all Foreman DF, 25141\*
- Heater Stacking Kit, Foreman 500/750, 30903
- Duct Adapter Kit, 16", 30902
- \* When running on NG requires 1" hose diameter and inlet pressure of at least 10 P.S.I. When inlet pressure is 2 to 10 P.S.I. use regulator, 132136.



<sup>\*</sup> Ships on custom pallet.

<sup>\*\*</sup>Operates from single 16" connection with duct adapter accessory sold seperately



# **Quiet operation**

Reduces sound pollution and makes meeting OSHA standards easier with less than 70 dB of sound output while operating.

# **Rental ready**

# Indoor-outdoor rated

- Operate outdoors and duct up to 100 feet to save space in work areas
- Vent outside or into existing chimney to operate indoors and mitigate heat loss

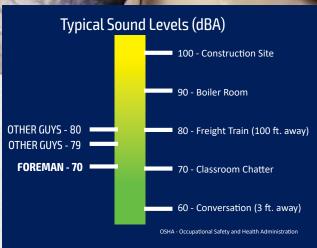
# Fuel flexibility

- Dual Fuel (DF) model operates from natural or propane gas with the turn of a ball valve. No conversion kit required.
- Oil model has on-board tank or easily connects to remote fuel tank.

# Optimal portability

- One person portable with wheels, handle and fit through standard door
- Foreman 750 does not require a forklift to move
- Equipped with single point lifting bail and forklift pockets on 500/750

# Efficient off season storage





One-person portability



Stands on end (Foreman 230)

Stacks two units high with optional stacking kit (Foreman 500 & 750)

# **Fuel-conscience features**



Recirculate heated air

Recycle air that's already been heated and use less fuel.



# Thermostatic control

Automatically heat to a set temperature and use only as much fuel as is required with the remote thermostat option.



Vent mode

Keep heated air working hard without using more fuel. Moves heated air throughout the space using fan only.

# Centralized control panel





# Less power supply headaches

With the onboard volt meter, operators can easily confirm adequate power is available from the start and monitor throughout heater operation.

# Streamlined status and diagnostics

Heater status lights provide a quick indication of operation status. If problems arise, status lights streamline troubleshooting and can save service managers a trip.

# Anticipate maintenance

Take the guesswork out of how long a heater ran when on rental with the hour meter. Rely on the actual heating hours to schedule maintenance rather than calendar days.

# Burner-specific insights

The Beckett® GeniSys™ control provides status and diagnostic information specific to the burner.



# **Enclosed flame design invented** by L.B. White

Direct-fired efficiency with added safety

- ✓ Enclosed flame promotes safer work environments and provides option to duct
- ✓ 99% direct-fired fuel efficiency boosted by remote thermostat and option to move air only like a fan
- ✓ Quiet with less than 70 dB operation
- Dual Fuel (DF) models quickly switch from NG to LP
- Fits through standard 36" door frame while handles and wheels on larger models provide maneuverability

# **MODELS AVAILABLE IN:** 40,000 (LP only) 350,000 80,000 NEW 700,000 170,000







PREMIER°	40	80, 2.0	80 DF, 2.0	170, 2.0	170 DF, 2.0	350 DF, 2.0	700 DF
BTU/HR rating	40,000	80,000	80,000	170,000	170,000	350,000	700,000/350,000
Heated air output (CFM)	330	450	450	1,200	1,200	2,500	5,000
Fuel type	LP	LP	LP, NG	LP	LP, NG	LP, NG	LP, NG
Fuel consumption LP gas max (lbs/hr)	1.9	3.7	3.7	7.9	7.9	16.2	32.4 / 16.2
Fuel consumption NG gas max (cu ft/hr)	-	-	80	-	170	350	700 / 350
Amps (start/continuous)	2.6 / 1.0	5.0 / 1.5	5.0 / 1.5	7.3 / 5.0	7.3 / 5.0	25.0* / 9.0	28 / 12
Electric supply (volts/hz/phase)	120/60/1	120/60/1	120/60/1	120/60/1	120/60/1	120/60/1	240/60/1
Motor horsepower	1/12	1/8	1/8	1/3	1/3	1	1
Running decibels	62	70	70	70	70	72	70.4
Unit length (in)	24.8	28	28	32.3	32.3	48.3	47.5
Unit width (in)	14.5**	13.5	13.5	24.3	24.3	28.0	28.0
Unit height (in)	16.3	22.0	22.0	32.0	32.0	41.0	69.0
Shipping weight (lb)	60	79	79	161	161	320	640
Case material	Tri-Shield™***						
Electrical connection	Mounted inlet						
Thermostat connection	Mounted inlet						
Wheels	-	-	-	Semi-pneumatic	Semi-pneumatic	Semi-pneumatic	0
Ventilation (fan only)	S	S	S	S	S	S	S
Gas hose, regulator & thermostat	S	S	S	S	S	S	0
Outlet duct diameter (in)	8	12	12	12	12	18	18
Outlet duct max length (ft)	12	12	12	12	12	25	25
LINK™ ready	-	-	-	-	-	S	-
Certified to ANSI/CSA standards	U.S. & CA						

S=Standard O=Optional

- \* Amps spike over 15 during initial start-up. Check breaker capability.
- \*\* 18.1 with optional thermostat bracket installed.
- \*\*\* Tri-shield coated steel with three unique protective layers including: a non-corrosive hot-dipped, galvanized steel, an oven-cured epoxy primer and baked, thermosetting polyester.

# Accessories (sold separately): •500-133671, 2-1 Outlet adapter for 24" duct

- 500-22835, Duct, 18" x 12' w/ duct adapter & clamp
- 500-133767, Duct, 24" x 25' w/ duct adapter & clamp
- 500-132976, T-Stat with 1.4' cord
- 500-132047, Hose, 1" x 15', 1 NPT both ends
- 500-25141, Regulator, LP
- 500-133766, Kit Mobility





# Reliable, directional heat

Versatile and efficient forced air

- ✓ Easy to operate with dependable 3-trial ignition system, and diagnostic lights on Ultra models
- ✓ 99% direct-fired fuel efficiency with variable output

  controls and thermostatic control on 170 and 400 models
- Built to last with industry's heaviest gauge combustion
   chamber and burner plate, and Tri-shield™ coated steel case

# MODELS AVAILABLE IN: LP NG DF (LP/NG) 125,000 (LP only) 170,000 (LP or NG) 400,000 (LP or DF only)



TRADE	SMAN°	125	170	170 Ultra	170N	170N Ultra	400	400 Ultra	400 Ultra DF
BTU/HR r	ating	70,000 / 125,000	125,000 / 170,000	125,000 / 170,000	125,000 / 155,000	125,000 / 155,000	250,000 / 400,000	250,000 / 400,000	175,000 / 400,000*
Heated a	ir output (CFM)	400	550	550	550	550	1,050	1,050	1,050
Fuel type		LP	LP	LP	NG	NG	LP	LP	LP/NG
Fuel cons max (lb/h	sumption LP gas min/ nr)	3.2 / 5.8	5.8 / 7.9	5.8 / 7.9		-	11.6 / 18.6	11.6 / 18.6	11.6 / 18.6
Fuel cons max (cu f	sumption NG gas min/ t/hr)	-	-	-	125 / 155	125 / 155	-	-	175 / 400
Inlet gas	pressure LP gas	11.0 (in W.C.)	11.1 (in W.C.)	11.1 (in W.C.)	-	-	5.2 PSIG	5.2 PSIG	1.5 PSIG
Inlet gas	pressure NG min/max	-	-	-	7/13.5 (in W.C.)	7/13.5 (in W.C.)	-	-	1.5 PSIG
Amps (sta	art/continuous)	2.0 / 0.70	3.7 / 1.0	3.7 / 1.0	3.7 / 1.0	3.7 / 1.0	4.0 / 1.3	4.0 / 1.3	4.0 / 1.3
Service sa	aver (self-diagnostics)	-	-	Yes	-	Yes	-	Yes	Yes
Unit leng	th (in)	25.6	24.0	24.0	24.0	24.0	34.5	34.5	34.5
Unit widt	h (in)	11.8	9.5	9.5	9.5	9.5	12.5	12.5	12.5
Unit heig	ht (in)	16.0	16.0	16.0	16.0	16.0	21.5	21.5	21.5
Shipping	weight (lb)	28.0	34.0	34.0	34.0	34.0	51.0	51.0	55.0
Case mat	erial	Tri-Shield™**	Tri-Shield <sup>™</sup> **	Tri-Shield™**	Tri-Shield™**	Tri-Shield™**	Tri-Shield™**	Tri-Shield™**	Tri-Shield™**
High tem	p safety switch	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Air flow s	afety switch	No	No	Yes	No	Yes	Yes	Yes	Yes
Gas press	sure regulator	S (w/POL)	S (w/POL)	S (w/POL)	S	S	S (w/POL)	S (w/POL)	S (w/POL)
Unit mou	nt thermostat	***	S	S	S	S	S	S	S
Gas hose		S	S	S	0	0	S	S	S
Certificat	ion	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA	U.S. only

S=Standard O=Optional





<sup>\* 250,000 - 400,000</sup> BTU/HR on LP.

<sup>\*\*</sup> Tri-shield coated steel with three unique protective layers including: a non-corrosive hot-dipped galvanized steel, an oven-cured epoxy primer and baked, thermosetting polyester.

<sup>\*\*\*</sup> Thermostat not available



# Turnkey directional heat

Forced air with onboard fuel

- ✓ Convenient fuel with onboard fuel tank and option to run on kerosene, diesel or fuel oil #1
- ✓ Easy to operate with onboard air diagnostic system, fuel & pressure gauges, and digital space temp display
- ✓ 99% direct-fired fuel efficiency boosted by onboard thermostat





TRADESMAN° K	K75	K125	K175	K210	K400	K650
BTU/HR rating	75,000	125,000	175,000	210,000	400,000	650,000
Heated air output (CFM)	265	520	600	650	1,400	3,600
Fuel type	Kerosene*	Kerosene*	Kerosene*	Kerosene*	Kerosene*	Kerosene*
Fuel consumption max. (gal/hr)	0.6	0.95	1.3	1.6	3.0	4.9
Tank capacity (gal)	5	10	13	13	29	50
Operating time max (hr)	8.3	10.5	10	8	9.5	10
Running amps	1.6	2.5	3.2	3.7	4.4	7.1
Pump Pressure (PSI)	3.8	5.5	6.5	8.5	125	110
Motor horsepower	1/8	1/5	1/4	1/3	1/2	3/4
Unit length (in)	32	36.1	41.8	41.8	52.5	69.2
Unit width (in)	11.8	21.5	23.1	23.1	31.4	32.8
Unit height (in)	16.8	24.6	26.1	26.1	32.8	48.7
Shipping weight (lbs)	32	64	72	74	163	298
Thermostat	S	S	S	S	S	S
Fuel & pump pressure gauges	S/S	S/S	S/S	S/S	S / -	S/-
On/off switch	S	S	S	S	S	S
Cord caddy	S	S	S	S	S	-
Certification	U.S. & CA					

S=Standard O=Optional



<sup>\*</sup> Kerosene, #1 and #2 Diesel or #1 Fuel Oil



# 360-degree heat distribution

Convenient for early phases of construction

- ✓ No electricity required
- ✓ 99% direct-fired fuel efficiency improved by adjustable shut-off controls that also save fuel
- ✔ Built to last with cast iron burners, one-piece body, and the Norseman incorporates the heaviest gauge steel in the class
- Lightweight design at less than 35 lbs
- Hose and regulator included with LP models (Canada)

# **NORSEMAN AVAILABLE IN:**



# **WORKMAN AVAILABLE IN:**







CONVECTION	WORKMAN <sup>™</sup> 100N Plus	NORSEMAN <sup>™</sup> 200 Plus	WORKMAN <sup>™</sup> 225 Plus	NORSEMAN <sup>™</sup> 250
BTU/HR rating	100,000	200,000	45,000-225,000	250,000
Fuel type	NG	LP	LP	LP
Fuel consumption LP gas max (lbs/hr)	-	9.3	2.1 / 10.4	11.6
Fuel consumption NG max (cu ft/hr)	100	-	-	-
Inlet gas pressure LP gas min/max (PSIG)	-	23.0	10.2	23.0
Inlet gas pressure NG min/max (in W.C.)	7.0/13.5	-	-	-
Ignition type	Piezo pilot	Piezo pilot	Piezo	Pilot
Unit length (in)	16.5	18.0	17.0	18.0
Unit width (in)	15.0	13.0	15.0	13.0
Unit height (in)	25.0	24.0	26.0	24.0
Shipping weight (lbs)	14.0	34.0	19.0	34.0
Flame safety	Thermocouple controlled gas valve			
Burner type	Stainless steel	Cast iron	Stainless steel	Cast iron
Case material	Galvanized steel	Heavy gauge steel	Galvanized steel	Heavy gauge steel
Gas pressure regulator	S	S	S (w/pol)	S
Gas hose (10 ft U.S./15 ft CA)	0	S	S	S
Certification	U.S. & CA	U.S. & CA	U.S. & CA	*

S=Standard O=Optional



<sup>\*</sup> Norseman 250 is L.B. White tested and evaluated, but not third-party certified. Not approved for use on combustible floors.



# Warm objects like the sun

Easy spot-heat

- ✓ No electricity required
- ✓ 99% direct-fired fuel efficiency improved by adjustable shut-off controls that also save fuel
- **✓ Built to last** made from durable materials with high temperature paint
- Lightweight design at less than 50 lbs with folding handle and wheels
- Hose and regulator included with LP models

# **MODELS AVAILABLE IN:**



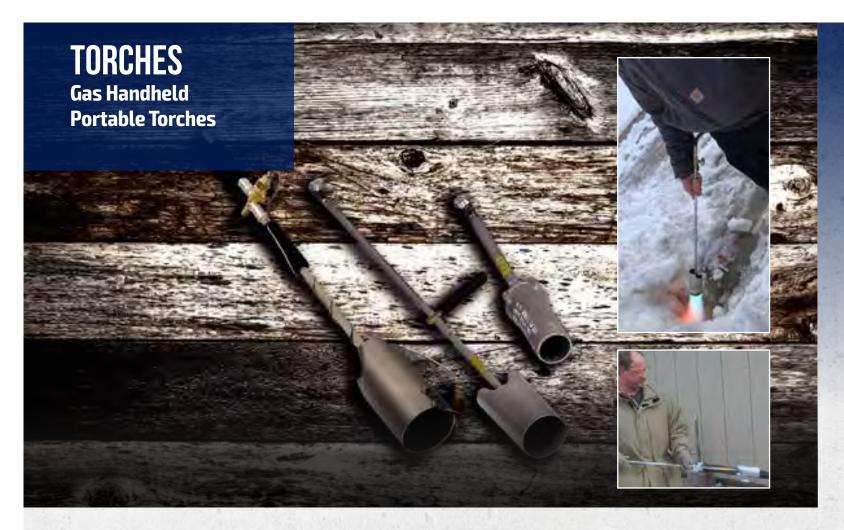


SUN BLAST°	35	HD 100	HD 100N	125	125N
BTU/HR rating	35,000	50,000 - 100,000	50,000 - 100,000	125,000	125,000
Fuel type	LP	LP	NG	LP	NG
Inlet gas pressure LP min/max (in W.C.)	22.0	13.5	13.5	13.5	7.0
Fuel consumption LP gas max (lb/hr)	1.6	2.1	-	5.8	-
Fuel consumption NG gas max (cu ft/hr)	-	-	100	-	125
Operating time 20 lb LP cylinder (hr)	12.5	-	-		-
Ignition type	Piezo	Piezo pilot	Piezo pilot	Piezo pilot	Piezo pilot
Unit length (in)	12.4	16.0	16.0	16.5	16.5
Unit width (in)	10.4	16.0	16.0	16.2	16.2
Unit height (in)	37.5	32.5	32.5	35.0	35.0
Shipping weight (lb)	30.0	49.0	49.0	43.0	43.5
Control valve	S	S	S	S	S
Excess flow valve	S	S	S	S	S
Safety tip over switch	S	S	S	S	S
Preset regulator	S	S	S	S	S
POL	S	S	S	S	-
Certification	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA	U.S. & CA

S=Standard O=Optional

# Accessories (sold separately): • Regulator, NG (second stage), HD 100N, 500-07087 • Gas hose, HD 100, 1/2 in. x 50 ft., 500-132991 • Gas hose, HD 100N, 3/4 in. x 50 ft., 500-133318



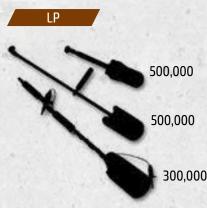


# Year-round handheld torches

For thawing pipes, burning brush and more

- ✓ Easy to operate with lightweight handle, manual or pilot light models, and shut-off safety valves on some models
- **✓ Built to last** with steel and cast-iron heads

# **ALL MODELS AVAILABLE IN:**







TORCHES	Torchman <sup>™</sup> SV	Torchman <sup>™</sup> 500	Bertha <sup>™</sup> 500
BTU/HR rating	300,000	500,000	500,000
Fuel type	LP	LP	LP
Ignition type	Manual	Manual	Manual
Fuel consumption LP gas max (lb/hr)	14.0	23.2	23.2
Fuel consumption NG gas max (cu ft/hr)	-	-	-
Head type	Steel	Steel	Cast iron
Assembled length (in)	29.5	36.0	22.0
Control valve	S	S	S
Excess flow valve	S	S	S
Safety shut-off valve	Yes	-	-
Preset regulator	S	-	0*
POL	S	S	O**
Gas hose (10 f. U.S./15 ft CA)	S	S	S
Thermocouple	S	-	-
Unit weight (lb)	5.2	3.5	7.0
Shipping weight: bulk packed (lb)***	-	-	7.0
Shipping weight: individually packed (lb)	-	-	-
Shipping weight: skin packed (lb)***	8.5	6.0	7.5
Certification	CA	CA	-

S=Standard O=Optional



<sup>\*</sup>Recommended Option

<sup>\*\*</sup>Included standard with optional regulator assembly

<sup>\*\*\*</sup>Bulk Pack sold in packages of 8 torches; Skin packed sold in packages of 4 torches.

CA - Canada model defined by separate configuration.



# Combines low operating costs with rental-ready features

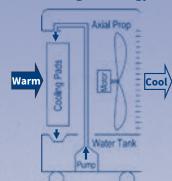
# ✓ Rental-ready features

- Automatic pump shut-offs prevents pump burnout when water runs out
- Quiet operation at less than 60 dB
- $\boldsymbol{\cdot}$  Adjustable with louvers that allow airflow to be adjusted up or down
- Option to set run times

# ✓ Low operating cost

- 10-gal water tank provides 3-4 hours or runtime with easy to read water level display
- Convenient garden hose connection for continuous fill
- Operates from standard circuits with low amp draw and safe GFCI connection

# **Cooling Technology**



Water from an onboard tank is pumped to the top of a filter-like cooling pad. Then, a 3100 CFM fan pulls warm, environmental air over the filter and pushes out air with a cooling effect 30+ feet.



CO	DLING	RELATIVE HUMIDITY						
CH	ART	20%	30%	40%	50%	60%	70%	
	75°F	-24	-21	-18	-12	-14	-12	
	80°F	-24	-22	-19	-17	-15	-13	. (ž
P. C	85°F	-26	-23	-20	-18	-15	-13	er °F away)
E E	90°F	-27	-24	-21	-18	-16	-13	cooler 10ft a
Ţ	95°F	-28	-25	-22	-19	-16		0.1.
<u>e</u> n	100°F	-30	-26	-23	-19	-17		Feels o
Ambient Temp	105°F	-31	-27	-24	-20	-17		Fe (app
•	110°F	-33	-28	-24	-21			
	115°F	-34	-29	-25	-21			

PORTABLE EVAPORATIVE COOLER	PC-31
Coverage area	950 sq. ft.
Airflow delivery	3,100 CFM
Fan motor	1/5 H.P. 115 V 3 speed
Power requirement	115 V
Amps	2.8
Water tank capacity	10.3 Gal
Run time capacity	3-4 hours
Max water connection pressure	50 PSI
Unit dimensions	38"H X 24"W X 17"D
Unit weight	45 Lbs.
One year warranty	S



THERMOSTATS	FITS MODELS	DESCRIPTION	PART #
Õ4	FOREMAN® 230, 500, 750, Premier® 40, 80 2.0, 170 2.0, 350 df 2.0	THERMOSTAT 25' CORD	30125
	PREMIER® 40, 80 2.0, 170 2.0, 350 DF 2.0	THERMOSTAT WITH 1.4' CORD	132976
REGULATORS	FITS MODELS	DESCRIPTION	PART #
0	PREMIER® 40	REGULATOR, PROPANE GAS W/ POL & HAND WHEEL	26377
	PREMIER® 80 LP	PROPANE REGULATOR WITH HAND WHEEL CONNECTOR	26377
Section 2.	PREMIER® 170 LP	PROPANE REGULATOR WITH HAND WHEEL CONNECTOR	26419
	PREMIER® 170 DF	DUEL-FUEL REGULATOR (PROPANE & NATURAL GAS)	26423
	PREMIER® 80, 170	VENTLESS REGULATOR	28690
	PREMIER® 350 DF	VENTLESS REGULATOR	28691
	PREMIER® 350 DF, 700 DF, FOREMAN® 230, 500, 750*	DUEL-FUEL REGULATOR (PROPANE & NATURAL GAS)	25141
	TORCHES	PROPANE REGULATOR	21788
GAS HOSE	FITS MODELS	DESCRIPTION	PART #
	PREMIER® 40	3/8" X 15' 3/8" NPT GAS HOSE KIT W/ADAPTER	22277
	UNIVERSAL	1/2" X 15' UNIVERSAL GAS HOSE KIT C/W 5 ADAPTERS	24600
	UNIVERSAL	1/2" X 20' UNIVERSAL GAS HOSE KIT C/W 5 ADAPTERS	25960
	UNIVERSAL	1/2" X 25' UNIVERSAL GAS HOSE KIT C/W 5 ADAPTERS	25961
	PREMIER® 350 DF, FOREMAN® 230, 500	3/4" X 15' GAS HOSE	25965
	FOREMAN® 750	1" X 15' GAS HOSE	132047
DUCTING	FITS MODELS	DESCRIPTION	PART #
	PREMIER® 40	8" X 12' WHITE DUCT KIT (INCL. ADAPTER RING)	132544
	PREMIER® 80, 170	12" X 12' GRAY DUCT KIT (INCL. ADAPTER RING)	26346
	PREMIER® 350	18" X 12' GRAY DUCT KIT (INCL. ADAPTER RING)	22835
	FOREMAN® 230, 500, 750	12" X 25' GRAY DUCT KIT (INCL. ADAPTER RING)	30052
	FOREMAN® 500, 750	20" X 25' GRAY DUCT RECIRCULATING KIT (INCL. CLAMP)	30053
	FOREMAN® 230, 500, 750	16" X 25' GRAY DUCT KIT (INCL. CLAMP)	30076
MISC.	FITS MODELS	DESCRIPTION	PART #
	FOREMAN® 230, 500, 750 DF	6" DIA. EXHAUST PIPE EXTENSION, STEEL	30161
	FOREMAN® 750 OIL	8" DIA. EXHAUST PIPE EXTENSION, STEEL	30161A
	FOREMAN® 230, 500, 750 DF	6" DIA. RAIN CAP	30162
200	FOREMAN® 750 OIL	8" DIA. RAIN CAP	30162A
439	FOREMAN® 500, 750 DF	STACKING KIT	30903
	FOREMAN® 500, 750	16" SINGLE DUCT ADAPTER KIT	30902
	TORCHES	POL STEM	571701
	TORCHMAN 500	TORCH HANDLE, SLIDING	25791

For a complete listing of all accessories please see our Parts and Accessories Price List

# WACKER NEUSON

<sup>\*</sup> When running on NG requires 1" hose diameter and inlet pressure of at least 10 P.S.I. When inlet pressure is 2 to 10 P.S.I. use regulator, 132136.

# **Hydronic Ground Heater**

# E 2200

# An efficient, durable, and user-friendly mobile hydronic heating system for any job site

The hydronic ground heater product line is engineered for reliable, trouble free starts in even the coldest weather conditions. The E 2200 will thaw up to 4,400 sq. ft. of frozen ground. This unit can also heat up to 4,400 sq. ft. of ground, indoors or out, to prepare for concrete placement, to prevent frost penetration or to ensure proper concrete curing. With accessories the unit will provide 360,000 cu. ft. of dry heat.



# **ADDITIONAL ADVANTAGES:**

- The E 2200 is engineered for reliable performance and trouble-free starts for up to 130 hours of run time.
- With 2,200 ft. of hose, the E 2200 is easy to operate and allows for flexible, uncomplicated set up for all applications.
- Positive displacement pump provides maximum flow and consistent heat delivery for thawing and curing.
- Digital temperature controller with push button adjustment allows operators to easily adjust Heat Transfer Fluid (HTF) output temperature for all concrete curing applications.
- **Hydraulic hose system** allows for single person operation and hose placement.
- Performance monitoring strobe light indicates from a distance that all systems are operating properly.
- Unit features 87% heater efficiency, the highest in the industry.
- Several options are also available, including a 5.0 kW liquid-cooled diesel generator and lifting bail.





Technical Data		E 2200
Dimensions (L x W x H)	in (mm)	169 x 72 x 88 (4293 x 1829 x 2235)
Ground clearance	in (mm)	12 (305)
Weight (without fuel and genset)	lb (kg)	4715 (2139)
Weight (with fuel and genset)	lb (kg)	6297 (2856)
Fuel tank capacity	gal (I)	151 (572)
Heat transfer fluid (HTF) capacity	gal (I)	95 (360)
Pump	gph (l/h)	2 x 265 (2 x 1003)
Hose length	ft (m)	2200 (670)
Hose reels		1
Hose rewind		120V AC, w/12V DC clutch
Circulation loops		2
Tire code		ST 235/80R16 LRD
Hitch		2-5/16" ball
Performance		
Heater, gross output	Btu/hr (kW)	252,000 (73.9)
Heater efficiency		87%
Temperature controller		digital
Fuel consumption at full load (without genset)	gph (l/h)	1.8 (6.8)
Fuel consumption at full load (with genset)	gph (l)	2.2 (8.3)
Fuel requirements		Winter blend diesel
Run Time	hr	Up to 130
Electrical		115V, 2 x 20 amps
Normal operating temperature	°F (°C)	100 - 180 (38 -82)
Normal hose operating pressure	psi (kPa)	70-90 (483-621)
HTF flow rate per loop	gph (l/h)	265 (1003)
Thaw capacity (standard / with accessories)	ft² (m²)	2220-4400 (204-409) / up to 4400 (409)
Cure capacity (standard / with accessories)	ft² (m²)	up to 4400 (409) / up to 13,200 (1226)
Frost prevention (standard / with accessories)	ft² (m²)	up to 6600 (613) / up to 19,800 (1839)
Air heat capacity (with accessories)	ft³ (m³)	360,000 (10,194)
Performance monitoring light		Yes

# Standard Package

Hydronic Ground Heater E 2200

Includes operator's manual.

# Model Guide

E = Expandable 2200 = Hose length (in feet)

Please refer to our Price List and Ordering Guide for complete accessory information.







fications may change due to continuous product development. Users are advised to consult Wacker Neuson's Operator's Manual and website for specific information regarding the engine power rating. Actual power output may vary due to conditions of specific use.





# **Hydronic Ground Heater**

# E 3000ES

# An efficient, durable, and user-friendly mobile hydronic heating system for any job site

The Hydronic Ground Heater product line is easy to operate and dependable. The E 3000ES will provide maximum flow and ensure consistent heat delivery for thawing and curing applications. One pump per hose loop means more Btus/hr delivered to the project than competitive hydronic. This unit thaws or cures up to 6,000 sq. ft. - with accessories, the E 3000ES will cure up to 12,000 sq. ft. or provide 360,000 cu. ft. of dry heat.

# **ADDITIONAL ADVANTAGES:**

- The E 3000ES is engineered for reliable performance and trouble-free starts for up to 101 hours of run time.
- With 3,000 ft. of hose on a single hose reel, the E 3000ES is easy to operate and allows for flexible, uncomplicated set up for all applications.
- Positive displacement pump provides maximum flow and consistent heat delivery for thawing and curing.
- **Digital temperature controller** with push button adjustment allows operators to easily adjust Heat Transfer Fluid (HTF) output temperature for all concrete curing applications.
- **Performance monitoring strobe light** indicates from a distance that all systems are operating properly.
- Unit features 84% heater efficiency, the highest in the industry.
- **Several options are also available,** including a 5.0 kW liquid-cooled diesel generator.





Technical Data		E 3000ES
Dimensions (L x W x H)	in (mm)	169 x 72 x 88 (4293 x 1829 x 2235)
Ground Clearance	in (mm)	12 (305)
Weight (without fuel and no genset)	lb (kg)	5200 (2359)
Weight (with fuel and genset)	lb (kg)	7190 (3261)
Fuel tank capacity	gal (I)	118 (447)
Heat transfer fluid (HTF) capacity	gal (I)	95 (360)
Pump	gph (I/h)	2 x 265 (2 x 1003)
Hose length	ft (m)	3000 (914)
Hose reels		1
Hose rewind		120V AC, w/12V DC clutch
Circulation loops		2
Tire code		LT235/85R16
Hitch		2-5/16" ball
Performance		
Heater input (Gross)	Btu/hr (kW)	252,000 (73.9)
Heater output (Net)	Btu/hr (kW)	212,000 (62.1)
Heater efficiency		84%
Temperature controller		digital
Fuel consumption at full load (without genset)	gph (l/h)	1.8 (6.8)
Fuel consumption at full load (with genset)	gph (I)	2.2 (8.3)
Fuel requirements		Winter blend diesel
Run Time	hr	Up to 101
Electrical		115V, 2 x 20A
Normal operating temperature	°F (°C)	100 - 180 (38 -82)
Normal hose operating pressure	psi (kPa)	70-90 (483-621)
HTF flow rate per loop	gph (I/h)	265 (1003)
Thaw capacity (standard / with accessories)	ft² (m²)	3000-6000 (279-557) / up to 6000 (557)
Cure capacity (standard / with accessories)	ft² (m²)	up to 6000 (557) / up to 12,000 (1115)
Frost prevention (standard / with accessories)	ft² (m²)	up to 9000 (836) / up to 18,000 (1672)
Air heat capacity (with accessories)	ft³ (m³)	360,000 (10,194)
Performance monitoring light		Yes

# Standard Package

Hydronic Ground Heater E 3000ES

Includes operator's

## **Model Guide**

E = Expandable 3000 = Hose length (in feet) ES = Standard

Please refer to our Price List and







Specifications may change due to continuous product development. Users are advised to consult Wacker Neuson's Operator's Manual and website for specific information regarding the engine power rating. Actual power output may vary due to conditions of specific use.





# **Accessories for air heaters:**

# **Duct Adaptor Kits**



For use with Arctic Bear XHD, Arctic Bear HD, Cub 300, Cub 400 and Cub 700 models.

Customize your configuration of outlet air with duct adaptor kits.



Outlet port(s)	Diameter	Models	Part Number
2	12"	XHD/HD	0169248
1	16"	XHD/HD	0169246
1	20"	XHD/HD	0169247
1	18" to 2-12"	Cub 300	0173533
3	12"	Cub 400	0173117
2	16"	Cub 400	0173116
1	20"	Cub 400	0169330
3	16"	Cub 700	0173119
2	20"	Cub 700	0169332
2	20"	Cub 700	0169332

# **Ducting**



For use with Arctic Bear XHD, Arctic Bear HD, Cub 200, Cub 300, Cub 400, Cub 700, HX200 and MC5200

# **Ducting heat rating**

Grey: High Heat (-65-500 °F) Black: Mid Heat (-60-280 °F)

Yellow: Low Heat (-20-200 °F)



Ducting with screw clamp provides tightest connection.

Rating	Diameter	Length	Part Number
Black	12"	25'	0173537
Black	16"	25'	0173538
Black	20"	25'	0173539
Yellow	16"	25'	0169335
Yellow	20"	25'	0173540
Black	12"	25'	0173259
Black	18"	25'	0173260
Black	12"	25'	0173542
Black	16"	25'	0173543
Black	20"	25'	0173544
Yellow	20"	25'	0173541
Grey	12"	25'	0170337
Grey	16"	25'	0170338
Grey	20"	25'	0170339
	Black Black Black Yellow Yellow Black Black Black Black Black Black Yellow Grey Grey	Black 12" Black 16" Black 20" Yellow 16" Yellow 20" Black 12" Black 18" Black 16" Black 20" Yellow 20" Grey 12" Grey 16"	Black 12" 25' Black 20" 25' Yellow 16" 25' Yellow 20" 25' Yellow 20" 25' Black 12" 25' Black 12" 25' Black 16" 25' Black 20" 25' Black 20" 25' Yellow 20" 25' Yellow 20" 25' Grey 12" 25' Grey 16" 25'

# **Remote Thermostat**



For use with Arctic Bear XHD, Arctic Bear HD, Cub 200, Cub 300, Cub 400 and Cub 700 models.

Control your jobsite climate remotely: Plug this Remote Thermostat into your unit and run temperature sensor to desired location.

324
217



Secure your thermostat with this lock box.





# **Air Heat / Dehumidification**

# **Accessories for air heaters:**

# **B Vent Exhaust Pipe & Rain Cap**



For use with Cub 200, Cub 300, Cub 400 and Cub 700 models.

Safe double-wall exhaust pipe.

Item	Diameter	Length	Part Number
B vent exhaust pipe	6" 8" 10"	3' 3' 3'	0169336 0169337 0169338
B vent exhaust 90° pipe elbow	8" 10"	_	0169339 0169340
Rain cap	6" 8" 10"	=	0169341 0169342 0169343
Bracket, flue support	Cub 400 Cub 700		0173214 0173215

# **Burner**



For use with Cub 400 and Cub 700 models.

Add a burner to your Arctic Bear light duty indirect air heater; 3 fuel options.

DURNERS	FOR CUB 400		
Fuel	Model series	Part Number	
NG/LP	2006-2007	0173547	
NG/LP	2007-2008	0173546	
Diesel	all models	0173545	
DUDNEDO			
BURNERS	FOR CUB 400		
BURNERS   Fuel	FOR CUB 400 Model series	Part Number	
		Part Number 0173550	
Fuel	Model series		

# **Heat Xchanger ducting bracket**



For use with the HX200.

Add ductwork to your HX200 Heat Xchanger with this easy to use ducting bracket.

	Diameter	Part Number
Bracket	12"	0169662
Bracket	16"	0169664

# **Accessories for drying systems:**

# **Duct Adapter Kits**



For use with the MC5200.

Customize your configuration of dry air flow with duct adapter kits.

	Diameter	Part Number
Adaptor	3 x 12" to 20"	0170378
Adaptor	2 x 16" to 20"	0170377
Adaptor	2 x 20" to 20"	0169847
Window kit	1 x 20" to 20"	0171408





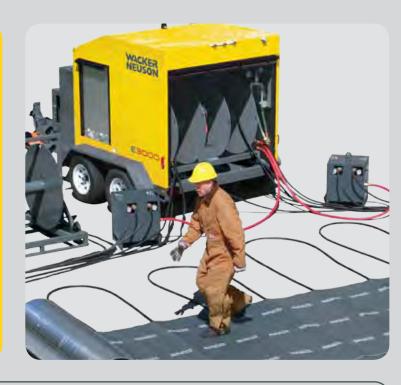
# **Curing Concept**

# **Problem:**

Cold temperatures slow the speed of concrete curing, causing cost increases and schedule delays.

# **Best Solution:**

Use Wacker Neuson hydronic heaters to accelerate the cure rate by raising the concrete temperature to an ideal 65-75°F (18-24°C), greatly reducing costs and delays.



# How temperature affects the concrete curing process: Long-term strength development Temperature of concrete vs. time Time to Initial Set Temperature of Concrete Time to Final Set Time to 75% Design Strength Time to 500 psi (3.5 MPa) 70° F (21° C 70° F (21° C) 60° F (16° C) 60° F (16° C) 50° F (10° C) 50° F (10° C) 40° F (4° C) 40° F (4° C) 30° F (-1° C) 30° F (-1° C) Hours Days

# **Curing cost per square** foot of concrete

# Traditional method



- Cost to build enclosure
- Uneven curing, curling and chalking
- Noxious fumes with open flame hazzard
- Huge fuel bills

# **Hydronic** heat



Figures are based on incurred may vary depending upon application and geographical location.

- No enclosure to build with easy set up
- Uniform curing
- No open flame or noxious fumes
- Easy temperature control result in fuel cost less than \$50 per day

# Slab on Grade

- 1. Preheat ground hoses on ground preheat to approximately 70°F (21°C)
- 2. Remove insulation\* and hoses
- 3. Place concrete 75°F (24°C) on warm ground
- 4. After final set, place vapor barrier, hoses, and insulation\* on top of slab
- 5. Hydronic heater maintains slab at 65°-75°F (18°-24°C)

# **Poured Walls**

- 1. Attach hoses to form framework
- 2. Cover with insulation\* and preheat
- 3. Pour concrete 75°F (24°C) into forms
- 4. Hydronic heater raises temperature of air space between forms and insulation\*, preventing heat of hydration from escaping
- 5. Hydronic heater maintains 65°-75°F (18°-24°C) concrete for curing period

# **Elevated Slab**

- 1. Once concrete has taken final set, place vapor barrier (or wet cure blanket), hoses, and insulation\* on top of slab
- 2. On-board positive displacement pumps provide superior flow rate, even when pumping fluid 250 feet (76m) above the hydronic heater
- 3. Hydronic heater maintains 65°-75°F (18°-24°C) concrete for curing period

Above curing applications are general guidelines. Project engineer must determine specific requirements for all curing applications.

\*To ensure even heat distribution for curing applications, use insulation blankets, available from your Wacker Neuson distributor.











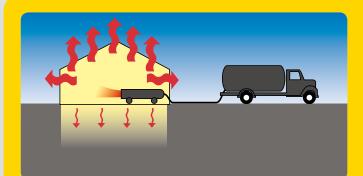






# Thaw method cost and time comparison

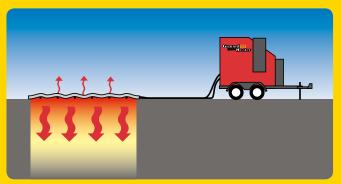




# Cost: Traditional Method ft<sup>3</sup> = \$1.33 Time: 25 days

Only 15% of the heat is conducted into frozen ground, 85% used to heat structure.

- Cost to build enclosure
- Uneven curing, curling and chalking
- Noxious fumes with open flame hazzard
- Huge fuel bills



# Cost: Ground Heater ft<sup>3</sup> = \$0.15 Time: 3 days

94% of the heat is conducted into frozen ground!

- No enclosure to build with easy set up
- Uniform curing
- No open flame or noxious fumes
- Easy temperature control result in fuel cost less than \$50 per day

Note: Figures above are based on average rates/costs. Actual rates/costs incurred may vary depending upon geographical location, soil conditions, etc. 6000 sq. ft. x 3' deep frost = 18,000 cu. ft.

# **Best thaw solution: Ground Heaters**

**Speed** – typically 1 foot deep/day

- delivers heat directly to thaw surface

- engineered for most BTU's/square foot

**Cost** – uses fuel efficiently; fuel costs per cu. ft. thawed

Ground Heater = \$0.02 Traditional = \$1.00

**Ease** – no enclosures to build

- setup and operation are simple

Coverage – up to 18,000 sq. ft./application

**Depth** – up to 10 feet/application

Safety - CSA certified in U.S. and Canada

- US NHTSA and Transport Canada compliant

To ensure even heat distribution for thawing applications, use Red Wave™ laterally conductive blankets, available from your Ground Heaters™ distributor.

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# **Hydronic Heat**

# Problem: Ice in the soil!

# Frost facts:

- Soil does not freeze
- Water in soil freezes
- Ice binds soil
- Melting ice requires 143 BTU's per pound!

# Thaw time factors:

- BTU's delivered per sq. ft.
- Hose spacing:Closer = More BTU's per sq. ft.More BTU's = faster thaw
- Soil type & moisture content
- Insulation layers

Ice content of frozen soil							
Soil type	Gravel	Sand	Clay	Silt			
Ice lbs / ft³	5 to 7	14 to 18	16 to 22	15 to 52			
Btu's to melt ice	up to 1001	up to 2574	up to 3146	up to 7436			

Thaw time in days*										
Frost Depth ft (m)	1 (0.3)		2 (0.6)		3 (0.9)		4 (1.2)		5 (1.5)	
Hose Spacing in (cm)	18 (45)	12 (30)								
Sand	1.0	0.75	2.0	1.5	3.0	2.25	4.5	3.25	6.0	4.5
Gravel	1.0	0.75	2.5	2.0	4.0	3.0	6.0	4.5	8.0	6.0
Clay	1.75	1.25	3.5	2.5	5.5	4.0	8.0	6.0	11.0	8.5
Silt	2.0	1.5	4.5	3.5	7.0	5.5	10.5	7.5	14.0	10.0

<sup>\*</sup>Performance will vary based on moisture level and insulation. Use Red Wave™ conductive blankets for optimum performance.

# **Ground Heater setup:**

# 1. Prepare Site

Scrape snow and ice from thaw site.

# 2. Position Heat Transfer Hose

Place hose as directed by Ground Heaters' thaw plan over thaw site area. A closed system, only heat goes into ground.

## 3. Lay Poly Vapor Barrier

Containing water vapor improves thawing.

- Prevents loss of heat
- Keeps soil moist for better heat conduction
- Keeps blankets clean

## 4. Place Red Wave™ Conductive Blankets

Prevent heat loss and direct heat laterally and into ground. Requires 2 to 3 layers. Red Wave conductive blankets optimize thaw performance.

Heat transfer hoses	Vapor — barrier	Insulating blankets
Hot soil		
Warm soil Frozen soil	_	

## Application determines hose spacing:

**Excavation** Hose spacing 18-24 in. (45-60 cm).

Frost islands can be easily excavated.

**Concrete** Hose spacing 12-18 in. (30-45 cm).

Complete thaw without frost islands.

**Accelerated** Hose spacing 6-12 in. (15-30 cm).

Fast, no frost islands between hoses.















# INSULATED BLANKETS Performance beyond R-value.

Cold weather stands between your people and their ability to perform at the highest level. It also impacts their workmanship – affecting the integrity of a variety of applications. Norseman high-performance blanket gear ensures your team can excel at their craft year-round.

In side-by-side tests, Norseman's insulated blankets are proven to provide R-value ratings equivalent to the leading competitors.\* Yet we do not rest on R-value alone in our commitment to provide uncompromising real-world protection.

Contact our Gear Specialists to learn more.

# Insulation is only our starting point:

Durable woven-polyethylene encapsulates superior closed-cell layered foam for maximum insulation.

Polypropylene foam fills the blanket all the way to the outer edges, reducing heat loss at the extremities. Lightweight, flexible blankets lay flat in sub-zero temperatures.

Norseman insulated blankets can be used for concrete curing, ground thaw, and hoarding applications; shown to reduce jobsite heating costs when used in hoarding applications.

\*In tests conducted in strict accordance to ASTM C-518 -2017, Norseman Insulated Blankets are comparable in R-value scores to other similarly constructed blankets currently available in the USA market.

THE GEAR

For almost 100 years, Norseman has supported those who do the heavy lifting and hard work. Our advanced protective and performance gear allows the people who rely on us to achieve extraordinary things.

# **BLANKET SPECIFICATIONS**

- Manufactured in Canada; proudly serving customers through multiple distribution centers across North America.
- Available in three standard thicknesses (3, 4, and 8 layers).
- Double stitched edge seam ensures the insulation foam will not shift.
- The 4-layer blankets have grommets in all four corners. The 3-layer and 8-layer blankets have grommets every 24".
- Middle overlapping seam reduces billowing on 12'-wide blankets.
- Custom thicknesses and sizes available to meet your specific requirements.
- Color customization available. Some restrictions may apply.
- For easy, economical shipping and storage, all insulated blankets are are folded and palletized.

3-LAYER		4-LAYER		8-LAYER	
Product #	Description	Product #	Description	Product #	Description
403081	6' x 24' orange, grommets every 24" (folded)	410692	6' x 24' orange, corner grommets (folded)	412687	6' x 24' orange, grommets every 24" (folded)
402313	12' x 24' orange, grommets every 24" (folded)	411585	12' x 24' orange, corner grommets (folded)		

# **SUGGESTED APPLICATIONS:**

- 3-layer blankets used in hoarding applications.
- 4 and 8-layer blankets used in concrete curing horizontal applications.
- 8-layer blankets used in ground thaw applications (custom thickness and size available).









A Reputation That Speaks For Itself







# Patron E1.5 120V, 1.5kW Electric Heater



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# Description

The E1.5 sets the standard for 120V electric space heaters. Built to run for 10 years without a break, it features a 116 CFM fan motor which distributes warm air throughout the room in a way you never thought possible. Instead of using it to warm a small area/personal space like other common space heaters, the E1.5 is meant to raise the temperature of an entire room by circulating the warm air in a much larger area.

## **Features**

- For heating, drying, and ventilating
- Integrated ambient thermostat from 32°F 100°F
- Overheat protection at 104°F
- Durable steel casing with powder coating
- Stainless jacketed heating coils
- Fast, high temperature rise with uni-directional fan
- User-friendly and proven reliability
- UL Approved

# **Specifications**

Item Number	E1.5
Item Number	E1.5
BTU/Hr	5,100
Watts	1,500
Volts / Amps	120V / 12.5A
Phase	1PH
Thermostat	32°F – 100°F
Airflow	116 CFM
Weight	13.7 LBS
LxWxH	11" x 12" x 8"
Power Cord	10' (12 AWG)
Plug Type	NEMA 5-15P
Decibel Rating	47 dB(A) 1m

# BTU Requirement Calculator Room Width (ft): Room Length (ft): Room Height (ft):

# Uses & Applications

Temp. Rise (°F):

BTU Required:

- Building Construction
- Curing Concrete
- Warming Workers
- Thawing Pipes/Equipment
- Garage/Shop Heating
- Offices & Warehouses
- Industrial Applications Drying & Ventilation
- Emergency Heat
- Disaster Relief
- Special Events Tent Heating
- Movie & TV Sets

# Patron E6 240V, 6kW Electric Heater



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# Description

The Patron E6 is the newest member of the Patron electric family. Built with the same quality and ruggedness of all the other Patron heaters, it offers great opportunity for use in many applications. The E6 is a 240V unit and pulls 25 amps. This means it will run flawlessly off a regular clothing dryer outlet. Make sure your receptacle is a NEMA 14-30P or 14-50P, to ensure compatibility with our plug. The E6 produces a ton of heat, and disperses it in large areas. use our BTU Calculator to the right to see if it will do the job for you!

# **Features**

- For heating, drying, and ventilating
- Integrated ambient thermostat from 32°F 100°F
- Overheat protection at 104°F
- Durable steel casing with powder coating
- Stainless jacketed heating coils
- Fast, high temperature rise with uni-directional fan • User-friendly and proven reliability
- Works on 208V
- Plugs directly into a standard dryer outlet

# **Specifications**

Item Number	E6	
BTU/Hr	20,500	
Watts	6,000	
Volts / Amps	230V / 25A	
Phase	1PH	
Thermostat	32°F – 100°F	
Airflow	250 CFM	
Weight	32.9 LBS	
LxWxH	20" x 12" x 17"	
Power Cord	10' (8 AWG)	
Plug Type	NEMA 14-30P	
Decibel Rating	55 dB(A) 1m	
Max Cord Length	100-ft (8AWG, 3-wire, SOOW)	

BTU Requirement C	alculator
Room Width (ft):	
Room Length (ft):	
Room Height (ft):	
Temp. Rise (°F):	
BTU Required:	

# Uses & Applications

- Building Construction
- Curing Concrete
- Warming Workers
- Thawing Pipes/Equipment
- Garage/Shop Heating Offices & Warehouses
- Industrial Applications
- Drying & Ventilation
- Emergency Heat Disaster Relief
- Special Events
- Tent Heating
- Movie & TV Sets





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# Patron E9, 240V, 6/9kW Electric Heater



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# Description

The Patron E9 is a top seller which exceeds expectations on a regular basis. It can be used in the most demanding of environments and has proven its abilities in hundreds of applications. The E9 is a 240V unit and pulls 37.5 amps. This means it will run flawlessly off a household stove receptacle. Make sure your receptacle is a NEMA 14-50P configuration, to ensure compatibility with our plug. The E9 produces a ton of heat, and disperses it in large areas with its 350 CFM fan. use our BTU Calculator to the right to see if it will do the job for you!

# **Features**

- For heating, drying, and ventilating
- Integrated ambient thermostat from 32°F 100°F
- Overheat protection at 104°F
- Durable steel casing with powder coating
- Stainless jacketed heating coils
- Fast, high temperature rise with uni-directional fan
- User-friendly and proven reliability
- Works on 208V
- Plugs directly into a standard stove outlet

# **Specifications**

Item Number	E9
BTU/Hr	30,700
Watts	9,000
Volts / Amps	230V / 37.5A
Phase	1PH
Thermostat	32°F - 100°F
Airflow	350 CFM
Weight	39.9 LBS
LxWxH	23" x 14" x 18"
Power Cord	10' (8 AWG)
Plug Type	NEMA 14-50P
Decibel Rating	55 dB(A) 1m
Max Cord Length	50-ft (8AWG, 3-wire, SOOW) 100-ft (6AWG, 3-wire, SOOW)

# BTU Requirement Calculator

Room Width (ft): Room Length (ft): Room Height (ft):

Temp. Rise (°F):

BTU Required:

# Uses & Applications

- Building Construction
- Curing Concrete
- Warming Workers
- Thawing Pipes/Equipment
- Garage/Shop Heating
- Offices & Warehouses
- Industrial Applications
- Drying & Ventilation Emergency Heat
- Disaster Relief
- Special Events
- Tent Heating
- Movie & TV Sets

# Patron 18E-1 240V, 18kW, 1 Phase Electric Heater



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# Description

Versatility is the the 18E's claim to fame. It can operate on 208V or 240V, single phase or three phase. Be advised, you need to buy the 18E in either single phase, or the three phase model. Furthermore, there are four heat settings to cater to any application: fan only for ventilation, 13kW, or 18kW. This heavy-duty units boasts 65,000 BTU/Hr in its 18kW state, and pumps heat over a large area with its 590 CFM fan.

### **Features**

- For heating, drying, and ventilating
- Integrated ambient thermostat from 32°F 100°F
- Overheat protection at 104°F
- Durable steel casing with powder coating
- Stainless jacketed heating coils
- Fast, high temperature rise with uni-directional fan
- User-friendly and proven reliability
- Works on 208V

# **Specifications**

Item Number	18E-1	
BTU/Hr	65,000	
Watts	18,000	
Volts / Amps	240V / 81A	
Phase	1PH	
	Fan Only	
Modes	13kW / 54A	
	18kW / 81A	
Thermostat	32°F - 100°F	
Airflow	590 CFM	
Weight	62 LBS	
LxWxH	32" x 14" x 20"	
Power Cord	Not Supplied	
Plug Type	Not Supplied	
Decibel Rating	58 dB(A) 1m	
Max Cord Length	50-ft (2AWG, 3-wire, SOOW)	

BTU Requirement Calculator
Room Width (ft):
Room Length (ft):
Room Height (ft):
Temp. Rise (°F):
BTU Required:

# Uses & Applications

- Building Construction
- Curing Concrete
- Warming Workers
- Thawing Pipes/Equipment
- Garage/Shop Heating
- Offices & Warehouses Industrial Applications
- Drying & Ventilation Emergency Heat
- Disaster Relief
- Special Events Tent Heating
- Movie & TV Sets





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# Patron 40E 480V, 40kW, 3 Phase Electric Heater



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# Description

The Patron 40E is an electric powerhouse in any demanding application. Suitable for a magnitude of situations, it will endure the harshest of applications, all while pumping out over 136,000 btu/hr. It features transport wheels and a rear lifting handle, making it extremely portable, as well as a 14" duct adapter for areas and sites in need of specific heat distribution. The 40E runs off 3-phase 480V power and pulls 50 amps. It produces hot, clean air and blows it over a very large area with a powerful 1765 cfm fan.

## **Features**

- For heating, drying, and ventilating
- Integrated ambient thermostat from 32°F 100°F
- Overheat protection at 104°F
- Durable steel casing with powder coating
- Stainless jacketed heating coils
- Fast, high temperature rise with uni-directional fan
- User-friendly and proven reliability
- 14" duct ring
- Transport wheels and rear lifting handle
- UL Approved

## **Specifications**

Item Number	40E
BTU/Hr	136,500
Watts	40,000
Volts / Amps	480V / 50A
Phase	3PH
Modes	16kW / 20A / 51,200 BTU/Hr
	32kW / 40A / 102,400 BTU/Hr
	40kW / 50A / 136,500 BTU/Hr
Thermostat	32°F - 100°F
Airflow	1,765 CFM
Weight	125 LBS
LxWxH	46" x 20" x 25"
Power Cord	Not Supplied
Plug Type	Not Supplied
Decibel Rating	82 dB(A) 1m
Max Cord Length	50-ft (4AWG, 4-wire, SOOW)
	100-ft (2AWG, 4-wire, SOOW)

# BTU Requirement Calculator

Room Width (ft):

Room Length (ft):

Room Height (ft): Temp. Rise (°F):

BTU Required:

## **Uses & Applications**

- Building Construction
- Curing Concrete
- Warming Workers
- Thawing Pipes/Equipment
- Garage/Shop Heating
- Offices & Warehouses
- Industrial Applications
- Drying & Ventilation
- Emergency Heat Disaster Relief
- Special Events
- Tent Heating Movie & TV Sets

# Patron 60E 480V, 60kW, 3 Phase Electric Heater



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# Description

The Patron 60E is an electric powerhouse in any demanding application. Suitable for a magnitude of situations, it will endure the harshest of applications, all while pumping out over 136,000 btu/hr. It features transport wheels and a rear lifting handle, making it extremely portable, as well as a 14" duct adapter for areas and sites in need of specific heat distribution. The 60E runs off 3-phase 480V power and pulls 75 amps. It produces hot, clean air and blows it over a very large area with a powerful 1765 cfm fan.

# **Features**

- For heating, drying, and ventilating
- Integrated ambient thermostat from 32°F 100°F
- Overheat protection at 104°F
- Durable steel casing with powder coating
- Stainless jacketed heating coils
- Fast, high temperature rise with uni-directional fan
- User-friendly and proven reliability
- 14" duct ring
- Transport wheels and rear lifting handle

# **Specifications**

Item Number	60E
BTU/Hr	205,000
Watts	60,000
Volts / Amps	480V / 75A
Phase	ЗРН
Modes	24kW / 30A / 82,000 BTU/Hr 48kW / 60A / 164,000 BTU/Hr 60kW / 75A / 205,000 BTU/Hr
Thermostat	32°F – 100°F
Airflow	1,765 CFM
Weight	125 LBS
LxWxH	46" x 20" x 25"
Power Cord	Not Supplied
Plug Type	Not Supplied
Decibel Rating	82 dB(A) 1m
Max Cord Length	50-ft (2AWG, 4-wire, SOOW)

TU Requirement	Calculator
Room Width (ft):	
Room Length (ft):	
Room Height (ft):	
Temp. Rise (°F):	
BTU Required:	

# Uses & Applications

- Building Construction
- Curing Concrete
- Warming Workers
- Thawing Pipes/Equipment
- Garage/Shop Heating Offices & Warehouses
- Industrial Applications
- Drying & Ventilation
- Emergency Heat Disaster Relief
- Special Events Tent Heating
- Movie & TV Sets

# HONDA

# Wherever you need it, Honda has the power to keep you going.



# For WORK

Why are Honda Generators number one on the job? Easy. Reliability and durability. On construction sites, time is money; crews can't afford to be idle due to a lack of on-site power. In the construction and rental industry, Honda has consistently been named "most preferred" in reader surveys by leading trade publications. Minimal downtime plus minimal maintenance equals happy customers.

# For home

When the lights go out, it's more than just an inconvenience. Power outages can also result in financial loss due to spoiled food, lost work time, broken pipes, and even water damage to buildings and furniture. A quiet, reliable Honda generator can easily help keep your family safe and secure through power-related emergencies. It can also be used to charge your 12-volt car battery.'





# For play

For camping and RV power, Honda portable power is the perfect way to enjoy the great outdoors with all the comforts of home. Portable generators are also ideal for outdoor events like concerts, races, parties, tailgating, and more. That's why Honda Generators is the official supplier of INDYCAR and the first choice of many race teams and race tracks for their portable power needs.

Whether you're a camper or a contractor, an RVer or a dirt biker, whether you work in a shed out back or at home in your office, extra power with a Honda generator means you'll never go without.



You can see our entire line of reliable generators and search online for the dealer nearest you at gen.honda.com.

And be sure to follow us on social media.



facebook.com/ HondaGenerators



twitter.com/ HondaGenerators

# Powered by world-famous Honda Engines

All Honda Generators feature either our Honda GX, iGX, or GC engines. These four-stroke engines are recognized as the industry leader in providing reliable, quiet and fuel-efficient power.

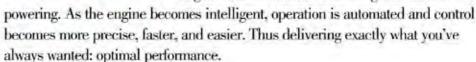
Many include **overhead valves** for smooth, consistent power, and a **cast iron cylinder sleeve**' for "commercial grade" quality and durability. Many offer a **dual element air cleaner** for increased engine life. All Honda Generators are equipped with **Honda Oil Alert**" which protects the engine by shutting it down if the oil pressure level reaches a low level.

And we're proud to point out that the next generation of GX engines, models GX120 – GX390, bring even more to the table, such as noise reduction levels ranging from 2.5 to 8 dB(A). The GX240 – GX390 model engines offer up to 6% more power over the previous models. The increase in power is achieved through several innovative improvements. First, the GX Series now employs a digital CDI (capacitor discharge ignition) system to dramatically improve ignition timing. Second, the compression ratio has been increased and finally, combustion air flow has been enhanced through a more efficient air cleaner design that reduces air flow restriction.



# Honda iGX Engines take intelligence to a whole new level.

Honda's innovative iGX Series, a new generation of intelligent computer-controlled engines, are on Honda EM and select EB Series generators. The iGX models now employ a digital CDI ignition system to dramatically improve ignition timing. They also feature an integrated electronic control unit (ECU) that communicates with a self-tuning regulator (STR) governor system which allows the engine to communicate with the generator it is



# The Honda Advantage

# Super Quiet

EU Series generators represent the leading edge of portable power technology. Ranging from 1000 to 7000 watts, these totally enclosed, super quiet generators are ideal for recreational and home backup applications.

EB Series generators range from 2200 to 10000 watts of industrial strength power. These generators are consistently ranked #1 by the construction and rental industries.



# Industrial

# **Deluxe** Series

EM Series generators with
electric start range from
4000 to 6500 watts and
offer a wide variety of
enhanced functions
for home backup and
general purpose situations.

EG Series generators are ideal for residential and DIY use and range from 2800 to 6500 watts, offering legendary Honda reliability with a simple approach to your power needs.

# **Economy** Series



# Features & Benefits



# Reliable

Honda has an unmatched reputation for reliable generators that offer dependable starts and keep on running year after year.



# **Fuel Efficient**

Honda's superior technology, with features such as Eco Throttle\* and Auto Throttle\*, means increased fuel efficiency and longer run times.



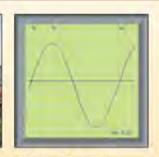
# Quiet

Thanks to the use of inherently quiet four-stroke engines and superior technology; Honda Generators boast incredibly low decibel levels.



# Portable

Honda Generators are made for true portability, from lightweight, easy-tocarry models to those with wheeled transport kits.



# Clean Power

Consistent delivery of clean power is possible with technologies such as Inverter, CycloConverter, DAVR, and iAVR voltage regulating systems.



<sup>\*</sup> Builder Magazine's Readex Research Brand Preference Study for 12 consecutive years.

# **Our Locations**

# NY Albany

878 Old Albany Shaker Road Latham, NY 12110 518.690.0750

# Binghamton

449 Commerce Road Vestal, NY 13850 607.798.0333

# Buffalo

1394 Military Road Tonawanda, NY 14217 716.873.8000

# Canandaiqua

2390 Rochester Road Canandaigua, NY 14424 585.396.0031

## Rochester

330 Metro Park Rochester, NY 14623 585.272.9390

# Syracuse

7800 Brewerton Road Cicero, NY 13039 315.433.5000

## OH Cleveland

16000 Brookpark Road Cleveland, OH 44135 216.465.3737

# Columbus

600 Marion Road Columbus, OH 43207 \*DELIVERY ONLY, CALL FOR AVAILABILITY\* 614.602.6236

# PA Erie

3001 West 17th Street Erie, PA 16505 814.833.7761

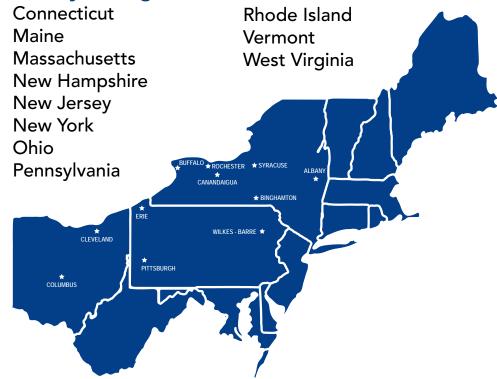
# Pittsburgh

1990 McKees Rocks Road McKees Rocks, PA 15136 412.458.4421

# Wilkes-Barre

121 Armstrong Road Pittston, PA 18640 570.299.5505

# **Proudly Serving**



# **About ADMAR**

ADMAR is the largest independently owned provider of construction equipment and supplies throughout New York, Pennsylvania and Ohio. Founded in 1972, the company provides aerial work platforms, rough-terrain forklifts, excavators, compressors, pumps, generators, concrete solutions and compaction, as well as an extensive service and parts operation. ADMAR is an exclusive dealer for Kubota's Construction Equipment line, Gehl, STIHL, Topcon and Wacker Neuson regionally. For more information or to inquire about specific product lines, visit admarsupply.com.

**Equipment You Need, When You Need It.**