



Smart Sense™ Technology

Guardian with Smart Sense™

Forced Air Heaters



**Operates at firing rates as low as
25% of max Btu/h**

while maintaining acceptable carbon
monoxide levels and ignition characteristics.

Guardian™ heaters with Smart Sense™ provide an automatic variable-rate control, compared to manual control in today's standard Guardian heaters.

Smart Sense allows the heater to run longer at lower firing rates and become part of the circulation system. This results in a much more consistent room temperature.

- Available Smart Sense configurations:
 - 60,000 Btu/h
 - 100,000 Btu/h
 - 250,000 Btu/h
- Ignition types:
 - Spark
 - Hot Surface
- CSA certified U.S. and Canadian models

Infraconic with Smart Sense™

Radiant Heat Brooder

L.B. White Smart Sense™ technology provides the ability to set and manage temperatures at pig level independently of the ambient room temperature.

Gain control of the pig-occupied zone with Smart Sense versus 3-stage or hi-lo control panels that are not controlled by precision-based technology.

- Both standard manual and spark ignition I-17 brooders function with Smart Sense
- Requires sensor mounting kits for existing and new installations
- Operates with an existing 0-10 vdc control or with the SmartBox™ controller



The sensor bracket eliminates variation in sensor location and provides consistent, even temperatures between zones, and room to room.

Sensor Bracket

Setting the Standard for Precision Heating

The L.B. White Smart Sense sensor bracket is a critical component in variable-rate radiant heat technology. Combined with proprietary control logic, the bracket keeps the sensor always locked into position to achieve precise results based on suggested protocols and desired pig pattern.



HEAT MANAGEMENT PROTOCOL

Smart Sense maintains an even room temperature through the house control. With this system, growers are not required to setup probes.



1-800-328-8842

HEATERS & REPLACEMENT PARTS

Guardian™ Forced Air Heaters
Classic™ Forced Air Heaters

The Guardian's time proven direct-fired design provides consistent, dependable heat for a range of swine production environments from gestation to grow-out.

Stock # Description

- 505205... LBW HEATER 60,000 BTU LP PILOT AGA (346)
 505206... LBW HEATER 60,000 BTU NG PILOT AGA (348)
 505662... LBW HEATER 115,000 BTU LP PILOT AGA (377)
 505066... LBW HEATER 115,000 BTU NG PILOT
 505207... LBW HEATER 30 - 60,000 BTU LP HSI AGA
 505222... LBW HEATER 50 - 100,000 BTU LP HSI AGA
 505196... LBW HEATER 50-100,000 BTU NG HSI AGA
 *505199... LBW HEATER 160-250,000 BTU LP HSI AGA
 505102... LBW HEATER 160-250,000 BTU NG HSI AGA
 505089... LBW HEATER 160,250,000 BTU NG SPARK IGNITION
 505008... LBW HEATER 160,250,000 BTU LP SPARK IGNITION
 *505226... LBW HEATER 160-250,000 BTU LP PILOT AGA

Range of models from 60,000 to 325,000 Btu/h
 Spark, hot surface or pilot light ignition
 Variable or fixed heat output
 Advanced Service Saver diagnostic feature
 Tri-Shield or galvanized case finish
 Indoor or outdoor installation

*BEST SELLER

Replacement Parts

Stock # Description

- 505255... LBW FAN WHEEL 10 3/4 X 6 GUARD 250
 505597... LBW FAN WHEEL 6 1/2 X 3 1/8 FOR 346
 505264... LBW FAN WHEEL FOR 377, 379, GUARD

Stock # Description

- 505073... LBW CONTROL GAS VALVE LP-ALL

Stock # Description

- 5050201... LBW CONTROL GAS & PILOT BASO LP-NG 3-4 SERIES

Stock # Description

- 505259... LBW HOSE 1/2 x 10' W/FITTINGS & ADAP

Stock # Description

- 505270... LBW THERMOSTAT REMOTE W/25' CORD
ALL UNIT

Stock # Description

- 505282... LBW CONTROL VALVE PILOT LP
120V 346, 377, 408

Stock # Description

- 505760... LBW SWITCH MAUAL RESET HIGH LIMIT

Stock # Description

- 505217... LBW SAIL SWITCH ASSY

Stock # Description

- 505781... LBW SWITCH AIR FLOW W/PADDLE

Stock # Description

- 505786... LBW IGNITOR HSI ONLY ALL GUARDIANS

Stock # Description

- 505020... LBW MOTOR 1/3 HP FOR Ab250
 505281... LBW MOTOR ENCLOSED FOR 346
 505810... LBW MOTOR TE BALL B. 285 377 379 408

Stock # Description

- 505007... LBW REGULATOR LP SECOND STAGE

Stock # Description

- 505796... LBW GAS COCK & NIPPLE ALL HEATER
MODELS

Stock # Description

- 505224... LBW CONTROL BOARD ALL HSI
 505067... LBW CONTROL BOARD DSI W/LED

Stock # Description

- 505289... LBW HEATER HANGING KIT
ALL UNITS (CHAIN)

Stock # Description

- 505938... LBW THERMOCOUPLER 21" FOR ALL UNITS

Stock # Description

- 505120... LBW ORIFICE PILOT LIGHT
SINGLE HOLE NG

Stock # Description

- 505790... LBW ORIFICE BURNER
LP 346

Stock # Description

- 505223... LBW ORIFICE PILOT LIGHT
SINGLE HOLE LP

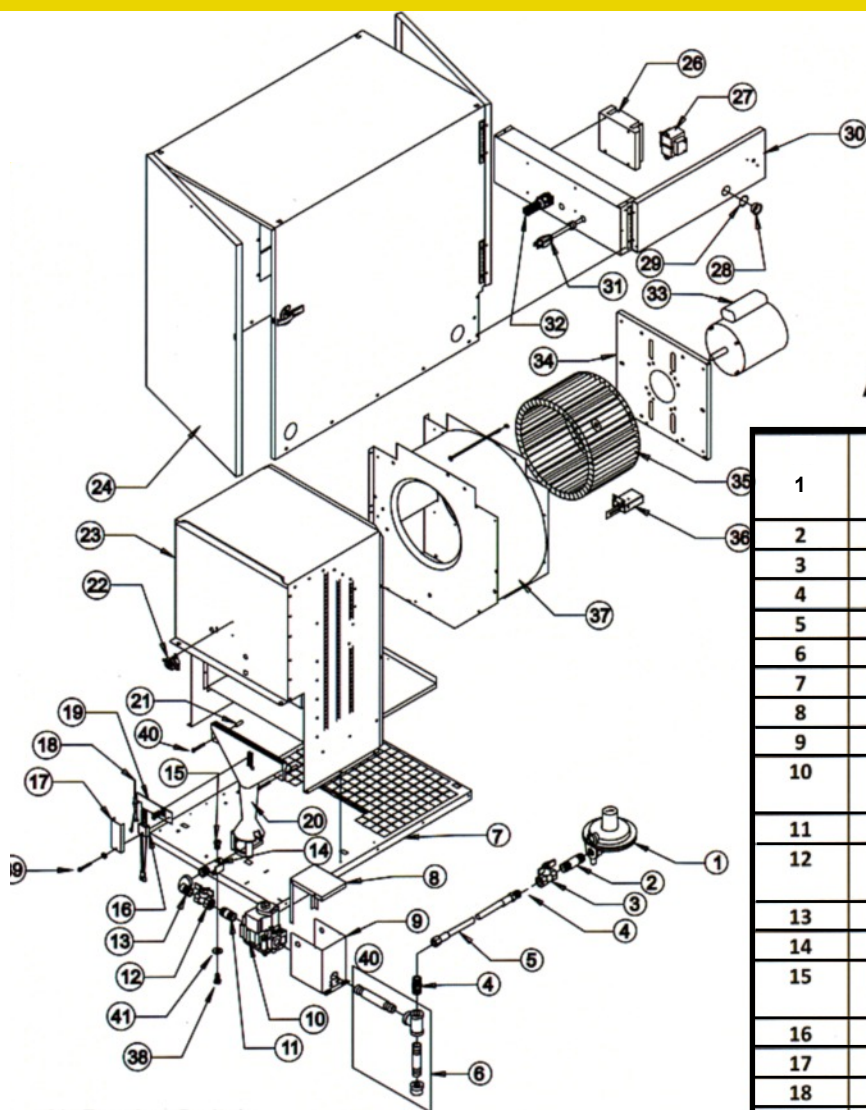
Stock # Description

- 505798... LBW BURNER ORIFICE
PILOT LIGHT LP

- 505262... LBW BURNER ORIFICE
PILOT LIGHT NG



Guardian Forced Air Heater AW250 (Hot Surface Ignition)



Air Proving Switch

Safety device used to insure that the proper air flow is being achieved before the gas valve is opened.

Burner

Cast iron component used to channel gas and provide an area at which the fuel may ignite.

Burner Orifice

Brass metering device used to feed gas to burner at a specific rate.

Fan Housing

Chamber used for compressing air for efficient air movement.

Fan Wheel

Component used in conjunction with the motor and fan housing to pull the hot air from heater and blow it into room for heating (also known as a "squirrel cage").

Gas Hose

Flexible connector used to convey gas from supply line in building to heater.

Heat Chamber

Metal fire box within the appliance that provides an area where burner flame mixes with combustion air thereby providing heat.

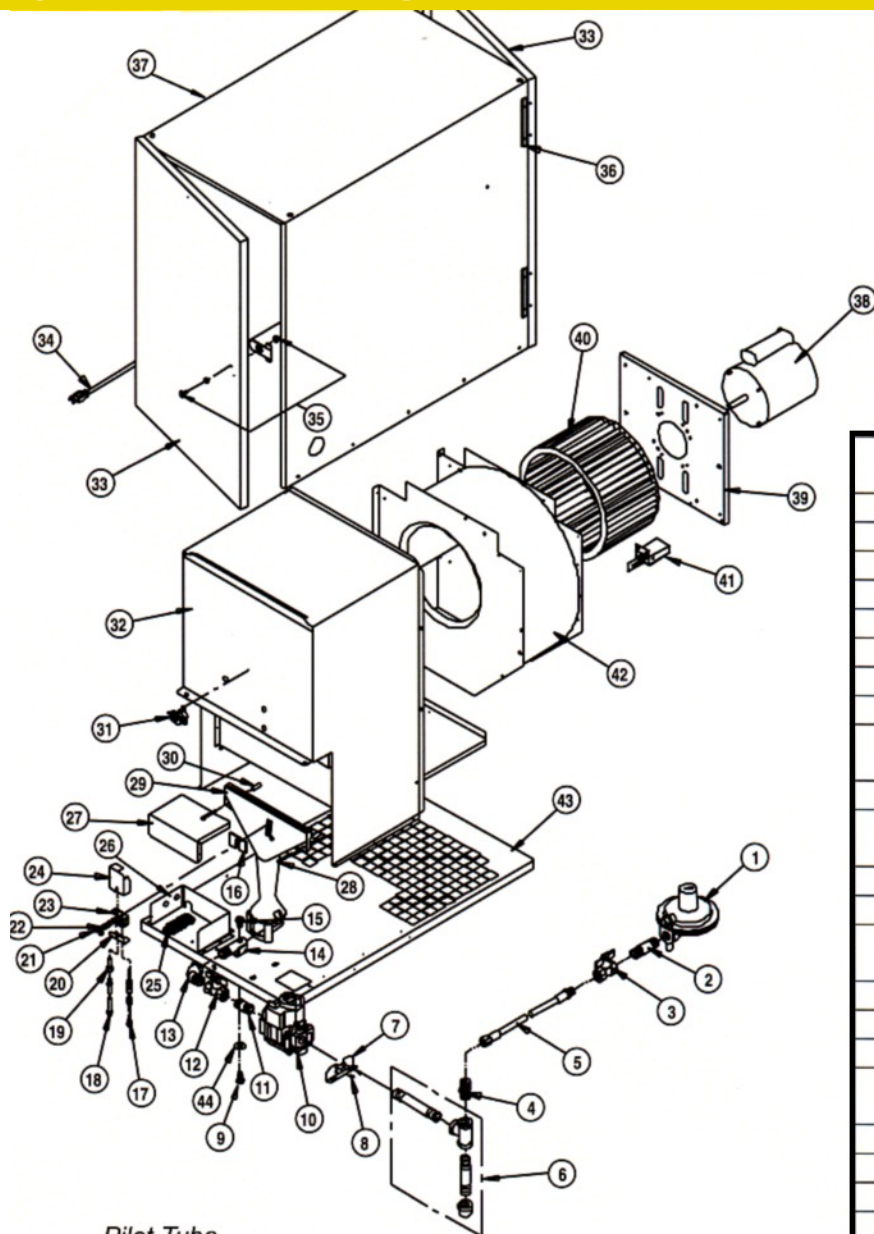
High Limit Switch

Safety device wired into the control system which is used to break an electrical circuit to the gas control valve in event of overheat situation.

1	Regulator, LP Gas, 2 nd Stage, Vent Over Outlet Regulator, LP Gas, 2 nd Stage, Vent Over Side Regulator, Natural Gas	06553 06665 23360
2	Nipple, 3 1/2 in.	07148
3	Valve, Manual Shut Off	05548
4	Adaptor, Hose, 1/2 NPT x 1/2 NPT	02894
5	Hose, 1/2 in. ID x 10ft. with Adaptor	20714
6	Kit, Sediment Trap	00815
7	Base	20136
8	Cover, Gas Control Valve	09287
9	Bracket, Gas Control Valve	09506
10	Valve, Gas Control, LP Gas Valve, Gas Control, Natural Gas	20143 20144
11	Nipple, 1/2 in. x 1 1/2 in.	02420
12	Valve, Throttle, LP Gas Valve Throttle, Natural Gas	22076 09428
13	Ell, Street	01359
14	Manifold	09291
15	Orifice, Burner, LP Gas Orifice, Burner, Natural Gas	20141 20142
16	Igniter	09201
17	Shield, Igniter	09167
18	Sensor, Flame	20139
19	Bracket, Igniter	09202
20	Burner	03453
21	Spacer	02687
22	Switch, High Limit	05566
23	Chamber, Heat	20024
24	Case, Assembly with Doors and Latches Galvanized Painted	20149 20465
26	Control, Ignition	09298
27	Transformer, 120/24 v.	09615
28	Plug, Window	08255
29	O-Ring	08347
30	Cover, Control Box	20134
31	Cord, Power, 10 ft.	20133
32	Harness, Wire	23700
33	Motor, 1/3 HP, Ball Bearing	20169
34	Mount, Motor	08647
35	Wheel, Fan	09050
36	Assembly, Air Flow Switch	24157
37	Housing, Fan, with Air Flow Switch Assembly and Motor Mount	24167
38	Bolt	02692
39	Screw, 6-32 x 3/4 in.	07240
40	Screw	02688
41	Washer	01589



Guardian Forced Air Heater AB250 (Pilot Ignition)



Pilot Tube

Formed copper tube used to convey gas from the safety control valve to the pilot light orifice. The tube is internally "tinned" when natural gas is used to resist the effects of sulphur in the fuel.

Regulator

The heart of any gas supply installation. Used to deliver a working pressure to the appliance under varying conditions in tank pressure.

Thermocouple

A thermoelectric device that converts heat energy directly into electrical energy. Works in conjunction with the electromagnet in the gas control valve thereby providing gas supply for the pilot light.

Thermostat

Electrical device used as an automatic on/off switch which will respond to changes in temperature in a certain area. Can be wired so contacts in the thermostat open or close on temperature increase or decrease.

Throttle Valve

Manually adjustable component used to increase or decrease the flow of gas to the burner. The throttle valve is located between the gas control valve and burner assembly.

1	Regulator, Second Stage (LP Gas)	06665
	Regulator, Second Stage (Natural Gas)	23360
2	Nipple, 3 1/2 in.	07148
3	Valve, Manual Shut-off	05548
4	Hose, 1/2 in. x 10 ft.	20714
5	Adapter, 1/2 NPT x 1/2 NPS	02894
6	Sediment Trap	00815
7	Bracket	21768
8	Screw	09425
9	Bolt	02692
10	Valve, Gas Control (LP Gas)	20439
	Valve, Gas Control (Natural Gas)	20440
11	Nipple	02420
12	Valve, Throttle (LP Gas)	20143
	Valve, Throttle (Natural Gas)	20144
13	Ell, Street	01359
14	Manifold	09291
15	Orifice, Burner (LP Gas)	20141
	Orifice, Burner (Natural Gas)	20142
16	Gasket	06974
17	Thermocouple, 21in.	03497
18	Tubing, Pilot	20436
19	Orifice, Pilot (LP Gas)	07829
	Orifice, Pilot (Natural Gas)	06968
20	Cover, Bottom	20265
21	Screw, Wing	07484
22	Stud	07827
23	Pilot Bracket	07831
24	Shield with Pilot Stack	20264
25	Terminal Strip	08253
26	Enclosure, Electrical	20028
27	Cover, Enclosure	20027
28	Screw	02688
29	Burner	03453
30	Spacer	02687
31	Switch, High Limit	05566
32	Chamber, Heat	20024
33	Door (Either End)	20757
34	Cord, Power	20426
35	Latch	09467
36	Hinge	05868
37	Case Assembly	20434
38	Motor	20169
39	Mount, Motor	08467
40	Wheel, Fan	09050
41	Air Flow Switch Assembly	24157
42	Housing with Air Flow Switch Assembly and Motor Mount	24167
43	Base	20431
44	Washer	01589

Classic™ Forced Air 60 Heater

1-800-328-8842

1	Regulator, Single Stage (Propane Gas) Regulator, Second Stage, (Propane Gas)	23215 06665
2	Bushing 3/8 NPT x 1/4	01544
3	Hose ¼ in. ID x 10ft. (Propane Gas) Hose 3/8 in. ID x 10ft. (Natural Gas)	20496 22000
4	Adapter, ¼ NPT x 9/16-18 UNF Adapter, ½ NPT x 5/16-18 UNF	01098 06655
5	Bushing, ½ x ¼	01519
6	Cord, Power, 5 ft.	01220
7	Cover, Junction Box	03231
8	Junction Box	03230
9	Thermostat with Bracket	05568
10	Cover, Gas Control Valve	23980
10A	Bracket, Gas Control Valve	23981
11	Bracket, Thermostat	05493
12	Valve, Pilot Gas Control (Propane Gas) Valve, Pilot Gas Control (Natural Gas)	21615 21616
13	Orifice, Burner (Propane Gas) Orifice, Burner (Natural Gas)	21584 21585
14	Burner Casting	08026
15	Pilot Assembly with Orifice (Propane Gas) Pilot Assembly with Orifice (Natural Gas)	02729 02741
16	Shield, Pilot	08205
17	Thermocouple, 21 in.	03497
18	Orifice, Pilot (Propane Gas) Orifice, Pilot (Natural Gas)	02689 02740
19	Tube, Pilot with Nuts	21380
20	Motor	20290
21	Mount, Motor	05490
22	Wheel, Fan	02808
23	Housing, Fan	05579
24	Switch, High Limit	05566
25	Cover, High Limit	05567
26	Chamber, Heat	21425
27	Case, Assembly	23283
27A	Case Panel, Motor End	07330
27B	Case Panel, Burner End	07331
27C	Door, Pilot Access	07748
28	Handle	09297
29	Base	21412
30	Screw, Pilot	08048
31	Screw, Burner	03068
32	Screw	09425

Motor

Electric device used to force preheated air through the heater and to circulate heat within a certain area. Converts electrical energy into mechanical energy.

Pilot Light Orifice

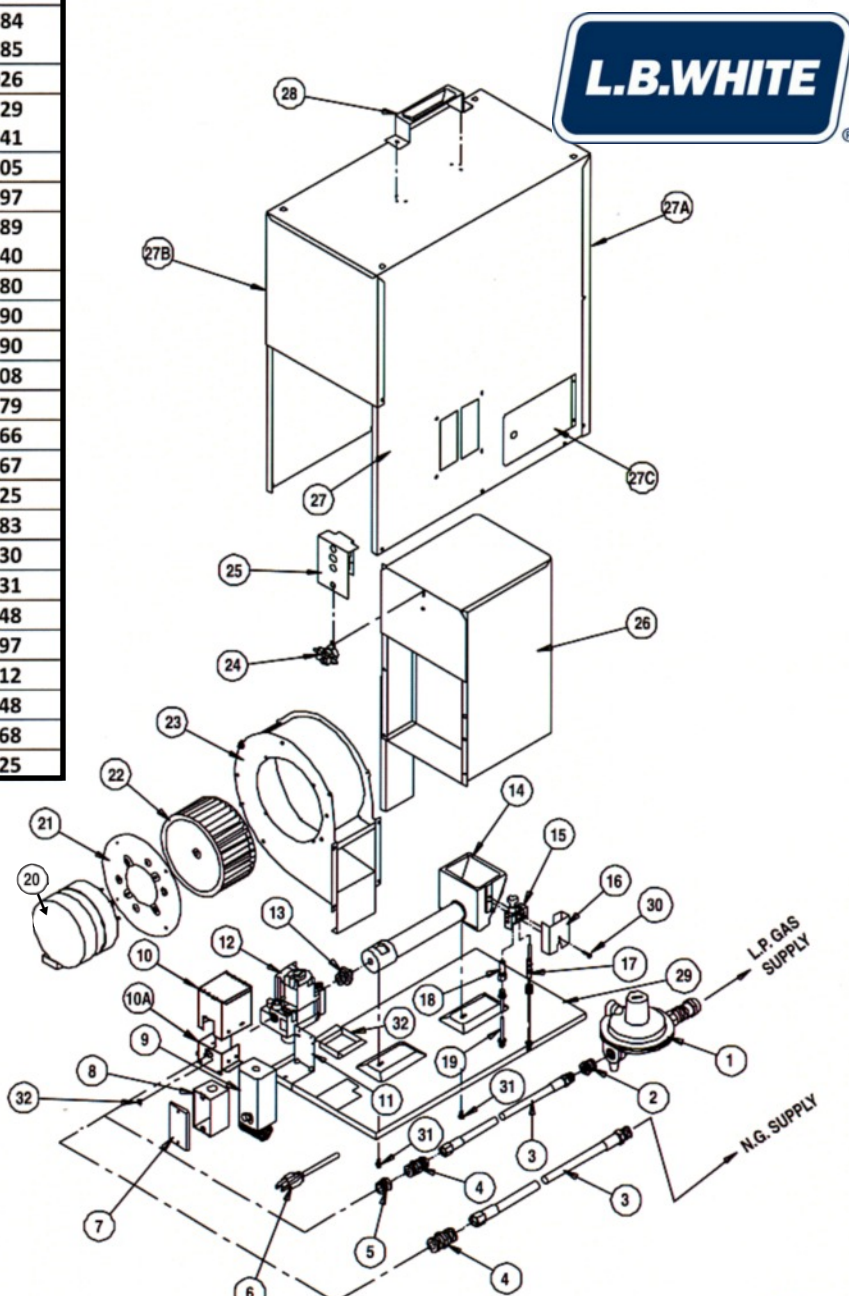
A metering device used to supply gas for the dual purpose of igniting the main burner and heating the thermocouple.

Pilot Safety Control Valve

A gas control valve which is held open by electrical power supplied by a pilot generator and which closes automatically to shut off the flow of gas to the main burner when the pilot flame is extinguished or becomes too small to light the main burner.

Pilot Shield

A formed sheet metal piece that fits around the pilot assembly to protect the the pilot flame against drafts.



HEATER MAINTENANCE TIPS

Ensure Peak Performance and Increase Savings at the Producer Level

Scheduled heater maintenance is essential for keeping LB White swine heaters working dependably over the years. To ensure the most reliable heaters in the hog industry, continue to work at peak performance and save money, we encourage our customers to perform regular checkups on their heater at each turn



Forced Air Heaters

[Click to Download PDF](#)



Radiant Heat Brooders

[Click to Download PDF](#)



Video Library

[Click to View Library](#)

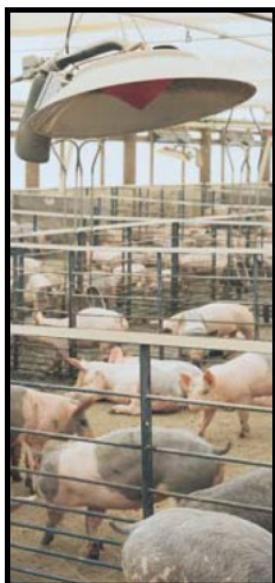
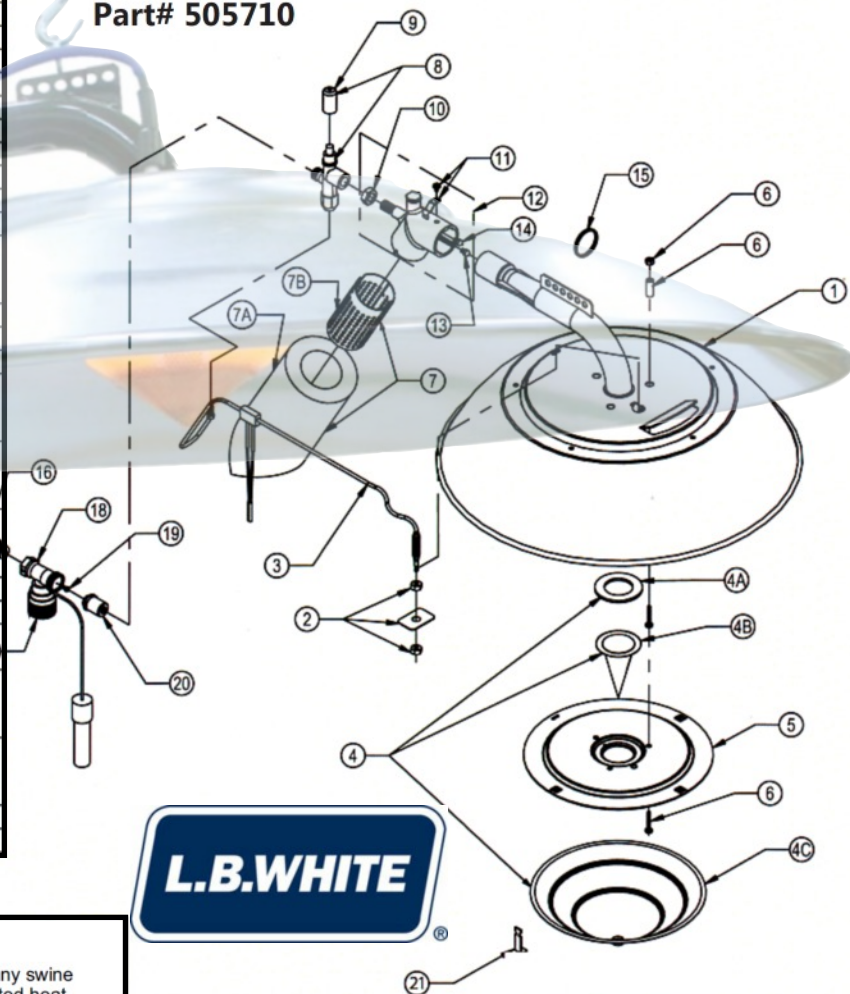


**The radiant heating solution
for healthier pigs and
up to 40% fuel savings**

INFRACONIC® Radiant Heat Brooder

1	Venturi Tube and Burner and Assembly	09639
2	Cover Plate with Nuts	572736
3	Thermocouple with Auto Reset Temperature Switch	09574
4	Kit, Combustion Cones and Gasket	21087
4A	Gasket	09586-A
4B	Inner Cone	09585
4C	Outer Cone	09588
5	Burner Plate	570204
6	Hardware for Burner Plate (nuts, screws, spacers, 3ea)	26141
7	Filter Kit	20427
7A	Filter	23951
7B	Filter Sleeve	20321
8	Safety Control Valve with Cap	572732
	Zone Control Heaters	572733
	Individual Control Heaters	572737
9	Cap for Safety Control	572734
10	Jam Nut for Safety Control	572730
11	Clip, Thermocouple with Screw	572735
12	Air Housing with Register Plate, Burner Orifice and Jam Nut	572731
	Propane Gas	572735
	Natural Gas	572735
13	Primary Burner Orifice (Low Heat)	09594
	Propane Gas	09773
	Natural Gas	09773
14	Secondary Orifice (High Heat)	09594
	Propane Gas	26707
	Natural Gas	26707
15	Key Ring	09620
16	Adaptor, Hose, Individual Control	09683
17	Thermostatic Head, Individual Control with 6 ft. Lead and Sensor	09415
18	Valve, Modulating, Individual Control	09750
	Propane Gas	09751
	Natural Gas	09751
19	Orifice, Bypass, Individual Control	09746
	Propane Gas	09747
	Natural Gas	09747
20	Adapter Sleeve, Individual Control	09682
21	Truss Clip	09559

LBW Infraconic 17,000 BTU Zone Control Part# 505710



INFRACONIC HEATER

Improve production and profitability in any swine environment with the Infraconic's patented heat efficiency, range of heat outputs, flexible installation and proven reliability.

With the Infraconic, you get a broader, more consistent heat pattern with less fuel. Pigs stay warm so they eat more and grow faster. And you save money on your energy costs – up to 40% depending on your facility and current heating solution.

Designed to withstand the harsh environments of swine facilities, key features of Infraconic radiant heaters include:

Models from 2,800 to 17,100 Btu/h.

- Modulating or spark ignition
- Zone or individual control
- Natural gas or liquid propane gas
- Fully assembled and ready to install
- Highly corrosion resistant components

Stock # Description

505710 . . . LBW INFRACONIC HEATER LP 17,100 ONLY ZONE

ZONE CONTROL

Stock # Description

505729 . . . LBW INFRACONIC ZONE CONTROL

Stock # Description



505016 . . . LBW INFRACONIC VALVE SAFETY CONTROL I17

Stock # Description



505764 . . . LBW INFRACONIC THERMOC. W/FUSE LINK NEW I10-I17

Stock # Description

505732 . . . LBW INFRACONIC I10/I17 FILTER W/SLEEVE HD PVC COAT

505065 . . . LBW INFRACONIC I10/I17 FILTER ONLY PVC COATED





www.val-co.com



M3 Series Infrared Heaters
561400 & 561412

M-HEATER

Valco's Gasolec popular M-Series heaters have earned a proven position in today's spot heating market. Excellent performance, rigid durability and simple straight forward design, with no moving parts have inspired a lot of other producers of gas heaters during the last decades.

Several versions of the M-heater from small to big: M2, M3, M5 and M8. The smallest has a maximum capacity of 1 kW/hour, while the biggest has a maximum capacity of 5 kW/hour. This makes the system suitable for every market need.

The M series heaters come standard with a stainless steel mesh filter. A heavy-duty fabric filter is available for extreme conditions/environments. It 'filters' the air better and reduces the amount of cleaning work for the farmer.

Advantages:

- Stainless steel construction
- Wide operating range
- Energy efficient
- Reliability
- Low maintenance
- Withstands high pressure washings



Stock # Description

- 561400. GASOLEC HEATER ONLY LP 5400 BTU - M3
- 561412. GASOLEC HEATER ONLY NG 5400 BTU - M3
- 561413. GASOLEC HEATER ONLY LP 10,000 BTU - M5
- 561414. GASOLEC HEATER ONLY NG 10,000 BTU - M5
- 561415. GASOLEC HEATER ONLY LP 17,000 BTU - M8
- 561416. GASOLEC HEATER ONLY NG 17,000 BTU - M8

HOSE KITS SOLD SEPERATELY

Stock # Description

- 561418. GASOLEC 6' HEATER LP HOSE KIT ASSY
- 561419. GASOLEC 8' HEATER LP HOSE KIT ASSY
- 561420. GASOLEC 10' HEATER LP HOSE KIT ASSY
- 561421. GASOLEC 12' HEATER LP HOSE KIT ASSY



STOCK #
561436

DESCRIPTION
GASOLEC CONTROL PANEL, MODULATING NON-ELECTRIC



STOCK # DESCRIPTION
561434 GASOLEC SS DUST FILTER



STOCK # DESCRIPTION
561447 GASOLEC GAUGE 2" SS 1/4" NPT 0-5 PSI



STOCK # DESCRIPTION
561432 GASOLEC JET (M8/LP .72MM)



STOCK # DESCRIPTION
561445 GASOLEC JET (M5/LP .52MM)
561449 GASOLEC JET (M3/LP)

STOCK # DESCRIPTION
561432 GASOLEC JET (M8/LP .72MM)



STOCK # DESCRIPTION
561436 GASOLEC MODULATING THERM 10,000 BTU
561437 GASOLEC MODULATING THERM 15,000 BTU



The Radiant Tube Heater For Brooders That Maximizes Fuel Savings.



VAL-CO™ Heat-Rite™ VM modulating infrared tube heaters maximize fuel savings. Modulation controls the burn rate and blower rate to ensure maximum efficiency. By controlling both fuel and combustion air, these tube heaters balance your radiant and thermal heat to produce the exact temperature you need. Ceiling mounting provides wide, even coverage of the house, saving valuable brooder space, as there's no need to raise or lower the heaters.



With VAL-CO™ Heat-Rite™ VTF models, the burner box is centrally located and provides the most effective heat distribution by firing in two directions. Ceiling mounting provides wide, even coverage of the house, while eliminating the need to raise or lower, saving you valuable brooder space. The infrared process directly heats objects rather than wasting heat on the air.



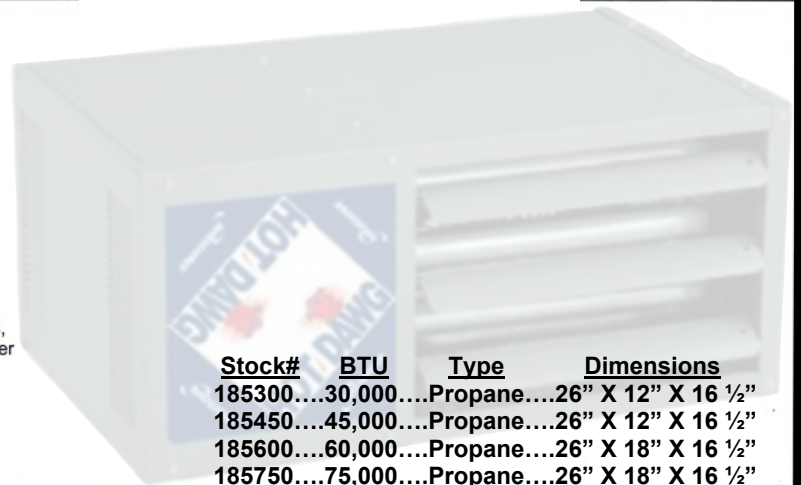
On VAL-CO™ Heat-Rite™ VES models, the burner box fires from a single end of the tubes. Ceiling mounting provides wide, even coverage of the house. The infrared process directly heats objects rather than wasting heat on the air.

1-800-328-8842

Modine Hot Dawg Heaters

Features Include:

- Quiet Operation
- Natural Gas or Propane
- Low-profile Design
- Certified for residential, commercial and industrial use
- Standard power exhaust simplifies side-wall or roof venting
- Versatile design allows for right or left hand controls and installation. Gas, electrical and flue connections can be changed from one side to the other by simply flipping the Hot Dawg over.
- Permanently-lubricated motor for trouble-free dependability
- Full 10-year warranty on heat exchanger
- 3" Vent (Models 30,000 - 75,000 BTU)
- 110 volt



Stock#	BTU	Type	Dimensions
185300	30,000	Propane	26" X 12" X 16 1/2"
185450	45,000	Propane	26" X 12" X 16 1/2"
185600	60,000	Propane	26" X 18" X 16 1/2"
185750	75,000	Propane	26" X 18" X 16 1/2"



Designed with You in Mind

Empire Vent-Free Heaters offer convenient, easy to operate controls on the top of the unit. The push button igniter lights the pilot, eliminating the need for matches. Each unit is test-fired in the factory and contains an oxygen-depletion sensor that shuts off the unit if not enough fresh air is available. Empire Vent-Free heaters are whisper quiet and use a state-of-the-art powder coat process that produces a durable, scratch-resistant finish.

MicroZone™



MicroZone MC100 Lamp and Mat Controller

TEMPERATURE MANAGEMENT and CONTROL of HEAT LAMPS & HEAT MATS

- Lower Electrical Cost
- Reduce Pre-Wean Deaths
- Extend Equipment Life
- Reduce Labor Costs
- Save Time

Part# 516150

This is the main control unit of the MicroZone system.

The MicroZone MC100 monitors room temperature, and varies the power to the heat lamps or mats from 0 to 100% via the MicroZone Power Modulator.

It also provides the programmable temperature ramp to adjust your power settings based on animal age.

One MC100 can control up to twelve MPM100 power modulators.



The MicroZone MPM100 regulates the power going to the heat lamps or heating mats in response to commands from the MC100 control module

Part# 516151



Herdstar Temp Sensor TS3 10K
Part# 516153



The MPS100 supplies the operating voltage for the MC100 control module.

Part# 516152

RetroLite Corporation of America

Part #: 516580

The Retroliter® Hang Straight™ Heat Lamp Fixture

Features:

Adjustable hanger is attached to the 9 foot power cord for easy mounting and height adjustment.

Lamp holder is fully enclosed to protect against breakage and water penetration.

Screw shell and center contact of lamp holder are nickel plated to prevent bonding to heat lamp screw base. This eliminates separation of the glass from the screw base during relamping.

Shock absorbing non-metallic shade/enclosure will not dent or corrode and reduces the risk of damage to the heat lamp.

Portion of the heat lamp's light is diffused through the opaque shade/enclosure to provide supplemental illumination.



Part #: 516579

Sales

Installation

Service



Steve Minnehan
Department Manager
stevem@palsusa.com
320-235-8868

PALSTM
PROPANE^{INC.}



Dave Deaner
Liquid Sales
daved@palsusa.com
320-235-8868

www.palsusa.com
1-800-205-0852

PALSTM
Supplier Of Choice

1-800-328-8842
www.palsusa.com

Burn Mizer™ Cremators

BURN-MIZER

Burn Mizer™
Cremators Save
You Money.



Burn Mizer™ cremators by VAL-CO™ destroy disease and reduce odor by incinerating 100 lbs. (45 kg) of carcass waste to one gallon (3.8 liters) of sterile ash with little or no unpleasant odors or smoke. Our cremators offer lower fuel costs than other national brands. Pre-cured refractory liners reflect heat (up to 3000° F/1649° C) to increase efficiency. Choose from among nine models with capacities from 100 to 1200 lb (45 to 544 kg). Optional winched doors are available. Door may be reversed at no extra charge. Burn Mizer™ meets or exceeds US EPA guidelines.



**Inside
View**