POWER-fin®

HIGH EFFICIENCY COMMERCIAL BOILERS

12 MODELS: 500,000 TO 5.0 MILLION BTU/HR

UP TO 87% THERMAL EFFICIENCY

5:1 TURNDOWN RATIO

OUTDOOR INSTALLATION APPROVED

Lochinvar SMART TOUCH™
OPERATING CONTROL

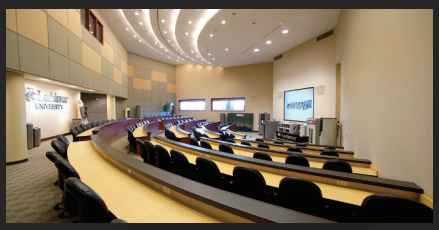
CONXUS®
REMOTE CONNECT

DESIGNED ★ ENGINEERED ★ ASSEMBLED
USA

Lochinvar®

THE LOCHINVAR DIFFERENCE

BROADEST LINE OF WATER HEATING SOLUTIONS IN THE INDUSTRY



INDUSTRY-LEADING TRAINING ON CAMPUS AND ONLINE AT LOCHINVARU.COM

A WORLD-CLASS RESEARCH & DEVELOPMENT DEPARTMENT THAT CONTINUOUSLY INTRODUCES NEW AND INNOVATIVE TECHNOLOGY

A COMMITMENT TO IN-DEPTH SERVICE BEFORE, DURING AND AFTER EVERY SALE

NO ONE BRINGS IT ALL TOGETHER LIKE LOCHINVAR

Lochinvar is the industry leader that other leading companies call upon for the most advanced and efficient water heating products in the world. For that reason, Lochinvar is trusted to go beyond the call of duty to find a solution for every project, no matter the size. You will not find a water heating company that works harder or cares more.

That's why no one brings it all together quite like Lochinvar.

A HISTORY OF INNOVATION

For nearly 80 years, Lochinvar, an American company, has been a leader of innovation and high-efficiency water heating. Through Lochinvar's pride in leadership and commitment to excellence, the company has continually improved year after year.

Today, Lochinvar touts the broadest line of high-efficiency water heating solutions, a world-class research & development department, comprehensive service with every sale and industry-leading training through Lochinvar University.

AN INDUSTRY LEADER IN THE MAKING, 1954.

DESIGNED ★ ENGINEERED ★ ASSEMBLED
USA

POWER-fin®

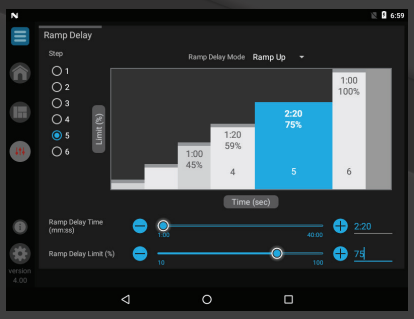
THE ORIGINAL BOILER CONTINUES TO SET THE STANDARD

In 1986, Power-Fin® redefined the industry with its space-saving design, groundbreaking efficiency and venting flexibility. Now, over 30 years later, we continue to raise the standard with an easy to operate touch screen user interface, remote boiler control and enhanced communications. The advanced Smart Touch™ color display includes CON•X•US® remote connectivity via WiFi or Ethernet for easy control at your fingertips, from anywhere. And a simple drop in Modbus or BACnet card allows for easy integration into a Building Management System.

Starting with the introduction of Power-Fin product line in 1986, we were able to provide something that other companies weren't focused on, efficiency and footprint.

ENHANCED OPERATING CONTROL

The Power-Fin now offers the industry-best Smart Touch™ 8″ LCD full color touchscreen with easy-to-understand info-graphics. It is equipped with CON·X·US® connectivity that lets you remotely monitor and optimize the performance of the entire boiler plant.



502-2001

2500-5000

BURNER MODULATION BOOSTS EFFICIENCY AND LOWERS COSTS

With thermal efficiencies of up to 87%, Power-Fin boilers feature a 5:1 turndown ratio that will precisely match the firing rate to heating load requirements—at any point from 20% to full firing rate. This results in less equipment cycling for greater efficiency and cost savings.

READY FOR OUTDOOR INSTALLATION

In warm-weather sites where the mechanical room is overcrowded, the Power-Fin can be easily installed either outdoors or on a rooftop. The outdoor hood and screen protector make outdoor installation fast and trouble free.

VENTING SOLUTIONS

The Power-Fin offers seven venting options for ease of installation and flexibility to meet the most challenging installation requirements. The

Power-Fin permits air intake and exhaust terminations to be horizontal through a sidewall or vertical through a roof. Consult the installation and operation manual for detailed venting guidelines.

CONX·US®
REMOTE CONNECT

Lochinvar SMART TOUCH™

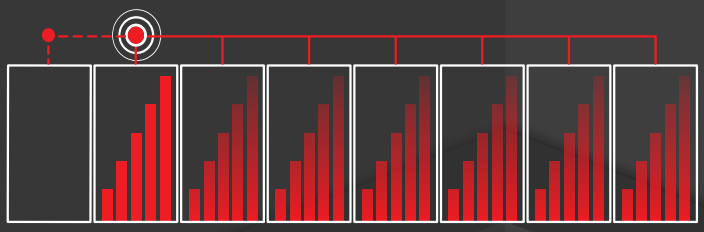
CONTROL FEATURES

- BUILT IN WIFI CAPABILITY TO REMOTELY MONITOR AND CONTROL BOILER PLANT
- CASCADE COMPATIBILITY WITH CREST CONDENSING BOILER TO CREATE A FRONT END LOADING SYSTEM
- PROGRAMMABLE SYSTEM EFFICIENCY OPTIMIZERS
- 3-PUMP CONTROL FOR OPERATION OF BOILER PUMP, SYSTEM PUMP, DOMESTIC HOT WATER PRIORITIZATION PUMP
- OUTDOOR RESET ADJUSTS SETPOINT BASED ON AN OUTDOOR TEMPERATURE
- COMPATIBLE WITH LOCHINVAR'S INDIRECT PLATE AND FRAME WATER HEATER AS WELL AS OUR STORAGE TYPE HOT WATER GENERATORS - ONE BOILER IN THE SYSTEM CAN BE ASSIGNED FOR DOMESTIC HOT WATER PRIORITIZATION (DHWP) TO MEET DOMESTIC WATER DEMAND
- 0-10 VDC BMS INPUT FOR EASY INTEGRATION INTO BUILDING MANAGEMENT SYSTEMS
- RED LOCKOUT SCREEN DISPLAYING THE FAULT CODE IN PLAIN ENGLISH

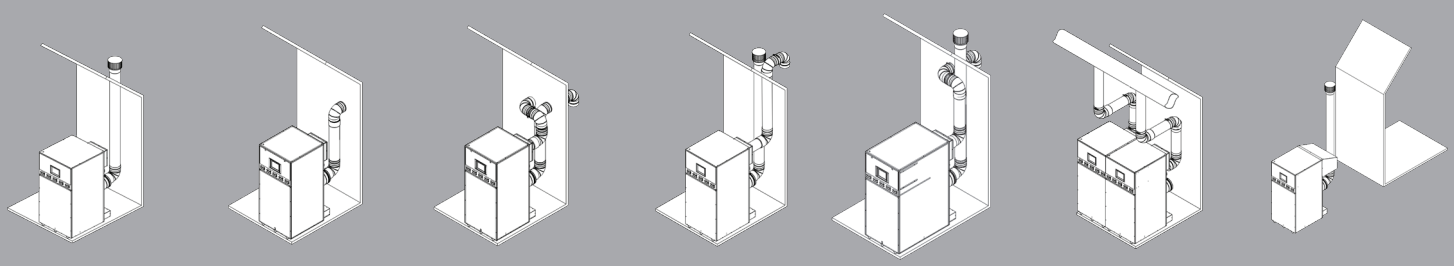
PEACE OF MIND, WHEN IT MATTERS MOST

Cascade Redundancy provides peace of mind because it helps ensure that a Power-Fin boiler system will always deliver reliable performance with no downtime. If the lead boiler is turned off for maintenance, Cascade Redundancy automatically shifts the lead role to the second sequenced boiler. Up to eight Power-Fin boilers can be sequenced using a 2-wire daisy-chain connection. Cascade sequencing can be programmed for Lead-Lag or Efficiency Optimized operation.

With Lead-Lag operation, one lead boiler modulates to capacity on demand. As load increases, the system then cascades to additional lag boilers in sequence. The first-on role shifts daily, distributing equal run times to each unit.

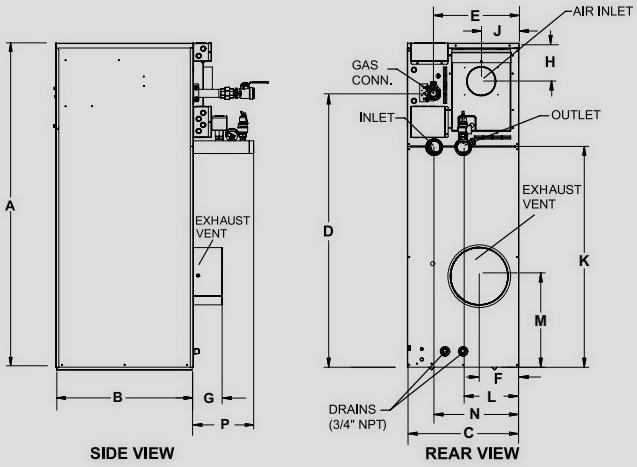


In an Efficiency Optimized system (see illustration left), all boilers fire and modulate simultaneously at the same Btu/hr input rates.



ROOM AIR VERTICAL | ROOM AIR SIDEWALL | DIRECT VENT SIDEWALL | DIRECT VENT VERTICAL | VERTICAL SIDEWALL AIR | COMMON VENTING | OUTDOOR

POWER-FIN® BOILER DIMENSIONS AND SPECIFICATIONS (505-2001)



Model Number Guide

PB	N	1501	M9
Model	Natural Gas	Btu/hr Input	Firing Controls

Power-Fin Boiler,
Natural Gas,
1,500,000 Btu/hr input,
M9 firing controls

POWER-FIN BOILER — DIMENSIONS AND SPECIFICATIONS

Model Number	Input MBH	(B)/(F) Thermal Efficiency	Output MBH	Net AHRI Rating MBH	(M) Thermal Efficiency	Output MBH	Net AHRI Rating MBH	A	B	C	D	(B)/(F) E	(M) E	F	G
PBN0502	500	85.0%	425	370	85.0%	425	370	44-1/2"	28-1/2"	23-1/4"	34"	18-3/4"	18-1/2"	6-1/2"	9-1/4"
PBN0752	750	85.0%	638	555	85.0%	638	555	52"	28-1/2"	23-1/4"	41-3/4"	19"	18-3/4"	6-3/4"	9-1/4"
PBN1002	999	85.0%	849	738	85.0%	849	738	59-1/4"	28-1/2"	23-1/4"	48-3/4"	17"	18-3/4"	7-1/4"	10-1/4"
PBN1302	1,300	85.0%	1,105	961	85.0%	1,105	961	67-3/4"	28-1/2"	23-1/4"	57-1/4"	17"	18-3/4"	8-1/4"	10-1/4"
PBN1501	1,500	84.0%	1,260	1,096	85.0%	1,275	1,109	65-1/2"	29-3/4"	27-1/4"	59"	21"	20-3/4"	13-1/2"	9-1/4"
PBN1701	1,700	84.0%	1,428	1,242	85.0%	1,445	1,257	70"	29-3/4"	27-1/4"	63-1/2"	21"	20-3/4"	13-1/2"	9-1/4"
PBN2001	2,000	84.0%	1,680	1,461	85.0%	1,700	1,478	76-3/4"	29-3/4"	27-1/4"	70"	21"	20-3/4"	13-1/2"	9-1/4"

Model Number	H	J	K	L	M	N	(B)/(F) P	(M) P	Gas Conn.	Air Inlet	(B)/(F) Cat I	Vent Sizes (M)* Cat II	(M) Cat IV	Shipping Wt. (lbs)
PBN0502	8"	7-3/4"	23"	11-1/2"	11-1/4"	17-1/2"	15-1/4"	15-1/4"	1"	5"	7"	7"	4"	505
PBN0752	8"	7-3/4"	30-1/2"	11-1/2"	11-1/4"	17-1/2"	15-1/4"	15-1/4"	1-1/4"	5"	9"	9"	5"	554
PBN1002	8"	7-3/4"	37-3/4"	11-1/2"	11-1/4"	17-1/2"	15-1/4"	15-1/4"	1-1/4"	6"	10"	10"	6"	603
PBN1302	8"	7-3/4"	46-1/4"	11-1/2"	19-1/2"	17-1/2"	15-1/4"	15-1/4"	1-1/4"	6"	12"	12"	8"	652
PBN1501	10"	9-1/2"	43-1/2"	5-3/4"	22-1/4"	21-1/2"	24-1/2"	19-1/2"	1-1/2"	6"	12"	8"	6"	1,065
PBN1701	10"	9-1/2"	48"	5-3/4"	25"	21-1/2"	24-1/2"	19-1/2"	1-1/2"	7"	14"	9"	7"	1,100
PBN2001	10"	9-1/2"	54-3/4"	5-3/4"	27-1/2"	21-1/2"	24-1/2"	19-1/2"	1-1/2"	8"	14"	10"	8"	1,127

*Notes: Change 'N' to 'L' for LP Gas Model. No deration on LP models. All water connections are 2-1/2" *w/CAT II conversion kit*

STANDARD FEATURES

- **85% Thermal Efficiency**
- **Outdoor Ready**
- **Modulating Burner with 5:1 Turndown**
  - Hot Surface Ignition
  - Low NOx Operation
  - Sealed Combustion
  - Low Gas Pressure Operation
- **Vertical & Horizontal Venting**
  - Venting up to 50 Feet
  - Category I or Category IV Venting
- **ASME Copper-Finned Tube Heat Exchanger**
  - ASME Certified, "H" Stamped
  - Gasketless design
  - 160 psi working pressure
- **On/Off Switch**
- **Adjustable High Limit w/ Manual Reset**
- **Flow Switch**
- **Low Air Pressure Switch**
- **Downstream Test Cocks**
- **50 psi ASME Relief Valve**
- **Combustion Air Filtration**
- **Temperature & Pressure Gauge**
- **Zero Clearances to Combustible Material**
- **High Altitude Models Available**
- **1 Year Warranty on Parts**
- **10 Year Limited Warranty**
  (See Warranties for Details)

SMART TOUCH™ FEATURES

- **SMART TOUCH Operating Control**
  - Full-Color 8" Touchscreen LCD Display
  - CON·X·US Remote Connect
  - Front-End Loading Capability with Crest Boilers
  - Building Management System Integration with 0-10 VDC Input
  - Outdoor Reset Control
  - Dual Level Password Security
  - Inlet & Outlet Temperature Readout
  - Freeze Protection
  - Service Reminder
  - Time Clock
- **Built-in Cascading Sequencer for up to 8 Boilers**
  - Built-in Redundancy
  - Cascade Multiple Sized Boilers
  - Lead/Lag Cascade
  - Efficiency Optimized Cascade
- **Domestic Hot Water Prioritization**
  - DHW tank piped with priority in the boiler loop
  - DHW tank piped as a zone in the system with the pumps controlled by the Smart System
  - DHW Modulation Limiting
  - Separately Adjustable SH/DHW Switching Times
- **Low Water Flow Safety Control & Indication**
- **Data Logging**
  - Hours Running, Space Heating
  - Hours Running, Domestic Hot Water
  - Hours Running, Modulation Rate
  - Ignition Attempts
  - Last 10 Lockouts
- **Programmable System Efficiency Optimizers**
  - Night Setback
  - Anti-Cycling
  - Outdoor Air Reset Curve
  - Ramp Delay
  - Boost Temperature & Time
  - Modulation Factor Control
- **Three Pump Control Contacts**
  - System Pump
  - Boiler Pump
  - Domestic Hot Water Pump
- **High-Voltage Terminal Strip**
  - 120V/1PH/60Hz
- **Low-Voltage Terminal Strip**
  - 24 VAC Auxiliary Device Relay
  - Auxiliary Proving Switch Contacts
  - Alarm on Any Failure Contacts
  - Runtime Contacts
  - DHW Thermostat Contacts
  - Unit Enable Contacts
  - Louver Proving Contacts
  - System Sensor Contacts
  - DHW Tank Sensor Contacts
  - Outdoor Air Sensor Contacts
  - Cascade Contacts
  - 0-10 VDC BMS External Control Contact
  - 3 Way Valve Contacts

Registered under
U.S. Patent #7,506,617

FIRING CODES

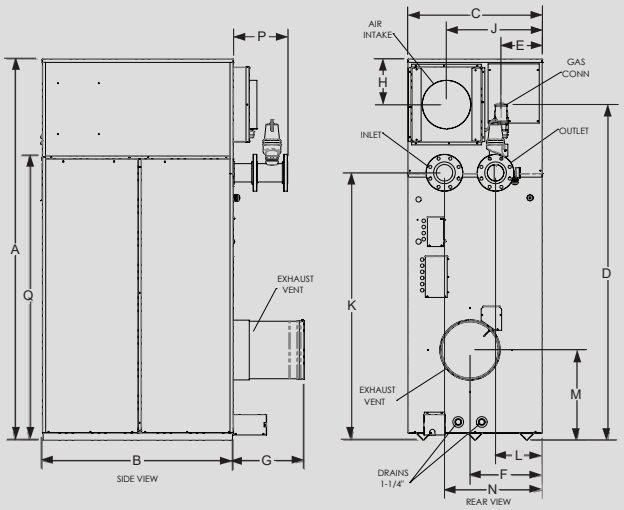
M Indicates 5:1 Turndown, Category IV
B Indicates 2:1 Turndown, Category I
F Indicates 100% On/Off Fire, Category I

M9	Standard
B9 or F9	Special Order Factory Trimmed

OPTIONAL EQUIPMENT

- Cupro-Nickel Heat Exchanger
- High and Low Gas Pressure Switches
  w/Manual Reset (required for CSD-1/FM/GE Gap)
- Low Temperature Valve
- Motorized Mixing Valve
- Outdoor Kit
- Low Water Cutoff
  w/ Manual Reset & Test
  (required for California Code)
- Alarm Bell
- Modbus Communications
- BACnet MSTP Communications
- BMS Gateway to LON or BacNet IP
- Wireless Outdoor Sensor
- Vent Kit
  - -Horizontal Exhaust Cap
  - -Horizontal Air Intake Cap
  - -Horizontal Direct Vent Cap
  - -Category IV to Category II Conversion Kit

POWER-FIN® BOILER DIMENSIONS AND SPECIFICATIONS (2500-5000)



Model Number Guide

PB	N	2500	M9
Model	Natural Gas	Btu/hr Input	Firing Controls

***P**ower-Fin **B**oiler,*
***N**atural Gas,*
***2,500**,000 Btu/hr input,*
***M9** firing controls*

POWER-FIN BOILER — DIMENSIONS AND SPECIFICATIONS

AHRI CERTIFIED® www.ahridirectory.org

Model Number	Input MBH	Thermal Efficiency %	Combustion Efficiency	Output MBH	Net AHRI Rating MBH	A	B	C	D	E	F
PBN2500	2,500	87.0%	87.0%	2,175	1,891	59″	44-1/2″	29-3/4″	49-3/4″	4″	15″
PBN3000	3,000	87.0%	87.0%	2,610	2,270	65″	44-1/2″	29-3/4″	55-3/4″	4″	15″
PBN3500	3,500	87.0%	87.0%	3,045	2,648	70-1/4″	47-1/4″	29-3/4″	62-1/2″	8-1/4″	15″
PBN4000	4,000	87.0%	87.0%	3,480	3,026	79-3/4″	47-1/4″	29-3/4″	68-3/4″	8-1/4″	15″
PBN5000	4,999	87.0%	87.0%	4,349	3,782	93-1/4″	46-3/4″	32-3/4″	82-1/4″	10″	17-3/4″

Model Number	G	H	J	K	L	M	N	P	Q	Gas Conn.	Air Inlet	Vent Sizes	Shipping Wt. (lbs.)
PBN2500	16″	9″	20-1/4″	37″	8-3/4″	23″	21-1/4″	12″	N/A	2″	9″	9″	1470
PBN3000	16-1/4″	9″	20-1/4″	43″	8-3/4″	23″	21-1/4″	12″	N/A	2″	9″	10″	1550
PBN3500	16-1/4″	9″	20-1/4″	48-1/2″	9″	23″	21-1/2″	12″	N/A	2″	10″	10″	1696
PBN4000	16-1/4″	10-1/2″	20″	54″	8-3/4″	22-1/4″	21-1/4″	12″	58-1/2″	2-1/2″	10″	12″	1841
PBN5000	17-1/2″	11″	23-1/2″	65-1/2″	11-1/2″	22″	24″	13-1/4″	69-1/2″	2-1/2″	12″	14″	2152

Note: Change "N" to "L" for LP Gas Model. All Water Connections are 4".The Net AHRI Water Ratings shown are based on an allowance of 1.15. The manufacturer should be consulted before selecting a boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc. The ratings have been determined under the provisions governing forced draft boiler-burner units.

STANDARD FEATURES

87% Thermal Efficiency (AHRI)
Modulating Burner with 5:1 Turndown
Outdoor Ready
CSD-1 Compliant
Direct-Spark Ignition
Low NOx Operation
Sealed Combustion
160 psi Working Pressure
On/Off Switch
Adjustable High Limit with Manual Reset
Condensate Trap w/Blocked Drain Switch
Drain Valve
System Sensor
Outdoor Air Sensor
Inlet & Outlet Temperature Sensors
High-Voltage Terminal Strip
Low-Voltage Terminal Strip
50 psi ASME Relief Valve
Temperature & Pressure Gauge
Zero Clearances to Combustible Materials
Low & High Manual Reset Gas Pressure Switches
High Altitude Models Available
10-Year Limited Warranty (See Warranty for Details)
1-Year Warranty on Parts (See Warranty for Details)

SMART TOUCH™ FEATURES

CON·X·US Remote Connect
Full-Color 8" Touchscreen LCD Display
Built-in Cascading Sequencer for up to 8 Boilers
- › Built-in Redundancy
- › Cascade Multiple Sized Boilers
- › Lead/Lag Cascade
- › Efficiency Optimized Cascade

Front-End Loading Capability with Crest Boilers
Building Management System Integration with 0-10 VDC Input
Outdoor Reset Control
Password Security
Domestic Hot Water Prioritization
- › DHW tank piped with priority in the boiler loop
- › DHW tank piped as a zone in the system with the pumps controlled by the Smart System
- › DHW Modulation Limiting
- › Separately Adjustable SH/DHW switching Times

Low Water Flow Safety Control & Indication
Inlet & Outlet Temperature Readout
Freeze Protection
Service Reminder
Time Clock
Data Logging
- › Hours Running, Space Heating
- › Hours Running, Domestic Hot Water
- › Hours Running, Modulation Rate
- › Ignition Attempts
- › Last 10 Lockouts

Programmable System Efficiency Optimizers
- › Night Setback
- › Anti-Cycling
- › Outdoor Air Reset Curve
- › Ramp Delay
- › Boost Temperature & Time
- › Modulation Factor Control

Three Pump Control
- › System Pump
- › Boiler Pump
- › Domestic Hot Water Pump

High-Voltage Terminal Strip
- › 240V/1PH/60Hz (PB2500-3000)
- › 208V/3PH/60 Hz (PB3500-4000)
- › 480V/3PH/60 Hz/(PB5000)
- › System Pump, Boiler Pump and DHW Pump Power

Low-Voltage Terminal Strip
- › 24 VAC Auxiliary Device Relay
- › Auxiliary Proving Switch Contacts
- › Alarm on Any Failure Contacts
- › Runtime Contacts
- › DHW Thermostat Contacts
- › Unit Enable/Disable Contacts
- › System Sensor Contacts
- › DHW Tank Sensor Contacts
- › Outdoor Air Sensor Contacts
- › Cascade Contacts
- › 0-10V DC BMS External Control Contact
- › 3 Way Valve Contacts

CODES & REGISTRATIONS

ANSI Z21.13/CSA Certified
ASME Certified, "H" Stamp / National Board
California Code Compliant
CSD1 / Factory Mutual / GE Gap Compliant
Canadian Registration Number (CRN)
AHRI Certified

FIRING CODES

M9	Standard Construction
M7	California Code

OPTIONAL EQUIPMENT

Alarm on any failure
Outdoor Kit
Low Temperature Valve
Motorized Mixing Valve
BMS Gateway to LON or BacNet IP
BACnet MSTP Communications
Modbus Communications
Cupro-Nickel Heat Exchanger
Wireless Outdoor Sensor
Low Water Cutoff w/ Manual Reset & Test
Electrical Options (shipped loose)
- ›PB 2500-3000
  208V/1PH/60Hz → 240V/1PH/60Hz
- ›PB 3500-4000
  480V/3PH/60 Hz → 208V/3Ø/60Hz
  600V/ 3PH/60 Hz → 208V/3Ø/60Hz
- ›PB 5000
  208V/3PH/60Hz → 480V/3Ø/60Hz
  600V/3PH/60 Hz → 480V/3Ø/60Hz

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