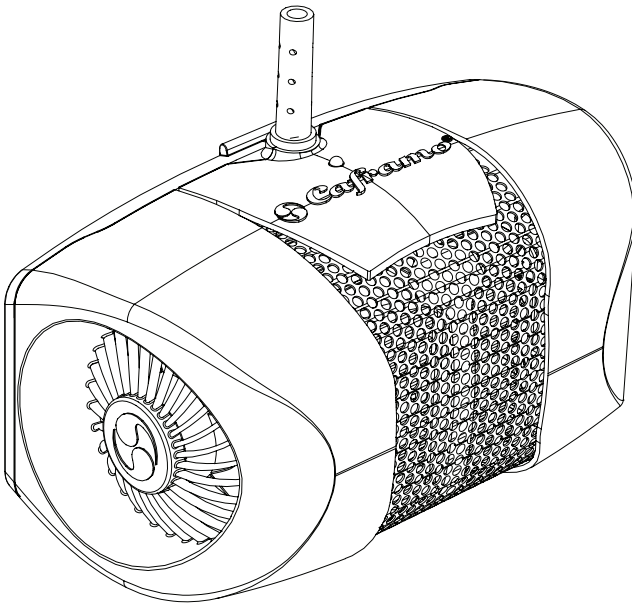


# Pali

**9510CABBX** - Automatic Thermostat

400W Engine Compartment Heater

## OPERATING INSTRUCTIONS



Read and save all instructions before using the heater.

 **Caframo**<sup>®</sup>  
MARINE

# IMPORTANT - READ AND SAVE THESE INSTRUCTIONS!

Thank you for purchasing Pali, the Caframo Marine 400W Engine Compartment Heater. Pali is designed to maintain the temperature in your engine compartment above freezing, preventing damage from a sudden cold snap.

## SAFETY WARNINGS

This heater is intended for use solely as a marine engine compartment heater. This heater is not to be used for any other applications such as room heating.

## INSTALLATION/ MOUNTING

**While boat is in motion the Pali must be secured to the mounting bracket.**

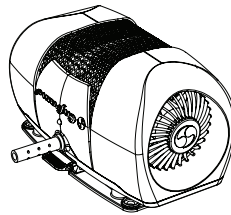
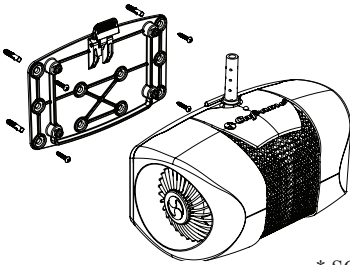
### 1. Vertical Secured Mount

**(Recommended for highest efficiency):**

Separate the Quick Mount Bracket from the heater. Using a minimum of 4 screws\*, securely attach the Quick Mount Bracket directly to the bulkhead of the vessel within the engine compartment.

### 2. Horizontal Use Un-secured

**(Ensure boat is motionless when using this option.)** Pali can be used without mounting the unit to the bulkhead or engine compartment floor. With the Quick Mount Bracket attached the Pali can be laid flat on any dry surface.



\* SCREWS NOT SUPPLIED

## OPERATION

### Pali 9510 (Automatic Thermostat)

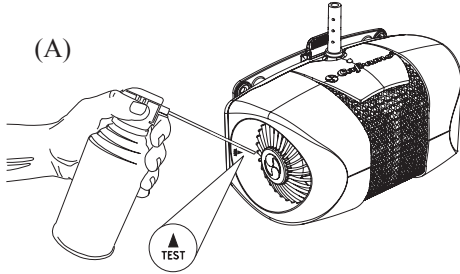
The Pali 9510 automatically cycles ON/OFF to regulate and maintain desired temperature. Connect the Pali 9510 to the secured Quick Release Bracket or lay it within a dry engine compartment. Do not place on a floor or low surface which could collect water. Plug the heater into the appropriate 120V outlet. The LED will become green once your unit is plugged in, indicating the unit has power and is ready to operate. The Pali 9510 will automatically activate when the engine compartment ambient temperature drops to 41°F (5°C). The LED will become red indicating the unit is now running.

Pali is designed to continuously protect up to an 80 ft<sup>3</sup> engine compartment at -4°F (-20°C) outside temperature.

# TESTING

There are 2 methods to test the functionality of the automatic Thermostat:

**1. Freeze Spray:** Plug heater into wall outlet, ensure green LED is on. Direct and spray (for up to 10 seconds) a general purpose freeze spray coolant for electrical components at the Test Target Area (A) marked on the inner rim of the air intake. Depending on the ambient temperature as well as the temperature of the heater this may take a few attempts. There may be residue left by the freeze which can be wiped off with a clean cloth. NOTE: The spray used must be certified electrical safe and non-flammable.




**2. Freezer Test:** Ensure the Pali is unplugged and cooled down. Place the heater in a plastic bag and into a freezer. This will lower the temperature of the thermostat. After 2 hours, remove the Pali from the freezer, remove plastic bag and plug in. The heater will automatically activate indicated by the LED turning red.

# CARE AND MAINTENANCE

The Pali requires very little maintenance. By following the instructions within this manual the heater will operate problem-free for years.

Unplug unit before cleaning. A vacuum can be used to clear the heater of any dust build-up and a dry cloth may be used to wipe the outer surface.

Do not attempt to open the unit to clean.

<p><b>Certified to:</b></p>  <p><b>UL-499</b> <b>Electric Heating Appliances</b></p> <p><b>C22.2 No. 191</b> <b>Electric Heaters and Battery Warmers</b></p>	<p><b>Independently tested to meet:</b></p> <p><b>MIL-SPEC</b> 810E: 514.6, 501.5, 502.5, 507.5 Vibration, High, Low Temperatures, Humidity</p> <p><b>UL-1500</b> Ignition Protection</p> <p><b>USCG</b> Ignition Protection Guidelines</p>
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## Important Instructions

When using electrical appliances, basic precautions should always be followed to reduce risk of fire, electric shock, and injury to persons including the following:

1. **SAVE THESE INSTRUCTIONS.**
2. Read all instructions before using the heater.
3. **Caution:** High temperature. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes and curtains at least 3 feet from the front of the heater and away from the sides and rear.
4. Extreme caution is necessary when any heater is used by or near children or disabled persons.
5. Always unplug heater when not in use.
6. Do not operate any heater with a damaged cord, plug or after the heater malfunctions, has been dropped or damaged in any manner.
7. Do not use outdoors where heating unit can be exposed to the elements and come in contact with moisture.
8. This heater is not intended for use in bathrooms, laundry areas and similar indoor locations. Never locate heater where it may fall into a bathtub or other water container.
9. Never locate heater where it may come into contact with water.
10. Do not run cord under carpeting. Do not cover cord with throw rugs, runners or the like. Arrange cord away from traffic area and where it will not be tripped over.
11. To disconnect heater, remove plug from electrical outlet.
12. Only connect heater to a properly grounded 3 prong electrical outlet which meets the electrical ratings as marked on the heater.
13. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock, fire, or damage to the heater.
14. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
15. The heater must not be located immediately below a socket-outlet.

## Product Features

Features	Description
Ignition Protected Design	No electrical arcing and retains core temperature below auto-ignition temperature of fuel fumes.
Safe Self-Regulated PTC Heaters	PTC heaters do not overheat ensuring additional safety around fumes.
Impinged Forced Air Technology	Allows for Omni-Directional Airflow and Dual Airflow Redundancy within a compact design that fits in the engine compartment.
Dual Airflow Redundancy	Two fans are used instead of one for added security in the event of single fan failure.
Omnidirectional Airflow Discharge	This allows for better thermal mixing of the engine compartment air resulting in more uniform heating throughout the engine compartment.
Safe Thermostat Temperature Control	A hermetically sealed thermostat activates at 41°F (5°C). This ensures that the coldest locations in compartment components do not drop below zero. The heater will turn off when the temperature reaches 59°F (15°C).
LED - Indicator	LED will glow green to indicate power to the Pali. Once thermostat activates LED will glow red indicating heat.
20' Heater Grade Power Cord	Extra long power cord included to plug in at shore lines or when stored in driveways. Heater certified cord is oil and weather resistant.
Small Foot Print	At 9" x 5" x 5" (228 x 132 x 126 mm) Pali fits in engine compartment's tight corners.
Quick Release Bracket	A mounting bracket with a positive lock can be quickly installed on any flat surface. The heater can easily be removed for off season storage.

### Specifications

Model 9510CABBX

Dimensions: 9" (w) x 5" (h) x 5" (d),

Weight: 4.75 lbs.

Power: 120V AC, 60Hz, 400W (1365 BTU/Hour)

Draw: (Start-up: 9A), (Running: 3.4A)

Cord: 20', 18AWG Heater Grade Cord (Oil and water resistant)