



**Marine add-on kit  
installation manual  
for the  
Calaer Air Heater  
(2 kW and 4 kW)**



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## WARNING

Improper installation, service or repair of the air heater systems may cause leakage of poisonous carbon monoxide (CO) causing serious injury or death or cause fire.

To install, service or repair the heater systems you need to have necessary technical skills, the appropriate technical documentation, special tools and equipment to ensure that you can complete the work properly.



Do not insert foreign objects into the heater and moving parts of the heater

To service or repair the heater systems you need to have completed a CalTech Heating Technologies AB training course and you need to have the appropriate technical documentation (this manual), special tools and equipment. Only genuine CalTech Heating Technologies AB parts may be used. See the heater system accessory catalog.

Always follow the instructions and pay attention to all warnings. CalTech Heating Technologies AB rejects any liability problems and damage caused by the system being installed, serviced or repaired by untrained personnel.

## SCOPE OF THIS MANUAL

This marine add-on installation manual applies to the following products:

- Product number 100083: 2 kW Marine Add-on Kit
- Product number 100084: 4 kW Marine Add-on Kit

The 2 kW marine add-on kit will fit to the 2 kW Calaer Air Heater 12 V and 24 V versions.

The 4 kW marine add-on kit will fit to the 4 kW Calaer Air Heater 12 V and 24 V versions.

The following components are included in the marine add-on kit:

2 kW Add-on Kit	
Part number	Description
334-000867-000	Manual Marine Add-on Kit
088-000539-000	Air duct 60 mm (4 m)
088-000540-000	Air outlet vent
092-000576-000 (2x)	Clamp 50-70 mm
090-000796-000	Hull skin fitting
223-000797-000	Exhaust lagging
407-000836-000	L-bracket

4 kW Add-on Kit	
Part number	Description
334-000867-000	Manual Marine Add-on Kit
088-000581-000	Air duct 90 mm (4 m)
088-000582-000	Air outlet vent
092-000586-000 (2x)	Clamp 80-100 mm
090-000796-000	Hull skin fitting
223-000797-000	Exhaust lagging
407-000836-000	L-bracket

## INSTALLATION INSTRUCTIONS



**WARNING:** Your boat can be damaged, or even sink, if the heater and add-on kit are installed in the wrong way! Refer to the manufacturer of your boat for technical advice on how to properly attach the heater with all its accessories to the boat.

**NOTE:** Some of the components that are used in these installation instructions are not part of the marine add-on kit, but are supplied with the heater unit.

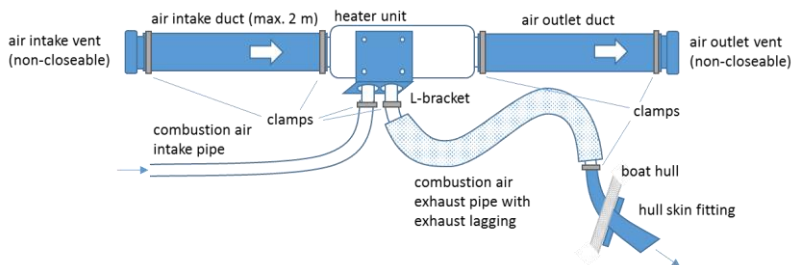
- The included air duct can be cut in order to obtain a duct for the air inlet and a duct for the air outlet.
- The duct for the air inlet of the heater must not exceed a length of 2 meters.
- When an air intake duct is used, the air intake protection grid that is mounted on the heater unit must be removed. Do this by turning the grid anti clockwise, then pull it carefully away from the heater. Attach the duct to the air inlet using one of the supplied clamps. The protection grid can be discarded, and the air intake vent that is provided with the heater unit can be mounted on the air intake duct using the clamp that is provided with the heater unit.
- Remove the air outlet ring from the heater unit by turning it anti clockwise, then pull it carefully away from the heater. Attach the air outlet duct to the heater using one of the supplied clamps. The original air outlet ring from the heater can be discarded.
- The air outlet vent can be mounted to the air outlet duct using the clamp that is supplied with the heater unit.
- The exhaust lagging must be placed over the exhaust pipe. It may be cut in order to match the length of the exhaust pipe.
- The L-bracket that is supplied with this add-on kit shall be used to mount the heater. The original bracket that is supplied with the

heater unit can be discarded. **NOTE:** Refer to the heater installation manual for the allowed installation positions. The heater can only be used if the allowed mounting angles are respected, even when the boat is heeling due to waves or wind.

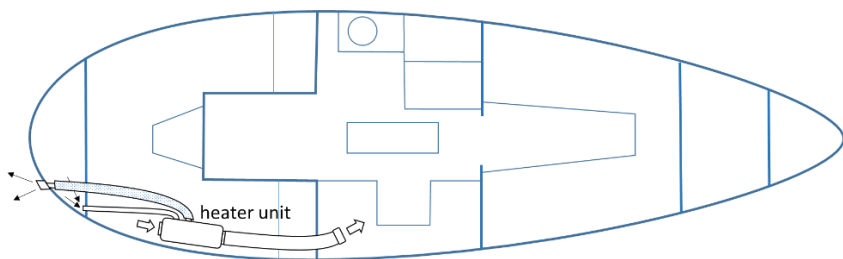
- The wide opening of the hull skin fitting must be on the outside of the boat, since the exhaust gases are released from here. It must be positioned with the opening pointing downward to prevent water from collecting in the exhaust pipe. **NOTE:** The hull skin fitting must be placed so that water can not enter, even in the case of rain, waves or when heeling. It may not be mounted close to windows or fresh air intake.
- Attach the heater exhaust pipe to the hull skin fitting with a clamp that is supplied with the heater unit.



**WARNING:** The air outlet vent on the air outlet duct shall always be open in order to secure the minimum required air flow through the heater. This vent may not be replaced with a version that can be closed completely!



**Figure 1: Integration of the add-on kit components with the Calaer air heater.**



**Figure 2: Possible placement of the heater in a boat. Refer to the manufacturer of the boat for technical advise on how to properly attach the heater and its accessories to avoid damage!**



## MAXIMUM ALLOWED DUCTING CONFIGURATION



**WARNING:** Irrespective of the configuration, there shall always be at least one ducting channel with a vent that cannot be closed. This is necessary to ensure the minimum required air flow through the heater.

**NOTE:** Many of the ducting components shown in the below examples are not included in the marine add-on kit. They can be obtained separately from CalTech ([www.caltechheating.se](http://www.caltechheating.se)) or selected CalTech suppliers.

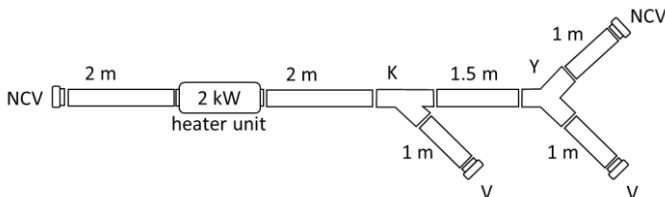
**NOTE:** Insulation can be applied around the outlet air ducting to increase the amount of heat that comes out through the outlet vents.

	Maximum inlet ducting	Maximum outlet ducting
2 kW Heater	2 m ( $\phi$ 60 mm) + vent	6.5 m ( $\phi$ 60 mm) + 3 outlets with vent
4 kW Heater	2 m ( $\phi$ 90 mm) + vent	10 m ( $\phi$ 90 mm) + 5 outlets with vent

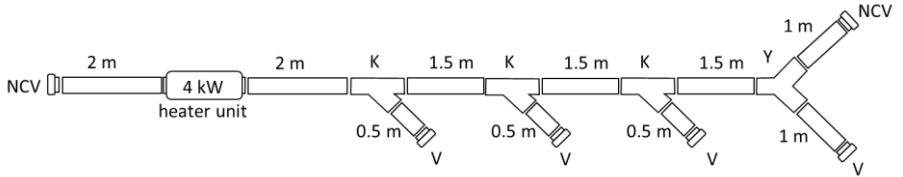
Adjustable vents are recommended to control the air flow. Be aware that at least one ducting channel must be equipped with a non-closeable vent!

Possible configuration examples:

2 kW:



4 kW:



Accessories:

2 kW	
Product number	Description
100107	K - split 60 mm
100090	Y - split 60 mm
100086	Air duct 60 mm (4 m)
100108	V - Air outlet vent (closeable) 60 mm
100088	NCV - Air vent (non-closeable) 60 mm
100092	Clamp 50-70 mm

4 kW	
Product number	Description
100105	K - split 90 mm
100091	Y - split 90 mm
100087	Air duct 90 mm (4 m)
100109	V - Air outlet vent (closeable) 90 mm
100089	NCV - Air vent (non-closeable) 90 mm
100093	Clamp 80- 100 mm

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Information in this manual is subject to change without notice. An updated on-line manual is available at [www.caltechheating.se](http://www.caltechheating.se).

