

Air Heater

Air Heater

Installation and usage instructions

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1. Safety

1.1 Before putting the product into operation

Read the usage and assembly instructions carefully. They contain important information for the installation, use and maintenance of the product.

The Manufacturer cannot be held liable for any damage resulting from improper and/or unreasonable use.

Keep all documentation for future use or for any subsequent owners.

- Store this manual in an accessible location protected from moisture and heat and protected from the direct rays of the sun.
- Use the manual in such a way as to avoid damaging it or any part of its content.
- Do not remove, alter or tear on any part of the manual.

Despite the care and thoroughness with which this manual has been prepared, the Manufacturer cannot guarantee that the information within covers every possible event associated with installation of the product. Contact our technicians immediately in the event of uncertainty. In the event of selling or transferring the product to another person, this manual and related documents should be delivered intact to the new user.

IMPORTANT



This manual refers to the standard version of the product. Non-standard machines may have minor differences not described in this manual. Contact the Manufacturer with any concerns or questions.

1.2 Technical safety

When transporting and installing the product, take care not to damage any part of it.

The Manufacturer shall assume no liability for damage to persons or property in the following cases:

- Incorrect installation or electrical connection or hydraulic circuit connection errors
- Damage to the product due to mechanical influences or incorrect connection voltages or excessive water temperatures in the hydraulic circuit
- Changes made to the product without the Manufacturer's express permission
- Use of the product for purposes other than those indicated in this instruction manual

Never switch on the product if it shows signs of damage. Contact the Manufacturer with any concerns or questions.

If this product's mains connection cable is damaged, it must be replaced by the Manufacturer, customer service or a similarly qualified person authorised by the Manufacturer.

Installations and repairs carried out by unqualified persons can create considerable danger to the user.

Repairs may only be carried out by the Manufacturer, customer service or a similarly qualified person authorised by the Manufacturer.

Only original Manufacturer spare parts may be used. The Manufacturer can guarantee that the safety requirements are met on when these parts are used.

1.3 Intended use

This product is designed for heating cabins of marine and recreational vehicles, also performing the function of defrosting cabin glass. The product is not suitable for any other use. Any use that does not comply with the indications in this manual is to be considered improper and dangerous.

WARNING



The Manufacturer declines all responsibility for accidents to persons or property deriving from the non-observance of the provisions and instructions listed in this manual and from the non-observance of the safety and accident prevention regulations in force in the various countries.

This product must not be handled and/or used by children under 8 years of age and/or persons with reduced physical, sensory or cognitive abilities unless they are supervised and/or adequately instructed with regard to the methods of use by a person responsible for their safety and aware of all the possible risks involved.

1.4 Contraindications of use

WARNING



The packaging elements (plastic bags, expanded polystyrene, etc.) must not be left within the reach of children or incapacitated persons: they are potential sources of danger.

DANGER



This product must not be handled and/or used by children under 8 years of age and/or persons with reduced physical, sensory or cognitive abilities unless they are supervised and/or adequately instructed with regard to the methods of use by a person responsible for their safety and aware of all the possible risks involved. Keep the product and its power cable out of reach of children under 8 years of age and prevent them from playing with the product. Cleaning and maintenance are meant to be performed by the user and must not be performed by unsupervised children.

DANGER



Keep children under 8 years of age away from the product or under constant supervision. Do not allow children to play with the product. Children may become entangled. Do not allow children to clean or perform maintenance on the product without supervision.

WARNING



Do not store inside the product or in the vicinity of its electrical parts: flammable substance-based spray cans, explosive materials, electrical equipment, live animals. Spray cans containing flammable substances may have leakage of these gases which, in contact with electrical parts, can ignite or cause explosions.

DANGER



Only use the device for its intended purpose.

DANGER



Maintenance and repair work may only be carried out by Qualified Technicians who are aware of the hazards involved and the relevant regulations.

DANGER



Never attempt to disassemble the product during operation; contact with live parts can cause serious damage to the product and the user.

DANGER



Do not operate the device in damp or wet environments.
Do not spill liquids of any kind on the product; this could permanently compromise its operation and become a source of danger for the operator.

WARNING



Do not alter any part of the product (such as attachments, holes, finishes, etc.) for any reason whatsoever in order to adapt it to other devices. Always consult the Manufacturer if any modifications are required.

Any changes made to the product without the knowledge of the Manufacturer will be the sole responsibility of those carrying out said changes. Changes made without the permission of the Manufacturer will void all warranties and may void the declaration of conformity to applicable directives.

WARNING



Take care when connecting/disconnecting the product from the hydraulic circuit to ensure that there is no leakage of liquid outside the system.

This is especially important if there is a liquid inside the hydraulic circuit that is harmful to humans and/or the environment.

1.5 List of dangers

DANGER



ELECTRICAL MAINS

Always disconnect the power supply from the product before carrying out any work on it in order to avoid damage and health hazards.

DANGER



AUTHORISED TECHNICAL PERSONNEL

Only technical personnel specialised in the electrical and hydraulic field can work on the product. All wiring and hydraulic components must comply with national and local laws (use only original spare parts certified by the Manufacturer when replacing components).

DANGER



Disconnect the product from the mains power supply immediately in the event of any malfunction. Never touch any damaged or non-insulated electrical cables while the electrical power supply is enabled.

The power cable must be replaced if damaged. Contact qualified personnel or your nearest Service Centre.

DANGER



Do not use plugs and switches if you have wet hands or feet.

DANGER



In the event of danger, disconnect the product from the power supply immediately, if this can be done safely.

DANGER



Improper installation, improper use or improper maintenance may increase the risk of irreparable damage to the product and may become a source of danger to the operator.

Please read the precautions, warnings and instructions in this manual carefully.

DANGER



If coolant is present in the hydraulic circuit to which the product is to be connected, it is mandatory to wear appropriate PPE, such as gloves and goggles, before carrying out any connection/disconnection operations.

Contact a doctor immediately in case of inhalation, skin or eye contact.

1.6 Residual risks

The product is safe in its operating conditions. There are, however, residual risks, listed in the list of dangers which are contained when the product is used correctly, following the instructions in the use and maintenance manual.

2. General information

The use and maintenance manual is an integral and essential part of the product and must be delivered to the user. It is important that it be well kept and carefully consulted as it contains specifications on the operation, maintenance and safety and product and the people and/or property that come into contact with it.

Please contact the Manufacturer with any concerns or questions about the indications provided in this manual.

The Manufacturer is excluded from any contractual and extra-contractual liability for damage caused by errors in the use and installation of the product, or in any case by failure to comply with the instructions given by the Manufacturer.

IMPORTANT



The Manufacturer reserves the right to modify the product and the related technical documentation without incurring any obligation towards third parties and does not accept responsibility for any errors or inaccuracies in the contents of this manual. This use and maintenance manual describes the characteristics of the standard product as of the date on which this publication was licensed for printing.

2.1 Manufacturer identification

Indel Webasto Marine Srl

Via Montefeltro, 118/c - Secchiano
47863 - Novafeltria (RN) - ITALY
www.indelwebastomarine.com

The Manufacturer is at your disposal for technical assistance or for the request of spare parts.

The use of original spare parts is recommended when replacing product parts. The Manufacturer declines all responsibility for any deterioration in product performance or for damage caused to the product due to the use of non-original parts.

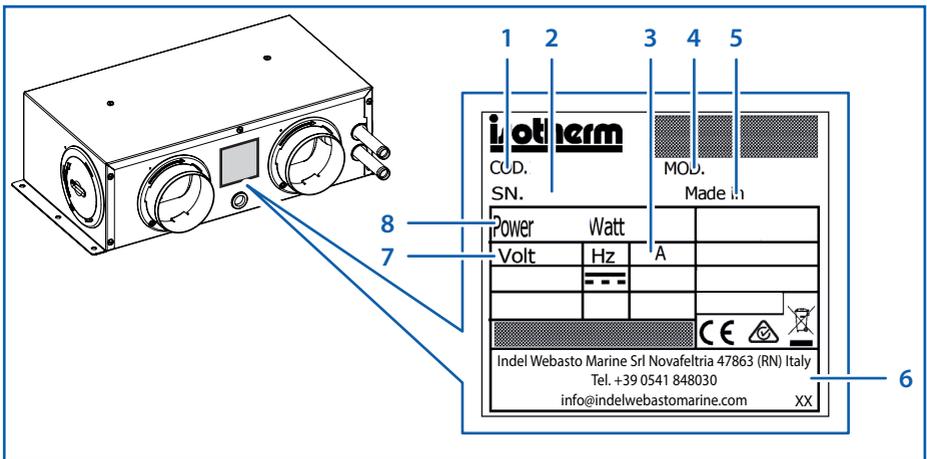
2.2 Product identification

This manual refers to the following machine:

AIR HEATER

Make sure that the product delivered to you is equipped with the identification plate shown below:

- 1) Code
- 2) Serial number
- 3) Rated current
- 4) Model
- 5) Country of production
- 6) Manufacturer identification
- 7) Working voltage
- 8) Rated power



It contains the model, serial number and all the technical data of the product necessary to request spare parts or to report technical problems to the service centre.

The products meet the requirements of the EMC directive and bears the CE marking.

2.3 Consulting the manual

Warnings or instructions considered critical or dangerous are highlighted with the following symbols for a better understanding of the information provided in this manual:

DANGER



Indicates information or a message which may seriously endanger the health and safety of operators if not strictly observed.

WARNING



Indicates information or a precaution that must be observed to avoid operations that may damage the product.

IMPORTANT



Indicates important information that must be observed to avoid operations that may damage the product, or any part of the text that you want to highlight.

OBLIGATION TO READ INSTRUCTIONS



The presence of this symbol mandates reading of instructions before putting the product into operation.

OBLIGATION TO DISCONNECT



The presence of this symbol mandates immediate disconnection of the product from the mains in case of failures.

OBLIGATION TO WEAR GLOVES



The presence of this symbol mandates each operator wear suitable protective gloves.

OBLIGATION TO WEAR SHOES



The presence of this symbol mandates each operator wear shoes designed to decrease the risk of injury.

OBLIGATION TO WEAR GOGGLES



The presence of this symbol requires each operator to wear eye protection equipment, such as safety goggles with side protection.

2.4 Operator qualification

In order to ensure that all operations carried out on the product are performed in safe conditions, the operators in charge must have the qualification and requirements to carry out the relative operations.

The operators are classified as follows:

USER



Unqualified operator, or rather without specific skills, able to carry out only simple tasks, i.e. use of the product through the use of the controls located on it and intervention for simple cleaning situations, following the instructions of this manual during use of the product.

Cannot perform operations intended for an installer.

INSTALLER



Operator qualified to carry out complex operations such as installation or maintenance. This is an operator who has been adequately trained through specific activities.

IMPORTANT



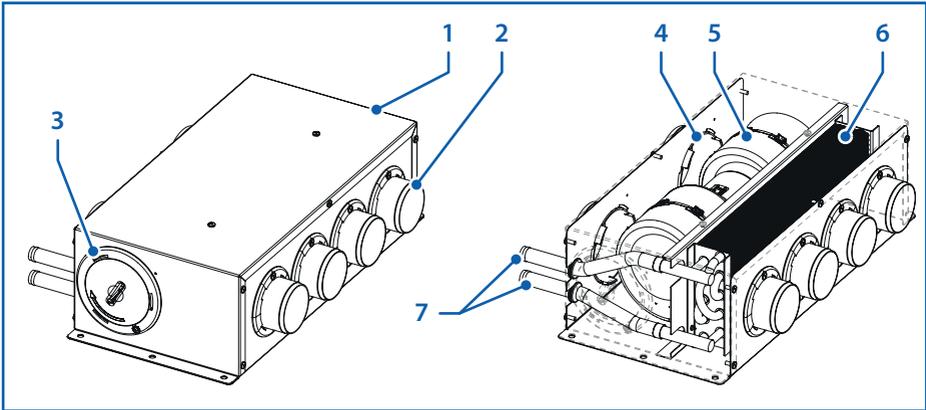
The pictogram at the beginning of each paragraph indicates the person authorised to carry out the operations described.

3. Product description

The product is designed to heat the environment in which it is installed by using the heat received from the hydraulic circuit to which it is connected (such as, for example, the engine's hydraulic circuit).

The air outlet windows are fitted with special inlet ports that allow the system to be customised through the use of hoses, nozzles and other equipment (not included with this product), thus conveying the air to the relevant areas.

3.1 Main components



- 1) Product body
- 2) Front windows (air outlet)
- 3) Side windows (air inlet)
- 4) Rear windows (air inlet)
- 5) Fan
- 6) Heat exchanger
- 7) Connections to the heat exchanger

Also supplied (not shown):

- Operating speed selector including connection cable to the product and to the battery poles
- 2 covers for the side and rear windows
- 2 inlet ports for the side and rear windows
- Fuse

3.2 Technical data

AIR HEATER		
Versions available	12 V	24 V
Power voltage (DC)	12 V	24 V
Heating capacity	10 kW / 34000 BTU/h	
Air flow rate	600 m ³ /h	620 m ³ /h
Maximum hydraulic circuit pressure	2.5 bar / 250 kPa	
Ventilation control	3 levels	
Absorption	125 W	
Product body material	Stainless steel AISI 304	
Exchanger pipe material	Copper	
Operating temperature	MIN -20 °C / MAX +80 °C	
Dimensions (not including cables)	450 (L) x 140 (H) x 320 (D) mm	
Weight	5.5 kg	

4. Installation

WARNING



In order to guarantee the unit's safe functionality, follow the indications included with in these instructions when installing and connecting the product.

WARNING



Any changes made to the product without the knowledge of the manufacturer will be the sole responsibility of those carrying out said changes. Changes made without the permission of the Manufacturer will void all warranties and may void the declaration of conformity to applicable directives.

The equipment must be installed on a stable stand and power sockets must be installed in the immediate vicinity.

All electrical connections must be positioned so that they are easily accessible, do not hinder the operator and cannot be accidentally damaged.

WARNING



If the power cable is damaged, it must be replaced by the Manufacturer, an Authorized Service Centre or a qualified technician.

The place where the product is to be installed must meet the following requirements:

- Do not expose this product to rain, splashing water or excessive moisture.
- Do not expose this product to heat sources such as radiators, heaters, stoves, or other appliances that produce heat, which could cause the product to exceed its maximum operating temperature.
- Do not expose the product to direct sunlight.
- Do not expose to a damp or wet environment.
- Do not expose the product to flammable materials.
- Location must not be a hazardous area.
- Do not expose the product to strong vibrations.

WARNING



The product must be installed in an area accessible for any maintenance.

WARNING



The product must be installed in power supply circuits whose sources are car/ caravan/RV batteries or boat batteries.

WARNING



If there is a battery charger, it must be connected to the battery and never directly to the product.

WARNING



Never short-circuit the poles of the power source.

WARNING



The product must be protected against indirect contact according to the regulations in force in the country in which it is used.

WARNING



Never touch any damaged or non-insulated electrical cables while the electrical power supply is enabled.

4.1 Packaging checks and removal



The operations indicated in this paragraph must be performed by a qualified installer. Always use PPE (Personal Protective Equipment) to avoid cutting risks.

After unpacking, check all parts for transport damage.

In case of complaints, please contact the supplier from whom the product was purchased or our customer service department.

IMPORTANT



The product and accessories are wrapped with buffer materials or fixed with some adhesive tape to avoid movement of the moving parts during transport: remove them all before installation. Always transport the product in a vertical position.

IMPORTANT



The packaging protects the product from transport damage. All materials used are environmentally friendly and recyclable. Please do your part: dispose of packaging in accordance with environmental regulations. Please ask your specialised dealer or your local authority for information on current disposal routes.

4.2 Ventilation



The operations indicated in this paragraph must be performed by a qualified installer. Always use PPE (Personal Protective Equipment) to avoid cutting risks.

It is very important that the product be well ventilated so that fresh air can enter through the windows provided (see figure on next page).

By using the inlet ports supplied for the air inlet windows, it is possible to position the fresh air intake points in areas away from the product itself.

For proper operation, always keep at least two air inlet windows open. Use the covers provided to close any unused windows.

WARNING



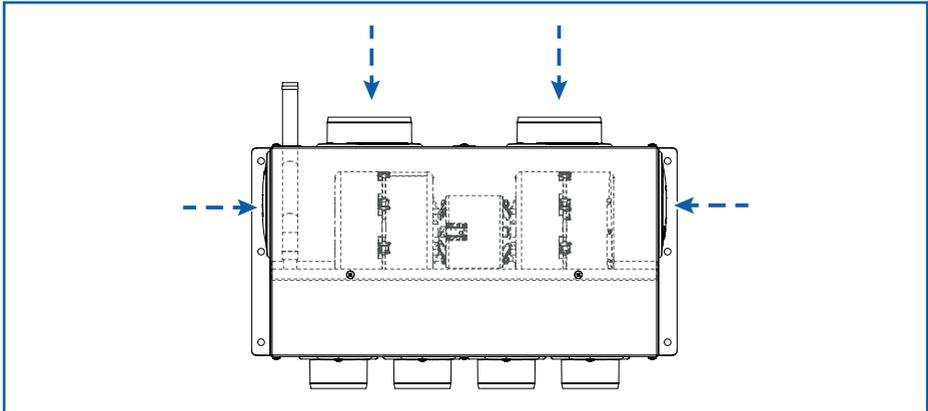
Never cover/obstruct all air inlet windows. At least two of these must always be open.

WARNING



Do not insert foreign objects into the product. Ensure that installation is done in such a way as to prevent the insertion of foreign objects inside the product, even accidentally, especially in the area where the fan is located.

To limit the entry of dust inside the product, it is advisable to install dust filters (not supplied) on the air inlet windows or at the ends of any pipes connected to these windows.



4.3 Positioning the device



The operations indicated in this paragraph must be performed by a qualified installer. Always use PPE (Personal Protective Equipment) to avoid cutting risks.

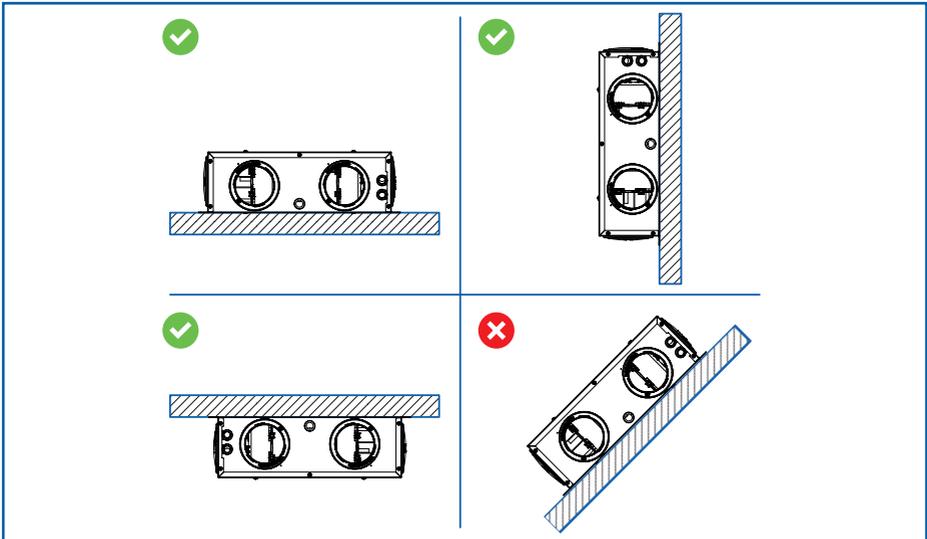
Before starting any installation work, ensure that the product is disconnected from the power supply and that it cannot be inadvertently reconnected.

The product is designed and manufactured for installation on any flat horizontal or vertical and sufficiently stable surface.

WARNING

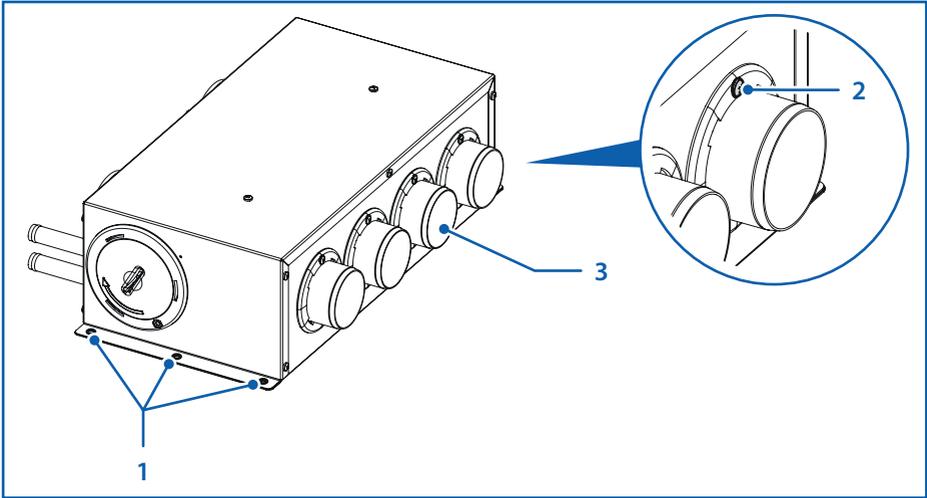


The product must always be installed in a horizontal or vertical position; other types of installation may impair correct functioning of the product.



Secure the product with appropriate screws (not supplied), using the 7 mm diameter holes **(1)**. Use all six available holes (3 on the right side and 3 on the left side) to fix the product correctly; do not use any other fixing method.

If necessary, the inlet ports **(3)** on the windows for hot air outlet can be removed by removing the relative fixing screws **(2)**. In this way, the product can be positioned flush with the wall of the room chosen for installation.



IMPORTANT



If you intend to use hoses, nozzles and other additional equipment (not part of the product supply) to bring the hot air to different points in the space to be heated, you must use the inlet ports supplied with the product.

4.4 Hydraulic connection



The operations indicated in this paragraph must be performed by a qualified installer. Always use PPE (Personal Protective Equipment) to avoid cutting risks and risks deriving from coolant.

DANGER



If coolant is present in the hydraulic circuit to which the product is to be connected, it is mandatory to wear appropriate PPE, such as gloves and goggles, before carrying out any operations.

DANGER



Connection to the hydraulic circuit must only be made with the product disconnected from the power supply, the vehicle engine switched off and after waiting for the hydraulic circuit to cool down.

WARNING



Make sure that the temperature of the coolant inside the circuit to which the product is connected does not exceed the maximum temperature indicated in the paragraph “3.2 Technical data” on page 13.

IMPORTANT



The product is not equipped with pumping systems and/or shut-off valves. Product connection to the hydraulic circuit must be made assessing all the details and meeting all the requirements for correct connection to this circuit.

IMPORTANT



The product can only be connected to hydraulic circuits that use a liquid compatible with contact with copper and therefore liquid that is not corrosive to copper piping.

Hoses of suitable quality, reinforced rubber hoses for heating systems with an internal diameter of 16 mm (5/8") must be used for connection.

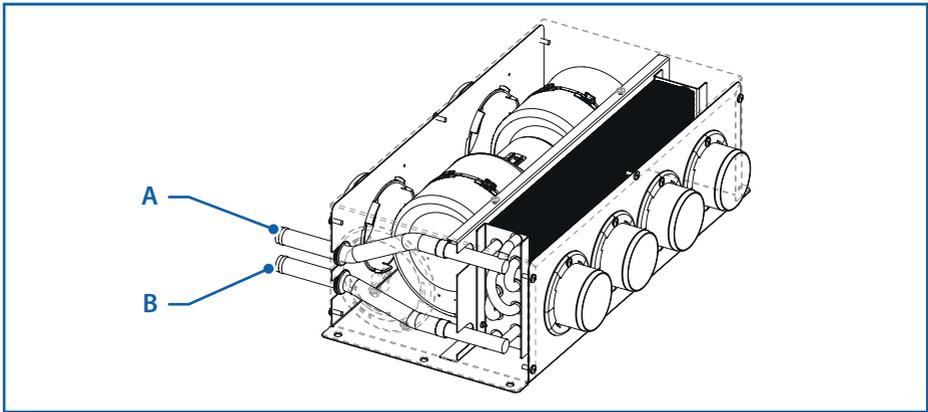
DANGER



Use pipes and materials that are suitable for the type of installation and, in particular, resistant to the temperatures that can be reached in the hydraulic circuit.

The product allows free customisation of the hydraulic connection to support all needs.

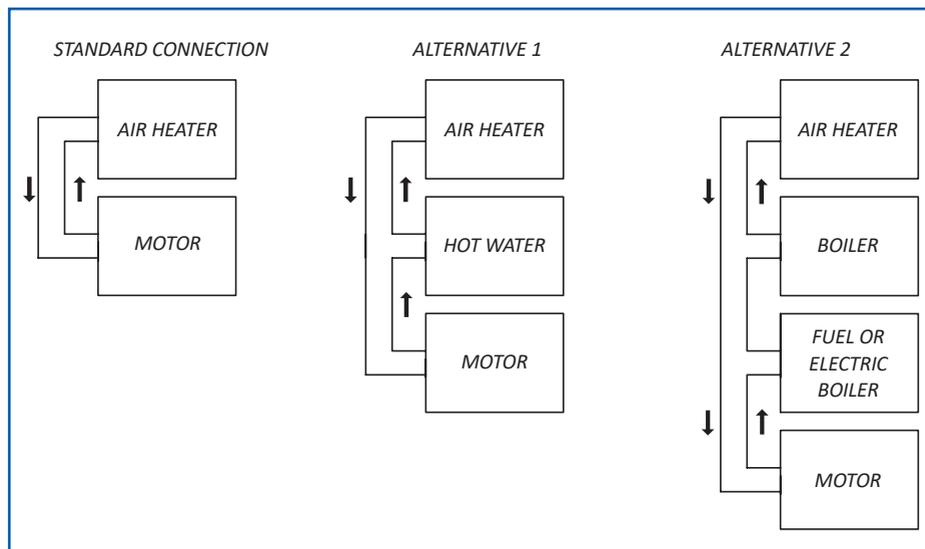
Depending on the type of installation, it is necessary to define which will be the liquid inlet and outlet between **(A)** and **(B)**.



4.4.1 Examples of hydraulic connections

The product allows for a wide range of customised installations according to the requirements of each application.

Below are some example diagrams of possible installations in keeping with the product.



4.5 Electrical connection



The operations indicated in this paragraph must be performed by a qualified installer. Always use PPE (Personal Protective Equipment) to avoid cutting risks.

In order to connect the unit to the vehicle's electrical system, proceed as follows:

- Before turning on the product, check to make sure that the voltage of the electrical system and/or battery complies with that which is indicated on the unit's data plate.
- Connect the product directly to the battery or to the relative main switch and make sure that the system is equipped with an electric device that's capable of protecting the circuit against possible overcurrents.
- Insert the supplied fuse or an equivalent fuse upstream of the product (see table below). Connect the red wire to the electrical system's positive terminal, and connect the black wire to the negative terminal. Use a pressed lug terminal that is suitable for the cable's size.

Model	12Vdc	24Vdc
AIR HEATER	15A	7.5A

- A separate switch that simultaneously disconnects the power cables must be installed upstream from the product.

WARNING



The supplied fuse or an equivalent fuse must be installed upstream of the product.

WARNING



If there is a battery charger, it must be connected to the battery and never directly to the product.

IMPORTANT



All wiring diagrams can be found in paragraph 10 on page 33.

Connect the operating speed selector to the product using the supplied cables with clamps. The length of the cables connected to the selector allows the installer to position the product in the desired location and then bring and install the speed selector on the vehicle's dashboard.

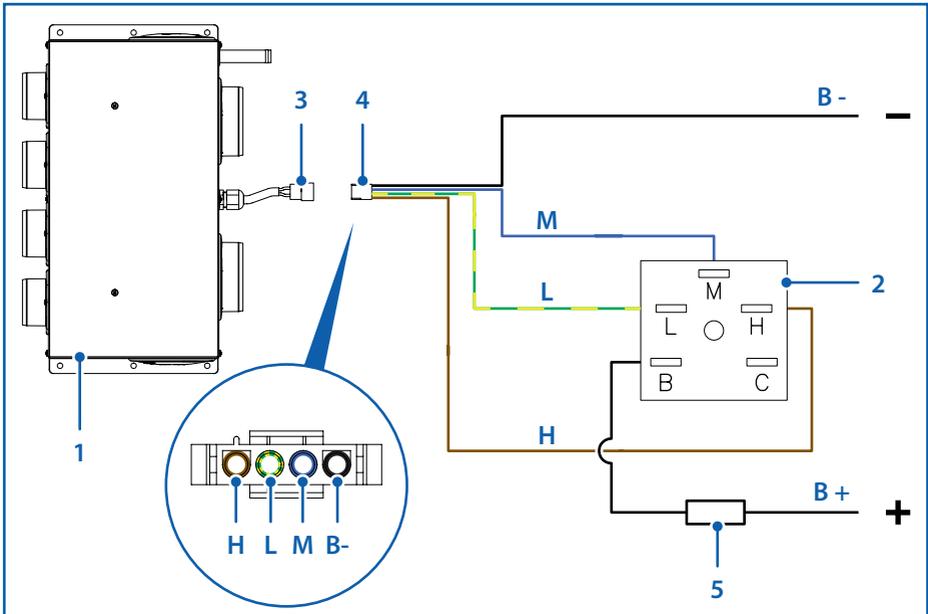
WARNING



The operating speed selector cables of the product are supplied already connected to it by the Manufacturer.

If they have to be disconnected for installation purposes, make the correct connection as shown in the wiring diagram in the following paragraph "10. Attachments" on page 33.

Contact the Manufacturer with any concerns or questions.



Ref.	Description
1	Product
2	Selector
3	Female connector
4	Male connector
5	Fuse
L	Yellow-green cable
M	Blue cable
H	Brown cable
B -	Negative power cable pole (-); this cable is easily identifiable by its loop shape at the end
B +	Positive power cable pole (+)

5. Usage instructions

WARNING



If you notice any irregular operation, first of all consult the "TROUBLESHOOTING" section later in this manual. It will help you solve problems that are not caused by faults and can be resolved easily.

In any other case, do not try to repair the product yourself but contact qualified personnel or your dealer to avoid possible damage or danger, including to yourself. Any unauthorised tampering will void the product warranty.

WARNING



Check for any visible damage on the refrigerator's mechanical and electrical components prior to use.

Before using the product:

- Switch off the product if it is on.
- Make sure that all packaging materials have been removed.
- Clean only the outside cover of the product with a soft damp cloth.
- Connect the product to the designated hydraulic circuit as indicated in the relevant section.
- Connect the product to the power supply as indicated in the relative paragraph.

5.1 Switching on



The operations indicated in this paragraph can be performed by a user.

To switch on the product, rotate the speed setting selector from the "0" position to a position corresponding to the desired speed.

5.2 Usage recommendations

WARNING

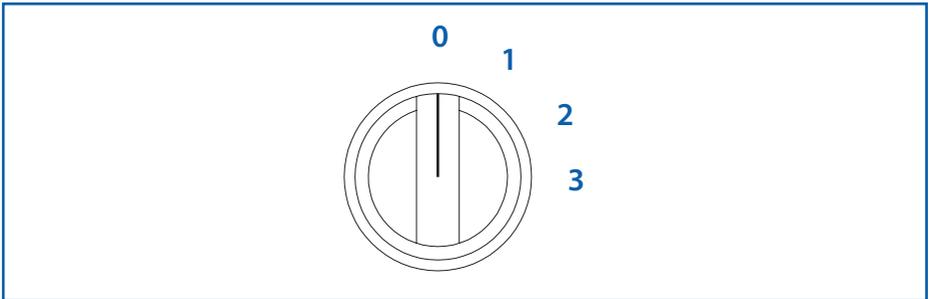


Never obstruct the product's ventilation system.

- The electrical system must be kept in good condition. Inspect the batteries and check the charge levels regularly. Always use a starter battery separate from the motor.

The product has three different operating speeds that can be set using the selector provided:

Position	Function
0	Product shut-down
1	Low speed (fan at minimum operation)
2	Medium speed (fan at medium operation)
3	High speed (fan at maximum operation)



5.3 Shut-down



The operations indicated in this paragraph can be performed by a user.

To switch off the product, rotate the speed selector to the “0” position.
Always switch off the product before storing the vehicle on which it is installed.

5.4 Putting out of service



The operations indicated in this paragraph must be performed by a qualified installer. Always use PPE (Personal Protective Equipment) to avoid cutting risks and risks deriving from coolant.

If you will not be using the product for a long period of time:

- Disconnect the product from the power supply.
- Isolate the product from sources of electricity, heat and bad weather, cover it so that dust and/or splashes of any kind do not affect the product.

DANGER



Always use suitable PPE to protect against contact with liquid inside the hydraulic circuit.

NOTE



Depending on the type and structure of the hydraulic circuit, when taking it out of service consider the risk of the liquid inside the pipes freezing and, if necessary, remove all the liquid present or carry out the appropriate activities to maintain it in an optimal state.

WARNING



Freezing of the liquid inside the pipes can lead to irreparable damage in the product.

6. Maintenance

WARNING



All maintenance and replacement operations, disposal of the power circuit upstream of the product and of the power source must be handled by qualified personnel.

This chapter contains a complete list of requirements and procedures related to maintenance of this product. Good maintenance includes periodic operations that include various types of cleaning.

If you do not understand any of the information or procedures contained in this chapter, please contact the Manufacturer for clarification before proceeding.

If product maintenance is carried out in a manner that does not comply with the instructions supplied, with non-original spare parts or without written authorisation from the Manufacturer, or in any case in such a way as to compromise its conditions or modify its characteristics, the Manufacturer will be relieved of any responsibility regarding the safety of persons or faulty operation of the product.

Any unauthorised modifications will invalidate the contractually defined warranty.

NOTE



Do not perform any kind of intervention, modification or repair other than those indicated in this manual.

DANGER



Always disconnect the product power supply before carrying out any work on it in order to avoid damage and health hazards.

6.1 Routine maintenance

6.1.1 Cleaning



The operations indicated in this paragraph can be performed by a user. Always use PPE (Personal Protective Equipment) to avoid cutting risks.

It is important to clean the product regularly for optimum performance:

- Switch off the product.
- Thoroughly clean the outside of the product with a soft microfibre cloth.
- Thoroughly clean the windows of the product where hot air escapes and fresh air enters.
- Turn the product back on.

NOTE



The presence of dust can block the flow of hot air out and fresh air in and impair proper operation of the product. Therefore, frequently remove all dust in the product windows with the use of, for example, a soft microfibre cloth or a Hoover.

WARNING



Do not use abrasive cleaners, metal abrasive sponges or hard brushes. These may damage the product.
Do not clean the product with aggressive, caustic or soda-based soaps or cleaners.

WARNING



Do not expose the product to water.

6.2 Special maintenance

Special maintenance operations are those carried out following breakdowns or malfunctions, which may involve the replacement of certain components by specialised and authorised technical personnel.

WARNING



All special maintenance operations must be carried out by technical personnel authorised by the Manufacturer.

7. Troubleshooting

All work on electrical parts or electrical connections must be carried out by qualified and authorised personnel.

DANGER



Disconnect electrical power before performing any operations on electrical parts or on electrical connections.

Defect	Possible cause	Intervention
The fuse blows.	The wrong fuse is being used.	Use a correctly sized fuse.
	Fan short-circuit.	Replace the fan.
The fan is noisier than normal.	Fan damaged.	Make sure that there are no foreign bodies inside the fan. Check the conditions of the fan blades; if one of the blades is broken, replace the fan.
	Check for the presence of voltage.	Check for the presence of a current using a tester.
Fan not working.	Presence of foreign bodies inside the product or in the fan.	Make sure that there is nothing preventing the fan from rotating.
	Fan defective.	If there are no foreign bodies and the fan is powered, replace the fan.
	Check that the fuse is intact.	See previous instructions. Replace the fuse.
	Check continuity on the speed selector.	If there is no continuity between the two contacts on the speed selector, replace the speed selector.

For more complicated defects requiring specialised assistance, please contact IWM or an Authorised Distributor.

8. Warnings for disposal

This product complies with the Directive 2012/19/EU regarding waste electrical and electronic equipment (WEEE).

The product's proper disposal is essential to preventing negative consequences for the environment and human health.



The symbol shown on the product, the packaging and/or the accompanying documentation indicates that the product should not be disposed of as household waste. The product must be taken to an authorized collection centre for the recycling of electrical and electronic equipment. The product must be disposed of in compliance with the current local environmental regulations regarding waste disposal.

For more information regarding the disposal, recycling and reuse of the product, please contact your local authorities, your local waste collection service or the retailer/distributor from whom the product was purchased.

Packaging is manufactured from recyclable material. It bears the recycling symbol and must be disposed of at an appropriate collection centre.

The symbol  indicates that the product complies with all European Union provisions provided for its use.

9. Warranty

The Indel Webasto Marine warranty complies with EU Directive 2019/771.

Validity period

The product warranty is valid for 2 years with regard to the cost of labour for repair or replacement, but only if carried out by IWM network, and therefore authorised, service centres.

For specific conditions of validity in the USA, please contact Indel Webasto Marine USA.

The validity period starts from:

- 1) The date of sale indicated on the product invoice or sales receipt.
- 2) The date of the invoice or registration document of the first sale of the vehicle in which it is installed, if installed by the Manufacturer of the vehicle.
- 3) In the absence of one of the above documents, the week of production indicated in the S/N (serial number).

Replacement of a product or component does not change the validity period.

The warranty covers:

- Replacement or repair of the product or of one or more components acknowledged to be faulty due to manufacturing defects.
- Breakage or malfunction of components under warranty validity despite proven proper installation and proper use.
- Labour and transport according to the operating methods described below.
- Costs for shipping the replacement product (not including charges for customs clearance).

The warranty does not cover defects, damage or malfunctions caused by:

- Negligence, neglect or improper use
- Incorrect installation or incautious handling
- Insufficient ventilation
- Incorrect electrical connection
- Undersized wiring
- Improper maintenance or maintenance performed by unauthorised personnel
- Failure to follow the instructions contained in this manual
- Transport damage
- Charges for customs clearance
- Objects subject to wear
- Professional use
- Damage caused by weathering
- Costs for dismantling and/or reassembling cabinets or other structures

Essential information for determining whether the case is covered by the warranty:

- Product code (indicated on the product label)
- S/N (serial number) (indicated on the product label)
- Invoice or sales receipt (or possibly registration document, see above in Validity period section)
- Detailed description of the defect (Attach photos if possible)
- Description of installation with particular attention to ventilation and wiring (Attach photos if possible)
- (If it is determined that the case is not covered under warranty, the customer must pay all expenses for repairs, replacements, labour, travel of persons and transport. IWM is not required to bear any expense.)

Operating procedures to be applied once it is ascertained that the case is covered by warranty:

Warranty repair of products installed in boats must be performed exclusively by service centres (CAT) that are part of the IWM network (see list at www.indelwebastomarine.com). IWM does not cover costs for service performed by others.

For products installed on boats, an IWM authorised CAT technician will come to the boat if it is located at a distance of maximum 100km from the CAT. IWM shall cover the cost of this transfer. If the boat is over 100km away, the customer can choose whether to pay the cost of the technician's transfer (in this case paying the technician directly), or to move the boat closer.

To locate the nearest service point and for travel coverage terms in the USA, please contact Indel Webasto Marine USA. IWM does not reimburse any expenses for spare parts purchased elsewhere.

Products installed on Recreational vehicles (RV):

Warranty repairs must be performed exclusively by service centres that are part of the Webasto network.

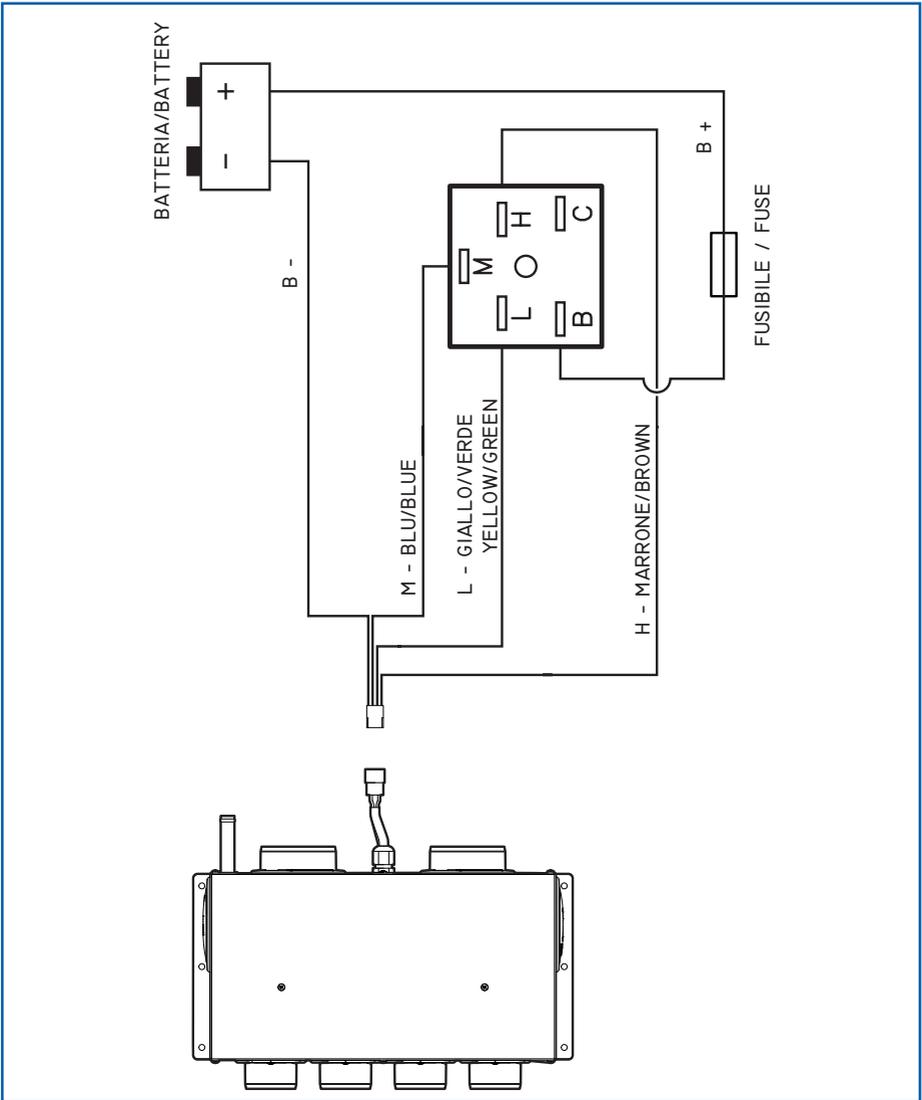
The vehicle must be brought to the service centre.

Find the service centre nearest to you at www.webasto.com

For the condition of products installed in recreational vehicles in the USA, please contact Indel Webasto Marine USA.

10. Attachments

10.1 Wiring diagram





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