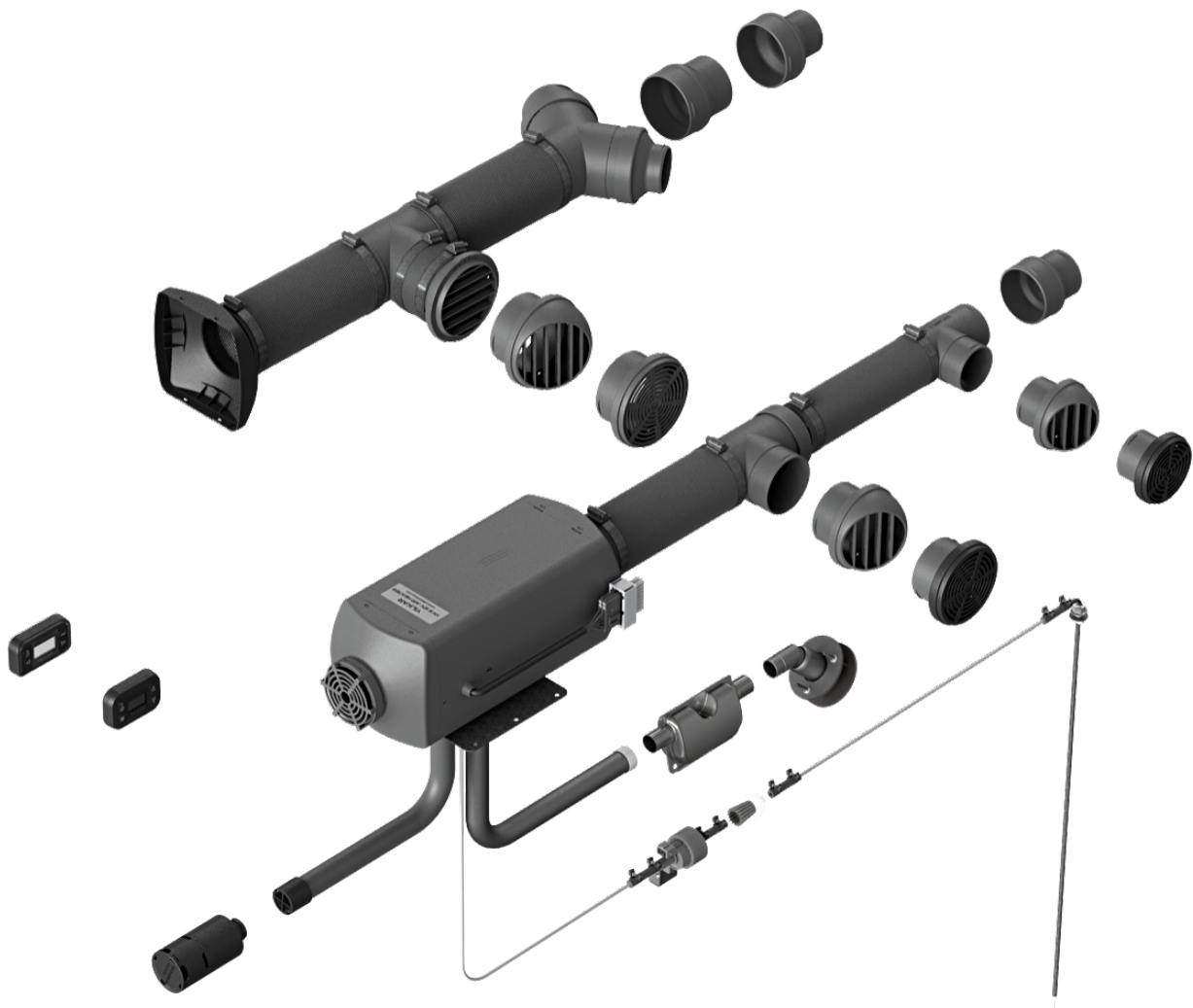


Installation Instructions

YH 5 Air Heater

YH 2 Air Heater



Contents

1. Introduction	2
1.1 Warranty and Liability	3
2. Safety and Legal regulations	3
2.1 Extract from ECE-R 122 Part 1 and ANNEX 7	3
3. Overview	5
4. Yilkar Air Heater Installation	6
4.1 Positioning the heater	6
4.2 Hot Air Line	8
4.3 Fuel Supply Line	9
4.3.1 Overview	9
4.3.2 Fuel Tank Connection	10
4.3.3 Fuel Hose and Clamps Connection	11
4.3.4 Fuel Dosing Pump Connection	12
4.4 Combustion Air Supply Line	13
4.5 Exhaust Outlet Line	14
4.6 Electrical Connection	16
4.6.1 Control Panel Installation	16
4.6.2 Cable Connection and Circuit Diagram	17
4.6.3 Change Set Mode	20
5. First Operation of the Heater	21
6. Error codes	22
7. Technical information	29

1. Introduction

Please read these installation instructions carefully to complete the installation of the Yılkar heater. If you have additional questions regarding assembly or operation, please contact your specialist dealer or Yılkar service. The experts here will gladly provide you with reliable and expert knowledge.

Please keep these installation instructions carefully.
We wish you a good trip.

This manual is part of the device and contains information for the user to use the device safely. The installation instruction describes all the requirements for installation.

If you have any questions, please contact service and / or customer service.

1.1 Warranty and Liability

Yılkar accepts no liability for defects, damage and damages caused by non-compliance with the installation instructions and user manual, as well as the warnings provided within them. This disclaimer applies especially to:

- Improper use
- Repairs not carried out by a Yılkar service workshop
- Use of non-genuine parts
- Conversion of the unit without permission from Yılkar

Type approvals are available for the YH-2 and YH-5 heaters by **ECE-R 10 (EMC) and ECE-R 122 (Heater Directive)**.

Failure to follow the installation instructions and the notes it contains will cause Yılkar to reject all of its responsibilities. Therefore, it will cause the type approval of Yılkar air heaters and thus the override of Homologation / ECE licenses.

2. Safety and Legal regulations



Explosion hazard in environments with flammable vapors, flammable gas and hazardous material (eg gas stations, storage tanks, fuel, coal, wood or grain tanks)

Do not put the heater in the stream !!

WARNING

Inhalation of toxic gases in enclosed spaces can cause **poisoning and asphyxiation**. The heater should **never be operated in enclosed spaces** such as garages or workshops without exhaust gas discharge !!

Fire hazard due to flammable materials or liquids in the hot air stream (dry type heater).

Do not block hot air flow !!

2.1 Extract from ECE-R 122 Part 1 and ANNEX 7

Quote Start;

Episode 1

5.3 Vehicle Mounting Requirements for Internal Combustion Heaters and Electric Heaters

5.3.1 Scope

5.3.1.1 According to paragraph 5.3.1.2, the heaters shall be installed by the requirements of paragraph 5.3.

5.3.1.2 Vehicles of category O with a liquid fuel heater shall be considered following the requirements of paragraph 5.3.

5.3.2 Positioning the heater

5.3.2.1 Body parts and other components in the vicinity of the heater shall be protected from excessive heat and the possibility of contamination of fuel or oil.

5.3.2.2 The heater does not present a risk of fire, even in the event of overheating. This condition is deemed to have been fulfilled if the installation maintains a sufficient distance to all parts and proper ventilation, using fire-resistant materials or the use of heat shields.

5.3.2.3 On vehicles M2 and M3, the combustion heater must not be installed in the passenger compartment. However, it can be installed in an effectively closed manner, which also complies with the requirements of paragraph 5.3.2.2.

5.3.2.4 The label specified in Annex 7, paragraph 4, or in a copy, shall be placed so that it can be easily read when the combustion heater is installed in the vehicle.

5.3.2.5 The heater shall be positioned in such a way that all reasonable precautions are taken to minimize the risk of injury and damage to personal property.

5.3.3 Fuel supply

5.3.3.1 The fuel tank shall not be installed in the passenger compartment and shall be fitted with an effective cover to prevent fuel spillage.

5.3.3.2 For liquid fuel heaters where a separate supply from the vehicle is provided, the type of fuel and the filling point shall be clearly labeled.

5.3.3.3 A warning is stating that the heater must be switched off before refueling must be affixed to the refueling point. In addition, appropriate instruction must be included in the manufacturer's instruction manual.

5.3.4 Exhaust system

5.3.4.1 Exhaust outlet; the aerators of the vehicle must be installed in such a way as to prevent emissions from entering the vehicle through heated air intakes or opening windows.

5.3.5 Combustion air intake

5.3.5.1 The air for the combustion chamber of the heater shall not be drawn from the passenger compartment of the vehicle.

5.3.5.2 The air intake shall be installed or protected in such a way that it is unlikely that trash or baggage will be blocked.

5.3.6 Heating air intake

5.3.6.1 The heating air supply may be fresh or recirculated air and shall be drawn from a clean area where there is no possibility of contamination by the exhaust fumes emitted by the combustion heater or other vehicle source.

5.3.6.2 The inlet duct shall be protected by a network or other suitable parts.

5.3.7 Heating air outlet

5.3.7.1 Any duct used to direct hot air from inside the vehicle shall be positioned or protected so as not to cause injury or damage when touched.

5.3.7.2 The air outlet must be so positioned or protected that there is no possibility of clogging with garbage or luggage.

5.3.8 Automatic control of the heating system

5.3.8.1 The heating system must be switched off automatically and the fuel supply must be stopped within five seconds after the vehicle has stopped. If a manual device is already activated, the heating system can continue to operate.

ANNEX 7 ADDITIONAL REQUIREMENTS FOR COMBUSTION HEATERS

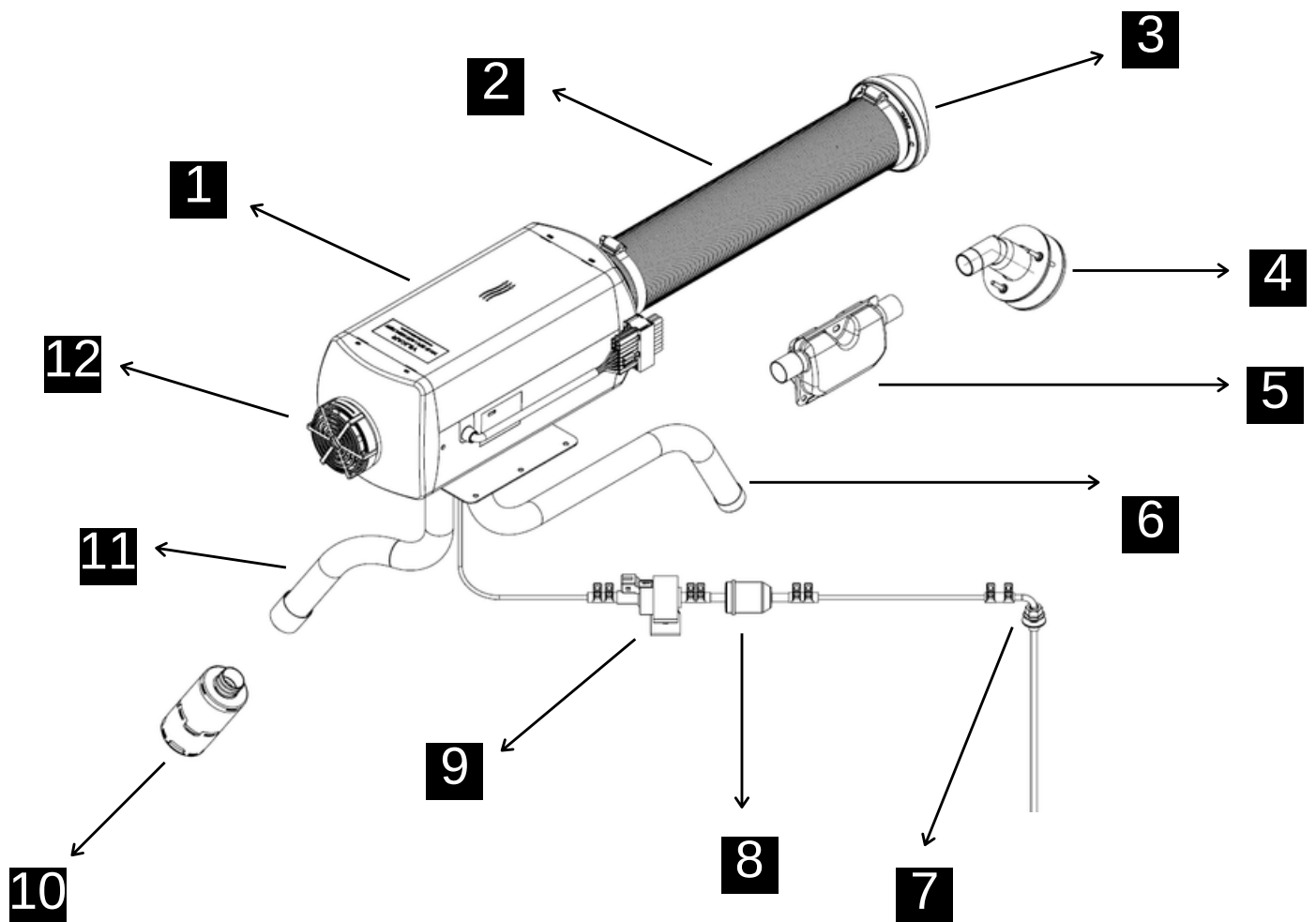
7. Warning light

7.1 A clearly visible description in the operator's field of vision shall be informed when the combustion heater is to be switched on or off.

End of quote

NOTE: Contrary to 5.3.2.3, the heater must not be installed in the passenger compartment of M1 and N class vehicles. However, it can be effectively installed and used in insulation, which also complies with the requirements of paragraph 5.3.2.2.

3. Overview



1 Air Heater

2 Hot air outlet hose

3 Hot air outlet grille

4 Marine exhaust apparatus (accessory)

5 Exhaust silencer (accessory)

6 Exhaust outlet hose

7 Fuel suction hose

8 Fuel filter

9 Fuel dosing pump

10 Combustion air silencer (accessory)

11 Combustion air hose

12 Cold air intake vent

4. Yilkar Air Heater Installation

4.1 Positioning the heater

The heater can be installed both inside and outside the vehicle. When using the vehicle in normal road traffic, the heater can only be stopped with ignition protection if it is located within the reach of the driver.

If installed outside, ensure that the heater is in a position where **it must be protected from splashed water and other factors (mud, pebble, etc.)**. If the heater passes through a water hazard during the licensing of the vehicle, it should be mounted so that no water can enter it; **needs to be protected**.

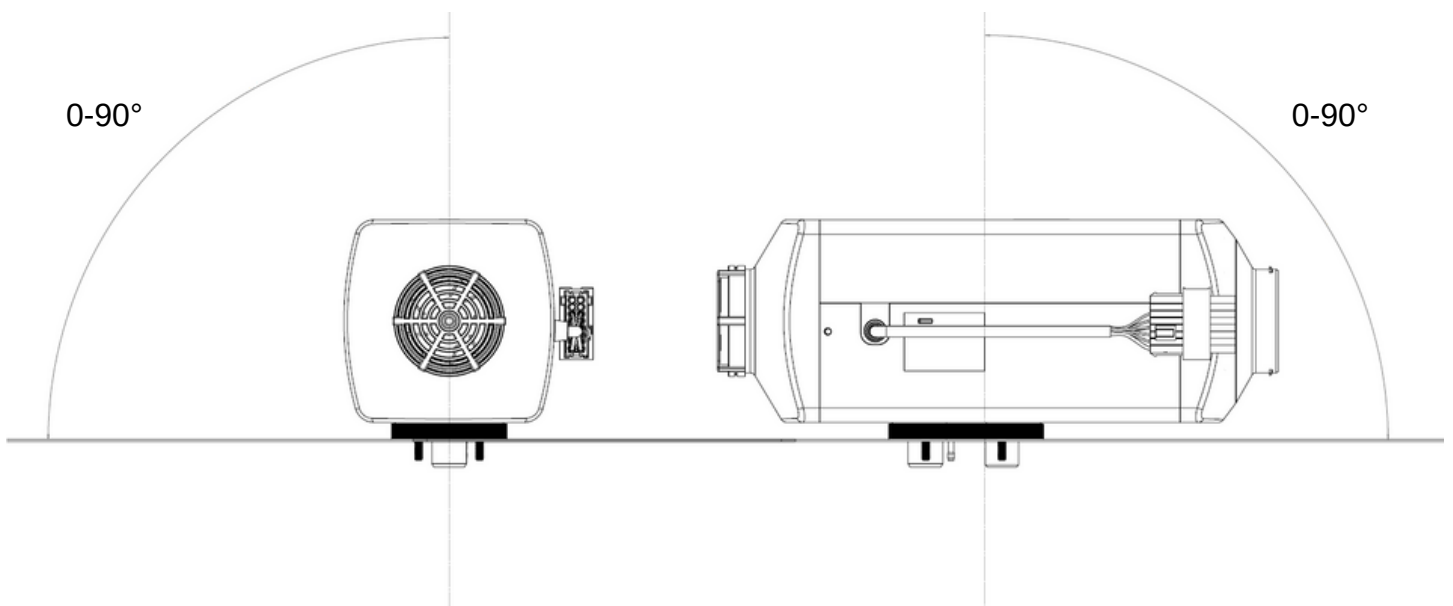


The seal

Combustion air inlet, exhaust outlet and fuel pipe outlet; **if the heater is installed indoors, it must be turned off.**

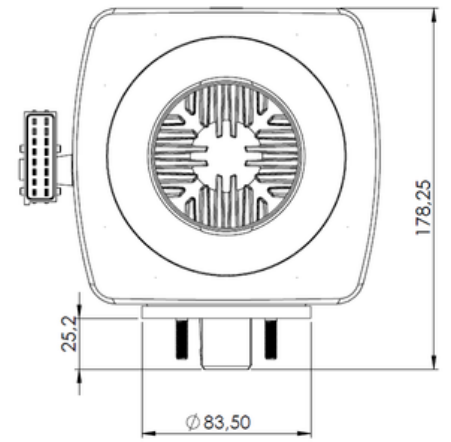
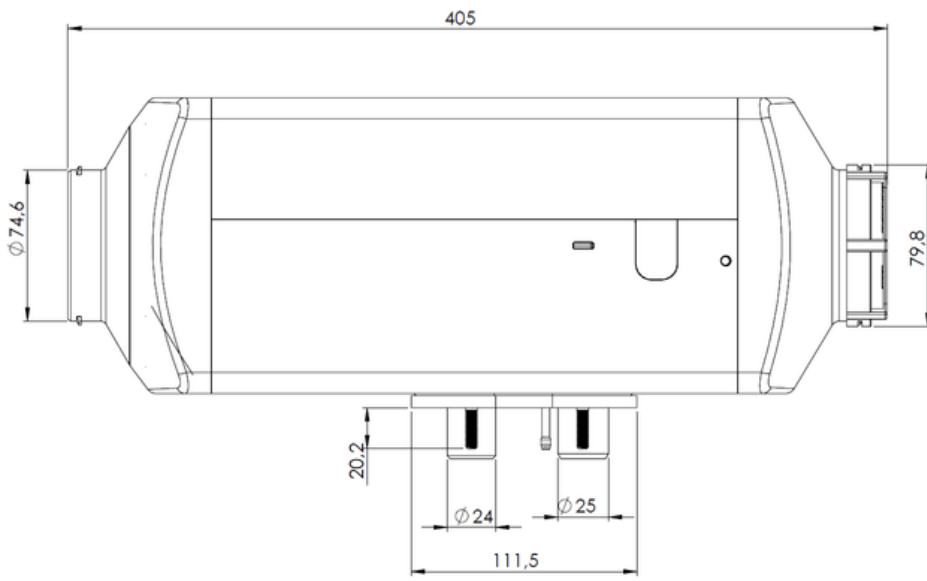
The seal designed and supplied for this purpose should be used.

Permitted mounting positions

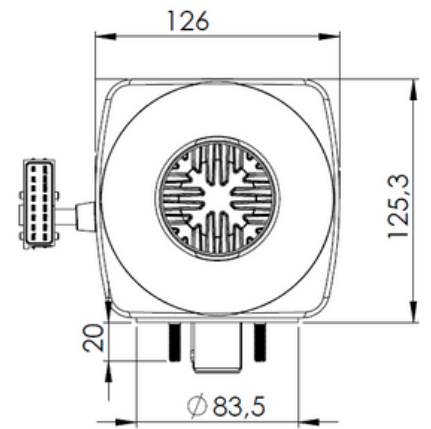
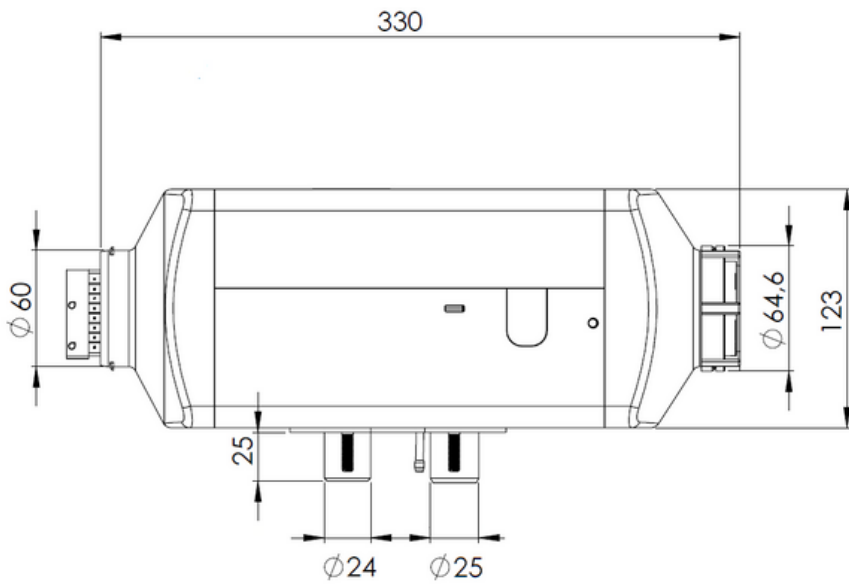


Installation of the heater should preferably be straight.

However, it can optionally be mounted within the limits mentioned above.



YH 5 Air Heater

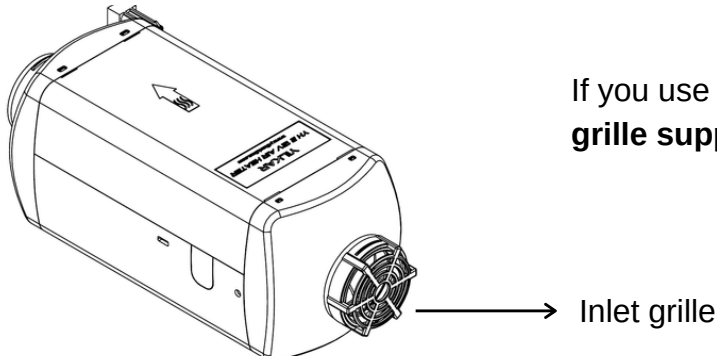


YH 2 Air Heater

4.2 Hot Air Line

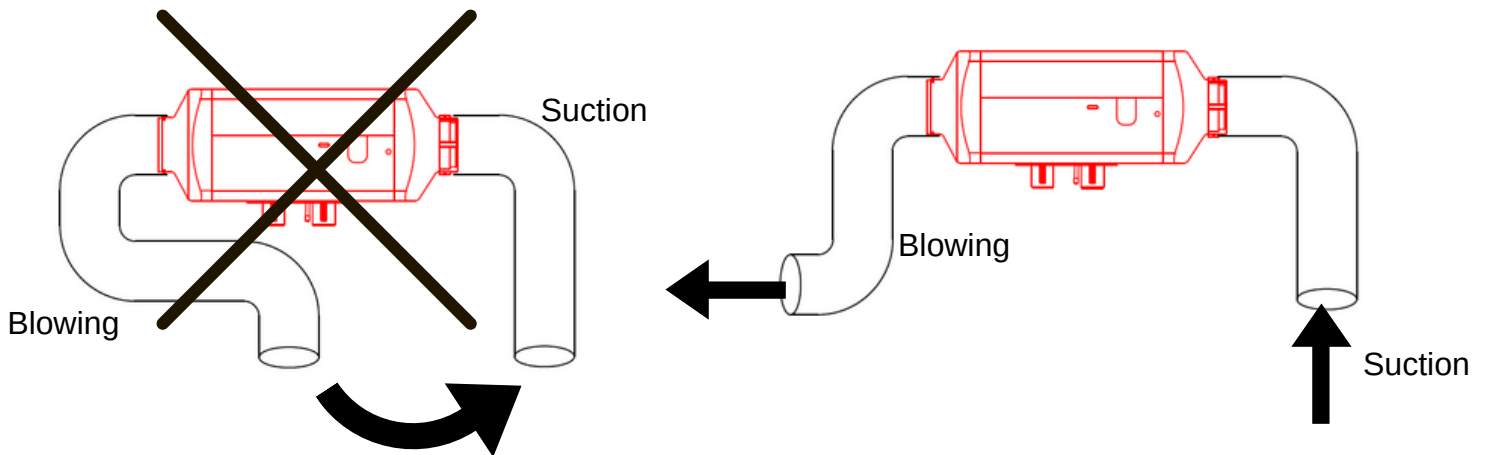
The heater should **not be integrated into the vehicle's heating system.**

On the suction side of the heater, there is a temperature sensor that allows the vehicle to be heated up to the desired temperature and keep it at this temperature.



If you use the heater without a hot air inlet hose, **the air inlet grille supplied with the heater should always be used.**

The hot air line circuit of the heater is for installation **independent from the blowing section and the suction section.**



Materials that can permanently withstand a **minimum of 130 ° C for the hot air line section** can be used.

In vehicles used for carrying people, the hot air line blowing section **must be directed at least 20 cm away from all parts.**

The heaters automatically control the internal temperature rise each time it is started. If this is above the specified limits, initialization is canceled and E16 error messages are displayed. The flow resistance of the connected hot air system must be reduced to ensure constant operation of the heater.

If the heater is located in a mounting box, the vent hole must be closed so that no hot air can enter the mounting box.

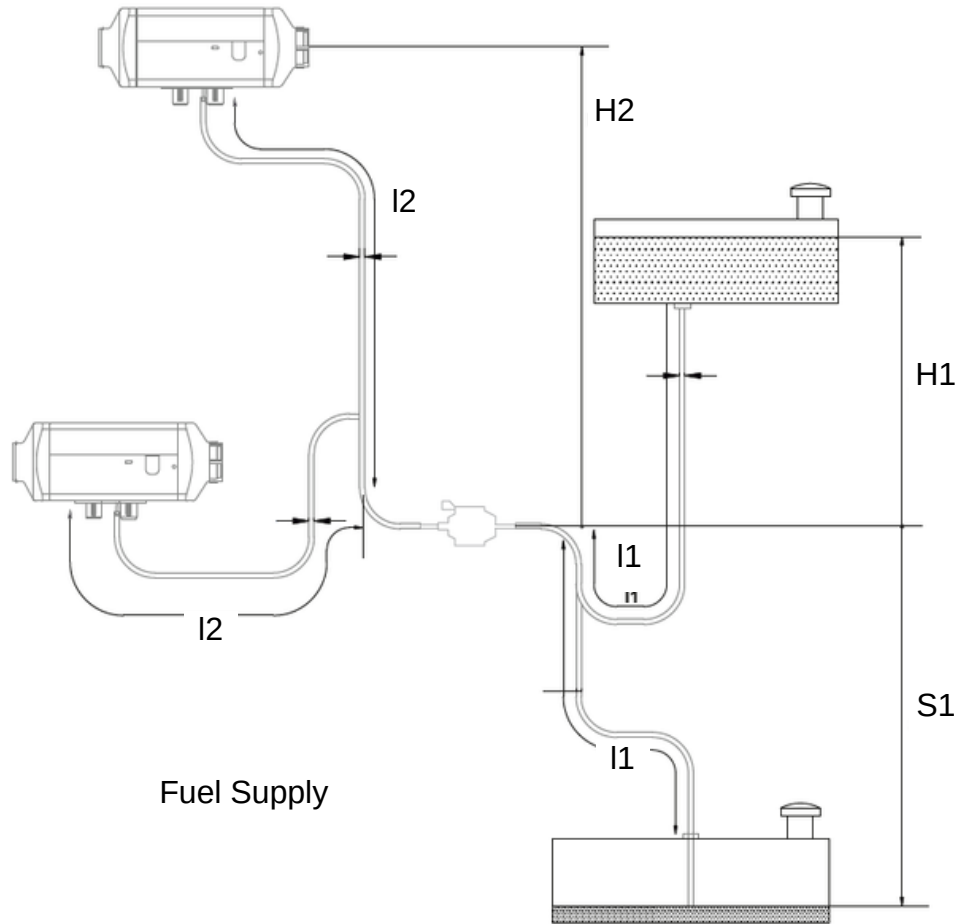
4.3 Fuel Supply Line

4.3.1 Overview

Fuel is taken from **the vehicle tank or an external fuel tank.**

During the installation, **the effects of pressure** should be considered.

Determine the tank and heater position **according to the diagram on the side and the table below.**



Input side

D1: Internal diameter of the fuel line = 2 mm.

H1: Fuel level (tank above fuel pump) [m]

S1: Fuel level (tank under the fuel pump [m]

I1: Length of the fuel line [m]

Pressure side

D2: The inner diameter of the fuel line is 2 mm.

H2: Height difference between heater and fuel pump (heater on top of fuel pump) [m]

S2: Height difference between heater and fuel pump (heater under fuel pump) [m]

I2: Length of the fuel line [m]

Parameters

Values

Inlet pipe length I1 [m]

max. 5 [m]

Pressure pipe length I2 [m]

max. 10[m]

Inlet pipe length I1 + pressure pipe length I2 [m]

max. 12[m]

Height difference between heater and fuel pump (heater on top of fuel pump) H2 [m]

max. 3[m]

Height difference between heater and fuel pump (heater under fuel pump) S2 [m]

max. 1[m]

4.3.2 Fuel Tank Connection

Only PA 12 plasticized, light and temperature-resistant steel, copper and plastic pipes according to DIN 73378 can be used for fuel lines.

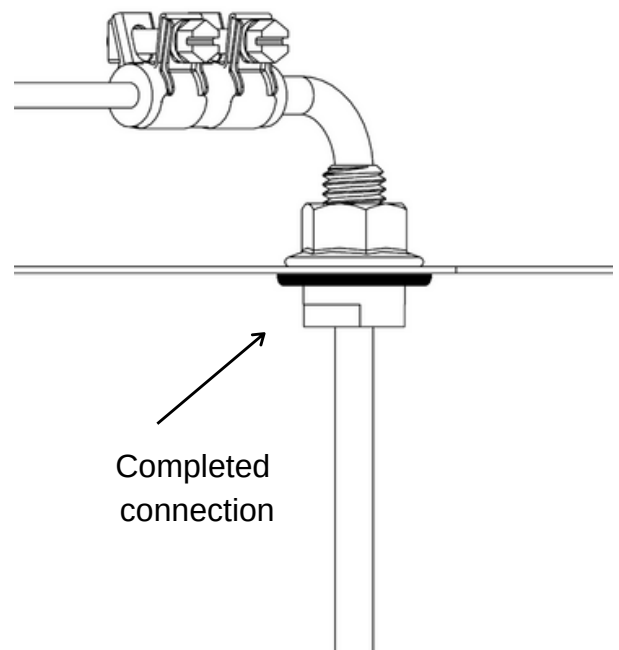
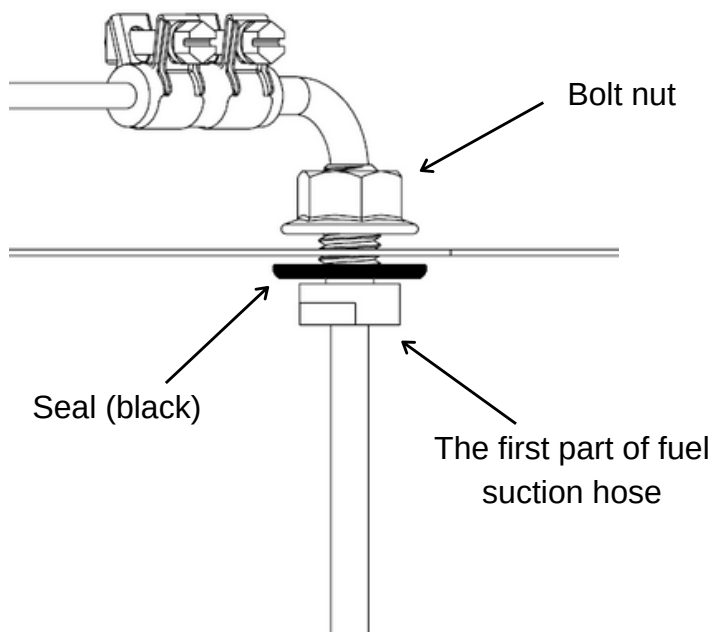
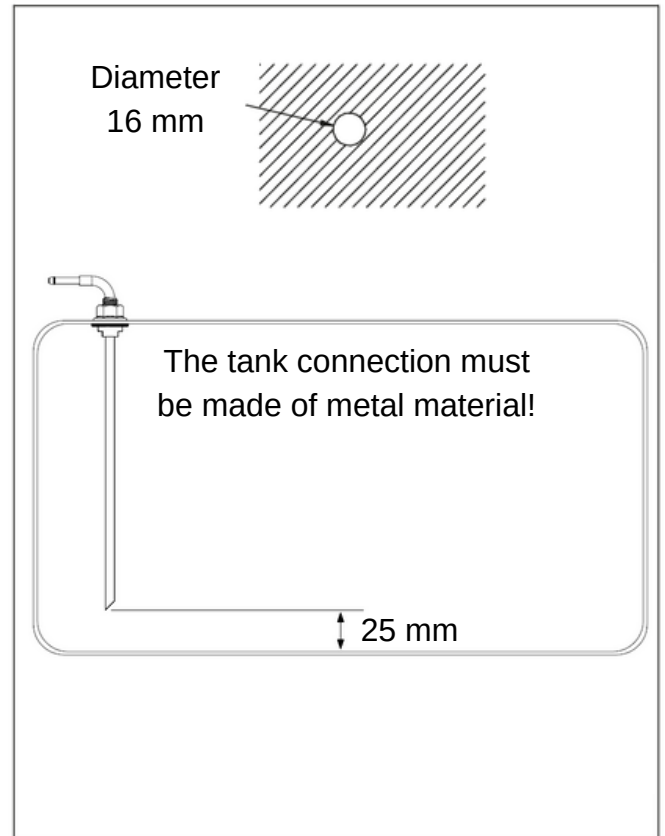
16 mm diameter hole must be drilled in order to place the fuel draw hose into the tank.

This fuel suction hose is then **guided into the tank through this hole**.

Important! The end of the fuel hose should be adjusted 25 mm above the bottom of the tank.

After the first part of the fuel pipe passes, **the seal is also sent inside**.

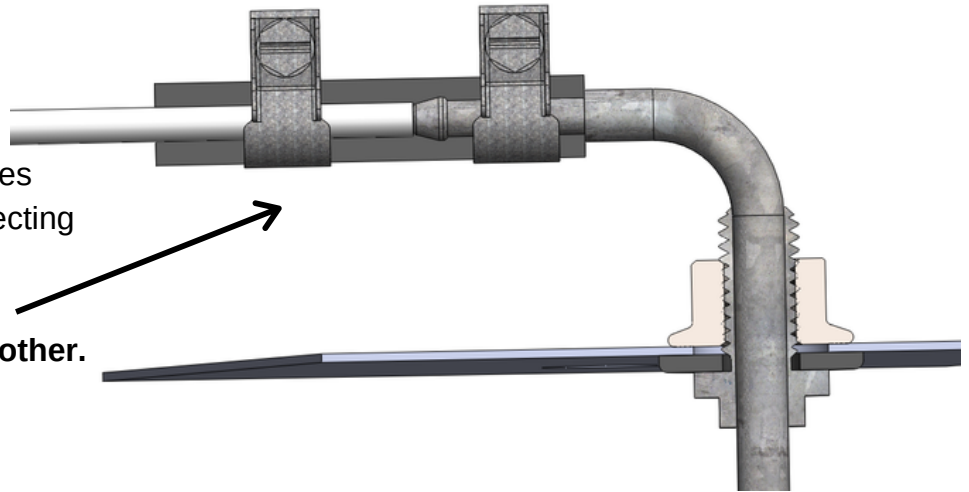
Then the bolt nut is placed and tightened. Thus, the connection of the fuel hose to the tank is completed.



4.3.3 Fuel Hose and Clamps Connection

There should be **no gaps** in the hoses between the connection when connecting the lines.

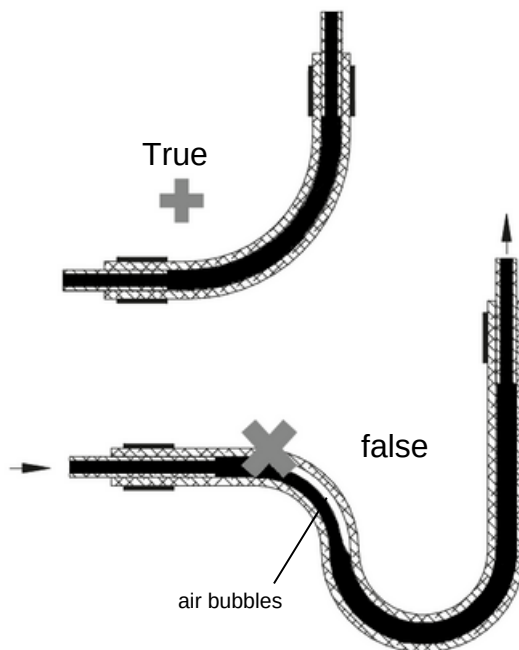
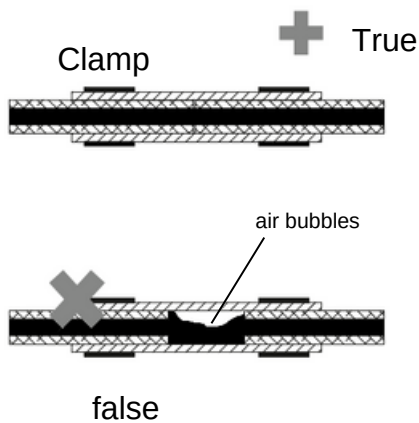
Place them **exactly opposite each other**.



The lines should not be allowed to exceed a certain size, as the lines cannot normally be oriented with a fixed ascent gradient.

Air or gas bubbles accumulate in lines with an inner diameter of more than 4 mm. If the lines hang down or are directed downwards, **the heater will malfunction while it is operating**.

To prevent the formation of air bubbles, place the white polyamide hoses exactly in the black hose.



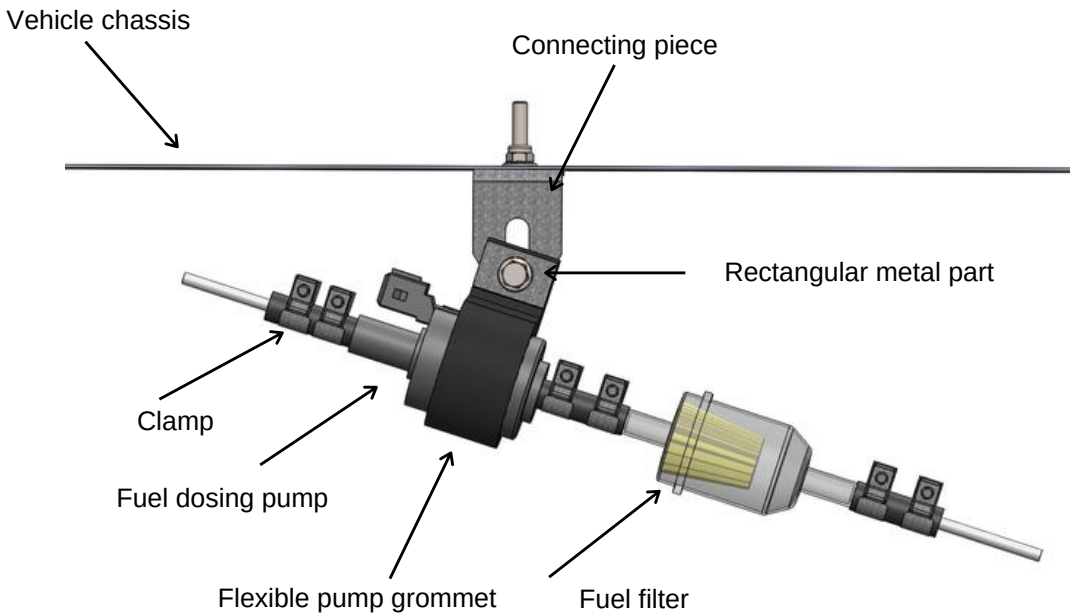
Unsupported fuel lines must be secured to **prevent sagging**.

They must be installed so that they are not damaged by **flying road chips and high temperatures (exhaust line)**.

Fuel lines must be secure in connections using hose clips to **prevent slipping**.

The lines should not be directed downwards from the dosing pump to the heater.

4.3.4 Fuel Dosing Pump Connection



Attention should be paid to the diagrams and images below to connect the fuel lines correctly.

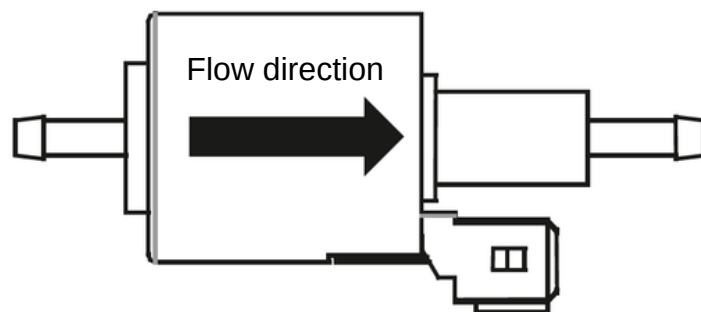
After the connections are completed, **make sure that there are no leaks on the line.**

The inlet of the fuel pump is required to connect the fuel filter.

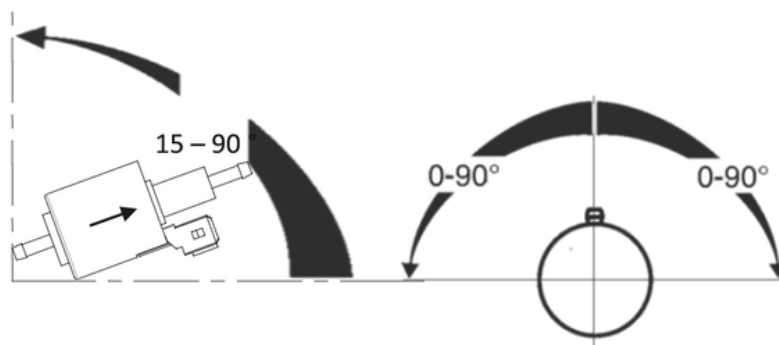
The diesel pump must be installed **together with the vibration damping part. Only original Yilkar parts** should be used for the vibration damping part and plug connections used in the diesel pump.

The diesel pump should be installed as close to the tank as possible and in a cool place.

The diesel pump, electrical connections and fuel lines must be positioned so **as not to be affected by the heat emitted from the vehicle parts.** If necessary, heat shield should be used to prevent heat.



The fuel dosing pump should be mounted with a minimum angle of 15 degrees as shown in the figure below.

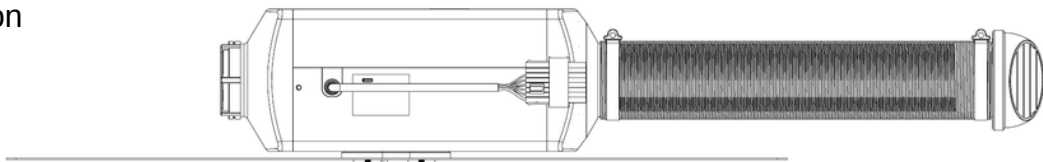


The electrical connector must remain on the top.

4.4 Combustion Air Supply Line

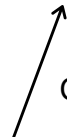
Combustion air cannot be taken from areas used by people under any circumstances.

Driving direction



The combustion air inlet opening must not show the direction of travel.

It should be placed so that it is not obstructed in any way from external factors.



Combustion air inlet



Exhaust gas outlet

Combustion air supply pipe should be used in an area that **will not be affected by external factors** (rainwater, mud, pebble, etc.).

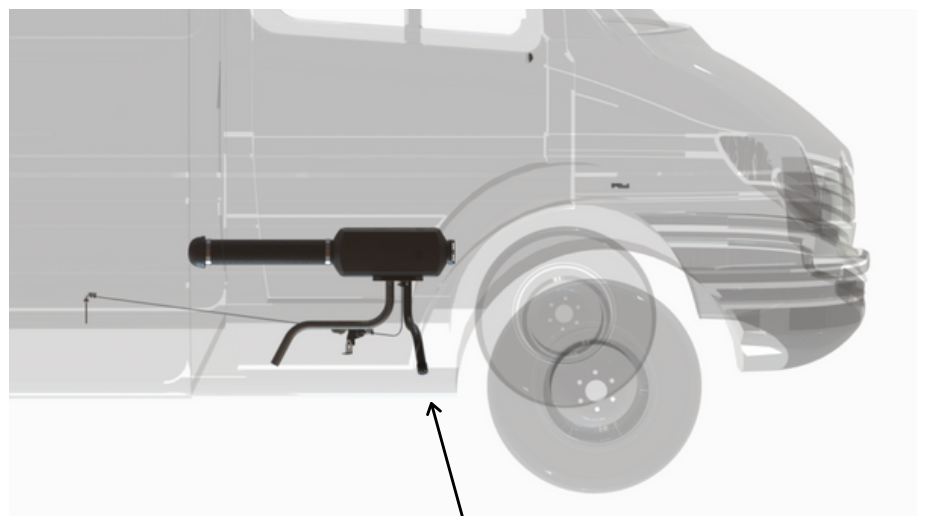
The combustion air supply pipe **must not be below the minimum permitted water level for the vehicle.**

Avoid any crushing and clogging risks.

If possible, hide behind the bumper.

Clogging of the combustion air will cause big problems.

It is not covered by the warranty.

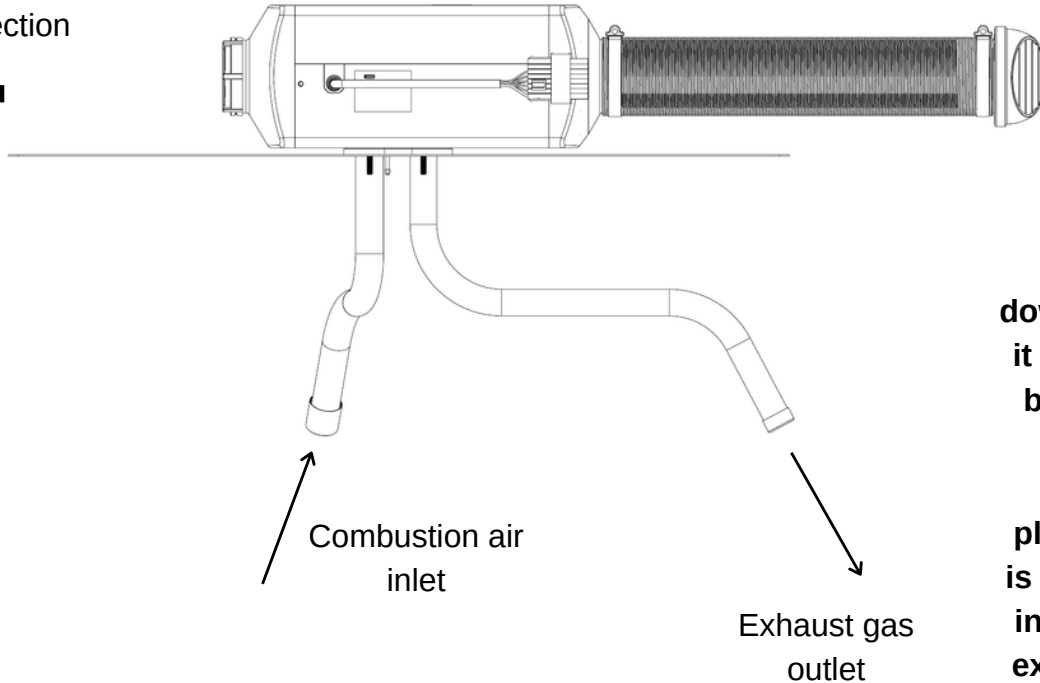


Combustion air inlet

4.5 Exhaust Outlet Line

Combustion air inlet pipe and exhaust pipe should be installed so that **they do not interact with each other.**

Driving direction



It should be mounted downward so that it is not affected by the air flow.

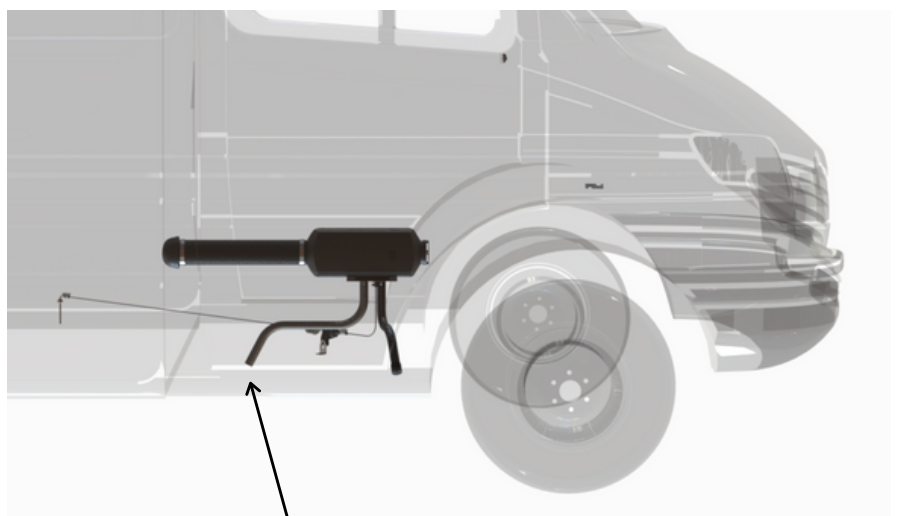
It should be placed so that it is not obstructed in any way from external factors.

The exhaust outlet pipe should be used in an area that **will not be affected by external factors (rainwater, mud, pebble, etc.).**

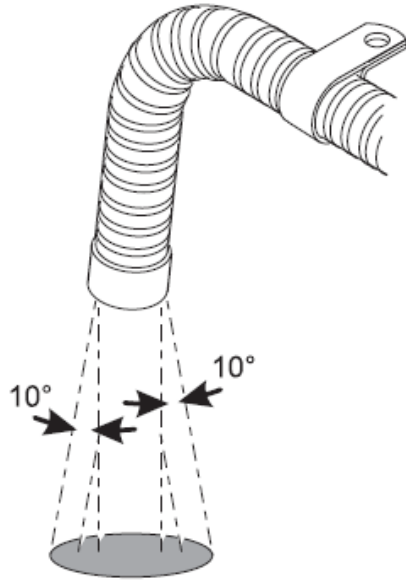
The exhaust outlet pipe **must not be below the minimum permissible water transition level for the vehicle.**

There must be a minimum area of 200 mm between the surface and the exhaust line pipe.

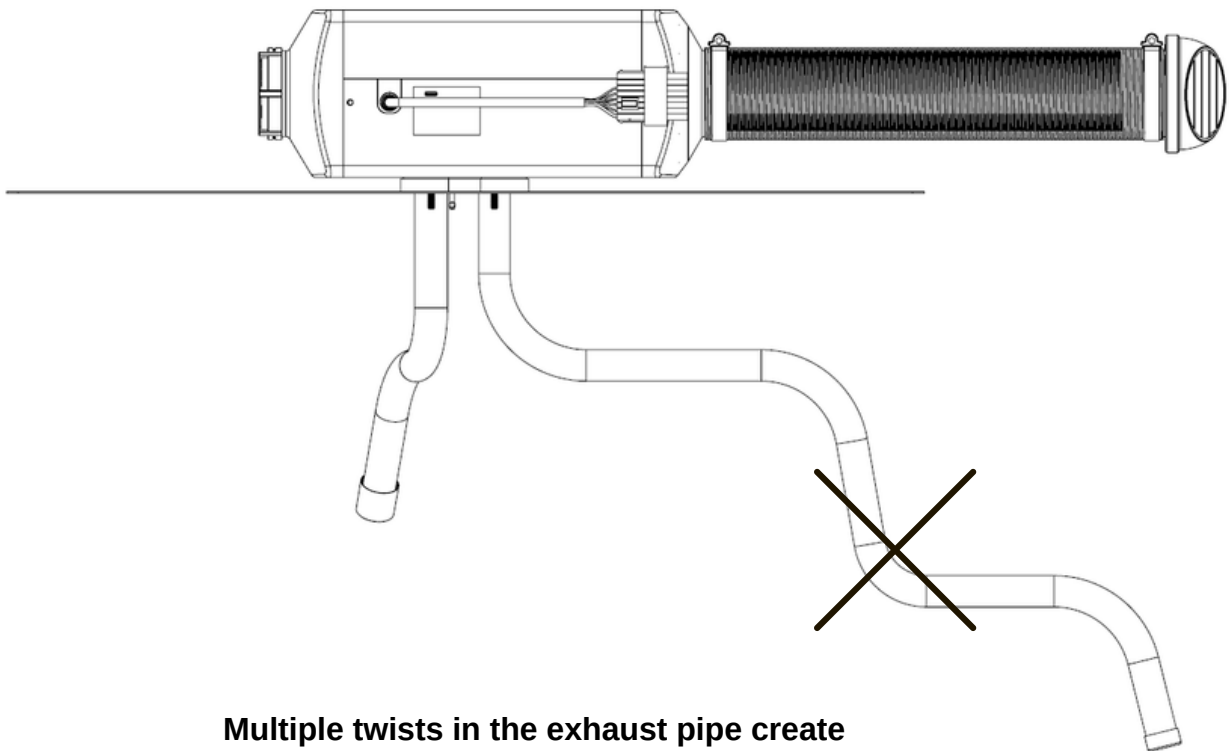
It should not be directed to any surface that creates a fire risk.



Exhaust gas outlet



The exhaust line pipe should be mounted at a $90^\circ \pm 10^\circ$ (max) angle with the surface.



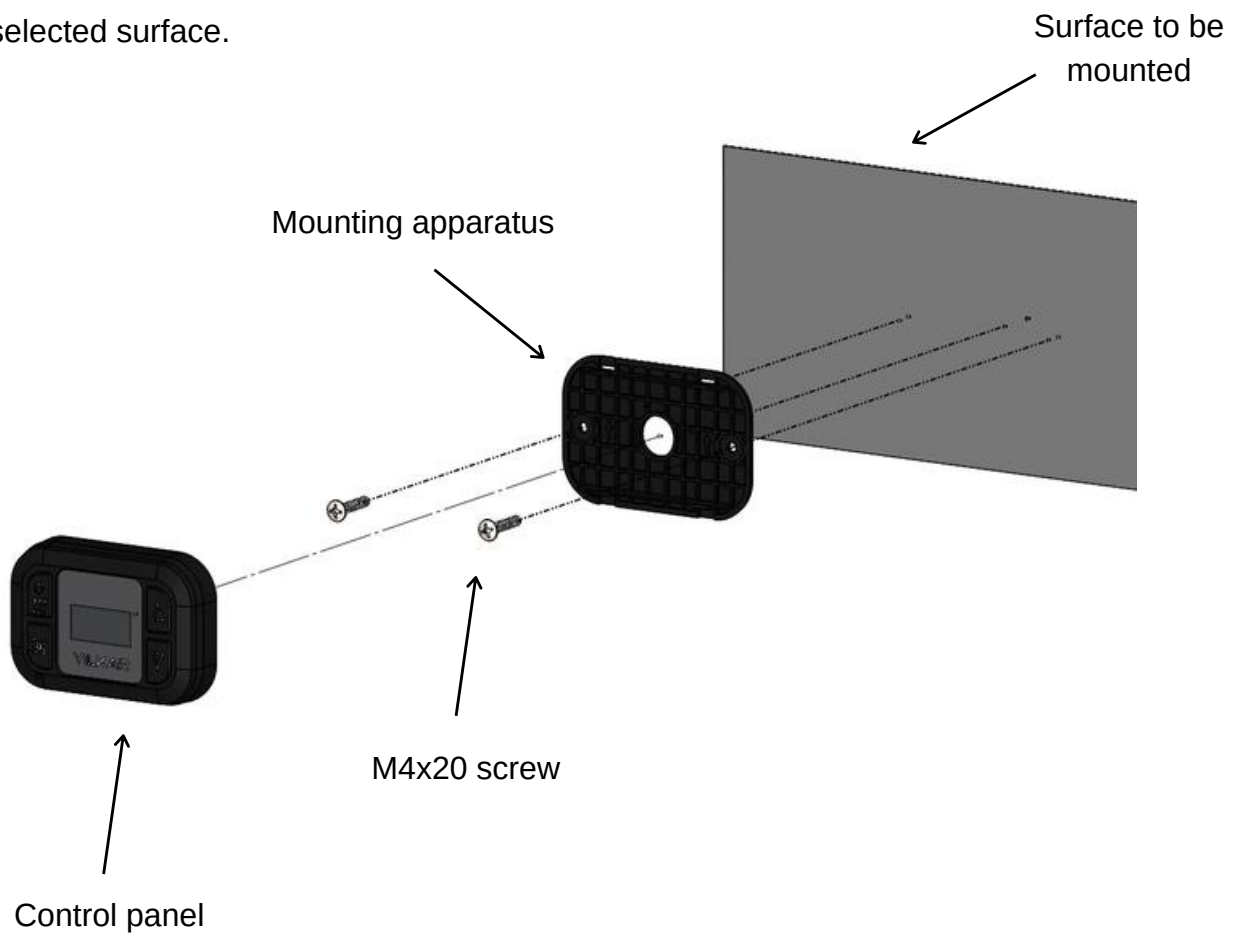
Multiple twists in the exhaust pipe create condensation and negatively affect operation.

This way the assembly is inappropriate!

4.6 Electrical Connection

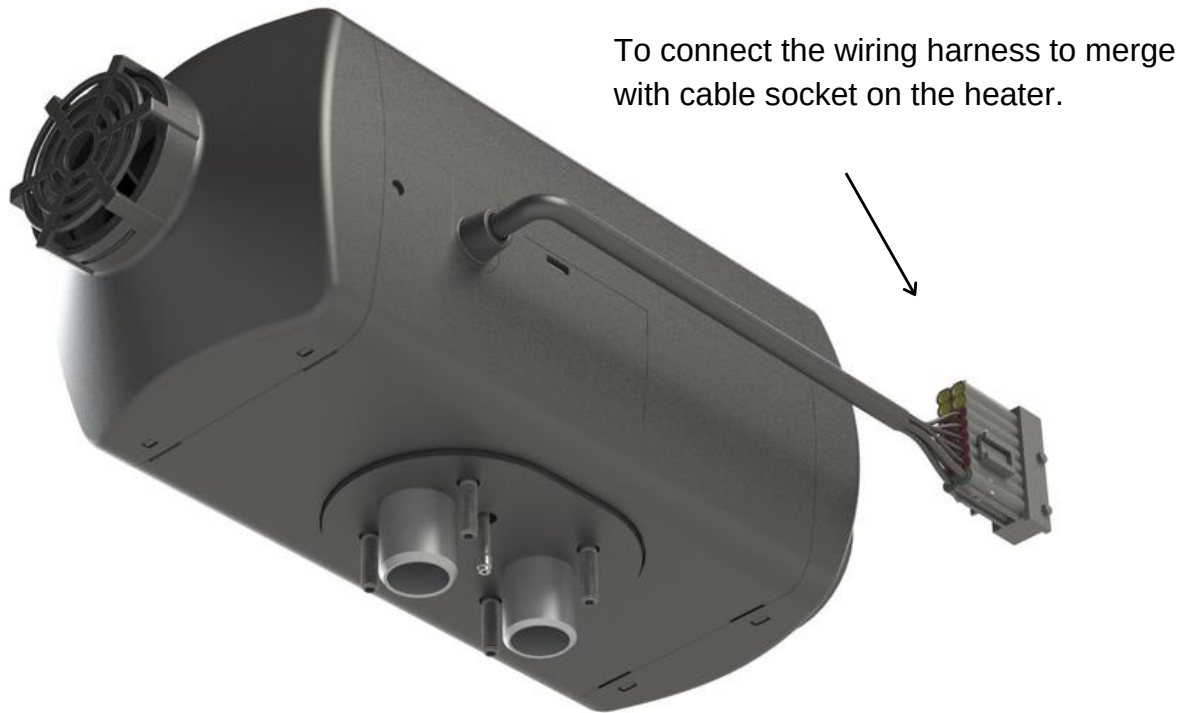
4.6.1 Control Panel Installation

For mounting the control panel, first of all, the mounting apparatus is mounted with 2 M4x20 screws on the selected surface.

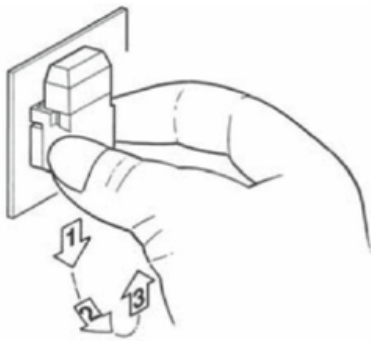


Afterwards, the control panel is assembled by means of interlocking trunks.

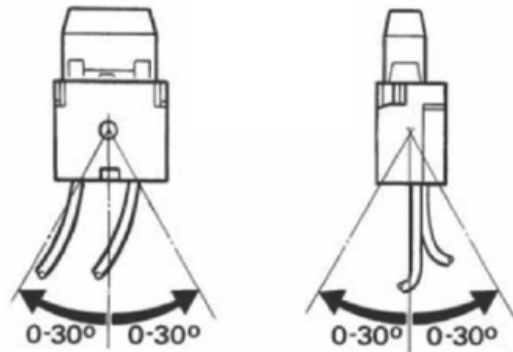
4.6.2 Cable Connection and Circuit Diagram



To protect the heater, an additional fuse terminal should be used. The fuse terminal can be installed inside the vehicle as shown in the picture.



Remove the fixing plate on the fuse holder



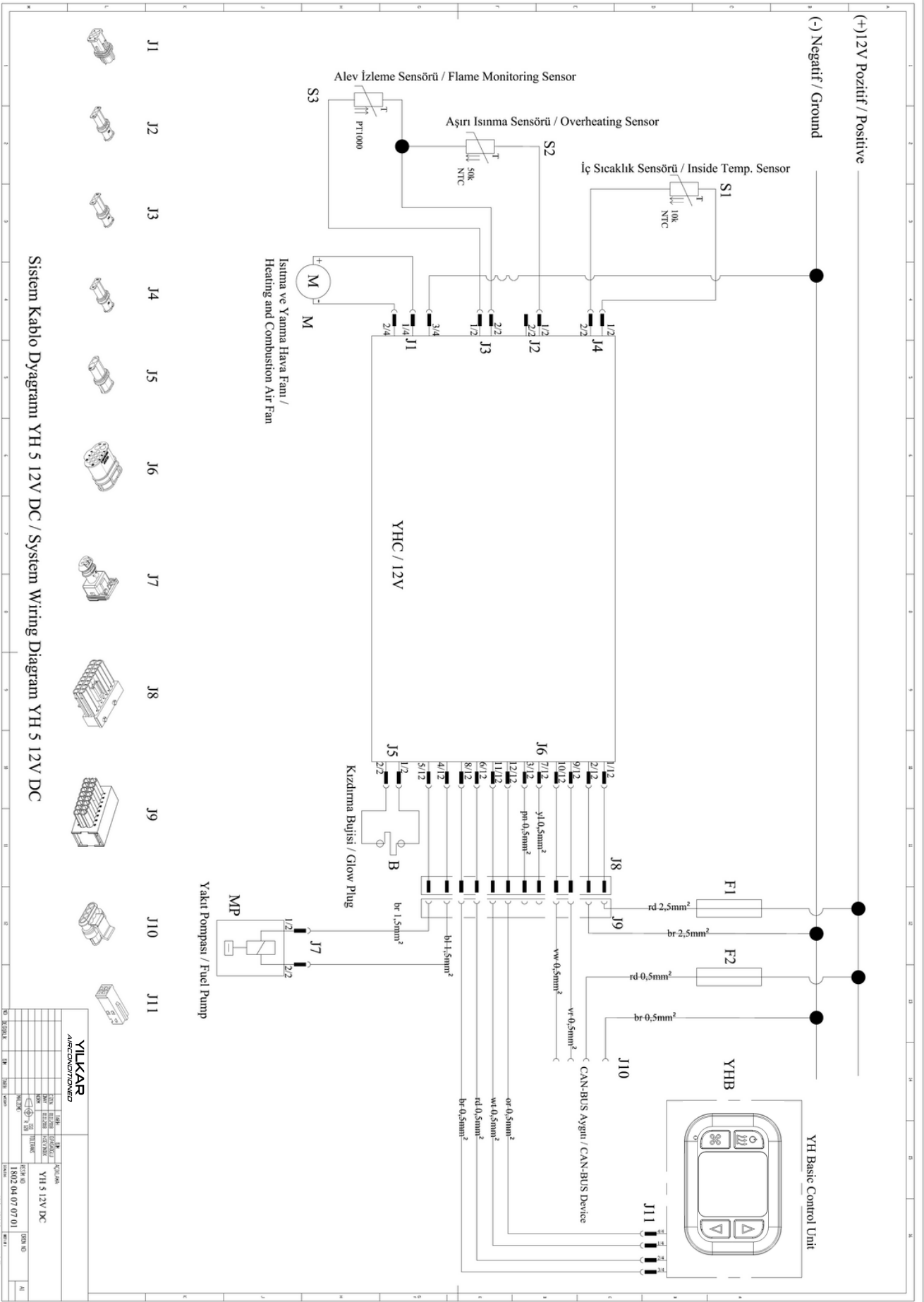
Fuse holder, mounting position

Important :

Connect your heater to the vehicle's battery without connecting it to any supply breaker, except for this fuse.

Large problems can occur if the device is de-energized while operating. Your device and you may be damaged.

System Wiring Diagram YH 2 - 5 12V / 24V DC



Açıklama / Description

Madde / Item

Yılkar Isıtıcı Kontrol Modülü / Yılkar Heater Controller	YHC
Yılkar Temel Kontrol Ünitesi / Yılkar Basic Control Unit	YHB
İç Sıcaklık Sensörü / Internal Temperature Sensor	S1
Aşırı Isınma Sensörü / Overheat Sensor	S2
Alev İzleme Sensörü / Flame Monitoring Sensor	S3
Ateşleme Bujisi / Glow Plug	B
Sigorta @24V 20A , @12V 20A / Fuse @24V 20A , @12V 20A	F1
CAN-BUS Aygıtı / CAN-BUS Device	F2
Isıtma ve Yanma Hava Fan Motoru / Heating and Combustion Fan Motor	M
Yakıt Dozaj Pompası / Fuel Metering Pump	MP

J6 soketi pin yerleşimi 12 pin / Pin Assignments Terminal Connection J6, 12 pin

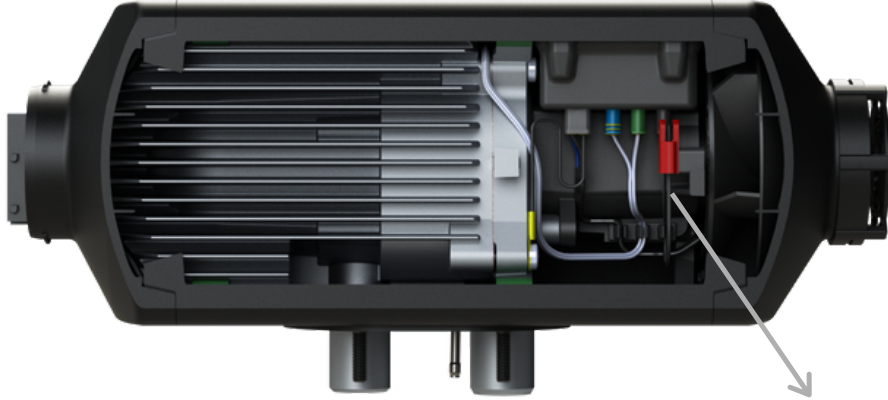
Açıklama / Description

Kablo Çap ve renkleri Cable Diameter and Colour

1.Pozitif (+) Besleme 12V/24V / Positive (+) Supply 12V/24V	Kırmızı / Red 2.50mm ²
2.Negatif (-) Besleme / Negative (-) Supply	Kahve / Brown 2.50mm ²
3.Boş / Empty	Pembe / Pink 0.50mm ²
4.Yakıt Pompası Pozitif Besleme / Fuel Pump Positive Supply	Mavi / Blue 1.50mm ²
5.Yakıt Pompası Negatif Besleme / Fuel Pump Negative Supply	Kahve / Brown 1.50mm ²
6.YHB Kontrol Ünitesi Pozitif Besleme / YHB Positive Supply	Kırmızı / Red 0.50mm ²
7.Boş / Empty	Sarı/ Yellow 0.50mm ²
8.YHB Kontrol Ünitesi Negatif Besleme / YHB Negative Supply	Kahve / Brown 0.50mm ²
9.CAN Bus RXD1 Servis Diyagnoz / CAN Bus RXD1 Maintenance Diagnostic	Mor Kırmızı / Violet Red 0.50mm ²
10.CAN Bus TXD1 Servis Diyagnoz / CAN Bus RXD1 Maintenance Diagnostic	Mor Beyaz / Violet White 0.50mm ²
11.RS485 B- SERİ HABERLEŞME / RS485 B- SERIAL COMMUNICATION	Beyaz / White 0.50mm ²
12.RS485 A+ Seri Haberleşme / RS485 A+ Serial Communication	Turuncu / Orange 0.50mm ²

4.6.3 Change Set Mode

The air heater comes out of the factory as standard mode. The device can be switched to room thermostat mode during assembly as required.



Internal temperature sensor

Standart mode:

The device makes the set adjustment according to the sensor on the air suction side of the air heater.

Therefore, the air heater will process the set value according to the temperature of the environment where the air supply is located.



Room thermostat temperature sensor

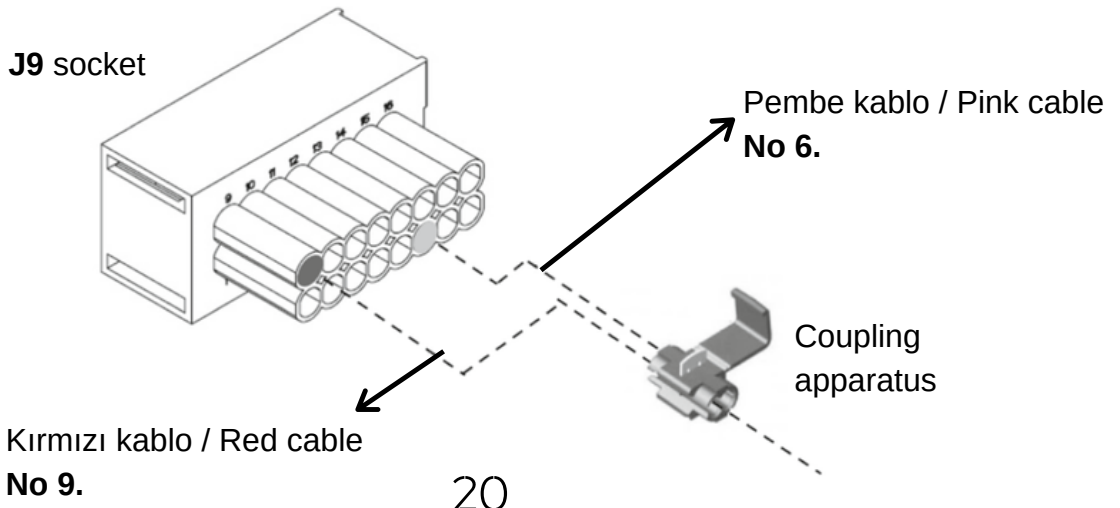
Room Thermostat Mode:

The device makes the set adjustment according to the temperature sensor on the control unit.

Therefore, the air heater will process the set values according to the control unit to be placed in the desired environment.

To switch the device to room thermostat mode, place pin 6 on the J9 socket, the pink cable in the mounting box, then connect the red cable on pin 9 with the cable lifter. This combination will energize pin 6 to trigger the device to operate in room thermostat mode.

If you wish to remove the device from the room thermostat mode, disconnect between the red and pink wire and reset the device.



5. First Operation of the Heater

After installing the heater, it must be operated several times to fill the fuel line. The heater may face malfunction for safety reasons until the fuel line is full. This malfunction will generally be "E15 Ignition Start Failure". Try restarting the device by resetting it from the control panel.

You may need to do this several times depending on the length of the fuel line.

After the device is operational, run your heater for at least 20 minutes to ensure the entire system is consistent.

If the device continues to fail and does not start, check the error codes and take the necessary action.

6. Error codes

E 01 : Glow Plug Open Circuit

Cause: The cable may be cut or the socket may be disconnected. The glow plug may be defective or broken.

Device Response: When the device sees the error, it wants to switch to stop mode. If the system is hot, it will operate cooling mode before stopping.

Troubleshooting:

- * Check glow plug cable and sockets.
- * Remove the spark plug and check the internal resistance test.
 - YH 12 Volts - $0.6 \Omega \pm 0.1 \Omega$
 - YH 24 Volts - $1.6 \Omega \pm 0.2 \Omega$
- * If the resistance values are not within this range, replace the glow plug.
- * Reset the device from the button or disconnect the power supply and then connect again.

E 02 : Glow Plug High Current

Cause: Cable may be cut or short-circuited.

Device Response: When the device sees the error, it wants to switch to stop mode, if the system is hot, it will operate cooling mode before stopping.

Troubleshooting:

- * Check glow plug cable and sockets.
- * Remove the glow plug and check it by performing a current test.
 - 8 volts - $7.8A \pm 1.5A @ 20^\circ C$
 - 18 volts - $5.2A \pm 0.5A @ 20^\circ C$
- * If the values are not in this range; Replace the glow plug.
- * If no problems are observed in the cable, sockets and current test, replace the YHC.
- * Reset the device from the button or disconnect the system from the power supply and connect again.

E 03 : Fuel Pump Open Circuit

Cause: The cable may be cut or the socket may be disconnected. The fuel pump may have failed.

Device Response: If the system detects an error while in the stop mode, the system will not operate and an error will appear on the screen. If the pump is in an open state while the system is running, the system will likely go into stop mode by cooling to detect that the flame has gone out (E19) or that the combustion has not started (E15).

Troubleshooting:

- * Check the fuel pump cable and connectors.
- * Disconnect the fuel pump connector (J7) and measure the resistance value of the fuel pump.
 - 12v pump - $5 \Omega \pm 0.5 \Omega$
 - 24v pump - $20.8 \Omega \pm 0.5 \Omega$
 - If the resistance does not match, replace the fuel pump.
 - If the resistance is correct, reconnect the fuel pump.
- * YH Disconnect the external connector J8-J9 and measure the resistance between pins 3 and 4 on J9 if it is OK (approx. 2Ω); Replace the YHC.
- * Reset the device from the button or disconnect the system from the power supply and connect again.

E 04 : Fuel Pump High Current

Cause: Cable may be cut or short-circuited.

Device Response: If the system detects an error while in the stop mode, the system will not operate and an error will appear on the screen. If the pump is short-circuited while the system is running, the system will likely go into stop mode by cooling to detect that the flame has gone out (E19) or that the combustion has not started (E15).

Troubleshooting:

- * Check the fuel pump cable and connectors.
- * Disconnect the fuel pump connector, if fault code E03 (Fuel Pump Open Circuit) is displayed, the fuel pump is faulty. Replace the fuel pump.
- * If the fault code E04 remains the same, disconnect the connector YH External connector J8-J9 and check that pin 3 (blue wire) on J9 is shorted to ground (pin 1) to the fuel pump. If it is OK, replace YHC.

E 05 : Blower Motor Open Circuit

Cause: The cable may be cut or the socket may be disconnected. The fan motor may have failed.

Device Response: If the system detects an error while in the stop mode, the system will not operate and an error will appear on the screen. If the fan motor is open while the system is running, the system will likely go into stop mode by cooling to detect that the flame has gone out (E19), that the combustion has not started (E15), or that the fan will detect a malfunction.

Troubleshooting:

- * Check the fan motor cable and sockets.
- * Unplug the fan motor cable from the YHC and perform a resistance test. If the resistance test is smooth; Replace the YHC.
- * Reset the device from the button or disconnect the system from the power supply and connect again.

E 06 : Blower Motor High Current

Cause: Cable may be cut or short-circuited. If any part enters the suction impeller side while the device is operating, this malfunction may occur as a result of the fan's current rise if an impeller prevents rotation of the impeller. If the magnetic field reader on the YHC is prevented from seeing the impeller, this fault may occur as the current will rise again.

Device Response: If the system detects an error while in the stop mode, the system will not operate and an error will appear on the screen. If the fan motor overcurrent detection occurs while the system is running, the system will go to stop mode.

Troubleshooting:

- * Check the fan motor cable, sockets, and device impeller to prevent operation.
- * Apply current test to the fan motor. To do so, pull the socket out of the motherboard.
 - Apply 8v voltage to the fan motor for 12v, 18v for 24v, and measure the current strength after 40 seconds.
 - Current strength = <6A - Fan motor is OK. Replace the YHC.
 - Current > 6A - Replace fan.
- * Reset the device from the button or de-energize the system. Restart the device if the error is corrected and the system will continue to run smoothly.

E 07 : Indoor Temperature Sensor Open Circuit

Cause: The cable may be cut or the socket may be disconnected. The indoor temperature sensor may have failed.

Device Response: When the device sees the error, it wants to switch to stop mode.

Troubleshooting:

- * Check the internal temperature sensor cable and sockets.
- * Remove the internal temperature sensor and check by applying resistance test.
If the internal resistance is $> 15K\Omega$ değiştir, replace the internal temperature sensor.
- * If the resistance test is OK, replace the YHC.
- * Reset the device from the button or disconnect the system from the power supply and connect again.

E 08 : Flame Monitoring Sensor Open Circuit

Cause: The cable may be cut or the socket may be disconnected. The flame monitoring sensor may have failed.

Device Response: When the device sees the error, it wants to switch to stop mode.

Troubleshooting:

- * Check the internal temperature sensor cable and sockets.
- * Remove the internal temperature sensor and check by applying resistance test.
If the internal resistance is $> 70K\Omega$, replace the flame monitoring sensor. @ 20 ° C
- * If the resistance test is OK, replace the YHC.
- * Reset the device from the button or disconnect the system from the power supply and connect again.

E 09 : Overheating Sensor Open Circuit

Cause: The cable may be cut or the socket may be disconnected. The overheating sensor may have failed.

Device Response: When the device sees the error, it wants to switch to stop mode.

Troubleshooting:

- * Check the internal temperature sensor cable and sockets.
- * Remove the internal temperature sensor and check by applying resistance test.
If the ohmic resistance is $> 1200 \Omega$, replace the overheating sensor. @ 20 ° C
- * If the resistance test is OK, replace the YHC.
- * Reset the device from the button or disconnect the system from the power supply and connect again.

E 10 : Indoor Air Temperature Sensor High Current

Cause: Cable may be cut or short-circuited.

Device Response: When the device sees the error, it wants to switch to stop mode. If the system is hot, it will operate cooling mode before stopping.

Troubleshooting:

- * Check the internal temperature sensor cable and sockets.
- * Disconnect the internal temperature sensor connector, and reset the device from the button. If the fault code E07 (Internal Temperature Sensor Open Circuit) is displayed, the internal temperature sensor is faulty. Replace the internal temperature sensor.
- * Or remove the internal temperature sensor and check by applying resistance test.
If the internal resistance is too low (about 0), there is a short circuit. Replace the internal temperature sensor.
- * If the resistance test is OK, replace the YHC.
- * Reset the device from the button or disconnect the power supply and then connect again.

E 11 : Flame Monitoring Sensor High Current

Cause: Cable may be cut or short-circuited.

Device Response: When the device sees the error, it wants to switch to stop mode. If the system is hot, it will operate cooling mode before stopping.

Troubleshooting:

- * Check the flame monitoring sensor cable and sockets.
- * Disconnect the flame monitoring sensor socket, and reset the device from the button. If the fault code E08 (Flame Monitoring Sensor Open Circuit) is displayed, the flame monitoring sensor is faulty. Replace the flame monitoring sensor.
- * Or remove the flame monitoring sensor and check by applying resistance test.
If the internal resistance is too low, there is a short circuit. Replace the flame monitoring sensor.
- * If the resistance test is OK, replace the YHC.
- * Reset the device from the button or disconnect the power supply and then connect again.

E 12 : Overheat Sensor High Current

Cause: Cable may be cut or short-circuited.

Device Response: When the device sees the error, it wants to switch to stop mode. If the system is hot, it will operate cooling mode before stopping.

Troubleshooting:

- * Check overheating sensor cable and sockets.
- * Disconnect the overheating sensor connector, and reset the device from the button. If the fault code E09 (Overheating Sensor Open Circuit) is displayed, the overheating sensor is faulty. Replace the overheating sensor.
- * Or remove the overheating sensor and check it by performing a resistance test.
There is a short circuit if the ohmic resistance is too low. Replace the overheating sensor.
- * If the resistance test is OK, replace the YHC.
- * Reset the device from the button or disconnect the power supply and then connect again.

E 13 : High Voltage Failure

Cause: The voltage increases to 30 volts for 24-volt devices and 15 volts for 12-volt devices and if the supply is present for more than 20 seconds, the device detects high voltage failure.

Device Response: If the device detects this fault in stop mode, it will not allow the system to operate if the voltage drops and becomes operational, the error goes away automatically and the system can be started. If such an error occurs while the device is running, the device will send itself to the stop mode by cooling and the error will remain on the screen.

Troubleshooting:

- * Check that the supply voltage from the vehicle to the system is within the appropriate range.
YH 24v - Supply voltage < 30v.
YH 12v - Supply voltage < 15v.
- * If the supply voltage is appropriate, reset the device from the button or disconnect the power supply and then connect again.

E 14 : Low Voltage Failure

Cause: The voltage drops below 21 volts for 24-volt devices and less than 10.5 volts for 12-volt devices, and the device detects a low voltage failure if the supply voltage is present for more than 20 seconds.

Device Response: If the device detects this fault in stop mode, it does not allow the system to operate if the voltage rises and becomes operational, the error goes away automatically and the system can be started. If such an error occurs while the device is running, the device will send itself to the stop mode by cooling and the error will remain on the screen.

Troubleshooting:

* Check that the supply voltage from the vehicle to the system is within the appropriate range.

YH 24v - Supply voltage > 21v.

YH 12v - Supply voltage > 10.5v.

* The voltage on the vehicle battery must not differ from the voltage on the J9 connector. If this is the case, please note that the "+" terminal of the battery is in contact with oxidation or contact.

* If the supply voltage is appropriate, reset the device from the button or disconnect the power supply and then connect again.

E 15 : Ignition Start Failure

Cause: The fuel tank may be out of fuel, the fuel hose may be clogged, the exhaust hose may be clogged, or the combustion air intake hose may be clogged. The glow plug may have failed and the fault could not be detected electrically.

Device Response: If the device does not detect combustion in the combustion chamber shortly after it starts working, it tries to start the combustion again after cooling for a while. If it encounters the same situation 2 times in a row, it will give the error.

Troubleshooting:

* Make sure the exhaust outlet and combustion air intake hoses are not blocked or improperly installed.

* Make sure there is fuel in the fuel tank.

* Make sure the fuel hose is not blocked.

* Make sure glow plug is working.

* Try to start the device after refueling the fuel tank, if the device does not work in 2 attempts, it will give the same error again, reset it from the button or disconnect the power supply and then connect again.

E 16 : Overheating Failure

Cause: The device may have overheated in any way during operation. The temperature sensor on the housing or the temperature sensor in the suction line may be detecting temperatures that are higher than required. If the power is cut off for any reason while the system is operating, this may occur when the power is turned on again.

Device Response: When the device detects this error, it will go into stop mode by cooling if it is working. It will clear the error if the device is reset or if the power is supplied and reconnected. If this error occurs when the device is de-energized and turned on again, all the sensors on the device will detect high temperature and the error will be displayed and the error will remain on the screen until the reset is made with the button.

Troubleshooting:

* Make sure that there are no airflow obstructions in the air inlets and outlets of the device.

* Make sure that the pipe length between the device and the blowing grille is within the standards.

* Check the cables and sockets of the temperature sensors on the device.

* If a problem is not observed, reset the device from the button or disconnect the power supply and then connect again.

E 17 : Control Unit Communication Failure

Cause: Deformation may occur in the cables that the device communicates with the control unit. There may be a failure in the YHC or control panel.

Device Response: When the device detects this error, it will go into stop mode by cooling if it is working.

Troubleshooting:

- * Check the cables and sockets where the device communicates with the control unit.
- * If there are no problems, replace the control unit and perform the necessary repair if there is deformation in the cables or sockets.
- * **The device cannot be reset from the control panel !!** Power down the system and give it again.

E 18 : Fan Operating Failure

Cause: While the device is operating, an element that prevents the operation of the fan may have entered the device. The magnetic sensor may have malfunctioned. If the device is intervened, the distance between the outside air impeller and the holder T plastic may be incorrectly set. There may be elements that impede the operation of the propeller that delivers air to the combustion chamber. For similar reasons, since the fan motor tries to maintain its operating speed, the current it uses may increase and the device may see fan motor high current failure.

Device Response: When the device detects this error, it will switch to stop mode if it is working.

Troubleshooting:

- * Make sure that no external elements get inside the device.
- * Ensure that the distance between the outside air impeller and the holder T plastic is within the standards.
- * Make sure that the YHC is in the correct position.
- * Be sure to reset the device from the button or disconnect the system from the power supply and connect again.

E 19 : Combustion Stop Failure

Cause: The fuel tank may be out of fuel or the fuel hose may be clogged. The combustion air intake or exhaust outlet may be clogged or deformed. The exhaust line or indoor air intake line may be improperly installed, with with inverse airflow into the device.

Device Response: If the device is working when it detects this error, it will switch to stop mode by cooling.

Troubleshooting:

- * Make sure the exhaust outlet and combustion air intake hoses are not blocked or improperly installed.
- * Make sure there is fuel in the fuel tank.
- * Make sure the fuel hose is not blocked.
- * Try to start the device after refueling the fuel tank, if the device does not work in 2 attempts, it will give the same error again, reset it from the button or disconnect the system from the power supply and connect again.

E 20 : Air Blockage Failure

Cause: Occlusion may occur on the air intake side or the outlet side during operation. There may be a detection problem with the flame monitoring or overheating sensor.

Device Response: If the device is working when it detects this error, it will switch to stop mode by cooling.

Troubleshooting:

- * Make sure there is no blockage in the air intake and outlet of the device.
- * After making sure of these situations, reset the device from the button or disconnect the system from the power supply and connect again.

E 21 : EEPROM Failure

Cause: YHC fault may have occurred.

Device Response: If the device is working when it detects this error, it will switch to stop mode by cooling.

Troubleshooting: Replace YHC. After replacement, reset the device from the button or disconnect the system from the power supply and connect again.

E 22 : Control Unit Temperature Sensor Failure (Opsiyonel)

Cause: If the system is operated in room thermostat mode, there may be a malfunction of the temperature sensor on the control unit.

Device Response: If the device is working when it detects this error, it will switch to stop mode by cooling.

Troubleshooting:

- * Replace the control unit.
- * After replacement, reset the device from the button or disconnect the system from the power supply and connect again.

7. Technical information

The Control Unit is designed for Engine, Diesel Fuel Pump and Glow Plug 12 V and 24 V. Control Panel and temperature sensor components are not voltage dependent.

Permissible ambient temperatures

Operation: -40 ° C to +40 ° C

Storage: -40 ° C to +90 ° C

Diesel fuel specified by the manufacturer according to DIN EN590 should be used. The use of additives has no known adverse effects. If fuel is taken from the vehicle tank, follow the additional instructions provided by the vehicle manufacturer.

HEATER	YH 2	YH 5
Heating Performance (kW)	0.9 - 2.5	1.0 - 5.0
Fuel Type	Diesel	Diesel
Fuel Consumption (l / h)	0.072 - 0.26	0.1 - 0.48
Operating Voltage (V)	12-24	12-24
Operating Voltage Range (V)	10,5 - 16 / 21 - 30	10,5 - 16 / 21 - 30
Operating Temperature (° C)	-40 ile +40	-40 ile +40
Setting range for indoor temperature (° C)	+10 ... +35	+10 ... +35
CO2 in exhaust gas (permitted function range) (%)	5.5 10	5.5 10
Dimensions (Length * Width * Height) (mm)	320*130*150	400*140*180
Weight (kg)	3	5.2

Warning!

The installation instructions must be read and followed carefully before installing the heater and operating the device. If improper installation or work is done or determined to be done, the regulations will be invalid and YILKAR company will not take any responsibility.

YILKAR

AIRCONDITIONED

Vehicle Heating Cooling and Ventilation Systems

Phone : +90 224 215 53 28 (pbx)

Fax : +90 224 215 99 24

Address : K   kbalıklı Mah. 580.Sok
No:6 Osmangazi / BURSA / TURKEY

www.yilkarklima.com