

# ■ Operating and installation instructions

**REMKO GPS series**

**Wall heater with 2-stage gas burner**

GPS 15, GPS 25, GPS 35, GPS 55, GPS 75





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Carefully read this operating manual prior to commissioning /using the unit!

This operating manual is a translation of the German original.

These instructions are an integral part of the unit and must always be kept in the vicinity of the installation location or on the unit itself.

*Subject to modifications; no liability accepted for errors or misprints!*

# REMKO GPS series

## Safety notes

**Always observe the respective local building code and fire prevention guidelines as well as the guidelines of the accident prevention and insurance associations when using the units.**

The units have been subjected to extensive material, functional and quality inspections prior to delivery. However, dangers can arise from the units if they are used improperly or not as intended by untrained personnel!

Please observe the following notes:

- The units may only be operated by persons that have been instructed in their operation
- In case of defects that endanger the operational safety of the units, operation must be discontinued
- The units must be installed and operated so that the emerging flow of warm air does not have harmful effects on either the units or the surroundings
- Do not expose the units to atmospheric influences (rain, sun, etc.)
- Do not touch the units with damp or wet body parts, e.g. hands
- Protect the units from spray water or other liquids
- Do not use gas lines for the grounding of electrical devices
- Do not touch hot parts of the units, such as the flue gas pipe
- Do not touch moving parts of the units
- Never stick foreign objects into the units
- The units may only be mounted on stable structures or ceilings made of non-flammable construction materials and with sufficient bearing capacity
- The mounting of the units may only be executed at the points provided for this purpose in the factory
- The units may not be installed or operated in potentially flammable or explosive environments

- The units must be installed away from traffic zones - by crane, for example. A safety zone with a clearance of 1 m must be ensured
- The protective grid of the intake must always be kept free of dirt and loose objects
- The units may not be exposed to direct jets of water
- The units must be inspected by a service technician at least once yearly
- Safety devices must not be bypassed or disabled!
- Prior to maintenance or repair work, the gas supply must be sealed off and the unit must be disconnected from the mains at all poles. (Remove fuse and switch off customer-provided main/emergency shut-off switch)

### Preventative measures with odour of gas

1. Immediately switch off the unit.
2. Close the gas shut-off device(s).
3. Warn all directly endangered persons.
4. Open windows and doors.
5. Do not actuate electrical equipment such as light switches or electrical plug-in contacts.
6. If the room in which the gas odour has emerged cannot be entered, immediately contact the fire brigade, police and the local responsible municipal gas supplier.



#### NOTE

*The units are used exclusively for industrial and commercial applications. They are not intended for the heating of living spaces or the like.*



#### CAUTION

*Safety devices may not be bypassed or disabled during operation.*



#### CAUTION

*Assembly, adjustment and maintenance work may only be carried out by authorised and qualified technicians.*

## Unit installation

### Application area

With the REMKO gas wall heaters from the GPS range, it is possible to heat small rooms, such as workshops, right through to large spaces such as industrial warehouses, sports halls, etc. For efficient heating it is therefore essential to determine the necessary heat output by professionally calculating the heat requirement for the respective space.

#### CAUTION

*The units must not be set up or installed in areas with explosive or corrosive atmospheres.*

### General prerequisites

With the installation of the units, the local and country-specific provisions and guidelines must be observed in the respective valid version as a basic rule.

Work such as the following:

- gas and electrical installation
- conversion of the gas type
- commissioning
- adjustments or maintenance may only be carried out by qualified technicians

In addition to a faultless electrical and gas installation, it is also ensured through this measure that all necessary measurements and test are conducted.

- The units must be inspected by an authorised service technician at least once yearly. For this purpose, concluding a service contract with a service company is recommended
- During planning and installation of the flue gas routing, the structural possibilities as well as the applicable local and country-specific regulations must be consistently adhered to
- In heavily soiled environments, care and maintenance measures must be carried out in accordance with the respective conditions. The combustion air must be fed from outside as a basic rule

### Selection of the installation location

With determination of the installation location, the requirements must be coordinated in regard to:

- Fire protection and operational hazard
- Function: Space heating, underpressure and/or overpressure in the installation space, etc.
- Operational concerns, heat requirement, nominal air flow rate, air recirculation requirement, humidity, room temperature, air distribution, spatial requirements
- Installation, repair and maintenance possibilities. The units must be installed in such a way that they are always easily accessible for maintenance and repair work.

With improper installation and operation, hazards may arise from the units. Prior to the planning and during the unit installation, the following points must absolutely be observed.

- The units must be installed and operated in such a way that personnel are not endangered by flue gas and radiant heat and no fires may occur
- During installation of the units it must be ensured that the flow of warm air does not have damaging effects on the surroundings
- Fire hazards must be eliminated through the selection of materials for the installation and position surfaces. For this purpose, see TRGI, Section 5.1.3.3
- The wall or ceiling intended for installation must also consist of non-flammable materials. Its load capacity must be checked; reinforcements must be installed when necessary
- Brackets must be securely anchored to the wall or ceiling and the units must be attached to the brackets at the points provided for this purpose in the factory
- Appropriate maintenance possibilities for heat exchangers, burners, fan and flue gas evacuation must be planned for
- It must be possible to actuate control elements for the units and fuel supply from the ground. Maintenance and repair possibilities must be ensured by the operator

# REMKO GPS series

## Unit description

### Definition of the unit

Pursuant to EU Directives, the unit is defined as:

*"Gas fan-assisted heater (WLE) without flow-operated safety device, equipped with a fan in front of the heat exchanger".*

The unit is a fully-automatic, directly-fired fan-assisted air heater for wall and ceiling installation.

It can be fuelled with natural gas or liquid gas.

The unit is used for continuous and temporary heating of open and closed spaces, e.g. in:

**halls, workshops,  
greenhouses,  
storage rooms, etc.**

### Classification of the units

The units have been classified by the European standardised regulations EN 437 and EN 1020 according to:

#### The gas category:

determination according to the type of gases with which they may be operated.

**For Germany DE II2ELL3B/P**

#### The gas type:

the burner can be operated with gases of the second family (natural gas - group H and L) and with gases of the third family (butane and propane).

#### The type of gas fireplace:

differentiation according to the possibilities of the discharge of the combustion products or the supply of the combustion air.

(ambient-air-dependent/independent)

Additional notes can be found in the chapter "Installation of the flue gas evacuation and the combustion air supply".

### Design of the units

The exterior cladding of the units is made from coated steel sheet, which guarantees durability.

The outlet grid is found in the front section.

In order to ensure an optimal distribution of warm air in the installation location, the horizontal fins of the outlet grid can be manually adjusted. On the rear side of the unit you will find the fan(s) with protection grid, the connection nozzles for the removal of the flue gas and supply of the combustion air, the gas connection nozzles,

the cable passages for the electrical lines as well as the plug connection for the power supply. In the right-hand side section the necessary components for the control and safety are found behind the inspection door, including e.g.:

- the electrical circuitry with the cabling
- the control electronics
- the gas valve
- the modulating gas burner

In the interior of the unit, directly in the circulation air flow, is the combustion chamber with heat exchanger. The combustion chamber is manufactured entirely from Inox stainless steel, AISI 430. For the purpose of higher resistance to corrosion from damp vapours, Inox stainless steel, AISI 441 is used for the heat exchanger.

The special form and the large surface area of the combustion chamber and heat exchanger guarantee a high level of efficiency and long service life.

The gas burner is likewise manufactured entirely from special, mechanically-processed stainless steel.

### Function of the units

The 2-stage gas wall heaters of the GPS series have been developed for the heating of industrial and commercial spaces.

The electronic control of the unit regulates the heat output between minimum and high-output according to the set NTC1 temperature.

With the pre-mix and modulation technology, efficiency of up to 94% can be achieved.

The nominal heating capacity of the REMKO GPS series lies between 13.0 and 73.5 kW.

The units consist primarily of the combustion chamber with heat exchanger and the fan(s).

The ambient air is suctioned in by the fan(s) and efficiently channelled through the combustion chamber with heat exchanger. The combustion chamber is heated by the gas burner operation and releases its heat to the air flowing past. The air heated in this manner is blown out of the front side of the unit through an adjustable outlet grid.

Operation of the unit as intended is only possible with a connected temperature controller, e.g. ATR-10 (accessory).

## Fans

The switching on of the fans is time-controlled by the control board, whereby the timing begins with the switching-on of the main burner.

The delayed switch-on prevents cold air from being blown into the room.

### Switching off the unit

If there is no longer a heat requirement (room temperature above the adjusted setpoint value), the control board switches off the burner. The burner fan runs for the secondary ventilation of the combustion chamber for a fixed, pre-set time.

The fan(s) likewise run afterwards on a time-controlled basis until the heat exchanger is cooled. If a new heat requirement should take place during the follow-up phase, the control board will wait for the fans to switch off and then proceed with a reset and begin a new cycle.

### CAUTION

*Before resetting safety equipment, the cause of the trigger must be identified and rectified.*

### NOTE

*Safety devices may not be bypassed or disabled during operation of the unit!*

### IMPORTANT NOTE!

The interruption of the current supply during burning operation or in the follow-up cooling phase is not permitted, because lack of a secondary ventilation of the heat exchanger can lead to significant damage:

- Overheating of the unit with the resulting expiration of the guarantee
- Damage to the fan of the burner and its components
- Tripping of the safety thermostat and the associated lock-out of the safety thermostat (STB). Therefore no new unit start without manual resetting
- Damage to electrical lines

## Safety thermostat(s) with vertical air flow

A safety thermostat (STB) is installed on the units for each fan, for manual resetting.

If the safety thermostats are triggered then a safety shutdown is also triggered.

The thermostat is installed in the area of the heat exchanger in order to monitor the temperature at its output.

The disabling of the unit caused by the triggering of the safety thermostat is displayed by the error indicator light on the front of the unit.

### NOTE

*The model with vertical air flow must be specified at the time of order placement, because the probe is not installed as standard.*

## Air/gas premix

The units are equipped with a burner with complete air/gas premix.

This mixing process takes place in the fan of the burner motor. The air suctioned in by the fan flows through the Ventura tube, where an underpressure is created, which draws in the gas. In the process, a constant air/gas mixture is created. The ratio of air and gas pressure is 1:1.

This value can be changed through the offset regulating screw found on the gas valve.

The amount of gas is already adjusted upon delivery of the units and the screw is sealed.

With the adjusting screw located at the Venturi tube, a fine adjustment can take place, which regulates the maximum gas flow rate and thus determines the carbon dioxide (CO<sub>2</sub>) content of the flue gases. The screw is not sealed in order to enable conversion of the fan-assisted air heater to another type of gas.

### PLEASE NOTE:

For the offset and CO<sub>2</sub> adjustment.

The control board of the units enables the speed regulation of the burner motor with DC depending on the heat output required in the space.

By changing the speed the air flow rate and thus the gas flow rate are changed.

Minimum and maximum speeds of the fan are two values that cannot be changed.



# REMKO GPS series

## Cycle of operation

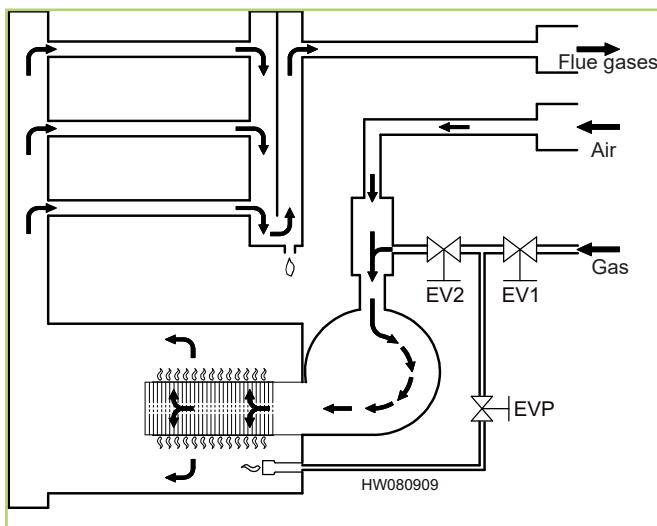
The units from the GPS range are fully-automatic hot air heaters, which are equipped with an electronic device with self-testing. This guarantees a high degree of reliability and safety.

## Burner operation

The burner is ignited when the following preconditions are fulfilled:

- The unit is supplied with power and is not in a fault shut-down state (lock-out)
- The gas supply valve is open
- The toggle switch on the control panel is switched to the "I=Winter" position
- The thermostat contact is closed
- The contact between terminal 34 and 35 on the GPS board is closed

Under these conditions, the burner fan starts immediately. After the pre-flushing process is complete, the flame is ignited with an ignition output that is 30 % of the maximum output. After subsequently waiting for the stabilisation phase to pass, the burner runs up to maximum output. If the flame cannot be ignited then 4 further ignition attempts take place. With the fifth ignition attempt, the GPS board triggers a fault shut-down. If the burner ignites, the cooling fan starts up after 30 seconds and conveys the warm air into the room.



In order to switch the hot air heater off, the switch on the control panel must be set to the "0" position. It is prohibited to switch off the unit by disconnecting the power supply. This process must be used exclusively in emergencies. With an instructed switch-off of the hot air heater, the burner fan continues to operate for a further 90 seconds, in order to flush the burner chamber of flue gases. The cooling fan runs on for 120 seconds after the switch-off, to ensure that the heat exchanger "cool down" takes place. If the cool down process is not completed then this reduces the service life of the heat exchanger and therefore also invalidates the guarantee. Furthermore, the safety thermostat may also be triggered and necessitate a manual reset.

If, during the cool down phase, a new heating request is issued then the unit waits until the cooling fan has switched off, performs a reset and then starts a new heating cycle.

## Efficiency

The advantages of the units lie in the 2-stage mode of operation, meaning the heat output created and thus the gas flow (consumption of fuel) are changed corresponding to the heating stage.

With a reduced heat requirement of the room, the fan-assisted heater consumes less fuel, whereby its efficiency is increased by up to 94%.

## Intrinsic safety:

The increase in efficiency with minimum output is achieved through the use of a modern air/gas mixture technology and the simultaneous flow rate regulation of combustion air and gas.

This technology increases the safety of the unit, because the gas valve feeds the fuel depending on the amount of air in accordance with its factory settings.

Unlike atmospheric burners, the CO<sub>2</sub> content remains the same through the entire operating range and allows an increase in efficiency with reduction of the heat output.

With no combustion air, the valve does not release gas.

With reduction of the combustion air, the gas valve automatically reduces the amount of gas and keeps the combustion parameters at an optimal level.



## **Modulation**

The gas wall heaters are units with 2-stage gas burner modulation, whereby outputs between the minimum and maximum settings are possible during operation.

The highest output serves for raising the room temperature quickly when switching on the units.

The second stage enables a slower heat-up speed of the space, which means that the burner is required to switch on and off less often. Furthermore, the air is heated less heavily due to the lower heat output, which limits the physical emergence of layer formation (tendency of the warm to rise).

These results can only be achieved through a precise monitoring of the climatic spatial conditions and an optimal control of the unit.

With the dimensioning of heating systems with fan-assisted air heaters, it is important to observe the number of hourly air renewals.

In this regard, please note the following: Gas wall heaters should, in general, be arranged so that the air flow rate ensures air recirculation at least twice hourly, even if this would not be necessary for the heat output.

### **Minimal pollutant emissions:**

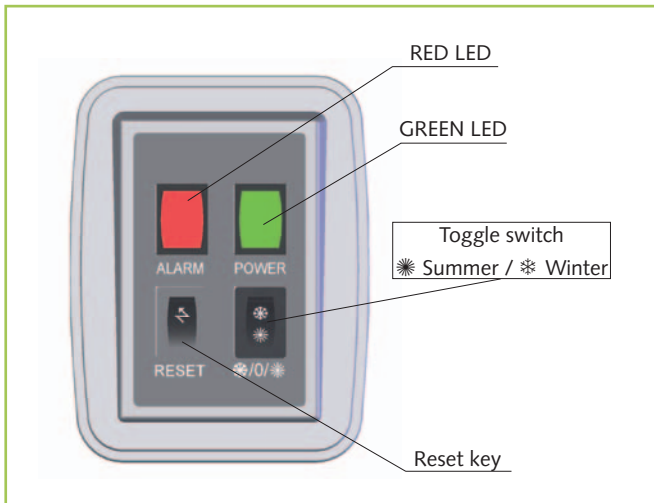
The premix burner provides for "clean" burning with low pollutant emissions with the air/gas valve.

# REMKO GPS series

## General notes

### Control panel

The hot air heaters from the GPS series are fitted as standard with a control panel on the front of the unit. All unit information or fault indications are displayed on this control panel.



The illumination of the green LED means that the unit is connected to the mains.

The illumination of the red LED indicates a malfunction of the unit.

Using the malfunction diagnostics, the cause of the malfunction can be identified by the different types of flashing signals of the red LED.

### Summer/winter toggle switch

Also, a manually-operated toggle switch ☼ / 0 / ❄ is installed on the front of the unit, which enables switching the unit from winter operation ❄ to summer mode ☼ (continuous ventilation).

In the central position [0] all unit functions are switched off.

### Reset key

A manually-actuated reset key is installed on the front of the unit, which enables the unlocking of the unit after the malfunctions F1, F2, F5, F6 or F8.

## ⚠ CAUTION

*Before resetting safety equipment, the cause of the trigger must be identified and rectified.*

### Safety thermostat

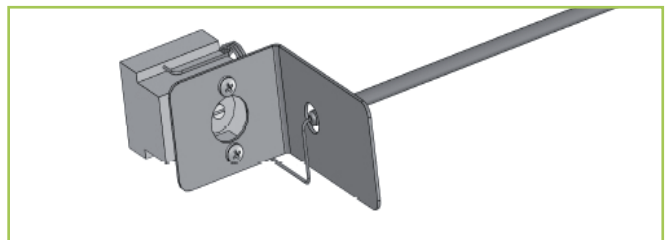
The GPS unit series is equipped with a safety thermostat with automatic reset function and positive safety device as standard. This means that the safety equipment also triggers with a breakage.

If the thermostat is tripped, the burner is stopped via the flame monitoring unit and a subsequent fault shut-down of the flame monitoring unit is triggered. The thermostat probe is located behind the top outflow fins, in the centre of the housing. The fault shut-down is displayed on the control panel by the red indicator light.

Because this is a safety-relevant error, the fault shut-down is permanent and requires a manual reset.

### High or low flame

The units are serially equipped with a room temperature probe NTC1 on the rear side of the unit so that the intake temperature of the fans is monitored. The operation of the two stages takes place depending on the temperature value measured by the probe compared to the value set inside the thermostat housing. The thermostat can be set to the desired temperature value via a screw. This value should be set a few degrees above the desired room temperature. If the temperature rises above the set value then the burner is set at a lower flame, which reduces the heat output. In this way the air blown into the room is heated less heavily. However, the thermostat for controlling the high or low flame is by no means a replacement for a room thermostat, which must be installed in all instances.



The optimisation of the temperature value must take place during operation of the system and depends on the distance of the fan-assisted air heater to the floor and the required temperature conditions. The gas wall heater is normally installed at a distance of 2.5 - 4 m from the floor.

The desired comfortable temperature should be reached and maintained with this. However, it is necessary to ensure that the units are operated with the lowest necessary temperature value, in order to maintain these conditions. The thermostat is set to 20°C in the factory. This value enables a mid-level installation range between 3 and 5 metres with room temperatures between 17 and 19°C (see graph below).



#### NOTE

*Set the temperature on the internal thermostat at least 2 K above the desired room temperature.*

### Malfunction diagnostics

With a malfunction, the red alarm light illuminates constantly on the control panel.

To cancel the malfunction, it is necessary to press the reset key for longer than 1 second.

If the malfunction is still present after the reset, please do not attempt a reset more than three times and contact customer service to arrange a repair.

To activate diagnostics, it is necessary to press the reset key for longer than 5 seconds. The red light will start to flash. The error number can now be determined on the basis of the number of flashing signals. The flash sequence is repeated and displayed with a pause of 2 seconds between each repetition.

**F1** - LED flashes once quickly

**F2** - LED flashes twice quickly

**F5** - LED flashes five times quickly

**F6** - LED flashes six times quickly

**F8** - LED flashes eight times quickly

### Types of malfunction

The malfunctions (lock-outs) displayed and saved by the control board have the following causes:

**F1** - Malfunction of the flame monitoring unit because of unsuccessful ignition of the burner; the control board arranges for a series of automatic deactivation attempts prior to reporting the malfunction.

**F2** - Tripping of the safety thermostat.

If the temperature detected by the thermostat is too high, it disconnects and disables the operation of the unit.

**F5** - Burner fan defective;

Combustion air fan is defective or the signal to the control board lies beyond the tolerance range of the desired speed.

**F6** - Combustion air fan is defective or the signal to the control board lies beyond the tolerance range of the desired speed.

**F8** - The control board has identified an undesired response.

The malfunctions F1 and F2 are caused by safety devices and therefore are permanent:

The malfunction persists when switching off and restarting the mains voltage and can only be unlocked manually.



#### CAUTION

*Before resetting safety equipment, the cause of the trigger must be identified and rectified.*

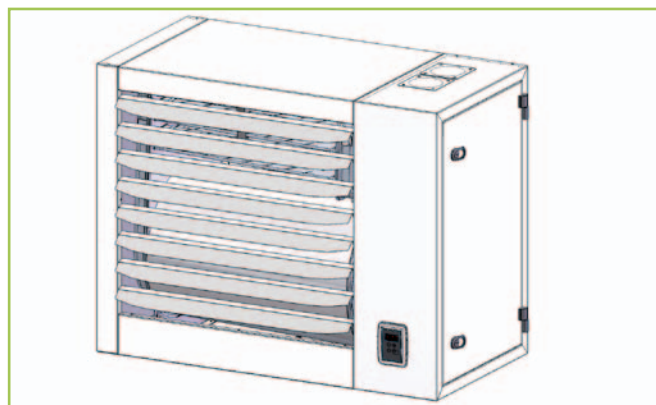


#### NOTE

*Safety devices may not be bypassed or disabled during operation of the unit!*

### Fin alignment

Before switching the unit on, open the fins at least 45°, in order to avoid overheating the combustion chamber.



# REMKO GPS series

## Intended use

The units are designed exclusively for heating and ventilation purposes in industrial or commercial use (no living space heating) on the basis of their structural design and equipment.

The unit design allows for the use of the unit accessories approved by the manufacturer.

The units must only be operated by appropriately instructed personnel.

With non-observance of the manufacturer's specifications, the respective local legal requirements or after arbitrary alterations to the units, the manufacturer shall not be liable for resulting damages.

Any improper use of the units is prohibited. The units must be installed by a qualified technician, who is responsible for the observance of the existing regulations, rules and guidelines.



### NOTE

*Operation other than the types listed in this operating manual is prohibited. With non-observance, any liability and claim to guarantee expire.*

## Customer service and Guarantee

As a prerequisite for any guarantee claims to be considered, it is essential that the ordering party or their representative complete and return the "**certificate of guarantee**" to REMKO GmbH & Co. KG at the time when the units are purchased and commissioned.

The units are tested several times to verify their correct function. However, if malfunctions should arise that cannot be remedied by the operator with the assistance of the troubleshooting section, please contact your specialist dealer or contractual partner.



### CAUTION

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*The redistribution, even in part, or the use of this documentation for purposes other than intended is strictly prohibited without the written authorisation of REMKO GmbH & Co. KG.*



## Environmental protection and recycling

### Disposing of packaging

When disposing of packaging material, please consider our environment.

Our units are carefully packed and delivered in stable transport packaging and, if applicable, on a wooden pallet.

The packaging materials are environmentally-friendly and can be recycled.

By recycling packaging materials, you make a valuable contribution to the reduction of waste and conservation of raw materials.

***Therefore, only dispose of packaging material at appropriate collection points.***

### Disposal of the old unit

The manufacturing process for the units is subject to continuous quality control.

Only high-grade materials are processed, the majority of which are recyclable.

You also contribute to environmental protection by ensuring that your old equipment is only disposed of in an environmentally-friendly manner.

***Therefore, only bring the old unit to an authorised recycling business or to an appropriate collection point.***



### Transport and handling

The units from the GPS range are supplied fastened to a wooden pallet and covered with suitable stable cardboard packaging. Suitable transport vehicles, capable of bearing the load, must be used to transport the units. All transport work must be performed by experienced personnel, who are familiar with the applicable health and safety regulations. The unit can be unpacked once it has been transported to the installation site.

## Installation

The following instructions for installation and set-up of the units are intended exclusively for authorised technicians.

All safety notes must be observed without fail.

### General information

Normally the units can be installed directly in the room to be heated.

With the installation of the units, the local and country-specific regulations (LBO) and combustion plant order (FeuVO) of the respective state must be observed.

The first enactment of the (German) Federal Emission Control Act (1st BImSchG) and the statutory provisions of the ordinance governing small combustion plants (1st BImSchV) must also be applied.

The installation of fan-assisted heaters operated with gas burners is prohibited in the following spaces:

- In public function rooms or in rooms with a concentration of people greater than 0.4 per square metre
- In rooms where gas or dust can accumulate through the processing that takes place there or through the materials stored there, which could lead to fire or explosion

So that no dangerously high temperatures are reached, the distance between the exterior surface of the unit and flue gas pipe and any accumulated flammable material must be no less than 1.5 m, with a ground clearance of 2.5 m or greater.

Units with gas burners for gas with a density greater than 0.8 (liquid gas, propane, butane) may only be installed in rooms where the floor does not lie below ground level. Rooms must have one or more permanent openings (windows or doors).

### Ventilation openings

The rooms where gas-powered units are operated must have one or more permanent openings (windows or doors).

These openings must be arranged in the following places:

- directly below the ceiling with gases with a density less than 0.8
- directly above the floor with gases with a density greater than or equal to 0.8.

The openings must be arranged on exterior walls in open air. For the size of the cross-section, the installed heat output is authoritative.

### Installation instructions

The minimum height and clearance of the fan-assisted heater from the walls and floor can be gathered from the drawing below.

The minimum clearances are the necessary distances for maintenance. All measurements are given in mm. The height [2500 mm] corresponds to the minimum height indicated for "Hanging units" by the guidelines.

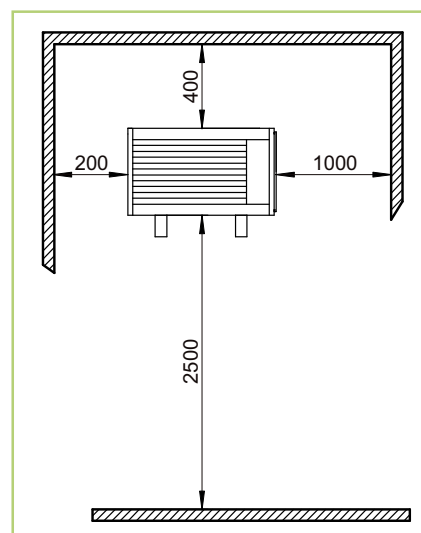
Two different types of brackets are available for the installation as accessories:

**Fixed and pivoting.**



#### NOTE

*Ensure sufficient distance between fan and wall (unhindered air flow).*



# REMKO GPS series

## Permanent wall installation

Align the wall brackets in a suitable place on the wall (spirit level) and securely fasten.

Mark the boreholes to be made with a pencil.

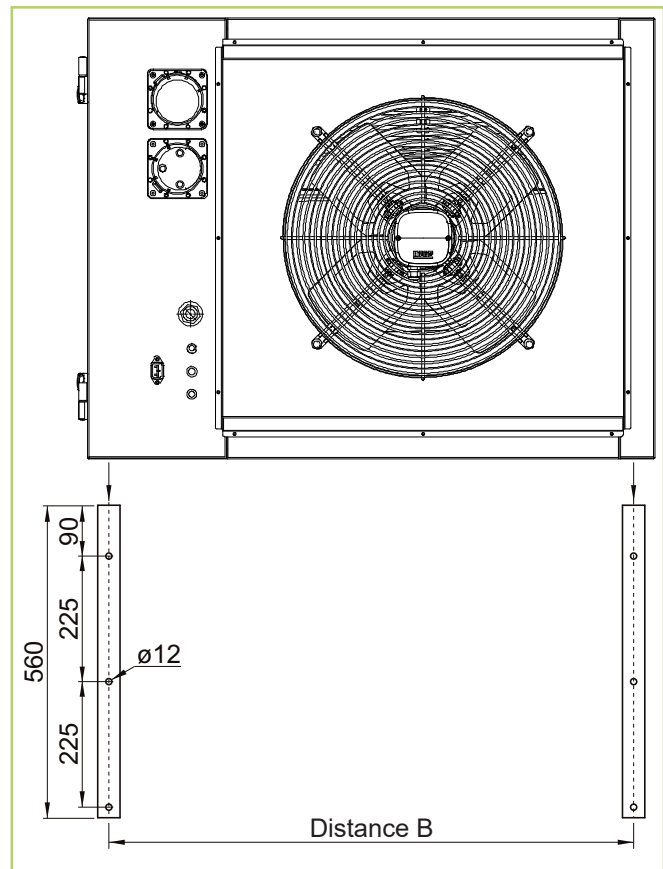
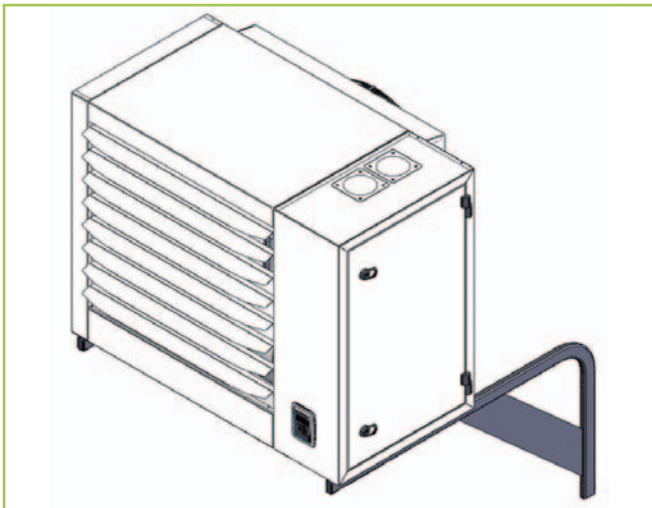
- Securely attach the wall brackets with suitable anchors and screws - M10 or greater.



### NOTE

*Make sure that the type of anchor and size of the screws are appropriate for the type of masonry, in order to bear the weight of the unit.*

- Install the two bracket pairs with the supplied material as shown in the figure
- When installing the brackets, lock the nuts with a locking ring between the bracket and nut.



### Distance between the wall brackets

Model	Distance B
GPS 15	719 mm
GPS 25	719 mm
GPS 35	910 mm
GPS 55	910 mm
GPS 75	1241 mm

The unit should be affixed "decoupled".

Brackets for wall installation (standard design) EDP no.: 228780 GPS 15 - 75

- Position the unit on the brackets so that the holes of the unit line up with those of the brackets, whereby the corners of the brackets must be flush with the front edge of the unit.
- Fasten the units with the M8 screws provided; in the process, insert a locking ring between the screw and bracket.

### ⚠ CAUTION

*The units may only be mounted on stable walls, ceilings or structures made of non-flammable construction materials with sufficient bearing capacity.*

*The wall console must be affixed securely using screws and wall plugs in accordance with the customer's type of wall and the unit weight.*





## Pivoting wall installation

The instructions for installation of the pivoting brackets are included with the packaging. The use of pivoting brackets is appropriate for the following cases:

- a) Installation of the unit in a corner
- b) Installation of the unit at a right angle to the wall it is mounted on
- c) Installation of the unit on a column

### NOTE

*The brackets must be connected to the unit and the wall in a de-energised state.*

### CAUTION

*The units may only be mounted on stable walls, ceilings or structures made of non-flammable construction materials with sufficient bearing capacity.*

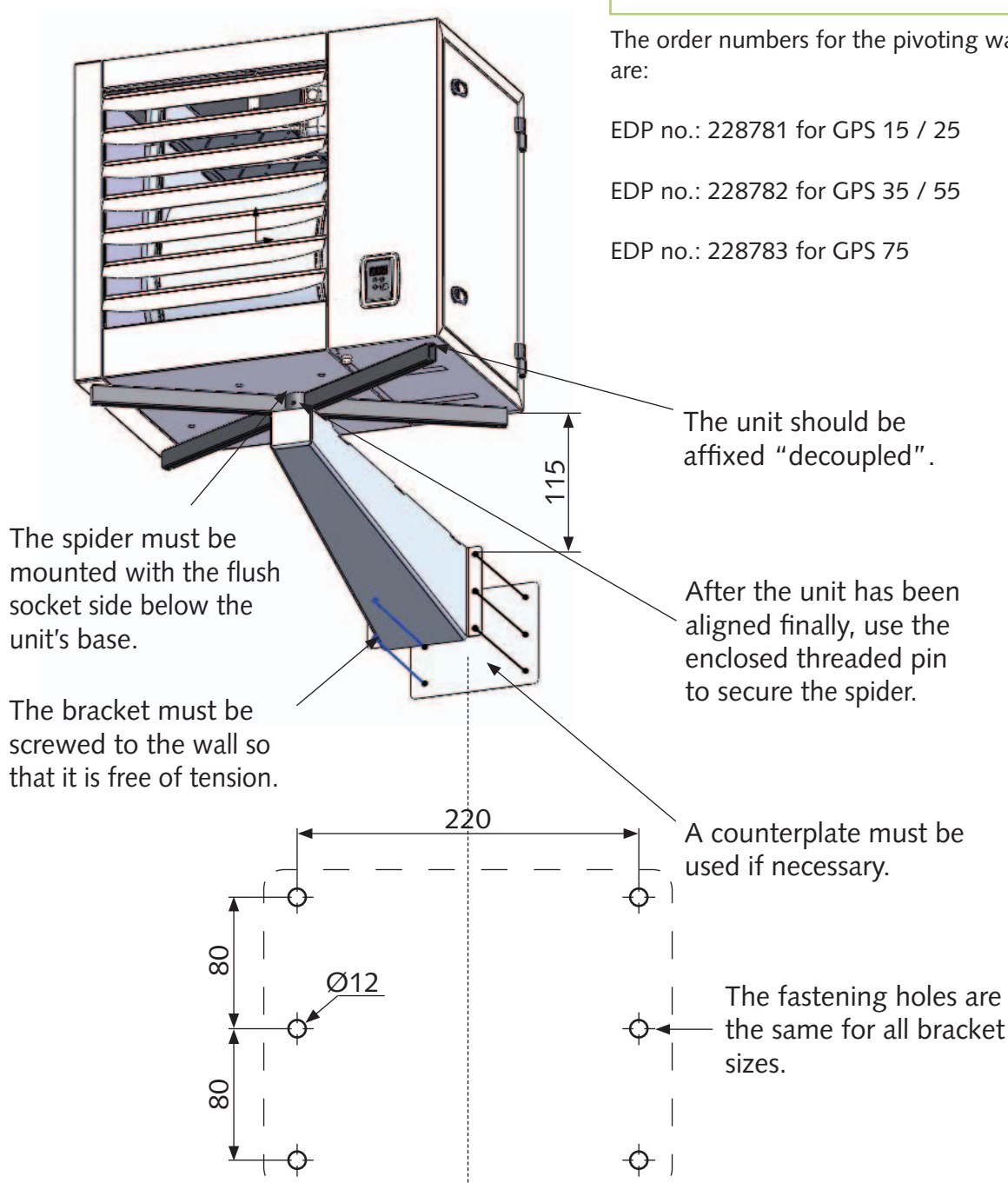
*The wall console must be affixed securely using screws and wall plugs in accordance with the customer's type of wall and the unit weight.*

The order numbers for the pivoting wall installation are:

EDP no.: 228781 for GPS 15 / 25

EDP no.: 228782 for GPS 35 / 55

EDP no.: 228783 for GPS 75



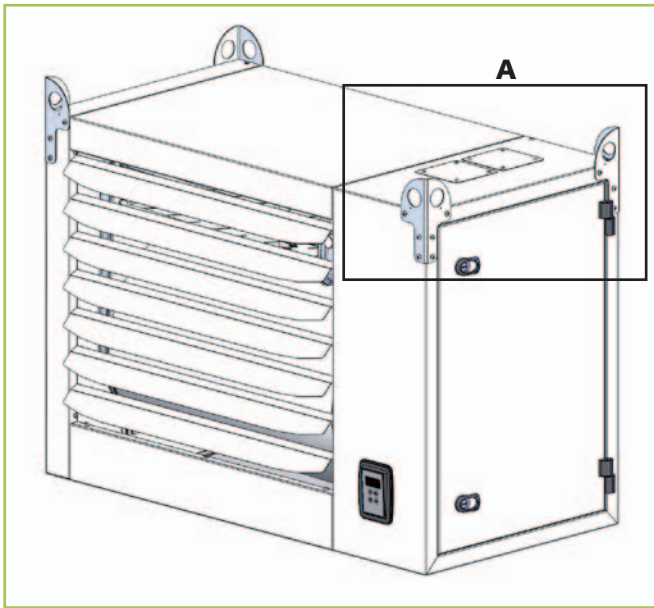


# REMKO GPS series

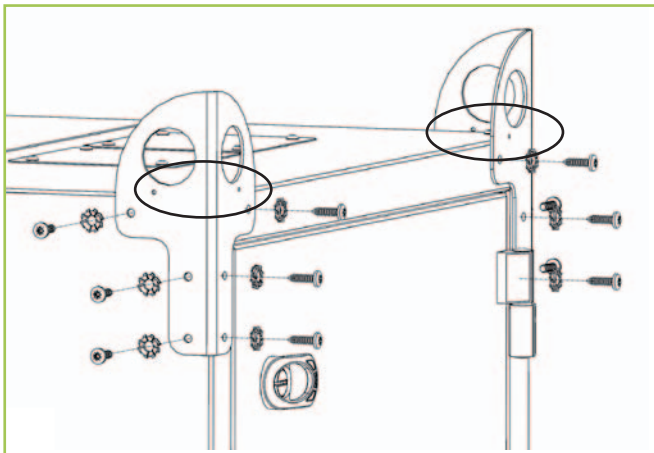
## Hanging from the ceiling

The accessory assembly kit ceiling suspension, with 4 universal suspension brackets, is available for installation as a suspended unit.

When fastening to the ceiling with chains or ropes provided by the customer, use appropriate fastening materials that are suitable for the weight of the unit.



Detailed view A:  
Horizontal air flow



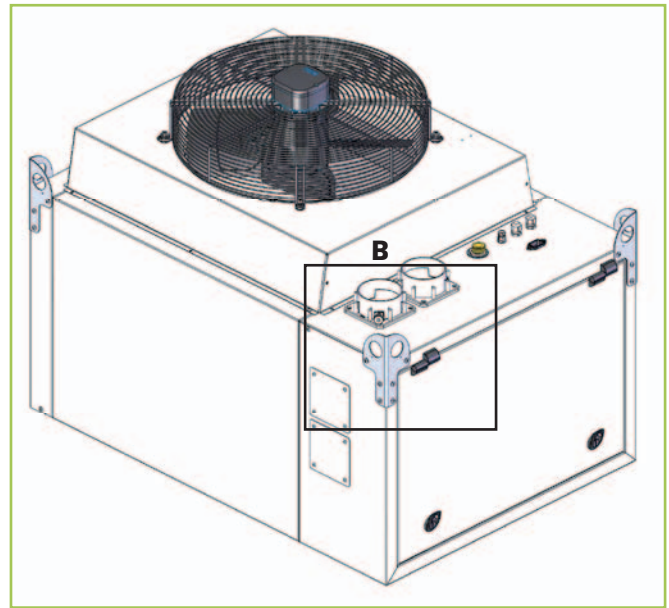
**NOTE:**  
Small guide holes are provided for correct arrangement of the suspension brackets. These must be aligned at the top edge of the unit. Refer to corresponding figure here. With a vertical unit installation (**only possible with the GPS series**), a fan thermostat must be additionally installed.

## Vertical air flow

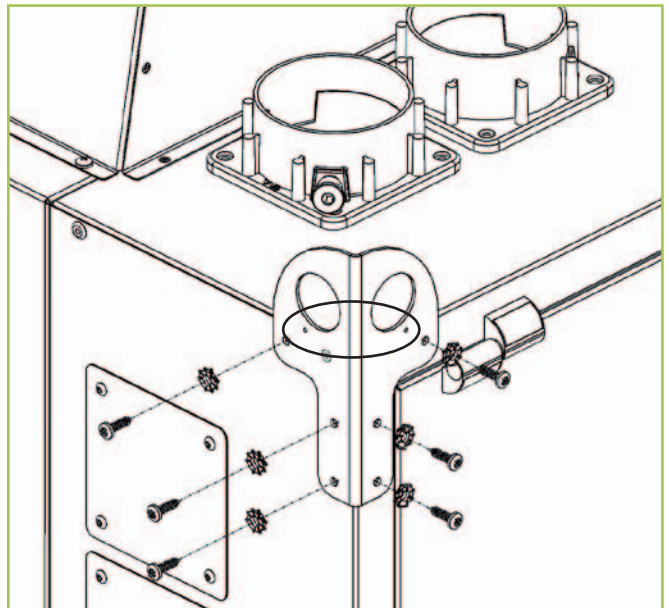
If installation with a vertical air flow is intended, this should be specified during the order phase. An additional thermostat is installed on the fan for this.

### **CAUTION**

*Installation as a suspended unit with vertical air flow can lead to damage and the failure of the unit without the fan thermostat.*



Detailed view B:  
Vertical air flow



## Flue gas connection

The units work with a closed combustion cycle.  
The fan is located in front of the heat exchanger.

The flue gas evacuation and/or combustion air supply must be planned and executed in observance of the respective local guidelines.

In addition, installation on outside walls must be coordinated with the responsible district master sweep.

The classification of the different installation versions takes place pursuant to the European Standard EN 1020 and/or DVGW-TRGI Directive 2008 and is a component of the EC authorisation in the factory-supplied design.

### Installing the end pieces

The warm air heaters from the GPS range are equipped in the rear and top section of the burner box with openings for the extraction and flue gas pipe. Depending on which type of installation has been selected, it is possible to fit or relocate the end pieces at the rear or top.

The end pieces are mounted on the rear side of the unit in the factory. If top openings should be required then the connections must be detached from the rear side and the cover and seal unscrewed from the top openings. Now screw the 90° bend inside the burner box, in the respective direction. Insert the end pieces in the desired position and screw the cover and seals into the seats that are not used. Make sure that the seal is guaranteed on the burner box and in particular on the flue gas pipe.

### Fitting the end piece seals

The scope of supply includes two seals to seal the end pieces with the flue gas pipe and fresh air line. These are fitted on the end pieces of the GPS units for correct sealing.

#### CAUTION

*If the end piece seals are not used then there is a high risk that flue gases will be fed into the room to be heated.*

**Individually, the units are classified for the following versions:**

**B23/C13/C33/C43/C53/C63**

The installation of the flue gas and supply air duct can take place in different ways.

#### **e.g. Gas fireplace type B:**

The combustion cycle is not sealed compared to the environment in which it has been installed. The combustion air is taken directly from the installation space.

This version may only be installed in rooms that have at least one door or window that can be opened to the outside and have a volume of at least 4 m<sup>3</sup> per kW total nominal heat output of the unit; or a combustion air opening of at least 150 cm<sup>2</sup> leading outside or two openings that have a clear cross-section of at least 75 cm<sup>2</sup> each.

#### **e.g. Gas fireplace type C:**

The combustion cycle is sealed compared to the environment in which it is installed. The combustion air is fed from outside.

The units may only be operated with appropriate flue gas pipes.

The factory components available as serial accessories correspond to all requirements.

#### CAUTION

*The use of plastic flue gas pipe is not permitted.*

#### NOTE

*The installer of the exhaust system is obliged to complete the system identification (name plate) enclosed with the exhaust system in accordance with applicable standards and visibly attach it to the exhaust system.*

# REMKO GPS series

## Condensate water

With long pipes condensate can form, because the temperature of the flue gas drops below the condensation temperature. This must be prevented through the following measures:

- Through heat insulation of the flue gas pipes
- Through the use of condensate water traps, where the collected condensate is drained from the flue gas pipe.

### Note:

Appropriate condensate traps are available as accessories. They can be used with both horizontal and vertical pipework.

## Guide to selection

If the flue gas end piece is not connected directly to the unit, but rather longer flue gas sections must be overcome, ensure - according to the tot. length and geometry of the flue gas routing - that the end and extension pieces, as well as the elbows, exhibit the correct diameter.

After fastening the flue gas routing, the pressure loss for the respective unit must be determined.

The pressure loss is different with each unit, because the flue gas flow rate depends on the output.

Add up the determined pressure losses of the individual flue gas components and make sure that the sum total does not exceed the value available for the unit type to be used.

### Note:

With the internal installation of coaxial tubes, a maximum tube length of 3 m is permitted. The end piece of the flue gas pipe must be installed in accordance with the relevant national guidelines.

If there is a combustion air supply duct, the pressure losses must be added to those of the flue gas pipe.

If the sum total of the pressure losses lies above the available unit pressure, flue gas and fresh air pipes with a larger diameter must be used. The calculation must be performed once more for this.



### NOTE

*Exceeding the permissible pressure losses in the pipework reduces the heat output and safe operation of the unit.*

The maximum possible duct lengths between the unit and end piece are shown in the table.

When using flue gas elbows, it is necessary to take the respective pressure losses into consideration.

## Examples of pressure losses:

A 90° elbow with Ø 80  
equates to 1.8 m straight pipe length

A 45° elbow with Ø 80  
equates to 0.8 m straight pipe length

A 90° elbow with Ø 100  
equates to 2.3 m straight pipe length

A 45° elbow with Ø 100  
equates to 1.0 m straight pipe length

Examples for the design of flue gas pipe and combustion air ductwork are represented on the following pages.

## Individually, the units are classified for the installation versions

**B23/C13/C33/C43/C53/C63**



### CAUTION

*Installation work may only be carried out by authorised qualified technicians.*

## Installation examples

### Gas fireplace type B23

Room-air-dependent combustion system.

The combustion cycle is not sealed compared to the environment in which it has been installed. The combustion air is taken directly from the installation space.

The guidance of the flue gas can take place in two variants:

- with the aid of horizontal ductwork (outside wall installation) straight through the outside wall or
- with a vertical duct through the roof, if the ceiling is also the roof.

With these installation variants, sufficient ventilation of the installation space must be ensured in order to guarantee the correct supply of combustion air. This takes place through openings in the walls of the room.

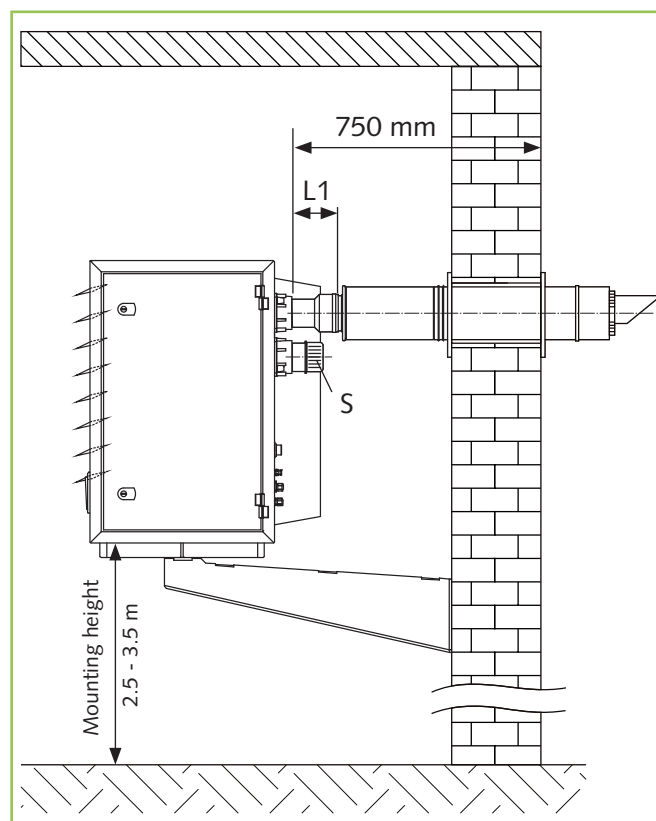
The dimensions and characteristics determined in the standards must be adhered to.

In particular, DVGW-TRGI 2008 Sec. 5.2.2 and TRF Sec. 7.2.2. should also be observed.

The combustion air supply must be made from the outside as a basic rule:

- With mechanical suction plants in the installation space
- If over or underpressure can occur in the installation space
- If the unit is installed in environments with large amounts of dust
- In operations working with motor vehicles

### Type B23 horizontal through the outside wall.



#### Type B23 horizontal

L1 maximum duct length without end pieces

	Pipe ø 80
Model	Metres
GPS 15	30
GPS 25	30
GPS 35	30
GPS 55	25
GPS 75	10

#### ⚠ CAUTION

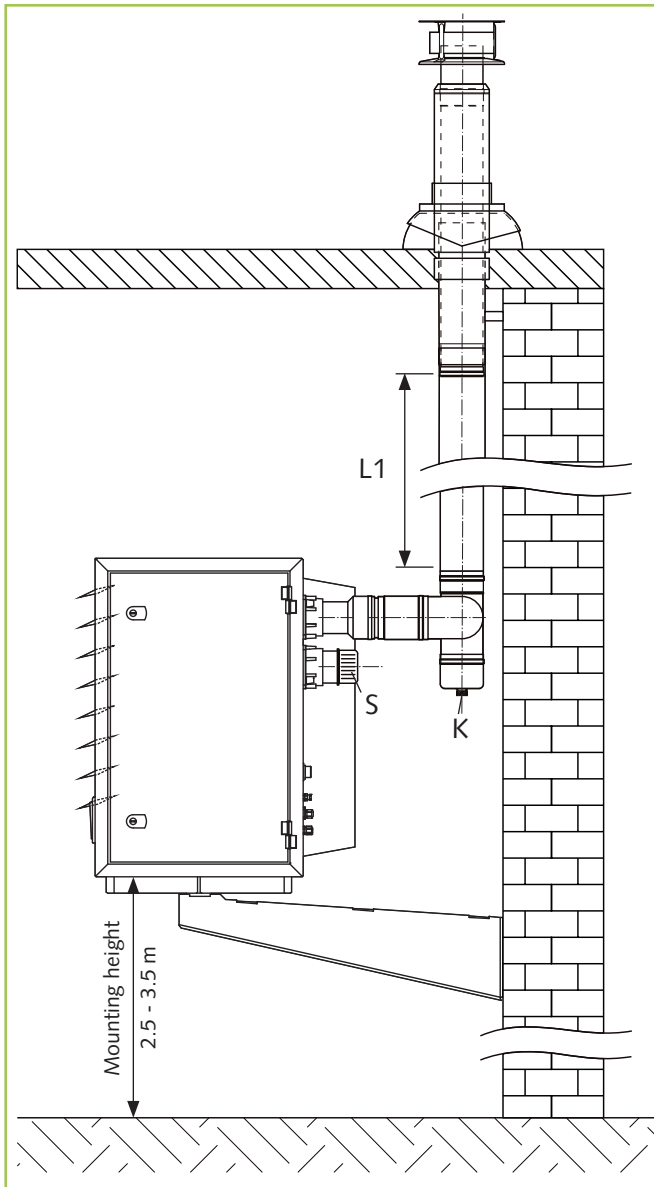
*In this version a protection grid should be affixed on the combustion air supply duct so that the penetration of solid objects with a diameter greater than 12 mm is prevented.*

#### Protection grid [S] for combustion air intake

GPS 15 - 75; EDP no.: 228960

# REMKO GPS series

## Type B23 vertical through the ceiling.



### Type B23 vertical

L1 maximum duct length without end pieces

	Pipe ø 80
Model	Metres
GPS 15	30
GPS 25	30
GPS 35	30
GPS 55	25
GPS 75	10



### NOTE

Condensate drainage connection [K] = M 20 external thread

## Gas fireplace type C

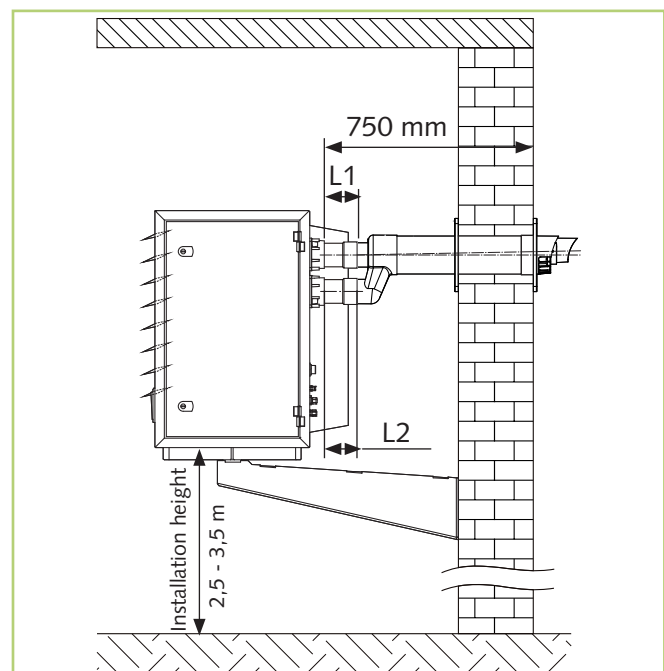
Room-air-independent combustion system. The combustion cycle is sealed compared to the environment in which it is installed. The combustion air is fed from outside. The ductwork runs horizontally through the outside wall or vertically through the roof.

### NOTE

According to Section 4-1-2 of the FeuVO (German Fire Ordinance), only fireplaces that are self-contained from indoor air may be operated in garages.

## Type C13

Room-air-independent combustion system. Exhaust/ and combustion air are led through an LAS end piece through the outside wall.



### Type C13 horizontal / coaxial

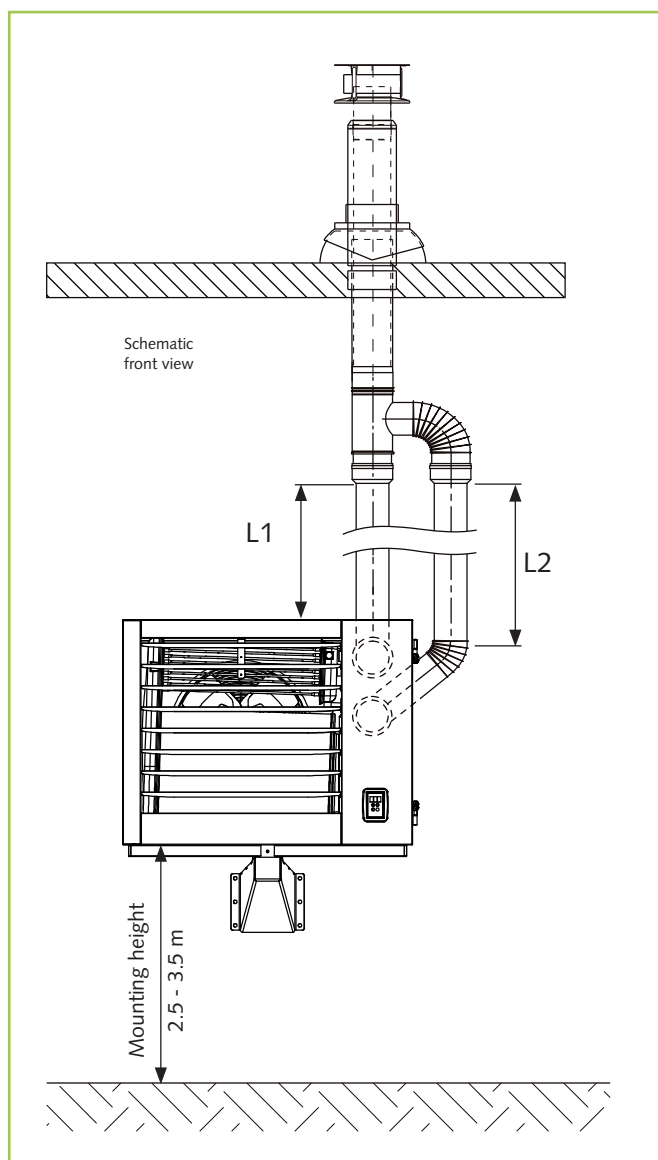
L1 + L2 maximum duct length without end pieces

	Pipe ø 80	Pipe ø 100
Model	Metres	
GPS 15	30 + 30	-
GPS 25	30 + 30	-
GPS 35	20 + 20	-
GPS 55	8 + 8	20 + 20
GPS 75	2 + 2	10 + 10

Flue gas and fresh air adapter piece Ø80 to Ø100  
GPS 55-75; EDP no.: 228916

## Type C33

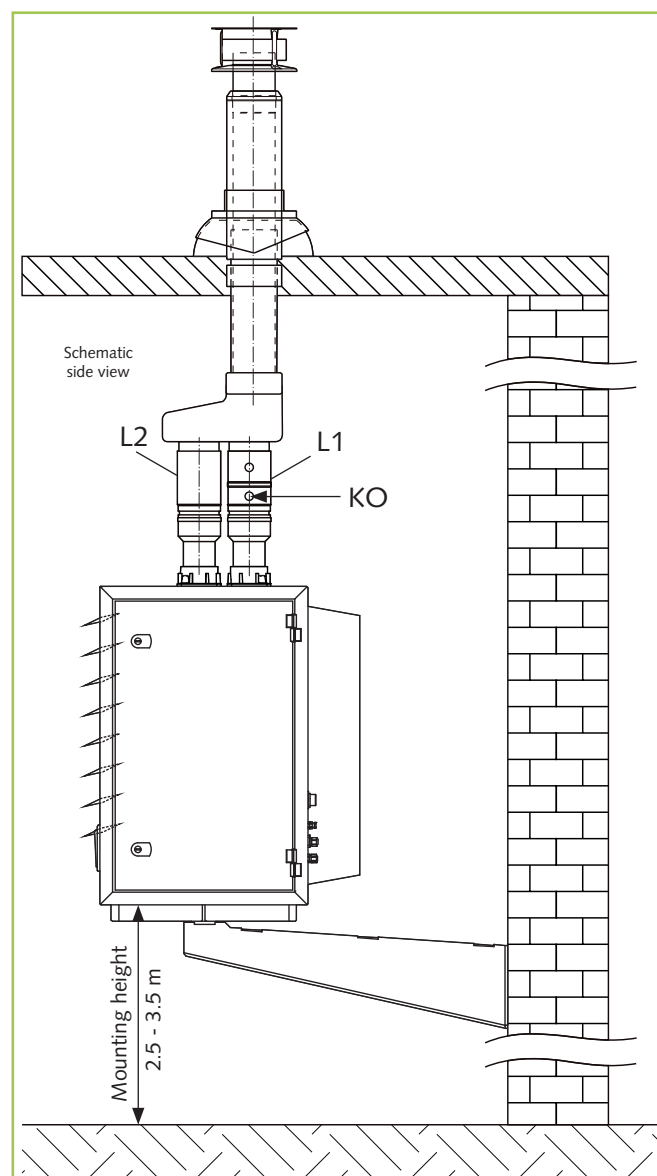
Room-air-independent combustion system.  
Exhaust/ and combustion air are led through an LAS  
end piece through the roof.



Type C33 vertical / coaxial

L1 + L2 maximum duct length without end pieces

	Pipe ø 80	Pipe ø 100
Model	Metres	
GPS 15	30 + 30	-
GPS 25	30 + 30	-
GPS 35	20 + 20	-
GPS 55	5 + 5	20 + 20
GPS 75	1 + 1	10 + 10



### NOTE

In this version the position of the connections to the unit must be changed, meaning they must be repositioned from behind to above. **This variant is executed at the factory and must be indicated when ordering.**

### NOTE

Condensate drainage connection [KO] = M 30 external thread

### NOTE

The installation of the exhaust gas routing through the outside wall must correspond to the regulations of DVGW - TRGI and TRF as a basic rule and must be approved by the responsible district master sweep.



# REMKO GPS series

## Electrical wiring

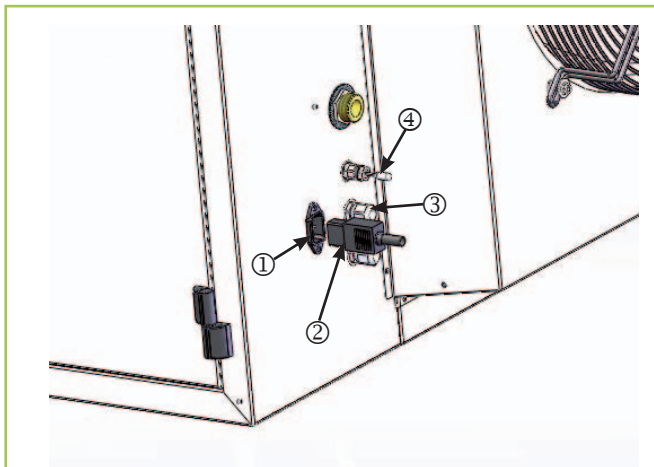
The electrical connection of the unit may only be carried out by authorised technicians (electrical power company-approved) in accordance with the applicable regulations. A main/emergency shut-off switch should be installed in an easily accessible position on the visible side of the unit and protected against unintended actuation. The switch must disconnect all poles of the unit with a minimum contact opening of 3 mm from the power supply.

### ⚠ CAUTION

*A multi-polar isolator with appropriate electrical protection must be connected upstream to the units.*

*The wire cross-section must be at least 1.5 mm<sup>2</sup>.*

The units must be connected to the power supply protected against polarity reversal.  
Power supply 230V/50Hz,  
Minimum cross-section of the power supply 1.5 mm<sup>2</sup>.



### Rear panel legend:

- ① = Unit power outlet
- ② = Unit plug
- ③ = Cable guides
- ④ = Unit temperature probe

### 💡 NOTE

*Phase and neutral lines must not be interchanged during connection, because the flame monitoring device will otherwise interrupt unit operation for safety reasons.*

**Alarm F1 is displayed.**

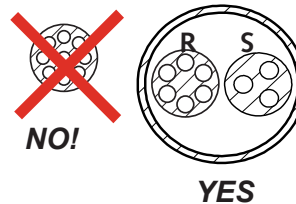
## Connection of room thermostat and remote control

The hot air heaters from the GPS series must always be connected to a thermostat, a timer or a room temperature controller, so that the user can switch the unit on and off. The operator or installer is required to install the unit circuitry in the room. If multiple switches serve to switch off the burner, these must be connected in series.

### ⚠ CAUTION

*The main/emergency shut-off switch may only be used in emergency situations or with extended periods of non-use.*

*If it is switched off during the operation of the unit, the electrical supply-air fan cannot cool the combustion chamber. This can result in damage to the unit.*



R = Controller cable  
S = Live cable



## KF-30 connection

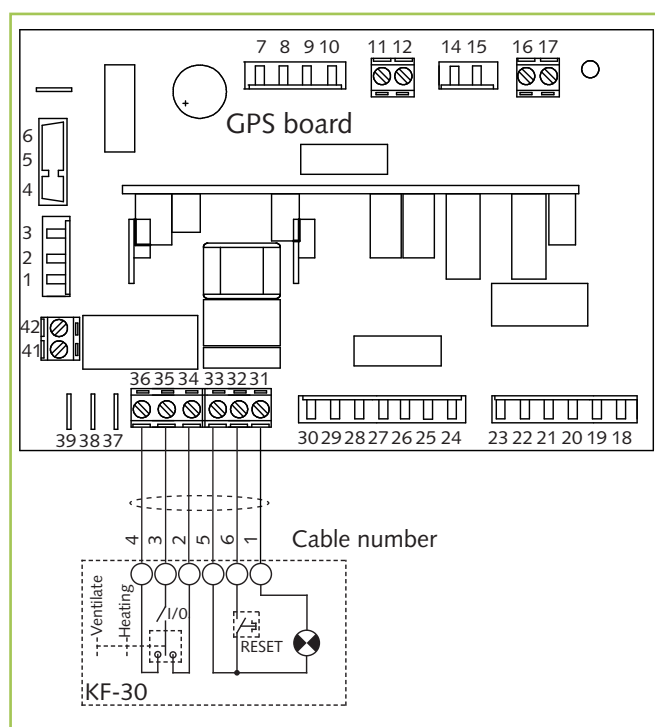
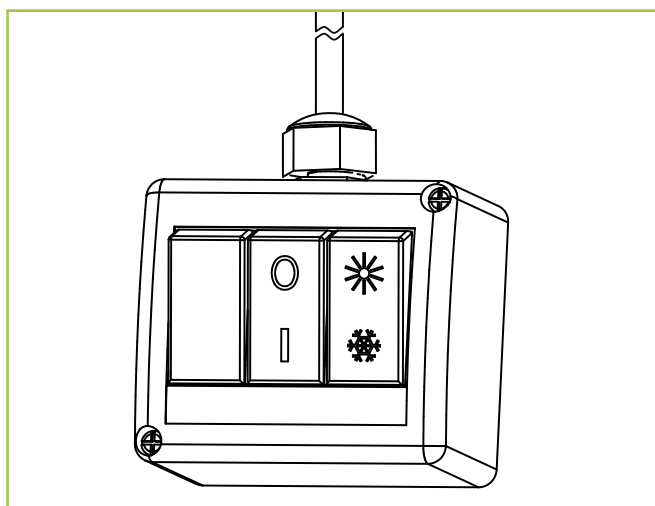
The cabled remote control KF-30 is a simple control for the GPS unit range and has the following functions:

- On / off switch
- A summer / winter selector switch
- A RESET key with error indicator light

The remote control is connected to the screw terminals of the GPS board in accordance with the wiring diagram.

### NOTE

*If a remote control is connected to the unit then the selector switch on the front control panel of the unit must always be set to "winter".*

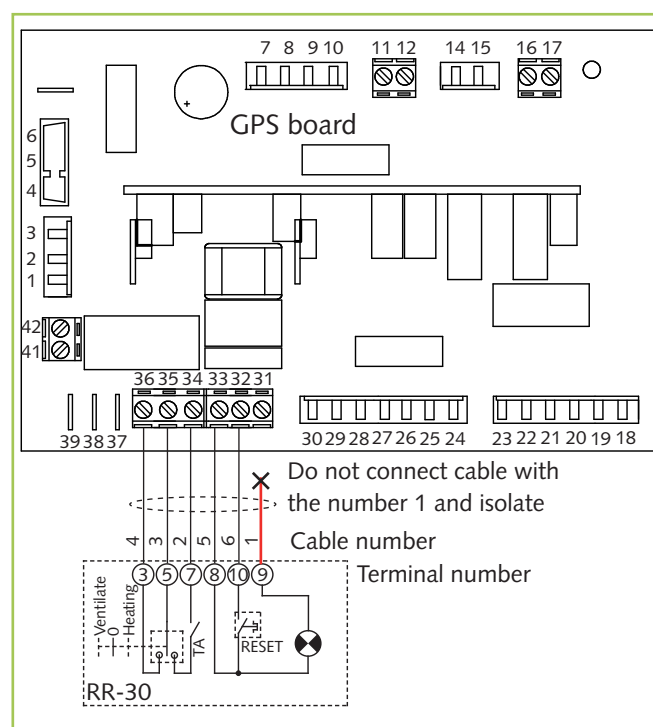
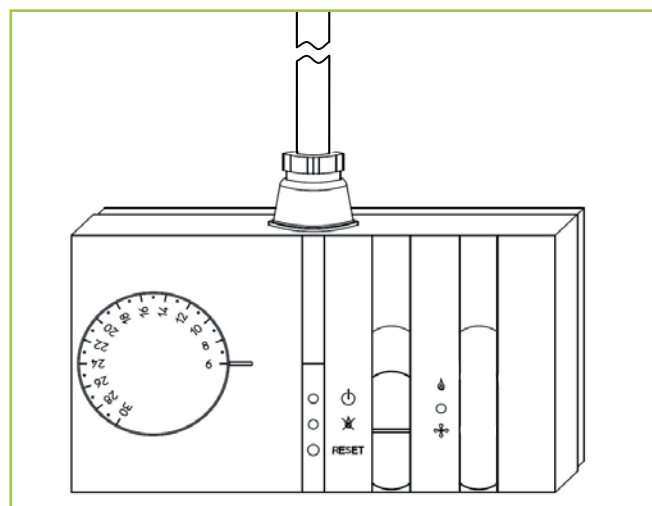


## RR-30 connection

The room temperature controller RR-30 is electronically controlled and is designed for simple and convenient regulation of the room temperature. It offers the following functions:

- Heating / off / ventilation selector switch
- Adjustment wheel for the room temperature
- Operating message light
- RESET key

The remote control is connected to the screw terminals of the GPS board in accordance with the wiring diagram.



# REMKO GPS series

## Connecting the ATR-10 for a GPS unit

The ATR-10 electronic temperature controller is designed for convenient regulation of the room temperature. It offers the following functions:

- Heating / off / ventilation function buttons
- Electronically adjustable room temperature
- Electronically adjustable weekly timer
- Operating message indicators
- Malfunction message
- RESET button combination

The remote control is connected to the screw terminals of the GPS board in accordance with the wiring diagram. Observe the ATR-10 operating manual to ensure fault-free operation.

## GPS group operation using the ATR-10

The ATR-10 electronic temperature controller is suitable for group operation of GPS units. One RP-10 is required per GPS unit for isolated unit switching. Observe the ATR-10 operating manual to ensure fault-free group operation.

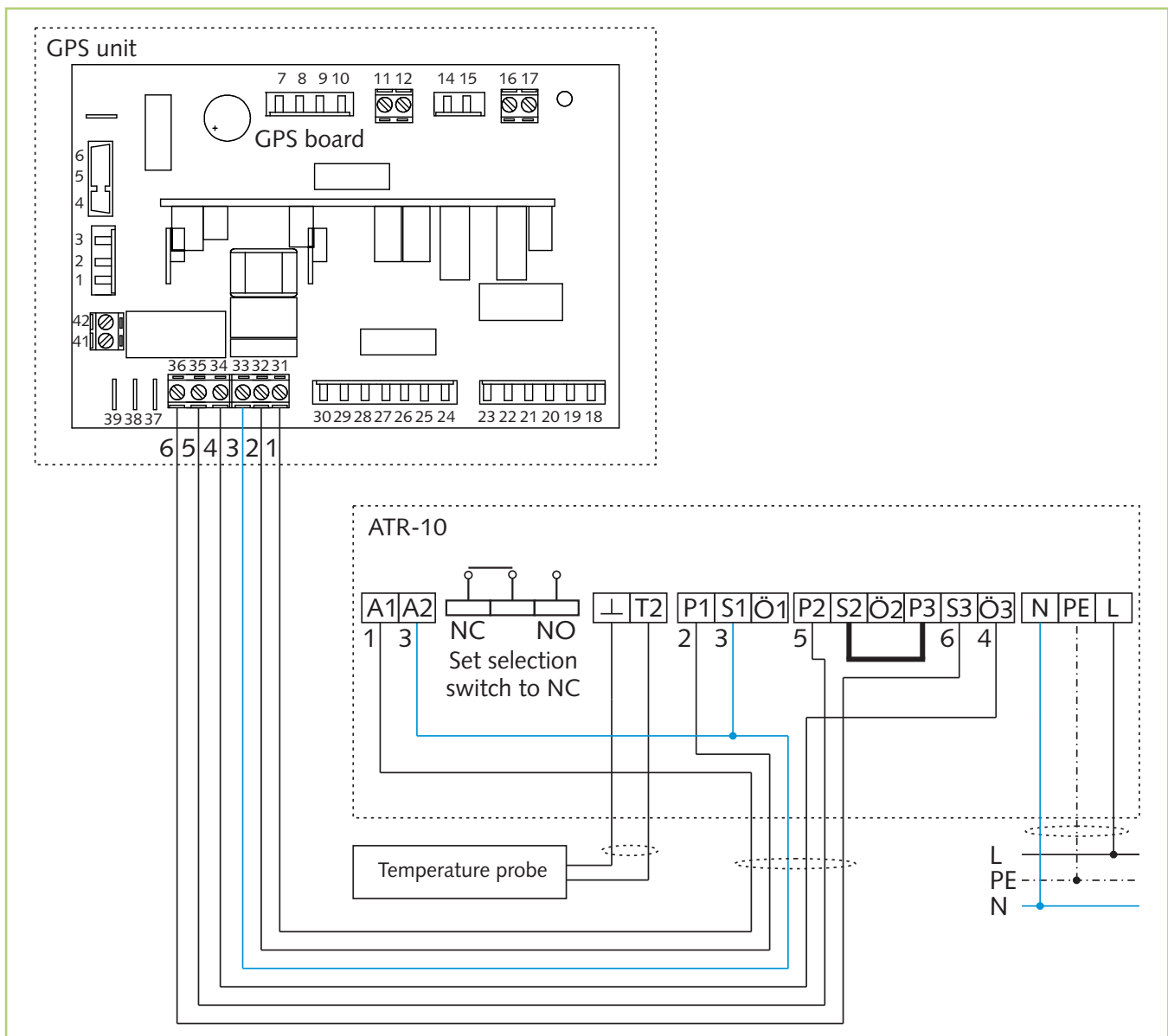
### RP-10 relay board

GPS 15-75; EDP no.: 1011368



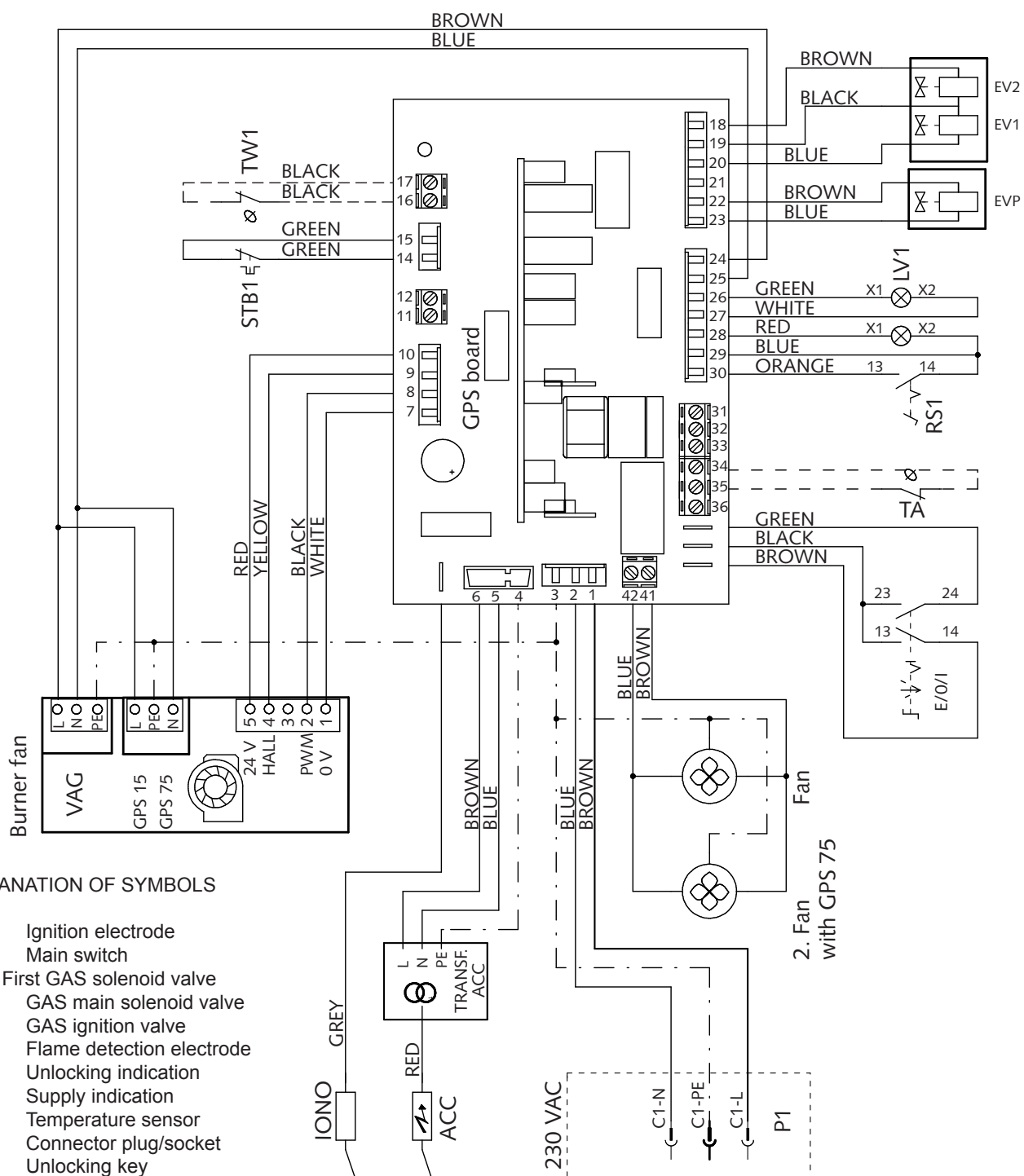
### NOTE

*The cable lengths between the ATR-10 temperature controller and the GPS board may not exceed 8 metres. Avoid doorbell/telephone cables!*



We reserve the right to modify the dimensions and design as part of the ongoing technical development process.

## Electrical wiring diagram



# REMKO GPS series

## Gas connection

The installation of the gas connection may only be executed by authorised technicians (authorised by the municipal gas supplier) in observance of the applicable provisions for the respective gas type. The cross-section of the ductwork should be determined according to the connection value of the unit, the total output resistance as well as the amount of gas supply pressure.

The necessary gas supply pressure (depending on gas type) should be ensured by the customer.

The necessary amount of gas and the necessary gas pressure must be continuously available during operation of the unit according to its output. The unit connection takes place through an R 3/4" external thread connection.

The gas supply should be executed with a suitable, removable screw connection free of voltage and vibration.

The components described in the applicable gas guidelines as well as the locally required components in the gas supply, such as gas pressure regulators, isolation devices, etc., are not included in the scope of delivery and must be provided by the customer. Installing a high-output compatible gas filter without pressure regulator is also recommended, because the filter area of the serial filter installed above the gas valve is limited.

The applicable standards allow a maximum pressure of **60 mbar** in the heating room; higher pressure values must be reduced prior to entrance to the heating or installation room of the unit.

Prior to the initial commissioning, the gas supply line must be thoroughly cleaned and bled through appropriate measures.

It must be ensured that the connection of the unit to the gas supply line is executed gas-tight.

All screw connections of the unit and the gas supply must be inspected for leakage integrity.

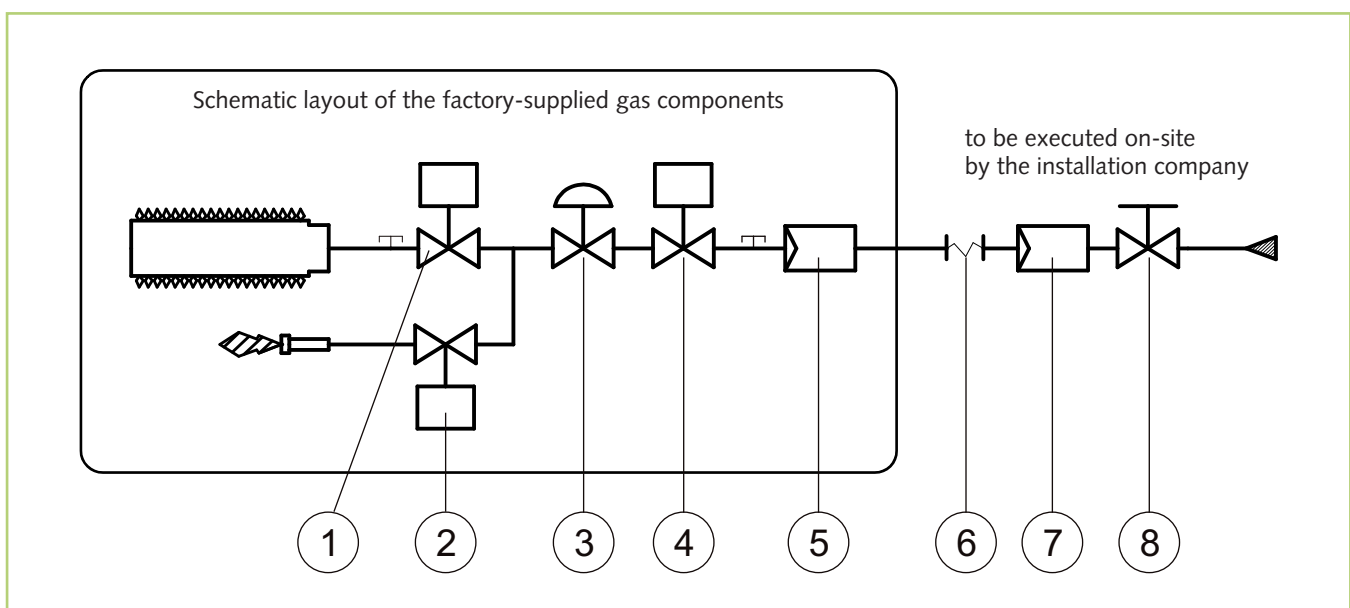
If leak detection sprays are used, these must correspond to DIN 30657 (corrosion-free).

### ⚠ CAUTION

*Installation work on the gas system and the supply lines may only be conducted by licensed technicians.*

### LEGEND

- 1 = Electrical gas solenoid valve *main burner*
- 2 = Electrical gas solenoid valve *ignition burner*
- 3 = Pressure regulator
- 4 = Electrical gas safety valve
- 5 = Gas filter (small filter area)
- 6 = Vibration-inhibiting connection piece (provided by the customer)
- 7 = Gas filter with large filter area (provided by the customer)
- 8 = Gas stopcock (provided by the customer)



## Commissioning

The initial commissioning may only be carried out by a contract installation company or the factory customer service department.

Carry out the following steps prior to the initial commissioning:

### CAUTION

*Adjustment and maintenance work on the unit and gas burner may only be carried out by authorised and qualified technicians!*

1. Inspect all connections and screw connections of the unit and the gas connections for leakage integrity.
2. Check all electrical screw and plug connections within reach.
3. Check the electrical connection for polarity and the power supply (230V/50Hz).
4. Check whether the unit is properly connected to an effective grounding system that corresponds to the applicable safety standards.  
Only then is the electrical safety and function of the unit guaranteed.

### CAUTION

*Gas lines must never be used for the grounding of electrical equipment!*

The units are delivered pre-set in the factory according to the desired type of gas.

It must be ensured that a gas supply pressure that conforms to standards is continuously present in accordance with the locally available gas type. The gas of the network must be consistent with the gas category to which the unit is adjusted.

For commissioning of the burner, proceed as follows:

1. Loosen the lock screw in the pressure tap of the burner.  
Do not unscrew completely!
2. Connect a suitable pressure measurement device, e.g. U-pipe pressure gauge, min. resolution 0.1 mbar.
3. Open the gas shut-off devices.
4. Switch on the main/emergency switch.
5. Set the mode selector switch on the front side of unit to the "winter" setting.
6. Switch on the room thermostat or press the remote control switch.
7. Set the heat requirement temperature higher than the temperature measured by the room thermostat or the temperature controller (omitted with KF-30).

If the conditions are fulfilled and the unit is not blocked, pre-ventilation of the combustion chamber starts, followed by ignition of the burner. The cooling fan subsequently starts.

It is possible that the ignition burner does not ignite with the initial commissioning, because there is still air in the gas line, whereby the unit triggers a malfunction. The unit must be unlocked and the starting procedure repeated.

### CAUTION

*A functional inspection of the entire unit including leak testing of all gas-conveying connections must be conducted.*

## Combustion analysis

Start the unit and make sure that the pressure at the valve intake corresponds with the prescribed value. Otherwise adjust.

After approx. two minutes connect a flue gas analytical device to the flue gas pipe and read the CO<sub>2</sub> value.

Compare this value to the information in the table "Gas settings" for the type of gas in use.

# REMKO GPS series



If the value lies outside the indicated range, make adjustments with the CO<sub>2</sub> regulating screw at the Venturi tube.

- When tightening, the gas flow rate is reduced and the CO<sub>2</sub> value along with it
- When loosening, the CO<sub>2</sub> value increases.

Then set the burner to "minimum output" by setting the internal thermostat to a low temperature.

Wait until the minimum output at the burner has stabilised and check that the CO<sub>2</sub> value is the same or slightly below the CO<sub>2</sub> value of the high flow rate (up to -0.3%).

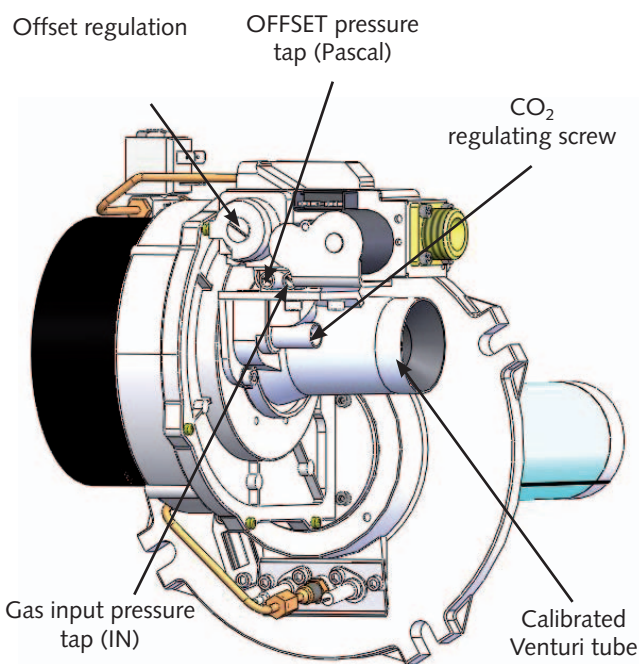
With deviating values, use the offset screw.  
To change the values, pull out the metal plug and use the regulating screw:

- When loosening, the CO<sub>2</sub> value is reduced.
- When tightening, it increases.

After any changes to the offset regulation, the CO<sub>2</sub> value at the high output must be checked again through the steps indicated above.

After these steps, set the temperature on the internal thermostat back to the desired room temperature value.

After completion of all steps for the initial commissioning, the user is instructed on the use of the unit and its controller.



## CAUTION

*The inlet of the Venturi tube may in no case be covered with your hands or other objects. This can lead to flashback of the premix burner.*

## CAUTION

*If the unit should not be used for extended periods of time, the gas cocks must be closed and the main switch of the unit must be switched off.*

## NOTE

*The unit always conducts follow-up ventilation prior to switching off the fans.*

## NOTE

*If the unit is not set to "Normal" operation, the control board automatically resets the unit after 20 minutes.*

## Maintenance

In order to preserve the performance and a long service life of the units, a number of mandatory checks must be carried out once yearly and in each case prior to the beginning of the heating season:

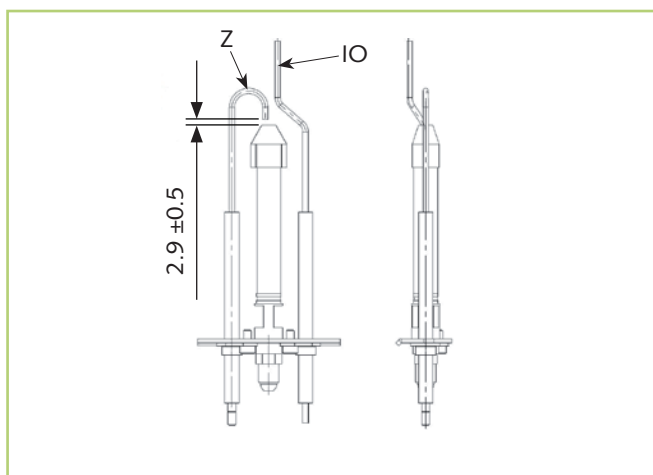
- 1) Check condition of the ignition and monitoring electrodes as well as the ignition gas burner.
- 2) Check condition of the supply and flue gas lines as well as the end pieces.
- 3) Inspect Venturi tube for dirt.
- 4) Inspect heat exchanger for dirt.
- 5) Check gas pressure at the inlet to the gas valve.
- 6) Check function of the flame monitoring unit.
- 7) Check of the safety thermostat(s).
- 8) Check of the ionisation current (>2 microamperes).

### NOTE

With steps 1, 2, 3 and 4 the power and gas supply to the unit must always be interrupted. Steps 5, 6, 7 and 8 take place in the unit heating mode.

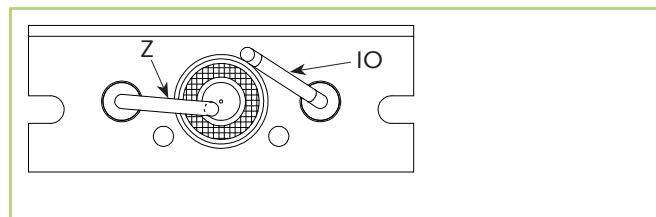
#### 1) Checks of the electrodes

Completely disassemble the ignition burner and clean gas system and gas nozzle with compressed air. Check the ceramic of the electrodes for integrity. Carefully remove any oxidation accumulation on the metal part of the electrodes with very fine emery paper. Check electrodes for their positioning according to instructions (see figure).



It is important that the monitoring electrode [IO] lies tangential to the ignition burner head and not within it.

The ignition electrode [Z] must discharge to the outside edge of the ignition burner at an appropriate distance to the monitoring electrode.



#### 2) Checks of the flue gas and supply air lines

Carry out a visual inspection of the condition of all lines and connectors. Remove any accumulation of dirt that has formed on the end piece of the supply air line.

#### 3) Checks and cleaning of the Venturi tube

Remove the dirt at the inlet of the Venturi tube with a small brush or other suitable tool. Make sure that it does not fall into the Venturi tube.

#### 4) Inspect heat exchanger and burner for dirt

No deposits collect due to the "clean" burning in the hot air heaters GPS. Deposits only arise with "unclean" combustion, which occurs if the gas flow rate is too high or there is a lack of air. Cleaning is therefore only necessary in special cases. If the gas flow rate is too high, this is due to the poor function of the gas valve.

If it is necessary to clean the burner or heat exchanger, it is necessary to replace all seals fitted between the burner and heat exchanger.

#### 5) Check of the gas input pressure

Make sure that the pressure at the inlet to the gas valve corresponds to the prescribed value for the respective gas type. This check must be carried out with the unit switched on at high output.

#### 6) Check of the flame monitoring unit

Close the gas cock in the unit heating mode and make sure that the alarm F1 occurs. Open the gas cock again, unlock and wait for the unit to restart.



# REMKO GPS series



## 7) Check of the safety thermostat(s)

The check must be carried out in the unit heating mode.

- Heat up the thermostat probe with a hot air gun or other suitable means until the alarm F2 is issued.
- Let the thermostat probe cool down and reset the unit again.
- This check should be carried out on all existing unit thermostats.

## 8) Check of the ionisation current

Carry out the inspection with a tester that is capable of detecting microampere values with DC.

- Interrupt power supply to the unit.
- Disconnect cable from the flame monitoring unit and connect to the minus terminal of the tester.
- Connect a cable from the positive terminal of the tester to the flame monitoring unit.
- Switch on the unit again and measure the ionisation current.

The value of the ionisation current must exceed 2 microamperes ( $\mu A$ ).

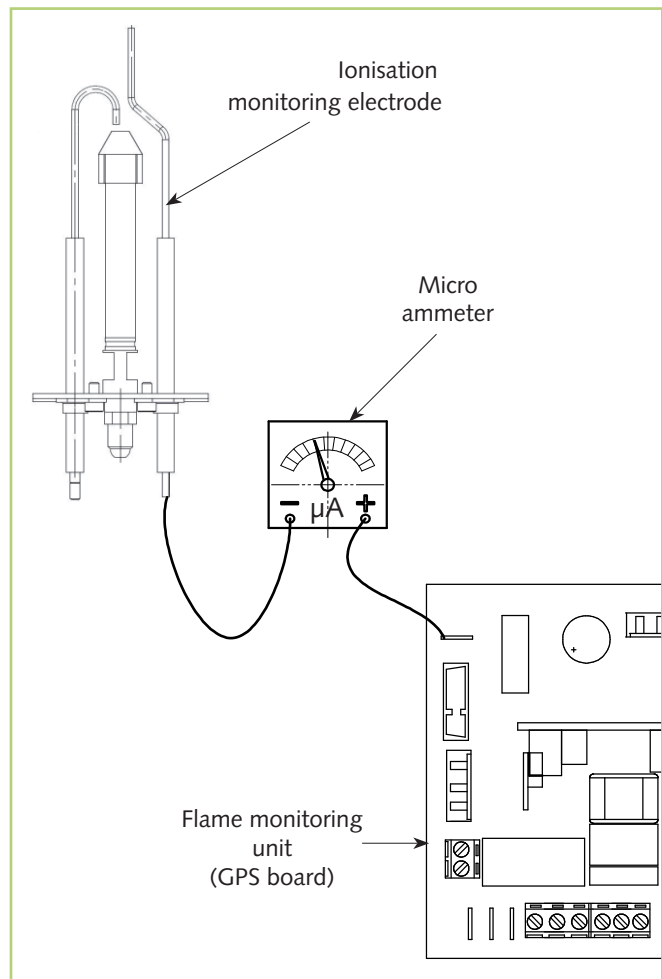
Lower values are a sign of poor positioning, oxidised electrodes or the presence of a defect.

### NOTE

*Adjustment and maintenance work may only be carried out by authorised and qualified technicians.*

### NOTE

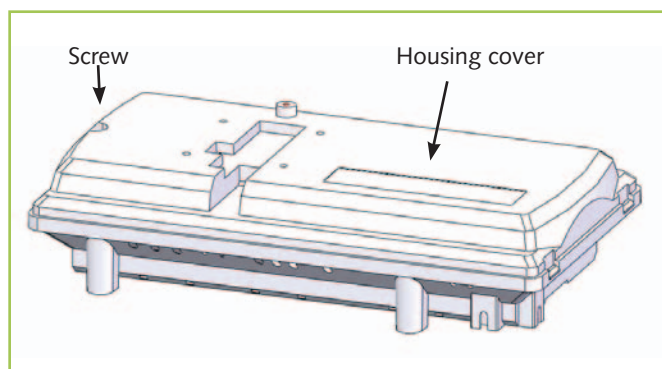
*Regular care and maintenance, at the latest after every heating period, is the basic requirement for a long service life and malfunction-free operation of the units.*



## Replacement of the control board

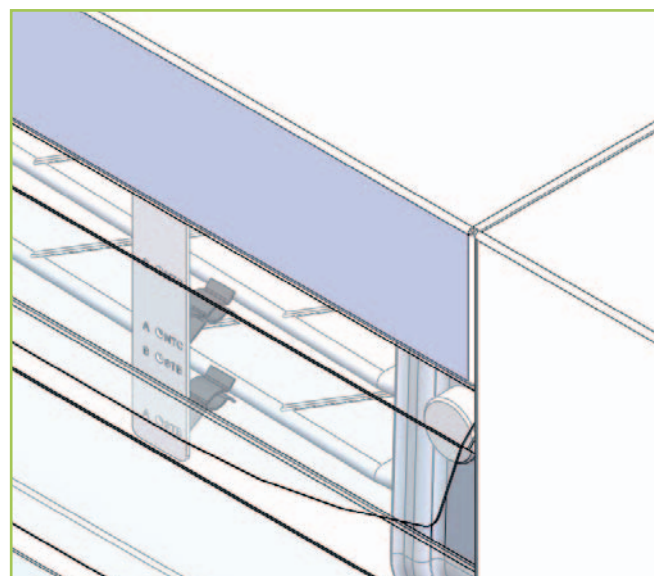
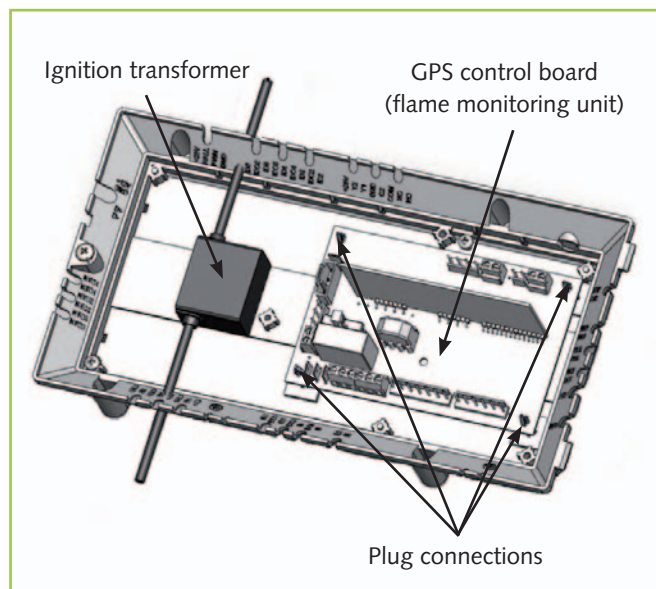
If it is necessary to replace the control board of the GPS unit, perform the following steps:

- 1) Unscrew the screw on the board housing and take off the housing cover



- 2) Undo all plugs and cable terminals of the GPS board and remove cables

- 2) Undo all plugs and cable terminals of the GPS board and remove cables



The mounting bracket for the STB is behind the front air fins.

- 3) Press plug connections together and release board from the plug connections
- 4) Remove board and insert new board
- 5) Fasten new board to the housing with plug connections
- 6) Insert all plugs and connect the cables to the cable terminals according to the wiring diagram
- 7) Hook in the housing cover on the right, fold down and fasten with the screw

## Replacement of the STB

In order to replace the STB thermostat, refer to the following table and the corresponding labelling on the mounting bracket in the unit.

STB replacement	
Model	Position
GPS 15	A (STB)
GPS 25	A (STB)
GPS 35	A (STB)
GPS 55	C (STB)
GPS 75	D (STB)

## Chimney sweep

The unit must be set as follows for measurement by the chimney sweep:

- 1) Set the switch on the control panel to winter.
- 2) Set the temperature on the temperature controller higher than room temperature to trigger a heating cycle.
- 3) Also set the internal thermostat for the 2-stage burner operation higher than the actual room temperature, to trigger maximum output.

Once the unit has ignited it is possible to take the measurement approx. every 2 minutes at a measuring point in the flue gas pipe.

Once the measuring process is complete, bring the internal thermostat and room temperature controller back to the previous condition.

# REMKO GPS series

## Replacement of the gas valve and CO<sub>2</sub> and offset regulation

### Unit with and without temperature controller

With replacement of the gas valve, the CO<sub>2</sub> and, if applicable, the offset value must be adjusted.

It is not advisable to change the offset calibration because this is set in the factory.

If necessary, perform a combustion analysis.

Start the unit and make sure that the pressure at the valve intake corresponds with the prescribed value. Otherwise adjust.

After approx. two minutes connect a flue gas analytical device to the flue gas pipe and read the CO<sub>2</sub> value.

Compare this value to the information in the table "Gas settings" for the type of gas in use.

If the value lies outside the indicated range, make adjustments with the CO<sub>2</sub> regulating screw at the Venturi tube.

- When tightening, the gas flow rate is reduced and the CO<sub>2</sub> value along with it
- When loosening, the CO<sub>2</sub> value increases

Then set the burner to "minimum output" by setting the internal thermostat to a low temperature.

Wait until the minimum output at the burner has stabilised and check that the CO<sub>2</sub> value is the same or slightly below the CO<sub>2</sub> value of the high flow rate (up to -0.3%).

With deviating values, use the offset screw. To change the values, pull out the metal plug and use the regulating screw:

- When loosening, the CO<sub>2</sub> value is reduced.
- When tightening, it increases.

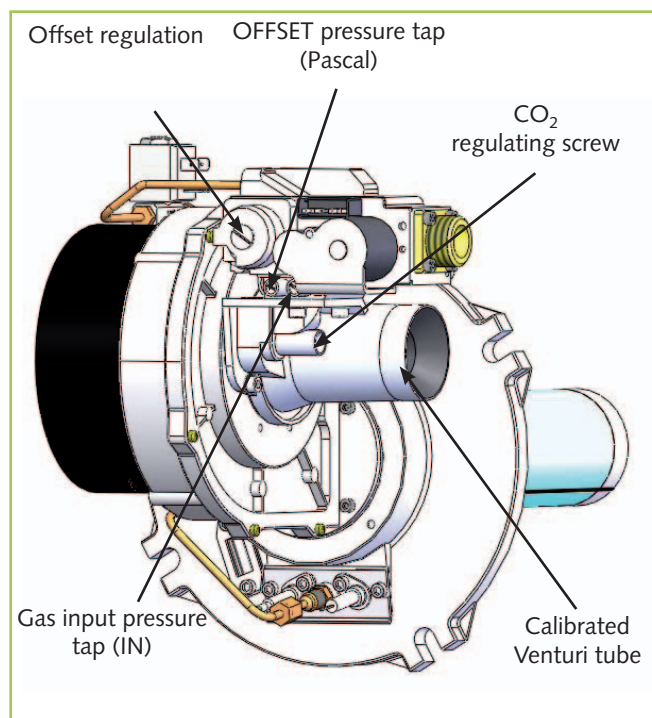
After any changes to the offset regulation, the CO<sub>2</sub> value at the high output must be checked again through the steps indicated above.

After these steps, set the temperature on the internal thermostat back to the desired room temperature

value.

After completion of all steps for the initial commissioning, the user is instructed on the use of the unit and its controller.

This also happens if the power supply of the unit is switched off and then on again.



## Conversion to liquid gas

The on-site conversion of the gas type may only be carried out by authorised, qualified technicians.

Prior to the conversion, the country-specific requirements must be fulfilled.  
The kit for conversion from natural gas to liquid gas is described in the following.

Kit scope:

- Calibrated diaphragm
- Ignition flame nozzle
- Notice sticker "Unit converted to..."

After completion of settings, replace notice sticker "Unit set to ..." with the supplied sticker "Unit converted to ...".

Proceed as follows for the conversion:

- Disconnect power supply of the unit at all poles
- Carefully insert the calibrated diaphragm between gas valve and Venturi tube
- Carefully replace ignition nozzle

Gas type liquid gas G30 - G31		
Model	ø Ignition nozzle	ø Gas diaphragm
	mm	
GPS 15	0.51	2.5
GPS 25	0.51	3.9
GPS 35	0.51	4.1
GPS 55	0.51	4.8
GPS 75	0.51	6.3

- Re-connect the power supply of the unit and prepare the unit to start
- Make sure during the ignition process that no gas emerges at the copper pipe connection to the nozzle

### ⚠ CAUTION

*The fan-assisted heater supplied for operation with liquid gas is adjusted for the gas G31. When operating with G30 the CO<sub>2</sub> must be checked and possibly adjusted.*

If the burner is in operation and working at high output, check:

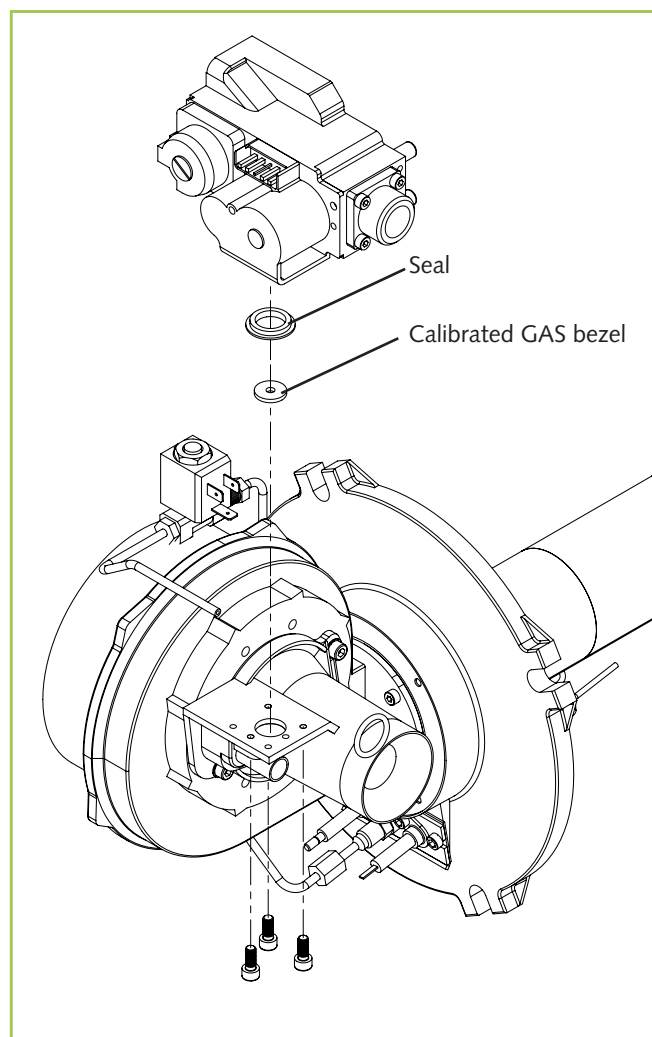
- 1) that the pressure at the inlet to the gas valve corresponds to the prescribed value for the respective gas type.
- 2) that the CO<sub>2</sub> content corresponds to the prescribed values for the gas type.

If the measured value deviates, it must be adjusted with the CO<sub>2</sub> regulating screw.

If it is screwed in, the CO<sub>2</sub> value is reduced.

If it is unscrewed, the CO<sub>2</sub> value is increased.

Check the leakage integrity of the gas circuit again.

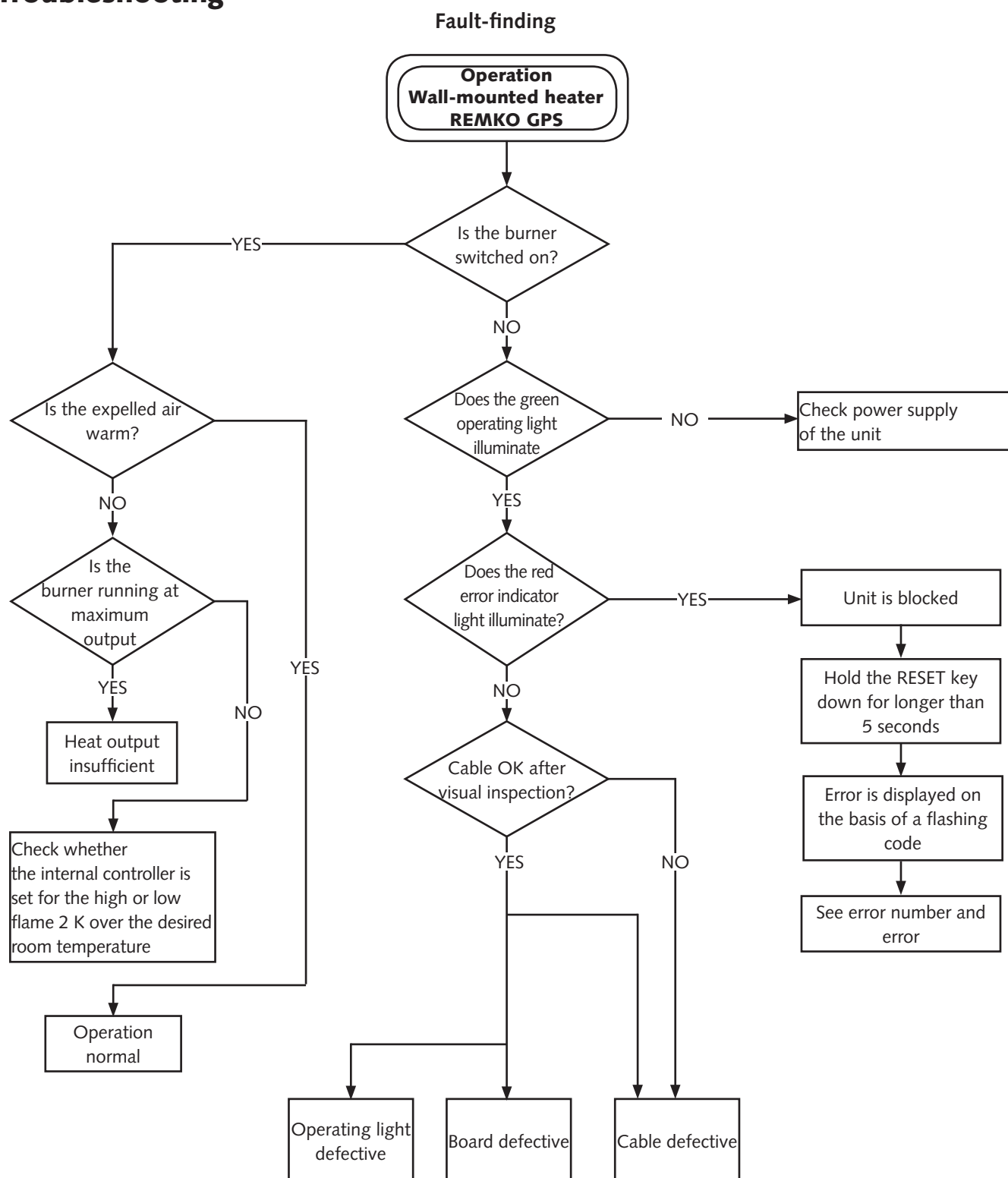


### 💡 NOTE

*Adjustment and maintenance work may only be carried out by authorised and qualified technicians.*

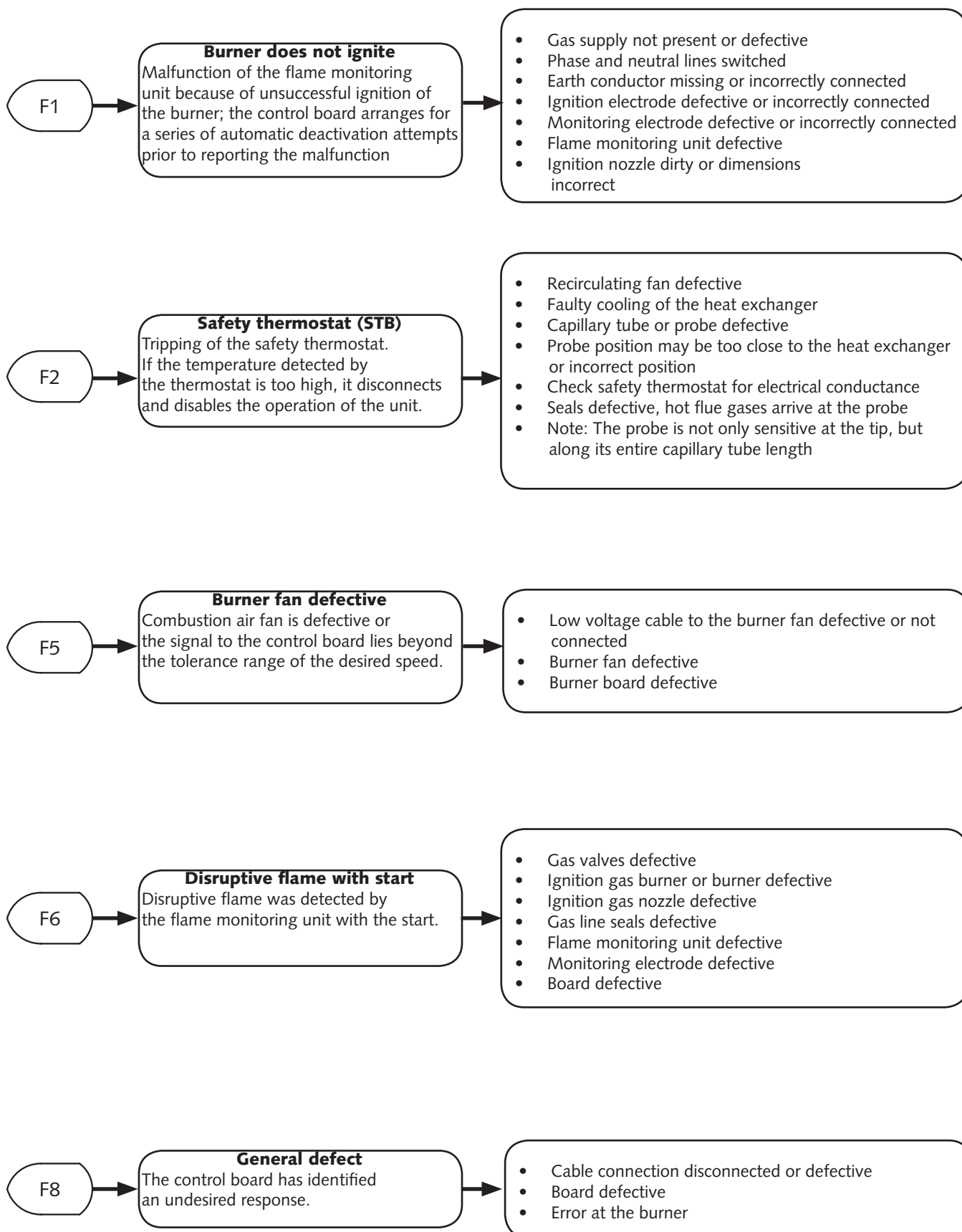
# REMKO GPS series

## Troubleshooting



## Error number and error

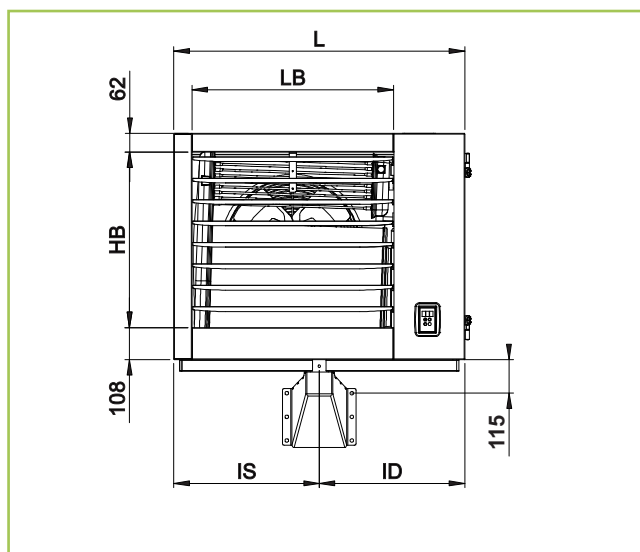
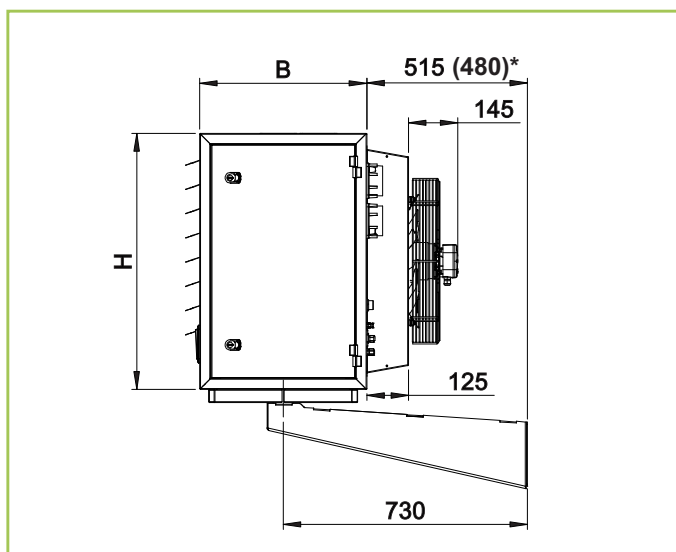
## Types of malfunction





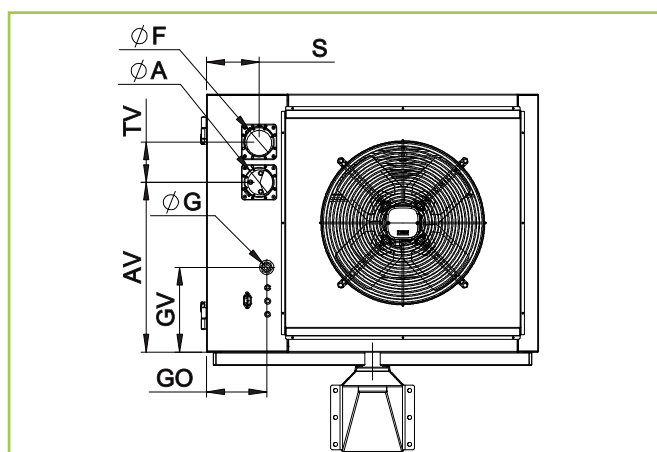
# REMKO GPS series

## Unit dimensions



\* Dimension for the fixed wall bracket

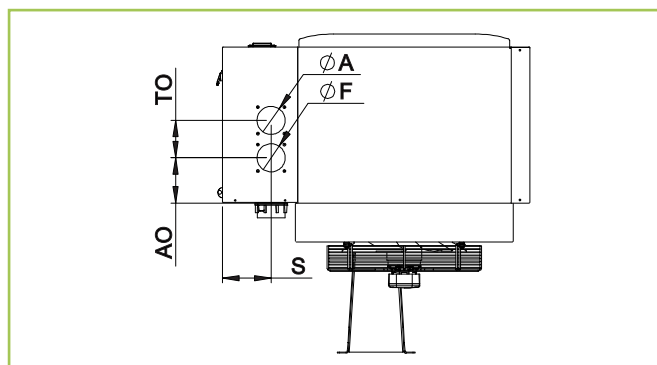
Series	Dimensions				Opening				Gas supply		
	L	W	H	V	HB	LB	IS	ID	ØG	GO	GV
GPS 15	795	500	690	145	520	490	395	400	3/4"	180	255
GPS 25	795	500	690	145	520	490	395	400	3/4"	180	255
GPS 35	985	500	690	145	520	680	490	495	3/4"	180	255
GPS 55	985	500	765	145	595	680	490	495	3/4"	180	255
GPS 75	1310	500	765	145	595	1010	655	660	3/4"	180	255



Series	Horizontal discharge				
	A	F	AV	TV	S
GPS 15	80	80	430	120	155
GPS 25	80	80	430	120	155
GPS 35	80	80	430	120	155
GPS 55	80	80	505	120	155
GPS 75	80	80	505	120	155

A = Supply line

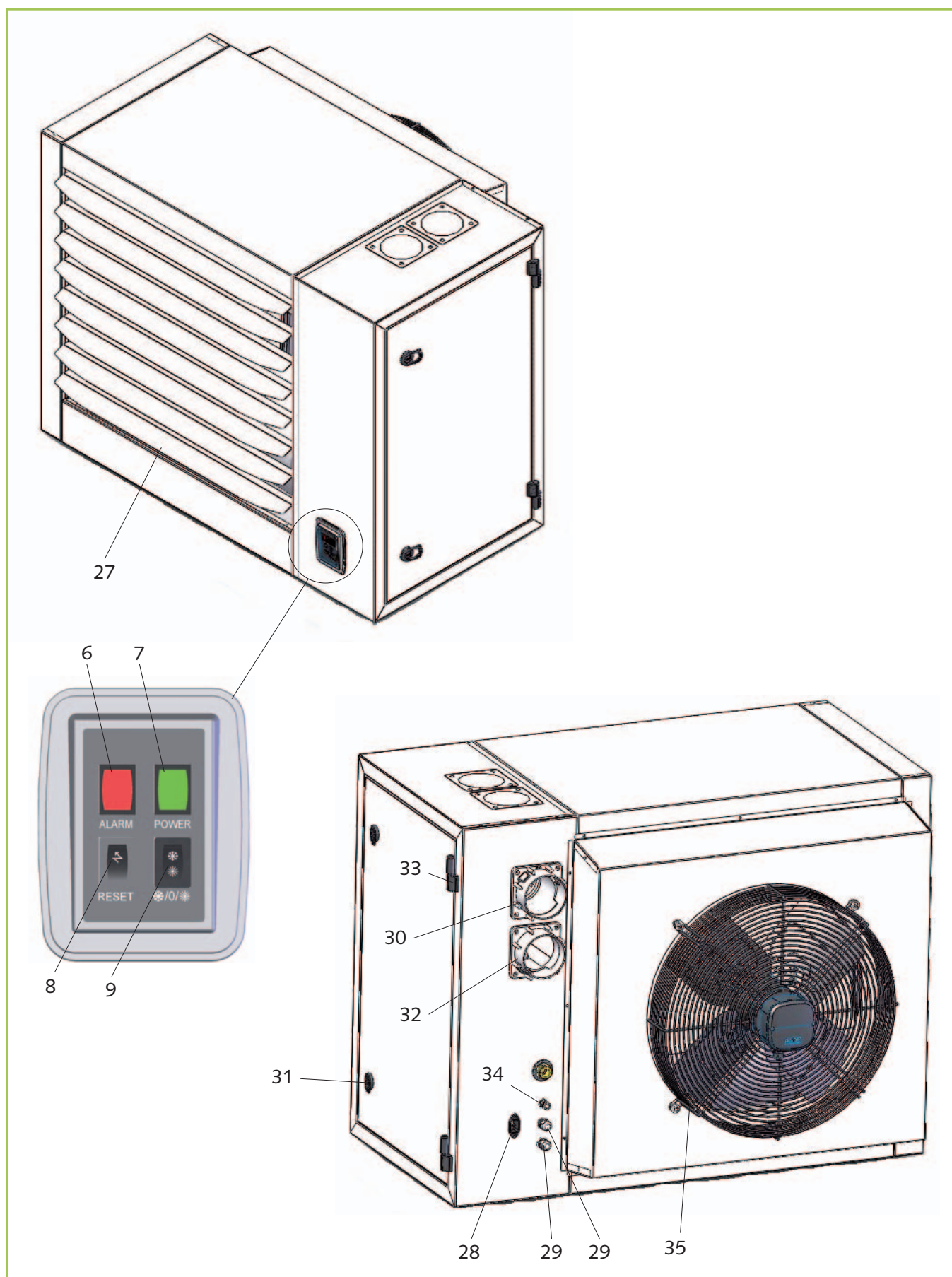
F = Flue gas line



Series	Vertical discharge				
	A	F	AO	TO	S
GPS 15	80	80	145	120	155
GPS 25	80	80	145	120	155
GPS 35	80	80	145	120	155
GPS 55	80	80	145	120	155
GPS 75	80	80	145	120	155



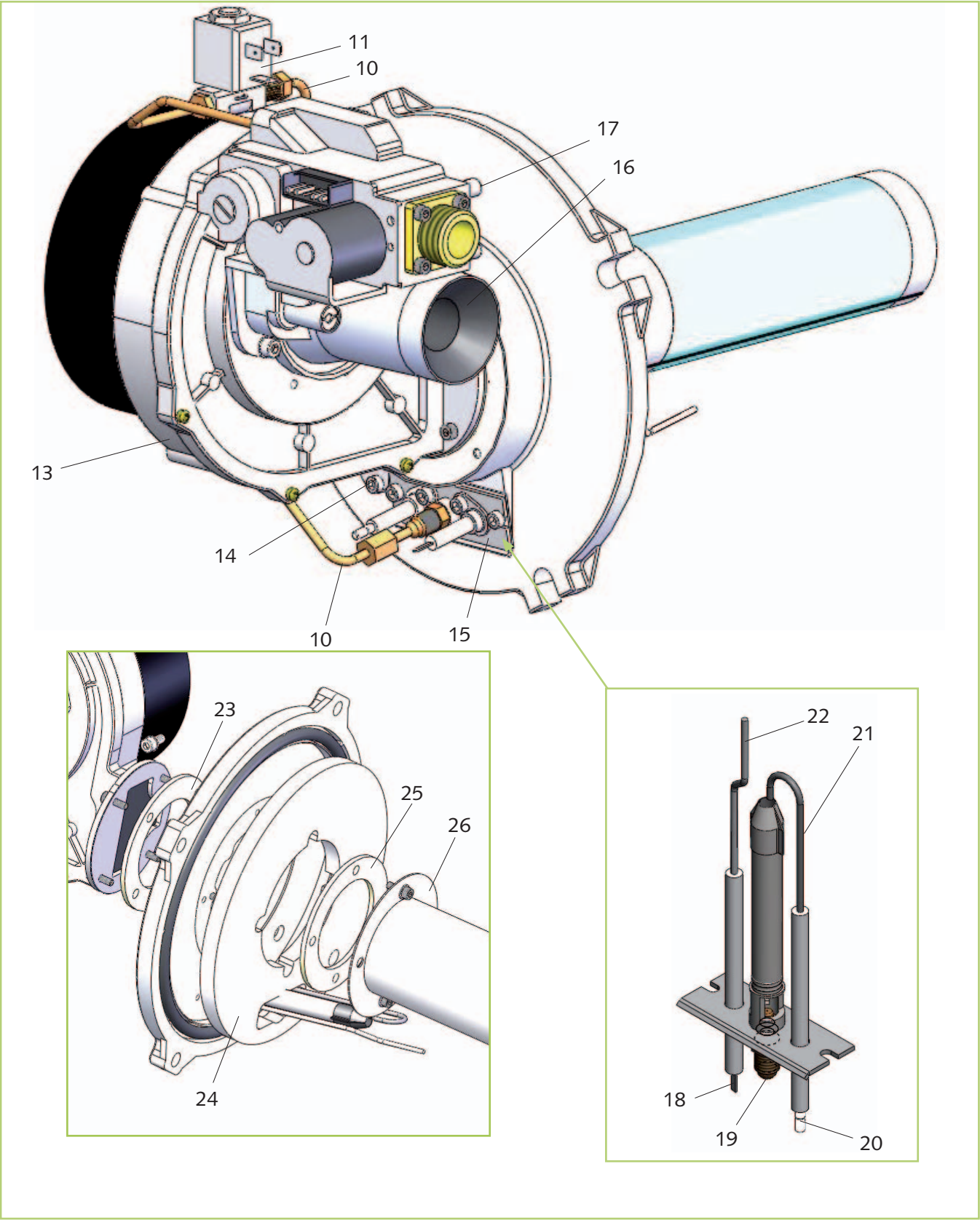
## Exploded view of the unit

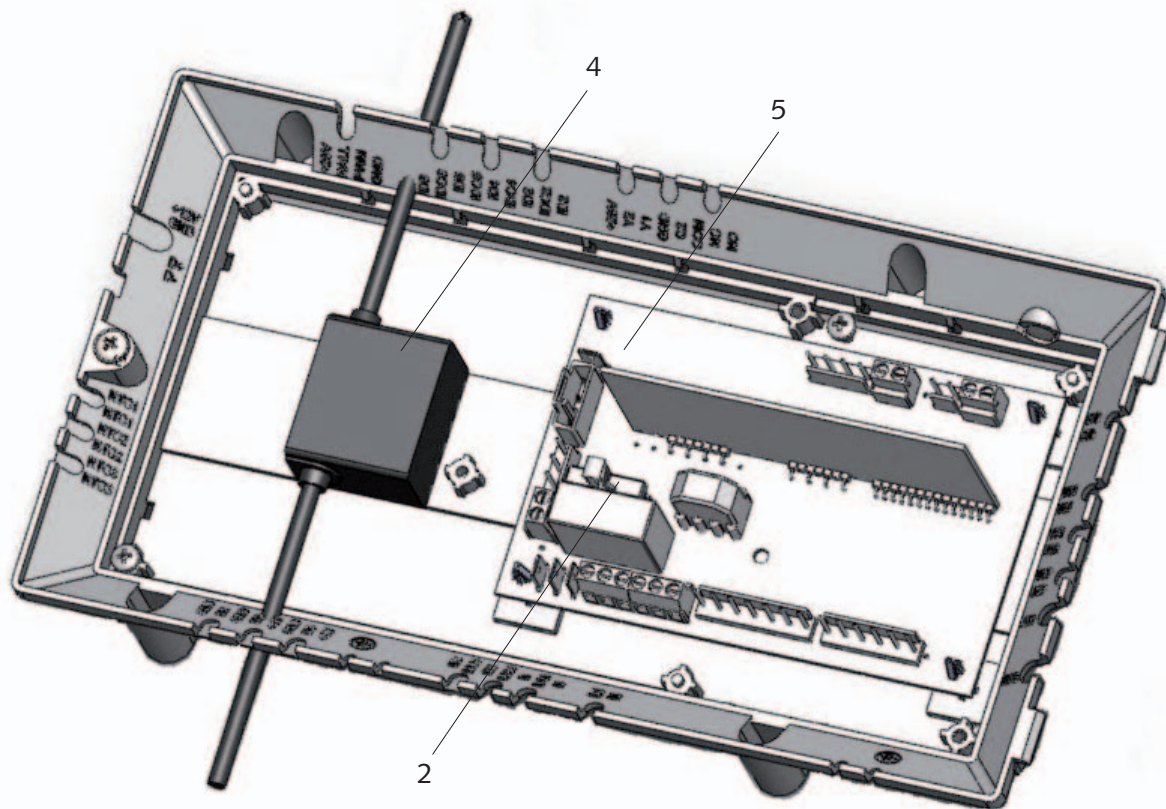
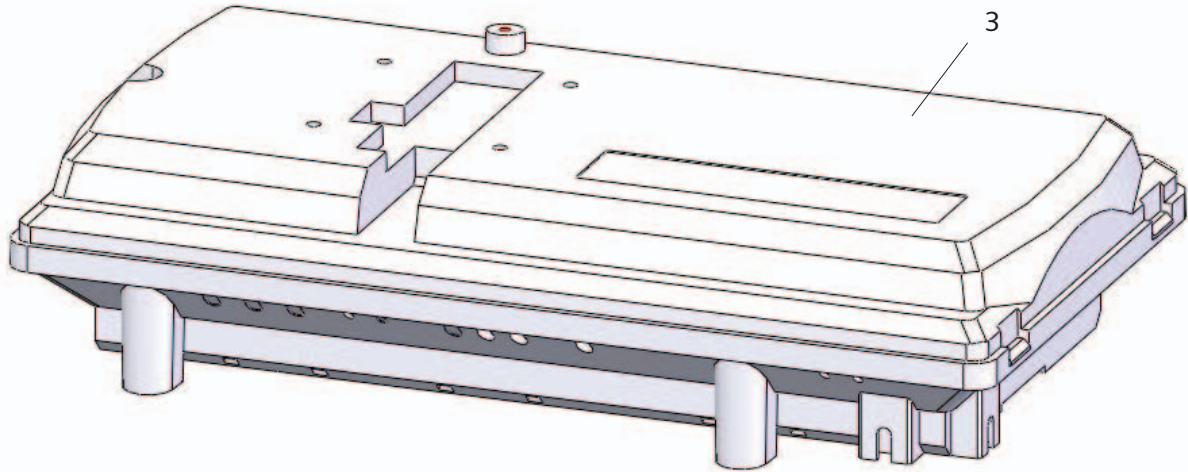


When ordering spare parts, please state the EDP no., unit number and type (see name plate)!

# REMKO GPS series

## Venturi burner







# REMKO GPS series

## Spare parts list

No.	Designation	GPS 15	GPS 25	GPS 35	GPS 55	GPS 75
1	Switch group, compl.	On request by providing the serial number				
2	F1 fuse 6.3 A					
3	Board housing					
4	Transformer					
5	Flame monitoring unit					
6	Indicator light RED (square)					
7	Indicator light GREEN (square)					
8	Unlock key (RESET)					
9	Summer / off / winter toggle switch					
10	Ignition gas pipe					
11	Ignition burner solenoid valve					
12	Gas burner, compl.					
13	Burner fan					
14	Inspection glass with seal					
15	Ignition gas burner, compl.					
16	Venturi tube					
17	Gas valve					
18	Ionisation cable					
19	Natural gas ignition nozzle					
19a	Liquid gas ignition nozzle					
20	Ignition cable					
21	Ignition electrode					
22	Ionisation electrode					
23	Burner fan seal					
24	Burner flange seal					
25	Burner pipe seal					
26	Gas lance					
27	Air outlet fins					
28	Electrical connection bush					
29	Cable connections					
30	Flue gas connection					
31	Closure					
32	Air supply connection					
33	Door hinge					
34	Temperature probe (NTC1)					
35	Recirculating fan					
Not shown	Safety temperature limiter					
Not shown	Gas valve seal					
Not shown	Gas supply pipe					
Not shown	Gas supply pipe seal					
Not shown	Counter nut					
Not shown	Electrical connection plug					
Not shown	Venturi burner, compl.					

When ordering spare parts, please state the EDP no., unit number and type (see name plate)!

## Country table of gas types

Country	Category	Natural gas	Pressure	LPG	Pressure
AT, CH	II <sub>2</sub> H3B/P	G20	20 mbar	G30/G31	50 mbar
BE <70 kW	I <sub>2</sub> E(S)B,I3P	G20/G25	20/25 mbar	G31	37 mbar
BE >70 kW	I <sub>2</sub> E(R)B,I3P	G20/G25	20/25 mbar	G31	37 mbar
CY, MT	I <sub>3</sub> B/P			G30/G31	30 mbar
DE	II <sub>2</sub> ELL3B/P	G20/G25	20 mbar	G30/G31	50 mbar
DK, FI, GR, SE, NO, IT, CZ, EE, LT, SI, AL, MK, BG, RO, HR, TR	II <sub>2</sub> H3B/P	G20	20 mbar	G30/G31	30 mbar
ES, GB, IE, PT, SK	II <sub>2</sub> H3P	G20	20 mbar	G31	37 mbar
FR	II <sub>2</sub> ESi3P	G20/G25	20/25 mbar	G31	37 mbar
HU	II <sub>2</sub> HS3B/P	G20/G25.1	25 mbar	G30/G31	30 mbar
IS	I <sub>3</sub> P			G31	37 mbar
LU	II <sub>2</sub> E3P	G20/G25	20 mbar	G31	37/50 mbar
LV	II <sub>2</sub> H3B/P	G20	20 mbar		
NL	II <sub>2</sub> L3B/P	G25	25 mbar	G30/G31	30 mbar
PL	II <sub>2</sub> ELwLs3B/P	G20/G2.350	20/13 mbar	G30/G31	37 mbar
RU	II <sub>2</sub> H3B/P	G20	20 mbar	G30/G31	30 mbar

The initial commissioning may only be conducted by authorised technicians.

The initial commissioning also comprises the combustion analysis, which is mandatory.

The units are permitted in EU countries and outside of the EU for the types of gas listed above.

## Gas burner adjustment values / flue gas analysis

Gas type	G20	G25	G30	G31
Category	according to country of destination (see table above)			
Supply pressure [mbar]	20 (min.15-max.25)	25 (min.18-max.30)	30 - 50 (min.25-max.57.5)	30 - 50 (min.25-max.57.5)
Ignition gas nozzle Ø [mm]	0.70	0.70	0.51	0.51
Carbon dioxide CO <sub>2</sub> [%]	8.7 ±0.1 (cat.H) 8.7 ±0.1 (cat.E)	8.8 ±0.2	9.9 ±0.4	9.7 ±0.2
Model	Ø Gas diaphragm [mm]			
GPS 15	3.9	4.4	2.5	2.5
GPS 25	5.7	6.3	3.9	3.9
GPS 35	6.3	7.2	4.1	4.1
GPS 55	7.2	8.1	4.8	4.8
GPS 75	9.7	not necessary	6.3	6.3

# REMKO GPS series

## Technical data

Series	Symbol	Unit	GPS 15	GPS 25	GPS 35	GPS 55	GPS 75
Nominal thermal load	$\dot{Q}_H$	kW	16.5	27	34.8	52.2	73.5
Nominal heat capacity	$P_{rated,h}$	kW	15	24.6	31.9	48.1	67.5
Minimum capacity	$P_{min}$	kW	12.1	20.4	25.8	39.9	56.2
Nominal airflow volume	$\dot{V}_{nom}$	m <sup>3</sup> /h	2,000	2,700	3100	4500	7800
Air temperature increase		K	21.5	26.1	29.5	30.5	24.8
Fuel			Natural gas or liquid gas				
NOx class [EN1020:2009]	Cl		5				
CO <sub>2</sub> content <sup>1)</sup>		%	8.8 ± 0.2				
CO <sub>2</sub> content <sup>2)</sup>		%	9.9 ± 0.4				
Gas connection <sup>4)</sup>		Inches	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 3/4"
Gas flow rate (natural gas H)		m <sup>3</sup> /h	1.75	2.86	3.68	5.52	7.78
Gas flow rate (natural gas L)		m <sup>3</sup> /h	2.03	3.32	4.28	6.42	9.04
Gas flow rate (liquid gas)		kg/h	1.35	2.21	2.85	4.27	6.01
Flue gas flow <sup>1)</sup>	$\dot{m}_{Af}$	kg/h	30	46	61	101	136
Flue gas flow <sup>2)</sup>	$\dot{m}_{Af}$	kg/h	31	48	62	103	140
Available flue gas pressure		Pa	80	100	120	130	140
Exhaust gas temperature, approx.	$t_{Af}$	°C	204	191	182	187	184
reqd. draft intensity		Pa	0				
Efficiency at nominal heating capacity	$\eta_{nom}$	%	81.6	81.2	82.6	82.9	82.6
Efficiency at minimum capacity	$\eta_{pl}$	%	83.8	84.3	84.3	84.8	84.3
Case dissipation factor	$F_{env}$	%	0	0	0	0	0
Power consumption of the ignition flame	$P_{ign}$	kW	0	0	0	0	0
Nitrogen oxide emissions (Hi)	NO <sub>x</sub>	mg/kWh	44	30	30	47	43
Nitrogen oxide emissions (Hs)	NO <sub>x</sub>	mg/kWh	40	27	27	42	39
Efficiency of heat emission	$\eta_{s,flow}$	%	93.8	92.2	91.3	90.7	92.6
Room heating annual efficiency	$\eta_{s,h}$	%	73.6	72.9	72.3	72.2	73.4
Power supply		V/Hz	230/1~/50				
Rated current		A	0.62	0.86	0.89	1.43	2.14
Rated power consumption		kW	0.143	0.197	0.184	0.330	0.493
Max. auxiliary energy consumption	$el_{max}$	kW	0.063	0.058	0.074	0.101	0.112
Min. auxiliary energy consumption	$el_{min}$	kW	0.037	0.033	0.045	0.056	0.061
Auxiliary energy consumption in sb.	$el_{sb}$	kW	0.005	0.005	0.005	0.005	0.005

We reserve the right to modify the dimensions and design as part of the ongoing technical development process.



Series	Symbol	Unit	GPS 15	GPS 25	GPS 35	GPS 55	GPS 75
Sound power (Lw)		dB(A)	61.4	71.3	67.3	75.7	78.3
Sound pressure level L <sub>pA</sub> <sup>5)</sup>		dB(A)	34	44	40	49	51
Combustion air connection Ø		mm	80	80	80	80	80
Flue gas connection Ø		mm	80	80	80	80	80
Installation variants		Type	B23 / B23P / C13 / C33 / C43 / C53 / C63				
EC approval		No.	0476CQ0451				
Weight		kg	57	57	67	78	102

1) Values when burning natural gas.

2) Values when burning liquid gas.

3) Values pertain to 15°C 1013mbar.

4) The gas line must be measured on the basis of the length and route, and not according to the diameter of the unit gas connection. Connection thread in accordance with ISO 228.

5) Measured at a distance of 6 m from the unit.

#### Gross calorific values H<sub>g</sub> in standard condition:

H natural gas	11.48 kWh/m <sup>3</sup>
L natural gas	9.75 kWh/m <sup>3</sup>
Propane gas	28.14 kWh/m <sup>3</sup>
Propane gas	14.00 kWh/kg

#### Additional specifications for fresh air and flue gas ducting

The following applies to all models in the GPS range:

B <sub>1</sub> air heating unit:	no
C <sub>2</sub> air heating unit:	no
C <sub>4</sub> air heating unit:	yes

#### REMKO GmbH & Co. KG

Air conditioning and heating technology  
Im Seelenkamp 12  
32791 Lage

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Im Seelenkamp 12  
32791 Lage

Telephone +49 (0) 5232 606-0  
Telefax +49 (0) 5232 606-260

E-mail [info@remko.de](mailto:info@remko.de)  
URL [www.remko.de](http://www.remko.de)

**Hotline within Germany**  
+49 (0) 5232 606-0

**Hotline International**  
+49 (0) 5232 606-130

