Operating and installation instruction

REMKO PGT (E) series

Propane gas heating systems

PGT 30 (E), PGT 60 (E), PGT 100 (E)

This product is not suitable as a main heater.

Edition EN - Q09

Read the instructions prior to performing any task!

Contents

Carefully read this operating manual prior to commissioning/using the units!
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 PGT (E) 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
- The power plug must be pulled out of the mains socket before maintenance and repair work
- The units must be installed such that they are stable on a non-combustible surface
- It is necessary to ensure that no flammable objects or materials can be drawn in
- This unit can be used by children above the age of 8, as well as by people with impaired physical, sensory or mental capabilities or a lack of experience and knowledge if they are supervised or have received instruction in the safe operation of the unit, and if they understand the associated potential hazards. Children must never play with the unit. Cleaning and user maintenance must not be carried out by unsupervised children
- The units must be installed and operated in such a way that personnel are not endangered by exhaust gases and radiant heat, and no fires may occur
- Portable liquid gas tanks must be installed such that they are **stable** and **upright**
- Liquid gas tanks must never be used lying horizontally during unit operation
- All unit electrical cables must be protected against damage, e.g. by animals
- The units must only be operated in areas where the units can be supplied with an adequate amount of air for combustion
- The units must only be operated in well-ventilated spaces and away from flammable materials. Personnel must not remain in the installation area

Appropriate prohibition signs must be displayed at the entrances!

- A safety zone of 1.5 m must be maintained around the units, incl. to non-combustible items
- A minimum distance of 3 m must be maintained from the unit outlet
- The unit outlet must not be restricted or fitted with hoses or pipes
- Never insert foreign objects in the unit
- The air intake grille must always be kept free of dirt and loose objects
- The units must not be exposed to direct jets of water e.g. **pressure washers, etc.**

⚠ CAUTION

For use in public buildings, national regulations must be observed.

⚠ CAUTION

If there is a gas leak, immediately close the shut-off valve to the gas supply system, switch off the gas heater, unplug the power plug, open windows/doors for ventilation and seek the cause of the gas leak in order to neutralise this. Do not use the unit again before the gas leak has been eliminated!

Intended use

The units are designed exclusively for heating and ventilation purposes in industrial or commercial use (not for living space heating in private use) on the basis of their structural design and equipment.
According to DIN EN 1596, the device definition is "warm air heaters not intended for domestic use without heat exchangers with forced convection".

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.

NOTE

Operation other than the types listed in this operating manual is prohibited.
With non-observance, any manufacturer liability or guarantee claims are voided.

CAUTION

Customer service and Guarantee

As a prerequisite for any guarantee claims to be considered, it is essential that the ordering party or its 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 were tested at the factory 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.

NOTE

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

Environmental protection and recycling

Disposal of packaging

When disposing of packaging material, please consider our environment.
Our units are carefully packed and delivered in sturdy transport packaging made from cardboard and polystyrene.
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 environment friendly manner.

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

REMKO PGT (E) series

Unit description

The units are mobile fan-assisted air heaters (WLE) directly fired with liquid gas, without a heat exchanger.
The units operate without an exhaust gas connection and are designed exclusively for commercial use.
The units are equipped with integrated power regulation for the stepless control of the heating capacity, quiet and low-maintenance axial fans, robust gas burners with thermal flame monitoring, electric solenoid valves, electric ignition, room thermostat socket and mains cable with earthed safety plug.

The units conform to the fundamental health and safety requirements of the appropriate EU stipulations, and are simple to operate.

The units are EC type-tested, DVGW-registered and approved for EU countries.

The units may be used among other things for the following:

- Drying newly completed buildings
- Spot heating of outdoor workplaces
- Spot heating workplaces in open, non-flammable manufacturing facilities and halls
- Temporarily heating enclosed spaces with a sufficient fresh air supply
- De-icing machines, vehicles and non-combustible warehoused goods
- Maintaining the temperature of frost-sensitive parts

Operating sequence

Moving the operating switch to the "I" position puts the supply air fan into operation and the program sequence for the automatic burner is started.

After a few seconds, the electric solenoid valve opens the gas supply to the burner. The liquid gas is transported through a nozzle under pressure into the mixing tube. Here, the gas is enriched with a quantity of oxygen aligned with the unit output.

The gas/air mixture is ignited at the burner head by an electric ignition spark. Ignition is automatically ended as soon as a flawless flame burns, and the automatic burner has taken over the flame monitoring.

Regulation of the min/max heating capacity can be implemented on a stepless basis during unit operation on the integrated "power regulation".

Monitoring the units

It is possible to safely monitor all functions with the safety devices of the units.
In the event of irregularities or if the flame is extinguished, the units are switched off and interlocked.

Safety temperature limiter (STB)

The units are equipped with a safety temperature limiter (STB), which interrupts the gas supply in case of overheating and electrically interlocks the unit.

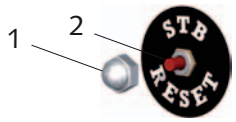
A manual reset of the STB can only be implemented after the units have cooled down.

⚠ CAUTION

If the safety temperature limiter has been triggered, the cause of the malfunction must be identified and rectified before a reset is performed.

The STB is reset by actuating the reset key 2.

1. Unscrew the protective cap 1.



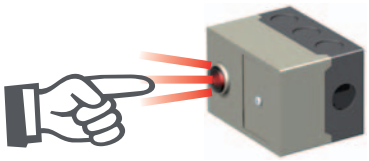
2. Push in key 2.

3. Screw the protective cap 1 back on again.

Automatic burner

In the event of irregularities or if the flame is extinguished, the automatic burner switches off and interlocks the units.
The unit's fault lamp will light up in this case.

The automatic burner is unlocked by pressing the malfunction button.



The automatic burner can be unlocked after a waiting time of approx. 60 sec.

NOTE

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

Installation instructions

The safety regulations of the accident prevention and insurance associations, the respective regional building regulations and the combustion appliances regulations apply to the operation of the units. For example, for Germany:

- Combustion plant order (FeuVo) for the individual federal states
- Accident Prevention Regulation DGUV Regulation 79, "Use of Liquid Gas"
- Workplace directives ASR 5
- Workplace regulations §§ 5 and 14

Outdoor installation

- Operation of the units must not present a hazard or unreasonable discomfort
- The unit operator must ensure that it is not possible for unauthorised persons to manipulate either the unit or the power supply
- To prevent damage due to inclement weather, units installed outdoors must be adequately protected

Installation in enclosed, well-ventilated rooms

- The units are designed without an exhaust gas connection according to type, and can only be used in enclosed rooms on a conditional basis
- Reliable extraction of the combustion gases must be guaranteed in all cases in order to exclude impermissible contamination of the room air with hazardous substances
- The fresh air supply required for trouble-free combustion must be ensured. It is practical to have the fresh air supply provided by windows and doors or through appropriately dimensioned openings in the outside wall
- The units must not operate continuously whilst unattended

The units may only be operated in rooms if:

- A sufficient quantity of air is supplied to the units for the combustion
- These are well ventilated and aerated
- The proportion of substances harmful to health in the breathing air is at a harmless level

There is good natural ventilation and aeration if:

1. the room volume in m^3 is at least 30 times the nominal heating capacity kW of all of the units operating in the space, and if the natural change of air is guaranteed by windows and doors or
2. constantly open ventilation openings are present for incoming and exhaust air in the vicinity of the ceiling and floor, the size of which in m^2 is at least 0.003 times the nominal heating capacity in kW of all of the units operating in the space.

⚠ CAUTION

For use in public buildings, national regulations must be observed.

⚠ CAUTION

The units must only be installed in well ventilated spaces and not in living areas or similar recreational areas.

Gas connection

The gas connection / unit operation must take place exclusively on the basis of the accident prevention regulation DGUV 79 "Use of liquid gas", as well as the respective local construction and fire prevention regulations.

The fuel supply must be installed in accordance with DIN 4755 for oil-fired warm air heaters, DVGW Code of Practice G 600 for gas-fired warm air heaters and TRF for liquid gas.

The units are operated with liquid gas in accordance with DIN 51622. They require a constant unit connection pressure of 1.5 bar. It is prohibited to exceed or undershoot the connection pressure.

⚠ CAUTION

A constant unit connection pressure of 1.5 bar (1500 mbar) must be guaranteed, also in continuous operation.

- When using longer hose lines, consider the respective pressure loss
- Only use components that have been tested and are suitable for the respective purpose, such as gas hose, pressure controller and hose breakage protection or leak gas protection
- If possible, the length of the gas hose should not exceed 2 m
- Only pressure controllers with a fixed outlet pressure setting are permitted. The units may only be operated out of the gas phase

⚠ CAUTION

Before all work on the gas supply and when replacing gas cylinders, all shut-off valves must be closed and no ignition sources are permitted in the immediate vicinity.

- The use of longer hose lines is permissible if:
  -special operational reasons exist
  -appropriate additional safety measures are observed and the hose lengths are kept as short as possible
- Hose lines must be fundamentally protected against chemical, thermal and mechanical damage
- In particular, torsional stress must be avoided
- The units may only be operated out of the gas phase
- The units must be serviced by qualified persons only
- Only original spare parts may be used for repairs
- Unit parts that are prone to wear and ageing (e.g. gas hoses) must be replaced at regular intervals
- Gas connection nipple on the unit - G1/4 LH - KN
- When selecting the hose, make sure that the pressure class is sufficient
- All common gas cylinder sizes are permitted for the gas supply. However, a gas cylinder with at least 11 kg filling weight is recommended. For longer operation and nominal heat outputs above 50 kW, it is recommended that the gas be drawn from several gas cylinders in parallel. (Multi-cylinder accessories set)

NOTE

This does not apply if the correct condition is confirmed by an expert.

⚠ CAUTION

*The units must not be used **below ground level**, e.g. in basements, without suitable gas monitoring equipment.*

NOTE

It is prohibited to exceed or undershoot the required connection pressure.

Connecting the gas supply

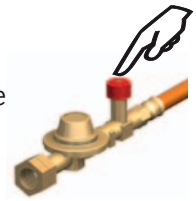
1. Connect the pressure controller to the gas cylinder or gas supply system.

Observe the left-hand thread!

2. Open cylinder valve(s) or shut-off valve of the supply line.

With simultaneous discharge from multiple gas cylinders, all valves must be opened.

3. Push the unlock button on the hose breakage protection after opening the valve(s).



This process is also necessary after every cylinder change.

4. Check all gas connections for leak-tightness using suitable media.
For example with:

Soap solution or leak detection spray.

NOTE

Because these are ball nipple screw connections in accordance with DIN 4815, part 2, only appropriate, fitting hoses may be used.

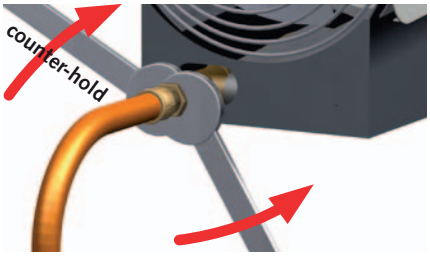
NOTE

Only hoses for liquid gas in accordance with DIN EN 16436-1, pressure class 30 may be used for construction site operations.

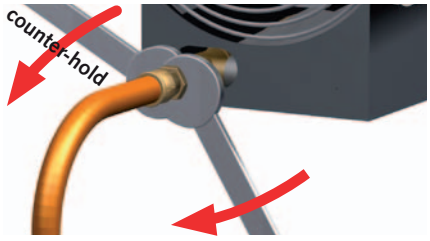
Assembly note

During the assembly or disassembly of the gas hose, it is necessary to **counter-hold** the unit by the **gas connection nipple** with an open-end wrench size 17, whilst observing the left-handed thread.
This process also applies to the pressure controller, hose breakage protection and all further gas components.

Tighten gas hose:
Turn the union nut **anticlockwise**



Loosen gas hose:
Turn the union nut **clockwise**



Icing up of gas cylinders

With insufficiently dimensioned gas supply systems, there is a risk of the pressurised gas cylinder icing up.
Due to the reduction of the gas pressure, it is no longer possible to guarantee the correct gas supply to the unit.

Crystalline frost formation on the gas cylinder(s) must not be defrosted with naked flames, glowing objects, radiators, etc.

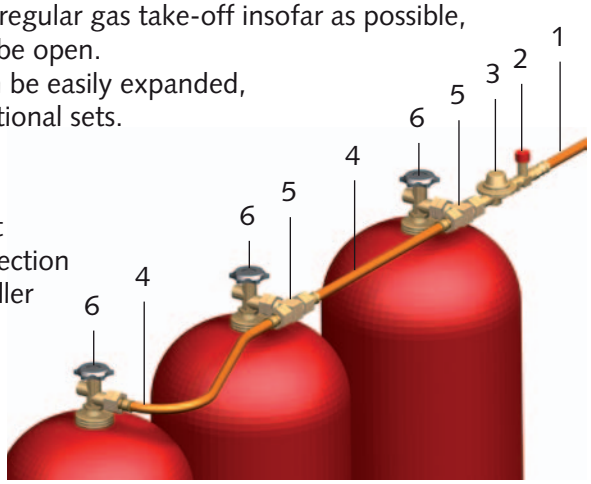
In order to avoid the gas cylinder(s) icing up, it is necessary to configure the gas supply in accordance with the unit connection value, the time in operation and the ambient temperature of the supply tank.

Attachment multi-cylinder set (accessory)

In order to guarantee a regular gas take-off insofar as possible, all cylinder valves must be open.
The cylinder battery can be easily expanded, through the use of additional sets.

Legend:

1 = Gas hose to the unit
2 = Hose breakage protection
3 = Gas pressure controller
4 = HP hose 0.4 m
5 = T-connection
6 = Cylinder valve



Tank gas systems

When connecting the units to tank gas systems, ensure sufficient pipe dimensions depending on the pipe length.
A sufficient gas supply to the consumer system can be ensured through the use of an evaporator.

In order to guarantee the faultless unit function, it is advisable to install a permanently set pressure controller with 1.5 bar outlet pressure and corresponding gas throughput (see unit name plate), as well as a shut-off device tailored and approved for the respective pre-pressure.

In order to avoid malfunctions of the unit's control and safety equipment due to harmful substances such as rust and dust from the gas supply line or tank(s), it has proven to be essential to install gas filters before the control and safety equipment of the units (see DIN EN 676 and TRF 88 section 5).

NOTE

Installation work on the tank gas systems and the supply lines may only be performed by qualified specialist personnel.

CAUTION

Before all work on the gas supply and when replacing gas cylinders, all shut-off valves must be closed and no ignition sources are permitted in the immediate vicinity.

Commissioning

The units should be checked for visible defects on the operating and safety devices as well as proper installation and correct electrical and gas connections before commissioning.

Only a person who has been adequately trained in the handling of the units and the use of liquid gas, pursuant to DGUV 79 may be tasked with the operation and monitoring of the units.

Connecting the units to the electrical power supply

1. Move the operating switch to the "0" (Off) position.

2. Connect the unit's power plug to a properly installed and fused mains socket. **230 V/50 Hz**.

CAUTION

In the event of defects that endanger the operational safety of the units, operation of the units must be discontinued immediately and the supervisor informed!

NOTE

The electrical connection for the units must be made at a separate feed point with a residual current device in accordance with VDE 0100, Section 55.

Before the unit start, ensure that the gas supply cylinders are correctly secured and are not positioned directly in the heat radiated by the units. The pressurised gas tanks must be positioned to the **side/rear** of the unit.

CAUTION

The tanks must never be heated or de-iced through the unit hot air flow.
There is a risk of explosion!

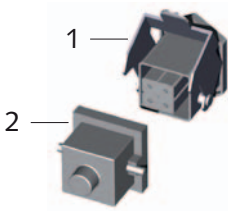
CAUTION

Pressurised gas tanks must not lie horizontal when used during unit operation.
Gas outlet in the liquid phase.

Heating without room thermostat

The units operate in continuous operation without room temperature regulation.

1. Connect the strapping plug 2 supplied with the thermostat socket 1 on the unit.



2. Move the operating switch to the "I" (Heating) position.

The supply air fan starts up and the automatic burner starts the unit after approx. 15 seconds.

NOTE on polarity!
If the unit should implement a fault shut-down during the start phase, first check the polarity of the power supply by turning the power plug through 180°.

It may be necessary to repeat this process with a change in position or new socket assignment!

⚠ CAUTION

It must be ensured that supply air can be freely sucked in and that heated air can be blown out without obstruction. The unit intake and outlet must not be restricted or fitted with hoses or pipes.

Setting and controlling the heating capacity

The desired or required heating capacity can be steplessly set on the "**power regulation**".

Turning to the left:
higher heating capacity

Turning to the right:
lower heating capacity

The heating capacity can also be steplessly changed during unit operation.

Safety distances

- For safe operation, a 1 m safety distance must be maintained around the unit
- A minimum distance of 3 m must be maintained from the unit outlet

⚠ CAUTION

It is essential to observe the necessary safe distances from flammable and fire hazardous materials.

- Flooring and ceilings must be fire retardant

⚠ CAUTION

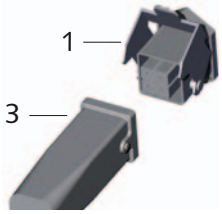
In case of a gas leak, halt unit operation immediately. All gas shut-off valves must be closed and the units disconnected from the power supply.

Heating with room thermostat
(Accessories)

The units operate fully automatically and according to the room temperature.

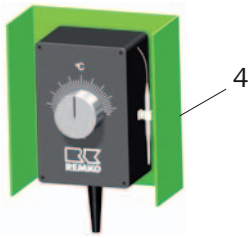
1. Pull out the strapping plug 2.

2. Connect the plug 3 of the room thermostat 4 with the thermostat socket 1 on the unit.



3. Place the room thermostat 4 at a suitable location in the room. The thermostat sensor must not be located directly in the warm air flow and must not be placed directly on a cold floor.

4. Set the desired temperature on the room thermostat 4.



5. Move the operating switch to the "I" (Heating) position.

The unit starts automatically after a brief burner pre-ventilation if heat is required and then runs fully automatically.

▶ ▶ ▶

Ventilate

In this operating mode, the supply air fan runs permanently.
The units can be used for air recirculation or ventilation purposes.

1. Close the shut off valve(s) of the gas supply system and allow the gas flame to burn out.

2. Move the operating switch to the "II" (Ventilate) position.

Thermostatic control as well as heating operation is not possible in this operating mode.

NOTE

Overpressure and underpressure in the installation area should be avoided as this will inevitably lead to combustion-related faults.

NOTE

For optimum operation the units should not be operated above an ambient temperature of 25 °C.

Shutdown

1. Close the shut off valve(s) of the gas supply system and allow the gas flame to burn out.

2. Move the operating switch to the "0" (Off) position.

3. If the units are inactive for long periods, disconnect them from the mains power supply.

NOTE

Important notes on the post-cooling phase for units with automatic fan run-on (PGT 100 series, PGT 30/60 as option).

The automatic fan run-on serves to avoid heat accumulation inside the unit after the burner is switched off.

For this reason the electrical connection must not be disconnected from the mains power supply before the cooling phase has ended, except in an emergency.

CAUTION

*The units must not be used **below ground level**, e.g. in basements, without suitable gas monitoring equipment.*

Care and maintenance

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.

In accordance with the operating conditions, the units must be checked as and when required, but at least every **two years**, by a specialist to ensure that they are in a condition that is safe to use.

The results of this test must be recorded in a test certificate. The test certificate must be stored until the next test and presented for inspection by authorised persons on request.

CAUTION

Before undertaking any work on the unit, the gas supply must be shut off and the power plug must be removed from the mains socket.

- Keep the units free of dust and other deposits
- Only clean the units with a dry or moistened cloth
- Never subject to direct jets of water.
  e.g. pressure washers etc.
- Never use abrasive or solvent-based cleaners
- Use only suitable cleaners, even for heavy contamination

- Check the inlet and outlet grille for contamination on a regular basis
- Check hoses and seals for damage on a regular basis
- Replace damaged hoses, seals, etc. immediately
- Clean the gas burner, gas nozzle and the combustion air openings regularly
- Check ignition and ionisation electrodes regularly and adjust and clean if necessary

NOTE

Replace defective or damaged parts immediately and exclusively with original spare parts.

NOTE

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

CAUTION

An electrical safety check must be carried out in accordance with VDE 0701 after any work on the units.

NOTE

A strongly yellowy flame indicates an inadequate fresh air supply or dirt inside the unit.

Disassembling and cleaning the gas burner

1. Switch off the gas supply to the unit and unplug the power plug from the mains socket.
2. Remove the protective outlet grille, exterior cladding and inspection cover.
3. Undo the clamping screw 5 of the nozzle holder.
4. Remove the ignition cable from the ignition electrode.
5. Detach the ionisation cable from the ionisation electrode. **Be aware of the cap nut and spring washer!**
6. Loosen the clamping screw 4 on the electrode bracket and carefully draw out the ignition and ionisation electrode.
7. Carefully remove any adhered deposits from the ignition and ionisation electrode.
8. Detach the fastening screws of the gas burner and remove the complete gas burner from the unit.
9. Carefully clean the gas burner with a suitable brush and possibly compressed air.
10. Clean the gas nozzle if necessary.
    Do not use any sharp-edged objects!
11. Carefully remove deposits or soiling in the unit base.
12. After all cleaning work on the gas burner, carefully refit all parts in reverse order.
13. After using the gas nozzle, tighten clamping screw 5 again.
14. Adjust the ignition and ionisation electrode in accordance with the sketch and tighten the clamping screw 4 of the electrode bracket.
    The tip of the ionisation electrode must be in the vicinity of the flame.
15. Carefully refit all parts of the unit in reverse order.

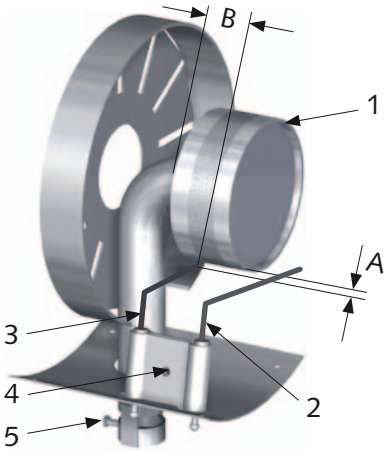
CAUTION

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

for example with:

Soap solution or leak detection spray.

Gas burner



Unit type	A	B
PGT 30	approx. 3 mm	approx. 15 mm
PGT 60	approx. 3 mm	approx. 15 mm
PGT 100	approx. 3-4 mm	approx. 30 mm

Legend:
1 = Gas burner
2 = Ionisation electrode
3 = Ignition electrode
4 = Clamping screw (electrodes)
5 = Clamping screw (gas nozzle)

REMKO PGT (E) series

Troubleshooting

Malfunctions:	Cause:
Unit does not start.	1 – 2 – 3 – 4 – 5 – 7 – 10 – 13 – 17 – 18
Unit switches off during operation. (Fault lamp in the automatic burner lights up)	2 – 6 – 7 – 8 – 9 – 10 – 13 – 14 – 17
Fan runs, but the gas supply is blocked or no ignition takes place.	7 – 12 – 13 – 14
The gas supply is interrupted, or the flame is extinguished.	6 – 7 – 8 – 9 – 10 – 13 – 14 – 17 – 18
Unit consumes too much fuel.	13
Unit cannot be switched off.	5 – 15
Heating capacity drops in permanent operating mode.	14
Heating capacity cannot be regulated.	11

Cause:	Remedial measures:
1. The unit is not connected to the electricity supply.	Connect the plug with an appropriate socket (230V/50Hz).
2. The fan motor is overloaded or the fan runs irregularly or is blocked.	Check the motor, fan blade and drive clutch and replace if necessary.
3. The room thermostat is set too low.	The setting must be higher than the current room temperature.
4. No strapping plug in the room thermostat socket.	Connect the strapping plug with the thermostat socket.
5. The operating switch is defective.	Shut off the gas supply, unplug the power plug from the mains power socket and replace the operating switch.
6. The polarity of the power plug is incorrect.	Check polarity, turn the power plug through 180°.
7. No gas pressure at the solenoid valve.	Check whether the gas supply to the unit is present. Check the level of the gas cylinders. Check the gas hose for damage. Disengage or replace the hose breakage protection.
8. The ionisation or ignition electrode are incorrectly set.	Settings according to specifications; check the porcelain insulation of the electrodes.
9. The protective intake grille of the supply air fan is contaminated.	Clean the protective intake grille.
10. Shutdown by safety temperature limiter (STB). The power plug (only PGT 100) was disconnected from the mains power supply before the cooling time had passed.	Check the protective intake and outlet grilles (clean if necessary). Check whether the fresh air supply is sufficient. Unlock STB (reset STB).
11. The gas control is faulty or contaminated.	Replace or clean gas control.
12. The ignition does not work.	Operating switch to the "I" position (heating mode). Check the ignition cable for damage. Check the electrode settings, check cyclical igniter.
13. The pressure controller is defective, an incorrect pressure controller is fitted, or the hose breakage protection has interlocked.	Fit an original pressure controller. Disengage or replace the hose breakage protection.
14. The gas cylinder(s) is (are) iced up due to an excessively high gas take-off and low temperatures.	Replace the gas cylinder(s) and connect 2-3 cylinders with the multi-cylinder set, EDP no. 1014050.
15. The solenoid valve does not close.	Shut off the gas supply, allow the flame to burn out. Operating switch to the "0" position and remove the power plug from the mains power socket. Replace the solenoid valve.
16. Leaky gas connection.	Use foaming media to search for the leak and remedy this.
17. The fault lamp in the automatic burner lights up.	Reset the automatic burner by pressing the malfunction button.
18. The automatic burner is defective.	Replace defective automatic burner.

Automatic firing device - LME41

The unlock key is the central control for unlocking, as well as activation / deactivation of the diagnostics.

The multicoloured signal lamp in the unlock key is the central indicator for visual diagnostics and interface diagnostics.

During commissioning, indication takes place in accordance with the following table:

Colour code table for the multicoloured signal lamp		
Condition	**Colour coding**	**Colour**
Waiting time (tw), other wait conditions		OFF
Air pressure alarm waiting phase, pre-purging		Yellow
Ignition phase, ignition actuated		Yellow flashing
Operation, flame OK		Green
Operation, flame poor		Green flashing
External light with burner start		Green/red
Low voltage		Yellow/red
Malfunction, alarm		Red
Fault code output, see fault code table		Red flashing
Interface diagnostics		Red flickering light

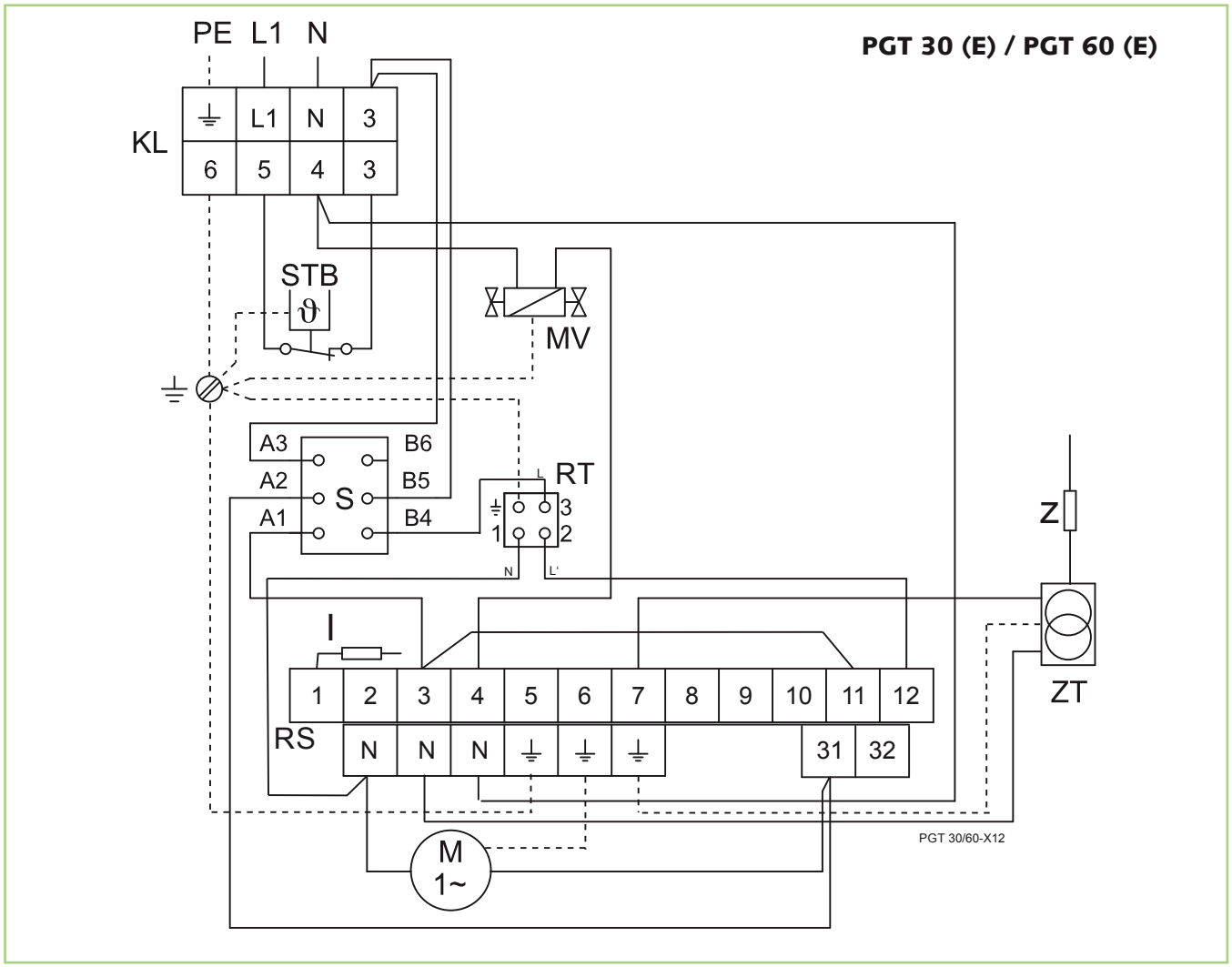
Legend: ..... = Continuous / ○ = OFF / ▲ = Red / ● = Yellow / ■ = Green

Troubleshooting diagnostics

After an unchangeable fault shutdown, the red signal lamp lights up. In this condition, it is possible to press the unlock key >3 seconds to activate the visual troubleshooting diagnostics in accordance with the fault code table.
Pressing the unlock key again >3 seconds activates the interface diagnostics. If interface diagnostics is activated inadvertently, which is apparent from the weak red flickering light in the signal lamp, pressing the unlock key once more >3 seconds switches this off again. The correct switching moment is signalled by a yellow light pulse.

Fault code table		
Red flashing code of the signal lamp	**Alarm at terminal 10**	**Possible cause**
2 x flashing	ON	No flame formation at the end of the safety time (TSA) - defective or dirty fuel valves - defective or dirty flame sensor - poor burner setting, no fuel - defective ignition device
3 x flashing	ON	Air pressure alarm error - Air pressure failure after specified time (t10) has lapsed - Air pressure alarm frozen in resting position - Error with leakage control (only in conjunction with LDU11...)
4 x flashing	ON	External light with the burner start
5 x flashing	ON	Air pressure alarm time monitoring - Air pressure alarm frozen in working position
6 x flashing	ON	Free
7 x flashing	ON	Loss of flame during operation too frequent (repetition limiting) - defective or dirty fuel valves - defective or dirty flame sensor - poor burner setting
8 x flashing	ON	Free
9 x flashing	ON	Free
10 x flashing	OFF	Wiring error or internal error, output contacts, other error
14 x flashing	ON	CPI contact not closed

Electrical wiring diagram

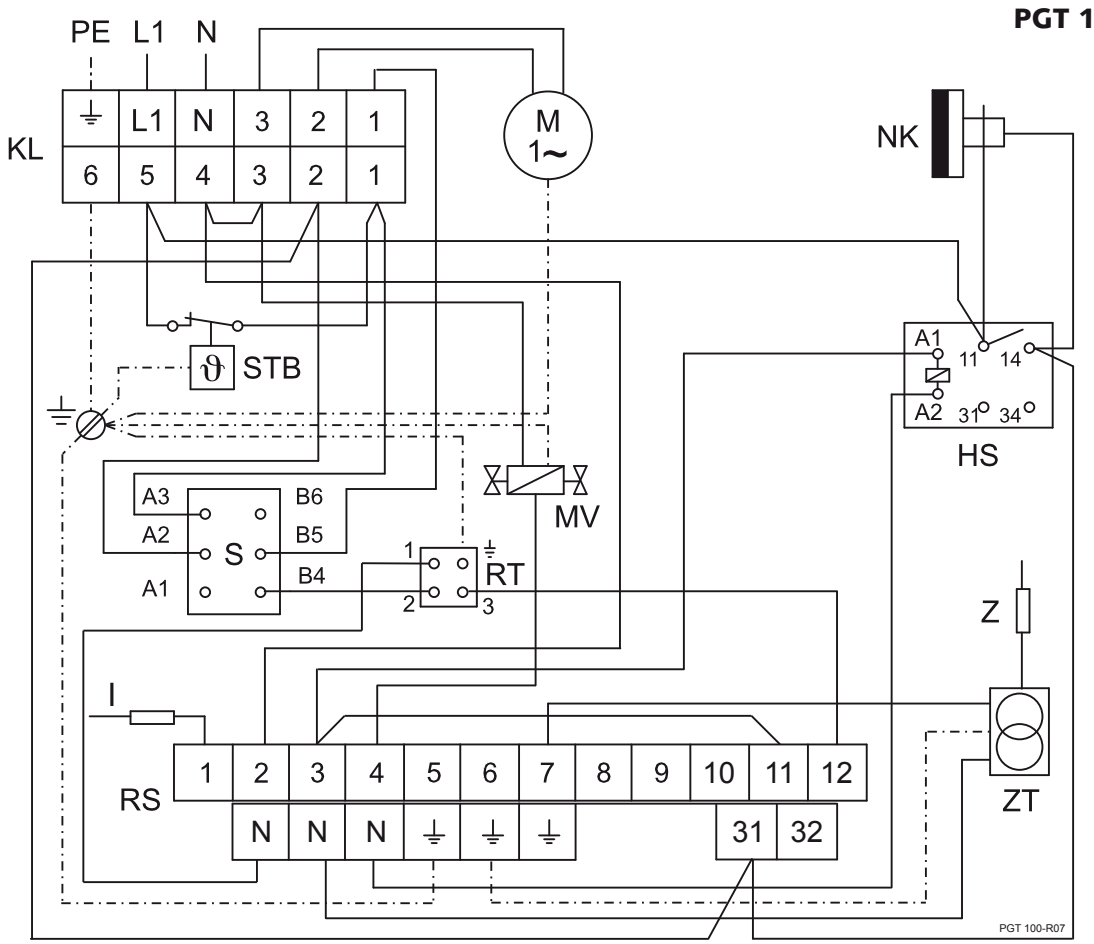


Legend:

I = Ionisation electrode
KL = Terminal block
M = Fan motor
MV = Solenoid valve
RS = Relay socket
RT = Thermostat socket
S = Operating switch
STB = Safety temperature limiter
Z = Ignition electrode
ZT = Ignition transformer**Legend:**

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

REMKO PGT (E) series

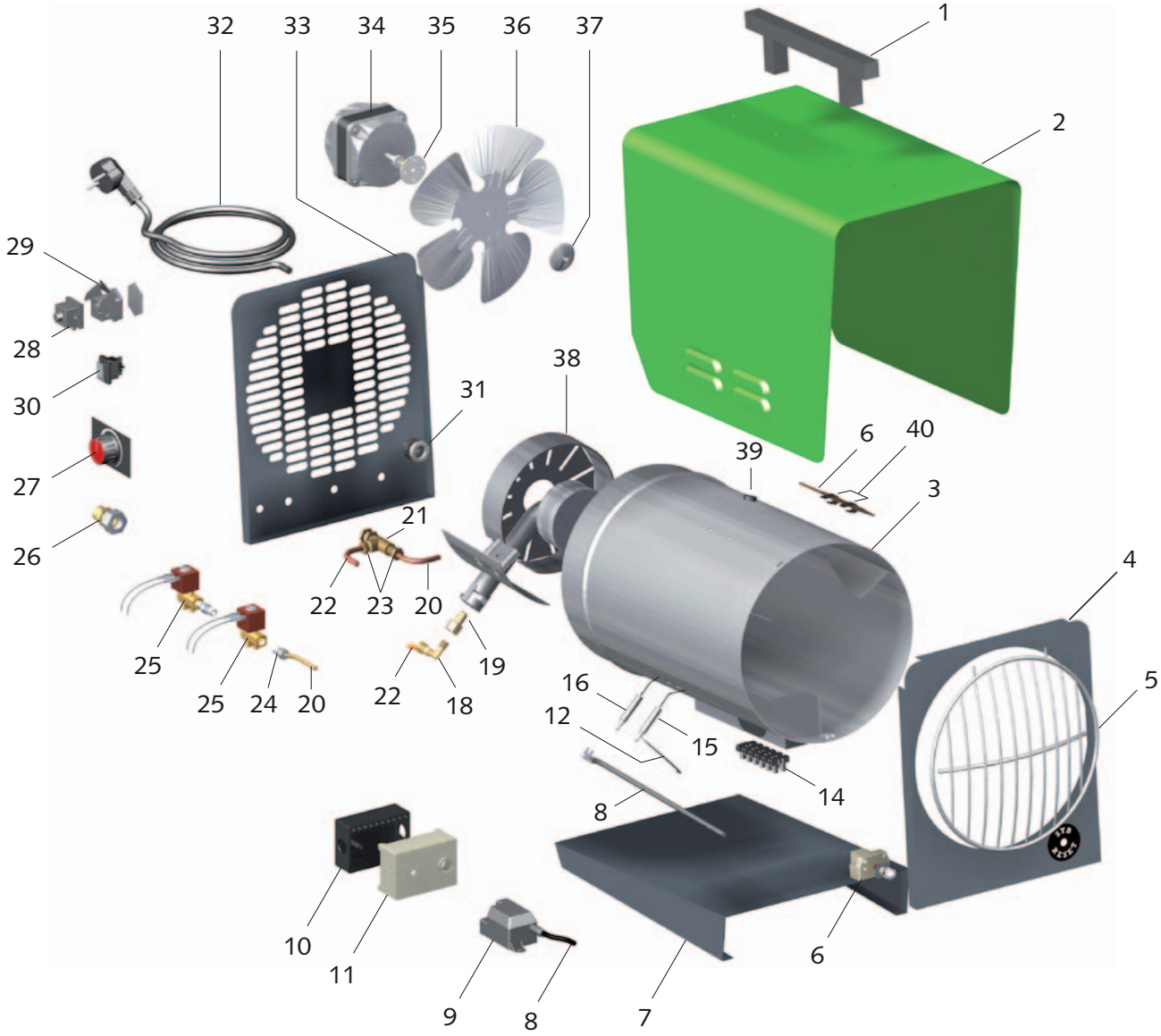


Legend:

HS = Auxiliary relay
I = Ionisation electrode
KL = Terminal block
M = Fan motor
MV = Solenoid valve
NK = Aftercooler thermostat
RS = Relay socket
RT = Thermostat socket
STB = Safety temperature limiter
S = Operating switch
Z = Ignition electrode
ZT = Ignition transformer

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

Exploded view of PGT 30 (E)



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

REMKO PGT (E) series

Spare parts list for PGT 30 (E)

No.	Description	EDP no.
1	Transport handle	1121184
2	Exterior cladding	1121185
2a	Exterior cladding (stainless steel)	1121186
3	Combustion chamber	1101384
4	Completion panel, front	1101479
5	Protective outlet grille	1101383
6	Safety thermostat	1101197
7	Inspection cover	1101385
8	Ignition cable	1121187
9	Cyclical igniter	1121188
10	Automatic burner base	1121181
11	Automatic burner	1121180
12	Ionisation cable	1101187
14	Terminal block 4x	1101442
15	Ionisation electrode	1101186
16	Ignition electrode	1101180
18	OT elbow union	1101316
19	Gas nozzle	1101159
20	Gas supply pipe M/R	1101444
21	Gas control	1101411
22	Gas supply pipe R/D	1101453
23	Screw connection M10x1	1101409
24	GE-screw connection	1101396
25	Solenoid valve	1101376
26	Gas connection nipple	1101134
27	Adjusting knob, cpl.	1101192
28	Strapping plug	1101019
29	Thermostat socket	1101018
30	Operating switch	1101188
31	Strain relief	1101267
32	Mains cable with plug	1101320
33	Completion panel, rear	1101480
34	Fan motor	1108049
35	Drive clutch B 6 Ø	1108455
36	Fan blade	1101392
37	Clutch plate	1101375
38	Gas burner	1101417
39	Grommet	1101304
40	Retaining clip	1101395
xx	Run-on relay (accessory)	1105075
xx	Pressure controller with hose breakage protection	1101470
xx	2 linear m. Gas hose	1101419
xx	2 linear m. HP gas hose [1)]	1101174
xx	5 linear m. HP gas hose [1)]	1108410
xx	10 linear m. HP gas hose [1)]	1108411
xx	Multi-cylinder set (2-3 cylinders)	1014050
xx	T-connection for multi-cylinder set	1101177
xx	Nylon seal for T-connection	1101178
xx	HP hose 0.4 m [2)]	1101179
xx	Thermostat plug	1101020

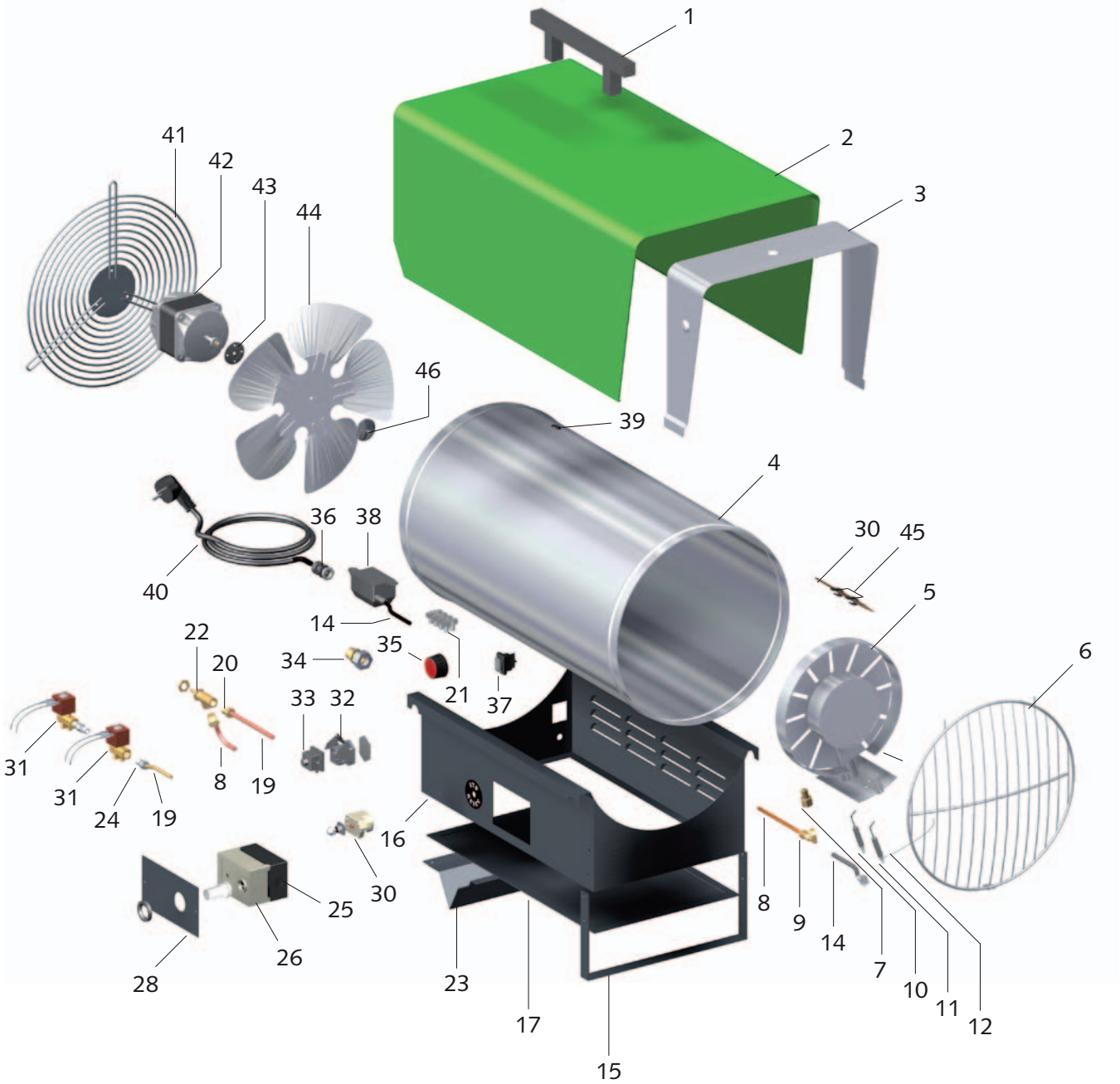
xx = not illustrated

[1)] Version for construction site operation per DIN 4815 part 1, pressure class 30

[2)] For multi-cylinder set

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

Exploded view of PGT 60 (E)



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

REMKO PGT (E) series

Spare parts list for PGT 60 (E)

No.	Description	EDP no.
1	Transport handle	1101142
2	Exterior cladding	1101420
2a	Exterior cladding (stainless steel)	1101461
3	Insulation	1101421
4	Combustion chamber	1101422
5	Gas burner	1101423
6	Protective outlet grille	1101424
7	Gas nozzle	1101426
8	Gas supply pipe R/D	1101457
9	OT elbow union	1101316
10	Ignition electrode	1101280
11	Ionisation electrode	1101186
12	Ionisation cable	1101187
14	Ignition cable	1121187
15	Support, front	1101427
16	Unit base	1121189
17	Inspection cover	1101469
19	Gas supply pipe M/R	1101441
20	Screw connection M10x1	1101409
21	Terminal block 4x	1101442
22	Gas control	1101412
23	Support, rear	1101249
24	GE-screw connection	1101396
25	Automatic burner base	1121181
26	Automatic burner	1121180
28	Cover	1121190
30	Safety thermostat	1101197
31	Solenoid valve	1101376

No.	Description	EDP no.
32	Thermostat socket	1101018
33	Strapping plug	1101019
34	Gas connection nipple	1101134
35	Adjusting knob, cpl.	1101192
36	Strain relief	1101267
37	Operating switch	1101188
38	Cyclical igniter	1121188
39	Grommet	1101304
40	Mains cable with plug	1101320
41	Protective intake grille	1101432
42	Fan motor	1101254
43	Drive clutch B 8 Ø	1101255
44	Fan blade	1101150
45	Retaining clip	1101395
46	Clutch plate	1101375
xx	Run-on relay (accessory)	1105075
xx	Pressure controller with hose breakage protection	1101470
xx	2 linear m. Gas hose	1101419
xx	2 linear m. HP gas hose [1)]	1101174
xx	5 linear m. HP gas hose [1)]	1108410
xx	10 linear m. HP gas hose [1)]	1108411
xx	Multi-cylinder set (2-3 cylinders), cpl.	1014050
xx	T-connection for multi-cylinder set	1101177
xx	Nylon seal for T-connection	1101178
xx	HP hose 0.4 m [2)]	1101179
xx	Thermostat plug	1101020

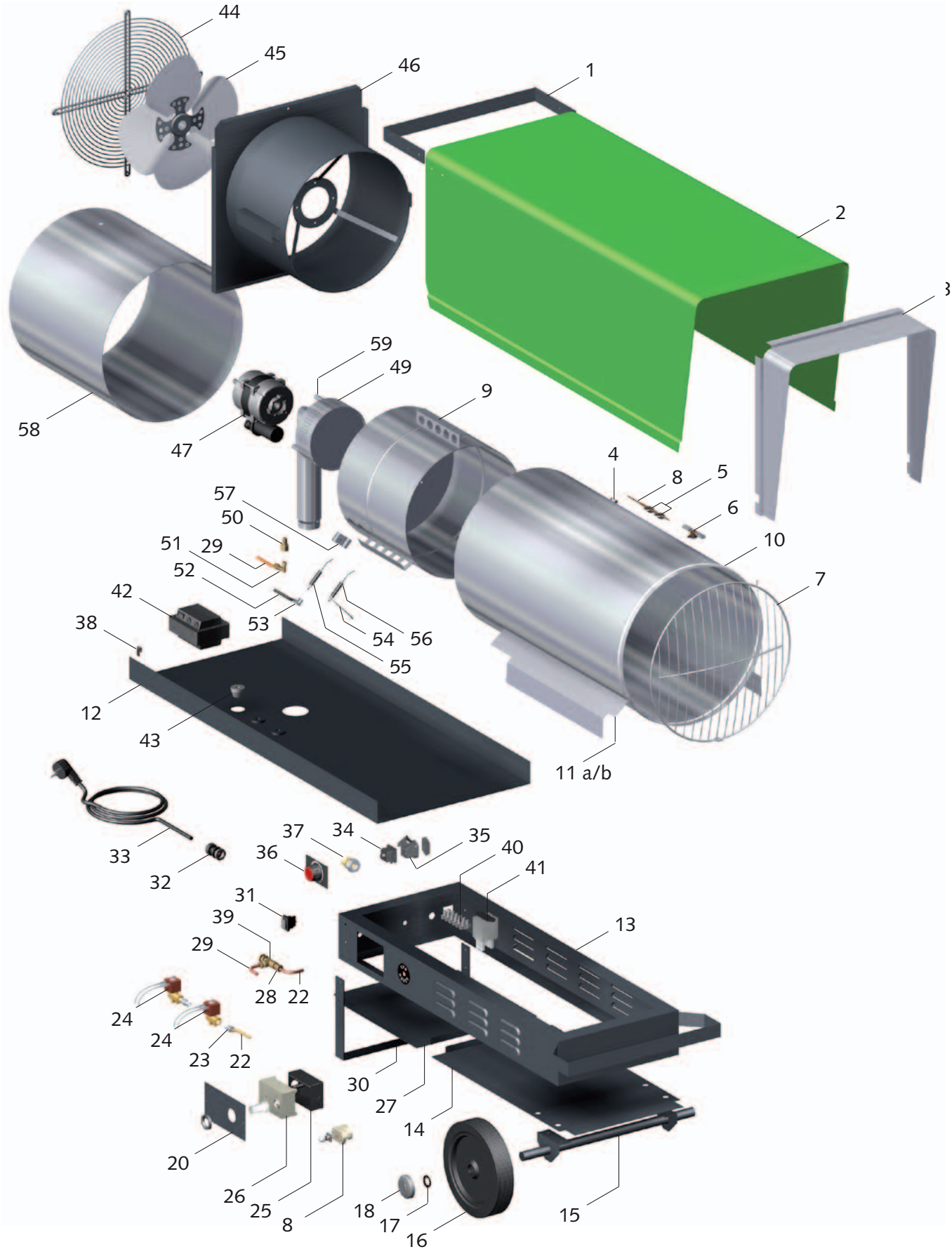
xx = not illustrated

[1)] Version for construction site operation per DIN 4815 part 1, pressure class 30

[2)] For multi-cylinder set

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

Exploded view of PGT 100 (E)



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

REMKO PGT (E) series

Spare parts list for PGT 100 (E)

No.	Designation	EDP no.
1	Transport handle	1101680
2	Exterior cladding	1101681
2a	Exterior cladding (stainless steel)	1101462
3	Insulation	1101682
4	Grommet	1101304
5	Retaining clip	1101395
6	Aftercooler thermostat	1101683
7	Protective outlet grille	1101684
8	Safety thermostat	1101197
9	Combustion chamber	1101685
10	Interior cladding, front	1101686
11a	Cladding support, right	1101631
11b	Cladding support, left	1101632
12	Mounting plate	1101687
13	Unit base	1121191
14	Floor panel	1101652
15	Axle	1101653
16	Wheel	1102155
17	Locking ring	1101622
18	Hubcap	1101623
20	Cover	1121190
22	Gas supply pipe M/R	1101441
23	GE-screw connection	1101396
24	Solenoid valve	1101165
25	Automatic burner base	1121181
26	Automatic burner	1121180
27	Inspection cover	1101651
28	Screw connection M10 x 1	1101409
29	Gas supply pipe R/D	1101690
30	Support, rear	1101691
31	Operating switch	1101188
32	Strain relief	1101267
33	Mains cable with plug	1101320
34	Strapping plug	1101019
35	Thermostat socket	1101018

No.	Designation	EDP no.
36	Adjusting knob, cpl.	1101192
37	Gas connection nipple	1101134
38	Fastening bracket	1102906
39	Gas control	1101692
40	Terminal block 6er	1101366
41	Auxiliary relay	1108038
42	Ignition transformer	1101666
43	Grommet, large	1101677
44	Protective intake grille	1101648
45	Fan blade	1101693
46	Fan housing, cpl.	1101694
47	Fan motor	1101634
49	Gas burner	1101695
50	Gas nozzle	1101659
51	OT elbow union	1101316
52	Ignition cable	1101696
53	Connection clip	1101181
54	Ionisation cable	1101187
55	Ignition electrode	1101698
56	Ionisation electrode	1101697
57	Electrode bracket	1101633
58	Interior cladding, rear	1101450
59	Spacer sleeve	1101699
Without figure:		
	Pressure controller	1101418
	Hose breakage protection	1101664
	2 linear m. Gas hose	1101419
	2 linear m. HP gas hose [1)]	1101174
	5 linear m. HP gas hose [1)]	1108410
	10 linear m. HP gas hose [1)]	1108411
	Multi-cylinder set (2-3 cylinders), cpl.	1014050
	T-connection for multi-cylinder set	1101177
	Nylon seal for T-connection	1101178
	HP hose 0.4m for multi-cylinder set	1101179
	Thermostat plug	1101020

[1)] Version for construction site operation per DIN 4815 part 1, pressure class 30

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

Maintenance protocol

Unit type: ..... **Unit number: .....**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Unit cleaned - outside -																				
Unit cleaned - inside -																				
Fan blade cleaned																				
Combustion chamber cleaned																				
Gas burner cleaned																				
Ignition electrode adjusted																				
Gas hose checked for damage																				
Gas-transporting parts checked for leak-tightness																				
Safety equipment checked																				
Safety devices checked																				
Unit checked for damage																				
All fastening screws checked																				
Electrical safety check																				
Test run																				

Comments:.....

.....

.....

1. Date: .... Signature	2. Date: .... Signature	3. Date: .... Signature	4. Date: .... Signature	5. Date: .... Signature
6. Date: .... Signature	7. Date: .... Signature	8. Date: .... Signature	9. Date: .... Signature	10. Date: .... Signature
11. Date: .... Signature	12. Date: .... Signature	13. Date: .... Signature	14. Date: .... Signature	15. Date: .... Signature
16. Date: .... Signature	17. Date: .... Signature	18. Date: .... Signature	19. Date: .... Signature	20. Date: .... Signature

Unit to be maintained only by authorised specialists in accordance with the statutory regulations.

REMKO PGT (E) series

Technical data

Series			PGT 30 (E)	PGT 60 (E)	PGT 100 (E)
Nominal heat load max.		kW	26.00	55.00	100.00
Nominal heat capacity	P_{nom}	kW	26.00	55.00	100.00
Minimum heat capacity	P_{min}	kW	10.00	25.00	50.00
Air volume flow		m^3/h	725	1310	3260
Fuel			LPG		
Fuel/gas type			Cat I_{3P}		
Energy efficiency ratio			A	A	A
Unit connection pressure		bar	1.5	1.5	1.5
Unit connection value		kg/h	0.78 - 2.0	1.95 - 4.27	3.90 - 7.80
Auxiliary power consumption					
at nominal heating capacity	el_{max}	kW	0.070	0.100	0.655
at minimum heating capacity	el_{min}	kW	0.070	0.100	0.655
in Stand-By mode	el_{SB}	kW	0.000	0.000	0.000
Pilot flame power requirement	P_{pilot}	kW	N/A	N/A	N/A
Thermal efficiency at nominal heating capacity	$\eta_{th,nom}$	%	100.0	100.0	100.0
Thermal efficiency at minimum heating capacity	$\eta_{th,min}$	%	100.0	100.0	100.0
Type of room temperature control			two or more manually adjustable stages, no room temperature control		
Power supply		V/Ph/Hz	230/1~/50	230/1~/50	230/1~/50
Rated current consumption		A	0.6	0.95	2.8
Electrical protection (provided by the customer)		A	10	10	10
Enclosure class		IP	11	11	11
Sound pressure level L_{pA} 1m [1)]		dB(A)	56 - 69	62 - 72	74 - 82
Dimensions: Length		mm	450	650	1060
Width		mm	260	320	435
Height		mm	410	510	620
Weight		kg	12	20	47
Product ID number					

[1)] Noise measurement in acc. with DIN 45635 - 01 - KL 3 in heating mode

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

Technical data for the automatic burner	
Operating voltage	230 V (-15 % + 10 %)
Frequency	50 Hz (40 - 60 Hz)
Safety time	5 seconds
Waiting time after fault shut-down	approx. 60 seconds
Permissible ambient temperature	– 20° C to + 60 °C
Min. required ionisation flow	5 µA
Sensitivity (ionisation flow)	1 µA
Enclosure class	IP 44

REMKO QUALITY WITH SYSTEMS

Air-Conditioning | Heating | New Energies

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