ATTACK®

CAST IRON FLOOR STANDING GAS BOILER

EKO, PLQ, KLQ, KLV, E, EZ, P

INSTRUCTION FOR USE

WWW.ATTACK.SK

Putting the boiler into operation:

ATTACK EKO, PLQ, KLQ, KLV, E, EZ, P
Capacity of 9, 12, 15, 20, 25, 30, 35, 40, 45, 49,9 kW

1. Plug the connector of the power supply flex into the 230 V/50 Hz socket. Test the socket with another appliance. The main switch of the boiler must be in the „off" position.
2. Let the gas flow into the boiler by turning a manual valve. When starting operation after a longer period of inactivity, it is necessary to deaerate the gas piping. Force the air out by gas through the burner (EKO, PLQ, P).
3. Set the thermostat to the maximum operation temperature.
4. Light the burner following the instructions on the internal side of the door (see more details in the instructions EKO, PLQ, P).
5. Turn the boiler's main switch on. The control light goes on and the main burner is ignited. Set the thermostat back to the required temperature of the heating water.
6. To put the boiler out of operation for a short time, turn the main switch off and thereby, the boiler remains in the stand-by mode, disconnected from power supply.
7. To put the boiler out of operation for a long time, turn the combined valve into the „off" position (see instruction EKO, PLQ, P), close the manual gas valve and put the power supply flex out of the socket 230 V/50 Hz.
8. If it comes to the power failure during the operation, the gas supply into the burner is interrupted, while the burner still burns (EKO, PLQ, P). When the power is supplied again, the burners burn automatically without need of intervention.
9. For PLQ and KLQ modifications, the excessive output can be reduced by switching a button on the front board. The excessive output is reduced automatically by the E and EZ modifications.
10. All the repairs during the guarantee and post-guarantee period have to be done by an authorized service organization.

ATTACK, s.r.o.
Vrútky

Contents

Introduction

Dear customer,

Thank you for your confidence and purchase of our product, the ATTACK floor standing cast iron gas boiler with fluent electronic output regulation. We wish it serves you reliably for a long time. Please, read this instruction for use carefully to ensure reliable and correct function of the boiler. The manual is written with reference to the faultless operation of the boiler connected into the central heating system.

The conditions of correct operation of the boiler:

- choice of a suitable boiler type and output
- correct commission
- reasonable operation
- regular technical maintenance
- reliable service

GENERAL DESCRIPTION

The latest types of the ATTACK cast iron gas boilers are marked as EKO, PLQ, KLQ, KLV, E, EZ, P. These products achieve high level of the technical-economic parameters, comparable with the top foreign products. Thanks to progressive design, with high efficiency and long life they attain very low level of pollutants in the flue gas and therefore they considerably save the environment. In all the modifications is used an automatic gas valve, enabling reliable, safe and economical operation with minimum need for manipulation. The boilers are assembled from the control and regulation elements from the top European manufacturers and cast iron bodies (consisting from 2, 3, 4, 5, 6, 7 elements). The ATTACK gas boilers are equipped with the high quality stainless steel burners. All the ATTACK floor standing boilers are certified under the CE1015.

PURPOSE OF USE

The type line of EKO, KLV boilers is produced with the stable capacity of 9, 12, 15, 20, 25, 30, 35, 40, 45, 49,9 kW. The P type line is produced in the stable capacity of 9, 18, 25, 35, 45, 50 kW. The PLQ, KLQ type ranges are produced in modulated capacity of 6–9, 12–15, 15–20, 18–25, 24–30, 28–35, 38–45, 42–49,9 kW. The E and EZ boilers are produced with the automatically modulated output of 6–9, 10–18, 16–25, 25–35, 33–49,9 kW. They are used for heating or central heating of family houses, flats, shops and similar premises where the natural gas as fuel is used. The boiler is intended to operate with the heating water of the maximum hydrostatic pressure of 0,4 MPa (4 bar) in line with the STN 07 7401 norm (it must not be acidic, i.e. the pH value must be higher than 7 and the carbonic hardness must be low) and operating temperature up to 90°C with connection to the heating systems with forced or natural flow (marked as S or P).

For the domestic hot water preparation there are the indirect heated floor standing hot water tanks of the same design as the ATTACK floor standing gas boilers.

MODIFICATIONS OF THE CAST IRON GAS BOILERS

Adequately to the project requirements, it is necessary to choose a suitable boiler type and output. Therefore we produce boilers in various modifications:

ATTACK EKO – floor standing cast iron boiler with permanent flame controlled by a thermocouple.

ATTACK PLQ – floor standing cast iron boiler with permanent flame controlled by a thermocouple and two-stage output regulation controlled by a switch on the front panel.

ATTACK KLV – floor standing cast iron boiler with electric ignition controlled by the ionization electrode. The function of the boiler is similar to the one of boilers with permanent flame, only the burners are ignited electronically after turning the boiler (or room) thermostat on.

ATTACK KLQ – floor standing cast iron boiler with electronic ignition controlled by ionization electrode with two-level output regulation controlled by a switch. The function of the boiler is similar to the one of boilers with permanent flame, only the burners are ignited electronically after turning the boiler (or room) thermostat on.

ATTACK E – floor standing cast iron boiler with electronic ignition controlled by ionization electrode. The boilers are made with modulation system (graduated modulation) which is automatically controlled transition between two output levels of the boiler in the range of 65–100 %.

ATTACK EZ – floor standing cast iron boiler with electronic ignition controlled by ionization electrode. The boiler is made with modulation system (fluent modulation) which is automatically controlled transition between two capacity levels of the boiler in the range of 65–100 %. The boilers are equipped with additional regulation that adjusts a three-way valve and starts heating the hot water tank after the water tank temperature gets under 60°C .

ATTACK P – non-electrical floor standing cast iron boiler with permanent flame controlled by thermocouple. This boiler is intended for a system with natural flow only.

CONDITIONS OF INSTALLATION

A gas boiler can be installed only by an authorized company. Before installation is the installation company obliged to check the correct choice of the boiler type with regard to the functional attributes and required parameters. There is no expanse vessel nor safety valve installed in the boiler. The installation must be done in line -with the valid norms and prescriptions - see ČSN EN 1775, ČSN 33 2000-7-701, ČSN 06 1008 and ČSN 38 6460. The door in the room where the boiler is placed must be open outwards. Because of service works, there must be free space around the boiler of at least 1x1 m in front and 4 m by the both sides.

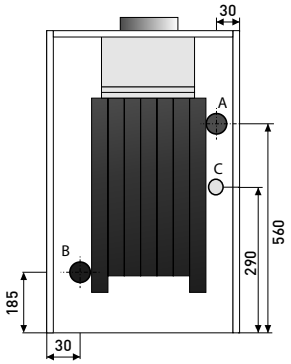
The boiler must not be installed in dusty, wet, aggressive environments which should cause damage and clog of burner and exchanger parts. The boiler must stand on a solid base (concrete floor, tiles, etc.). Cleaning of the boiler must be done in a dry way only (e.g. vacuum cleaning).

Following the norm ČSN 33 2000-3, there must be ordinary environment in the boiler room, protected from frost with the air temperature within the range of +5 - + 35 °C and relative moisture up to 80 %. The combustion air must not contain halogen hydrocarbons and vapours of aggressive substances, it must not be wet and dusty.

Size of the space, where the boiler is installed and the way of ventilation must be in line with the norms ČSN EN 1775 and TPG 70401.

Diameter of the flue gas exhaust must be appropriate to the boiler output and it should be resistant against condensate from the waste gas, filled with suitable flue blocks or non-corrosive material. The exhaust pipe from the boiler to the flue ventilation pipe must be from a non-corrosive material and behind the horizontal draught breaker which is a part of the boiler, there must be vertical height of 50 cm before the change of flow direction. By connection of the exhaust pipes, the upper one is always shifted into the bottom one. The top of the chimney must be at least 0.65 m above the top part of the slant roof and 1 m above the flat roof (eventually attic under the ČSN 73 4201 norm) to prevent creation of the pressure zones by the wind around the chimney that can be stronger than the flue exhaust. We recommend to consult whether the flue waste gas exhaust is suitable for connection with a gas boiler with a local chimneyer who could also inspect the flue. The boiler operation must be ensured under the non-condensing conditions, not to damage the chimney and the boiler. A manual shut off gas valve, not included in the boiler accessories, must be installed into the gas supply pipe. There must be free access to the shut off valve. The boiler is connected with heating system with screw joints of 1" (forced circulation) or 6/4" (natural circulation S or P). The boiler is filled through a filling valve that is delivered with the boiler. A pressure gauge for control of surpressure in the heating system is a part of the boiler together with a thermometer.

The view from the rear side of the boiler



Connection	
A	flow connection of heating 1" or 6/4"
B	return flow connection of heating 1" or 6/4"
C	natural gas

CONDITIONS OF OPERATION

The boiler must be operated in line with the rules given in this manual that is delivered with the boiler. Except the service works, the user must not do any repairs on the appliance nor adjustments or dismounting and cleaning the internal parts of the boiler. The boiler can be operated by an adult person only. After leaving home in the winter (e.g. for holiday), a supervision by an adequately responsible person is needed.

If there is a danger of approach of inflammable (explosive) gases or fumes to the boiler (e.g. by PVC application), it must be put out of operation early including the burning flame (EKO, PLQ, P).

SAFETY CONDITIONS

When installing a boiler, a safe distance of its surface from inflammable materials depending on the degree of flammability must be kept. Distances:

- from inflammable materials of B, C1, C2 categories 200 mm
- from inflammable materials of C3 category 400 mm
- from materials not tested by STN 73 0853 400 mm

EXAMPLES OF CLASSIFICATION OF THE BUILDING MATERIALS BY THE INFLAMMABLE LEVEL:

- A category non-combustible (brick, blocks, concrete, tiles, mortar, plaster)
- B category very difficult to ignite (heraklit, lignos, basalt boards)
- C1 category difficult to ignite (beech, oak, wood-fibre, werzalit, cardboard)
- C2 category normally flammable (pinewood, solodur)
- C3 category easily flammable (wood-fibre boards, polyurethan, PVC, styrofoam)

If a boiler stands on the floor made from flammable materials, it must be protected by incombustible insulating plate exceeding boiler dimensions for at least in 150 mm. Solid materials of the A category can be used as incombustible and insulating materials. Objects from flammable materials cannot be placed on the boiler nor in the distance shorter than 500 mm.

CONDITIONS TO KEEP THE ECOLOGICAL PARAMETERS

The boiler is set up and tested by the producer to ensure the optimum process of burning in line with the ecological requirements. The boiler must be installed into the dry and dustless environment, without possibility to suck strange, aggressive materials or fogs through the air supply. Ask the specialized company to take care about the the flue gas exhaust. It is necessary to make the annual tests and cleaning.

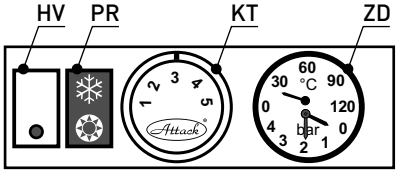
TECHNICAL DESCRIPTION EKO, PLQ, KLV, KLQ, E, EZ, P TYPES:

The body of boilers consists of cast-iron elements with the system of exchanger ribs, where the flue gas go into the collector and through draught breaker into the chimney. The pipes with screw joints 1“ or 6/4“ (S, P) have to be connected to the heating system on the rear side of the body. In the upper front in a copper sleeve there are emergency thermostat and sensors of boiler thermostat and thermomanometer. In the rear bottom part there is the inlet and outlet valve and in the front upper part there is a reverse valve with a sensor of the pressure gauge.

The boiler body is insulated by insulating material preventing the heat leakage into surroundings. The front wall is covered by protective metal sheet. After demounting the boiler skeleton and draught breaker, it is possible to get to the combustion chamber, to check or to clean the exchang-

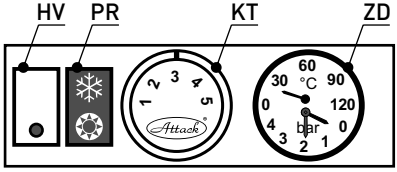
er. When mounting back, it is necessary to pay attention to seal the draught breaker with the boiler body tightly. The function of draught breaker is described in a separate part. Under the exchanger is the burning chamber with atmospheric burners. The bottom of the chamber is equipped by a dish on stands to keep condensate. The burner set consists of burner tubes holder with accessories and of burning system. It is connected to the burning chamber in two points. Gas distributor is made as a closed steel profile. On the burner board there are burner tubes. Above them there is an ignition burner together with thermocouple (ionization electrode) and ignition electrode in a separated holder. The ignition burner and burning level can be watched through a small hole above the holder of burning system. This part is accessible after removing the front door. Behind the door there is an electromagnetic combined valve positioned on the gas supply pipe, which is one of the main functional parts of the boiler. This valve is set up by a producer to the optimal burning quality and there should be no manipulation with it. Due to this is the regulation screw painted. Under the valve there is a holder on the gas distributor (EKO, PLQ, P) with a piezoelectric ignitor used for starting the ignition burner. Above the valve near the upper edge of the front door there is a covered electroinstallation board with all the electroinstallation. The boiler body is protected by a protective coating. The external cover is treated by heat resistant dust paint.

ELECTRICAL FRONT PANEL OF THE EKO, PLQ, KLV, KLQ, E BOILERS



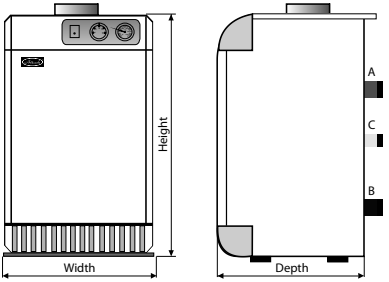
HV – main switch
PR – operation mode switch (only PLQ, KLQ)
KT – boiler thermostat (1–5)
KT – PRODIGY "E" boiler thermostat
ZD – thermomanometer

ELECTRICAL FRONT PANEL OF THE EZ BOILERS



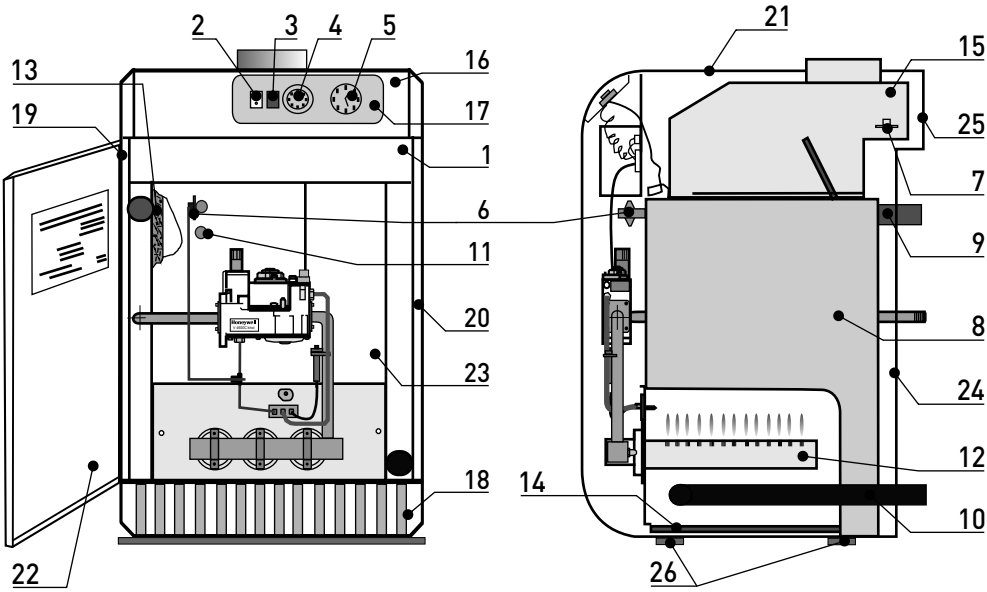
HV – main switch – switch of the tank (EZ)
TD – unblock button (EZ)
KP – adjustable boiler potentiometer
ZD – combined thermomanometer

EXTERNAL DIMENSIONS OF THE EKO, KLV, PLQ, KLQ, P BOILERS



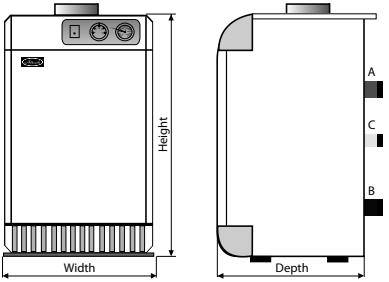
External boiler dimensions in mm						
Boiler type on kW	9	12–20	25–30	35	40–45	50
Width	365		445	535	630	720
Height	845					
Depth	580	630	580	610	670	

MAIN PARTS OF EKO, KLV, PLQ, KLQ, P BOILERS



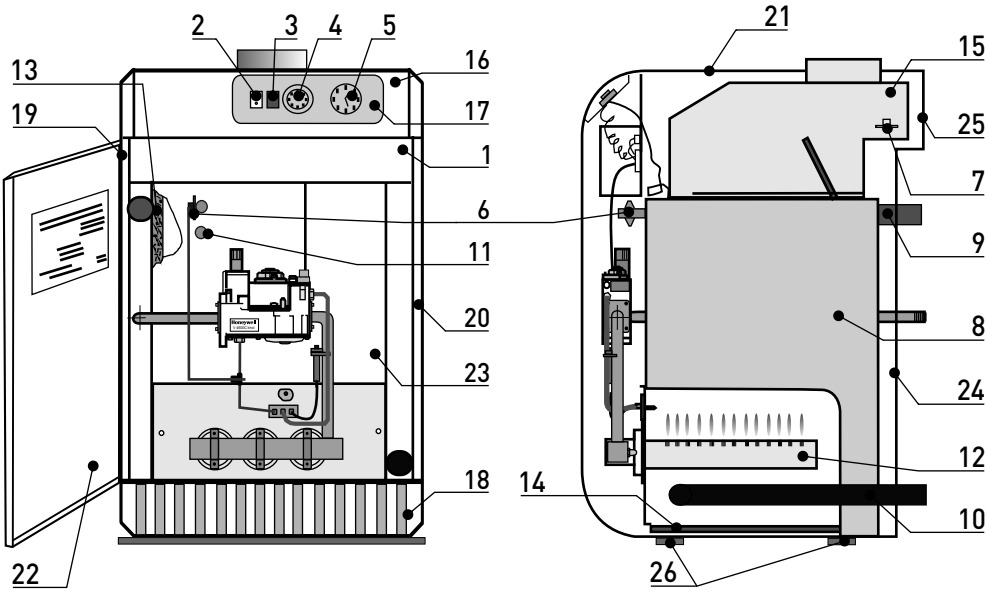
1. Electrical installation box
2. Main switch
3. Output switch
4. Boiler thermostat
5. Thermomanometer
6. Emergency thermostat + dish
7. Flue gas thermostat
8. Cast iron body
9. Flow connection of C. H.
10. Return connection of central heating
11. Reverse valve
12. Burners
13. Thermal insulation
14. Condensing dish
15. Draught breaker
16. Plastic board
17. Plate of the plastic board
18. Bottom plastic cover
19. Left side cover
20. Right side cover
21. Upper cover
22. Door
23. Covering plate
24. Rear bottom cover
25. Rear upper cover
26. Stands

EXTERNAL DIMENSIONS OF E, EZ BOILERS



External boiler dimensions in mm						
Boiler type on kW	9	12–20	25–30	35	40–45	50
Width	365		445	535	630	720
Height	845					
Depth	580	630	580	610	670	

MAIN PARTS OF E, EZ BOILERS



1. Electrical installation box
2. Main switch / Water tank switch
3. Failure unblock
4. Prodigy (E), potentiometer (EZ)
5. Thermomanometer
6. Emergency thermostat + sensor
7. Waste gas thermostat
8. Cast iron body
9. Riser pipe of heating
10. Runback pipe of heating
11. Check valve
12. Burners
13. Thermal insulation
14. Condensing dish
15. Draught breaker
16. Plastic board
17. Plate on the plastic board
18. Bottom plastic cover
19. Left side board
20. Right side board
21. Upper plastic cover
22. Door
23. Protective metal sheet
24. Rear bottom sleeve
25. Rear upper cover
26. Stands

CONNECTING THE BOILER TO THE ELECTRICITY MAINS (NOT FOR ATTACK P BOILERS)

Boilers are plugged into the electrical socket of 230 V/50 Hz placed near the boiler, with a supply cable ended with a plug. In line with the ČSN EN 60 335-1, the plug must be approachable after the boiler is installed. The socket must be adequately protected by zeroising or grounding and it must be connected in line with the ČSN 33 21 80. The boiler and other parts of installation must be grounded. Installation of the socket, room thermostat, circulation pump and service of electrical boiler parts can be carried out only by a person with proper electrotechnical qualification, by the law No. 718/2002.

ELECTRICAL EQUIPMENT OF BOILERS

All the electroinstallation is placed on an insulating pad of the electrical board. On the front cover there is a main switch, output switch (PLQ, KLQ), switch of failure unblocking (E, EZ), control button of the boiler thermostat and thermomanometer. When the power supply fails, all the euipment supplied with the power of 230 V is out of operation which means that a valve closes gas flow to the burners. The flame of ignition burner (EKO, PLQ, P) is still burns and the boiler stays in a stand-by mode. After the power supply starts again, the function starts automatically. Electrical installation is ready to connect the additional room thermostat, pump and switch contacts of three-way valve. The room thermostat or the contacts of the three-way valve are connected after removing the jumper on terminals 7, 8 and the circulation pump is connected to the terminals 3, 4, 5. By the E boiler type is the room thermostat connected to the terminals 8, 9 and circulation pump to the terminals 11, 12, 13. By the EZ boiler type is the room thermostat connected to the terminals 6, 7, three-way valve to the terminals 3, 4, 5 and circulation pump to the terminals 12, 13, 14. Connection of the room thermostat, circulation pump and three-way valve can be performed only by a person with electrical qualification by the law No. 718/2002.

START – PUTTING THE BOILER INTO OPERATION

1. Remove the door.
2. Plug the flex cable into the electricity mains, the main switch is in the off position.
3. Open the gas supply to the boiler by a manual valve on the inlet pipe.
4. Set the required temperature of outlet water by knob of the thermostat.
5. The temperature is increased by turning the switch to the right (clockwise) and decreased by turning the switch to the left (anticlockwise).
6. Press the control button of the gas combined electrical valve and hold it for 20 seconds. At the same time press the button of piezo ignitor hardly for few times. Check the ignition burner through the hole. **ATTENTION** – around the check hole there is a risk of burn when touch. Be careful by work with the valve and piezo ignitor, not to get burned. Release the button of the valve. The gas flows into the ignition burner and the sensor of thermo-couple is heated by flame. If the flame is extinguishes, the process of ignition must be repeated (EKO, PLQ, P). By the KLQ, KLV and EZ versions, are the burners ignited automatically after switching the main switch and setting up the boiler thermostat.

7. Turn the main switch into the on position. The gas flows into the burner where it is ignited.
8. Close the boiler front door.

Warning: ATTACK P boiler is a version of non-electrical installation.

STOP – PUTTING THE BOILER OUT OF OPERATION

For a short-time inactivity:

- switch the main switch off. The valve closes because of losing the voltage and the gas supply is interrupted
- the flame of ignition burner still burns, the boiler is in a stand-by mode (EKO, PLQ, P)
- in the case of need, put the boiler into operation by switching the main switch on
- ensure the heating system against frost damage

For a long-time inactivity:

- remove the boiler door
- turn the main switch off - the gas supply to the burners gets closed
- turn the control button of the valve in the direction of arrow and release, thus close the gas supply to the ignition burner and other burners (EKO, PLQ, P)
- unplug the supply cable from electricity mains
- close the manual gas valve on the supply pipe next to the boiler
- close the boiler door
- ensure the heating system against frost damage

Warning: The ATTACK P boiler is without electrical installation.

OPERATION CONTROL

The boiler is secured against dangerous operation states while working. However, it is not possible to prevent from the failures the cause of which is not included in the boiler mechanism. Therefore it is necessary test the boiler once in three days after being started and to check the following:

- whether the system is filled with water and there is no leakage
- whether there is free approach of the outside air
- whether the flue gas or gas cannot be smelled
- whether there is no extra noise when burning the gas and no imperfect burning indicated by the change of flame's blue color

The breakdowns detected must be reported to the service worker who put the boiler to operation. If there is a gas leakage, the gas supply must be closed. The breakdowns found must be removed immediately.

FAILURE STATES OF OPERATION

When these occur, the gas supply into the main burner and ignition burner is automatically closed:

- when the thermo-couple (ionisation electrode) is cooled because of: gas supply breakdown, clogging by dirts, the flame extinguished by condensate, wrong setting of the thermo-couple with reference to the ignition burner,
- when there is breakdown in the circuit of the boiler thermostat, the water in the boiler body gets overheated.

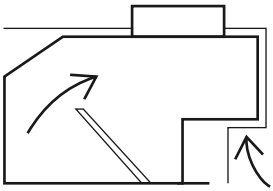
The boiler operation cannot be started automatically in such cases. It is not possible to start the boiler again without the professional service action to remove the problem.

What to do in the case of failure:

No.	Failure	Possible cause	Removing	Removed by
1.	Water leakage from unsealed areas	a1) released joint a2) damaged sealing element a3) damaged cast iron	a1) tight the joint a2) replace the element a3) replace the cast iron	a1) service a2) service a3) service
2.	Gas discharge from unsealed areas		a) close the gas supply b) find the place of leakage and remove the failure	a) customer b) service
3.	The ignition burner is not burning properly or went off after start	a) low gas pressure	a1) set up the flame by a screw a2) set up the gas pressure a3) deaerate	a1) service a2) service a3) service
4.	Boiler has a low output	a) low gas pressure b) unsuitable main jets	a) set up the gas pressure	a) service
5.	Ignition burner goes off after igniting repeatedly	a) faulty emergency thermostat b) faulty thermocouple c) faulty gas inlet valve	a) replace the thermostat b) replace the thermocouple c) replace the valve	a) service b) service c) service
6.	Hot water does not flow into the heating system	a) same as by 5 b) boiler aerated, low water pressure c) faulty reversevalve or pump d) damaged thermostat	a) same as by 5 b) deaerate, fill in with water c) replace damaged parts d) replace thermostat	a) same as by 5 b) customer c) service d) service
7.	Main burners are not ignited after switching the thermostat	a) faulty gas valve b) reset on the flue gas thermostat activated	a) change the valve b) check the flue, press reset on the flue gas thermostat	a) service b) service

CHIMNEY DRAUGHT BREAKER

The draught breaker is an important part of the boiler. It is installed on the flue gas exhaust with stable exhaust from 2 to 200 Pa. This item is removable to enable approach for service works. When installing back, it is necessary to seal it properly. Dimensions and shape of the draught breaker are given by the producer and must not be changed!



FUNCTION OF THE DRAUGHT BREAKER:

- safe and perfect burning
- partial elimination of an excessive exhaust, stabilization of the boiler efficiency
- protection of the boiler against possible influence of reverse draught in the chimney
- reverse draught can start as a result of an incorrectly selected exhaust ventilator in a flat or a house which is dangerous and not allowed
- in the case of accidental intake of flue gas or outside air intake into the boiler, the draught breaker ensures accomplished burning for a limited time and flue gas returns from the draught breaker back to the boiler room

FUNCTION OF THE FLUE GAS THERMOSTAT

The flue gas thermostat serves to interrupt the boiler operation by closing the gas supply into the boiler, if the reverse flue gas flow occurs. The flue gas thermostat is not switched on automatically after the sensor cools down. It is necessary to switch it on manually, by the red or black button on the thermostat. If the boiler operation is blocked again, it is necessary to call service technician. The flue gas thermostat must not be out of order during the boiler operation. The faulty thermostat must be replaced only with an original one supplied by producer.

BOILER FUNCTION

The required water temperature is kept by the boiler thermostat. When the water temperature achieves the adjusted value, the appropriate electrical part of the combined valve is closed.Thereby is the gas supply into the burners stopped.

The thermostat enables the power supply and the main burners are ignited immediately after the water temperature decreases for several degrees under the adjusted value (i.e. starting difference value of thermostat).

The flame control is automatic. If the burning conditions change (big drop of gas pressure, gas supply broken or burning stopped), the valve closes the gas supply into the burners. The emergency thermostat protects the boiler against overheating, if the boiler thermostat or valve fails.

OUTPUT REGULATION

The boiler is equipped with the basic regulation and control elements that serve for one-level (EKO, KLV), two-level (PLQ, KLQ) and automatically controlled (E, EZ) output regulation. The regulation of the boiler can be set up and controlled only by a specialized service worker.

AFTER SET UP

The most simple regulation is to set up the operation thermostat correctly, depending on the outside temperature according to the informative values which must be adjusted by the user by his own experience and various ways of the source dimensioning, heating bodies, construction of the building, etc.

The boiler works adequately to the selected mode. After reaching the required temperature of heating water, the flame on burners extinguishes and only the ignition burner burns (EKO, PLQ, P). After it gets colder, the flame is ignited automatically. With this way of regulation the cycles (on-off) of the boiler change often, mainly in the transient times of seasons when the heating water temperature is low, and there is excess output. Such operation mode is not good for the boiler and it increases average consumption of gas. For these times we recommend to decrease the output for PLQ, KLQ modifications, to prolong the boiler lifetime and to decrease the average gas consumption. By the E, EZ modifications is the output decreased automatically.

REGULATION OF OPERATION

It is possible to use the additional regulation which is not included into the equipment of the boiler. The installation must be done adequately to the project. It is also possible to use regulators and room thermostats according to the temperature of the selected reference room or equithermal regulation of the heating water.

There is a wide range of room thermostats of domestic and foreign production from simple ones up to programmable ones with daily or weekly cycle to regulate the room temperature. In this case is the temperature of heating water stable and keeps the boiler in longer operating modes. Due this, the producer recommends to install the mixing circle as a basic element to regulate the operation. The regulation is done through mixing the hot water from the boiler with returning water in the heating system. The water of the adequate temperature is prepared by mixing the water from the boiler with return water and the heated object gets only the necessary amount of heat. Except of the mixing device there are also the servo-gear and the electronic regulator. The mixing device can be used separately, without automatic regulation by servo-gear. In this case it must be manually set to a certain point of scale according to the estimated temperature. A suitable type and size is selected by project maker as a part of complete additional regulation for automatic operation.

MARKING OF THE BOILER

The marking means the whole identification of the boiler and it is in the form of a adhesive label placed on the rear cover of the boiler. A brief summary of instructions and information about manipulation is on the label on the internal part of the boiler door.

SPARE PARTS

The producer keeps the particular parts of boilers as spare parts which are provided for guarantee and post-guarantee service only to contract partners on the base of order or claim.

GUARANTEE, CLAIM

The guarantee conditions and instructions for claim are exactly given in the guarantee letter. Repairs within the guarantee period have to by done by the authorized company.

Attention!

Regarding the conditions of guarantee, the producer does not permit any repairs by an unauthorized organization within the guarantee period.

SERVICE

The authorized company has to check and adjust the boiler every year within the guarantee period. This check is not included into the guarantee. Even after finishing the guarantee time, the producer recommends to make any interventions aiming to repairs by a contract service partner. The actions of the user within the post guarantee time are determined in the part „Maintenance".

MAINTENANCE

The user is instructed to do only the basic maintenance like removing dirts and dust according to the cleanliness of environment. The burner parts can be congested by dust and impurities during the boiler operation. To clean the boiler, it is necessary to undo and clean the burner system by air or by a water pressure. Only the authorized trained specialist can make the reparations and cleaning of the boiler.

PACKAGING, TRANSPORT, STORING

Boilers are transported in vertical position fixed to a wooden pallet that is removed during the installation of the boiler. In any case it must not be used as a stand for boiler. To prevent damaging during manipulation and transport, the boiler is protected by a paper box. The paper box is secured by a granoflex tape. The boiler must be stored in an un-aggressive space with the temperature of +5 to +50°C and maximum relative humidity of air of 75 %, without any organic steams, gases and dust.

BOILER ACCESSORIES AND DOCUMENTATION

The ATTACK EKO, PLQ, KLQ, KLV, E, EZ, B boilers are delivered completely assembled and functionally tested. The delivery contains the following documentation:

- instruction manual together with a document boiler test certificate on its back side
- guarantee letter

TECHNICAL CHANGES

The producer reserves right for adjustments of the product related to the innovation and technological changes. Such changes do not have to be contained in the instructions.

CONCLUSION

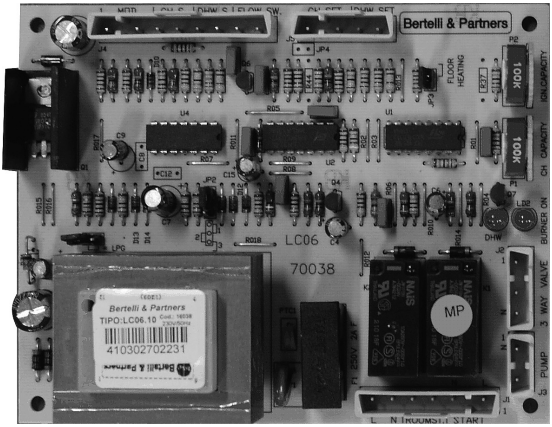
The producer recommends to study all the consumer documentation thoroughly and keep it as a source of information and instructions regarding to operation of the heating system. Following the

advice from the instructions you can use all the advantages of the boiler and avoid various failures and claims.

You will be awarded by comfortable moments and satisfied with your investment.

Classification of the appliance by STN 070240
Appliance category: I_2H
Boiler design: B11BS
Connection overpressure of natural gas G20: 20 mbar

SETTING OF THE MODULATION ELECTRONICS OF THE ATTACK EZ BOILER



1. Trimmers

P1 – CH. CAPACITY – setting of the max. boiler output into the heating system

P2 – ING. CAPACITY – setting of the starting output (10 seconds after ignition)

2. Jumpers

JP1 – natural gas – connected

JP2 – anti-cycling timer

1 – 60 seconds

2 – 120 seconds

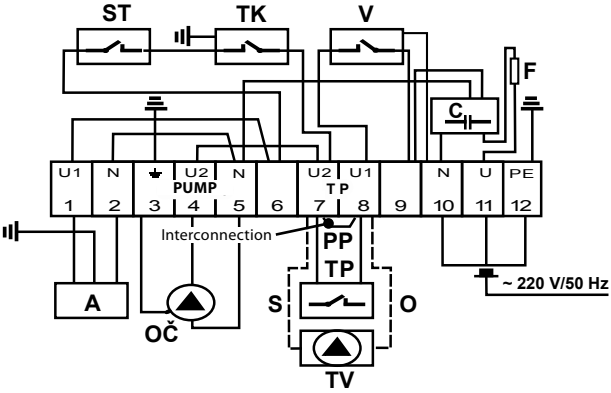
3 – 180 seconds

JP3 – connected (should not be disconnected)

TECHNICAL DATA

ATTACK boiler type	Unit	9	12	15	20	25	30	35	40	45	50
Nominal output EKO, KLV, P	kW	9	12	15	20	25	30	35	40	45	49,9
Nominal input EKO, KLV, P	kW	9,9	13,2	16,5	22	27,5	33	38,5	44	49,5	55
Number of elements	pc	2	3			4		5	6		7
Adjustable output PLQ, KLQ	kW	5–9	—	12–15	15–20	18–25	24–30	28–35	—	38–45	42–49,9
Modulable output E, EZ	kW	5–9	—	10–18	—	16–25	—	25–35	—	30–45	33–49,9
Adjustable input PLQ, KLQ	kW	5,5–9,9	—	13,2–16,5	16,5–22	19,8–24,5	26,4–33	30,8–38,5	—	41,8–49,5	46,2–55
Modulable input E, EZ	kW	5,5–9,9	—	11–16,5	—	17,6–24,5	—	27,5–38,5	—	33–49,5	36,3–55
Gas pressure in front of the boiler	mbar	20									
Diameter of nozzles	mm	2,5	2,5	2,5	2,7	2,5	2,7	2,7	2,5	2,7	2,5
Pressure to nozzles – EKO, PLQ, KLV, KLQ, P	kPa	0,8–1,4	0,95	0,7–1,05	0,8–1,2	0,8–1,35	1–1,35	0,7–1,15	1,35	0,85–1,15	0,85–1,25
Pressure to nozzles – E, EZ	kPa	0,8–1,4	—	0,5–1,4	—	0,5–1,35	—	0,65–1,15	—	0,6–1,15	0,6–1,25
Fuel consumption by max. output – EKO, PLQ, KLV, KLQ, P	m^3/h	1,06	1,4	1,76	2,35	2,94	3,5	4,12	4,7	5,3	5,85
Fuel consumption by max. output – E, EZ	m^3/h	1,06	—	2,13	—	2,94	—	4,12	—	5,3	5,85
Fuel consumption by min. output – EKO, PLQ, KLV, KLQ, P	m^3/h	0,88	—	1,4	1,76	2,13	2,82	3,3	—	4,4	4,9
Fuel consumption by min. output – E, EZ	m^3/h	0,88	—	1,17	—	1,88	—	2,94	—	3,5	3,8
Fuel		Natural gas „G 20“									
Natural gas connection	DN	15 (Pass through nut 3/4")									
Flue exhaust diameter	mm	110				135		145	165		180
Volume of the cast iron body	l	7	10			13,8		16,8	19,8		22,8
Max. pressure in heating system	bar	PMS = 4									
Connection of heating – forced circulation / natural circulation (S, P)	G	1" / 6/4"									
Boiler weight	kg	73	99			125		151	180		208
Power supply	V / Hz	~ 230 / 50									
Grade of protection	IP	40									
Temperature of the heating water	°C	40–90 / 0–90 (P)									
Efficiency	%	90									
Flue gas flow	g/s			14,4		20,5		28,9		37,2	
Electrical input	W	15									

Connecting the electrical installation of the ATTACK EKO boiler



ATTENTION:

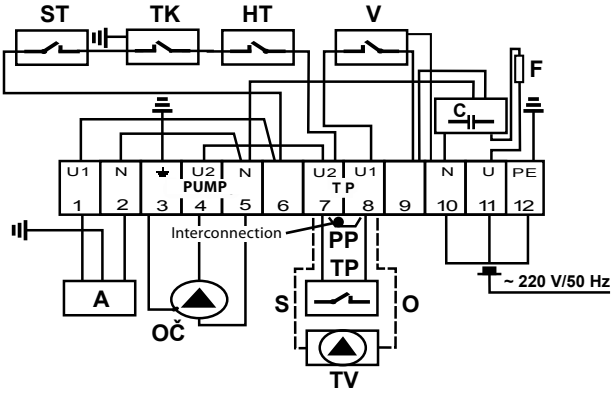
Connect the TP (room thermostat), eventually the TV (three-way valve) as well into the terminals 7 and 8.

Remove the interconnection!

DESCRIPTION:

A – automatics V 4600C
V – main switch
TK – boiler thermostat
TP – room thermostat
OČ – circuit pump
C – capacitor
ST – flue gas thermostat with reset
TV – three-way valve Honeywell VC4613
O – orange conductor of the three-way valve
S – grey conductor of the three-way valve

Connecting the electrical installation of the ATTACK KLV boiler



ATTENTION:

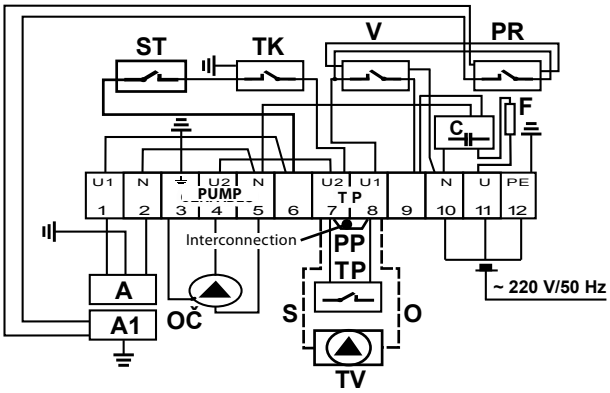
Connect the TP (room thermostat), eventually the TV (three-way valve) as well into the terminals 7 and 8.

Remove the interconnection!

DESCRIPTION:

A – automatics VK 4100C
V – main switch
TK – boiler thermostat
TP – room thermostat
OČ – circuit pump
C – capacitor
HT – emergency thermostat with reset
ST – flue gas thermostat with reset
TV – three-way valve Honeywell VC4613
O – orange conductor of the three-way valve
S – grey conductor of the three-way valve

Connecting the electrical installation of the ATTACK PLQ boiler



ATTENTION:

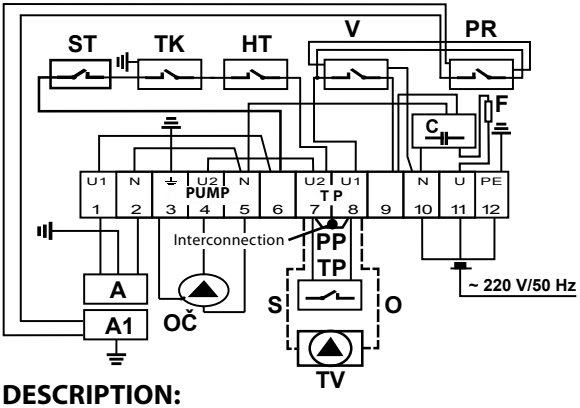
Connect the TP (room thermostat), eventually the TV (three-way valve) as well into the terminals 7 and 8.

Remove the interconnection!

DESCRIPTION:

A – automatics V 4600Q
TP – room thermostat
C – capacitor
A1 – two-stage regulator of automatics
V – main switch
TK – boiler thermostat
OČ – circuit pump
PR – output switch
ST – flue gas thermostat with reset
TV – three-way valve Honeywell VC4613
O – orange conductor of the three-way valve
S – grey conductor of the three-way valve

Connecting the electrical installation of the ATTACK KLQ boiler



ATTENTION:

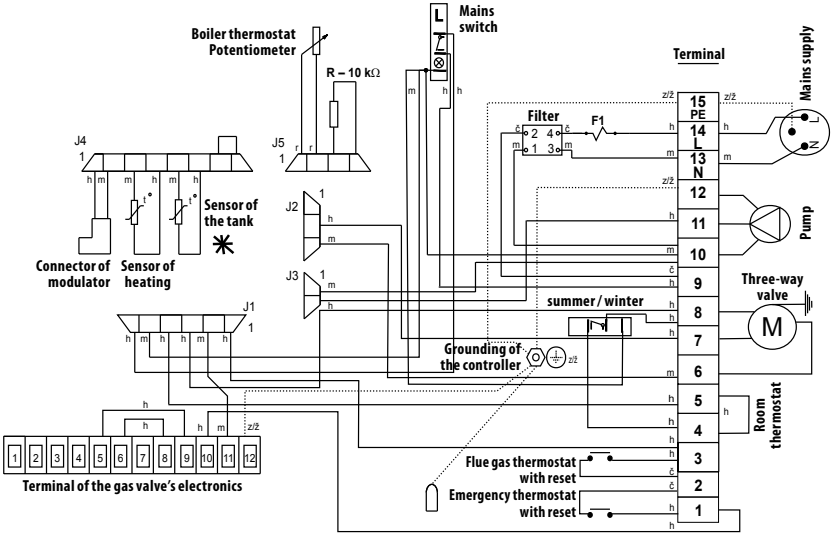
Connect the TP (room thermostat), eventually the TV (three-way valve) as well into the terminals 7 and 8.

Remove the interconnection!

DESCRIPTION:

A – automatics V 4100Q
TP – room thermostat
C – capacitor
A1 – two-stage regulator of automatics
V – main switch
TK – boiler thermostat
OČ – circuit pump
PR – output switch
HT – emergency thermostat with reset
ST – flue gas thermostat with reset
TV – three-way valve Honeywell VC4613
O – orange conductor of the three-way valve
S – grey conductor of the three-way valve

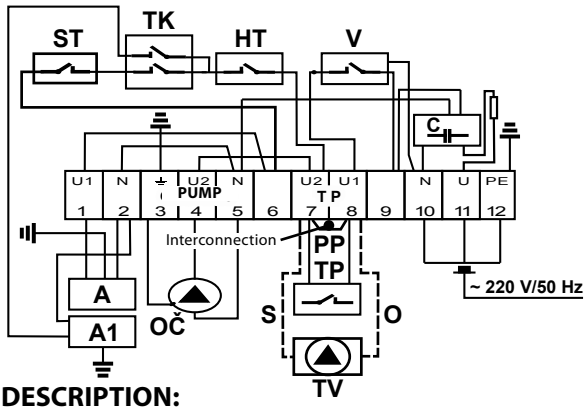
Connecting the electrical installation of the ATTACK EZ boiler



DESCRIPTION:
č – Black
m – Blue
h – Brown
z/ž – Yellow-green

*** Note: if the D.H.W. tank is not connected, it is necessary to remove the sensor of the tank and to replace it with the interconnection!**

Connecting the electrical installation of the ATTACK E boiler



ATTENTION:

Connect the TP (room thermostat), eventually the TV (three-way valve) as well into the terminals 7 and 8.

Remove the interconnection!

DESCRIPTION:

A – automatics V 4100Q
TP – room thermostat
C – capacitor
A1 – two-stage regulator of automatics
V – main switch
TK – boiler thermostat PRODIGY
OČ – circuit pump
PR – output switch
HT – emergency thermostat with reset
ST – flue gas thermostat with reset
TV – three-way valve Honeywell VC4613
O – orange conductor of the three-way valve
S – grey conductor of the three-way valve

Warranty Certificate

The product meets technical standards and technical conditions. The product was made according to valid drawing documentation with the required quality and approved by the State testing institute.

Guarantee

The company ATTACK, s.r.o. warrants for this product only if there have been met conditions of the warranty in time 24 months - 2 years - from the date of starting the boiler up.

The serial num. of the boiler:

Type:

Insert barcode here

Date of shipment from manufacturer:

The waranty conditions:

The warranty covers all faults of the device and its components that have resulted from faulty material or mistakes made by processing of the material.

The warranty does not apply to gaskets, sealing cords, insulating materials, fireclay fillings, ignition spirals.

The warranty for the device is subject to the following conditions:

- a warranty card fully completed will be submitted to the complaint
- the installation of the equipment was carried out by a qualified employee of a professional installation company
- assembly and commissioning were confirmed in the warranty card
- the device will be used exactly according to the manufacturer's instructions and recommendations which are listed in the installation manual
- if the system has been cleaned before installing and starting the system, the treated heating water and the mounted filter

In the absence of any defect or fault caused by unprofessional operation by the customer, the costs associated with the work of the serviceman/technician are covered by the person who required for the repair.

The warranty claim expires and does not cover faults and damages that have arisen from:

- damage during transport
- breaking the rules about the installation, operating and maintenance instructions from the instructions of use
- violent mechanical damage
- unprofessional repairs or modifications, unprofessional operation and transportation
- if the warranty card is not completed properly
- a natural calamity
- arbitrary customer's conversion of device
- by making a design change or by modifying the text of the warranty certificate
- do not carry out a mandatory service visit within a given time
- install the device in a dirty and aggressive environment
- by clogging or clogging the boiler body with dirt from the system and water

The boiler is not subject of the warranty if:

- it is not operated with the prescribed fuel:
- for gasification boilers - wood with a humidity content not exceeding 20%, or with a fuel not specified by the manufacturer
- for pellet boilers - wood pellets of 6 mm diameter, max. length 35 mm, according to DIN 51 731-HP 5 or DIN Plus or EN 14961-2-A1
- Regumat ATTACK-OVENTROP will not be installed in the system to ensure that the boiler return temperature is at least 65 ° C during operation
- there is no functional thermostatic valve installed to the boiler for cooling circuit connected to the cooling water source
- it is not connected to the chimney with the prescribed dimensions specified in the operating instructions

Instructions for complaint:

To make a warranty service, please contact the appropriate serviceman/technician with the following information:

- the exact address and contact of the user where the device is installed
- the approximate nature of the fault
- when and by whom device has been installed and put into operation
- device type, serial number and date of manufacture

After completing there will be made a record of reparation and the user will confirm the work.

The serviceman/technician is obligated to keep the user proof of repair. If the Service Officer detects any device interference or other damage and does not carry out the required service inspection, he is required to notify the user that the repair will be carried at his own expense and at the same time loses his / her entitlement to the next warranty.

ATTACK, s.r.o. • Dielenská Kružná 5020, 038 61 Vrútky • Slovakia
Tel: +421 43 4003 101 • Fax: +421 43 3241 129 • E-mail: kotle@attack.sk
Export – tel: +421 43 4003 115 • Fax: +421 43 3241 129 • E-mail: export@attack.sk

ATTACK, s.r.o. producer reserves the right to change technical parameters and dimensions of boilers without previous warning.

ATTACK, s.r.o. – 06/2017