WARNING!
This conversion kit must only be installed by a qualified heating contractor as specified by the manufacturer’s instructions and the applicable rules and regulations of the local authorities. If these instructions are not followed exactly, a fire, explosion or release of carbon monoxide may occur with serious property damage or loss of life and serious injury. The heating contractor is liable for correct conversion of the heating system with this conversion kit.

CAUTION!
Before converting the heating system to a different type of gas the gas line must first be shut off and then the power to the heating system must be disconnected.

Note:
Please keep these instructions for future reference.

In the Commonwealth of Massachusetts this boiler must be installed by a licensed plumber or gas fitter.

Logano GC 124 II
1 Safety considerations

1.1 Key to symbols

1.2 Safety instructions

2 Product information

2.1 Correct use

2.2 Scope of delivery

3 Conversion to propane

4 Start-up instructions

4.1 Starting up boiler

4.1.1 Prepare pressure measurement

4.1.2 Turning on heating system

5 Final start-up procedures

1 Safety considerations

1.1 Key to symbols

Warnings

Important information

Additional symbols

Table 1

1.2 Safety instructions

Risk to life through the explosion of volatile gases

Risk to life from electric shock.
# Product information

## 2.1 Correct use
This conversion kit and the accompanying instructions are for conversion of GC124 II special gas-fired boilers from natural gas to propane.

### Requirements

<table>
<thead>
<tr>
<th>GC124 II–18</th>
<th>GC124 II–25</th>
<th>GC124 II–32</th>
</tr>
</thead>
<tbody>
<tr>
<td>74 MBtu/hr</td>
<td>103 MBtu/hr</td>
<td>132.5 MBtu/hr</td>
</tr>
</tbody>
</table>

*Table 2 Requirements*

## 2.2 Scope of delivery

- Honeywell gas solenoid valve conversion kit
  - # 393 691, comprising:
    - black safety screw
    - pressure adjustment screw
    - red spring
    - yellow label for gas valve
- GC124 II: BBR 12 pilot gas orifice
- Main gas orifices and seals
- "Conversion to propane" label (to be filled out and attached to the unit)
- Technical documents

## 3 Conversion to propane

For your own safety read the instructions before conversion.

**WARNING:** Risk to life through not observing the conversion instructions.

- If you wish to convert the boiler for operation with propane, the conversion from natural gas to propane must be carried out first as specified by the attached conversion instructions.

The following instructions must be followed for conversion of the boiler to propane:

- If the boiler was in operation, close the gas shut-off. Otherwise open boiler front door.
- Set room thermostat (optional) to the lowest value.
- Disconnect the heating system from the power supply.
- Open boiler front door.

**WARNING:** Danger to life through fire or explosion.

- Never use excessive force on the ON/OFF knob (figure 2).
- Turn ON/OFF knob only by hand.
- Never use tools to turn knob.
- If you are unable to turn the knob by hand, do not try to repair it.
- Call Buderus technical service for assistance.

**Fig. 1** Opening boiler front door

**Fig. 2** Gas valve

[1] ON/OFF knob (shown in ON position)

- Turn gas valve ON/OFF knob clockwise to OFF position. Do not use force.
**WARNING:** Risk to life through the explosion of volatile gases.
- Wait five (5) minutes until all gas residues have dissipated. Check whether there is any smell of gas, including at floor level. If you can smell gas, close the gas shut-off and disconnect the heating system from the power supply and contact the customer service technician or the gas company.

- If there is no sign of a gas odor, continue with the next step.

**Removing burner**
- Secure gas manifold with wire or cord.
- Remove igniter cable from ignition module (figure 3, [6]).
- Disconnect cable connector from bottom of gas valve (figure 3, [3]).
- Label cables to the flame roll-out switch, then remove cable (figure 3, [2]).

**Replacing main gas orifices**
- Install the new main gas orifices and copper gasket. Check with table 3 that the correct orifices for operation of the boiler are installed.

---

**Table 3 Orifice sizes for propane**

<table>
<thead>
<tr>
<th>Model</th>
<th>GC124-18</th>
<th>GC124-25</th>
<th>GC124-32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>180</td>
<td>175</td>
<td>170</td>
</tr>
<tr>
<td>Qty</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Note:** These orifice sizes are exclusively for installations 0-8500 feet above sea level.

---

**Fig. 3 Front view**
- [1] Flame roll-out switch
- [2] Flame roll-out switch cable
- [4] Gas supply pipe
- [5] Aquastat
- [6] Ignition module
- [7] Igniter cable
- [8] Gas valve cable connector
- [9] Pilot line
- [10] Igniter cable

---

**Fig. 4 Removing burner**
- [1] Screw nuts (two)
- [2] Screws on gas manifold on top of gas valve (four)
- Remove four (4) screws from gas manifold on top of gas valve.
- Remove two (2) screw nuts on burner tray and take out the tray.
Converting gas valve
- Remove the safety screw [1] for the manifold pressure adjustment on the gas valve.
- Remove manifold pressure adjustment screw [2].
- Remove stainless steel spiral spring [3].
- Install the red spring from the Honeywell conversion kit in the gas valve.
- Screw in the new gas adjustment screw from the Honeywell conversion kit until it is flush with the top of the gas valve. Then screw the manifold pressure adjustment screw six (6) revolutions clockwise. This corresponds to a pressure preset of approx. 10.0 W.C. This setting must be checked with a pressure gauge on completion of the conversion (chapter 4, page 6).
- Install new black safety screw from the Honeywell conversion kit.
- Clean the gas valve housing [4] and attach the yellow label [5] from the Honeywell LP conversion kit to a visible spot on the gas valve.

Removing pilot burner and replacing pilot gas orifice
- Unscrew ignition burner unit from burner.
- Remove pilot orifice.
- Position the new BBR 12 pilot gas orifice in pilot burner unit.

When installing the pilot gas orifice, make sure that the pilot gas orifice is correctly threaded and tightened.

- Screw the pilot line to the pilot burner unit.
- Screw the pilot burner unit to the main burner.
- Check that the pilot burner unit is correctly seated compared to the main burner.
- Record the required information on the conversion label and attach on the outside of the boiler jacket as close as possible to the nameplate.

Carrying out leak test
- Open manual gas shut-off in the gas line.
- Check the gas supply line to the gas shut-off for leaks with soap solution. If no leaks are found, continue with the step after the next step. If any leaks were found, close gas shut-off.
- Seal leaks and repeat the previous step.
- Wait five (5) minutes until all gas residues have dissipated. Then check for a gas odor, including at floor level, because many types of gas are heavier than air.
- Always follow the start-up instructions on the next page.
4 Start-up instructions

For your own safety, read before boiler start-up.

### WARNING: Risk to life due to not observing the start-up instructions and resulting malfunction.
- If these instructions are not followed exactly, fire or explosion may result causing serious property damage, loss of life, or serious personal injury.
- Observe the installation instructions.

This unit is equipped with an automatic igniter that starts the burner. Do not attempt to ignite the burner manually.

### WARNING: Danger of explosion
If you smell gas there is danger of explosion!
- No open flame! No smoking!
- Prevent spark generation. Never operate electrical switches, including telephones, plugs or door bells!
- Close main gas shut-off!
- Open windows and doors!
- Warn all occupants of the building!
- Evacuate the building!
- Call gas company, heating contractor or fire department from outside the building.

### WARNING: Risk to life due to water damage.
- Do not operate the unit if any part is or was submerged in water.
- Contact a qualified customer service technician immediately to have the unit checked and all parts of the control and gas valves replaced that were in contact with water.

#### 4.1 Starting up boiler
- STOP! First perform a leak test as described on page 5 of this manual.
- First read the safety instructions on this page.

#### 4.1.1 Prepare pressure measurement
- Remove the screw plug for the gas pressure measurement port on the gas valve. Install pressure measuring nipple and attach a pressure gauge to measure the gas pressure.
- Remove the screw plug for the orifice pressure measurement port on the gas valve. Install pressure measuring nipple and attach a pressure gauge to measure the orifice pressure.
- Open gas shut-off.

#### 4.1.2 Turning on heating system
The boiler is fully functional with the factory-installed aquastat and field installed and connected vent damper.
- Switch on power to the heating system, continue to chapter 5 (page 7).
- Verify that the thermostat (optional) signals a heat demand to the boiler (set temperature dial at least 10°F above ambient).

---

**Fig. 7 Gas valve**

[1] ON/OFF knob (shown in ON position)
[2] Screw plug for gas pressure measurement port
[3] Screw plug for orifice measurement port
[4] Ignition gas line connection

**Fig. 8 ON/OFF switch**

[1] Emergency shutoff switch
5 Final start-up procedures

Verifying the ignition spark

- Look through the sight glass at the igniter and verify that a spark is visible.

Fig. 9 GC124 II

[1] Sight glass

- Should no spark be visible continue to troubleshooting procedure in the installation and service manual.

WARNING: Risk to life from fire or explosion.

- Never use excessive force on the ON/OFF knob (figure 10).
- Turn ON/OFF knob only by hand.
- Never use tools to turn knob.
- If you are unable to turn the knob by hand, do not try to repair it.
- Call Buderus technical service for assistance.

- Turn ON/OFF knob (figure 10) counterclockwise to the ON position.
- The ignition flame will appear and ignite the main burner. If the main burner does not ignite, close the gas shut-off. Disconnect heating system from the power source and inform your customer service technician or gas company.

Checking gas supply pressure

- Check the gas supply pressure while the boiler is operating. The connection pressure for natural gas must be between 4.7” and 10.5” W.C. For propane gas (LP) it must be between 11” and 13” W.C. If the gas pressure is in the correct range, record the measured value in the start-up protocol, then continue with the next step. If the supply pressure does not meet the above criteria, close gas line and contact the gas company.

Checking orifice pressure

- Compare the orifice pressure with the values in table 4. If it differs by more than 0.2” W.C., adjust accordingly. To set the orifice pressure, the protective screw on the gas valve must be removed (figure 11, page 8). Turn the adjustment screw clockwise to increase the pressure, and counterclockwise to reduce the pressure. This setting must be adjusted while the boiler is operating.

<table>
<thead>
<tr>
<th>GC124 Il</th>
<th>Natural Gas [inch W.C.]</th>
<th>LP [inch W.C.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>3.5</td>
<td>8.8</td>
</tr>
<tr>
<td>25</td>
<td>3.5</td>
<td>8.6</td>
</tr>
<tr>
<td>32</td>
<td>3.5</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Table 4 Orifice pressure at 60°F / 30” Hg. These values are only valid in the U.S.A. and only for elevations from 0-8500ft.
Final start-up procedures

![Fig. 11 Gas valve](image1)

1. ON/OFF knob (shown in ON position)
2. Safety screw on gas supply pressure measurement port
3. Safety screw on orifice pressure adjustment port
4. Safety screw on orifice pressure measurement port
5. Safety screw on ignition gas adjustment screw

- Record the measured value in the start-up protocol. Install the safety screw back into the gas valve.
- Observe main burner flame through the sight glass (→ figure 9, page 7) in the burner plate. The flame must show a steady and stable body and generally be of bluish color. If the main burner flame meets the requirements, continue with the next step. If the main burner flame is weak, yellow, or goes out, turn the ON/OFF knob (→ figure 13, page 8) on the gas valve clockwise to OFF. Close the gas shut-off and disconnect the heating system from the main power source and contact the customer service technician or the gas company.

Checking flame rod

- Test the flame rod by closing the gas shut-off. The main burner flame (→ figure 12, page 8) and the ignition flame are extinguished. After no more than six (6) seconds the main gas solenoid valve on the gas valve must close with an audible noise. If the gas valve does not operate correctly, turn ON/OFF knob on the gas valve clockwise to the OFF position immediately. Close the main gas shut-off and disconnect the heating system from the main power source and contact the customer service technician or the gas company.
- After 90 seconds the igniter stops generating sparks for five (5) seconds.
- Disconnect the heating system from the main power source. Open main gas shut-off. A normal operating cycle must follow.
- If the main burner flame lights and burns to spec, continue with the next step. If not, turn knob on gas valve clockwise to OFF position immediately. Close main gas shut-off. Disconnect heating system from the power source and inform the customer service technician or gas company.
- Turn gas valve ON/OFF knob clockwise to OFF position.
- Close main gas shut-off.
- Disconnect heating system from the power source and set the thermostat to the lowest setting.

Remove pressure measuring nipple and pressure gauge for measuring gas pressure and orifice pressure from the gas valve, and close the openings with the screw plugs.

![Fig. 12 Main burner](image2)

[1] Main burner flame

Checking for leaks

- Open main gas shut-off.
- Set thermostat at least 10°F above ambient to establish a heat demand.
- Turn main power switch ON.
- Turn gas valve ON/OFF knob counterclockwise to ON position.
- After the burner has lit check the gas valve including screw plugs for leaks using soapy water. If no leaks are found, continue with the step after the next step. If leaks are found, close gas shut-off and turn ON/OFF knob on gas valve clockwise to the OFF position. Disconnect the heating system from the power source and turn thermostat to its lowest setting.
- Seal leaks. Repeat all steps in this paragraph.
- Carefully wipe away the soapy water to prevent corrosion caused by the alkaline content of the soap.
Checking the vent damper

**WARNING:** Risk of life due to leaking flue gases.

- Verify the functionality and operability of the vent damper.

- Check the position of the vent damper. The damper must be fully open (vertical). When burner is on flue gases must not escape from the open draft hood.

![Fig. 14 Checking vent damper](image)

- Open draft hood
- Vent connection
- Vent damper
- Damper blade position indicator
- Vent damper motor
- Flue gas collector
- Boiler

Checking aquastat

Check the function of the maximum aquastat to make sure that it switches the boiler off as soon as the boiler water temperature set at the aquastat is reached. Record the result in the start-up protocol.

- Set aquastat to its desired setting.
- Replace front door and close.

![Fig. 15 Checking temperature control](image)

- Adjustment keypad
Notes