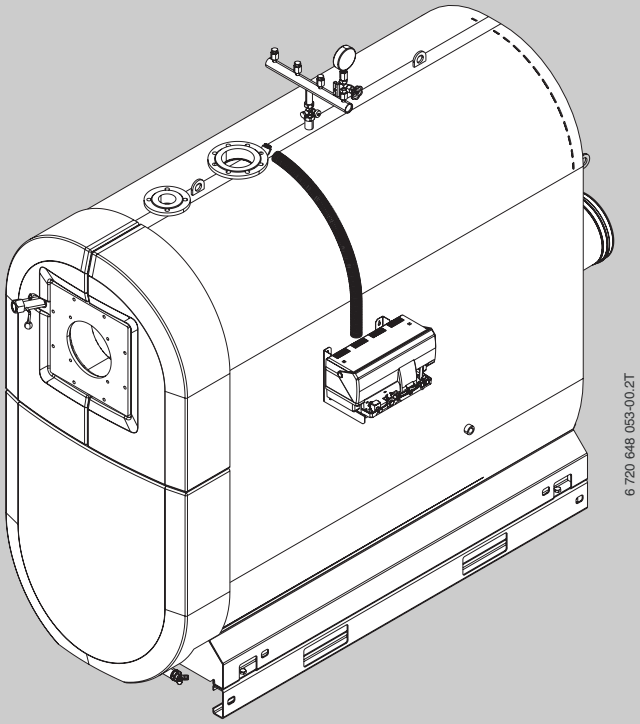
Operating instructions

Floor standing condensing boiler



6 720 648 053-00.2T

Logano plus SB745

Output range 800 – 1200 kW

For users

Read carefully before use

6 720 800 395 (2012/03) GB

Buderus

Introduction

Dear Customer,

Heat is our element – and has been now for more than 275 years. Right from the start, we invest all our energies and passion into developing individual solutions for you, so you feel comfortable in your home.

Whether heat, domestic hot water or ventilation, a product from Buderus will always provide you with highly efficient heating technology of proven quality that will reliably keep your home cosy for many years to come.

We manufacture in accordance with the state of the art and ensure that our products are efficiently matched to each other. In this endeavour, efficiency and environmental compatibility are our priorities.

Thank you for choosing a Buderus product – a choice that will give you not only efficient energy utilisation but also high levels of comfort and convenience. To ensure that you retain this level of excellence, please read the operating instructions carefully. If, contrary to expectations, problems arise, please contact your installer who will be happy to assist you.

Should your installer not be available, then contact our customer service that is available to you around the clock.

We hope you will enjoy your new Buderus product!

Your Buderus Team

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1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings

Warnings in this document are framed and identified by a warning triangle which is printed on a grey background.

Electrical hazards are identified by a lightning symbol surrounded by a warning triangle.

Keywords indicate the seriousness of the hazard in terms of the consequences of not following the safety instructions.

- **NOTICE** indicates that material damage may occur.
- **CAUTION** indicates that minor to medium injury may occur.
- **WARNING** indicates that serious injury may occur.
- **DANGER** indicates possible risk to life.

Important information

Important information in cases where there is no risk of personal injury or material losses is identified by the symbol shown on the left. It is bordered by horizontal lines above and below the text.

Additional symbols

Symbol	Meaning
▶	a step in an action sequence
→	a reference to a related part in the document or to other related documents
•	a list entry
–	a list entry (second level)

Tab. 1

1.2 Safety instructions

Danger through failure to consider your own safety in an emergency such as a fire

- Never put your life at risk. Your own safety is paramount.

If you smell gas

- close the gas tap.
- Open the windows.
- Never operate electrical switches, including telephones, plugs or door-bells.
- Extinguish all naked flames.
- No open fire.
- Never smoke.
- Never use lighters.
- Warn all occupants of the building, but do not ring doorbells.
- Leave the building and telephone your gas supply utility and authorised contractor **from an outside phone**.

If you smell exhaust gas

- Switch off the appliance.
- Open windows and doors.
- Notify an authorised contractor.

Electric shock hazard

- Before carrying out any work on the heating system, disconnect it from the power supply across all poles. For example, activate the emergency stop switch outside the boiler room. It is not enough to switch off the control unit.
- Safeguard the heating system against unintentional reconnection.
- Adhere to country-specific rules and regulations when making the electrical connection, commissioning, servicing and carrying out maintenance.

Siting, conversion

An insufficient supply of air can result in dangerous escape of flue gas.

- Only have the boiler installed or modified by a competent person.
- Never change any parts in contact with flue gas.
- Never cover or reduce the size of air vents in doors, windows or walls. If draught-proof windows are fitted, ensure there is an adequate supply of ventilation and combustion air.
- Ensure that the boiler installation room remains free from the risk of frost.
- The heating system must be installed and operated in accordance with the applicable codes of practice as well as national, regional and local code.

Thermal disinfection

- **Risk of scalding!**
  Monitor any operation with temperatures in excess of 60 °C.

Inspection and maintenance

- **Recommendation for customers:** Arrange a maintenance and inspection contract with an authorised contractor, covering an annual inspection and responsive maintenance.
- The user is responsible for the general and environmental safety of the heating system.
- Immediately correct all faults to prevent system damage.
- Use only original, genuine spare parts from the manufacturer. Losses caused by the use of spare parts and accessories not supplied by the manufacturer are excluded from the manufacturer's warranty.

Explosive and highly flammable material

- Never use or store highly flammable materials (paper, thinners, paints etc.) near the boiler.

Combustion/ambient air

- Keep the combustion/ambient air free of corrosive substances (e.g. halogenated hydrocarbons that contain chlorine or fluorine compounds). This will help prevent corrosion.
- Keep the combustion air supply free of dust.

Disposal

- Dispose of packaging in an environmentally responsible manner.

2 About the boiler

2.1 Correct use

The Logano plus SB745 condensing boiler has been designed for hot water heating systems in e.g. multiple dwelling units or for industrial use.

Any gas burner to EN 676 and EN 267 can be used if its operating range matches the boiler specification.

Only burners that have been tested and approved for electromagnetic compatibility (EMC) may be used.

Logamatic 4000 control units are used with these boilers.

For further details on correct use → chapter 2.3, chapter 2.5 and chapter 3, page 8.

2.2 CE Declaration of Conformity

The design and operation of this product conform to the applicable European directives and supplementary national requirements. Conformity has been demonstrated.

The Declaration of Conformity can be viewed at www.buderus.de or alternatively can be requested from your local Buderus sales office.

2.3 Suitable fuels

The combustion of biogas is not permitted.

Permissible fuels

- Natural gas from the public gas supply in accordance with national regulations with a total sulphur content < 50 mg/m³.
- LPG in accordance with national regulations with a content of elementary sulphur < 1.5 ppm and volatile sulphur < 50 ppm.

The boiler must only be operated with the specified fuels. Only burners that are suitable for the specified fuels may be used.

Observe the manufacturer's burner selection list and the burner manufacturer's instructions.

2.4 Data plate

If you contact the manufacturer with any questions about this product, always provide the details on the data plate. These details enable us to assist you specifically and quickly.

The data plate is fitted to the back of the boiler casing.

There you will find information such as the serial number, output and approval details.

2.5 Product description

The Logano plus SB745 is a floor standing condensing boiler with a slim, compact design and a small footprint thanks to the combustion chamber located at the top and the condensation heating surface located at the bottom. It is referred to in this manual as the SB745 or the boiler. The SB745 has two thermo-hydraulically separated return connections for the high and low temperature circuits. For the type-tested boiler sizes with internal condensing heat exchanger and CE designation, the components that come into contact with hot gas and condensate are made of stainless steel.

Equip the SB745 with a suitable burner.

Optional accessories can be found in the general catalogue.

NOTICE: System damage through incorrect burner.

- ▶ Only use burners which meet the technical boiler requirements.

The main SB745 components are (→ fig. 1):

- Boiler body [1] in conjunction with a burner.
  The boiler block transfers the heat generated by the burner to the heating water.
- Thermally insulating casing.
  The boiler jacket and thermal insulation reduce heat losses.
- Control unit (accessory – [8]).
  The control unit monitors and controls all electrical boiler components.

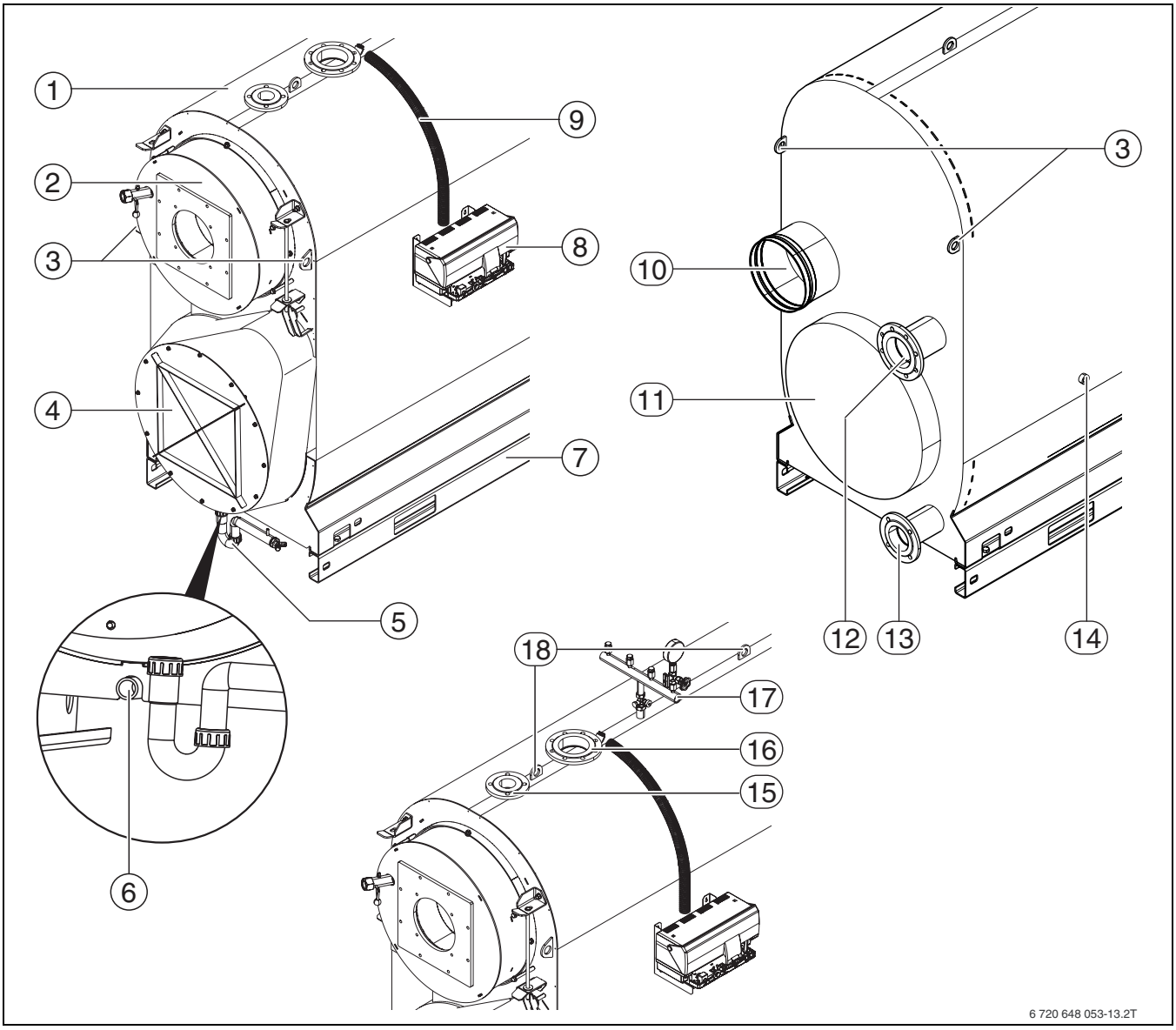

Fig. 1 Boiler overview

1 Boiler body
2 Combustion chamber door
3 Safety lug to secure the load during transportation (not for lifting)
4 Flue gas collector
5 Condensate drain, siphon
6 Drain
7 Base frame rail
8 Control unit (accessory)
9 Cable conduit
10 Flue gas connection
11 Inspection opening, reversing chamber
12 Return 1 (RK1), low temperature return (main return)
13 Return 2 (RK2), high temperature return
14 Inspection opening on the water side (both sides)
15 Flow safety connection
16 Boiler flow
17 Valve manifold (accessory)
18 Lifting eyes

3 Information on installation and operation

For the installation and operation of the heating system, observe all country-specific standards and guidelines.
The information on the data plate is binding and must be observed.

3.1 Combustion air quality

- Keep the supply of combustion air free of corrosive substances (e.g. halogenated hydrocarbons that contain chlorine or fluorine compounds).
  This will help prevent corrosion.
- Never use or store chlorinated cleaning agents or halogenated hydrocarbons (as contained in spray cans, solvents or cleaning agents, paints and adhesives, for example) in the boiler room.
- Keep the combustion air supply free of dust.
- If building work is taking place in the installation room and creating a lot of dust, shut the boiler down.
  A burner contaminated during building work must be cleaned before commissioning.

3.2 Heating water quality

The quality of the fill and top-up water is essential for increased efficiency, functional reliability, long service life and for maintaining the constant operational condition of a heating system. If the system is filled with water that has a high calcium hardness, this will be deposited on the heat exchanger surfaces and will obstruct the transfer of heat to the heating water. As a result, the wall temperatures of the stainless steel heat exchanger surfaces will rise and the thermal stresses (loads on the boiler body) will increase.
This is why the quality of the fill or top-up water must meet the conditions stipulated in the operator's log provided and be recorded in this log.
The conditions for boilers > 600 kW require general water treatment independent of the water hardness and the volume of fill and top-up water.

4 Commissioning

- Ask your contractor to provide information about how the boiler works and is operated.
- Never undertake any modifications or maintenance.

4.1 Preparing the heating system for operation

For you to be able to commission the heating system, observe the following:

Open the automatic air vent valve only briefly for ventilation.

- Check that the required operating pressure has been built.
- Check the flange connections and other connections for tightness.
- Fill the condensate siphon.

4.2 Commissioning the control unit and burner

By commissioning the control unit you automatically commission the burner as well. The burner can then be started by the control unit. For further information, see the installation instructions of the relevant control unit or burner.

- Use the control unit to commission the boiler.

5 Shutting down

NOTICE: Risk of system damage through frost.

When there is a frost, the heating system can freeze up if it is not operational, e.g. because of a fault shutdown.

- When there is a risk of frost, protect your heating system against freezing up.
- If your heating system has been shut down for several days due to a fault shutdown and there is a risk of frost, drain the heating water at the drain & fill valve. Also leave the air vent valve at the highest point in the system open.

NOTICE: Risk of system damage through frost.

The heating system can freeze up as a result of a power failure or if the power has been switched off.

- Check the "Control unit settings" to ensure the system remains operational (especially when there is a risk of frost).

5.1 Shutting down the heating system

Shut down your heating system via the control unit. Switching off the control unit automatically also switches off the burner.

- Set the On/Off switch of the control unit to "0" (Off).
- Isolate the fuel supply to the burner.

5.2 Shutting down the heating system in an emergency

Only in emergencies, switch OFF the heating system via the boiler room MCB/fuse or the heating system emergency stop switch.

- In dangerous situations, immediately close the main fuel shut-off valve and the power supply of the heating system via the boiler room main MCB/fuse or the heating system emergency stop switch.
- Isolate the fuel supply to the burner.
- Never put your life at risk. Your own safety is paramount.

6 Correcting a burner fault

NOTICE: Risk of system damage through frost.

When there is a frost, the heating system can freeze up if it is not operational, e.g. because of a fault shutdown.

- If your heating system has been shut down for several days due to a fault shutdown and there is a risk of frost, drain the heating water at the drain & fill valve. Also leave the air vent valve at the highest point in the system open.

NOTICE: System damage due to the reset button being pressed too frequently.

This can damage the burner ignition transformer.

- Press the reset button no more than three times in a row.

The display shows heating system faults. Further information on the fault displays can be found in the service instructions of the relevant control unit. In addition, burner faults are signalled by an indicator on the burner.

- Press burner reset button (see burner operating instructions).

If the burner still fails to start after three attempts, contact a contractor.

7 Inspection and maintenance

7.1 General notes

NOTICE: System damage due to inadequate cleaning and maintenance.

- ▶ Carry out cleaning and maintenance procedures annually. In the course of this work, check the entire heating system including the neutralising system for correct function.
- ▶ Immediately correct all faults to prevent system damage.

Use only original, genuine spare parts from the manufacturer. Spare parts can be ordered from the manufacturer's spare parts catalogue.

Enter into an annual inspection and responsive maintenance and inspection contract with your contractor.

7.2 Why is regular maintenance important?

Have your heating system regularly serviced:

- to maintain a high level of efficiency and to operate the system economically (low fuel consumption)
- to achieve a high level of operational reliability
- to maintain the cleanest possible combustion.

Annual inspection and service are part of the warranty terms.

7.3 Checking and correcting the water pressure

The heating system must contain sufficient water to safeguard its correct function.

- ▶ If the water pressure in the heating system is too low, top up with water.
- ▶ Check the water pressure monthly.

7.3.1 When should you check the water pressure in the heating system?

The fill and top-up water quality must comply with the specification in the boiler log supplied.

Air pockets may form in the heating system through the fill or top-up water releasing gases.

- ▶ Vent the heating system (e.g. by bleeding the radiators).
- ▶ If required, top up with water.

Recently added fill or top-up water loses much of its volume in the first few days because it releases gases. With new systems you should therefore initially check the heating water pressure on a daily basis, and then at gradually longer intervals.

- Once the heating system is hardly losing any volume, check the heating water pressure monthly.

A distinction is generally made between open vented and sealed unvented systems. In practice, open vented systems are rarely installed nowadays. We will therefore be using a sealed unvented heating system to demonstrate how you can check the water pressure. All settings will have already been made by the installation engineer when the system was first commissioned.

7.3.2 Sealed unvented systems

NOTICE: System damage through frequent topping up.

Subject to the water quality, your heating system can be damaged through corrosion or scaling.

- Ensure that the heating system is vented correctly.
- Check the heating system for leaks and the expansion vessel for functionality.
- Observe the requirements regarding water quality (see operator's log).
- If water loss occurs frequently, locate the cause and rectify the problem without delay.

NOTICE: System damage through temperature stresses.

- Only fill the heating system when cold (the flow temperature must not exceed 40 °C).
- During operation, only fill the heating system via the fill valve in the heating system pipework (return).

For sealed unvented systems, the pressure gauge needle [3] must be within the green band [2]. The red needle [1] of the pressure gauge must be set to the pressure required for the heating system.

- Check the heating system water pressure.
- If the pressure gauge needle [3] no longer lies between the two red indicators, top up with water.
- Top up with water via the filling valve in the heating system pipework.
- Vent the heating system.
- Check the water pressure once more.

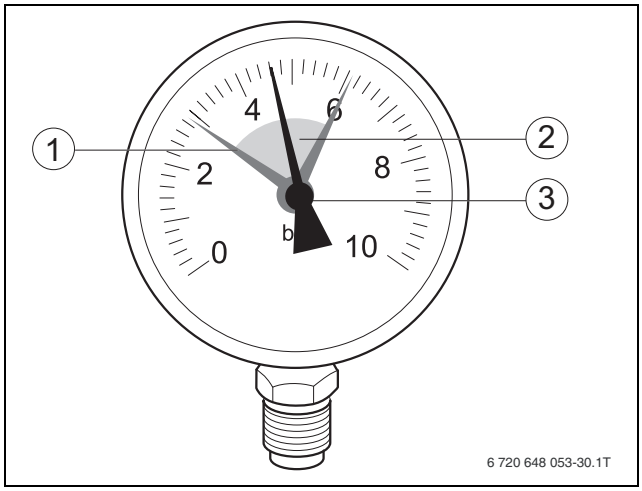

Fig. 2 Pressure gauge for sealed unvented heating systems

1 Red needle
2 Green marking
3 Pressure gauge needle

7.3.3 Installations with automatic pressurisation units

For installations with an automatic pressurisation unit observe the manufacturer's instructions.

The water quality requirements also apply here (→ chapter 7.3.1, page 10).

8 Energy saving information

Heating economically

The appliance has been designed, so that the gas consumption and environmental impact are as low as possible yet comfort is at its optimum level.

Inspection/Maintenance

So that gas consumption and environmental impact can be kept as low as possible for as long as possible, we recommend that you take out an inspection and maintenance contract with an approved contractor covering an annual inspection and service subject to demand.

Heating controls

Install the heating control unit with room temperature controller or a weather-compensated controller and thermostatic valves.

For further information, see the relevant installation and operating instructions of the controller.

Heating systems with weather-compensated control unit

With this type of control, the outside temperature is captured, and the heating flow temperature is adjusted in accordance with the heating curve set at the controller. The lower the outside temperature, the higher the flow temperature.
Set the heating curve as low as possible. Turn the appliance temperature controller to the maximum design temperature of the heating system.

Heating systems with room temperature-dependent control

The room where the room temperature controller is installed (reference room) determines the temperature in other rooms. Thermostatic valves should not be installed in the reference room.
Set the appliance temperature controller to the maximum design temperature of the heating system.
In each room (except the reference room), the temperature can be regulated individually by means of thermostatic valves. If a lower temperature is required in the lead room than in the other rooms, reference the room temperature controller set as is and reduce the temperature at the radiator valve.

Thermostatic valves

Fully open the thermostatic radiator valves in order to achieve the required room temperature. Change the required room temperature at the temperature controller only if the temperature is not achieved after a prolonged period.

Venting

Never leave windows slightly open for ventilation purposes. Otherwise, heat will be constantly discharged from the room without significantly improving the air quality in the room. It is better to fully open windows briefly.

Close thermostatic radiator valves whilst airing rooms.

Now you know how to heat economically with the heating system. Contact your installer should you have further questions – alternatively, write to us.

9 Environmental protection/disposal

Environmental protection is key commitment for the Bosch Group.
Quality of products, efficiency and environmental protection are equally important objectives for us. All legislation pertaining to the environment is strictly observed. To protect the environment we use the best possible technology and materials, subject to economics.

Packaging

We are dedicated to adhering to country-specific disposal standards for packaging in order to ensure optimum recycling. All packaging materials are environmentally compatible and can be recycled.

Old appliance

Old appliances contain materials that should be recycled. The relevant assemblies are easy to separate, and all plastics are identified. This allows the various assemblies to be appropriately sorted for recycling or disposal.

10 General

Cleaning the boiler jacket

Wipe down the boiler jacket with a damp cloth. Never use aggressive or corrosive cleaning agents.

Appliance details

When requesting a customer service visit, it is useful to provide detailed information about your appliance.
You will find these details on the data plate or the appliance type label (→ installation and maintenance instructions)

Gas boiler (e.g. Logano SB615):

.....

Serial number: .....

Date commissioned: .....

Correct fuel

This heating system requires the correct fuel to ensure perfect operation. During commissioning, your heating contractor will enter the correct fuel type for your heating system in the table below.

NOTICE: Risk of system damage through use of incorrect fuel.

- ▶ Only use the fuel intended for your heating system.

We recommend you seek the advice of your heating contractor if you intend to change the fuel for your heating system.

Use only the following fuel:
Stamp/Signature/Date

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