

6 720 806 031-001TL

Oil/gas boiler

Uni 3000 F

Output range 420 to 1850 kW



BOSCH

Operating Instructions

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1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings



Warnings in this document are identified by a warning triangle printed against a grey background. Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

The following keywords are defined and can be used in this document:

- **NOTICE** indicates a situation that could result in damage to property or equipment.
- **CAUTION** indicates a situation that could result in minor to medium injury.
- **WARNING** indicates a situation that could result in severe injury or death.
- **DANGER** indicates a situation that will result in severe injury or death.

Important information



This symbol indicates important information where there is no risk to people or property.

Additional symbols

Symbol	Meaning
▶	Action step
→	Cross-reference to another part of the document
•	List/list entry
–	List/list entry (second level)

Table 1

1.2 Safety instructions

General safety instructions

Failure to observe the safety instructions can result in serious personal and possibly life-threatening injuries as well as physical damage and damage to the environment.

- ▶ Read the safety instructions carefully prior to commissioning the system.

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

- ▶ Never put yourself at risk of fatal injury. Your own safety is paramount.

Installation, conversion and operation

Insufficient ventilation can lead to dangerous flue gas leaks.

- ▶ Installation and commissioning as well as servicing and maintenance must be carried out only by a suitably qualified contractor.
- ▶ Ensure that the plant room remains free from the risk of frost.
- ▶ The heating system must be installed and operated in accordance with the applicable engineering practices as well as national, regional and local regulations.
- ▶ Have the appliance installed only by a suitably qualified engineer.
- ▶ Never modify any parts in contact with flue gas.
- ▶ Do not operate the device without sufficient water volume.
- ▶ Always keep equipment openings (doors, maintenance cover) closed during operation.
- ▶ Only use approved fuels according to the rating plate.
- ▶ Ensure that the required ventilation cannot be blocked or hindered in any way.

Risk through oil leaks

- ▶ If using oil as fuel, country-specific regulations hold the operator responsible for asking a contractor to correct any oil leaks the moment they are discovered.

If you smell fuel:

- ▶ Close the fuel isolation valve.
- ▶ Open windows.
- ▶ Never operate electrical switches.
- ▶ Extinguish all naked flames.
- ▶ Never smoke.
- ▶ Warn all occupants in 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 suspect the smell of flue gas:

- ▶ Switch off the appliance (→ page 6).
- ▶ Isolate the fuel supply and guard against unintentional re-connection.
- ▶ Open windows and doors.
- ▶ Notify an authorised contractor.

Electric shock hazard

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

Installation and conversion

- ▶ Only have the appliance installed or modified by an authorised and suitably qualified contractor.
- ▶ Never modify any parts in contact with flue gas.
- ▶ With **open flue appliances**: 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 combustion air supply.
- ▶ Ensure that the plant room remains free from the risk of frost.
- ▶ The heating system must be installed and operated in accordance with the applicable engineering practices as well as national, regional and local regulations.

Inspection and maintenance

- ▶ **Recommendation for customers:** Arrange a maintenance and inspection contract with an authorised contractor, covering an annual inspection and demand-dependent maintenance.
- ▶ The user is responsible for the general and environmental safety of the heating system (in compliance with national regulations).
- ▶ Only use genuine spare parts! Spare parts are available via spare parts merchants and a list of genuine parts can be found online (see last page for details).

Explosive and highly flammable material

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

Combustion/room air

- ▶ Keep the combustion/ambient air free of corrosive substances (e.g. halogenated hydrocarbons that contain chlorine or fluorine compounds). This will help to prevent corrosion.
- ▶ Keep combustion air free of dust.
- ▶ Never hang up washing to dry in the plant room.

Thermal disinfection

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

Disposal

- ▶ Dispose of packaging in an environmentally responsible manner.

2 Product Information

2.1 Intended use

The oil/gas-fired Uni 3000 F floor-standing high efficiency boiler has been designed for hot water heating systems, e. g. for apartment buildings or industrial units.

The boiler is only approved for open flue operation.

Any oil or 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.

Control units from the CFB 9xx controller series are used with these boilers.

The quality of fill and top-up water must comply with the specifications in the boiler operator's log supplied.

For further detail on correct use, → Chapter 2.4, page 4.

2.2 Gas Supply

The gas supply must be installed and maintained by a Gas safe registered installer with the necessary experience and ACS elements to complete the works.

► Please note that, depending on the region, approvals for the flue system and condensate connection to the public sewage system may be required. Before starting installation, notify the responsible agencies (e. g. the responsible flue gas inspector) and the wastewater agency.

2.3 EU Declaration of Conformity

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

You can ask for a copy of the Declaration of Conformity for this product. For this see the contact address on the back cover of these instructions.

2.4 Overview of possible fuels

The boiler must only be operated with the specified fuels. Only burners that are suitable for the specified fuels may be used. Your heating contractor has entered the required type of fuel in Table 4, Chapter 10, page 10.

Fuels			
28-second oil (Kerosene)	LPG 3P (G31)	Natural Gas I2H (G20)	Combustion of biogas/waste gas (quality in line with DVGW G262 ¹⁾ , table 3
35-second oil (Gas Oil)			

Comment: The boiler must only be operated with the specified fuels. Select a burner intended for the indicated fuels. Bosch Commercial and Industrial Heating can provide a burner matching service, in addition to supplying a selection of burners.

Table 2 Fuels

- 1) Proportion of sulphur and sulphur compounds in the gas up to a maximum of 1500 mg/m³ (approx. 0.1 % by volume)
 Proportion of chlorine and chlorine compounds in the gas up to a maximum of 50 mg/m³
 Proportion of fluoride and fluoride compounds in the gas up to a maximum of 25 mg/m³

2.5 Data plate

The data plate is located on the rear side of the boiler.

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



Please quote these details if you have to contact the manufacturer because of a problem with your system. These details enable us to assist you specifically and quickly.

The information on the type plate is binding and must be observed!

2.6 Appliance description

The Uni 3000 F is a stationary floor-standing boiler with dual-flue combustion to EN 303/ EN 14394 for use with oil and gas as fuel. It is referred to in this manual as the floor-standing boiler or the boiler.

The boiler consists of the following main components:

- The boiler shell transfers the heat generated by the burner to the heating water.
- Boiler casing and thermal insulation [2]. The boiler jacket and thermal insulation reduce heat losses.
- Control unit (accessory [1]). The control unit monitors and controls all electrical components of the boiler.

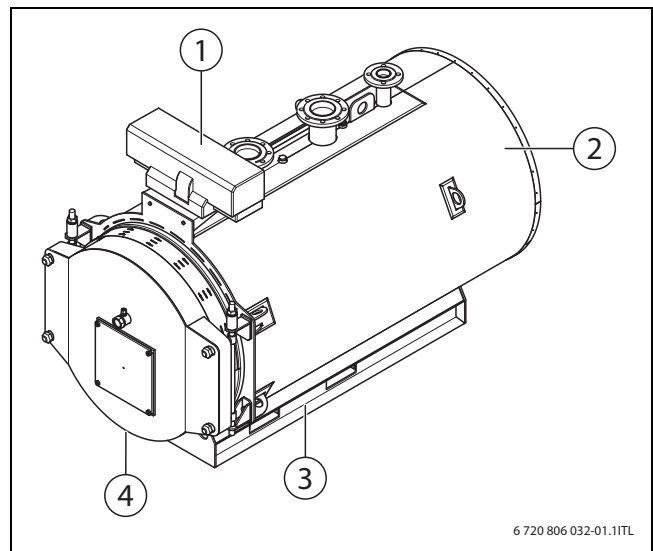


Fig. 1 Uni 3000 F oil/gas floor-standing boiler up to 1200 kW

- [1] Control unit
 [2] Boiler jacket
 [3] Base frame
 [4] Burner door

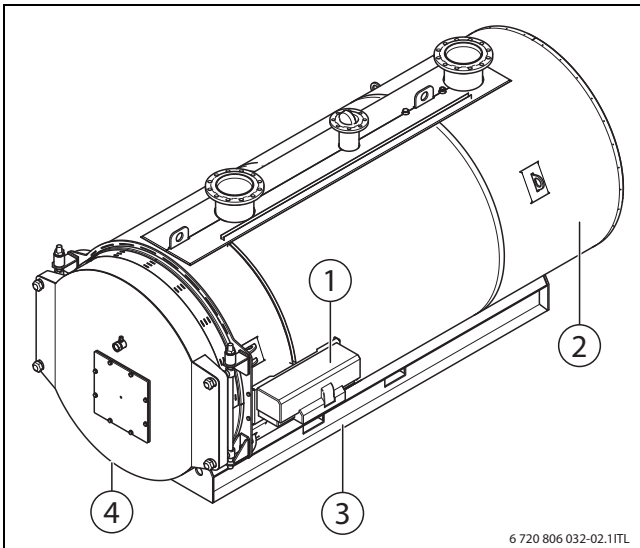


Fig. 2 Uni 3000 F oil/gas floor-standing boiler from 1400 kW - 1850 kW

- [1] Control unit
- [2] Boiler jacket
- [3] Base frame
- [4] Burner door

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 to 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.
- ▶ Ventilation ducts/openings are not to be blocked

3.2 Heating water quality

Ensure that ventilation and bleeding openings are not reduced in size or sealed.

The quality of the fill and top-up water is an essential factor 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 restrict the transfer of heat to the heating water. As a result, the wall temperatures of the 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 the contractor to be able to commission the heating system, observe the following:



Open the automatic air vent valve only briefly for venting.



Observe the operating requirements of BG01 for hot water boilers (UK).

- ▶ Check that the required operating pressure has been set.
- ▶ Check the flange connections and other connections for tightness (water/fuel).
- ▶ Open the fuel supply to the main fuel shut-off valve.
- ▶ Switch on the heating system emergency stop switch.

Have your contractor show you how to top up the water (→ also Chapter 7.2, page 7).

4.2 Operating the control unit and burner

Start your boiler at the control unit (in this example, Fig. 3: CFB 930 control). The adjustments made in the control unit will affect the burner as well. The burner can then be started by the control unit.

For further details, see the operating instructions of the particular control unit or burner.

- ▶ Set the boiler temperature controller [2] to **105 °C**. Set the ON/OFF switch [6] to "I" (ON).



Follow the control unit's operating instructions.

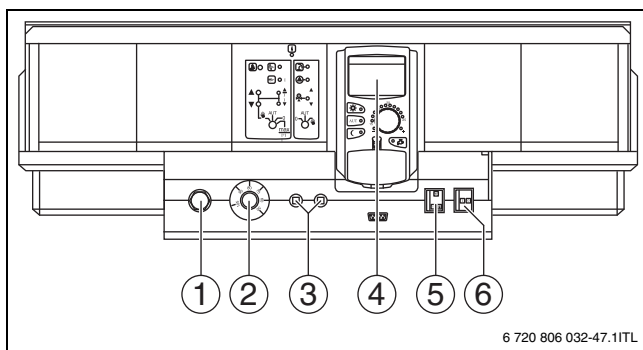


Fig. 3 Control unit, example CFB 930 control

- [1] High limit safety cut-out
- [2] Boiler temperature controller
- [3] F1, F2 Fuse
- [4] MEC
- [5] Burner emergency operation switch
- [6] Appliance on/off switch

5 Decommissioning



NOTICE: System damage due to frost.

The heating system can freeze up during a power failure or if the power supply has been switched off!

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

5.1 Shutting down the heating system

Shut your boiler down via the control unit (e. g. CFB 930 control, → Fig. 3, page 6). This also switches the burner off automatically.

- ▶ Set the ON/OFF switch (→ Fig. 3, [2]) to "0" (OFF).
- ▶ Isolate the fuel supply to the burner.

5.2 Shutting down the heating system in an emergency



Switch off the heating system by means of the fuse in the boiler room or the heating system emergency stop switch only in emergency situations that pose an immediate risk to life and limb.

- ▶ Never put your life at risk. Your own safety is paramount.
- ▶ In other cases of danger where there is no actual risk to life and limb, immediately shut off the main fuel shut-off valve and isolate the heating system via the fuse in the boiler room or via the heating system emergency stop switch (→ Chapter 1.2, page 3).
- ▶ Isolate the fuel supply to the burner.
- ▶ Guard against unintentional re-connection.

6 Correcting burner faults



NOTICE: Risk of system damage through frost. When there is a frost, your heating system can freeze up if it is shut down, e.g. through 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.

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



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.

- ▶ Press burner reset button (see burner operating instructions). If the burner still fails to start after three attempts, contact a suitably qualified contractor.

7 Inspection and maintenance



NOTICE: System damage through absence of or faulty cleaning and maintenance.

- ▶ Have the heating system inspected and cleaned by a contractor annually. Check that the complete heating system operates correctly.
- ▶ Immediately correct all faults to prevent system damage.
- ▶ We recommend you enter a contract covering an annual inspection and service subject to demand.



Annual inspection and service are part of the warranty terms and conditions.



Use only genuine spare parts from the manufacturer. Spare parts can be ordered via spare parts merchants. A spare parts list is available online (see last page for details).

7.1 What makes 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.

7.2 When do you need to check the water pressure in your heating system?



The fill and top-up water quality must comply with the specifications in the operator's 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. 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 naturally 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.

7.2.1 Checking and correcting the water pressure

Your heating system must contain sufficient water to ensure it functions correctly.

NOTICE: Risk of system damage due to 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.
- ▶ Notify your heating contractor if you find the need to refill your heating system frequently.
- ▶ Check with your local installer as to whether the incoming water source can be used without further treatment, or whether it must first be treated.

- ▶ Top up your heating system with water if the system pressure is too low.

NOTICE: Risk of equipment damage from thermal stress!

- ▶ Only fill the heating system when cold (the flow temperature must not exceed 40 °C).
- ▶ Fill the heating system during operation only by a WRAS approved filling method in the return pipe work for the heating system.

- ▶ Check the water pressure monthly.

7.2.2 Sealed unvented systems

If the pressure in the heating system drops below the required minimum operating pressure (→ Table 3, page 10): Add top-up water.

- ▶ Check the water pressure of the heating system.
- ▶ Check operating pressure. If the pressure in the system drops below the values in Table 3, water must be topped up.
- ▶ Top up with water.
- ▶ Vent the heating system.
- ▶ Check the operating pressure again.

7.2.3 Open vented systems

For open vented systems, the hydrometer needle [1] should be within the red band [3].

The operating pressure depends on the static height of the system and the installation height of the expansion vessel.

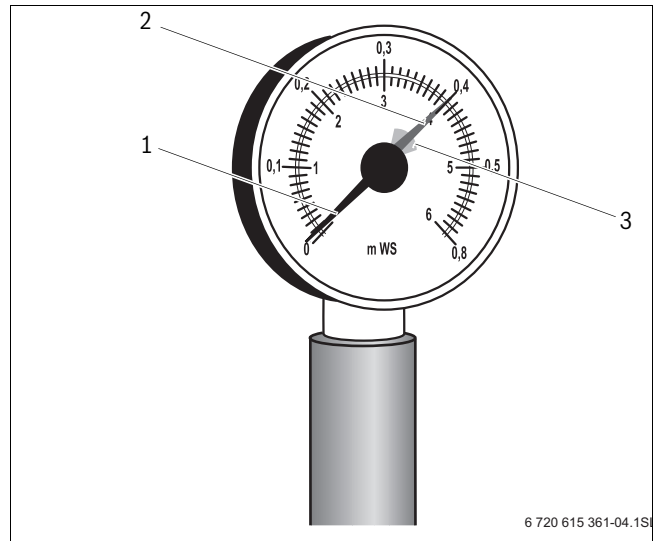


Fig. 4 Hydrometer for open vented heating systems

- [1] Hydrometer needle
- [2] Green needle
- [3] Red marking

7.3 Installations with automatic pressurisation units

For installations in which an automatic pressure maintaining system is integrated, observe the manufacturer's instructions. The water quality requirements also apply here (see Operating Instructions).

8 Environment / disposal

Environmental protection is a key commitment of 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 economic considerations.

Packaging

Where packaging is concerned, we participate in country-specific recycling processes that ensure optimum recycling. All of our 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. In this manner the individual components are easily sorted and added into the recycling and disposal systems.

9 Tips on energy saving

Economy mode

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

Inspection/Maintenance

So that oil/gas consumption and environmental impact can be kept as low as possible for as long as possible, we recommend that you take out a servicing and maintenance contract with an authorised contractor covering an annual inspection and demand-dependent maintenance of the boiler.

Heating controls

Ensure the controls comply with Part L2 of the building regulations (UK). 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 system's flow temperature is adjusted in accordance with the heating curve set on the control unit. 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 in which the room temperature-dependent control unit is located determines the temperature for the other rooms (reference room). Thermostatic valves should not be installed in the reference room.

Set the device's 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 reference room than in the other rooms, leave the room temperature-dependent control unit set as it is and reduce the temperature by means of the radiator valve.

Thermostats

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.

Economy mode (night setback)

Substantial amounts of fuel can be saved by reducing the room temperature during day or night. Reducing the temperature by 1 °C can save up to 5 % energy. It is not recommended to let the daytime temperature of heated rooms drop below +15 °C, otherwise the cool walls would continue to cool down the whole room. The room temperature would have to leading to spikes in energy demand and higher energy consumption than if the supply of heat was to remain constant.

In a well insulated building, set the temperature for economy mode to a low level. Even if the set economy temperature is never reached, energy will be saved as the heating system remains switched off. The start of economy mode can be set earlier if needed.

Ventilation

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

Close thermostatic radiator valves whilst airing rooms.

Domestic Hot Water (DHW)

Always set the hot water temperature to as low as possible. A lower setting on the thermostat means a higher rate of energy savings. Furthermore, higher hot water temperatures result in increased limescale deposits and thereby impair the function of the appliance (e.g. longer heating-up times or lower output).

Circulation pump

If necessary, set an existing circulation pump for hot water to your individual requirements using a timer (e. g. mornings, midday, and evenings).

Circulation and charge pumps can also be used to ensure thermal disinfection. Ask your contractor for more information on thermal disinfection of your hot water system.

Now you know how to heat economically with the Bosch appliance. Contact your installer should you have further questions - alternatively, write to us.

10 General information

Operating pressure/water quality

Operating pressure/water quality	
Minimum operating pressure (top up if pressure drops below value)	_____ bar
Set operating pressure (optimum value)	_____ bar
Maximum heating system operating pressure (excess pressure activates pressure relief valve)	_____ bar
Top-up water needs to be treated.	Yes/No

Table 3 Operating pressure (entered by heating contractor)

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 device.

You will find these details on the type plate or the additional type plate (→ Installation and service instructions).

Oil/gas floor-standing boiler (e. g. Uni 3000 F):


.....


Serial number:

Commissioning date:
.....

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.

	<p>NOTICE: Risk of system damage through use of incorrect fuel.</p> <p>► Only use the fuel intended for your heating system.</p>
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	<p>We recommend you seek the advice of your heating contractor if you intend to change the fuel for your heating system.</p>
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Use only the following fuel:
<p>.....</p>
<p>Stamp/Signature/Date</p>

Table 4

Notes



Bosch Thermotechnology Ltd.
Cotswold Way, Warndon, Worcester WR4 9SW

All Enquiries: 0330 123 3004
www.bosch-industrial.co.uk