Domestic hot water tank

100 SL





Installation, User and Service Manual

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# **1** Introduction

# 1.1 Symbols used

#### 1.1.1. Symbols used in the manual

In these instructions, various danger levels are employed to draw the user's attention to particular information. In so doing, we wish to safeguard the user's safety, obviate hazards and guarantee correct operation of the appliance.



Signals a referral to other instructions or other pages in the instructions.

#### 1.1.2. Symbols used on the equipment



Before installing and commissioning the device, read carefully the instruction manuals provided.



Dispose of the used products in an appropriate recovery and recycling structure.

# 1.2 Abbreviations

- CFC: Chlorofluorocarbon
- DHW: Domestic hot water

#### 1.3.1. Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various applicable European Directives. They are therefore

delivered with **((** marking and all relevant documentation.

In the interest of customers, we are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

Our liability as the manufacturer may not be invoked in the following cases:

- Failure to abide by the instructions on using the appliance.
- Faulty or insufficient maintenance of the appliance.
- Failure to abide by the instructions on installing the appliance.

#### 1.3.2. Installer's liability

The installer is responsible for the installation and initial start up of the appliance. The installer must respect the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Carry out installation in compliance with the prevailing legislation and standards.
- Perform the initial start up and carry out any checks necessary.
- Explain the installation to the user.
- If a maintenance is necessary, warn the user of the obligation to check the appliance and maintain it in good working order.
- Give all the instruction manuals to the user.

#### 1.3.3. User's liability

To guarantee optimum operation of the appliance, the user must respect the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Call on qualified professionals to carry out installation and initial start up.
- Get your installer to explain your installation to you.
- Have the required checks and services done.
- Keep the instruction manuals in good condition close to the appliance.

This appliance is not intended to be used by persons (including children) whose physcial, sensory or mental capacity is impaired or persons with no experience or knowledge, unless they have the benefit, through the intermediary of a person responsible for their safety, of supervision or prior instructions regarding use of the appliance. Care should be taken to ensure that children do not play with the appliance.

To prevent hazardous situations from arising, if the mains lead is damaged it must be replaced by the original manufacturer, the manufacturer's dealer or another suitably skilled person.

#### 1.4 Homologations

#### 1.4.1. Certifications

This product complies to the requirements to the european directives and following standards:

- 2006/95/EC Low Voltage Directive. Reference Standard: EN 60.335.1.
- 2004/108/EC Electromagnetic Compatibility Directive.
  Reference Standards: EN 50.081.1, EN 50.082.1, EN 55.014

#### 1.4.2. Directive 97/23/EC

This product conforms to the requirements of european directive 97 / 23 / EC, article 3, paragraph 3, on pressure equipment.

#### 1.4.3. Factory test

Before leaving the factory, each appliance is tested for the following:

- Water tightness
- Air tightness

# 2 Safety instructions and recommendations

### 2.1 Safety instructions



#### CAUTION

Before any work, switch off the mains supply to the appliance.

### 2.2 Recommendations



#### CAUTION

Do not neglect to service the appliance. Service the appliance regularly to ensure that it operates correctly.



#### WARNING

Only qualified professionals are authorised to work on the appliance and the installation.



#### WARNING

Heating water and domestic water must not come into contact with each other. Domestic water must not circulate via the exchanger.

- To take advantage of the guarantee, no modifications must be made to the appliance.
- To reduce heat losses as much as possible, insulate the pipes.

#### **Casing components**

Only remove the casing for maintenance and repair operations. Put the casing back in place after maintenance and repair operations.

#### Instructions stickers

The instructions and warnings affixed to the appliance must never be removed or covered and must remain legible during the entire lifespan of the appliance. Immediately replace damaged or illegible instructions and warning stickers.

# **3** Technical description

# 3.1 General description

# The 100 SL domestic hot water tank is delivered ready for connection to a boiler:

- EGC 17/29 EGC 25
- ► EGC 25 BE
- GSCX 25

#### Main parts:

- The tank is made of high quality steel and is lined with food safety quality enamel vitrified at 850°C, which protects the tank from corrosion.
- The tank is protected against corrosion by a magnesium anode which should be checked every 2 years and replaced if need be.
- The coil-shaped heat exchanger welded into the tank is made of smooth piping, its external surface, which comes into contact with drinking water, being enamelled.
- The appliance is insulated by CFC-free polyurethane foam, which reduces heat losses to a minimum.
- > The outside casing is made of painted steel sheeting.

# 3.2 Technical specifications

3.2.1. Characteristics o	of the DHW calorifier
--------------------------	-----------------------

DHW tank 100SL					
Primary circuit (Heating water)					
Maximum operating temperature	°C	95			
Maximum operating pressure	bar (MPa)	3 (0.3)			
Exchanger capacity	I	6.4			
Exchange surface	m <sup>2</sup>	0.95			
Secondary circuit (domestic water)					
Maximum operating temperature	°C	95			
Maximum operating pressure	bar (MPa)	10 (1.0)			
Water content	I	95			
Weight					
Shipping weight (ballon seul cuve nue)	kg	63			

#### 3. Technical description

Performances related to the boiler t	Gas fired floor-stand	Gas fired floor-standing condensing boiler <sup>(1)</sup>		
		17/29 kW	25 kW	
Power exchanged	kW	25	24	
Flow per hour $(\Delta T = 35^{\circ}C)^{(2)}$	l/h	610	590	
Specific flow $(\Delta T = 30^{\circ}C)^{(3)}$	l/min	18	18	
Draw-off capacity <sup>(3)</sup>	l/10 mm	180	180	
Q <sub>p</sub> : Primary flow rate	m <sup>3</sup> /h	1.1	1.1	
(1) Depending on the country in which the (2) Demestic cold water inlet: $10 ^{\circ}\text{C}$ - Dem	boiler is installed	Primary circuit (beating water): 80 °C		

(2) Domestic cold water inlet: 10 °C - Domestic hot water outlet: 45 °C - Primary circuit (heating water): 80 °C
 (3) Domestic cold water inlet: 10 °C - Domestic hot water outlet: 40 °C - Primary circuit (heating water): 80 °C - Calorifier temperature: 60 °C

#### Specifications of the DHW sensor 3.2.2.

Temperature in °C	10	20	25	30	40	50	60	70	80
Resistance in ohm	19691	12474	10000	8080	5372	3661	2536	1794	1290

# 4 Installation

# 4.1 Regulations governing installation



# 4.2 Package list

### 4.2.1. Standard delivery

#### The delivery includes:

- Complete calorifier
- Domestic hot water sensor
- > DHW tank installation, operating and service manual



#### 4.3.1. Type plate

The type plate must be accessible at all times. The type plate identifies the product and provides the following information:

- DHW calorifier type
- Manufacturing date (Year Week)
- Serial number.

4.3.2. **Positioning of the appliance** 

The DHW tank is installed under the boiler. To ascertain to space to be allowed around the appliance in order to facilitate access and maintenance, refer to the boiler's installation and service manual.

#### The installer must respect the following instructions:

- Install the appliance in frost-free premises.
- Place the appliance on a base frame to facilitate cleaning of the premises.
- Install the appliance as close as possible to the drawing off points in order to minimise energy losses through the pipes.







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- Domestic cold water inlet G 3/4"
- Domestic hot water outlet GG 3/4"
- Primary boiler flow G 3/4
- Primary boiler return G 3/4
- Magnesium anode
- Sensor tube for DHW sensor
- Drainage pipe

100 SL

# 4.4 Positioning the appliance



M002456-C

## CAUTION

- Have 2 people available.
- Handle the appliance with gloves.
- 1. Remove the packaging from the DHW calorifier, leaving the calorifier on the pallet used for transport.
- 2. Remove the protective packaging.

3. Remove the 2 screws securing the calorifier to the pallet.

- 5 (4 (6) (4 (6 M002457-A 7  $\boxtimes$ M002458-A NO YES õ NO 8 (1)
  - 4. Open the front panel by pulling it forwards until it stops.
  - 5. Use a screwdriver to unclip the springs at both ends.
  - 6. Remove the front panel.

7. Lift the calorifier and position it in its operating location.

Level the appliance using the adjustable feet.
 (1) Adjustment range: 0 to 20 mm

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# 4.5 Fitting the DHW sensor



- 1. Remove the inspection trap insulation.
- 2. Put the DHW sensor in place.
- 3. Route the cable to the back of the tank.

4.6 Hydraulic connections

### 4.6.1. Connecting the primary boiler circuit

Refer to the connecting kit manual.

# 4.6.2. Hydraulic connection of the secondary drinking water circuit

When making the connections, it is imperative that the standards and corresponding local directives are respected.

The tanks inside the domestic hot water tanks can run at a maximum operating pressure of 10 bar (1 MPa). The recommended operating pressure is under 7 bar (0.7 MPs).

#### Specific precautions

Before making the connection, **rinse the drinking water inlet pipes** in order not to introduce metal or other particles into the appliance's tank.

#### Provision for Switzerland

Make the connections according to the instructions of the Société Suisse de l'Industrie du Gaz et des Eaux. Comply with local instructions from water distribution plants.

#### Safety valve



#### CAUTION

In compliance with the safety rules, fit a safety valve to the domestic cold water tank inlet.

**France**: We recommend NF-marked hydraulic membrance safety control units.

All countries except Germany: 7 bar safety valve (0.7 MPa) **Germany**: 10 bar safety valve (1.0 MPa) maximum.

- Integrate the safety valve in the cold water circuit.
- Install the safety valve close to the calorifer in a place which is easy to access.
- We recommend mounting the safety unit below mid-height on the tank in order to ensure that drainage is possible.
- Size
- The diameter of the safety unit and its connection to the calorifer must be at least equal to the diameter of the domestic cold water inlet on the calorifer.
- There must be no cut-off element between the valve or the safety unit and the domestic hot water calorifer.
- The outlet pipe in the valve or safety assembly must not be blocked.

To avoid restricting the flow of water in the event of overpressure:

- The safety device drain pipe must have a uniform and sufficient gradient and its diameter must be at least equal to that of the outlet opening of the safety device (to prevent the flow of water being hindered if the pressure is too high).
- The cross section of the discharge pipe from the safety unit must be at least equal to the cross section of the opening of the safety unit outlet.

**Germany**: Define the dimensions of the safety valve in accordance with the DIN 1988 standard.

Capacity (litres)	Dimension of the valve Min. dimension of the inlet connection	Heating output (kW) (max)	
< 200	R or Rp 1/2	75	
200 to 1000	R or Rp 3/4	150	

- Fit the safety valve above the calorifer to avoid draining the tank during servicing.
- > Install a drainage valve at the lowest point on the calorifer.

#### Isolating valves

Hydraulically isolate the primary and secondary circuits using stop valves to facilitate maintenance operations on the unit. The valves make it possible to carry out maintenance on the calorifer and its components without draining the entire installation.

These valves are also used to isolate the calorifer unit when conducting a pressurised check on the leak tightness of the installation if the test pressure is greater than the admissible operating pressure.



# CAUTION

If the mains pipes are made of copper, fit a sleeve made of steel, cast iron or any other insulating material between the tank's hot water outlet and the pipes to prevent corrosion to the connection.

#### Connecting the domestic cold water

Make the connection to the cold water supply according to the hydraulic installation diagram.

Refer to the installation and maintenance instructions of the boiler

Install a water drain in the boiler room and a funnel-siphon for the safety unit.

The components used for the connection to the cold water supply must comply with the prevailing standards and regulations in the country concerned. Fit a one-way valve to the domestic cold water circuit.

Make the connection to the cold water supply according to the hydraulic installation diagram.

Refer to the installation and maintenance instructions of the boiler

Install a water drain in the boiler room and a funnel-siphon for the safety unit.

The components used for the connection to the cold water supply must comply with the prevailing standards and regulations in the country concerned. Fit a one-way valve to the domestic cold water circuit.

In regions where the water is very hard (Th > 20°F), we recommend fitting a softener. Water hardness must always be between 12°F and 20°F to be capable of providing effective protection against corrosion. The softener does not bring about a derogation from our warranty provided that it is approved and set pursuant to the codes of practice and is regularly inspected and maintained.

#### Pressure reducer

If the mains pressure exceeds 80% of the calibration of the valve or safety unit (e.g. 5.5 bar (0.55 MPa) for a safety unit calibrated to 7 bar (0.7 MPa)), a pressure reducer must be installed upstream of the appliance. Install the pressure reducer downstream the water meter in such a way as to ensure the same pressure in all of the installation pipes.

#### Measures to take to prevent hot water flow return

Fit a one-way valve to the domestic cold water circuit.

# 4.7 Electrical connections

#### 4.7.1. Recommendations



## WARNING

- Only qualified professionnals may carry out electrical connections, always with the power off.
- Earth the appliance before making any electrical connections.

Make the electrical connections of the appliance according to:

- The instructions of the prevailing standards,
- The instructions on the circuit diagrams provided with the appliance,
- The recommendations in the instructions.

Belgium: The earthing must comply with the RGEI standard.

**Germany**: The earth connection shall comply with standard VDE 0100.

**France**: The earth connection shall comply with standard NFC 15-100.

Other countries: The earthing shall comply with local standards.



#### CAUTION

- Separate the sensor cables from the 230/400 V circuit cables.
- The installation must be fitted with a main switch.

#### 4.7.2. Connecting the domestic hot water sensor



1. Connect the DHW sensor to the corresponding terminal block on the boiler (Terminal X20).

## 4.8 Filling the system

#### 4.8.1. Filling the domestic hot water circuit

- 1. Rinse the domestic circuit.
- 2. Open a hot water tap.
- 3. Completely fill the domestic hot water calorifer via the cold water inlet pipe, leaving the hot water valve open.
- 4. Close the hot water valve when the water flow is regular, without noise in the pipes.
- Carefully vent all of the DHW pipes by repeating steps 2 to 4 for each hot water tap. Note:

Venting the domestic hot water calorifer and the mains network helps to prevent noises and banging caused by trapped air moving through the pipes during draw-off.

- 6. Vent the tank exchanger circuit using the bleed valve provided for this purpose.
- 7. Check the safety devices (particularly the valve or safety unit), referring to the instructions provided with these components.



#### CAUTION

During the heating process, a certain amount of water may flow through the valve or safety unit, this is caused by water expansion. This phenomenon is completely normal and must in no event be hindered. This phenomenon is perfectly normal and must in no circumstances be hindered.

4.8.2. Filling the primary boiler circuit

Carefully vent the exchanger circuit in the domestic hot water tank.

Refer to the installation and maintenance instructions of the boiler

# 5 Commissioning

# 5.1 Check points before commissioning



Secondary circuit (domestic water)

Inspect all the connections in the system for leaks.

#### Primary boiler circuit

Inspect all the connections in the system for leaks.

#### 5.1.2. Electrical connection

- Check that the sensors are correctly fitted and connected.
- Check the electrical connections, particularly the earth.

### 5.2 Commissioning procedure



#### CAUTION

Initial commissioning must be done by a qualified professional.



#### CAUTION

During the heating process, a certain amount of water may flow through the valve or safety unit, this is caused by water expansion. This phenomenon is completely normal and must in no event be hindered.

# 6 Checking and maintenance

## 6.1 General instructions



- Maintenance operations must be done by a qualified engineer.
- Only original spare parts must be used.

# 6.2 Safety valve or safety unit

The safety valve or unit on the domestic cold water inlet must be operated at least **once a month** to ensure proper operating and to prevent from any overpressure which may that may damage the domestic hot water calorifier.



#### WARNING

Failure to abide by this maintenance rule may damage the domestic hot water calorifier and void its warranty.

# 6.3 Cleaning the casing material

Clean the outside of appliances using a damp cloth and a mild detergent.

# 6.4 Checking the magnesium anode



Check the condition of the anode at the end of the first year. After the first check, determine the frequency of future checks on the basis of anode wear. The magnesium anode must be checked at least every 2 years.

1. Remove the inspection hatch.

See chapter: "Removing the inspection trap", page 23.

- Descale the calorifier if necessary. See chapter: "Descaling", page 22.
- Measure the diameter of the anode. Replace the anode if its diameter is less than 15 mm.
- Reassemble the anode/inspection hatch unit.
  See chapter: "Reassembling the inspection trap", page 23.

#### 6.5 Descaling



In regions with hard water, annual descaling of the appliance is recommended in order to maintain its performance.

- 1. Remove the inspection hatch.
  - See chapter: "Removing the inspection trap", page 23.
- 2. Drain the DHW tank by siphoning it off using a rubber pipe.
- 3. Check the magnesium anode each time the hatch is opened. See chapter: "Checking the magnesium anode", page 21.
- 4. Remove limescale deposits in the form of sludge or strips in the bottom of the tank. On the other hand, do not touch limescale adhering to the walls of the tank as it provides effective protection against corrosion and improves the insulation of the DHW calorifier.
- 5. Remove limescale deposits from the exchanger to guarantee its performance.
- 6. Fit the unit together.

See chapter: "Reassembling the inspection trap", page 23.

6.6 Removing and remounting the inspection trap



#### CAUTION

To guarantee tightness, the gasket unit must be replaced each time the hatch is opened.

Have a lip gasket and a retainer ring on hand for the inspection hatch.



### 6.6.1. Removing the inspection trap

- 1. Turn off the domestic cold water inlet.
- 2. Open a hot water tap.
- 3. Open the valve on the safety unit.
- 4. Lift the insulation .
- 5. Remove the inspection trap (13 mm spanner).





1. Replace the lip gasket + retainer ring unit and place it in the inspection opening, taking care to position the tab on the lip gasket outside the domestic hot water calorifier.

# CAUTION

Each time it is opened, the lip gasket + retainer ring unit must be replaced to guarantee tightness.

2. Fit the unit together.



#### CAUTION

Use a torque wrench.

Torque applied to the anode:  $6 \text{ N} \cdot \text{m}$ . The flange mounting bolts must not be excessively tight.



Approximately 6 N·m is obtained by holding the box spanner by the small lever.

- 3. After reassembly, check the watertightness of the lateral flange.
- 4. Switch on.
  - See chapter: "Commissioning procedure", page 20.

# 6.7 Specific maintenance operations



The DHW tank does not need to be drained to perform these operations.

If the installation is fitted with a DHW expansion vessel, proceed as follows to disconnect it.



- 2. Unscrew the snap coupling.
- 3. Disconnect the two parts.
- 4. Proceed with the desired maintenance operation.
- 5. To re-assemble, proceed in reverse order.

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# 6.8 Maintenance form

No.	Date	Checks made	Remarks	Ву	Signature

# 7 Spare parts

# 7.1 General

When it is observed subsequent to inspection or maintenance work that a component in the appliance needs to be replaced, use only original spare parts or recommended spare parts and equipment.



To order a spare part, give the reference number shown on the list.

# 7.2 Spare parts

Spare parts list reference: 300026890-002-02



Nylon brace

2-pin DHW sensor connector

Insulation, buffer tank

Domestic hot water pipe

Domestic cold water pipe

Adjustable foot M8x45

Earth wire

Storage tank sensor with connector - Length 2 m

Markers	Reference	Description			
14	200019651	DHW tank screw bag			
15	200019652	DHW tank gasket bag			
16	200019181	Front panel			
17	300024461	Side panel			
18	300025098	Cross bar stiffener			
20	300025679	Plastic pipe Tap nozzle - Ø 18 / Length 490			
21	7604153	Male plug G 1/2x12			

# 8.1 General

You have just purchased one of our appliances and we thank you for the trust you have placed in our products.

Please note that your appliance will provide good service for a longer period of time if it is regularly checked and maintained.

Your installer and our customer support network are at your disposal at all times.

# 8.2 Warranty terms

**France**: The following provisions are not exlcusive of the buyer being able to benefit from the legal warranty stipulated in Articles 1641 to 1648 of the Civil Code.

**Belgium**: The following provisions regarding the contractual warranty are not exclusive of the buyer being able to benefit from the legal provisions applicable in Belgium regarding hidden defects.

**Switzerland**: The application of the warranty is subject to the terms and conditions of sale, delivery and warranty of the company marketing products.

**Portugal**: The following provisions do not adversely affect consumers' rights, as laid down in Decree-Law 67/2003 of 8 April amended by Decree-Law 84/2008 of 21 May, warranties relating to sales of consumer goods and other implementing rules.

**Other countries**: The following provisions are not exclusive of the buyer being able benefit from the legal provisions applicable regarding hidden defects in the buyer's country.

Starting from the purchase date shown on the original installer's invoice, your appliance has a contractual guarantee against any manufacturing defect.

The length of the guarantee is mentioned in the price catalogue. The manufacturer is not liable for any improper use of the appliance or failure to maintain or install the unit correctly (the user shall take care to ensure that the system is installed by a qualified engineer).

In particular, the manufacturer shall not be held responsible for any damage, loss or injury caused by installations which do not comply with the following:

- applicable local laws and regulations,
- specific requirements relating to the installation, such as national and/or local regulations,
- the manufacturer's instructions, in particular those relating to the regular maintenance of the unit,
- the rules of the profession.

The warranty is limited to the exchange or repair of such parts as have been recognised to be faulty by our technical department and does not cover labour, travel and carriage costs.

The warranty shall not apply to the replacement or repair of parts damaged by normal wear and tear, negligence, repairs by unqualified parties, faulty or insufficient monitoring and maintenance, faulty power supply or the use of unsuitable fuel.

Sub-assemblies such as motors, pumps, electric valves etc. are guaranteed only if they have never been dismantled.

The legislation laid down by european directive 99/44/EEC, transposed by legislative decree No. 24 of 2 February 2002 published in O.J. No. 57 of 8 March 2002, continues to apply.

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20/08/2013

