

These appliances comply with the requirements of SANS 1539. LPGSASA Permit number:  
20 litre model 1051-XXX/1RSA-17-A



Read these instructions carefully before installing and using the appliance. Keep these instructions for future reference

Model No: 13/GWH-20L (JAQ40-20B)



## 1. Introduction

Thank you for purchasing your new Totai Gas Instantaneous Water Heater manufactured to the highest standards and fully tested in South Africa to ensure compliance with the South African Standard. This appliance is designed to give the user years of trouble free and efficient service. Please read the following instructions carefully. It is important to note that this appliance must be installed by a registered LP gas installer as indicated below. The manufacturer and /or its agents and distributors will not be held responsible for injuries or damages caused by faulty or incorrect installation or use of the appliance.

## 2. Technical data

Model type	Type B
Model No:	13/GWH-20L (JAQ40-20B)
Gas type	LPG
Operating Pressure	2,8 kPa
Heat input	144 MJ/h
Gas consumption	2,8 kg/h
Water output	20 litres/min
Gas connection	8 mm Gas Hose
Water connection	G 1/2" Thread
Min. Water Pressure	25 kPa

### Important information for the user

Read these instructions carefully before using the appliance and retain them for future reference. This appliance consumes oxygen when in use and it is important that it is only used in a well ventilated area for the efficient performance of the appliance and for the safety of the occupants of the area. **Note that this water heater may only be installed indoors.**

**This appliance may only be installed by a registered LP Gas installer.** All registered installers are issued with a card carrying their registration number. Ask to be shown the card before allowing the installation work to commence and make a note of the Installer registration number. Upon completion of the installation, the installer is required to explain the operational details of the appliance together with the safety instructions. You will be asked to sign acceptance of the installation and be provided with a completion certificate. You should only sign for acceptance of the installation when the installation is completed to your satisfaction. Note that your invoice is required in the event that you wish to make a guarantee claim.

### Important information for the installer.

This appliance may only be installed by a LP Gas installer registered by SAQCC Gas, the government appointed registering body for all gas installers. The appliance must be installed in accordance with the requirements of SANS 10087-1 and any fire department regulations and/or local bylaws applicable to the area. If in doubt, check with the relevant authority before undertaking the installation. Upon completion of the installation you are required to fully explain and demonstrate to the user the operational details and safety practices applicable to the appliance and the installation.

The appliance has been designed specifically for use with LPG and may not be used with Towns Gas or Natural Gas.

Read these instructions carefully before commencing the installation. **Note that this appliance is designed for use with a flue and may not be used if a flue is not fitted in accordance with these installation instructions. Note that this water heater may only be installed indoors.**

For detailed installation instructions refer to section 6 of this manual.

## Fault Finding Chart

Cause		Malfunction	A	B	C	D	E	F	G	H	I	J			
Improper Operation	Gas supply valve is closed												Open gas supply valve		
	Water Supply valve is closed	•											Open water supply valve		
	Incorrect regulation method of water temperature					•								Increase gas volume and reduce water volume	
								•						Increase water volume and reduce gas volume	
	Electrical cut out switch has not been reset	•												Reset electrical cut out switch	
	Incorrect setting of water switch	•												Turn water control knob to hot	
Surroundings	Residual air in gas supply pipe	•	•											Repeat start up procedure until the gas comes through.	
	Inadequate fresh air supply to burners				•									Improve ventilation and air supply	
	Gas Pressure	Too high	•	•		•		•							Ensure gas supply is at 2,8 kPa
		Too low				•	•				•				Ensure gas supply is at 2,8 kPa
	Water Pressure	Too high					•								Reduce water supply pressure
		Too low	•	•		•					•	•			Increase water supply pressure
	Inadequate gas supply	Gas valve is half open					•								Open gas valve fully
		Gas pipe is too long					•								Reduce length of gas supply pipe
		Diameter of joints in gas pipe too small					•								Increase diameter of joints in gas pipe
		incorrect choice of pressure relief valve					•								Models greater than 8 l/min require a PRV of 1,2m <sup>3</sup> /h
		Simultaneous gas consumption by several appliances					•								Reduce the number of appliance using the gas at the same time as the water heater
	Blockage in water supply pipe	•						•							Check for blocked water filter and clean if required
	Blockage in water pipe downstream of water heater .e.g shower	•						•							Check for blockages in pipe or shower
Blockage in flue vent pipe								•						Ensure flue pipe is clear of obstruction e.g birds nest	
Inadequate battery voltage	•	•	•											Replace the batteries	
Water supply temperatures too low						•								Reduce water volume	
Safety Protection	Earth Leakage switch trips	•	•											Call Service Technician	
	Overheat sensor shuts down water heater				•										
	20 min timeout kick in and shuts down water heater				•										
Other Causes												•	Call Service Technician		

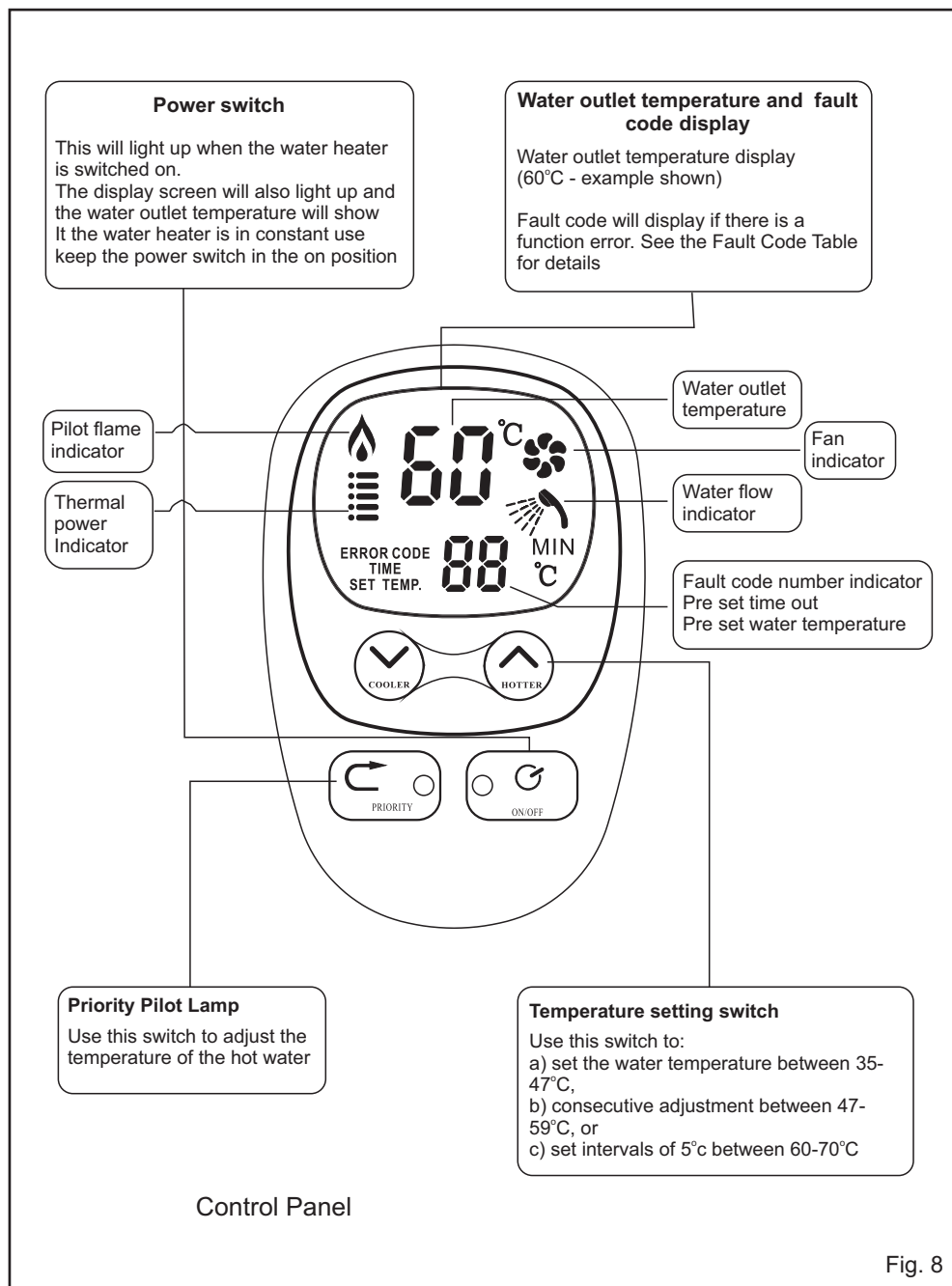


Fig. 8

### 3. Safety Information

- **The Total Gas Instantaneous Water heater must be securely affixed to a solid non combustible wall only.**
- The gas supply will require at least 1 x 48 kg LPG cylinder for efficient performance. For colder climates it is preferable to use 2x 48 kg cylinders both connected at the same time.
- Do not use this appliance if it is leaking gas (see notes below on how to check for a gas leak).
- Keep young children away from the appliance when in use.
- In the event of a burnback, where the flame burns back to the jets, immediately turn off the gas supply at the isolation valve on the gas line. After ensuring the flame is extinguished, re-light the appliance in the normal manner. Should the appliance again burn back, close the isolation valve and call a service technician to examine the appliance. Do not use the appliance again until the service technician has declared that it is safe to do so.
- If there is an apparent gas leak, (smell of gas) close the isolation valve on the appliance. Make sure that there are no naked flames within 5 metres of the appliance and check for leaks as described below.
- Never check for gas leaks with a naked flame as this is extremely dangerous.
- To check for a gas leak, use a brush dipped in a soapy water solution (e.g. water with dishwashing liquid added) and apply the solution to all the joints in the system. If there is a leak then turn off the gas supply at the isolation valve which the installer will provide as a part of the installation. Call a service technician to examine the appliance and do not use the appliance until the service technician has declared that it is safe to do so.
- Should you suspect a leak at the cylinder connections then apply the soapy water solution to the visible joints such as where the regulator fits into the cylinder or where the regulator fits into the flexible hose, or the joints on the manifold, if fitted. If there is a leak, then a bubble or bubbles will form. If you are unable to stop a leak at this point then turn off the cylinder valve or valves and call a service technician to correct the fault. As with leaks inside the premises do not use the appliance until the service technician has declared that it is safe to do so.
- Ensure that the appliance is used away from flammable materials.
- Do not remove the model rating plate that is attached to your appliance. This contains important information in addition to the serial number of the unit which the manufacturer will require should you need to make a service call.
- Only use this appliance indoors in a well ventilated area for the efficient operation of the appliance and the safety of the occupants of the area in which it is used.

### 4. Lighting and operating the appliance

- If at anytime during the igniting process, or during use, you smell gas, immediately turn off the gas supply to the appliance at both the gas flow knob and the gas system shut off or isolation valve and do not use the appliance until it has been checked for gas leaks as described above in section 3 above. It is preferable that this be done by a qualified gas service technician.
- This appliance is fitted with a 220v mains powered electronic ignition device for lighting the burners. See the installation notes re the electrical supply.
- To light the burners first ensure the mains power cable is connected to the electrical supply and the power is switched on.
- Make sure the water supply to the water heater is turned on.

#### 4.1 Control Panel setting and adjustment

- Press the power button on the display screen ( see Fig.8)
- The display screen will instantly indicate a fixed pre set temperature of 42°C and the water outlet temperature will read 30°C. As the following adjustments are made these readings will change.
- Open the hot water valve and this will ignite the burner as the water begins to flow.
- If the priority switch is off - the indicator light will be not be on, press the priority button- the indicator light will now show. Adjust the water temperature to the desired setting by pressing the temperature increase button on the right to increase the temperature and the button on the left to

decrease the temperature.

**Note:**

- For water temperatures between 35-47°C, holding the button in will gradually increase or decrease the water temperature depending which button is pressed.
- For water temperatures between 47 and 59°C, pressing the button in will, depending which button is pressed, increase or decrease the water temperature by 1°C for each press of the button.
- For water temperatures between 60 and 70°C pressing the button in will depending which button is pressed, increase or decrease the water temperature by 5°C for each press of the button.

**Note:**

If the Priority button indicator light is off or is flashing you will not be able to adjust the hot water temperature. In this case simply press the Priority button and once the indicator light is on you will be able to adjust the hot water temperature as indicated above.

- If the water hot water flow is set too low the burners will not ignite. Should this happen simply increase the hot water flow.
- If the hot water flow rate is set too high the water heater may not be able to reach the set water temperature. This would be particularly noticeable in colder climates
- The temperature of the cold water flowing into the water heater can affect the hot water temperature supplied by the heater. Depending on the climate, this can be quite noticeable particularly in colder climates.
- If the hot water outlet from the water heater is supplied to a bath, sink or shower through a mixer tap, be aware that the difference in the mixer tap settings will have an affect on the hot water temperatures supplied at the tap outlet irrespective of the temperature settings on the control panel.
- As an energy saving and safety measure, the gas supply to the water heater will shut off automatically if the water heater is used continuously for approximately 30 minutes.
- If this happens and you wish to continue using the water heater, turn off the hot water for several seconds and then turn it on again.

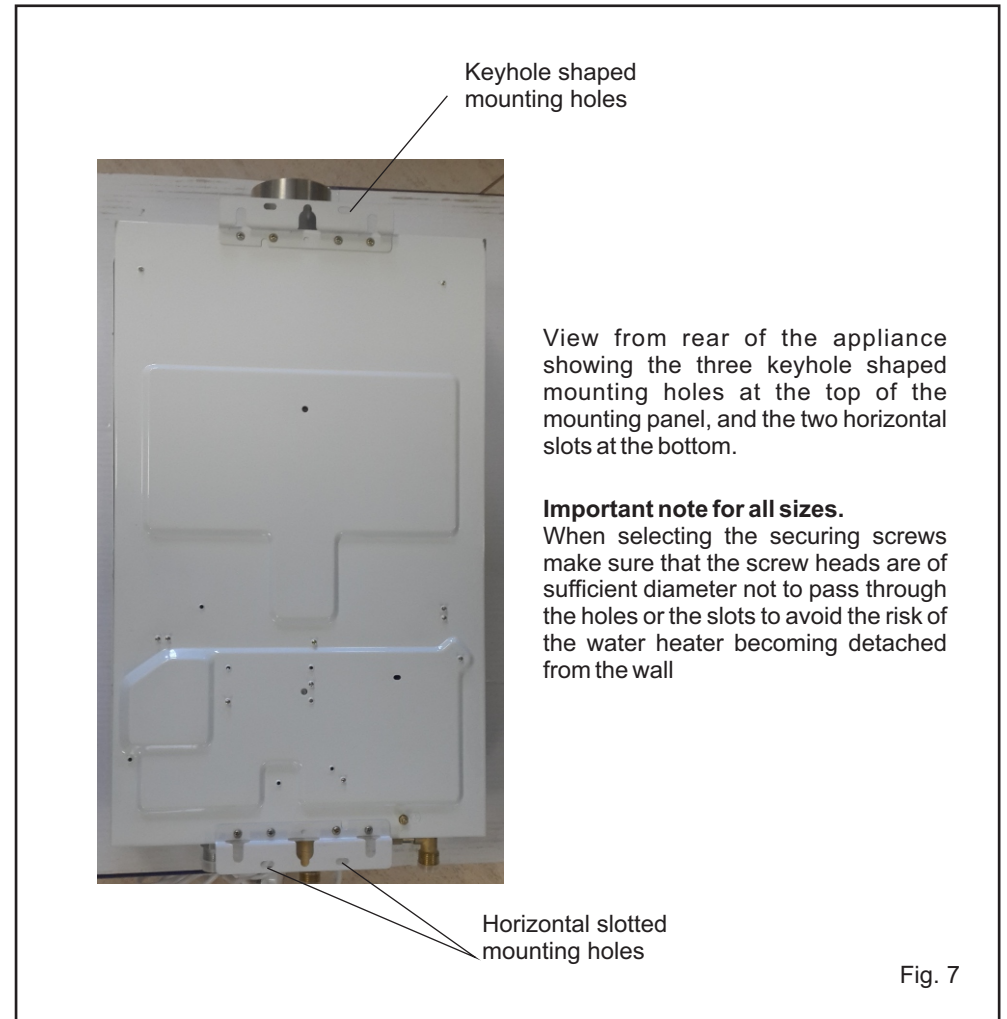
**5. Turning off the appliance**

- To turn off the appliance simply turn off the water flow control valve and this will automatically shut down the burners.
- It is important to note that when shutting down the water heater, if for just a short period, the water in the heater will still be hot. Take care when restarting the water heater to avoid the possibility of scalding due the retained heat in the water that is still in the water heater.
- When shutting down the appliance for more than a short time, always turn off the water and the gas supply.

**6. Installation**

**6.1 Introduction**

- Failure to follow these instructions may result in damage or injury, malfunction of appliance or loss of warranty.
- If you are not a qualified installer, please contact a local licensed plumber for the water connections and a registered gas installer for the gas supply, piping and connections.
- Best installation practice is to determine the flue system layout and wall penetration required, before deciding where to place the heater. Only when you are sure that the flue layout will comply with the information in sections 6.5 & 6.6 should the heater be mounted onto the wall.
- For your safety and efficient water heater operation, proper airflow to the heater must be provided.
- Locate the heater where flue layout, gas and plumbing pipework and electrical connections are feasible.
- If possible locate the water heater in a such a way that the hot water pipes are kept as short as possible. This will avoid excessive heat loss, especially during cold weather and for the same reasons it is always best practice to have the hot water pipes insulated.



Keyhole shaped mounting holes

View from rear of the appliance showing the three keyhole shaped mounting holes at the top of the mounting panel, and the two horizontal slots at the bottom.

**Important note for all sizes.**

When selecting the securing screws make sure that the screw heads are of sufficient diameter not to pass through the holes or the slots to avoid the risk of the water heater becoming detached from the wall

Horizontal slotted mounting holes

Fig. 7

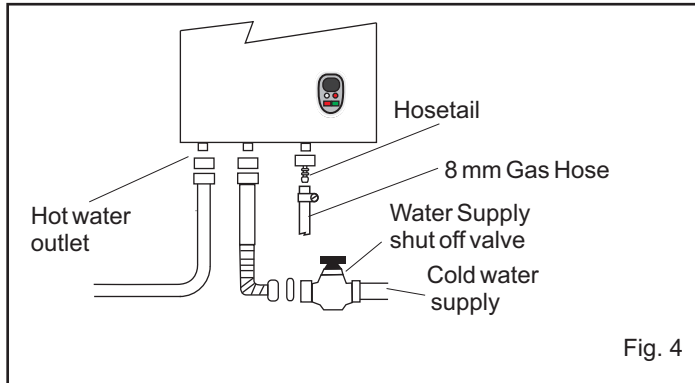


Fig. 4

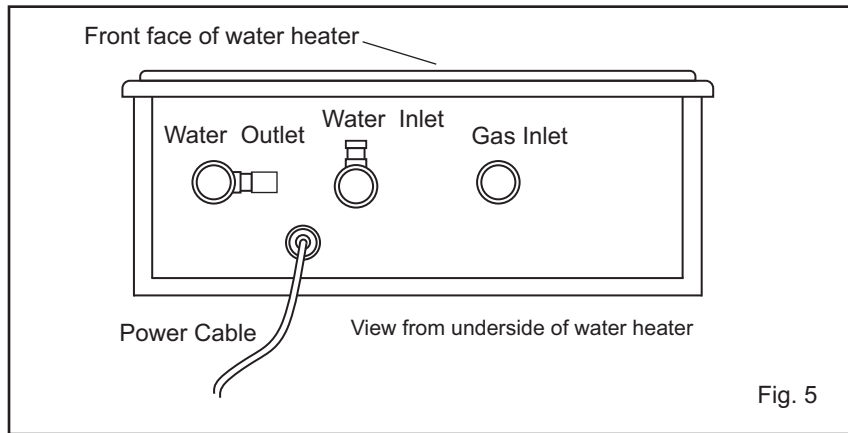


Fig. 5

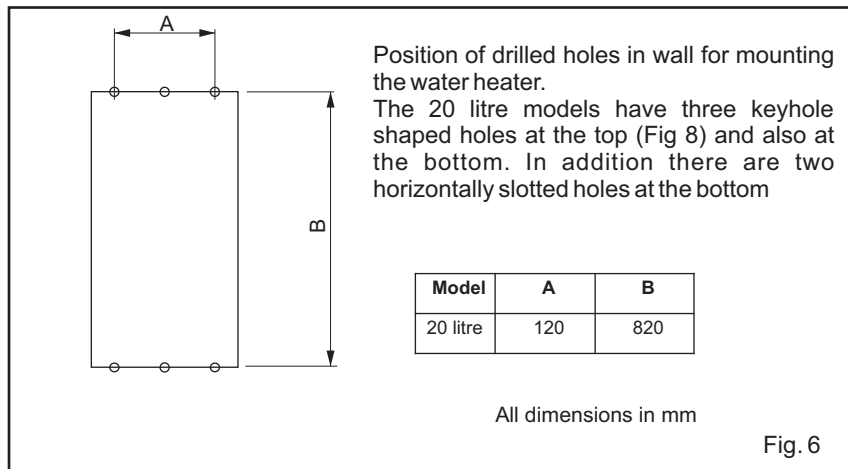


Fig. 6

- The water heater must be mounted inside the building on a solid wall constructed from non-combustible material.
- The required water supply to this water heater is cold water. The water in the water heater will remain cold except for the times that hot water is being used.

### 6.2 Mounting the Water Heater

- Before mounting the water heater check that the selected position will provide the minimum clearances at each side and on the top of the heater as shown in Figs.2 & 3 . This will ensure that sufficient space is available when servicing the heater.
- The mounted position of the water heater should be such that the control panel is between 1,4m & 1,6 m from the floor level. (See Figs 2 & 3 )
- The water heater should be not closer than 500 mm to any flammable materials, or electrical plug points or appliances.
- Remove the cover and inspect the appliance to identify the mounting holes and visually inspect the components. Ensure that the flue terminal is clear.
- The Totai water heater is designed for mounting permanently on a solid inside wall. (See Figs. 2 & 3) for the best height from the floor)
- Mount the heater to the wall use appropriate wall anchors. See Fig.6 for anchor point hole centres. Note also the details of the mounting holes on the back of the heater. See fig.7.
- A simple way to ensure correct alignment of the water heater is to:
  - Draw a horizontal pencil line on the wall for the top mounting holes(s).
  - Drill the hole(s) and fit the wall anchor(s) and suitable screw(s).
  - Offer the water heater up to the top screw(s) and hook the water heater over the screw(s) See Fig. 6.
  - Check that the water heater position is suitable to make it easy to operate the control panel and if this is a suitable height then with the water heater still in position, mark out the screw hole positions for the two bottom slotted mounting holes.
  - Remove the water heater, drill the bottom holes and fit the wall anchors.
  - Place the water heater back in position, fit and tighten the mounting screws.

### 6.3 Gas supply, piping and connections

- Before connecting the gas supply, check the rating plate on the side of the heater to be sure the heater, is rated for the same gas type to which the appliance is connected.
- **Note:** The Totai Gas water heater is not supplied with a regulator. Only a regulator that complies with SANS 1237 may be used in the installation.
- Only use a wall mounted LPG regulator that is rated to supply not less than 3 kg of gas per hour.
- **A normal 1 kg bullnose regulator will not be capable of providing sufficient gas and will starve the appliance resulting in poor performance.**
- Follow the guidelines in SANS 10087-1 to ensure that the gas pipe diameter is sufficient to give the required operating pressure at the appliance. Failure to observe this requirement may lead to poor appliance performance. The required gas pipe diameter will be dependant on the distance of the water heater from the cylinder(s).
- It is a requirement that a gas isolation valve be installed in the gas line close to the appliance in order to isolate the appliance from the gas supply in emergency situations or to facilitate maintenance on the appliance.
- For details of the gas connection points to the appliance, refer to Figs 4 & 5. Note that the gas supply must be connected to the right hand connection point on the bottom of the heater.
- Whilst it is allowable to connect the gas supply to the water heater using flexible gas hose, best practice is to use a copper pipe connected to the water heater with a suitable screwed gas fitting.

### 6.4 Water supply and connections

- The water supply to the water heater should be clean and free of anything that could block the water passages in the heat exchanger. If in any doubt a water filter should be fitted in the supply line.

- A water isolation valve must be installed in the water supply line to enable the water heater to be isolated from the water supply in the event that the water heater needs to be removed for servicing.
- The water supply to the water heater is connected with a G ½" threaded connector.
- **Note:** The water heater needs a water supply pressure of between 25 & 500 kPa. This is typical of most municipal mains water supply.

### 6.5 Electrical connections

- The appliance is supplied with an electrical cord fitted with a 15amp 3 pin plug for direct connection to a wall socket situated close to the appliance.
- It is important to note the following safety requirements.
  - The cable from the socket to the appliance may not be extended by joining an additional length of cable to that fitted to the appliance by the manufacturer.
  - Where an extended cable is required this must be a single piece of cable and should be fitted to the appliance by a qualified electrician.

### 6.6 Flue: Materials and layout

- **The following information is critical to effective venting of the products of combustion to the outside. Failure to take note of this information may lead to the appliance not functioning correctly, and could also create a dangerous situation leading to loss of life.**
- It is important that the flue exhausts to atmosphere above the roof level of the building in accordance with Figs. 2 & 3.
- Do not reduce the flue diameter. Measure the diameter of the flue connection outlet on the top of the water heater to establish the required flue pipe diameter.
- Do not connect the flue pipe to a flue pipe that is also connected to any other flued appliance.
- Always fit the correct size flue cowl at the end of the flue pipe outside of the building to assist in the flow of flue gases, to reduce the effect of high winds on the heater performance and to prevent rain from entering the flue system. (see Figs. 2, 3 & 4)
- Failure to meet the above requirements may result in damage to the appliance and which is not covered under the manufacturer's warranty.
- **Caution:** DK Gas Appliances (Pty) Ltd will not be responsible for incorrect installation of this appliances, and/or if a qualified installer does not install a vent system in accordance to this manual. This Installation Manual specifies the minimum vertical vent pipe length of 1,5 m.

### 6.6 Ventilation requirements

- This appliance is intended to be installed indoors. It must however only be used when connected to a fitted flue system which must be installed by the registered installer before starting up the appliance for the first time and before handing it over to the user. See section 6.5 above.
- Only use this appliance in a well ventilated area for the efficient operation of the appliance and the safety of the occupants of the area in which it is used.
- It is a requirement that permanent ventilation be fitted into the outside walls of the room in which the appliance is installed. Suggested minimum sizes of the ventilation openings are two equal sized openings of 450cm<sup>2</sup>. One opening should be at floor level and the other close to the ceiling. It is important that the openings vent directly to the outside.

#### Note:

- If the appliance is installed in a bathroom which may be closed off from adjoining rooms by a door, it is **extremely important** that permanent air vents be installed in an outside wall and that there are also permanent air vents at the top and bottom of the door.
- **It is also strongly recommended that if the water heater is on whilst the bathroom is in use e.g. whilst in the shower, a window must be left open.**
- If any structural changes are made to the room in which the appliance is installed, users should check with a registered installer that the modifications will not affect the safe operation of the appliance, particularly with respect to the supply of fresh air into the room and the correct

functioning of the fitted flue system.

### 7. Maintenance and Servicing

- There are no preset service intervals for this appliance, however it is recommended that the appliance be checked by a qualified service technician on an annual basis.
- Servicing of the appliance may not be carried out by unqualified persons. This may result in the creation of unsafe operating conditions.
- Do not modify the appliance in any way as to do so may make it unsafe.

### 8. Spares

- Use only spares supplied by the official distributor. The use of spares from other sources may result in unsafe operating conditions and will invalidate the supplier's warranty.

