



16L Constant Temperature Gas Geyser

ND16CTDH

Install outdoors only - must be installed
with a weather box (cover)

Read these instructions carefully before operating the gas geyser and familiarize yourself with the appliance before connecting it to the gas cylinder. **Keep these instructions for future reference.**

This appliance is manufactured to operate on LPG only. Do not tamper or modify the appliance. Never install this appliance indoors.

Important

If you smell gas

1. Turn off the gas supply at the bottle
2. Extinguish all naked flames
3. Do not operate any electrical appliances
4. Ventilate the area
5. Check for leaks as described in this manual
6. If gas smell persists, contact your dealer or gas supplier immediately

Burn-back

In the event of a burn-back, where the flame burns back to the jet, immediately turn the gas supply off at the gas cylinder. After ensuring the flame is extinguished, wait for 1 minute and then reignite the appliance as per normal. Should the appliance burn back again, close the gas cylinder and call a registered LPG installer.

Do not use the appliance again until the installer has confirmed that it is safe to do so.

Gas-pressure regulator

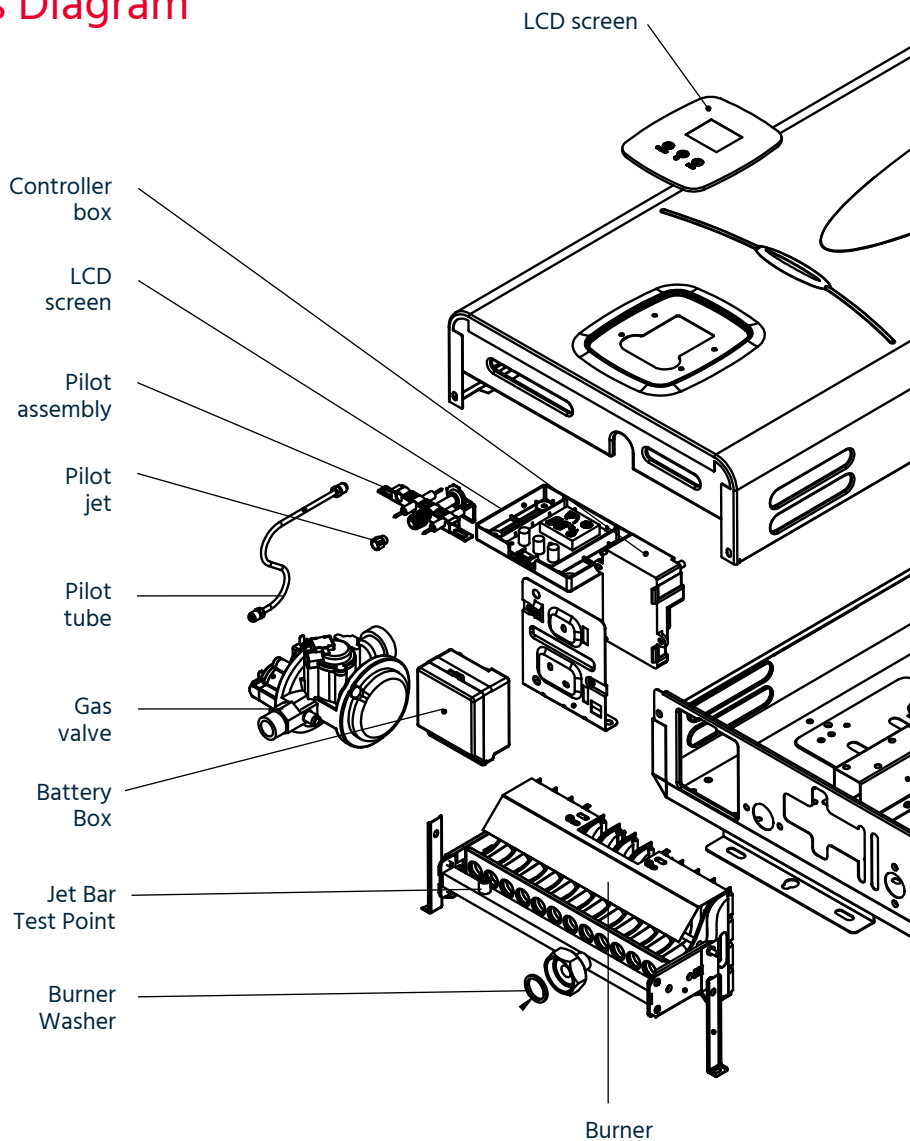
This appliance requires an operating pressure of 2,8 kpa. Only install a LPG regulator that complies with the SANS 1237 requirements.

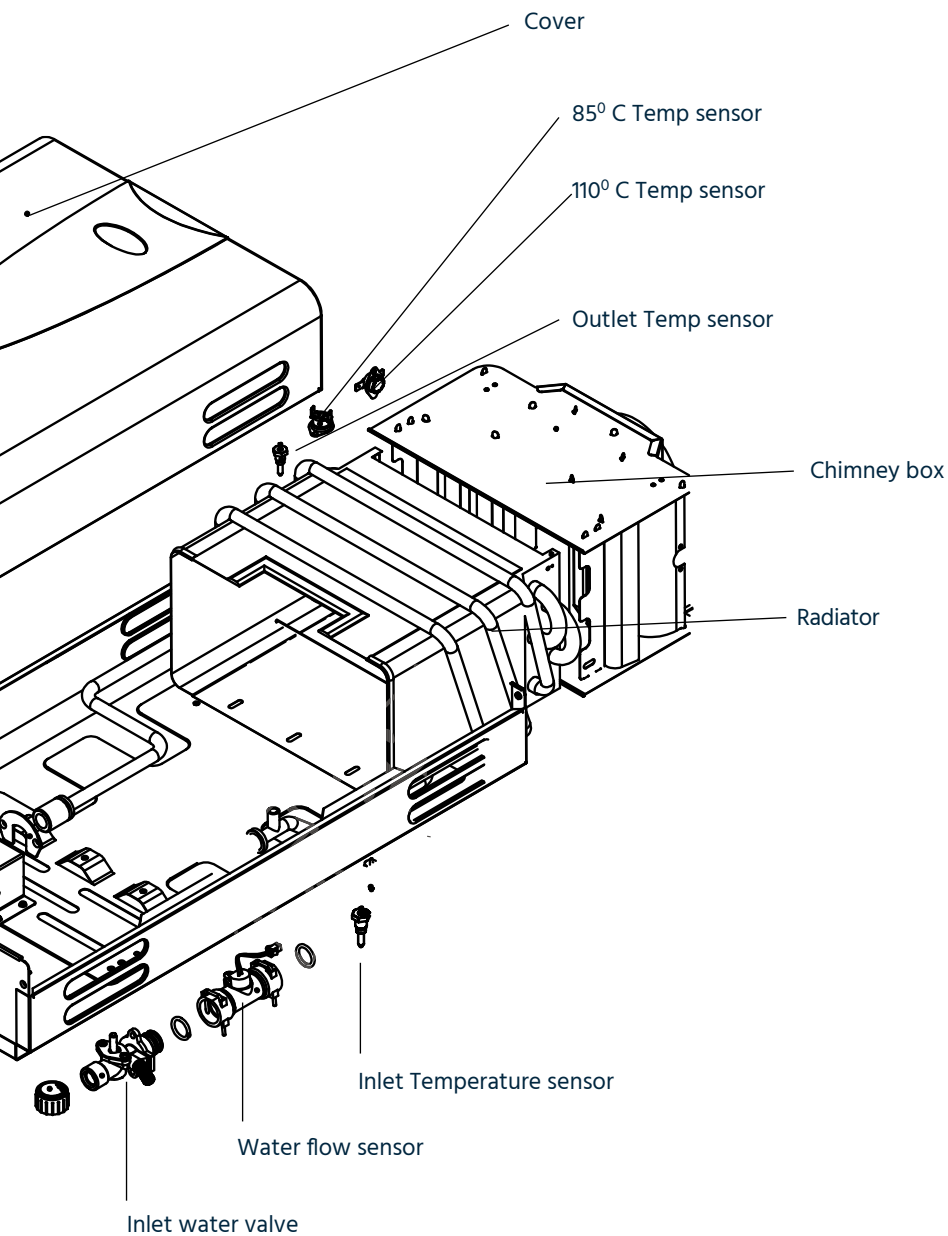
Guarantee

After installation, please register your product on the Dewhot website. You will need your invoice and Certificate of Compliance (COC) to complete the registration.



Parts Diagram







Technical parameters

Description	Constant temperature
Model no	NDCT16DH
Model	Type D
Gas type	LPG
Max gas pressure	2,8kpa
Rated input	32kw
Water pressure	20-500 kPa
Maximum Water Flow	16L/min
Max Gas Consumption	2.3 kg/h
Unit Size	730x 400x 220mm
GW 15.5kg	NW 13.3kg



Functions & Features

CONSTANT HOT WATER SUPPLY

The water heater will achieve and maintain the water temperature set on the digital display automatically irrespective of changing water flow and temperatures

TEMPERATURE MEMORY FUNCTION

The CPU of the controller will remember the temperature settings from the previous use, improving the reaction time upon start up.

EASY OPERATION

Simplicity of adjusting the temperature of the hot water by 1°C increments at the touch of a button.

PILOT IGNITION

The pilot burner will automatically ignite first, then the main burner. The pilot will then go off avoiding excessive gas usage.

CAN BE USED TO BACK UP SOLAR GEYSERS

Use this gas geyser in conjunction with our solar to gas valve to boost your solar water temperature in the winter months or colder, cloudier summer days.

FLAME OUT SENSOR

This is designed to automatically cut off the gas supply should the flame/ burner unexpectedly extinguish or the sensor no longer detects a flame.

LOW WATER PRESSURE START UP

The appliance will activate from a water flow of 3lt/min. This makes it suitable for low water pressure applications.

OVER PRESSURISATION/ FREEZING PROTECTION

The appliance will automatically protect itself by releasing pressure if the water supply is over 10 Bar (this should be manually set to lower pressures see **page 13**).

AUTOMATIC GAS ADJUSTMENT

The appliance will automatically adjust its gas usage depending on the water usage, using less gas when you use less water, making the appliance more efficient.



Appliance Safety instructions

PROPER VENTILATION

To avoid the risk of fire, explosion, or asphyxiation never operate the gas geyser unless it is installed properly and has adequate air supply. Make sure the flue terminal is installed properly for the initial start-up, check it annually thereafter.

FLAMMABLE MATERIALS

DO NOT handle, use or store combustible materials near to the gas geyser.

WEATHER BOX AND FLUE

This geyser should be installed with a cover under all circumstances. A flue can be used with a cowl but is not a requirement for the geyser to operate normally.

SETTING

Safety and energy savings need to be considered when setting the water temperature . Water temperatures above 52°C can cause severe burns.

Refer to page 16.

1. Households with small children, disabled or elderly people need to set the temperature to 49°C or lower
2. Maximum water temperature occurs when the burner is on. To see the water temperature look at the front control panel of the gas geyser.
3. The Factory default water setting is 41°C and this setting can be adjusted on the control panel.
4. The gas geyser has a heating range between 38°C and 60°C.

WATER TEMPERATURE

TIME/TEMPERATURE EXPOSURE RESULTING IN BURNS

Hot water can create severe burns, we should rarely exceed the temperatures below

49°C	More than 5 minutes
52°C	1.5 to 2 minutes
55°C	+/- 30 seconds
57°C	+/- 10 seconds
60°C	less than 5 seconds
63°C	less than 3 seconds
66°C	+/- 1.5 to 2 seconds
69°C	+/- 1 second



NATURAL AND LP GAS

Both LP and natural gas are odoured to help detect leaks.

Appliances using LP gas are different from natural gas models. A natural gas geyser can not function safely on LP gas and vice versa.

Do not try to convert the gas geyser from a natural gas to a LP gas appliance and vice versa. This could damage the appliance, cause injuries or fires. Never connect the gas geyser to a fuel type that is not in accordance with the appliance's data table.

WHEN DETECTING A LEAK ON YOUR INSTALLATION

LP gas is twice as heavy as air and may accumulate in low lying areas and cavities.

Before opening the hot water tap to test your gas geyser have your installer check all gas fittings and connections. Bubbles indicate a leak.

1. Do not attempt to find the cause yourself and turn off the gas supply in finding a leak.
2. Do not ignite any appliance.
3. Do not touch any electrical switch.
4. Evacuate the house immediately with your family and pets.

5. Leave the doors open for ventilation and contact the gas supplier, registered LP Gas Installer or Fire Department.
6. Stay away from the house (or building) until the service call has been made, the leak is fixed and the space has been declared as safe.
7. Ask the installer to show you where the gas shut-off valve is and how to use it.
8. Turn off the manual shut-off valve if the gas geyser has been subjected to overheating, fire, flood, physical damage or if the gas supply fails to shut off.

Gas detectors are highly recommended and they must be installed in accordance to the detector manufacturer's regulations.

GAS SUPPLY

1. The gas type should match the specification table. This is a low pressure gas appliance and the appropriate regulator should be used.
2. Ensure there is sufficient gas pressure (2,8kPa) for the gas supply.
3. The gas line should be equipped with a shut off valve.
4. At least a soapy solution must be used to check all connections and fittings for gas leaks.
5. The COC should be issued and signed after the installation has been inspected.



Installation instructions

FLUES AND COVERS

1. The gas geyser does not require a flue in order to operate normally. If a flue is used - a flue cowl should be installed to prevent rain from entering the geyser.
 2. Make sure the flue terminal is installed properly with all parts of the flue facing upward to allow hot air to escape.
 3. The flue will expell warm air and water vapour, do not install the terminal of the flue near areas/objects that can be damgeded from the above or are combustible. (see gas geyser location)
 4. Under no circumstances can you install this geyser indoors
 5. For any installation a weather box should be installed to retain the warrentee.
1. Clean, potable water free of corrosive chemicals, sand, dirt, or other contaminants.
 2. With inlet water temperatures above 0°C, but not exceeding 45°C
 3. Free of lime and scale deposits
 4. DO NOT reverse the hot and cold water connections, this will not allow the gas geyser to function.

GAS GEYSER LOCATION

1. Close to flue the extraction area .
2. Protected from freezing temperatures.
3. Clear 800mm of space from combustible surfaces.
4. Sufficiently ventilated.
5. Free of corrosive elements and flammable vapours.
6. Have sufficient space to service the appliance.
7. It should be securely mounted to the wall.
8. Installed at least 1400mm off the ground.

MOUNTING THE GAS GEYSER

Install the appliance in a place that allows for easy access for future servicing and replacing batteries.

Use at least 8mm concrete plugs and screws to mount the gas geyser to the wall. In the case of dry walling use dry wall anchors.

WATER SUPPLY

This appliance must only be used with the following water supply requirements:



WATER SUPPLY CONNECTIONS

Plumbing should be carried out by a qualified plumber. Use approved plumbing materials only. The diameter of the pipe lines should be a minimum of 1/2" copper or pex piping.

To conserve energy and to prevent freezing, insulate both the cold and the hot water supply lines. DO NOT cover the drain valves.

WATER PRESSURE GUIDELINES

Operation of the gas geyser requires a minimum water pressure of 14 psi (0,5 Bar) and a minimum water flow rate of 2.5 Litres/min.

1. For long pipe runs water pressure can drop and additional water pressure may be required.
2. When the water is supplied from a water tank, the height of the tank, the diameter of the pipes and their relation to water pressure, should be taken into consideration.

3. For gravity fed water 5 meters head is a minimum requirement.

GAS SUPPLY LEAK TESTING

1. The gas geyser and its gas connections must be tested for leaks at the normal operating pressures before using it.
2. Turn on the gas shut-off valve(s)
3. Use the soapy water solution to test for leaks at all connections and fittings. Bubbles indicate a gas leak that must be fixed.
4. Once the appliance is operating, the factory connections also need to be tested for leaks.



WARNING

Never use an open flame to test for gas leaks as this could result in property damage, personal injury and or death.

VENTING/FLUEING

DO NOT connect the gas geyser to an existing vent or chimney, it must be vented/flued separately from any other appliances.

When installing a gas geyser a minimum of 1 meter is required from any venting system.

IMPORTANT TIPS

If the water flow is too slow, the gas geyser will not ignite. Keep the shower head/outlets clean from debris that reduces flow rate.

To keep the water pressure balanced add a 400-600kpa pressure regulating valve on the cold water supply for municipal water feeds. Install a shutoff valve near the inlet of the gas geyser for service and draining purposes.

Installation of demountables is recommended on the hot and cold water lines, so that the gas geyser may easily be disconnected for servicing.

Install a non-return on the outlet of the gas geyser to prevent water hammer.

Do not solder the HOT or COLD water connections near to the gas geyser. If solder connections are to be used, solder the fitting to the adapter before fitting the adapter to the water connections on the geyser. Any heat applied to the water supply fittings will permanently damage the internal components of the gas geyser.

Hot water outlet connections between the gas geyser and the usage points should be as short as possible.

DO NOT use lead or plastic pipe. To save energy and reduce heat loss we recommend insulating the water piping.

NOTE The flow rate of hot water may vary when more than two taps or fixtures are being used at the same time.



Installation safety instructions

1. Inspect the gas pipes and flexible hoses regularly. If you find joints that are not tightly secured or if there are cracks, you should stop using the appliance and perform the necessary maintenance.
2. Turn off the gas shut-off valve if your gas geyser has been subjected to over heating, fire, flood, physical damage or if the gas supply fails to shut off.
3. Do not allow combustible materials such as newspaper, rags or mops to accumulate near the appliance.
4. Do not store or use petrol or other flammable vapours and liquids, such as adhesives or paint thinners, in the vicinity of this or any other gas appliance. If such flammables must be used, open doors and windows for ventilation.
5. Appliances in the vicinity should be shut off to avoid vapours igniting from the gas burner. Flammable vapours can be drawn by air currents from surrounding areas to the inlet of gas geyser.

ADJUSTING THE OVER PRESSURISATION VALVE (OPV) FOR FREEZING TEMPERATURES

When you have done a new installation and have connected the water, then you can use a small or medium flat screw driver to UNSCREW the grubscrew in the hollow centre of the over-pressurisation valve until the water drips out.

Then screw it BACK IN 1 full turn. This will mean that the over-pressurisation valve is set to the your specific water pressure supply and in the event of the water in the pipes freezing the valve will push out a small amount of water and allow the water to freeze in the geyser without causing damage.



Operating instructions

1. Open the battery box underneath the geyser and insert one D cell battery, paying attention to polarity.
2. Open the cold water valve that has been installed on the cold water inlet pipe or turn on the main water supply. Open the hot water tap which your new geyser now feeds. You should hear the water flowing through the geyser, if the batteries are installed correctly you will hear the geyser start to ignite if the gas does not come through it will turn itself off – this is one cycle. To initiate another cycle turn the tap off and then back on again.
3. You can now open the gas cylinder and any gas shut off valves installed on the gas line. There may be an air lock inside the gas line especially for gas piping which is longer than three to five meters. To get rid of this airlock you will have to run the geyser through multiple cycles until the gas reaches the burners, it will then ignite. Should this not work after three cycles use the gas bleeder valve to bleed the gas through.
4. You can adjust the temperature of your new gas geyser by using the digital control panel.
5. Try setting your gas geyser between 40-45 degrees Celsius. You should not need to add “much” cold water if any at all. This way you are maximizing your efficiency by not using more gas than you need to by overheating the water. For longer runs in water pipe you may need to make this temperature slightly higher.
6. Never install this gas appliance indoors.



Operating warnings

- Don't use the gas geyser where there is no air circulation.
- If you find a gas leak, turn off the gas valve immediately. If the room smells of gas, turn off the gas water heater and do not touch any electrical appliances or switches or turn on any hot or cold water taps. Call your installer immediately to determine the fault.
- When leaving the premises for extended periods, turn off your gas supply and turn off the gas geyser in the event of a hot water leakage the geyser will not turn on.
- The body of the gas geyser can get hot during operation, do not touch any part of the gas geyser, except for the control panel.
- Do not put any foreign objects in the exhaust port, air inlet or on top of the gas geyser to avoid incomplete combustion which results in poisoning.
- Should you notice a yellow flame which indicates abnormal combustion you should close the gas valve right away and then contact the installer.
- Before outdoor temperatures reach below zero degrees make sure the remaining water is emptied out of the gas geyser to avoid it freezing (Set your OPV refer to page 13).



Water Temperature settings

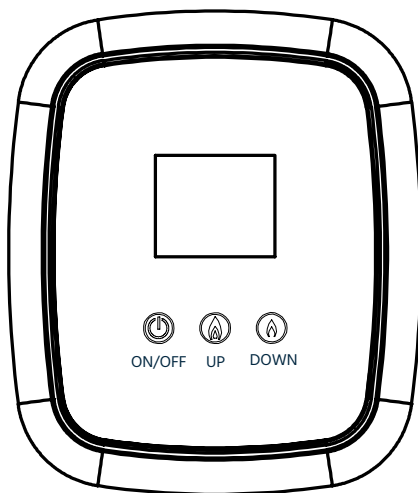
The gas geyser temperature can be regulated by adjusting the setting on the front of the control panel. Safety factors should be considered so please read and follow the warnings outlined on **page 8**.

Mixers can be used to adjust the temperature at the water outlet.

When the burner is switched on, maximum water temperatures are reached. The water temperature is determined by turning on a hot water tap. Water temperatures at the tap will vary depending on the weather and length of piping from the gas geyser, the longer the run in pipe the cooler the water will come out of the shower head.

Set the temperature as required by pressing the UP or down arrows on the temperature button (also see page 17).

By pressing the UP or DOWN you buttons will adjust the temperature point by 1°C increments.





SETTING YOUR GAS GEYSER TO THE CORRECT TEMPERATURE

The gas geyser should be set to such a temperature that you should not have to add too much cold water. If you set the temperature too high and have to cool it down using the cold water, you have effectively wasted gas. Try set the geyser so that you only have to open the hot water tap only.

Start by setting the geyser to 42°C for pipe runs shorter than 3m. If your pipe runs are from 3-5m try setting the geyser at 43°C and for pipe runs longer than 5m try setting the geyser at 45°C. If you find these temperatures are not satisfactory then increase the temperature by 1-2°C at time until you feel the water is hot enough.

The hottest water temperature will be from the hot water tap closest to the gas geyser.

Always remember to test the water temperature with your hand before use and remember that hotter water settings increase the risk of injury.

The gas geyser is fitted with a device that will shut off the gas supply to the burner

if the appliance exceeds normal operating temperatures at about 75 °C

The appliance won't operate with a water flow of less than 3 litres/minute. If this occurs, increase the water flow.

A GUIDE LINE OF SHOWERING TEMPERATURES

Body temperature: 35-37 °C

Summer time comfortable showering temperatures: 35-38°C

Warm shower in winter: 39°C

Hot showering temperature in winter 42°C (most preferred showering temperature)

Very hot showering temperature in winter: 44°C

For a bath temperature in winter: 48-50°C

Bare in mind a geyser showing 40°C will not be the same temperature at the shower head as it will loose heat travelling through the pipes, the further the run in pipes the more heat will be lost. Also bare in mind the slower the flow rate the more heat will be lost through the pipes as the water spends more time travelling to the shower loosing greater amounts of heat.



Maintenance and cleaning

GENERAL MAINTENANCE

If your gas technician maintains your gas geyser you should not have any issues with it for years.

We recommend that you periodically check the burner, relief valve, water filter and flue system.

This needs to be done by a certified installer. A maintenance program is advisable.

1. Inspect the area around the gas geyser to ensure that its in a safe operating environment.
2. Make sure that the appliance has not been damaged. If there are traces of damage or denting contact your supplier to check that the appliance is still functioning properly.
3. Check for any abnormal sounds while operating your appliance. A light humming sound is normal from time to time.
Check for gas/ water leaks.
4. The cold water supply filters should be cleaned once a year.
5. Perform regular maintenance on the

geyser to prevent carbon monoxide dangers, excessive hot water temperatures or other potentially hazardous conditions.

DO NOT

1. Continue to use the gas geyser if you feel that there is something wrong with it.
2. Allow children to operate or handle the appliance.

After you have checked, maintained and/or cleaned the appliance, make sure that it is working properly by turning on the hot water tap.

COASTAL CORROSIVE ENVIROMENTS

For geysers installed near the coast, get your gas installer to remove the cover and spray electrical contact cleaner on all the electronic contacts, after the electrical spray has dried up you can spray Q30 or any other kind of electrical sealant to seal the joins and prevent corrosion from entering the electronics. This is highly advised and can be performed at any location inland or coastal. Do not perform this step if the geyser is on.



GENERAL CLEANING

1. Clean the appliance and remote control by using a damp soft cloth only. Gently wipe the surfaces of the appliance and any remaining moisture with a dry soft cloth.
2. Do not store household items near or on top of the appliance
3. inlet water filters should be cleaned on a regular basis.
4. DO NOT scrub the appliance with a brush.
5. Use only water, any chemicals can damage the surface of the appliance.
6. DO NOT remove any labels, including the rating table when cleaning or servicing.
7. DO NOT splash water on the remote controls when cleaning.

CLEANING THE WATER FILTER

- Turn the appliance off
- Turn the water supply to the appliance off.
Unscrew the water fitting and pull the filter out.
- Remove particles - use a soft brush and rinse it with running water.
- Put the filter back and screw it in
- Turn on the second the cold water supply.

CAUTION

Cleaning of the main burner should always be performed by Registered LPG Installer.

A compressor can be used to clean the burner.

BURNER INSPECTION

Visually check the main burners annually.

Use the sight glass to check the flame picture, the flame should be a clean blue flame only.

If a yellow flame occurs, the gas geyser should be shut down and you should call a qualified installer to assess the appliance.

Check to make sure that the air supply and the vent terminal have not been blocked or contain debris.

VACATION AND EXTENDED SHUT-DOWN

If the gas geyser is left for an extended period of time, the power and gas to the appliance should be turned off.

The gas geyser and piping should be drained if they could be subjected to freezing temperatures over this period. After a long shut-down period, the gas geyser needs to be serviced and checked.



Symptoms and faults

Symptom	FAULT
Pilot comes on but ignitor continues to tick	Partially blocked pilot tube - the flame out sensor is not in the flame Faulty flame out sensor Or after heavy rain the controller can be wet, this will sort itself once dried off
The pilot is firing and firing but does not take a flame, an E1 error comes up and there is a faint smell of gas	Check the pilot flame tube is not blocked or partially blocked by a spiders web, remove tube and clean it out, always check the pilot jet at the same time
Unit fires continuously without a flame coming on or showing an error	Faulty controller
Faint firing and PA, BA or 6A comes up on the screen	Flat batteries
The geyser flame comes on and runs up to temperature then drops away and tries to re-ignite. The process repeats and either no error comes up on the screen or an E8 error is shown	LCD panel is faulty or the control box is wet normally after a storm Wait at least a day for the unit to dry before lodging a service call
Only 35-38 degrees reached on the LCD screen	The water flow may be too high, reduce it and place a 400kPa pressure reducing valve on the cold water line The regulator may be undersupplying gas, Check the gas inlet pressure is operating at 2,8 kPa while the appliance is running;



Symptom	FAULT
The units temperature jumps all over the place, from 65-35, is sometimes consistent but mostly not.	Flow sensor may be faulty, but this can be intermittent in its function- the pilot may fire again when the temperature should be coming down.
The unit will fire and the pilot will take but not the main burner and there is no smell of gas	Loom to gas is faulty. The gas section is faulty, check the first and second stage solenoids with a voltmeter.
Unit suddenly goes cold during use	Batteries may be flat Regulator is delivering too high a gas pressure, unit shuts off, hence cold water
Unit resets to 45 degrees	The geyser needs a PRV on the cold water supply as inconsistent and high water pressure spikes can cause it to reset The pre-set temperature is too high for the geyser to achieve and after a day or two of trying will re-set to factory setting 45 deg.
Unit fires and dies, fires and dies, fires and dies four times in a row then fails totally.	Gas section wiring loom is faulty.



Error code guide

WHEN AN ERROR CODE IS DISPLAYED

- Close the hot water tap, turn off the appliance and remove the battery.
- Wait for about 2 minutes before turning it on again.
- Open the hot water tap.

IF THE ERROR CODE REMAINS SHOWN

- Close the hot water tap and turn off the switch on the LCD screen.
- Take the proper action shown below and attempt operation of the appliance again.

IF THE ERROR CODE IS STILL SHOWN

- Turn off the hot water tap and turn off the switch on the LCD.
- Take note of the error code displayed and call the Dewhot Technical Service number.

CAUTION

- For your safety DO NOT attempt to repair any part of the gas geyser or installation. Only a Registered LPG Installer should do this.
- Turn off the power to the gas geyser before removing protective cover.

Do not place any form of magnetized tool near the flow sensor, this will damage it permananetly- remove the battery when working on or near the flow sensor



Code	Error	Solution
E0	Accidental flameout, the flame sensor could not detect the flame signal within 7s after the re-ignition process	Check the gas inlet pressure is operating at 2,8 kPa while the appliance is running;
		Check the gas valve is supplying 2,8kPa to the burners while the appliance is running on maximum temperature;
		Check whether the flame sensor is damaged or the connection wire is pulled off;
E1	No flame signal detected within 60s on the pilot flame No flame signal detected within 10s on the main burner	Change the diaphragm valve or controller
		Check the gas inlet pressure is operating at 2,8 kPa;
		Check whether the flame sensor is damaged or the connection wire is pulled off;
		Check whether the pilot gas supply pipe is twisted and blocked or cracked creating a leak;
E2	20 min shut off	Check for bugs or spiders in the pilot burner tube;
		Change the diaphragm valve or controller
E4	Flame signal detected without any water flow	Normal operation, close and re-open the tap.
E4	Flame signal detected without any water flow	Check the gas inlet pressure is operating at 2,8 kPa;
		Change the gas valve and perform a pressure test



Code	Error	Solution
E5	Faulty/damaged or unplugged output water temp sensor.	Check whether the water temp. sensor is unplugged, damaged or burnt; Change the sensor
E6		Check the gas pressure does not exceed 2,8 kPa at the gas inlet;
	Short circuit of the outlet water temperature sensor	Water pressure suddenly dropped, causing a temperature spike (check the flow rate is above 3lt/min with the bucket test); Change the radiator water temp. sensor for an 85°C sensor;
	Temperature of hot water has exceeded 85°C	Change the outlet temp. sensor
E7		Change the diaphragm valve or controller
	The gas flow is unstable, and has switched off 5 times continuously	It is normal if it is the first time operation or the appliance has been left unused for a long time; Change the batteries for new batteries;
		Check the gas inlet pressure is operating at 2,8 kPa while the appliance is running;
E8		Change the diaphragm valve or controller
	Water flow capacity is less than 3L/min - open circuit of the over heat temperature sensor	Check the gas inlet pressure is operating at 2,8 kPa while the appliance is running;
		Water pressure suddenly dropped, causing a temperature spike (check the flow rate is above 3lt/min with the bucket test); Change the gas valve or controller



Code	Error	Solution
EA	Open circuit of input water temperature sensor	Check whether the wire of input water temp. sensor is pulled off, burnt or damaged;
		Change the input water temperature sensor
EB	One of the 2 CPUs of the controller is damaged	Change the loom to gas valve
		Change the loom to LCD
		Change the LCD screen
		Change the controller
EE	Controller malfunction	Change the controller
LED FLASH	The batteries are flat	Change the batteries
PA BA 6A	Low battery	Change batteries



Only a registered gas installer can install your gas geyser and must comply to SANS 10087-1

This appliance may only be installed by a registered LPG installer.

Registered installers are issued with a card that displays their registration number.

Insist on seeing this card and make a note of their registration number.

When they have finished their installation make sure the installer performs an operational and safety briefing.

Before you sign off the installation, make sure you also receive your COC

Installer

This appliance may only be installed by a LPG Installer registered with the South African Qualification and Certification Committee (SAQCC). The appliance must be installed in accordance with the requirements of SANS 10087-1 for use with LPG and or any fire department regulations and/or local bylaws applicable to the area.

If in doubt, check with the relevant authority before continuing with the installation. Once an installation is complete you are required to brief, in full, the operational and safety functions of the unit.



DEWHOT

COMMITMENT TO QUALITY



Register your product

warrantyportal.dewhot.com

Track your product journey by registering your profile and products on our portal. This will also give you the ability to log faults, view terms & procedures or talk to a technician

The Dewhot Difference
We care, we share, we evolve

