



## Hurlcon Gas Fired Hydronic Heating Boiler HW130 & HW160 Modulating Models

# INSTALLATION AND OPERATING INSTRUCTIONS



**(EXTERNAL MODELS)**

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## INDEX

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INTRODUCTION.....	3
NOTICE TO INSTALLERS.....	3
MODELS AVAILABLE.....	4
STANDARD EQUIPMENT.....	4
INSTALLATION.....	5
SAFETY RULES.....	5
GUIDE TO INSTALLATION.....	6
CLEARANCES.....	7
ELECTRICAL CONNECTION.....	7
BOILER DIMENSIONS.....	8
INDOOR INSTALLATION.....	8
HEATING PIPE SIZE & LAYOUT.....	8
SIZING OF PRESSURE VESSEL.....	9
COMMISSIONING.....	9
STARTING BOILER.....	9
TESTING BURNER PRESSURE.....	10
FLOW SWITCH .....	11
CENTRAL HEATING CONTROLLER .....	12
OPERATING INSTRUCTIONS.....	12
ENERGY SAVING TIPS.....	12
MAINTENANCE.....	13
CENTRAL HEATING THERMOSTAT INSTRUCTIONS .....	13
GAS CONVERSION.....	14
.....	15
BURNER CONVERSION.....	15
.....	16
GAS PIPE SIZING TABLES.....	17
TROUBLESHOOTING.....	18
HW130 – HW160 WIRING DIAGRAM.....	19
ONE YEAR LIMITED WARRANTY.....	20
<b>MOUNTING INSTRUCTIONS .....</b>	<b>21</b>

## INTRODUCTION

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Congratulations on your purchase of a Hurlcon HW130 - HW160 Series Modulating Hot Water Boiler. Correct installation and service of your new heating system and correct chemical maintenance of the water will ensure years of service. The HW130 - HW160 Series Boiler is a compact lightweight and efficient gas fired hot water boiler.

The Hurlcon HW Boiler is a wall mounted induced draught atmospheric boiler with inbuilt flue for outdoor operation. The power output is controlled by an integrated electronic controller to maintain the set point water temperature over a wide load range. In addition, the Hurlcon HW Boiler is equipped with electronic ignition. The room thermostat display tells at a glance the operational status of the boiler. The boiler application (radiator or floor coil) is selectable via jumper settings on the boiler controller.

**Note:**

The appliance is not intended for use by young children or infirm person without supervision. Please ensure that young children are supervised to ensure that they do not play with the appliance.

## NOTICE TO INSTALLERS

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This is a Wall Mounted - External – Hot Water Heating Boiler  
For use with Natural Gas or LP Gas as per the attached data label.

*The information below is given to assist the installer with the installation of this range of HW130 – HW160 Boilers. Please read it carefully in order to make the installation as easy as possible and to ensure the system works well and conforms to the necessary government regulations.*

**PLEASE READ THESE INSTRUCTIONS BEFORE STARTING THE INSTALLATION.**

**THIS APPLIANCE MUST BE INSTALLED BY AN AUTHORISED PERSON ONLY.**

This boiler is to be installed and serviced to the requirements of the  
Local Building, Gas, Water and Electricity Authorities.

These instructions are to be held by the owner / user after installation.

**THIS APPLIANCE IS UNSUITABLE FOR USE AS A POOL HEATER**

This appliance must be installed in accordance with the installation instructions, local gas fitting regulations, the AGA Installation Code AS5601 / AG 601 and any other relevant statutory authorities.

Refer to data plate for details of gas type, gas consumption and burner pressure.

## MODELS AVAILABLE

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Details	Model HW130 Modulating	Model HW160 Modulating
Height	905	
Width	520	651
Depth	325	
Gas input	105.5 (95) MJ	145 (135) MJ
Gas type	Natural & (L P Gas)	
Nom output	24 (21) kW	35 (32) kW
Ignition system	Electronic Ignition	
Heat exchanger/burner	All copper/stainless steel	
Boiler Thermostat	SIT (modulating)	
Pressure relief	300kPa (3 Bar)	
Expansion vessel	7 litre diaphragm (~60lt system)	
Circulator	In line Centrifugal Pump	
Hi limit Thermostat	99 °C	
Run on timer	Timed electronic	
Pressure reduction valve	1 Bar pre-set	
Packed weight	50kg	60kg

## STANDARD EQUIPMENT

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### Electronic boiler control with linking room thermostat.

- Set temperature display.
- Electronic ignition

### Safety devices

- Built in flow switch
- Manual reset high limit
- Built in pressure relief valve

### Built to last

- Double row heat exchanger made from one piece extruded finned copper tube
- Stainless steel burners
- Fully powder coated steel cabinet
- Stainless steel flue terminal

### Efficiency

- Hot surface ignition
- Induced draught combustion
- Highly efficient stainless steel burners
- Modulating input gas burner

### Ease of installation

- Fully plumbed ready to go, including circulating pump, expansion tank, pressure reduction valve & 1" flow and return isolation valves.
- All electrical pre wired including three pin plug.

## INSTALLATION

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THIS APPLIANCE MUST BE INSTALLED BY AN AUTHORISED PERSON.

Refer to boiler data plate for specifications of gas type, gas consumption, burner pressure and water pressure.

This appliance must be installed in accordance with local regulations and A.G.A. Installation Code AS5601 / AG 601.

The flow and return connections are located on the bottom of the boiler. The flow and return connections are clearly marked and the connections are 1" BSP FI.

The Hurlcon Boiler is fitted with a built in flow switch and will not start unless full of water and the pump is operating.

The Hurlcon Boiler incorporates a powered flue terminal suitable for outdoor installation. An indoor room sealed model combined with co-axial flue kit for internal installation is available on request.

## SAFETY RULES

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For your safety – read before lighting

This appliance is equipped with an ignition device, which automatically lights the burner. Do not try to light the burner by hand.

BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

### Safety

#### **WHAT TO DO IF YOU SMELL GAS**

- Do not try to light any gas appliance.
- Do not touch any electrical switch.
- Turn off the gas supply at the gas meter.
- Immediately call your gas supplier or licensed gas fitter.

**NOTE. Some gases are heavier than air and it may be necessary to smell for leaks at floor level.**

### House keeping

- Do not store or use flammable liquids or chemicals near this appliance.
- Do not use aerosols in the vicinity of this gas appliance.
- Keep this appliance free of debris.

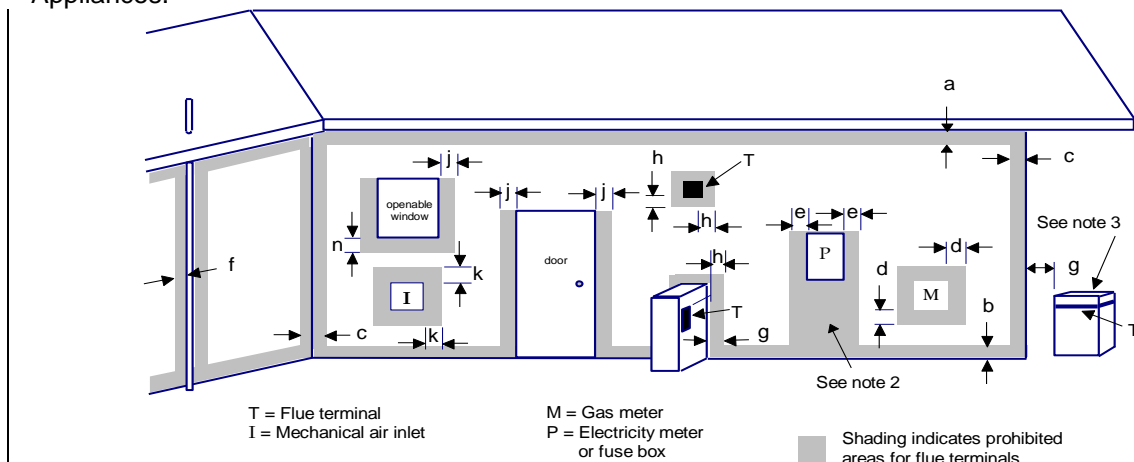
#### **WARNING:**

Should overheating occur or the gas supply fail to shut off, turn off the manual gas control valve to the appliance. Do not use this boiler if any part has been under water.

## GUIDE TO INSTALLATION

### Location of Flue Terminals – An extract from AG 601

Minimum Clearances Required For Powered Flue, Balanced Flue Terminals or the Terminals of Room Sealed Appliances.



### MIN. CLEARANCE (mm)

A	Below eaves, balconies and other projections	
	Appliances up to 50 MJ/h input	200
	Appliances over 50 MJ/h input	300
B	From the ground, <a href="#">above a balcony or</a> other surface	300
C	From a return wall or external corner	500
D	From a gas meter (M)	1000
E	From an electricity meter or fuse box (P)	500
F	From a drain pipe or soil pipe	75
G	Horizontally from any building structure (unless appliance approved for closer installation) or obstruction facing a terminal	500
H	From any other flue terminal, cowl, or combustion air intake	300
I	Horizontally from an openable window, door, non-mechanical air inlet, or any other opening into a building with the exception of - sub-floor ventilation	
	Appliances up to 150 MJ/h input	300
	Appliances over -150 MJ/h but less than -200 MJ/h input	500
	Appliances over 200 MJ/h input	1500
	All fan-assisted flue appliances, in direction of discharge	1500
K	From a mechanical air inlet, including a spa blower	1000
N	Vertically below an openable window, non-mechanical air inlet, or any other opening into a building with the exception of -sub-floor ventilation	See table

### CLEARANCE 'n' (mm)

Space heaters	All other appliances		
Up to 50 MJ/h input	Up to 50 MJ/h input	Over 50 MJ/h & up 150 MJ/h	Over 150 MJ/h input
150	500	1000	1500

### NOTES:

- All distances are measured to the nearest part of the -terminal.
- Prohibited area below electricity meter or fuse box extends to ground level.
- See Clause 5.13.6.6 for restrictions on a flue terminal under a covered area.
- See [Appendix -J](#), Figures J1(a) and J2(a), for clearances required from a flue terminal to an LP Gas cylinder. A flue terminal is considered to be a source of ignition.

The above information is part of AG 601 FIGURE 5.3 as supplied by the AGA and is provided as an indication of the correct clearances only. Please refer to the latest issue of AG 601.

## CLEARANCES

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The boiler must not be installed against any combustible surface.  
Clearances must comply with AS5601 / AG 601.  
Clearances from surfaces are:

Front	500mm
Both sides	50mm
Above	300mm
Below	900mm

## ELECTRICAL CONNECTION

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The boiler is supplied with a standard 10 amp 3 pin plug for connection to a 240V 10 amp earthed GPO. The boiler incorporates a 240/24 VAC transformer which supplies power to the central heating thermostat only and must not be used for any additional equipment. All equipment connected to mains power should be protected by an RCD circuit breaker. The boiler has a 240 volt power supply for the pump, fan and gas valve control. A terminal strip is provided for connection to the central heating thermostat.

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a suitably qualified person in order to avoid a hazard.

## GAS CONNECTION

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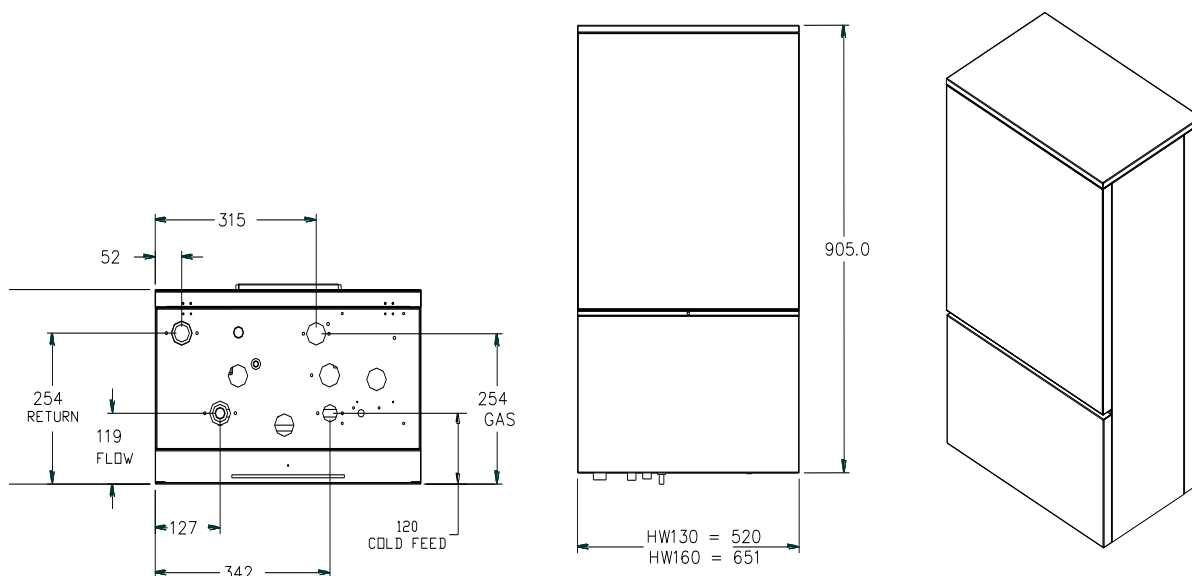
A ¾" BSP FI is provided for gas line connection. An approved manual shut off valve must be installed in the gas fitting line before the boiler so that the gas can be turned off and the boiler removed for servicing if required. The gas shut off valve should be sized the same as the gas fitting line to prevent excessive pressure drop in the gas pipe.

The gas fitting line should be installed by an authorised person and comply with local regulations and A.G.A. code AGS5601. The gas line from the meter will usually be of a larger size than the gas inlet connection. Therefore a reduction to the boiler connection fitting will be necessary. The reduction should be as close to the boiler as possible.

Before using the boiler, test all connections for gas leaks using soapy water.

The boiler gas valve has a built in pressure regulator with a 1/8" pressure test point provided. On starting the boiler, a manometer must be used and burner pressure checked against the boiler data plate. The gas valve regulator may need adjustment to correct manifold pressure. Incorrect burner pressure may void warranty.

## BOILER DIMENSIONS



## INDOOR INSTALLATION

This boiler is designed for outdoor use only. If the HW130 - 160 Boiler is to be installed indoors, a dedicated indoor model with special flue kit is available.

## HEATING PIPE SIZE & LAYOUT

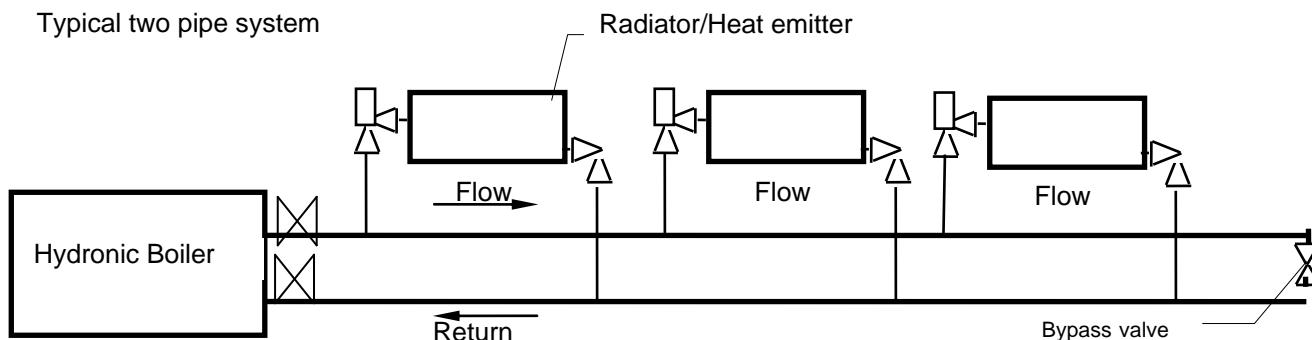
- The flow & return connection sizes of 1" BSP on the boiler are not necessarily the correct pipe sizes for the heating system. It is important that the pipe sizes are correctly calculated before installation.
- Hurlcon recommend a two pipe system with the pipes sized according to the flow requirements and length of runs with a maximum water velocity of 1.5 M/s.
- Reference The Institute of Plumbing Australia. - "SELECTION & SIZING OF COPPER TUBES FOR PIPING SYSTEMS".

Nominal flow capacities

Model	Output	Flow rates	DT	pd	min Pipe dia	F & R length
130	24 kW	0.38 l/s	15 oC	8 kPa	20 mm	6.0 m
160	35 kW	0.53 l/s	15 oC	14 kPa	25 mm	4.5 m



## Typical two pipe system



### Notes

1. An automatic heating bypass valve should be fitted to maintain adequate flow rate through the boiler when thermostatic valves are fitted and or when the majority of radiators are required to be turned off for long periods of time.
2. Any pipe work that is in an unheated area such as under the floor or in the ceiling space should be suitably insulated to prevent heat loss and possible freezing of the pipes.
3. The pipe work should be graded to facilitate the elimination of air at the highest point and the draining of the system at the lowest point. Provide air bleeds and drains at these points.

## SIZING OF PRESSURE VESSEL

If the total water capacity of the heating system is greater than 60 litres then an additional pressure vessel should be fitted. An approximate figure can be calculated from the following table. An additional tank can be fitted at a convenient location on the system if required.

Item	Capacity litres	per
Therma rad Radiators	0.70	kW
Thermaboard single	0.22	metre
Thermaboard double	0.44	metre
Copper tube 25 mm	0.44	metre
Copper tube 20 mm	0.23	metre
Copper tube 15 mm	0.10	metre

## COMMISSIONING

### STARTING BOILER

- Fill system with water and purge all air from system and pump.
- Purge gas line of any air and wait five minutes for gas to clear.
- Plug three pin plug into a suitable power point and switch on.
- Raise required room temperature on central heating thermostat until heating symbol is displayed.
- Pump should start.
- After 30seconds, the burner should ignite. (Do not light by any other means.)
- If the burner fails to light, the boiler will retry 3 times. To reset boiler press blue reset button located on lower electrical enclosure in boiler.. (See Trouble shooting page 19.)
- Allow boiler to run. Check there are no leaks and there is flow to all of the system.

## TESTING BURNER PRESSURE

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### Maximum and minimum burner pressures

- Tools required
  - Small flat screwdriver
  - 10mm spanner / socket or small shifter
  - No2 Phillips screwdriver
  - Manometer
- Burner pressures must only be checked by an AUTHORIZED PERSON.
- Maximum burner pressure must be set when water system is cool or when boiler can operate at a maximum condition until pressure is set. (Usually within first 1 – 2 minutes of operation)
- Turn boiler “OFF”.
- Open lower front door.
- Set up manometer
- Loosen screw from 1/8” test point located on burner side of gas valve.
- Connect manometer tube to test point
- Turn boiler “ON” and wait for main burner to ignite.
- Once main burner has ignited, the manometer will indicate the nominal burner pressure, adjust the maximum and minimum pressures as per the table below.
- To adjust the MAXIMUM pressure, rotate the brass nut on the gas valve solenoid, using a small shifter or 10mm spanner / socket. Turn brass nut clockwise to increase, anti-clockwise to decrease burner pressure.
- To adjust the MINIMUM pressure, With boiler running disconnect one only of the purple wires connected to the gas valve solenoid. The burner will now drop to minimum pressure. Rotate the red plastic screw on the gas valve solenoid, using a Phillips screwdriver. Turn screw clockwise to increase pressure, anti-clockwise to decrease burner pressure.
- Reconnect purple wire to solenoid. Gas pressure will now increase momentarily.
- When correct pressure is set turn boiler off.
- Remove manometer and retighten test point screw.
- Check all gas connections are tight and not leaking.
- Close front door.

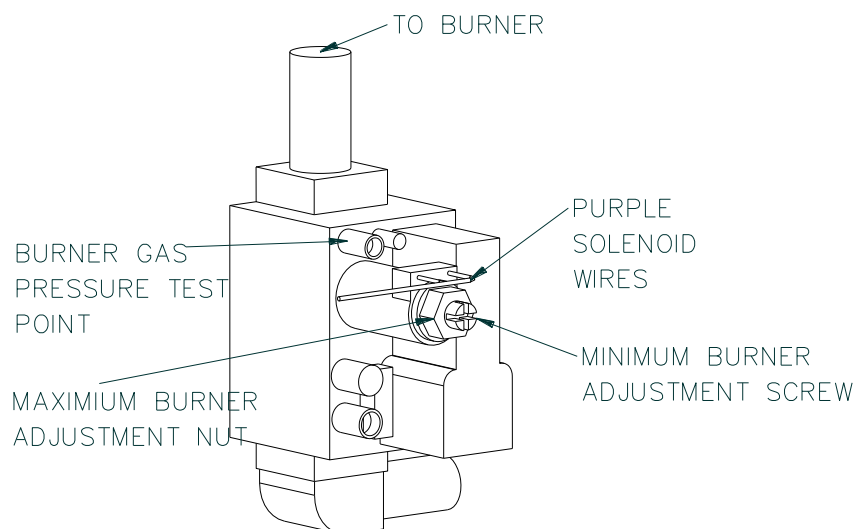
### Maximum inlet gas pressure is:

Natural Gas    3.5 kPa                  ULPG        3.5 kPa

### Nominal burner pressure is:

	<b>HW130</b> Modulating	<b>HW160</b> Modulating
<b>Natural Gas kPa</b>		
Maximum pressure	0.84 kPa max	0.84 kPa max
Minimum pressure	0.40 kPa min	0.40 kPa min
<b>ULP Gas kPa</b>		
Maximum pressure	2.00 kPa max	2.00 kPa max
Minimum pressure	0.85 kPa min	0.85 kPa min

## Gas valve detail



## Gas Specifications

### Natural Gas

	HW130	HW160
Capacity input MJ/h	105.5	145
Output kW/h	24	35
Number of Burners	14	20
Injector Diameter of Main Burners	1.3mm	1.25mm
Burner Pressure (kPa)	0.92	0.92
Hourly Gas Consumption per Burner MJ/h	7.5	7.5

### ULPG

	HW130	HW160
Capacity input MJ/h	95	135
Output kW/h	21	32
Number of Burners	14	20
Injector Diameter of Main Burners	0.79mm	0.79mm
Burner Pressure (kPa)	2.0	2.0
Hourly Gas Consumption per Burner MJ/h	6.75	6.78

## FLOW SWITCH

- The Hurlcon Boiler has an inbuilt flow switch which allows the burner to operate only when the system is full of water and the circulating pump is operating. NOTE: The installed flow switch has no user adjustments.
- Air in the system may cause the flow switch electrical circuit to open and stop the boiler from lighting.

## CENTRAL HEATING CONTROLLER

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- **80° or 45° operation.** HW modulating series boilers are factory default set to 80°. For floor heat applications the boiler can be selected for 45° max set point by a jumper on the PCB. (Jumper3 on boiler PCB set to position A). Water temperature can also be adjusted from the central heating thermostat. Press CH key then + or – to raise / lower temperature. Press CH key again to finish.
- **Language / Date settings.** Press CONFIG key to modify date, language (English or Italian).
- **Alarms.** The central heating thermostat has various alarm features to help identify faults. To reset an alarm code, remove door from boiler and press the blue reset button on the plastic electrical enclosure in the boiler.

**Wiring connections.** The central heating thermostat connects to the boiler using a 2 core low voltage cable. A maximum wire length of 20m between the boiler and thermostat is possible. A minimum conductor size of 1.0mm<sup>2</sup> is recommended.

## OPERATING INSTRUCTIONS

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- STOP! Read the safety rules on page 5 section 3.1.
- Turn off electric power to appliance.
- This appliance is equipped with an ignition device, which automatically lights the burner. Do not try to light the burner by hand.
- Wait five minutes to clear out any gas. If you then smell gas, STOP! Refer to instructions above.
- Turn on power to appliance.
- Set central heating thermostat to desired setting. Should heating be required the boiler will ignite in around 30 seconds
- If the appliance does not operate and fails to ignite after 3 attempts, and an alarm code ALL06 will appear. To retry press the reset switch located on the PCB enclosure behind the access door on the boiler. If the appliance still does not ignite, check trouble shooting on page 17 or call your service technician.

### TO TURN GAS OFF TO THE APPLIANCE

- Turn off gas tap in gas line prior to boiler.
- Turn off all electrical power to the appliance.

## ENERGY SAVING TIPS

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- During extended periods of non use, turn the boiler off.
- Set up a regular program of preventative maintenance for the boiler. Check heat exchanger, controls, burner operation etc.
- For areas where there is a danger of freezing, water should circulate through your boiler even if the heating is off.

## MAINTENANCE

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- It is recommended that the following items are professionally checked at least every six months and at the beginning of every heating season.
- Examine the flue outlet or termination cowl. Make sure there are no obstructions to the flow of air to, or flue products from, the appliance.
- Visually check the main burner and pilot flames. If the flame appears yellow, the burner should be cleaned by a qualified service technician.
- Keep the boiler area clear and free of combustibles and flammable liquids. Chlorine should not be stored in the vicinity of the boiler. Chlorine vapours, when drawn through a boiler, can rapidly cause corrosion of the heat exchanger.
- Keep the boiler area free from garden refuse and debris. This will help prevent insects nesting in the unit and ensure extended life and reliability of your boiler.

## CENTRAL HEATING THERMOSTAT INSTRUCTIONS

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- The Hurlcon HW Modulating boiler has been designed to work in conjunction with the Model 582 HRC central thermostat. The central thermostat, boiler control PCB and gas valve control all work together to maintain room temperature, water temperature and gas valve modulation control.
- Central thermostat Instructions are also supplied loose located in the thermostat packaging. Please retain for future use.

## OPERATION

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The sequence of events once the boiler has been correctly installed with the room thermostat and burner turned off.

Event	Result
Turn on electrical power to the boiler	Controller powers up and completes test procedure.
Turn on central thermostat .	Pump starts up. Ignition sequence begins; checks water flow, high limit and flow temperature against set temperature. Fan starts – air pressure switch is activated. Burner lights. Burner indicator on.
Water flow nears water set temperature.	Burner modulates down to try to maintain set output temperature.
Water flow reaches set temperature.	Burner turns off.
Water flow temperature falls 1°C (adjustable) below set temperature.	Burner relights. Burner indicator on.
Water flow temperature reaches 99°C	High limit switch opens, burner shuts down. Pump continues to run.
Controller turned off	Burner shuts down.
Room thermostat switches off	Burner shuts down.
Room thermostat switches on	Pump restarts, burner ignites.
Water flow stopped by external control	Flow switch de-activates, burner turns off and pump continues to run.
Water flow is reinstated	Flow switch reactivates, burner re ignites. Flow indicator on.





## 582 HRC

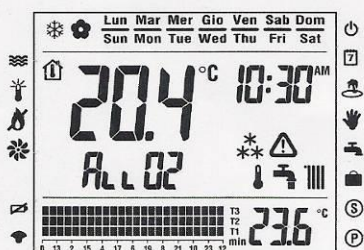
### USE AND INSTALLATION INSTRUCTIONS

#### ENGLISH

Read the instructions before use. This appliance must be installed in accordance with the rules in force.

582 HRC is the new SIT remote control device for the comfort of your house. Besides controlling and setting room temperature function, you may adjust the activity of your central heating boiler directly from the HRC panel. The maximum potential is achieved when the same central heating boiler is equipped with the SIT 0.550.032 - 0.550.036 control device.

#### General description



	Stand-by		Alarm
	Automatic		Water anomaly (lighted) loading (pulse)
	Comfort		Heating system sensor anomaly
	Manual		Flame anomaly
	DHW Only		Flue anomaly
	Holiday		Low battery
	Progr. / Config.		No connection
	Secondary heating on		Room temperature
	Primary heating on		1 <sup>th</sup> level of room temperature
	Hot water request		2 <sup>th</sup> level of room temperature
	Winter program		3 <sup>th</sup> level of room temperature
	Middle season program		Minimum level of room temperature
	Hot water or heating set		Antifreeze request

#### Preliminary operations

The remote control must be used exclusively with SIT 0.550.032 boiler control device.

The installation is wall mounted. It is possible to remove the device to replace the batteries.

The packaging includes: 2 fixing screw anchors, the controller, the adapter for wall mounting, the Use and Installation Instructions and 4 batteries (LR6 AA - 1,5 V).

#### 1. Wall mounting

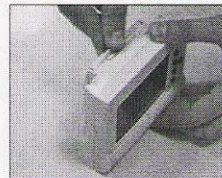
Install the controller 1.5 m above floor level, well away from heat sources, doors or windows.

For the electrical connections the adapter is provided with a hole on the rear of the body to enable cable routing.

The connection leads to the heating system must be less than 20 m.

**Warning:** disconnect power supply of the boiler before installing the HRC remote control.

- Detach the adaptor from the body of the HRC by pressing the small arch above the controller.



- Use a cross head screwdriver to remove the two screws in the case to access the electronic board in the adapter.

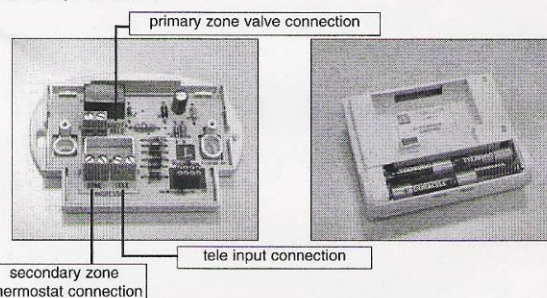
- Mark on the wall the points of the fixing holes and fix the template, using the mounting hardware supplied with the HRC. Make sure that the outlet cable of the heating appliance corresponds to the hole in the adapter and fix the adapter on the wall.

- Connect the boiler wiring cables to the terminal board in the adapter in accordance with the wiring diagram. All the connections are nonpolarized.

**Caution:** Electrical shock or equipment damage can occur if all the electrical connections are not correctly installed.

- Remove the cover and insert 4 alkaline LR6 AA 1.5 V batteries with the correct polarity in the proper slot.

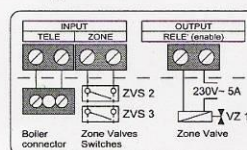
- The batteries are necessary to assure the correct working of HRC during a main electrical power failure.



- Fix the adapter on the template on the wall using the the supplied screws.

- Fit the HRC body on the adapter. With your hand push the remote control until the connection is made.

The remote control operates the valve of the zone 1 switching the Normally Open contact. See zone electrical diagram below.

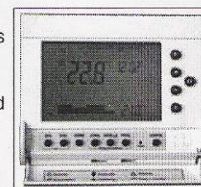


#### 2. Language/date/hour setting

Open the lower door and press the **CONFIG** key.

In this way you enter in the configuration procedures mode.

The single option during the configuration flashes. Select with the keys **+** and **-** until the expected value is shown, then confirm using the key **OK**. Now the following option is shown.



Several options are shown in sequence:

italian/english language, day of the week, hour, minutes, 0-24 or AM PM.

Press again the **CONFIG** key to terminate the setting.



### 3. Functional mode selection

Using the key **M** is possible to change the functional mode shown by the symbol on the right of the display.



**STAND-BY mode.** All the services are disabled, while alarm and supervision functions stay active.



**AUTO mode.** The heating/hot water /zone functions are enabled. The heating function is activated according to the pre-set program. The hot water and zone functions are activated according to the requests. The current set temperature is shown on the lower right corner of the display.



**COMFORT mode.** The heating temperature request goes to the maximum pre-set program or at the value selected with the key **+** and **-**. At the next change of temperature selected by program, the remote control goes back to AUTOMATIC mode. The hot water and zone functions are enabled.



**MANUAL mode.** The heating function is activated by the pre-set temperature request which is shown on the lower right corner of the display. To modify temperature press **+** and **-** keys. The hot water and zone functions are enabled.



**DHW only or SUMMER mode.** Only the hot water function is activated. Heating and zone services are off.



**HOLIDAY mode.** All the services are off, however the minimum temperature is guaranteed (anti-frost temperature). Alarm and supervision functions stay active. At the end of the day shown on the lower right corner of the display the remote control goes in AUTO mode. Press the **+** and **-** keys to set the number of the days of holiday mode (maximum number 99)

**NOTE:** The system and boiler anti-frost function is assured in each mode. In setting mode, by depressing the **S** key it is possible to see the pre-set program of the first or of the second half of the day.

### 4. Programming

It is possible to set the HRC, changing the temperature up to every half an hour. There are three different temperature levels and one minimum temperature settable (off).

$5^{\circ}\text{C} \leq T1, T2, T3 \leq 30^{\circ}\text{C}$  OFF/ $0^{\circ}\text{C} \leq \text{min} \leq 25^{\circ}\text{C}$  with  $\text{min} < T1 < T2 < T3$

If the minimum level is assigned to the OFF value, the boiler is not activated until the room temperature goes down to  $0^{\circ}\text{C}$ .

Open the door and depress the **PROG** key.

Two different programs shown by the and symbol are settable.

Depress the **+** and **-** key to show the program you want to set.

It is suggested to set the program with the required set for full winter season and the program for the middle seasons (spring and autumn).

In the bottom of the display is shown the graphical indication of the program.

#### 4.1. Program personalization

For each day of the week it is possible to set a differentiated program changing up every half an hour.

When you have chosen the program to personalize, depress the **OK** key.

Depressing the **M** key the days to program are shown in sequence and are highlighted by a small bar below the selected day.

Using **+** and **-** keys it is possible to set the chosen half hour. Then, pressing the **S** key, it is defined the temperature level in that half hour between min, T1, T2 and T3. In the bottom of the display it is shown graphically the chosen level.

Repeat the procedure to set the next half an hour. To repeat the program on a given temperature level to next half an hour depress the **PASTE** key.

To repeat the program on a given day to other days, chose with **M** key the day in which the program is correct; press the **COPY** key, and move with **M** key in the day you want to paste the same program, and then press the **PASTE** key.

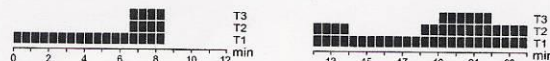
#### 4.2. Temperature level setting

To set the min, T1, T2 and T3 levels it is necessary to press the **PROG** key and press twice the **OK** key. The value to set is shown in the lower part of the display.

Use the **S** key to see the temperature set for each level. Every temperature may be changed using the **+** and **-** keys.

T1, T2, T3 settable between  $5^{\circ}\text{C}$  and  $30^{\circ}\text{C}$ .  
min settable between  $0^{\circ}\text{C}$  and  $25^{\circ}\text{C}$  or at OFF.

Note:  $\text{min} < T1 < T2 < T3$



### 5. Hot water and heating temperature setting

This function is enabled only if the no connection alarm is absent.

#### HOT WATER temperature setting

Press **DHW** key and then press the **+** and **-** key to reach the desired temperature value shown on the lower right corner of the display, then press **DHW** key again

#### HEATING temperature setting

Press the **CH** key and then the **+** and **-** key to reach the desired temperature value shown on the lower right corner of the display, then press **CH** key again.

### 6. Alarms and anomalies



ALL 01: Flue thermostat on



Alarm



ALL 02: water pressure switch on (\*)



No connection



ALL 04: hot water sensor anomaly



Low battery



ALL 05: heating sensor anomaly



Temperature sensor error



ALL 06: ion blocking alarm



Generic anomaly

The batteries are drained if the indication of temperature is shown on the display as "----".

(\*)

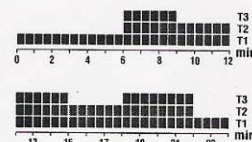
If the boiler is equipped with a remote filling water system, in case of water anomaly press continuously the key **REFILL** and wait for the disappearance of alarm icon .

### 7. Initial parameters and default condition

SET: min =  $6^{\circ}\text{C}$   
T1 =  $16^{\circ}\text{C}$   
T2 =  $18^{\circ}\text{C}$   
T3 =  $21^{\circ}\text{C}$   
manual =  $21^{\circ}\text{C}$

LANGUAGE = italian  
TIME = 0 - 24

Daily WINTER and MIDDLE SEASON  
preset program



To activate the default procedure press in series the **CONFIG** key, then for 5 times the **OK** key and for 1 time the **+** key (or alternatively the **-** key). The sign **RESET** will be shown on the display. Then press using a pencil the **RESET** key in lower right place.

### Technical data

Degree of protection:	IP20 when installed on the wall
Dimensions:	L:132 mm x H:105 mm x W:43 mm
Batteries:	4 alkaline LR6 AA - 1.5V
Operating temperature:	$0^{\circ}\text{C} \div 40^{\circ}\text{C}$
Storage temperature:	$-10^{\circ}\text{C} \div 50^{\circ}\text{C}$
Battery life:	$\geq 1$ year
Use:	only in daylight or electrical light
Max distance of connection:	20 m
Reading accuracy:	$0.1^{\circ}\text{C}$ between $-10^{\circ}\text{C}$ and $50^{\circ}\text{C}$
Relay outlet:	5 A, 30 VDC/250 VAC
Zone input:	switching of clean contact

### 8. Cleaning

Use only a soft damp cloth.

## GAS CONVERSION

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### 6.1 BURNER CONVERSION

1. Turn off and disconnect gas supply to unit.
2. Turn off power supply to boiler.
3. Remove front access door
4. Disconnect gas supply tube from burner manifold.
5. Remove burner top bracket. Remove Right Hand Side Shield. Remove left hand side shield.
6. Remove burner lower shield.
7. Remove the four Phillips head screws securing the burner at the end of the manifold tube to combustion chamber support angles.
8. Slide burner out.
9. Remove burner injectors and replace with desired gas type injectors.
10. Remove enclosure cover from boiler control PCB located in the R/hand lower section of the boiler.
11. Move Jumper 1 on the PCB to the correct gas type. Nat Gas – J1 not mounted. (Pos A).
12. ULPG – J1 mounted. (Pos B).
13. Refit electrical enclosure cover.
14. Re-install burner assembly and refit panels.
15. Reconnect the gas supply.
16. Modify / replace data labels and gas valve type label.
17. Check gas system for leaks.
18. Commence lighting procedure as described above.
19. Adjust burner pressures as described in previous section of manual.
20. NOTE: It is imperative that all shields are refitted for correct burner operation and combustion, incorrect re-assembly could void warranty

HW130 Modulating Boiler		
GAS TYPE	INJECTOR SIZE	BURNER PRESSURE
NATURAL	1.30 mm	0.92 kPa max 0.40 kPa min
ULPG	0.79 mm	2.00 kPa max 0.90 kPa min

HW 160 Modulating Boiler		
GAS TYPE	INJECTOR SIZE	BURNER PRESSURE
NATURAL	1.25 mm	0.92 kPa max 0.40 kPa min
ULPG	0.79 mm	2.00 kPa max 0.90 kPa min



## 6.2 GAS PIPE SIZING TABLES

<b>Natural gas at 1.13 kPa gas meter pressure</b>					
<b>VICTORIA</b>					
<b>Maximum run of copper pipe with average number of fittings</b>					
Model	20 mm	25 mm	32 mm	40 mm	50 mm
HW130	4 m	25 m	90 m	260 m	320 m
HW160	2 m	14 m	50 m	140 m	320 m

<b>1.25 kPa gas meter pressure</b>					
<b>S.A., W.A., some areas N.S.W.</b>					
<b>Maximum run of copper pipe with average number of fittings</b>					
Model	20 mm	25 mm	32 mm	40 mm	50 mm
HW130	18 m	85 m	300 m	320 m	-
HW160	10 m	45 m	160 m	320 m	-

<b>2.75 kPa gas meter pressure</b>				
<b>N.S.W. some areas, some new areas of Victoria.</b>				
<b>Maximum run of copper pipe with average number of fittings</b>				
Model	15 mm	20 mm	25 mm	32 mm
HW130	12 m	100 m	320 +m	-
HW160	8 m	65 m	260 m	320 +m

NO allowance has been made for other appliances connected to the gas main. This information is supplied as an indication of the capacities only. Refer to the latest issue of AG601 for full details.

## 7.0 TROUBLESHOOTING

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<b>BOILER WILL NOT LIGHT</b>	
<b>Possible cause</b>	<b>Remedy</b>
Automatic ignition system fails	Check gas is connected and on.
Pump not running	Check pump and flow switch
Pump air locked	Air bleed system & pump bearing
Flow switch open	Air bleed system. Check continuity
Defective gas control	Shut off gas supply and call for service
Thermostat turned off	Turn on
Set temperature lower than water temperature	Increase set temperature
Water too hot-fault condition displayed	Refer to fault indication table
High Limit Thermostat open	Reset high limit , Bleed air from system
Insufficient water flow	Check for too many valves turned off
<b>BOILER MAKING KNOCKING NOISES</b>	
<b>Possible cause</b>	<b>Remedy</b>
Boiler operating after pump has shut off	Shut off gas supply and call for service
Heat exchanger scaled	Shut off gas supply and call for service

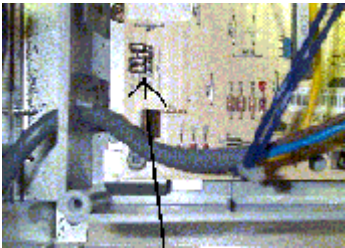
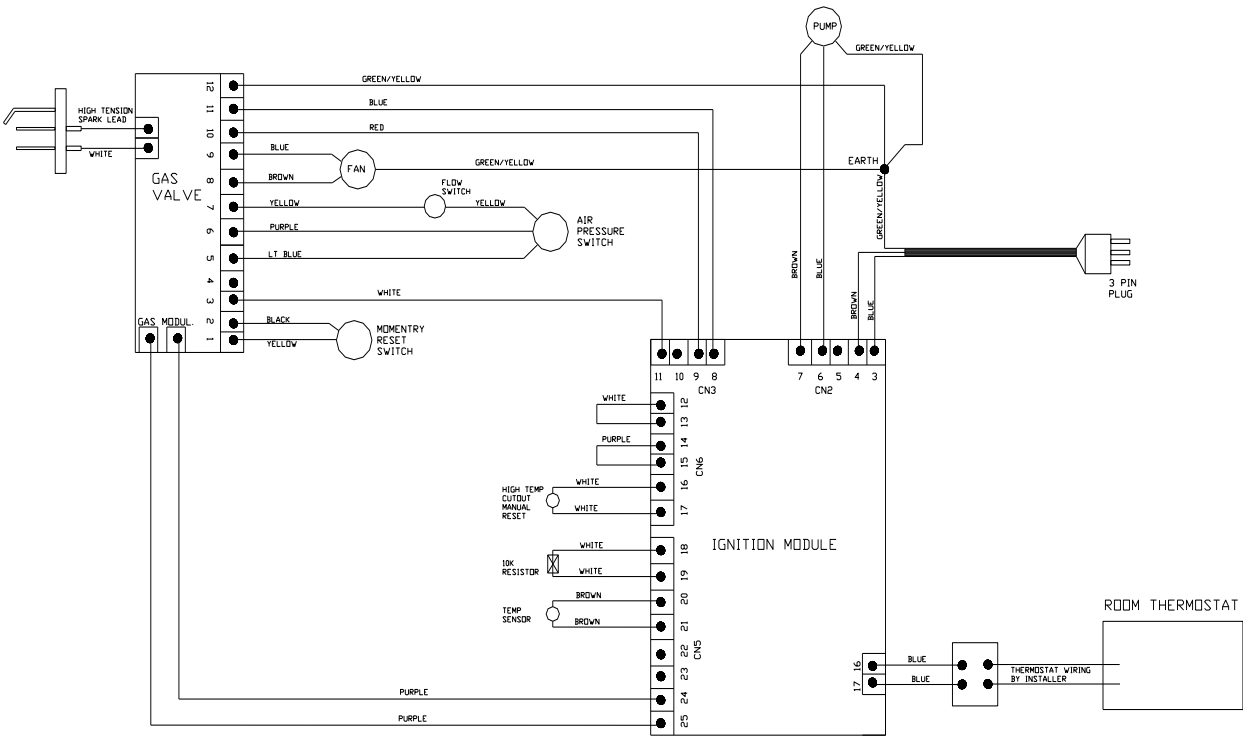
If the boiler cannot be made to perform correctly, please contact the Hurlcon Service Office closest to you.

For	VICTORIA:	Phone (03) 8796 8600
	NEW SOUTH WALES:	Phone (02) 9853 2100
	QUEENSLAND:	Phone (07) 3308 5400
	SOUTH AUSTRALIA	Phone (08) 8152 7600
	WESTERN AUSTRALIA	Phone (08) 9350 2600

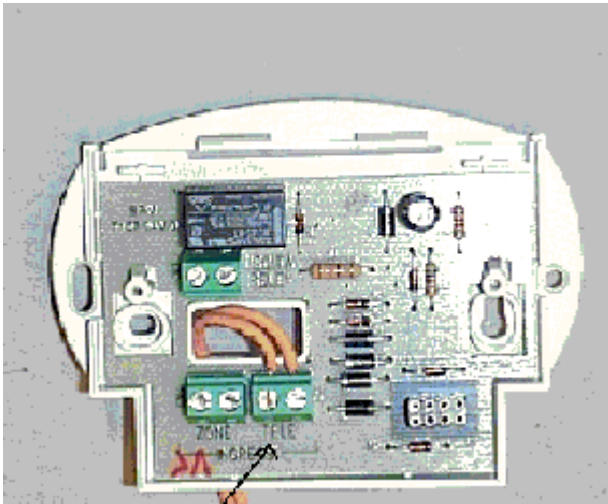
For all other areas, please contact our Victorian office.

# 8.0 HW130 – HW160 WIRING DIAGRAMS

## 8.1 MODEL HW130 – HW160 Modulating Boilers



JUMPER LOCATIONS



ROOM THERMOSTAT CONNECTIONS

## 9.0 ONE YEAR LIMITED WARRANTY

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### GENERAL CONDITIONS

Hurlcon cover your boiler with a limited 1 year warranty against defective materials and workmanship from the date of purchase (plus 30 days to allow for installation). The heat exchanger, burner and cabinet are covered by a five year limited warranty (plus 30 days to allow for installation). Proof of purchase date must be provided in order to substantiate warranty claim.

The warranty includes 12 months in field labour costs where the boiler is installed in a capital city metropolitan area. Labour charges apply to boilers installed outside of these areas. Any costs for transport of faulty or replacement parts, removal or reinstallation are the owner's responsibility.

Hurlcon assumes no liability for consequential damages of any kind.

Like your motor vehicle, your new boiler requires periodic service and maintenance to keep it operating in top condition and at maximum efficiency. An annual service by one of our qualified service technicians is highly recommended.

### LIMITATIONS

All warranties only apply if the boiler is installed and operated in complete compliance with the installation and operating instructions. The warranty shall not apply to any boilers or parts that have been subject to accident, negligence, alteration, abuse or misuse.

### ADDITIONAL WARRANTY EXCLUSIONS:

This warranty does not cover failures or malfunctions resulting from:

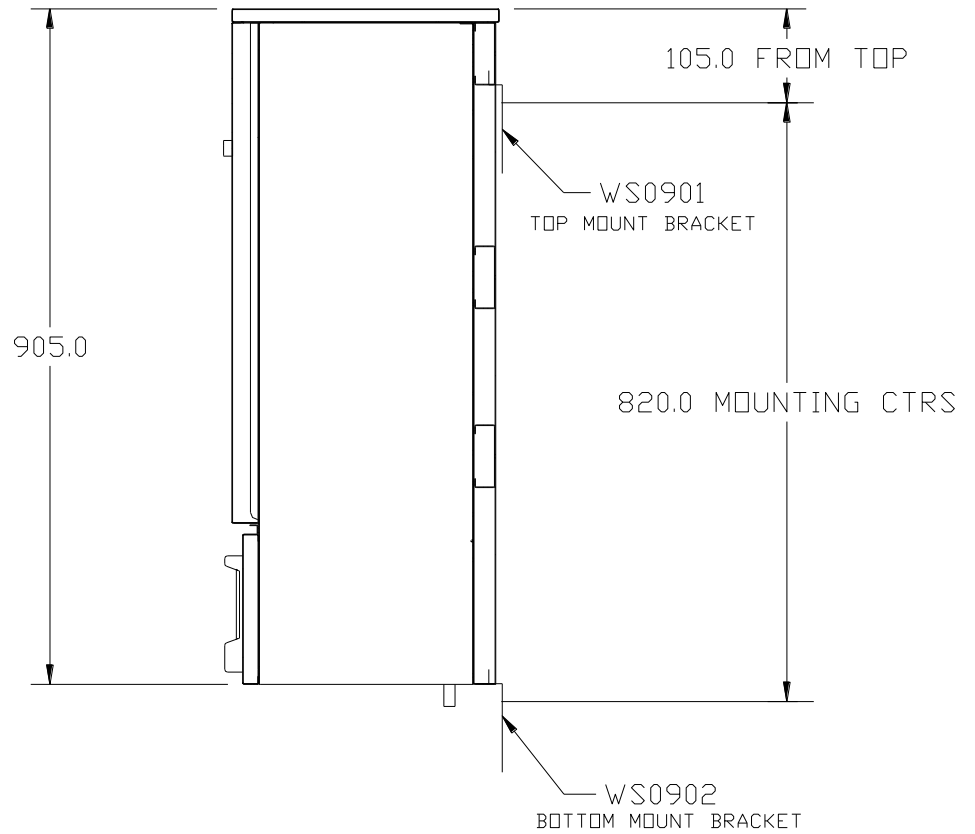
- Failure to properly install, operate or maintain the boiler in accordance with our printed instructions provided.
- Abuse, alteration, accident, fire, flood and the like. Examples of misuse or neglect include, but are not limited to, physical damage from external force, not following installation instructions, leaving door off for extended periods of time, inappropriate application of the boiler, etc.
- Scaling, freezing, or other conditions causing an inadequate water circulation.
- Incorrect gas pressure or gas supply.
- Incorrect or excessive flow rate of water.
- Failing to correctly bleed water system of air.
- Chemical contamination of combustion air or use of chemical additives to the water.
- Printed Circuit Boards: This item is warranted against all claims except for power surges, lightening strikes, wilful damage or water damage

No person is authorised to make any warranties on Hurlcon's behalf. To place a service call, contact your nearest Hurlcon office.

## 10.0 MOUNTING INSTRUCTIONS

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Mark the fixing hole locations for the top mounting bracket at the desired height. Mark the fixing hole locations for the bottom mounting bracket with the holes at 820mm centres. Securely fix the top and bottom mounting bracket (WS0901) (WS0902) to the wall. Lift the boiler over the bracket sliding the bracket lugs into the slots in the boiler.







HURLCON HEATING Pty. Limited. A.B.N. 97 007 284 504  
www.hurlconheating.com.au email: service@hurlconheating.com.au  
Information and specifications subject to change without notice.

<b>Victoria:</b>	<b>New South Wales:</b>	<b>Queensland:</b>	<b>South Australia:</b>	<b>Western Australia:</b>	<b>Gold Coast:</b>	<b>Townsville:</b>
Ph: (03) 9554 2275	Ph: (02) 9853 2100	Ph: (07) 3308 5400	Ph: (08) 8152 7600	Ph: (08) 9350 2600	Ph: (07) 5552 2600	Ph: (07) 4750 3100
Fax: (03) 9554 2272	Fax: (02) 98532170	Fax: (07) 3308 5470	Fax: (08) 8152 7670	Fax: (08) 9350 2670	Fax: (07) 5552 2670	Fax: (07) 4750 3170