


Jacuzzi®

J-HN250C, J-HN400C Heater

Installation and Operating Instructions




 **WARNING:** BEFORE INSTALLING THIS PRODUCT. READ AND FOLLOW ALL WARNING NOTICES AND INSTRUCTIONS ACCOMPANYING THIS HEATER. FAILURE TO FOLLOW SAFETY WARNINGS AND INSTRUCTIONS CAN RESULT IN SEVERE INJURY, DEATH OR PROPERTY DAMAGE

INTRODUCTION

Congratulations on your purchase of a Jacuzzi® J-HN Series Pool and Spa Heater. Proper installation and service of your new heating system and correct chemical maintenance of the water will ensure years of enjoyment. The Jacuzzi® J-HN Series Heater is a compact lightweight and highly efficient gas fired pool and spa heater. It is equipped with features that take advantage of new technology to provide a user friendly, efficient and environmentally friendly pool or spa heater.

The Jacuzzi® J-HN Series heater can safely be connected to PVC pipe. It accepts a wide range of water flow rates from as little as 3 l gallons per minute making it perfectly suitable for energy efficient variable speed pool and spa pumps. In addition, it is equipped with electronic start up and an accurate electronic thermostat to ensure ease of use and accurate temperature control. The electronic display shows at a glance the operational status of the heater.

 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

 This appliance must be installed by an authorized person.

This appliance must be installed in accordance with the installation instructions, local gas fitting regulations,

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


For a heater in which no provision is made for a vent permanently open between the water circuit and atmosphere a pressure relief valve must be fitted in accordance with

 **WARNING:** Electrical maintenance and repairs of this equipment must only be done by qualified persons in accordance with the latest edition of the National Electrical Code, NFPA 70 (“NEC”) and/or all applicable local and state codes and ordinances. Installations in Canada must be in accordance with the latest edition of CSA C22.1 – the Canadian Electric Code, part I (“CEC”)


Improper installation could cause an electrical hazard which may result in death or serious injury to pool users, installers or others due to electrical shock, and/or property damage. Always disconnect power to the pool pump at the house circuit breaker before servicing the pump. Failure to do so could result in death or serious injury to pool users, installers or others. To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
Australian and state regulations.

SAFETY RULES

1. Spa or hot tub water temperature should never exceed 104°F.
2. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness which could lead to unconsciousness and subsequently result in drowning.
3. Pregnant women beware! Soaking in water above 100°F during the first three months of pregnancy can cause fetus damage.
4. Before entering the spa or hot tub, the user should check the water temperature with an accurate thermometer, spa or hot tub thermostats may err in regulating water temperatures by as much as 4°F.
5. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain their physician's advice before using spas or hot tubs.
6. Persons taking medications which induce drowsiness, such as tranquilisers, antihistamines or anticoagulants, should not use spas or hot tubs.

 **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 heater if any part has been under water. 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.

 **WHAT TO DO IF YOU SMELL GAS.** Do not try to light any appliance. Do not touch any electrical switch. Do not use any telephone in your building. Immediately call your gas supplier from a neighbor's house.


 **DO NOT PLACE ARTICLES ON OR AGAINST THIS APPLIANCE**

 **DO NOT USE OR STORE FLAMMABLE MATERIALS NEAR THIS APPLIANCE**

 **DO NOT SPRAY AEROSOLS IN THE VICINITY OF THIS APPLIANCE WHILE IT IS IN OPERATION.**

 **NOTE – SERVICING SHALL BE CARRIED OUT ONLY BY AUTHORIZED PERSONNEL.**


OPERATING INSTRUCTIONS

1.  **STOP!** Read the safety information above.
2. Turn off electric power to appliance.
3. This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
4. Wait five minutes to clear out any gas. If you then smell gas, STOP! Refer to instructions above.
5. Turn filtration pump on.
6. Ensure water is flowing through the heater.
7. Turn on power to the heater and press the pool/spa button to select pool or spa mode.
8. Set thermostat to desired setting and the ON/OFF switch to turn the heater ON.
9. The heater will ignite in 60 seconds.
10. If the appliance does not operate, turn heater power supply off. Repeat instructions 5 to 7 above. If the appliance still does not ignite, call your service technician.

TO TURN GAS OFF TO APPLIANCE

1. Turn off all electrical power to the appliance.
2. Turn off gas tap in gas line prior to heater.

CHEMICAL BALANCE

 It is imperative that correct chemical balance be maintained in your pool and spa water, otherwise corrosion of your heater may occur. **Corrosion of the heat exchanger voids warranty.** Your local pool shop specialist or spa retailer can advise correct chemical balance. Your water should be checked and maintained regularly by a pool water professional. As a guide the following parameters may be used.

pH	7.2 to 7.6
Total Alkalinity (ppm)	80 to 120
Calcium Hardness (ppm)	150 to 250
Salinity (ppm)	4000 max. Excessive salt can damage your heater

You should test your water chemical balance at least on a weekly basis.

Excessive sanitiser can damage your heater. Chlorine should not exceed 3 ppm and bromine should not exceed 5 ppm. Salt chlorinators, especially when used on spa pools or indoor or covered pools, can easily produce excessive chlorine levels which will damage the heater internals.


CORROSION PREVENTION IN HEATERS

All Gas pool and spa heaters incorporate copper or copper nickel to make their heat exchangers as it is the most efficient material in transferring heat from the combustion chamber into the water. The typical life expectancy of a well maintained pool/spa heater is between 5 and 12 years.

The addition of Sanitiser (Chlorine, Bromine etc.) and other water balancing and conditioning chemicals can increase the rate of wear and tear on the heat exchanger and associated parts in your heater.

There are three most common reasons for heat exchanger corrosion which can be avoided with a little care and attention.

- 1. Excessive Sanitiser.**
This means too much Chlorine or Bromine in the water. Be careful, if the level of Chlorine or Bromine is excessively high, your test kit (and the pool shops) may not read accurately or indeed may show a nil reading. Any time a salt chlorinator is operating for extended periods (when heating the swimming pool from cold), particularly if the weather is overcast or the pool is enclosed or covered, the Chlorine level may exceed normal levels. When heating a Spa or Pool, turn the chlorinator down or off for the duration of the heating period.
- 2. Out of balance water.**
The water balance is a combination of pH, total alkalinity, Calcium hardness and temperature. Balanced water will help prevent corrosion of your heater. Balanced water should be between a pH of 7.2 - 7.6.
- 3. The addition of acid to lower pH.**
Acid must always be added in small quantities and spread over the pool surface evenly, not added in to the skimmer. Do not add a Gallon at a time, add a cup full each day to lower your pH.

 If you have a **salt chlorinated** INDOOR pool or COVERED pool be very careful of the level of Chlorine being produced. If you use a salt chlorinated spa be very careful of the level of Chlorine as the Chlorinator is usually sized for the pool and therefore should be switched off when heating the spa. Leaving the chlorinator on can raise the chlorine level very rapidly in a small volume of water.

These comments are intended as a guide only and are not definitive answers or recommendations on pool water chemistry. Astral Pool's intention is to provide a little understanding of the potential problems of water chemistry and the dangers of corrosion to heaters (and other pool equipment and fittings).

 **YOUR WATER SHOULD BE ADJUSTED & BALANCED PRIOR TO ANY CORRODED PARTS BEING REPLACED.**

DIGITAL THERMOSTAT OPERATION

DESCRIPTION

The sophisticated digital thermostat provides temperature read out, set point temperature, operating status of the heater and any fault conditions.

TEMPERATURE DISPLAY

The temperature display indicates water temperature in the inlet of the heater. Therefore the pump must be operating for an accurate pool or spa water temperature to be displayed.

Comfortable pool temperature is between 78°F and 86°F. Normal spa temperature is between 96°F and 101°F. To select your desired temperature press the up or down button repeatedly until the desired temperature is reached.

To prevent rapid cycling of the heater, the thermostat has an inbuilt time delay which prevents the heater from turning on for two minutes after the set point has been reached. If the time delay is activated, the symbol "L" will be displayed on the LCD screen on the front of the heater. This is part of normal operation.

Should a fault condition occur, the heater will lock out and prevent further heating. A lock out condition is indicated by the symbols F0 to F3. To reset a lock out condition, turn the power off for five seconds.

When the water temperature is heated to within 1 degree of the thermostat set point, the Jacuzzi® J-HN series heater burner will turn down so that the set point is not exceeded. In addition, the set point is maintained very accurately, so that when using your spa or pool, you will notice very little variation in water temperature.

POWER LOSS TO UNIT

The following will happen in event of power loss to the unit;

WHILE THE UNIT IS ON OR IN LOCK OUT MODE

The unit will turn off. If power is restored before the fan has time to stop, around 10 seconds then the unit will not light. You will need to turn off power to the unit and wait for 10 seconds or until fan has stopped and then turn the power back on. Turn the unit on if it's not already. The unit will relight.




If the power is off for more than 10 seconds or enough time for the fan to stop then the unit will turn back on and relight automatically once the power is restored.

WHILE THE UNIT IS OFF

When power is restored the unit will remain in the off mode.

DISPLAY SYMBOL INDICATION

Under fault conditions the thermostat will display a set of alpha numeric symbols to indicate the status of the heater. The meaning of each symbol and action to be taken are listed as follows:

SYMBOL	MEANING	ACTION
Temp Display	Unit has power	No Action
F0	Heater locked off, thermistor wire disconnected or water at 0 C (freeze conditions).	If water temperature reads greater than 0 C, phone for service.
F1	Thermostat reads greater than 45 C.	Allow water to cool below 40 C, turn heater off then on again.
F2	Mechanical Hi Limit greater than 43 C or 52 C and/or Low water flow	Allow water to cool below 30 C, turn heater off then on again. Make sure water is flowing through heater.
F3	Thermistor Fault.	Service required. www.Jacuzzi.com
L	Heater locked out on time delay for 2 minutes.	No Action. Heater will automatically reset after the time delay.
	Pump operating and sufficient water pressure to operate heater.	No Action.
	Thermostat calling for heat. Electronic Flame Supervision operating.	No Action.
	Burner Operating	No Action

MAINTENANCE


It is recommended that you check the following at least every six months and at the beginning of every swimming season.

1. Examine the flue outlet and panel louvers for blockages. Make sure there are no obstructions to the flow of air to or from the appliance.
2. Keep the heater area clear and free of combustibles and flammable liquids. Chlorine should not be stored in the vicinity of the heater. Chlorine and Acid vapors, when drawn through a heater, can rapidly cause corrosion of the heat exchanger.
3. Keep the heater area free from garden refuse and debris. This will help prevent insects nesting in the unit and ensure extended life and reliability of your heater.
4. Have your heater professionally inspected at least every 2 years or when used daily for 6 months each year, have it inspected once a year.

WINTER OPERATION

If the pool is not being used for a month or more, turn the heater off at the main gas isolation valve. For areas where there is no danger of freezing, water should circulate through your heater all year long even though you are not heating your pool.

It is necessary to drain the water from the heater where freezing is possible. This may be done by loosening the inlet or outlet barrel union. If the heater is below water level, isolate it from the pool first by closing shut off valves before and after the heater.

 **CAUTION:** If the heater has been drained for freezing conditions, do not turn on until the system is circulating water

INSTALLATION

 **THIS APPLIANCE MUST BE INSTALLED BY AN AUTHORISED PERSON.** Refer to heater 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

For a heater in which no provision is made for a vent permanently open between the water circuit and atmosphere a pressure relief valve must be fitted in accordance with

Levelling of the Heater

The Jacuzzi® J-HN Series Heater is fitted with Adjustable Feet to help with the levelling of the heater.

With OUTDOOR Installations it is advisable to have the Heater Level from left to right across the heater and have it slightly angled (approx. 5°F) to the rear to help with drainage of the Flue from water after rain.

FLOW RATES

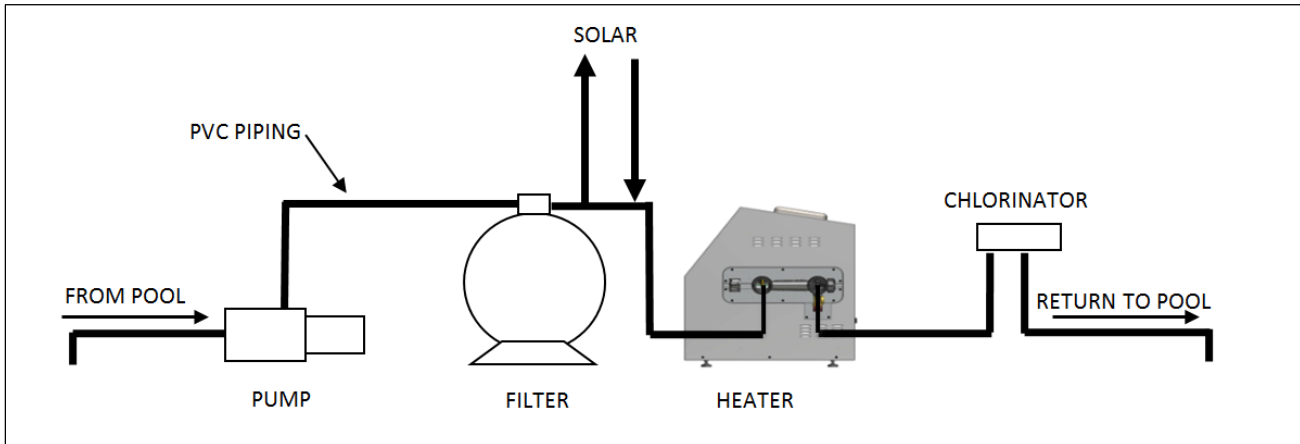
The Jacuzzi® J-HN Series Heater requires a minimum of 31 Gallons per minute (254 ft3/hr) and a maximum flow rate of 132 Gallons per minute (1059 ft3/hr). It is recommended that an external bypass valve capable of bypassing some water be installed when flow rates exceed 99 gallons per minute (794 ft3/hr).

WATER CONNECTIONS

The heater should always be installed after the pump and filter. The water connections are located on the right hand side of the heater. The inlet and outlet are clearly marked. Water connections require 2" high pressure PVC glue-in plumbing. It is recommended that Class 12 (PN12) pipe be used to connect to the heater.

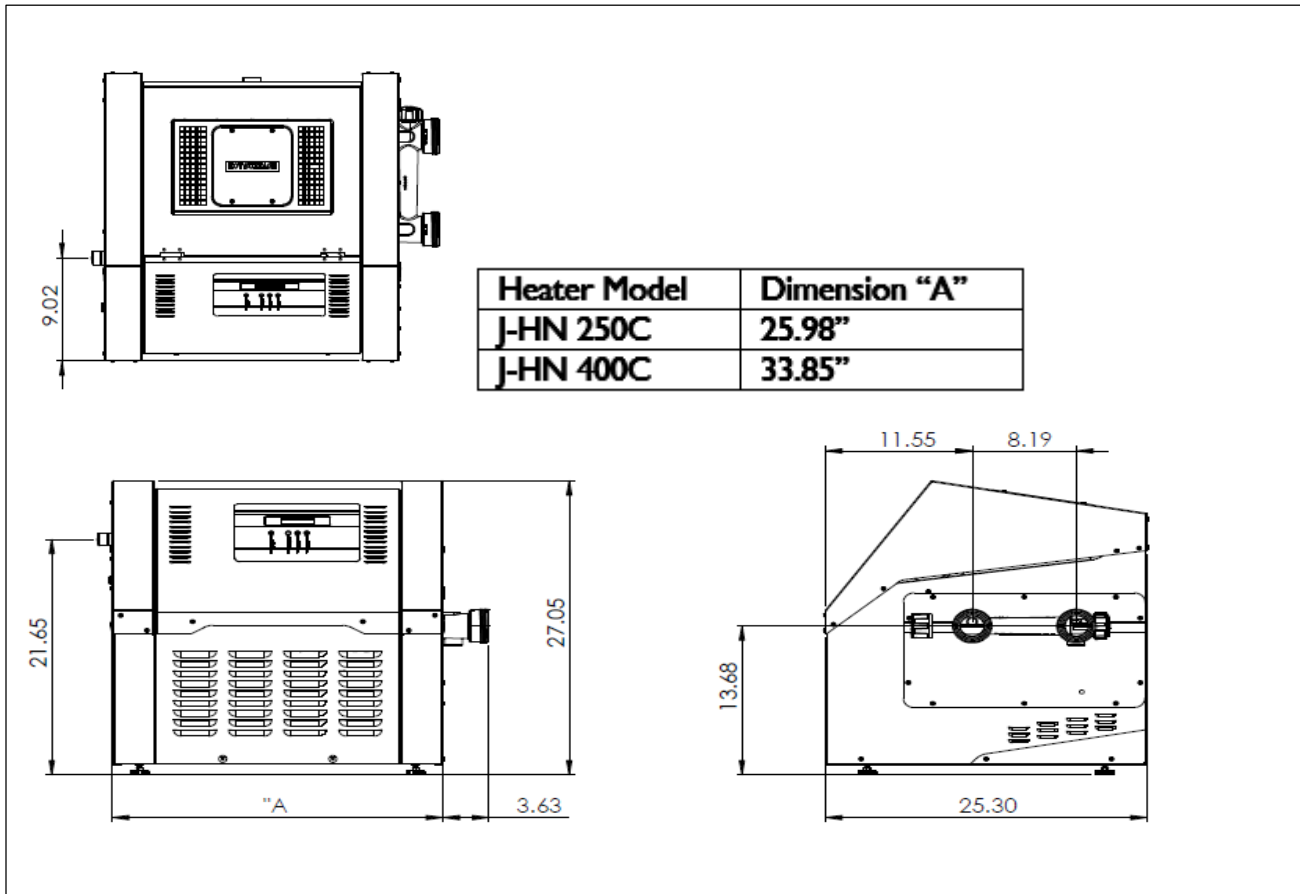
All automatic sanitising devices must be installed after the heater and in such a way that the sanitiser cannot enter the heater without first mixing with the water in the pool or spa. Sanitisers that are connected prior to the heater will void heater warranty. A non-return valve is not required to be fitted between the filter and the heater.

PLUMBING DIAGRAM



1. Plumbing in high pressure 2" PVC pipe.
2. Connections to heater in Class 12 or higher.
3. All Salt System Chlorinators or Sanitisers to MUST be installed after the heater.

HEATER DIMENSIONS



INDOOR FLUE INSTALLATION

For indoor installations a 5" flue and termination cowl must be fitted to the heater. The heater may be installed with a maximum of 52 feet of flue including 3 bends or of 26 feet of flue with a total of 5 bends.

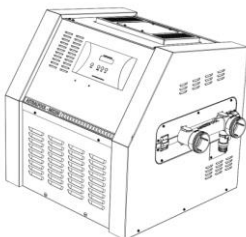
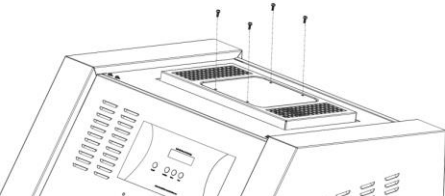
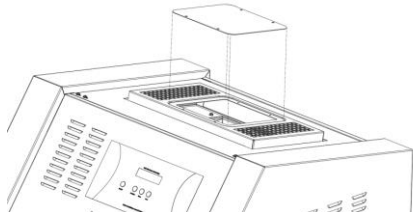

The flue and termination cowl must be ordered from www.jacuzzi.com

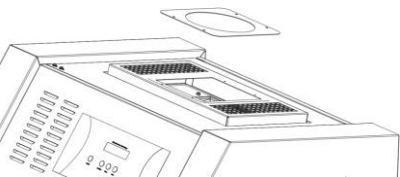
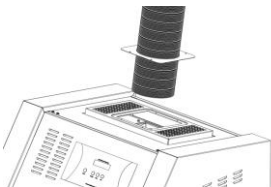
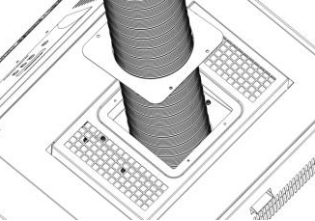
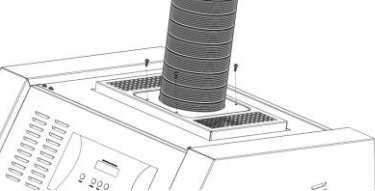
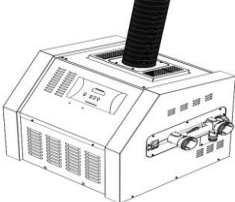
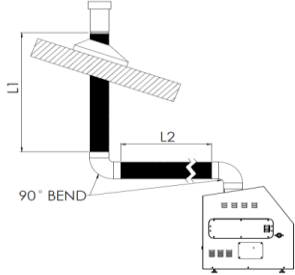
Part # 78285 13 feet spiral flue with termination cowl

Part # 78249 13 feet x 5" flue extension (maximum of three additional to make a total length of 52 feet

Heater must be installed to local or state regulations. Access and suitable working areas must be available to the heater.

Flue pipe is supplied with a galvanised sleeved end for the external application and an non sleeved aluminum end for fitment to appliance. The flue pipe can be cut shorter with a knife/saw.

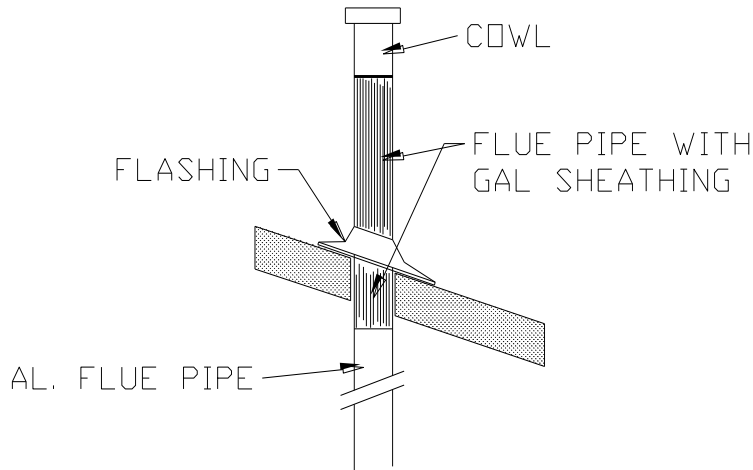
1	POOL HEATER – OUTDOOR MODEL.	
2	USING A PHILLIPS HEAD SCREW DRIVER UNSCREW 4 X SCREWS FROM FLUE COVER PLATE.	
3	REMOVE FLUE COVER OUTDOOR INSERT.	
4	<p>PRE BEND THE FLUE WHERE REQUIRED. BENDS ARE MADE BY CURVING THE FLUE PIPE AROUND A GENTLE RADIUS SUCH AS A PIPE OR KNEE. DO NOT OVER BEND AND KINK FLUE PIPE. KEEP BENDS TO A MINIMUM AND USE AS LARGE AS RADIUS AS POSSIBLE. MINIMUM INTERNAL RADIUS IS 250MM.</p> <p>BENDS CAN BE STRAIGHTENED IF REQUIRED.</p>	

5	TAKE THE FLUE COVER INDOOR INSERT.	
6	TAKE THE FLUE AND FEED IT THROUGH THE INDOOR INSERT.	
7	FIT FLUE PIPE TO APPLIANCE (NON-SLEEVED END OF FLUE). FIT BY SLIDING IT OVER THE FLUE CONNECTION SPIGOT AS FAR AS POSSIBLE.	
8	SLIDE INDOOR INSERT PANEL DOWN THE FLUE AND SCREW INTO POSITION WITH 4 X SCREWS.	
9	POOL HEATER – INDOOR MODEL.	
10	FORM EXTRA BENDS WHERE REQUIRED. CARE SHOULD BE TAKEN WHEN FORMING BENDS TO NOT CREATE A LOW POINT WHERE CONDENSATION MAY COLLECT. CONDENSATION SHOULD BE ABLE TO DRAIN TO THE HEATER OR OUT THE FLUE OUTLET. THE FLUE SHOULD BE BRACKETED AT INTERVALS OF 1 M USING STANDARD 125 MM STANDOFF BRACKETS AVAILABLE AT MOST PLUMBING SUPPLIERS.	

ROOFTOP TERMINATIONS

All flue exiting the roof must be shielded with the gal cover. Extra lengths of gal can be supplied. Decktite fittings / flashings must be attached to the galvanized flue cover. Brace flue in high wind applications.

Locate flue cowl onto reduced end of the gal outer covering / flue pipe. Attach with rivets / screws to hold into place.



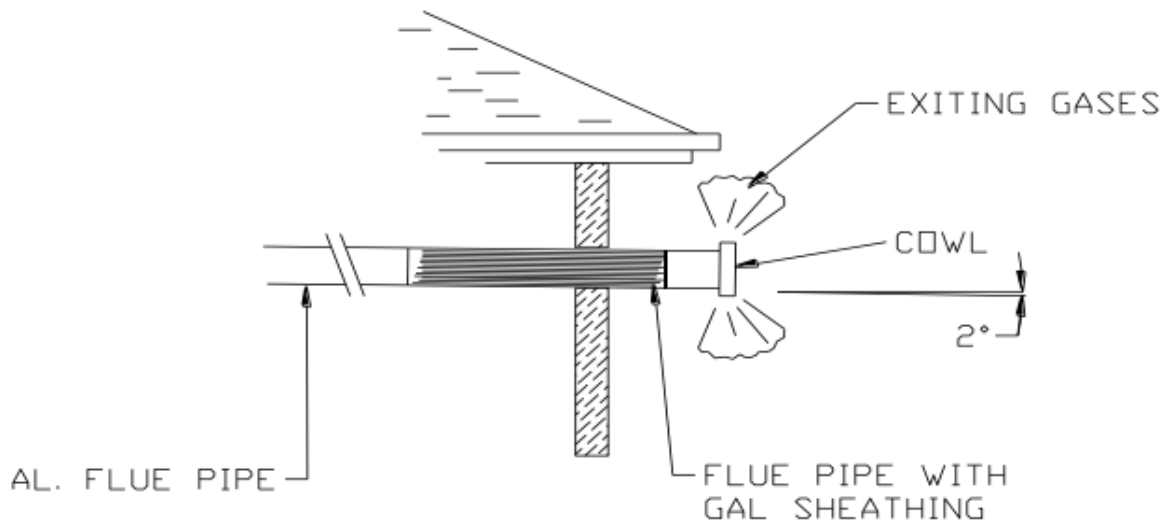
WALL TERMINATIONS

Ensure location is suitable as flue gases exit all around cowl and may blow back onto walls, eaves and features causing discolouration or mould and moisture issues. Condensation will occur around the flue exit area and condensation may drip from the flue outlet. All flues exiting the wall must be shielded with the gal cover. Extra lengths of gal can be supplied. Decktite fittings / flashings / wall exiting covers must be attached to the galvanised flue cover.

For long extensions of flue exiting the wall bracing may be required in high wind applications.

Locate flue cowl onto reduced end of the gal outer covering / flue pipe. Attach with rivets / screws to hold into place. Ensure a drain hole in the cowl is facing down.

The flue pipe must slope slightly towards the cowl for the last horizontal run (approx 2° F) to allow condensation to drain.



CLEARANCES

Installation clearances must comply with Local or State laws. The heater is approved for installation at reduced clearances as below.

			SURFACE TYPE	
			COMBUSTIBLE	NON COMBUSTIBLE
CLEARANCES (inches)	OUTDOOR	FRONT	12"	12"
		BOTH SIDES	12"	12"
		REAR	12"	4"
		ABOVE	39"	39"
	INDOOR	FRONT	12"	12"
		BOTH SIDES	12"	2"
		REAR	12"	4"
		ABOVE	20"	20"

N.B. HEATERS MUST BE INSTALLED ON A FIREPROOF BASE

VENTILATION

When installing the heater indoors, it is imperative that an adequate supply of fresh air is provided for combustion. Failure to provide adequate ventilation voids all warranties and may be a danger to persons or property.

Two permanent openings shall be provided directly to outside. The openings shall be located to ensure the distance between the top of the upper opening and the ceiling of the room or enclosure, and the distance between the bottom of the lower opening and the floor of the room or enclosure does not exceed 5% of the height of the room or enclosure.

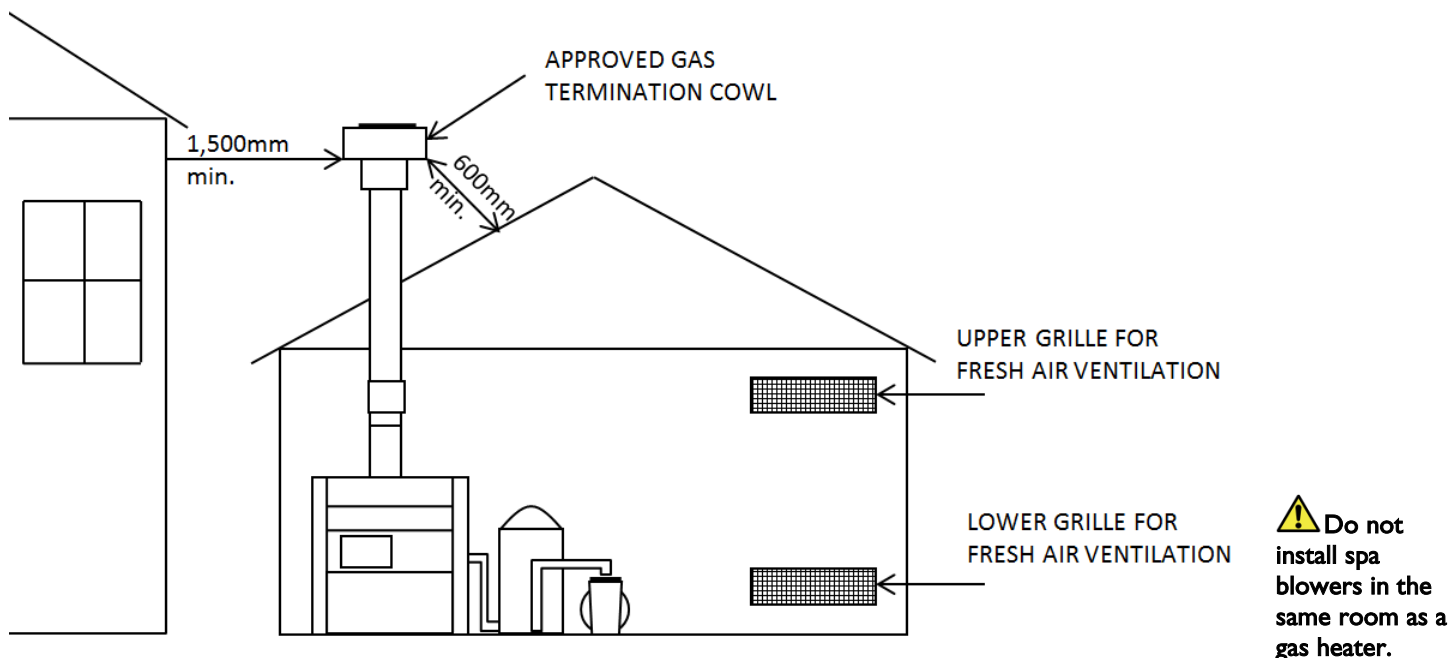
The minimum vertical dimension of any free ventilation opening shall be 6 mm.

The minimum free ventilation area provided directly outside by each opening shall be:

MODEL	AREA
Jacuzzi® J-HN250C	116" inches ²
Jacuzzi® J-HN400C	186" inches ²

If ventilation provided is obtained from an adjacent room then these areas will increase.

The following diagram is provided as a guide only. All flueing and installation work must be carried out by an authorized person. Flueing must conform to local regulations. Care must be taken to provide the correct ventilation and correct flueing materials in close proximity to combustible surfaces.



This is potentially dangerous to spa users.

⚠ Do not store chemicals or fuel in the same room as the gas heater. This may cause fire or explosion. When installing in a garage the Jacuzzi® J-HN Series Heaters must be installed 17" above floor level.

ELECTRICAL CONNECTION

All pool or spa equipment connected to mains power should be protected by an RCD circuit breaker.

GAS CONNECTION

The gas connection is on the right side of the heater. A 3/4" FI. connection is provided for gas line connection. An approved manual shut off valve must be installed in the gas fitting line before the heater.

The gas fitting line should be installed by an authorized person and comply with local regulations. The gas line from the Gas meter will usually be of a larger size than the gas inlet connection.

The heater gas valve has a built in pressure regulator and 2 x 1/8" pressure test points. On starting the heater, a manometer must be used and the supply inlet pressure checked while the heater is running against the heater data plate. Incorrect inlet pressures may void warranty and may result in service charges, should service be required. Gas valves are pre-set and should only be adjusted by trained Jacuzzi technicians or qualified gas fitters.

WATER PRESSURE SWITCH ADJUSTMENT

The Jacuzzi® J-HN Series Pool Heater incorporates a water pressure switch which allows the burner to operate only when the circulating pump is operating. The pressure switch is designed to operate with the heater installed up to 10' feet above or below the surface level of the pool or spa.

It is imperative that the following be undertaken by the person who is commissioning (first starting) your pool or spa heater. On initial start-up of the heater it may be necessary to adjust the water pressure activation switch.

This switch is located on the inlet / outlet header. The pressure switch is a safety device, designed to allow operation of the heater only when the circulating pump is on and there is sufficient water flow through the heater. It must shut the heater down immediately after the pump is switched off.

TO CHECK THE OPERATION OF THE SWITCH:

1. Check water pump hair and lint basket is clean and free of debris and backwash sand filter or clean cartridge filter. Pressure switch should only be checked and adjusted with clean skimmer, pump basket and filter.
2. Connect the heater to mains power supply and turn power on. The thermostat should not yet display "θ".
3. Turn on pump. The thermostat should now display "θ".
4. Turn pump off. The thermostat should no longer display "θ".
5. If display does not respond in this way, adjust the pressure switch as detailed below. If display responds correctly, perform a final check with the heater operating – see the section below titled "Starting the heater".

TO ADJUST PRESSURE SWITCH:

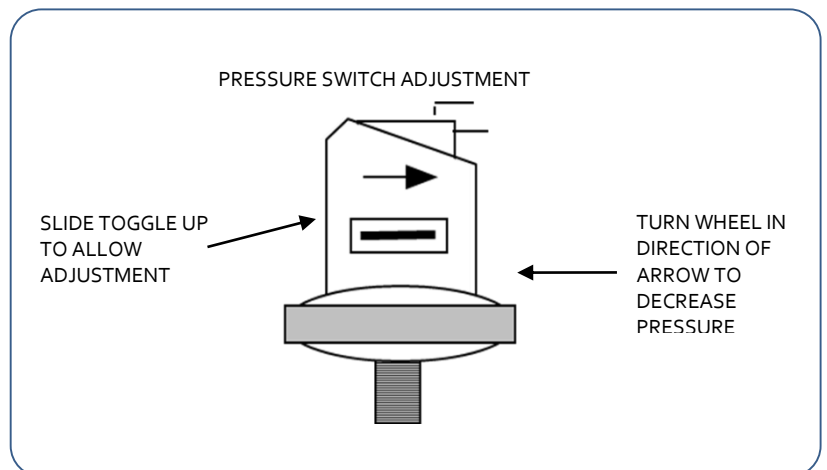
1. Connect the heater to mains power supply and turn power on. The thermostat should not yet display "θ".
2. Turn on pump.
3. View the display of the heater to confirm the "θ" has appeared on the LCD display on front of heater.
4. If no symbol is present, slide the toggle up to allow adjustment, then rotate knurled wheel anti clockwise (as viewed from above) until "θ" is displayed.
5. Switch pump off.
6. View LCD display to confirm the "θ" has disappeared.
7. If "θ" symbol is present when pump is OFF or "θ" does not disappear within 1 (one) second of pump turning off, the pressure switch must be adjusted.
8. With Pump turned OFF, turn knurled wheel clockwise to increase the pressure required to activate the switch.
9. Repeat steps 2 to 8 until symbol appears and disappears when pump turns on and off.
10. When the pressure switch is correctly set, slide the toggle down to lock the knurled wheel in position.
11. If pressure switch cannot be made to activate heater when pump is turned on and off, a flow switch may need to be purchased and fitted. Contact your local Astral Pool office for details.

⚠ WARNING: If the pressure switch cannot be adjusted correctly, DO NOT OPERATE THE HEATER, contact www.jacuzzi.com or an Authorized Service Agent for advice.

1. Perform a final check with the heater operating.

It is imperative that the heater is installed so that it does not operate when the circulating pump stops. Recommended methods to achieve this are:

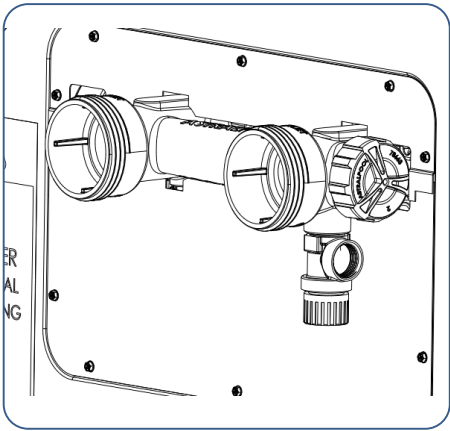
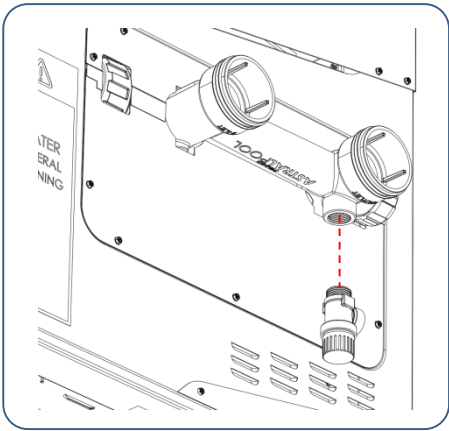
- a. Correct adjustment of internal pressure switch. Ensure heater does not turn on two or three minutes after circulating pump is turned off.
- b. Installation of an external flow switch may be preferred under certain installations where internal pressure switch does not turn heater off when circulator stops.



FITMENT OF PRESSURE RELIEF VALVE


- Order Replacement Header with Pressure Relief Valve port, Part Number 78660PRV
- Have an authorised service technician replace the header 78660 with 78660PRV. Refer to page 25 of service instructions “REPLACEMENT OF INLET/OUTLET HEADER”.
- Locate Pressure Relief port at the outlet of the header. Fit a pressure relief valve complying with _____ and having a total steam discharge capacity, in kilograms/hour, not less than the value listed in the table below.

MODEL HEATER	lb/hr
250	187
400	299



TESTING GAS PRESSURE

1. **Note – gas pressure must be measured when unit is operating.**
2. Set thermostat to “OFF”.
3. Remove screws from front thermostat panel and open.
4. Loosen screw from 1/8” brass test point located on outlet side of gas valve (between the valve and the burner).
5. Connect manometer tube to test point.
6. Set thermostat to “ON” and wait for burner to ignite.
7. Once burner has ignited, the manometer must indicate the nominal inlet pressure listed below.
8. Remove the regulator cap on the gas valve and adjust the regulator pressure to achieve the specified burner operating pressure.
9. If the regulator cannot be adjusted to achieve the specified burner pressure, it is likely the gas line to the appliance is insufficient.
10. Remove manometer.
11. Tighten test point screw.
12. Replace regulator cap.
13. Refit covers.

 Important to check that Test point screw has been refitted and tightened.

		Jacuzzi® J-HN Series Heater Model			
		J-HN250C		J-HN400C	
		NATURAL	PROPANE	NATURAL	PROPANE
GAS INLET RATES (MJ/h)		250	250	400	400
GAS TEST POINT PRESSURE (lbs)	INLET STATIC	0.163 MIN. 0.725 MAX.	2.75 MIN. 0.725 MAX.	0.163 MIN. 0.725 MAX.	2.75 MIN. 0.725 MAX.
	INLET OPERATING (HIGH FIRE)	>0.163	>0.398	>0.163	>0.398
	BURNER OPERATING (HIGH FIRE)	0.54	0.29	0.54	0.29
CO LEVELS (ppm)		10 to 30		10 to 30	

PERFORMANCE DETAILS

TO CHECK BURNER PERFORMANCE

1. Start pool pump supplying water to Jacuzzi® J-HN Series Gas Heater and ensure heater is turned off
2. Set up manometer to outlet side of gas valve
3. Turn the Heater on at the on/off switch
4. Increase temperature set point above the actual water temperature
5. Allow the heater to start
6. Ensure heater is running at full fan rate
7. Inspect flame from the flame inspection port on left hand side of the heater and ensure flames are blue
8. Check gas pressure on Manometer
9. Remove regulator cap on gas valve and adjust gas rate screw to achieve nominated burner pressure
10. Inspect flame again ensuring flame is blue in colour
11. Turn heater off and ensure the flame cuts out and the pressure switch symbol on the thermostat screen disappears
12. Turn heater on again, and ensure the thermostat displays "L" for lockout. Wait 2 minutes and the heater should then reignite.
13. Lower front door and secure shut.

TROUBLESHOOTING

HEATER WILL NOT LIGHT	
Possible cause	Action
No display	Check if power to heater is turned on
Pump not running	Start pump
Pump air locked	Check for leaks
Filter dirty	Clean filter
Pump strainer basket clogged	Clean strainer
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
Gas turned off	Turn gas cock on
Heater in a Fault condition	Refer to fault indication table
HEATER SHORT CYCLING (RAPID ON AND OFF OPERATION)	
Possible cause	Action
Insufficient water flow	Clean filter and pump strainer
HEATER MAKING KNOCKING NOISES	
Possible cause	Action
Low water flow	Check pump condition
Heater 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

IGNITION MODULE LED FLASH CODE

THE FOLLOWING CODES MAY OCCUR DURING STARTUP		
LONG FLASHES	SHORT FLASHES	DESCRIPTION
0	2	NORMAL OPERATION – START UP DELAY
1	0	NORMAL OPERATION
1	1	FLAME FAILURE DETECTED
1	2	WAITING FOR MAIN PRESSURE SWITCH
1	3	WAITING FOR SECOND PRESSURE SWITCH
1	4	WAITING FOR FLAME SENSE TO GO OFF
1	5	PURGE OPERATION IN PROGRESS (PRE PURGE OR POST PURGE)
1	8	WAITING FOR FAN TACHO FEEDBACK SIGNAL TO BE WITHIN ACCEPTABLE WINDOW (MODULE OPTION)
THE FOLLOWING CODES ARE INVOKED AS A RESULT OF A LOCKOUT CONDITION		

LONG FLASHES	SHORT FLASHES	DESCRIPTION
2	1	MAXIMUM RETRIES EXCEEDED
2	2	LOCK OUT DUE TO FLAME FAILURE
2	3 OR 4 OR 5	HARDWARE FAILURE ON MODULE OUTPUT(S). POSSIBLE HARDWARE FAILURE ON MODULE
2	6	HARDWARE FAILURE ON FLAME SENSING CIRCUIT
2	7	HARDWARE FAILURE IN MODULE
2	8	COMBUSTION FAN TIMEOUT (WHERE FITTED)
2	9	VENT SWITCH LOCKOUT (WHERE FITTED)
THE FOLLOWING CODES ARE INVOKED AS A RESULT OF A LOCKOUT CONDITION/HARDWARE FAULT		
LONG FLASHES	SHORT FLASHES	DESCRIPTION
3	1	LOCKOUT DUE TO MAIN PRESSURE SWITCH OPENING (WHERE FITTED)
3	2	LOCKOUT DUE TO SECOND PRESSURE SWITCH OPENING (WHERE FITTED)
3	3	LOCKOUT DUE TO FAN TACHO. FEEDBACK SIGNAL FAILING (WHERE FITTED)
3	4	LOCKOUT DUE TO INTERNAL FAULT (SOFTWARE ERROR)
3	5	LOCKOUT DUE TO INTERNAL FAULT (EEPROM ERROR)
3	6	LOCKOUT DUE TO INTERNAL FAULT (MICROCONTROLLER COMMUNICATIONS ERROR)

If the heater cannot be made to perform correctly, please contact the www.jacuzzi.com

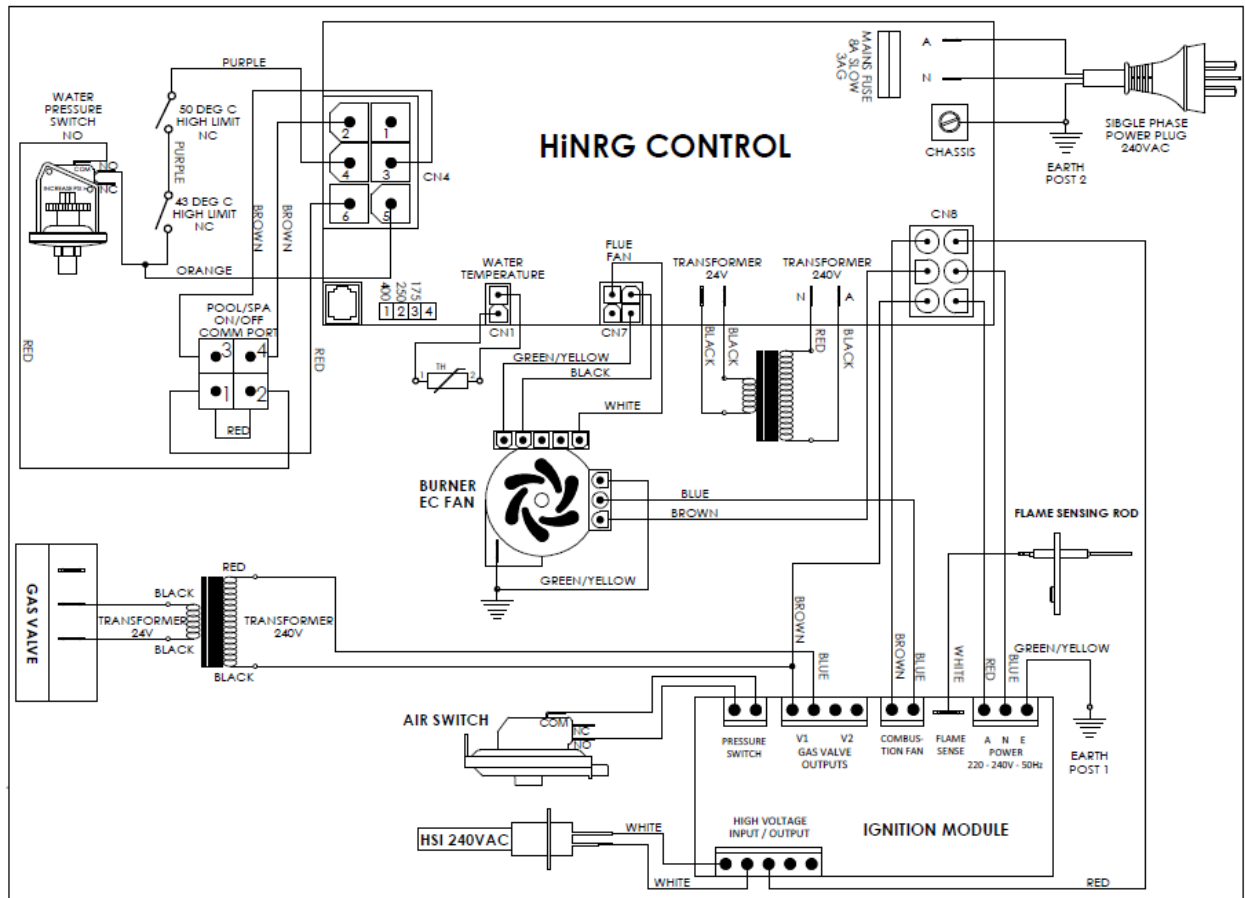
GAS PIPE SIZING TABLES

0.16 PSI gas meter pressure					
Maximum run of copper pipe with average number of fittings					
Model	3/4"	1"	1 1/4"	1 1/2"	2"
J-HN 250C	-	26' ft	45' ft	114' ft	459' ft m
J-HN 400C	-	9' ft	26' ft	65' ft m	295' ft
0.18 PSI gas meter pressure					
Maximum run of copper pipe with average number of fittings					
Model	3/4"	1"	1 1/4"	1 1/2"	2"
J-HN 250C	9' ft	45' ft	147' ft	360' ft	1049' ft
J-HN 400C	6' ft	26' ft	82' ft	229' ft	984' ft
0.40 PSI gas meter pressure					
Maximum run of copper pipe with average number of fittings					
Model	15 mm	3/4"	1"	1 1/4"	
J-HN 250C	6' ft	65' ft	278' ft	918' ft	
J-HN 400C	-	39' ft m	164' ft	524' ft	

Gas Pipe Sizing Tables are indicative only. All pipe sizing should be calculated by an authorized person.

Jacuzzi® J-HN Series WIRING DIAGRAM

ALL MODELS



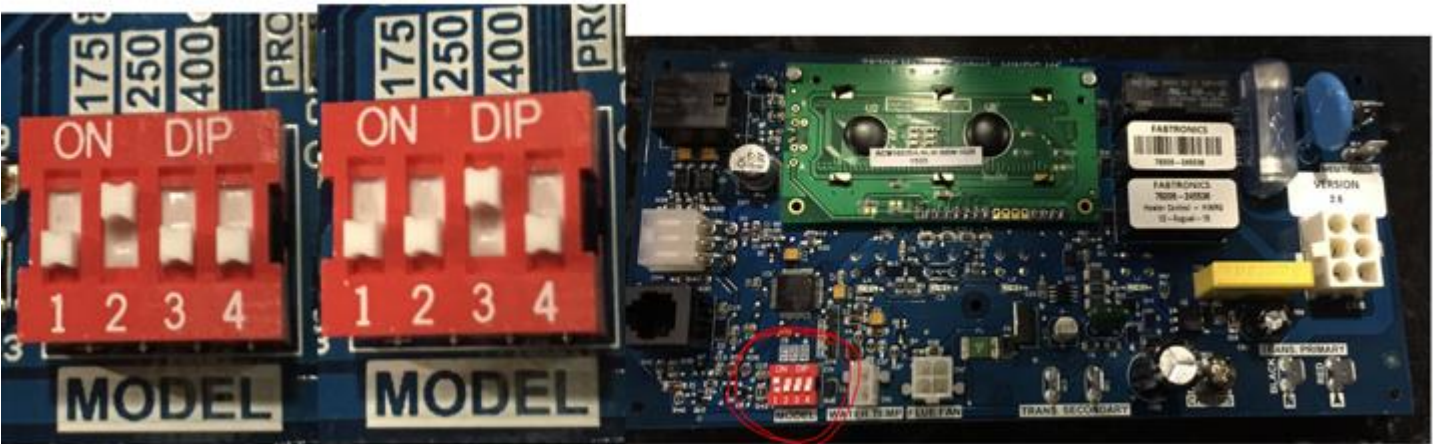
PCB DIP SWITCH SETTINGS

If replacing the PCB of a Jacuzzi® J-HN series heater, the dip switches need to be adjusted to suit the actual heater size

J-HN250C

J-HN400C

Location of Dip Switches on PCB



MAINTENANCE OF YOUR POOL HEATER

Maintenance Schedule: Your new product incorporates moving parts and withstands high velocity water with chemicals in it. Some of these parts will wear in the normal course of use and require regular checks and maintenance. Performing these checks and maintenance will identify parts that have worn and require repair/replacement before further serious damage is sustained. A small amount of regular care and attention to your pool equipment will help ensure long life and trouble free performance.

Timing	Maintenance Check	Service action (if required)
Every Month	Operate heater for 15 min to clear residues and ensure correct operation	Start circulation pump and turn heater on, leaving to run for a few minutes. This will clear flue passages and keep components working properly
Every 3 Months	Check inlet/outlet O-rings for leaks	Isolate Pump, turn power off, clean and grease O rings or replace if necessary
Every 3 Months	Check surroundings for leaves, debris and flooding	Remove debris from around the base of the heater and rectify if any flooding. Clear vegetation from around the flue
Annually	Check gas pressures	Call Service technician to perform annual gas checks and routine maintenance
	Check Burner, pilots and ignition systems	Must be completed by an authorised person

Important note: Regular maintenance is important to ensure long life and trouble free performance of your pool equipment. If unable to perform the maintenance yourself, contact www.JacuzziPool.com who will arrange a trained service technician to perform the maintenance for you.

Record your Equipment details here for quick reference:¶¶

¶¶ → Model No.: → _____ ¶¶
¶¶ → Serial No.: → _____ ¶¶
¶¶ → Inst date: → _____ ¶¶
¶¶ → Installer: _____ ¶¶
¶¶



INST396



www.JacuzziPool.com