

JANDY JXi™

Jandy

Polaris

ZODIAC®



MODELS

Model Sizes: 200, 260 & 400

Model Numbers

JXi200N	JXi200P
JXi260N	JXi260P
JXi260NC	JXi260PC
JXi400N	JXi400P
JXi400NN	JXi400PN
JXi400NK	JXi400NC
JXi400PC	



Model	BTU (in thousands)	Gas (Natural – Propane)	Options (VersaFlo™/Exchang- er)
JXi	400	N	K (Versaflo) N (CuproNickel) C (ASME)

Notes _____



ASME



Same Great Features as Current JXi

- Compact Lightweight Design
- Best Retrofit Option
- Easy Installation and Maintenance

Key Features for JXi ASME

- Copper Heat Exchanger
- Bronze Header with Flanged Connections
- Maintains competitors' Plumbing Alignment



Key Dates

- Shipments: Starting in Q2 2019



Notes _____

CLEARANCES

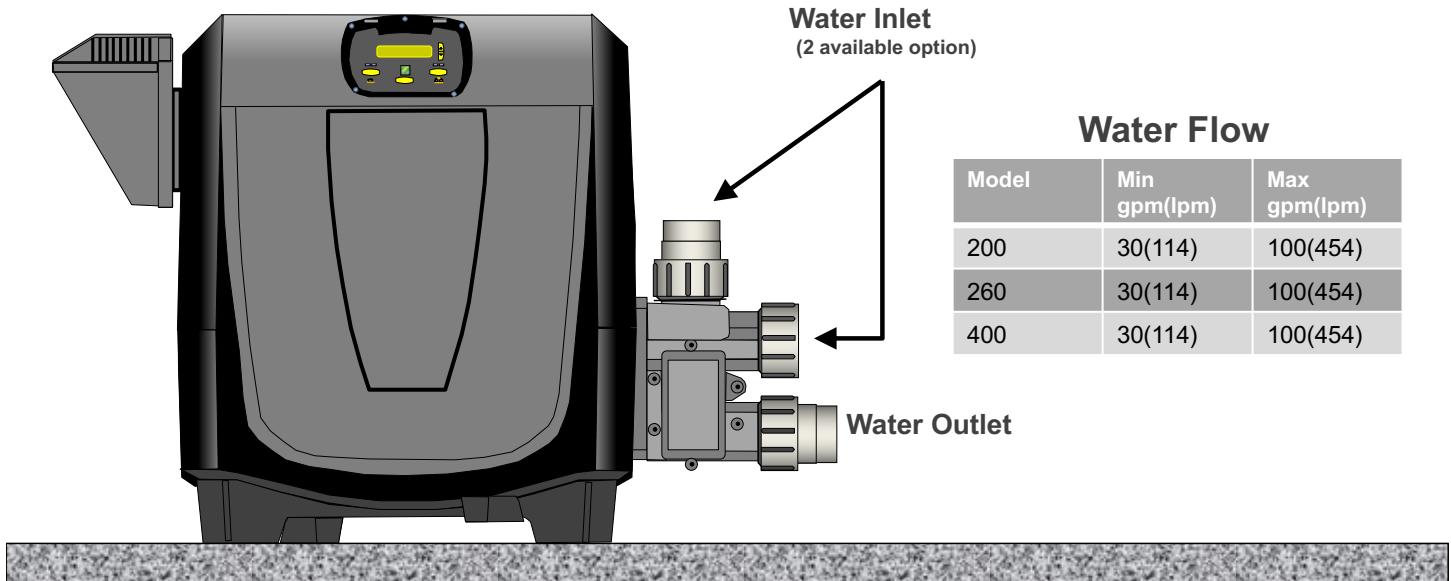
Locate the heater on a level surface in an **open, unroofed area**. If the heater is to be installed inside a contained area, refer to venting & combustion air requirements in the manual, Section 2.8.3

Do not install the heater under a deck

Minimum 6 inch clearance at all sides and vent outer edge for combustible surfaces

Minimum overhang vertical clearance = 36 inches & no more than a 12" overhang

Minimum serviceability clearance at the door panel = 18 inches



Notes _____

VERSA PLUMB

The JXi™ heater is Versa Plumb ready

The Versa Plumb System reduces hydraulic resistance by up to 50% versus other equipment sets in its class

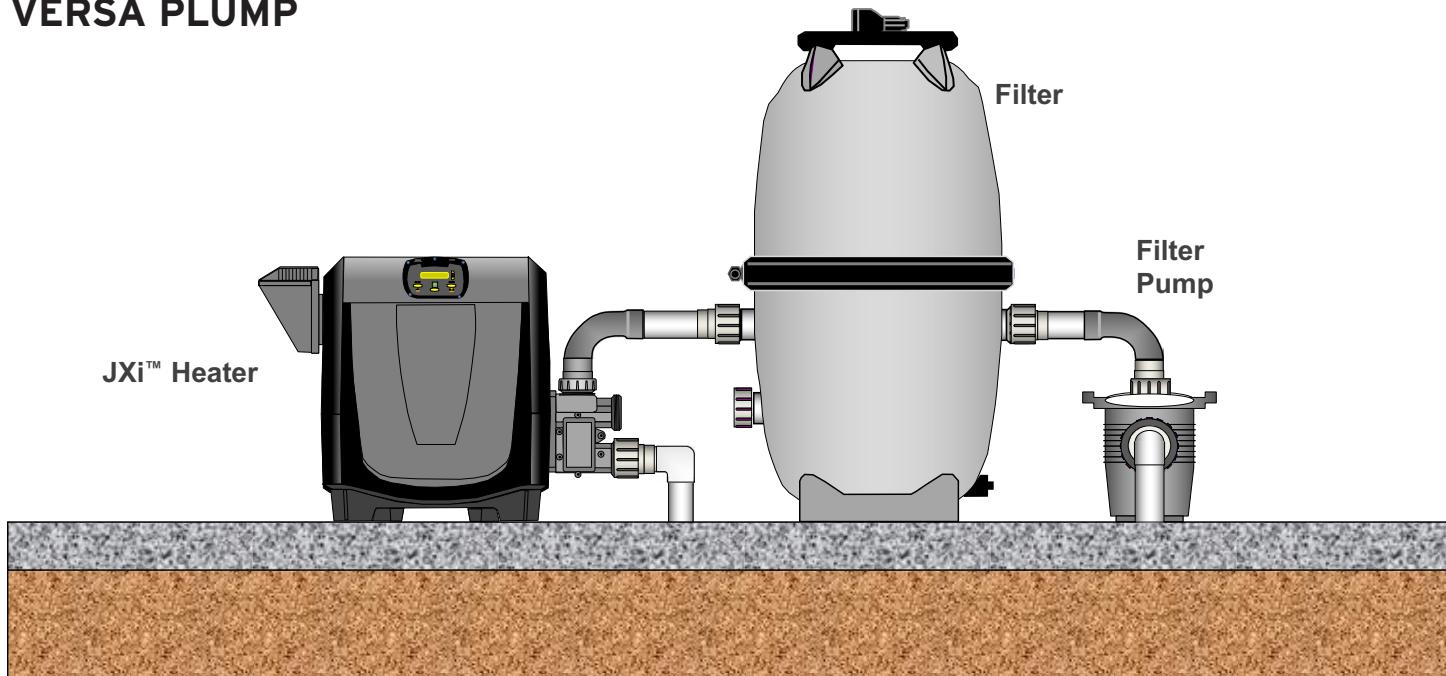
The Versa Plumb Systems increased hydraulic efficiency allows for up to a 1/2 HP smaller pump to achieve the same level of flow, resulting in greater energy savings



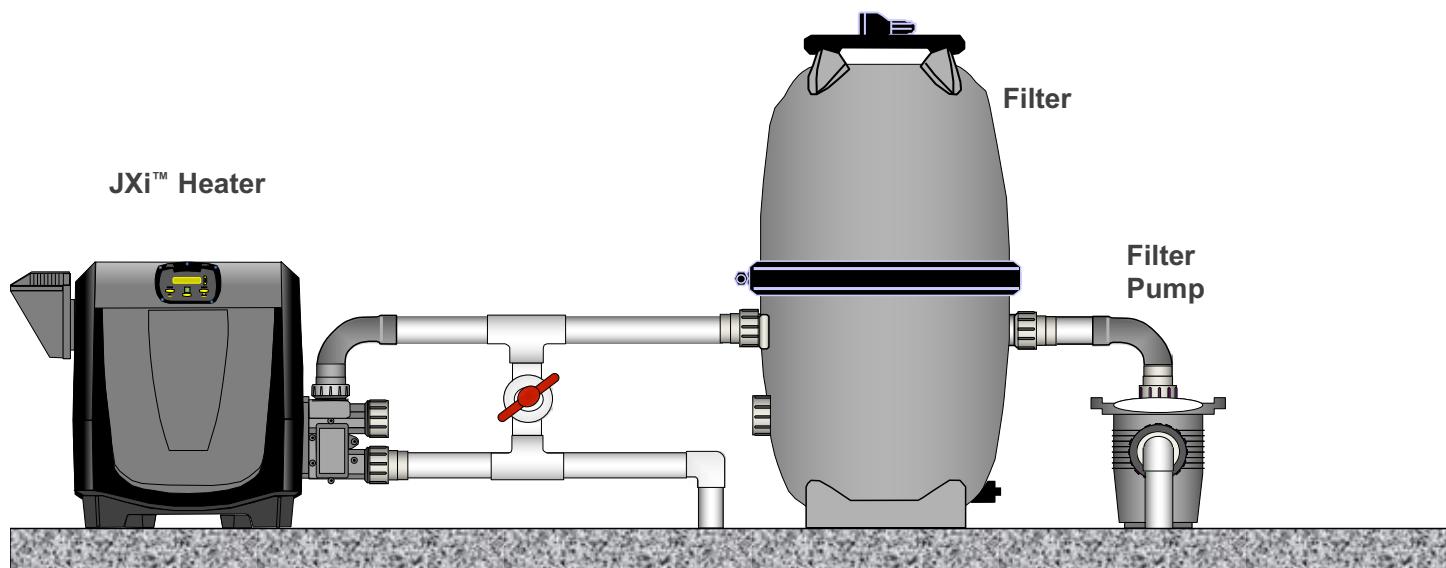
Innovatively designed system requires less plumbing pipe and fittings, while increasing hydraulic efficiency

Notes _____

VERSA PLUMP



VERSA PLUMB WITH MANUAL BY-PASS



The internal flow bypass within the heater manifold will accommodate flows delivered to the heater from a minimum of 30 gallons per minute (GPM) to a maximum flow of 100 GPM.

A manual bypass valve should be installed when the pump flow exceeds 100 GPM.

INSTALLATION ELECTRICAL

Factory default 240VAC /convertible to 120VAC

Must be installed to all NEC, NFPA or CSA Code

**Must be Bonded with equipment pad using
#8 AWG in the U.S and # 6 in Canada**

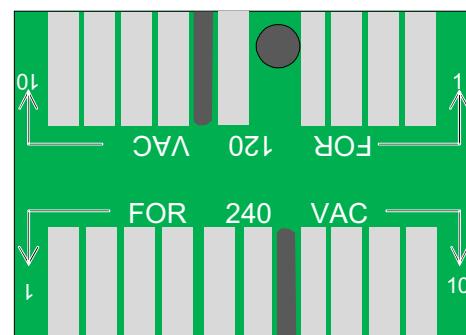
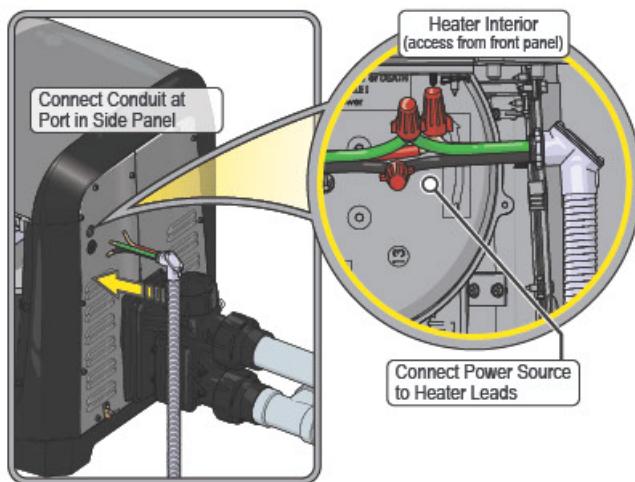


Notes _____

INSTALLATION ELECTRICAL

Converting from 240 VAC to 120 VAC

Snip the wire tie holding the conversion board in place.
Remove the conversion board, flip it over and reinsert.



Note: When wiring 120 VAC polarity is an issue

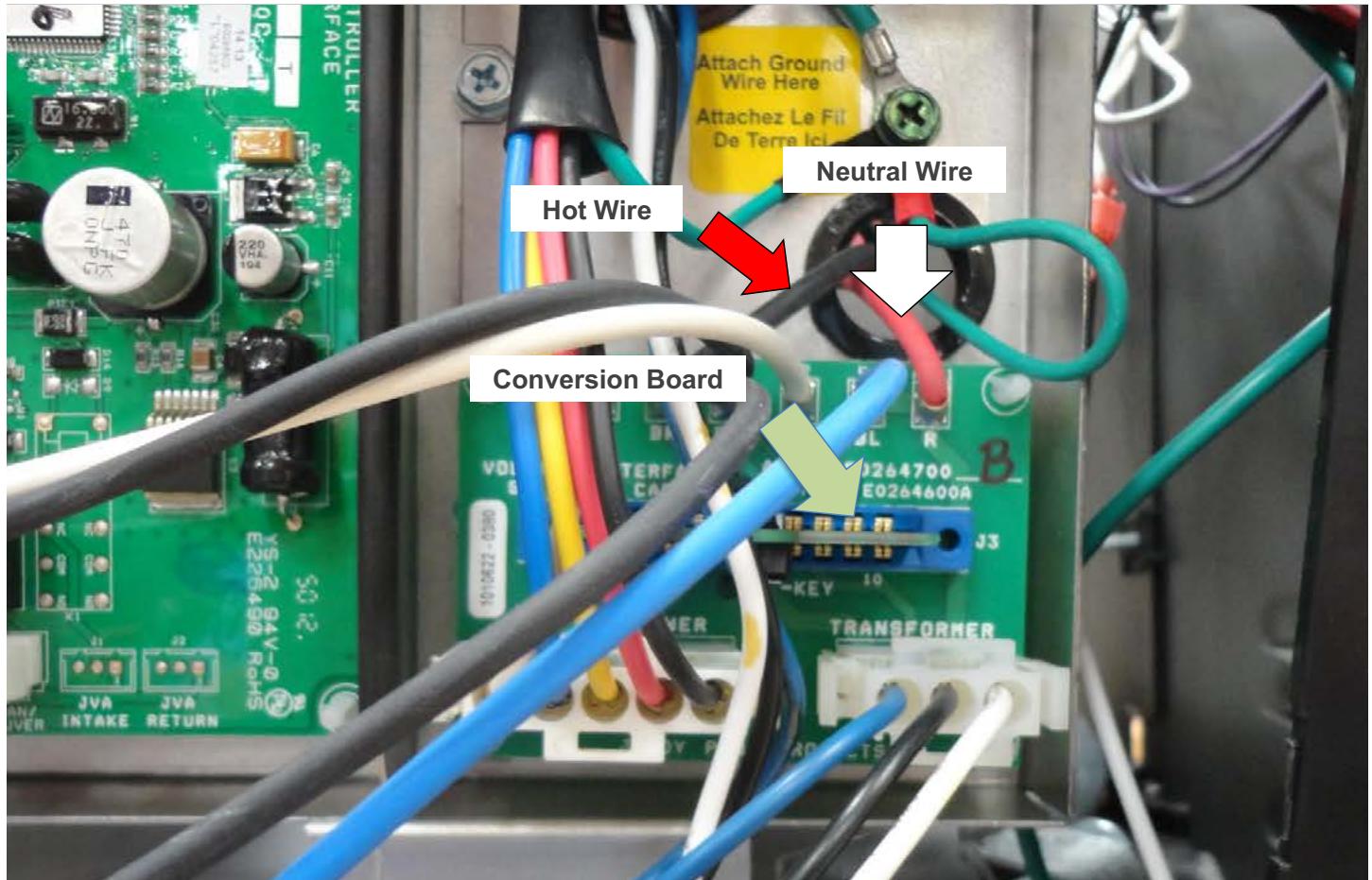
Connected the wires as follows:

- JXi™ hot (black) wire to power source black wire.
- JXi red wire to power source neutral (white) wire.
- JXi green to power source ground (green) wire.
- If this is not followed the heater will not rectify.

Notes _____

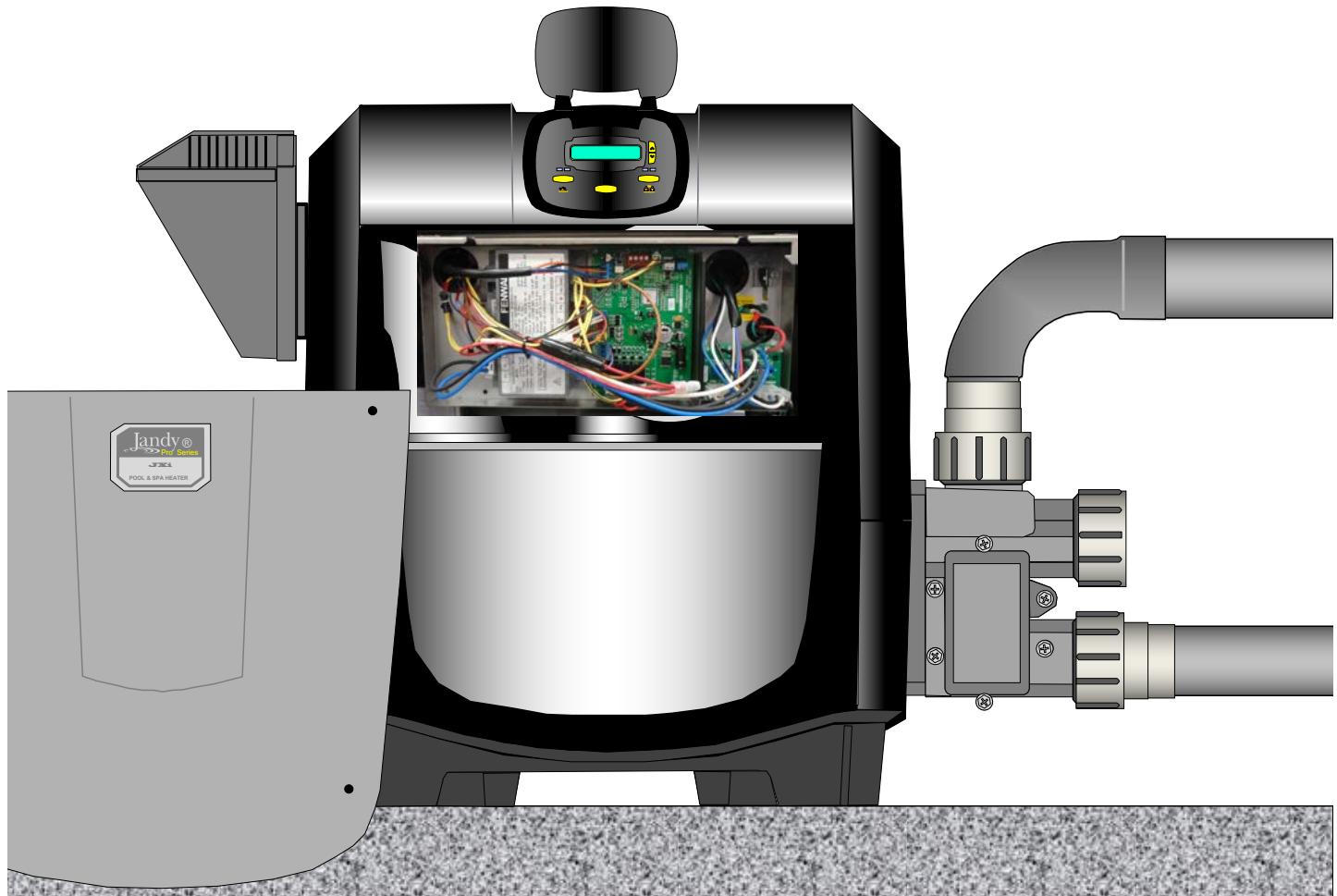


POWER DISTRIBUTION BOARD CONVERSION TO ACCEPT 120 VAC



Notes _____

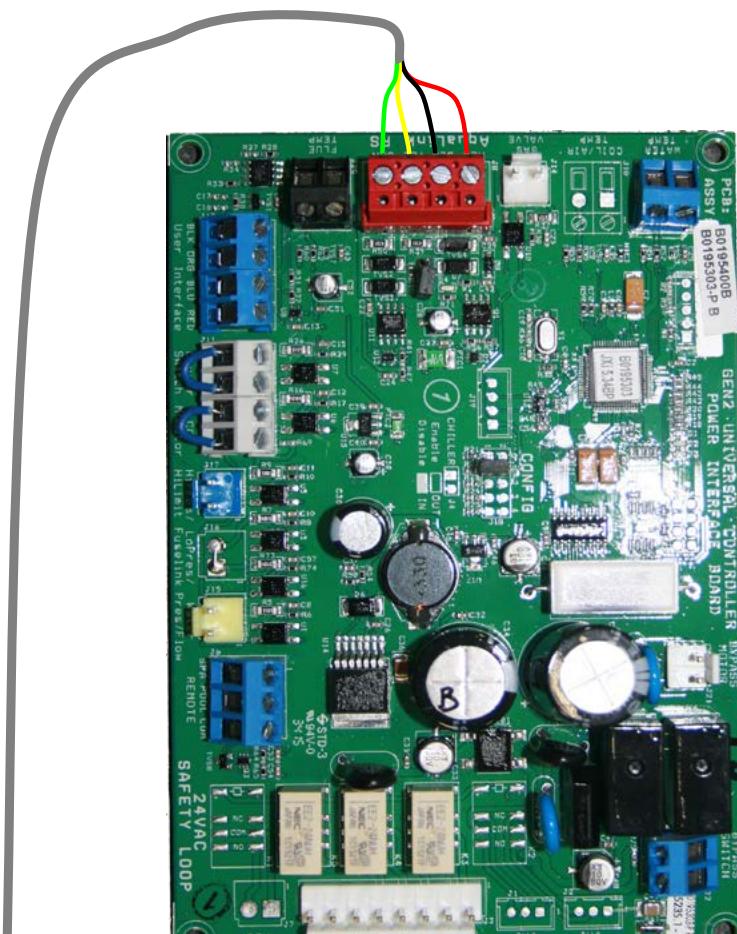
JXi CONNECTED TO RS 485



Notes _____

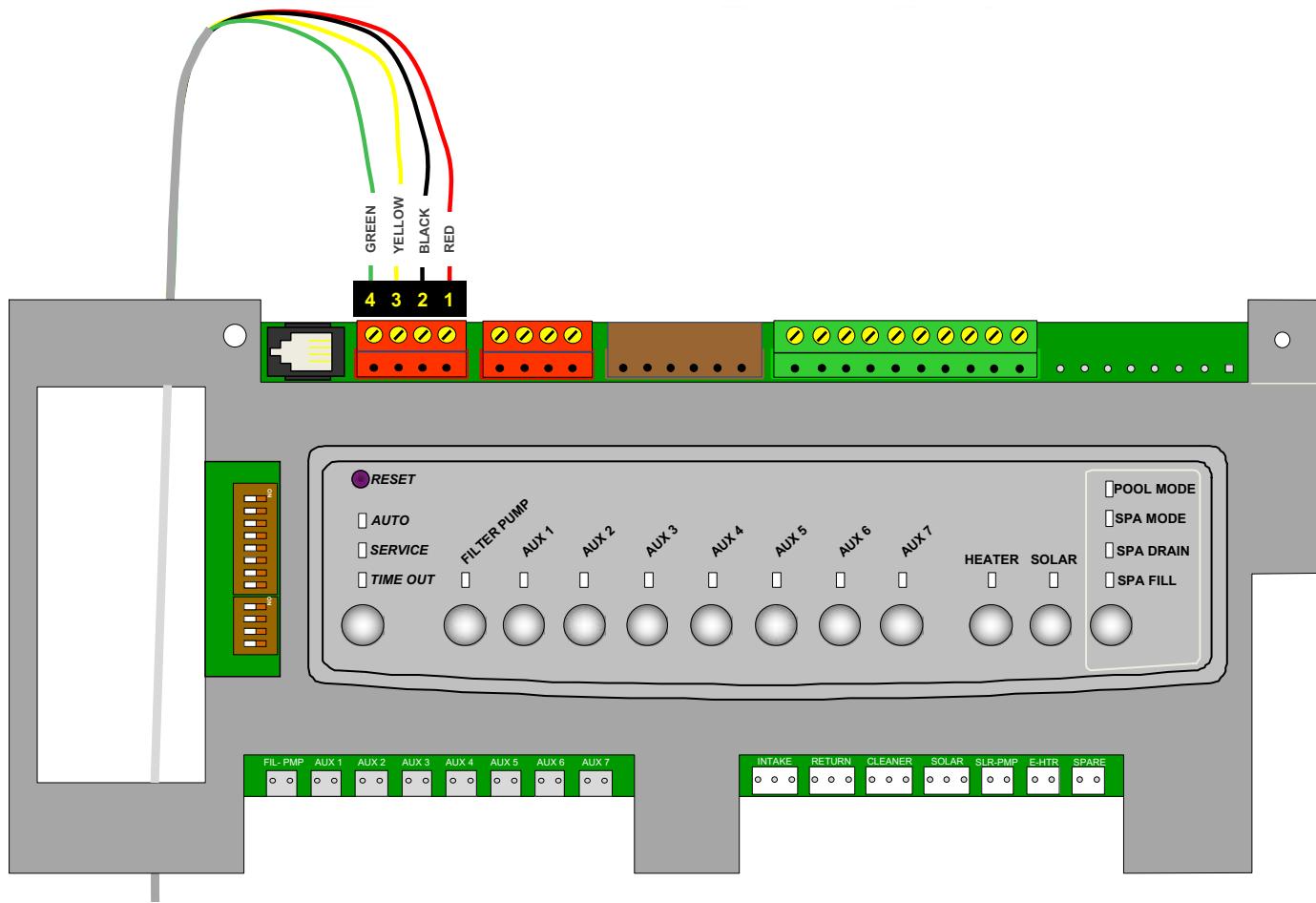
Installation, Jandy Control Smart Heater Connection

JXi CONNECTED TO RS 485



Notes _____

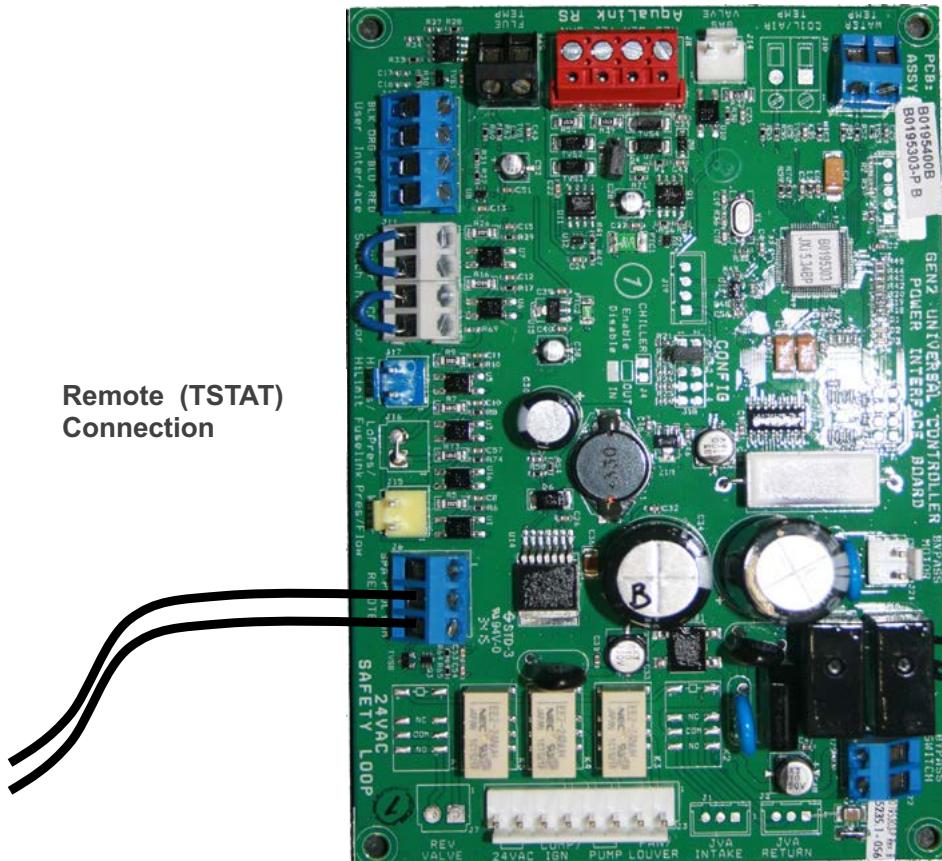
JXi CONNECTED TO RS 485



Notes _____

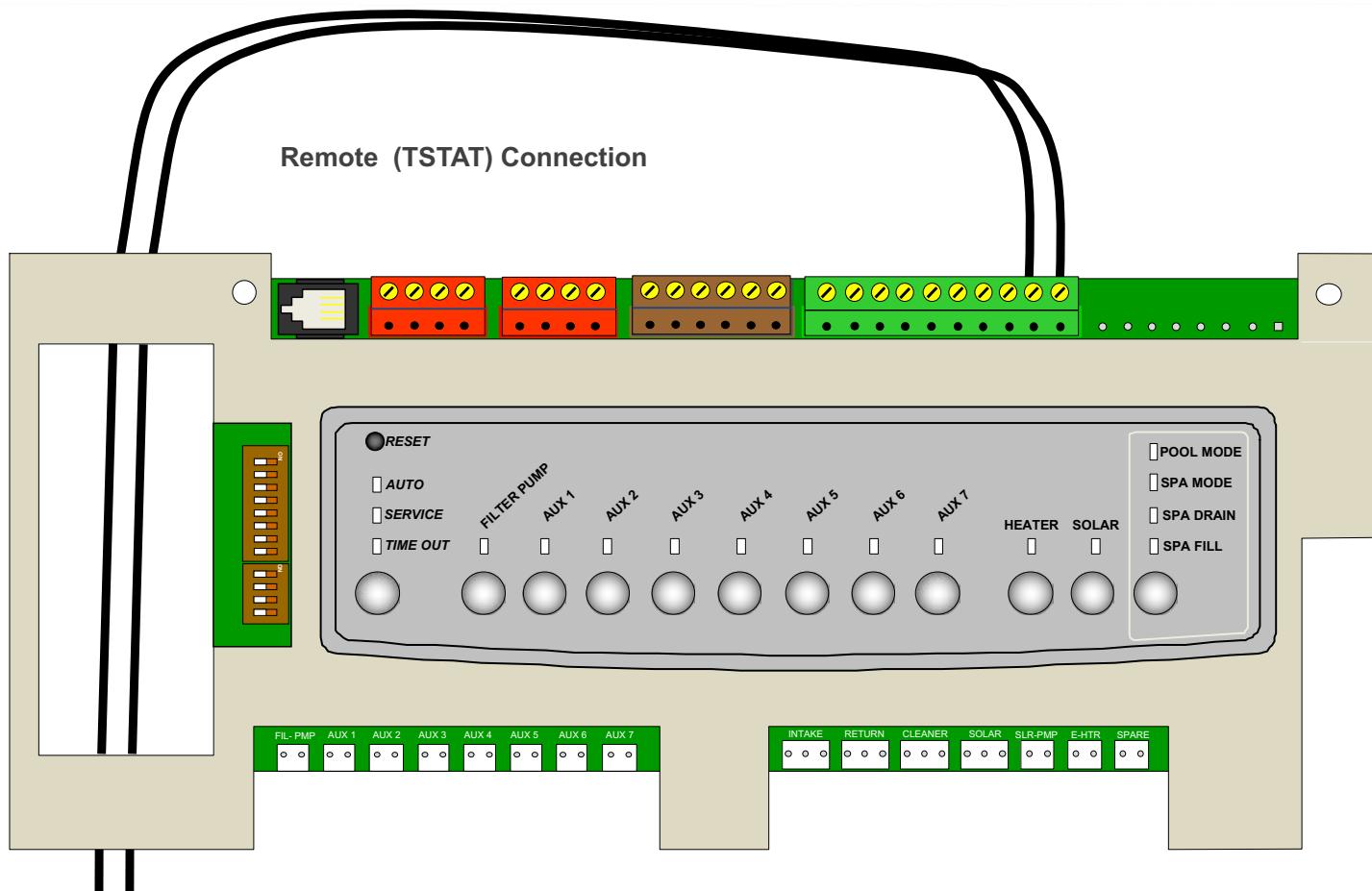
Installation, Connection to Control Two Wire (TSTAT)

JXi CONNECTED TO "FIREMAN'S SWITCH"



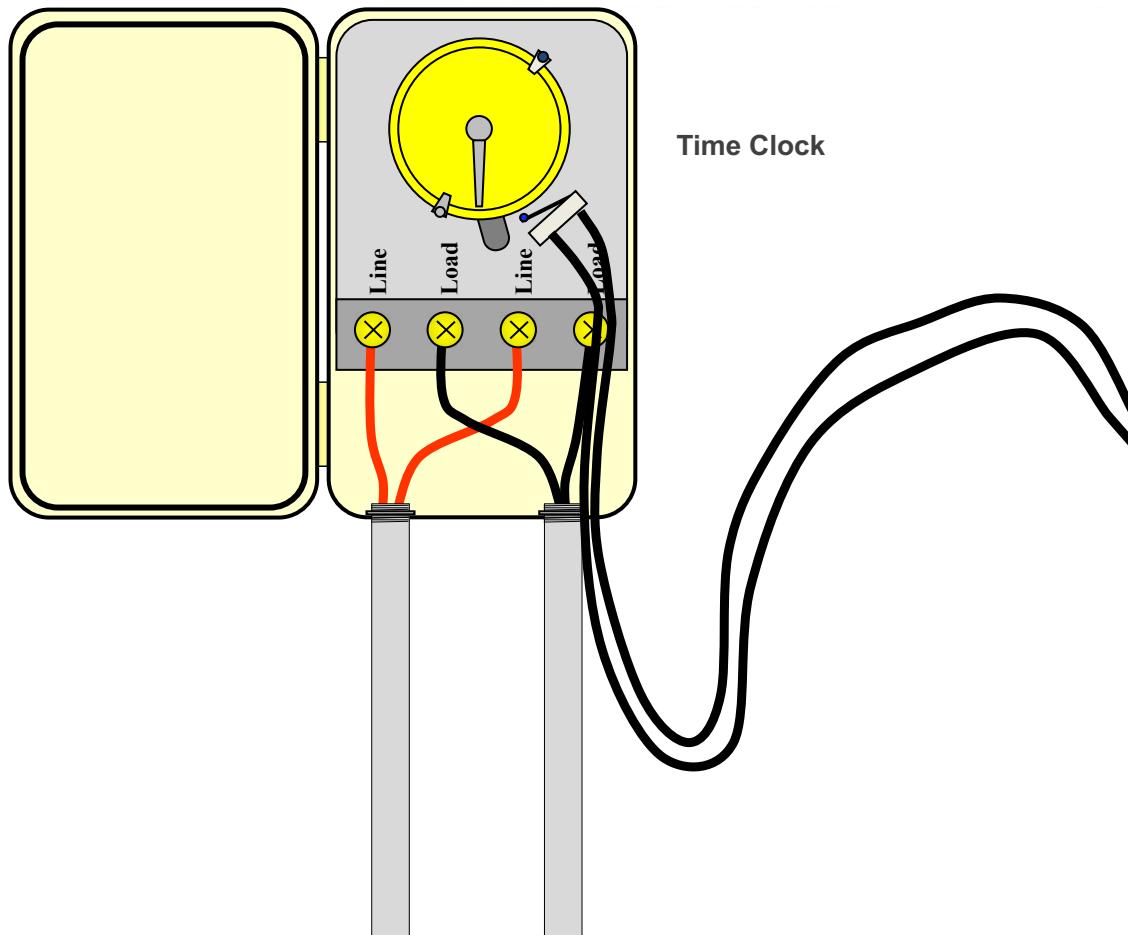
Notes _____

JXi CONNECTED TO "FIREMAN'S SWITCH"



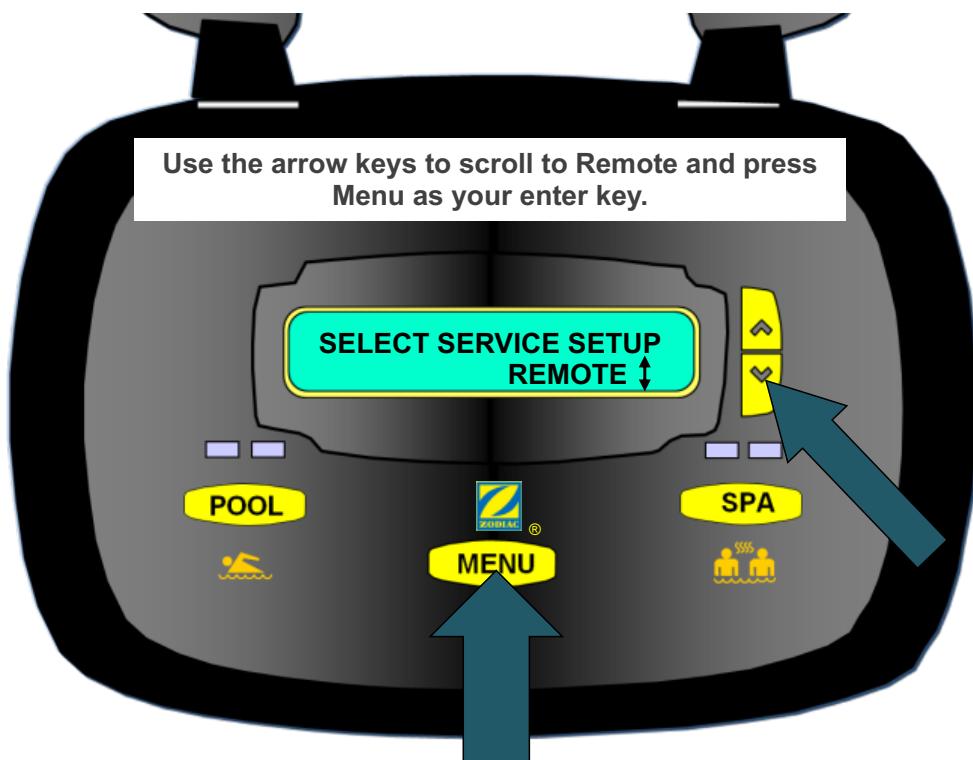
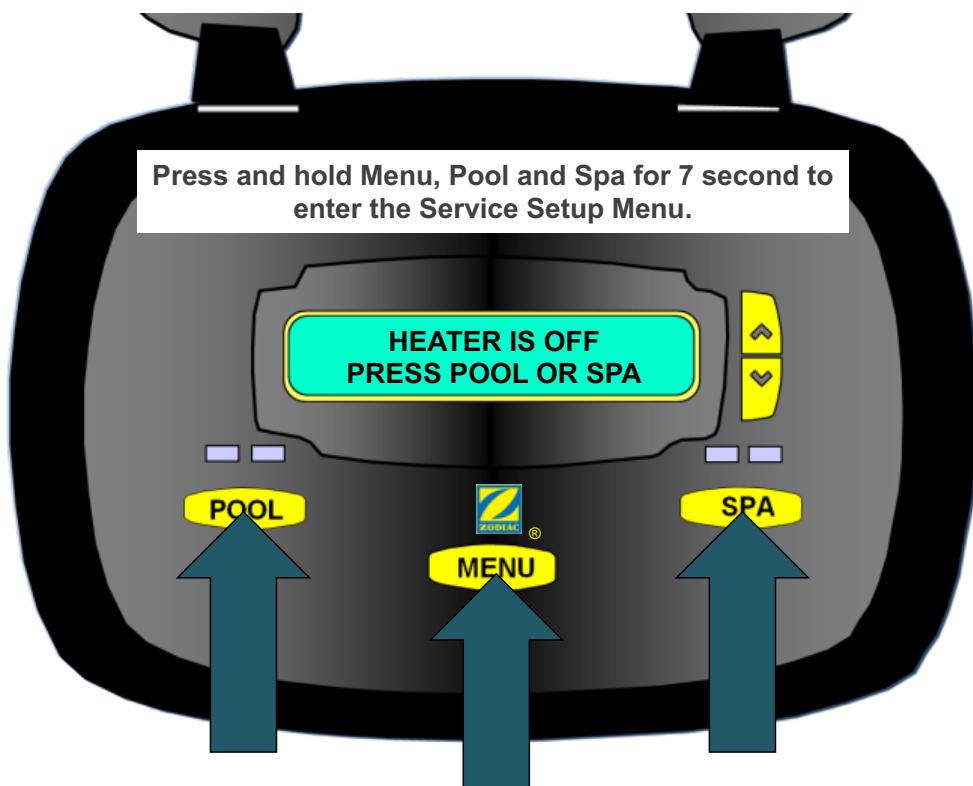
Notes _____

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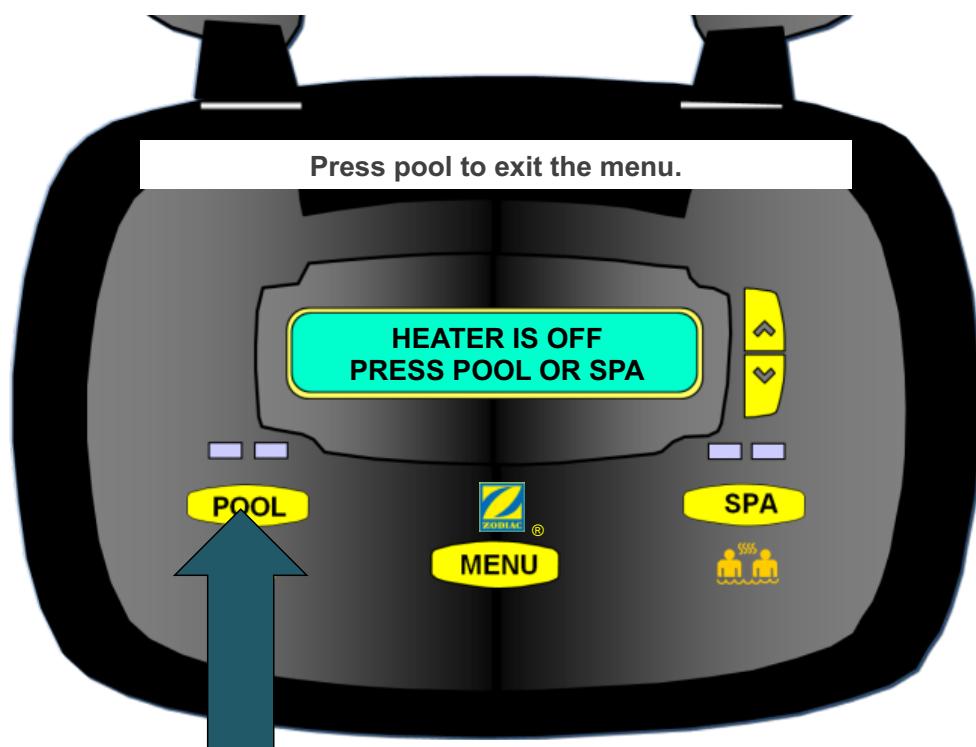
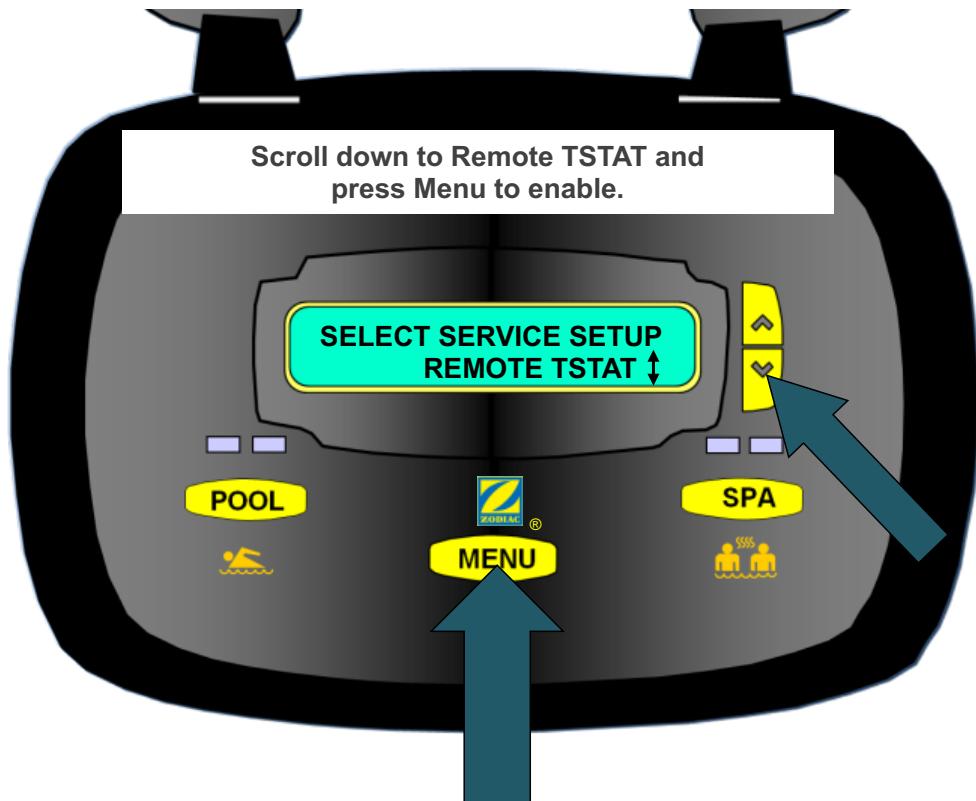
Notes _____

JXi CONNECTED TO "FIREMAN'S SWITCH"

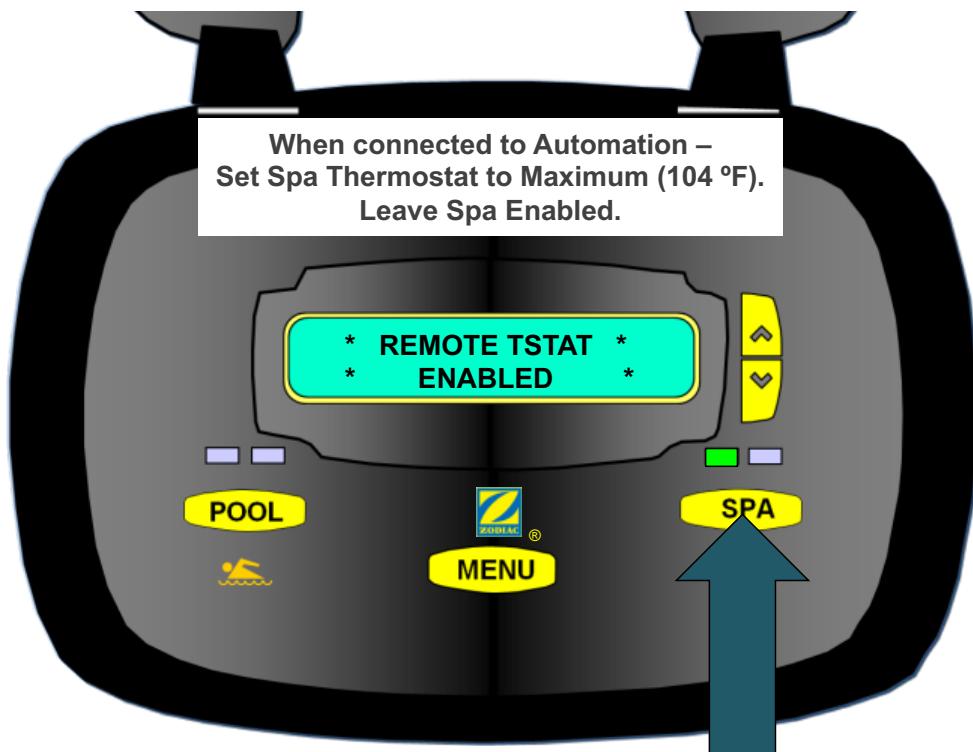
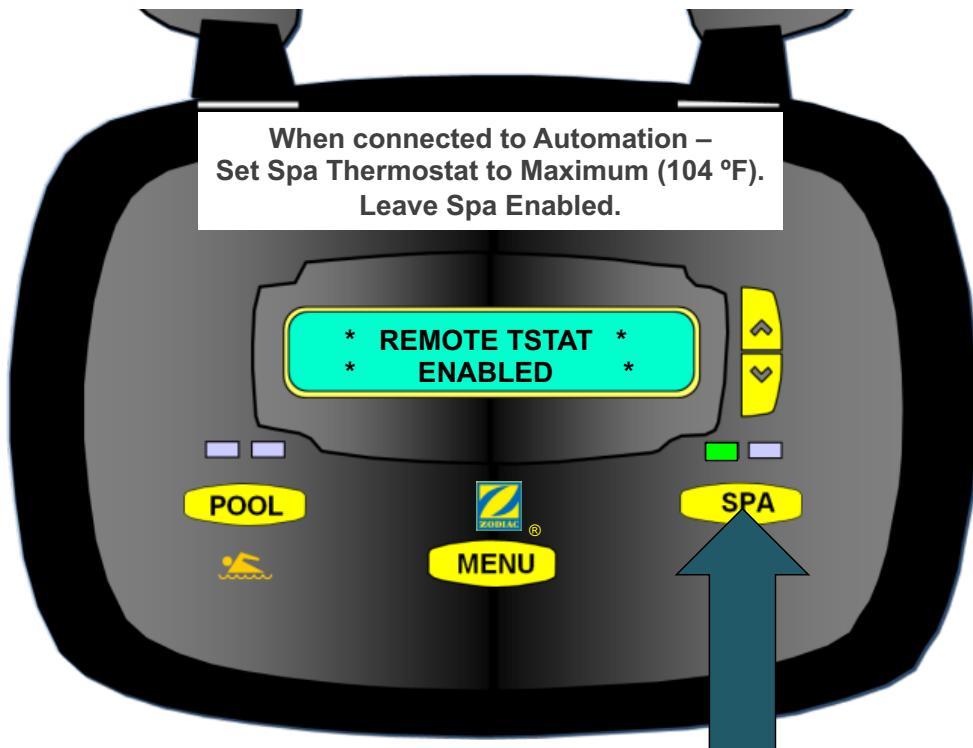


Installation, Connection to Control Two Wire (TSTAT)

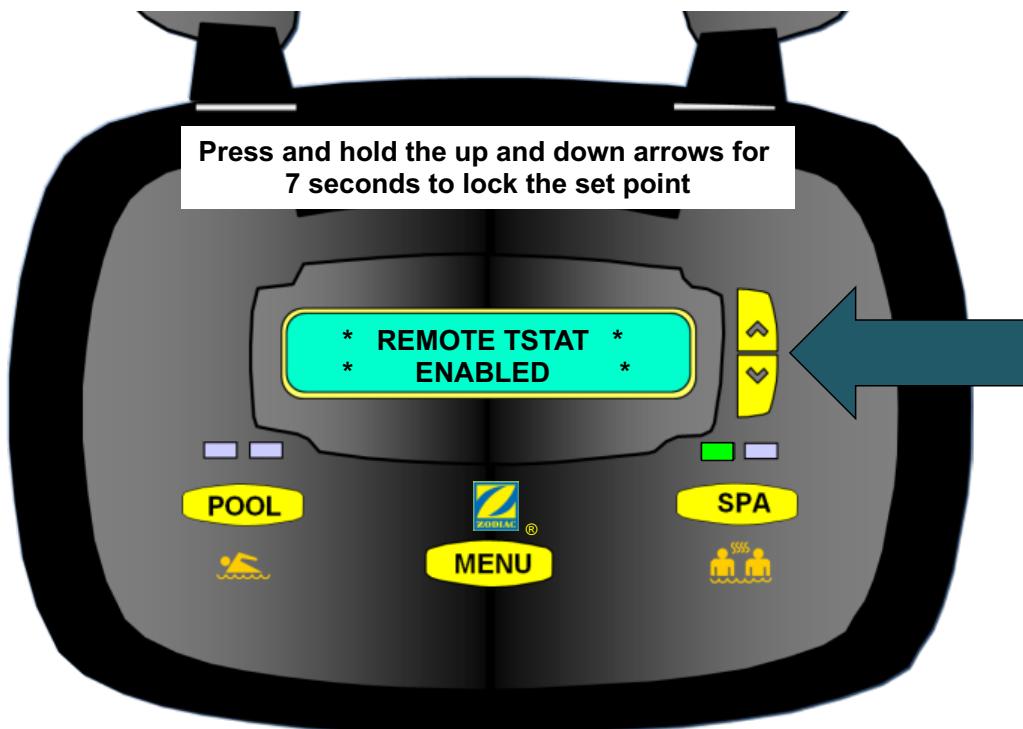
JXi CONNECTED TO "FIREMAN'S SWITCH"



JXi CONNECTED TO "FIREMAN'S SWITCH"



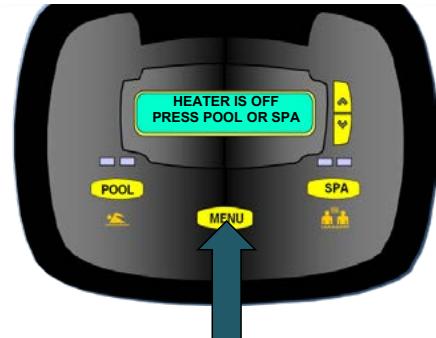
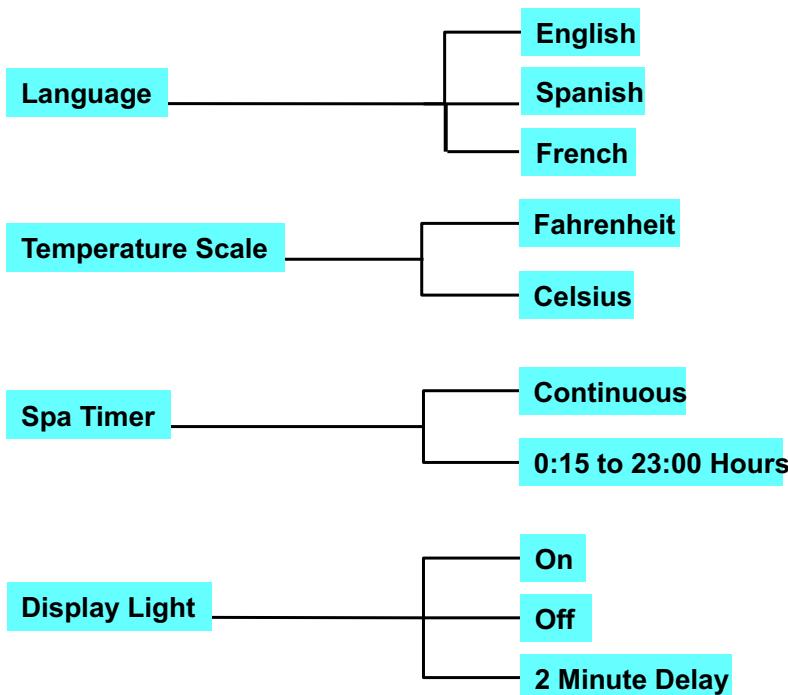
JXi CONNECTED TO "FIREMAN'S SWITCH"



Notes _____

CONNECTION TO CONTROL TWO WIRE (TSTAT)

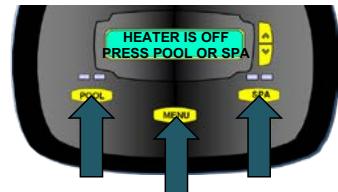
End User Menu, Universal Control



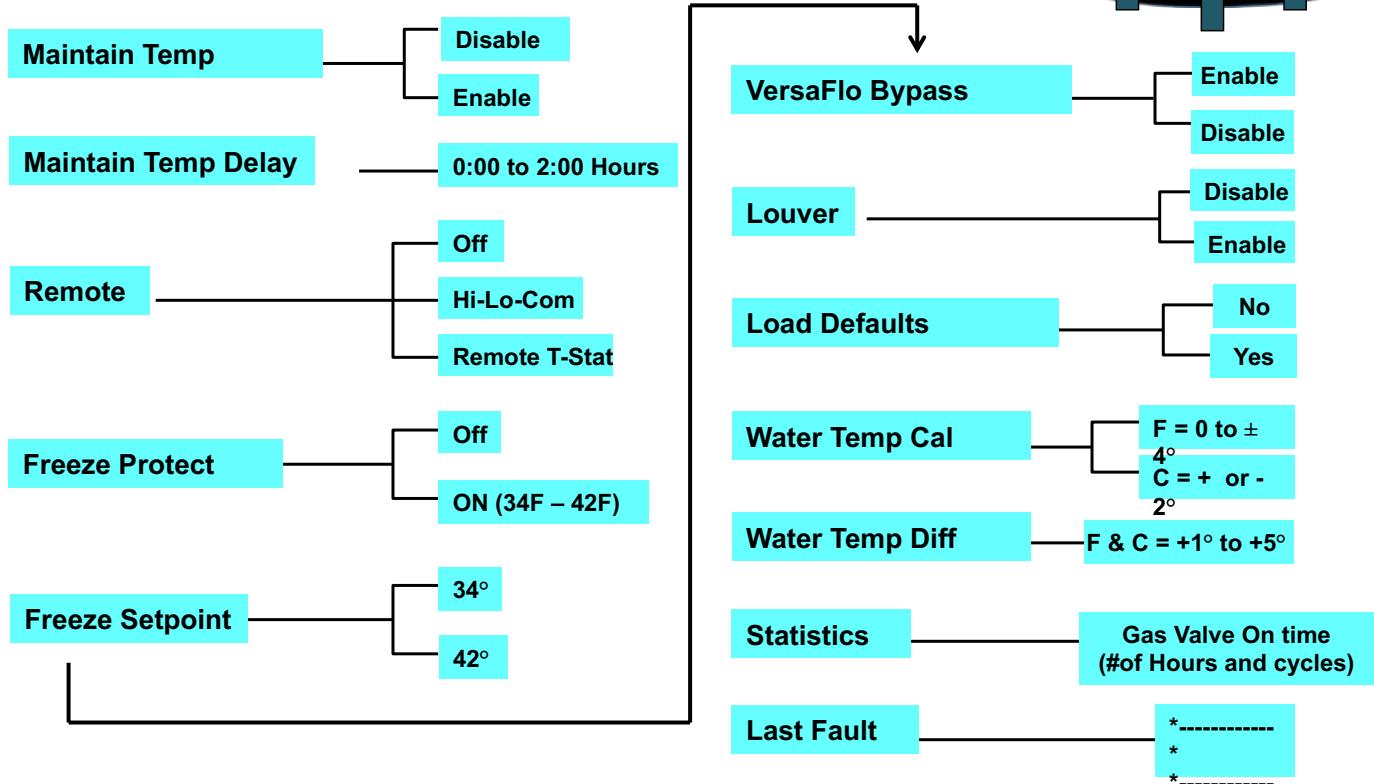
Hold down the Menu Button
for 5 to 10 Seconds

Notes _____

CONNECTION TO CONTROL TWO WIRE (TSTAT)



Installer/Technician Menu, Universal Control

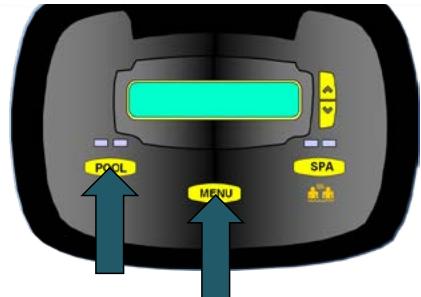


Notes _____

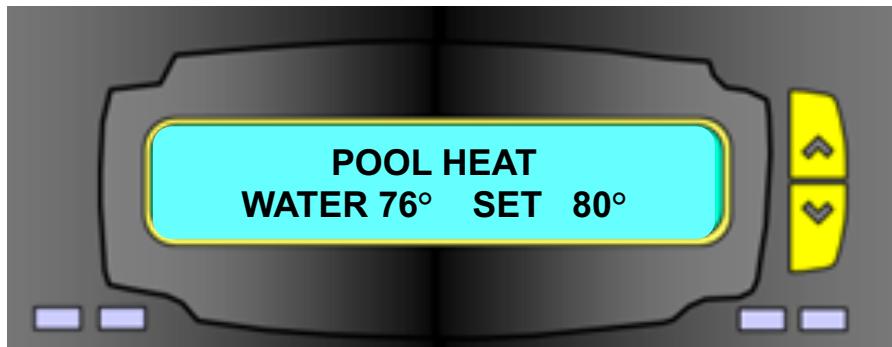
INSTALLATION

Flue Temp measurement, Universal Control

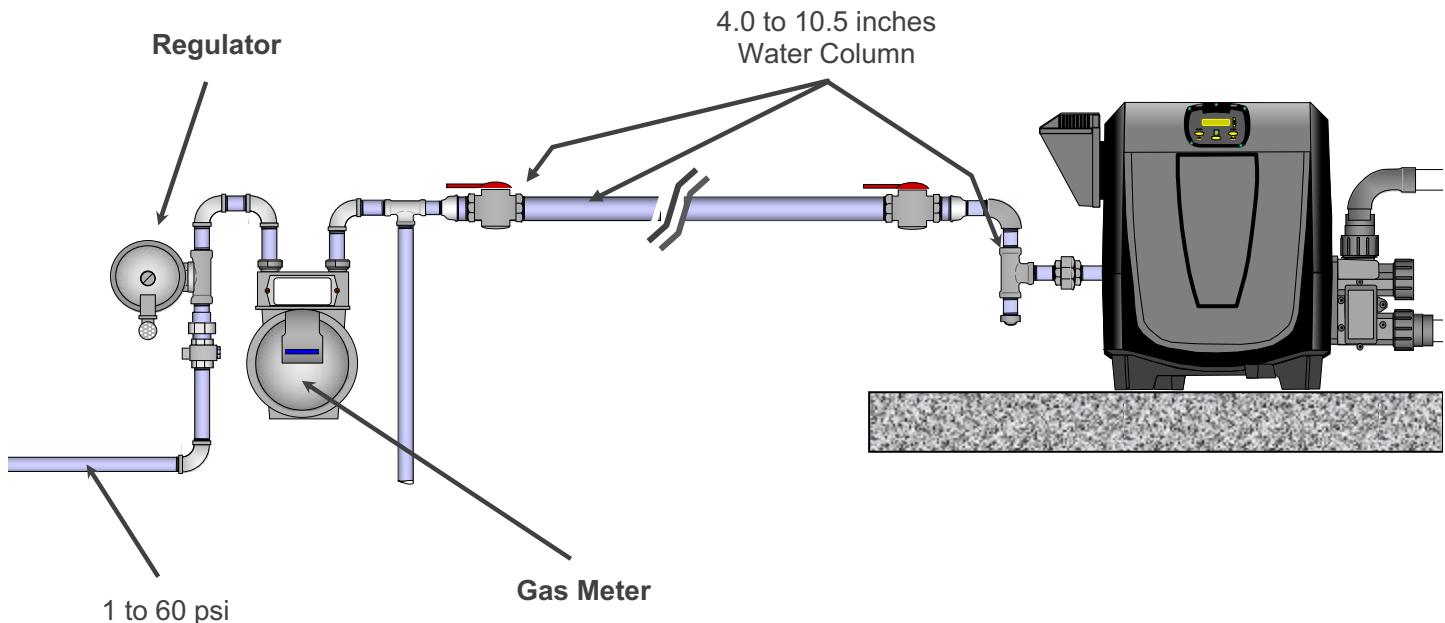
(Ensure heater is calling for heat)



Press and hold POOL and MENU for 5 seconds



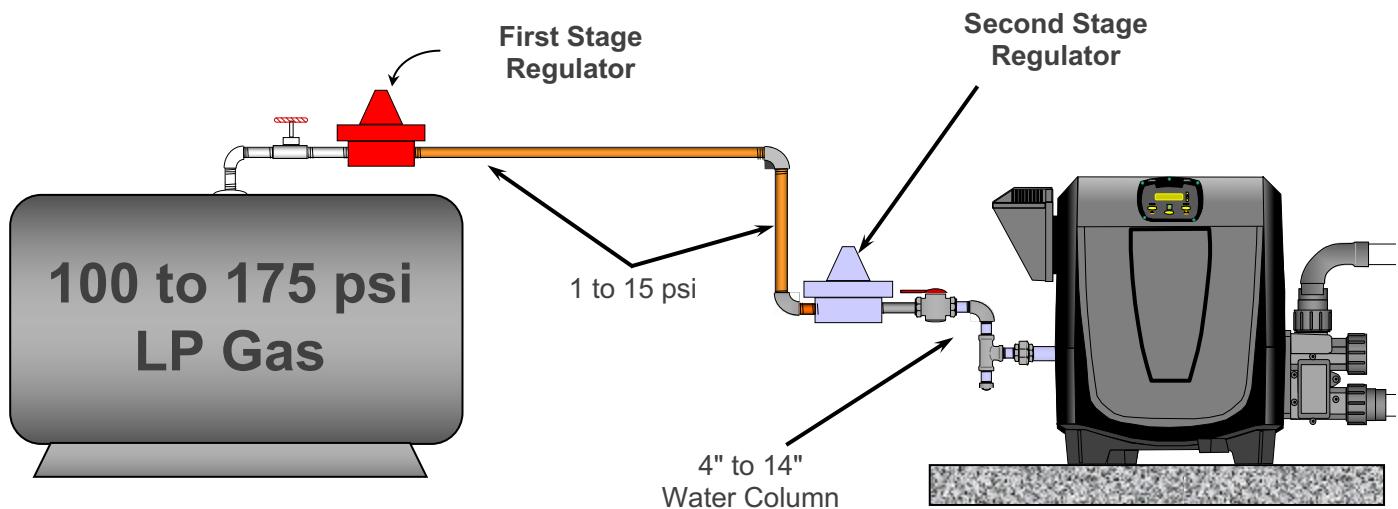
Notes _____

NATURAL GAS

1 psi = 28" Water Column

PROPANE GAS

Gas Flow: Two Stage Regulation



1 psi = 28" W.C.

INSTALLATION GAS REQUIREMENTS

Field Assembly Check List

Properly size gas pipe to supply gas from the meter to the heater.

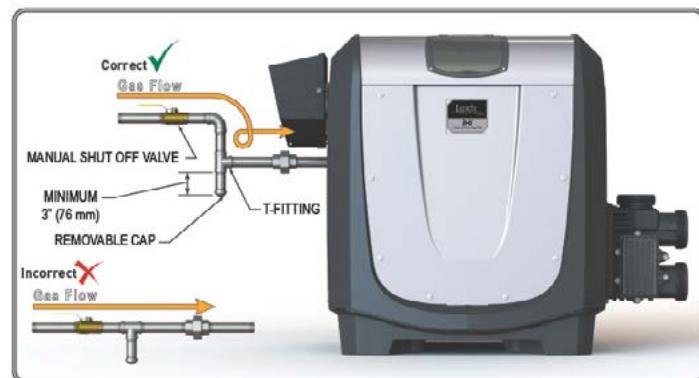
Gas shut-off valve (ball-cock) must be installed in-line outside of the heater jacket.

Suitable gas union must be installed to connect gas line to heater outside of the heater jacket.

Gas sediment trap (drip leg) in gas line between shut-off valve and heater is required (NFPA 54 ANSI Z223.1 – 2018 7.6.3 – 9.6.8).

Model	Maximum Equivalent Pipe Length									
	Natural Gas at 1050 btu per cubic foot		Propane Gas at 2500 btu per cubic foot		Natural Gas at 1050 btu per cubic foot		Propane Gas at 2500 btu per cubic foot		Natural Gas at 1050 btu per cubic foot	
	3/4"	1"	1-1/4"	1-1/2"	2"	3/4"	1"	1-1/4"	1-1/2"	2"
JXi400	NG 5 ft	LP 20 ft	NG 30 ft	LP 60 ft	NG 110 ft	LP 260 ft	NG 230 ft	LP 560 ft	NG 600 ft	LP 600 ft
JXi260	NG 15 ft	LP 40 ft	NG 60 ft	LP 150 ft	NG 230 ft	LP 590 ft	NG 490 ft	LP 600 ft	NG 600 ft	LP 600 ft
JXi200	NG 30 ft	LP 70 ft	NG 100 ft	LP 240 ft	NG 380 ft	LP 600 ft	NG 600 ft	LP 600 ft	NG 600 ft	LP 600 ft

Table shows the minimum supply gas pipe size required. Larger pipe size can be used if required by local code or if desired.



LIQUID PROPANE GAS AKA LP OR PROPANE GAS

Do not install in pits or locations where gas might accumulate.

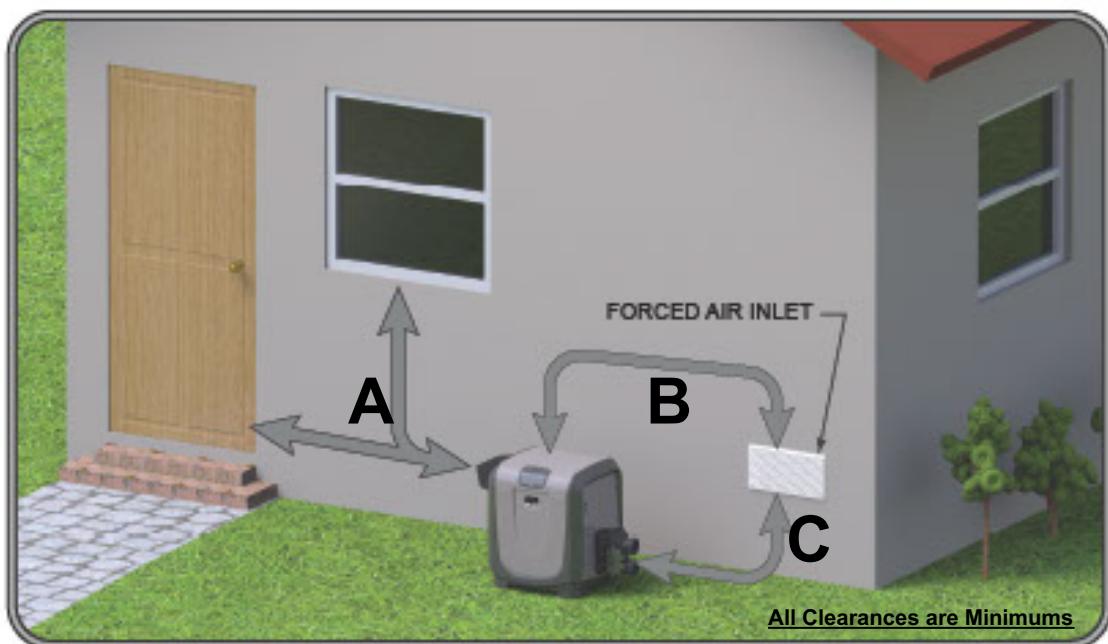
Consult the National Fuel Gas Code® (NFPA 54/ANSI Z223.1, latest edition), the Liquefied Petroleum Gas Code (NFPA 58, latest edition), the Natural Gas and Propane Installation Code in Canada (CAN/CSA B149.1, latest edition), and any other local codes and fire protection authorities about specific installation restrictions in your area.

CLEARANCES

Distance from heater to door, window or other opening to buildings

Dimension "A" – 4' minimum (Canada - 10' Min)

Dimension "B" – May be any distance if dimension "C" is 3' or more Dimension "B" – Must be at least 10' if dimension "C" is less than 3'

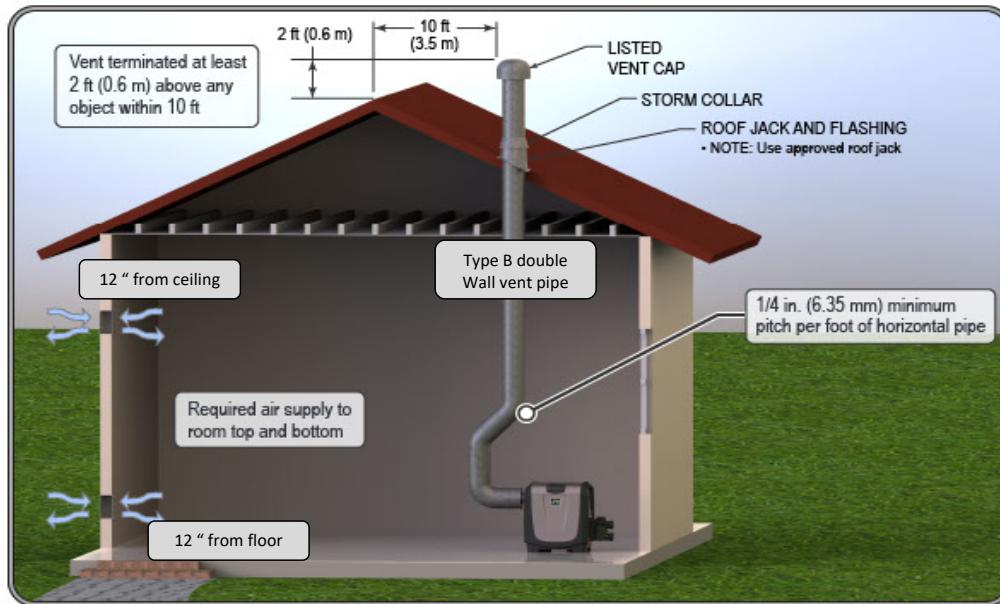


Note: points of measurement are from vent location

Notes _____

VENTING INDOORS

Category I Venting

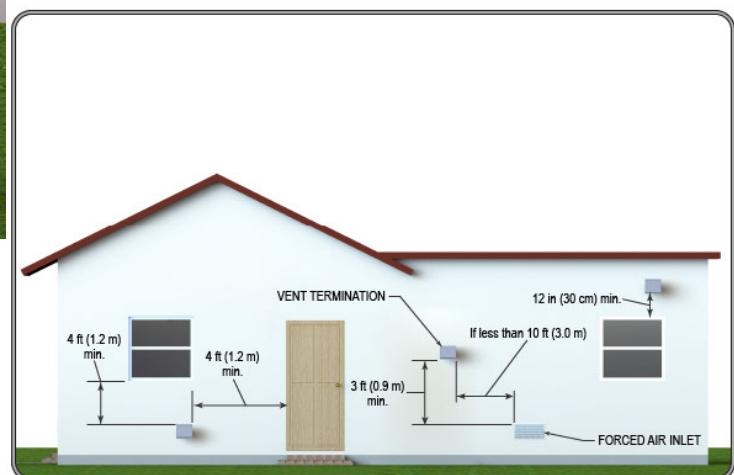


CATEGORY III SIDE WALL VENTING

Parts are available through companies such as Z-Flex or Heat-Fab and must meet the UL 1738 for Cat III installs.



AI29-4C® Stainless Steel
Vent Pipe and components



JXi AIR FOR COMBUSTION AND VENTILATION

Required Area for Net Free

(One Square Inch per 4,000 BTUs)

Air Opening in Square Inches directly from outside

Model	Direct from outside		Duct from outside	
	in ²	cm ²	in ²	cm ²
200	50	323	100	645
260	65	419	130	839
400	100	645	200	1291

Zodiac® strongly recommends using high quality vent pipe materials, which are corrosion resistant and suitable for the specific installation being considered, adapters and increasers can be obtained from manufacturers such as Amerivent or Duravent®.

CODES*		National Fuel Gas code ANSI® Z223.1 (NFPA® 54)					CAN/CSA-B149.1
CATEGORY	STATIC PRESS.	STACK TEMP.	CONDENSATE	TERMINATION LOCATION	PIPE SIZING		
					MODEL	PIPE SIZE	SPECIAL GAS VENT LENGTH [†] (VERTICAL OR HORIZONTAL)
I	Negative	High	Minimal	Roof	200	6 in (15 cm)	N/A
					260	7 in (18 cm)	N/A
					400	8 in (20 cm)	N/A
III	Positive	High	Minimal	Roof or Side Wall	200	4 in (10 cm)	50 ft (15 m)
					260	4 in (10 cm)	70 ft (21 m)
					400	4 in (10 cm)	70 ft (21 m)

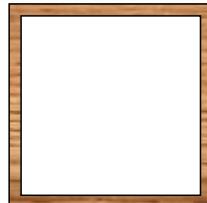
*Ensure that you are referencing the latest edition and pay special attention to the chapter addressing "Venting of Equipment".

[†]For each elbow installed, reduce the run length by 12 feet (3.7m)

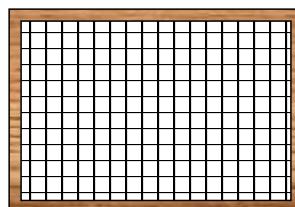
Notes _____

COMBUSTION AIR

Combustion air directly from the outside
1 sq. inch of outside air per 4,000 BTUs
If ducted 1 sq. inch per 2,000 BTUs



Opening to outside air no screens/no louvers



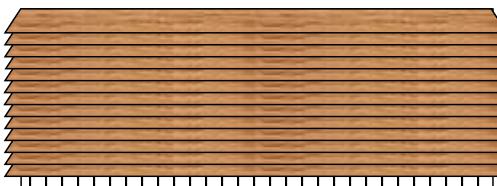
Opening to outside air with 1/4" mesh screen - add 50%

Opening to outside air with louvers add at least 20%



Opening to outside air with louvers add up to 75%

Opening to outside air with screens and louvers

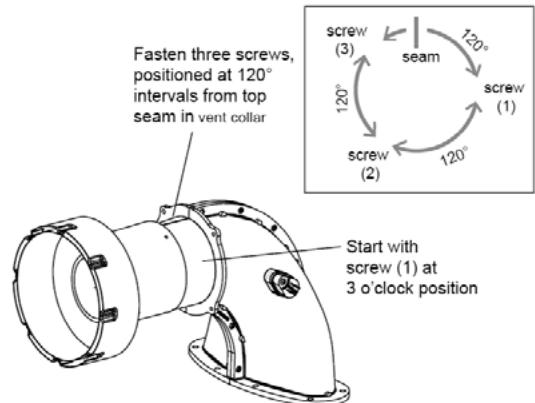
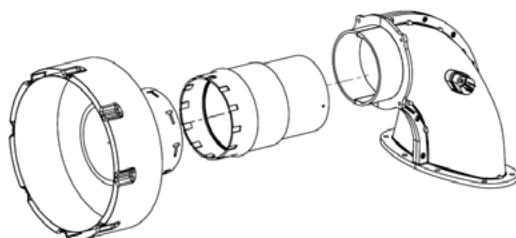


Consult louver manufacture

Notes _____

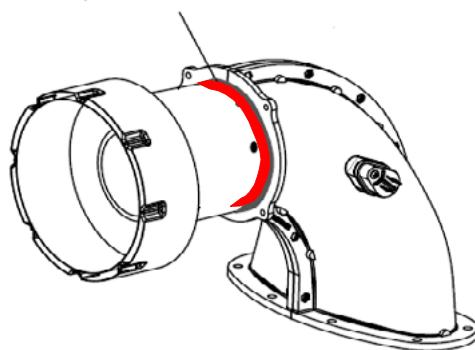
VENTING CAT III

Parts are available through companies such as Z-Flex or Heat-Fab and must meet the UL 1738 for Cat III installs



Start with screw (1) at 3 o'clock position

Apply RTV at seal after connecting.
Use minimum 600°F (315°C) temperature rated RTV.



Notes _____

CONNECT VENT ADAPTER



Part Number R0731100

Align and attach (2) flanges.



Notes _____

DIRECT AIR INTAKE

In certain applications it may be necessary to supply intake air directly to the heater. You will need to install the direct air conversion R-Kit R0724600.

A total equivalent length of 50' (15 m) of 3" (75 mm) PVC tubing can be used to bring the intake air directly to the blower input. Please be aware that each elbow used will account for 12' (3.6 m) of length.



Turn off all electrical power to the heater at the breakers.

- Ensure that the filter pump is off and will remain off for the duration of this procedure
- Turn off the gas supply to the heater at the meter or at the manual shut off valve outside the heater body
- For ease of access, remove the rear panel and optionally the top panel

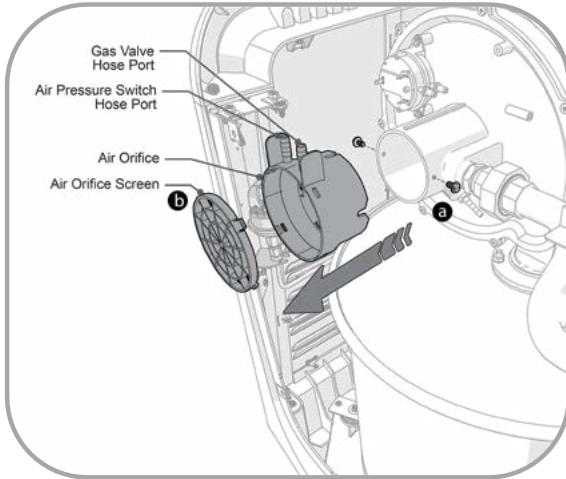
Direct Air Intake Part# R0724600

Parts Included:

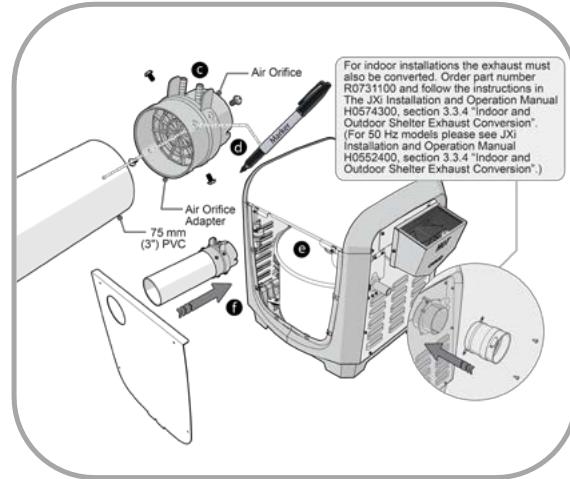
- 1 – Body Panel
- 1 – Inlet Adapter
- 8 – Screws, #8x3/4"

Notes _____

DIRECT AIR INTAKE



- a** Loosen the two screws securing the air orifice and screen in place. Remove the air pressure switch and gas valve hose from the air orifice
- b** Remove the air orifice, separate and dispose of the orifice screen
- c** Align the orifice adapter with the orifice tabs and secure with four screws

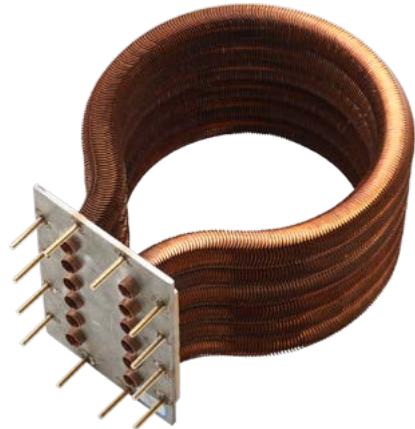


- d** Dry fit the 3" (75 mm) PVC tubing into the orifice adapter. Mark screw hole locations with a pen. Remove and drill pilot holes in the PVC. Fit the PVC into the orifice adapter, align the holes and secure with four screws
- e** Reinstall the air orifice and air hoses
- f** Install the new rear panel over the PVC and secure with four screws
 - If previously removed, reinstall the top panel
 - Turn on the gas supply to the heater
 - Restore electrical power at the breaker
 - Start the heater to ensure proper ignition
 - Once proper ignition is confirmed the heater can be returned to normal operation

Notes _____



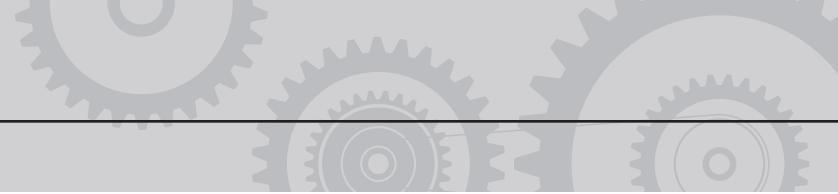
WATER FLOW



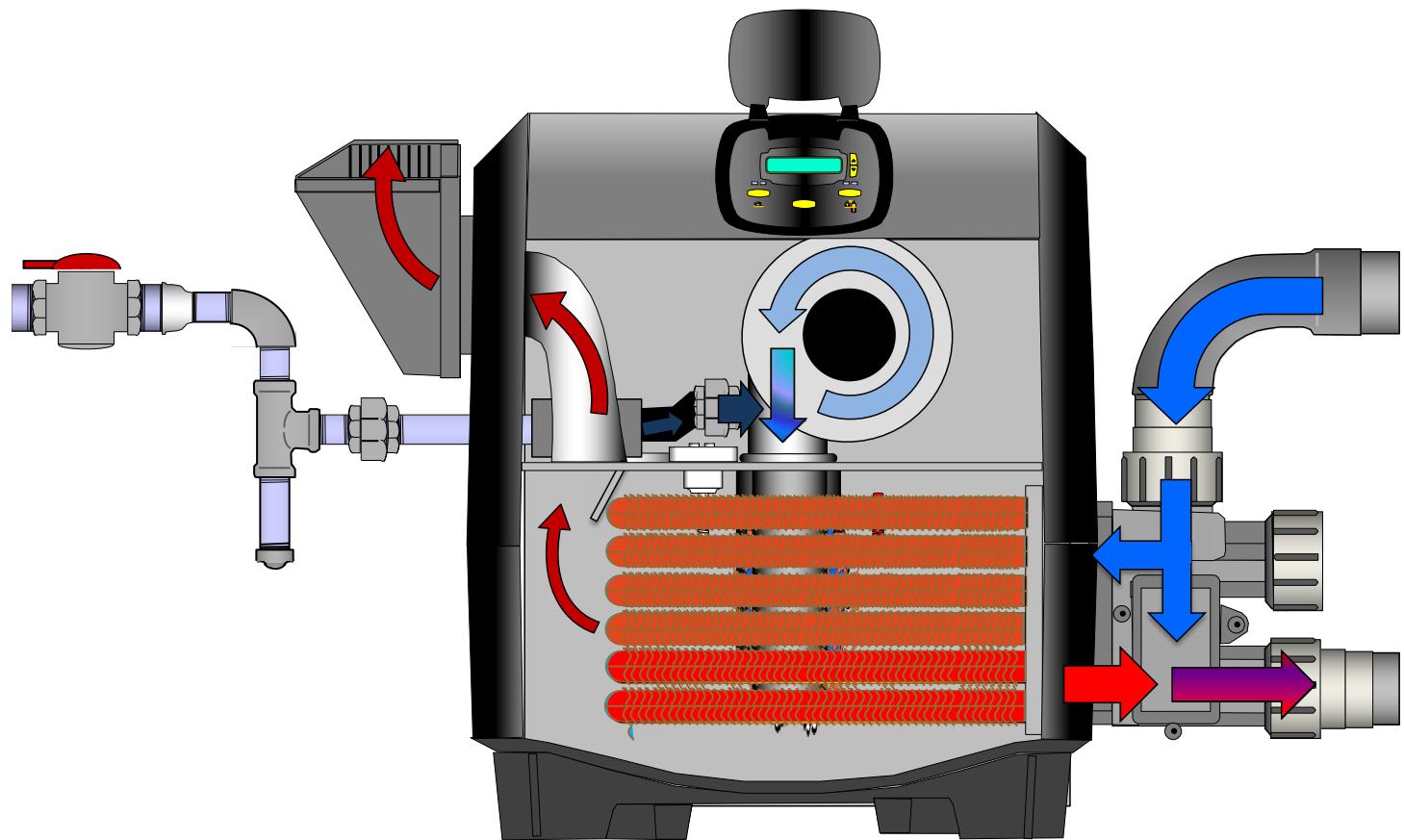
The JXi™ utilizes a 2 pass heat exchanger regardless of the BTU's of the heater.

BTU's	Total tubes	1 st pass	2 nd pass
200k	3	2	1
260k	4	2	2
400k	6	4	2

Notes _____



OPERATION



400K BTU model shown

Notes _____



NEW EXCHANGER FLOW CONTROL

- As with all pool heaters water velocity and flow through the heat exchanger are controlled by an automatic bypass. The automatic bypass consists of a disk and spring and is located between the Inlet/Outlet header.
- A thermal regulator valve is also incorporated into this heater in the Inlet/Outlet header. Its purpose is to hold water in the exchanger during initial heat up to reduce the amount of condensate created at the heat exchanger.



By-Pass



Thermal Regulator Valve (TRV)

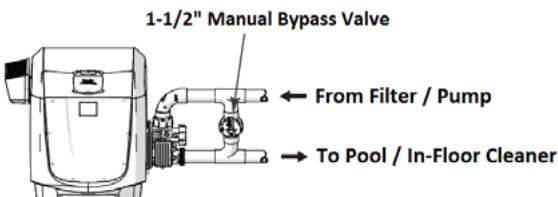


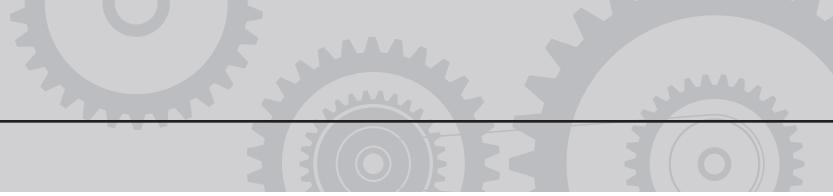
HEAT TRANSFER TEST



After 3 minutes of heating
the Temperature should be
120° F to 125 F°

(Inlet water temp needs to be
between 70 & 90 to calibrate
temp rise properly.)





PRESSURE RELIEF VALVE (PRV)

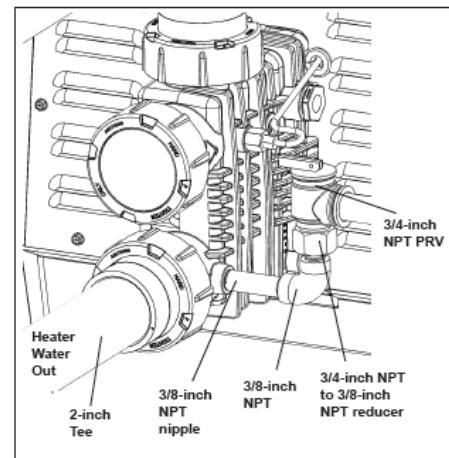
- Recommended for all installations
- Mandatory for all installs with possible return-side restrictions. (IE: 3 way valve for solar or other water flow feature)
- May be required by local code
- Must be ANSI Z21.22 compliant in the U.S. and CSA 4.4 compliant in Canada
- Maximum pressure cannot exceed 50 P.S.I.



PRESSURE RELIEF VALVE (PRV) INSTALLATION



- Locate the Threaded boss on outlet side of header
- Drill 1/4" hole through the Boss inner wall (*pilot bit is recommended to prevent thread damage*)
- Install 3/8" x 3" NPT nipple into Boss
- Install 3/8" elbow and 3/8" male to 3/4" female adapter
- Install PRV and drain piping



PART NUMBERS

Model Numbers

JXi400NK – JXi™ 400K BTU Natural Gas with VersaFlo™

JXiVFKIT – VersaFlo Bypass Accessory Kit

- **Includes:**

- VersaFlo Bypass Assembly with wiring harness
- Bypass Header Gasket
- Attachment Screws (QTY 6)
- Wire Ties
- Cable grommet
- 5/16" wrench



JXi400NK

Serial Numbers

VersaFlo heaters start with Rev H serial numbers

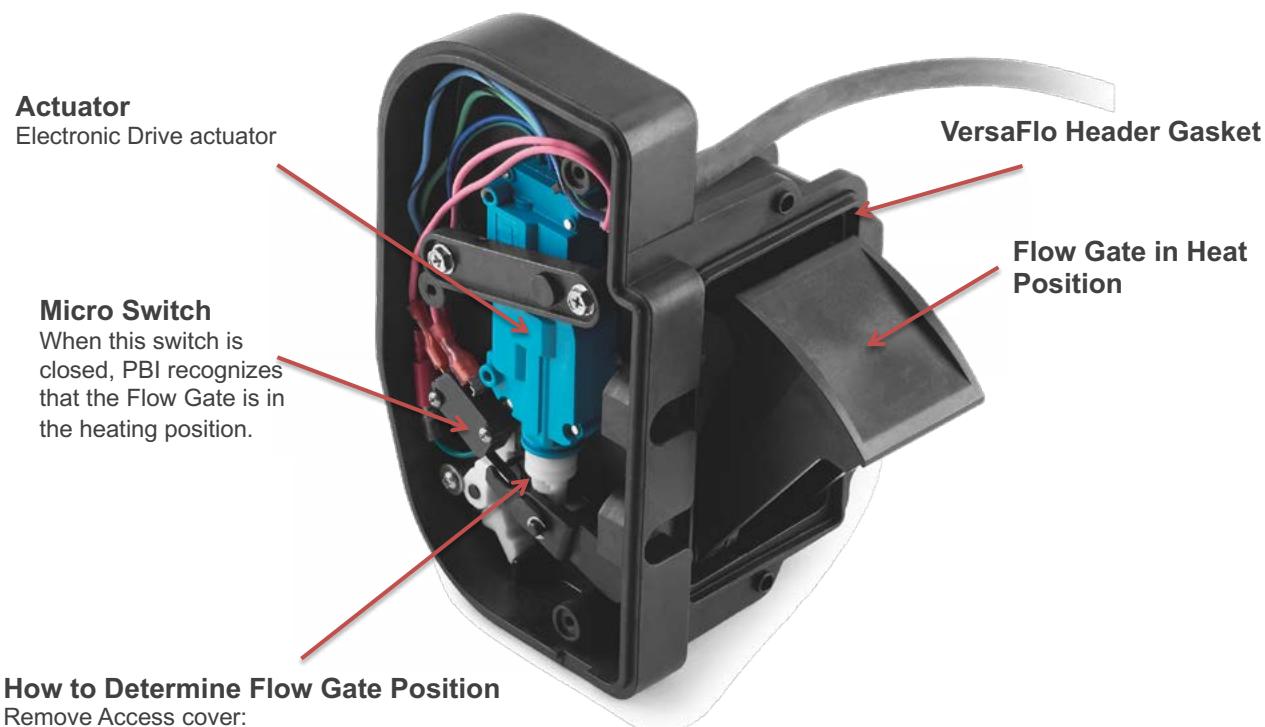
- **JXi Rev H will include:**
 - New PIB (with VersaFlo Connections)
 - New Flue Sensor
- **JXi Rev G and Earlier upgradeable with the following:**
 - R0719500 – JXi PIB Kit
 - R0719400 – JXi Flue Sensor Kit



JXiVFKIT

Notes _____

BYPASS IN HEAT POSITION



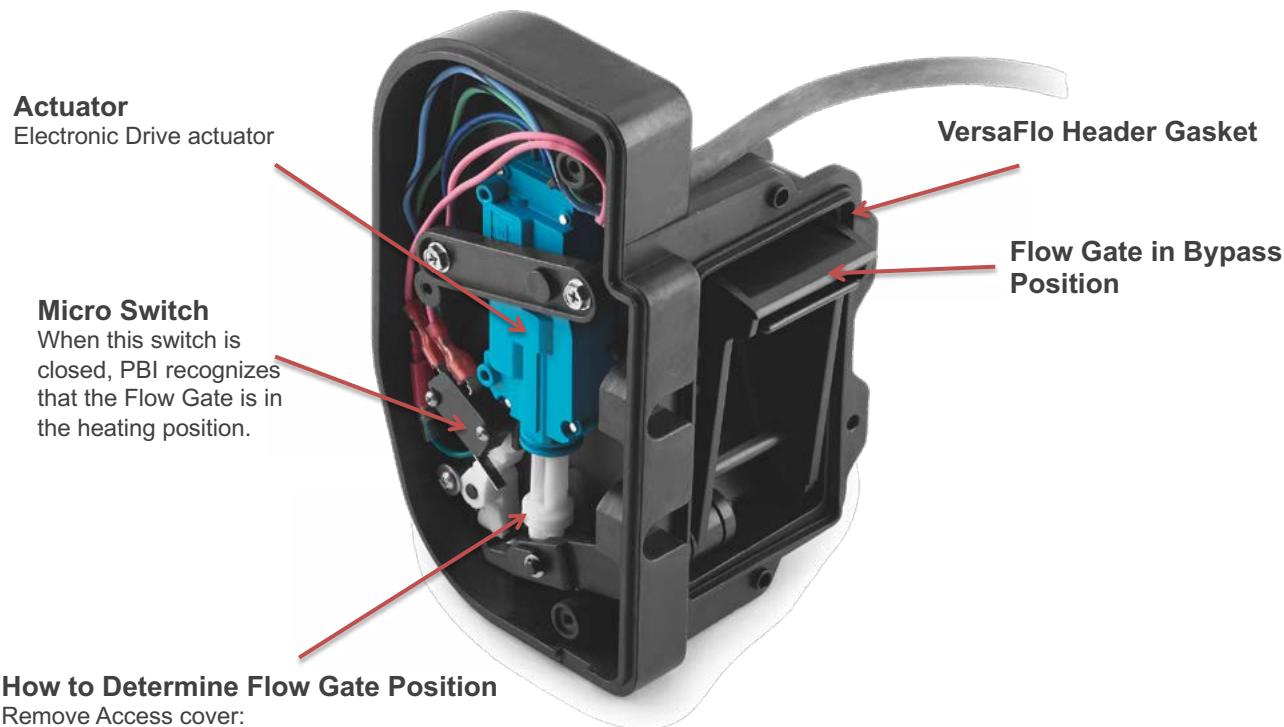
How to Determine Flow Gate Position

Remove Access cover:

Actuator up = water flowing through heat exchanger

Notes _____

BYPASS IN BYPASS POSITION



How to Determine Flow Gate Position

Remove Access cover:

Actuator down = water bypassing heat exchanger

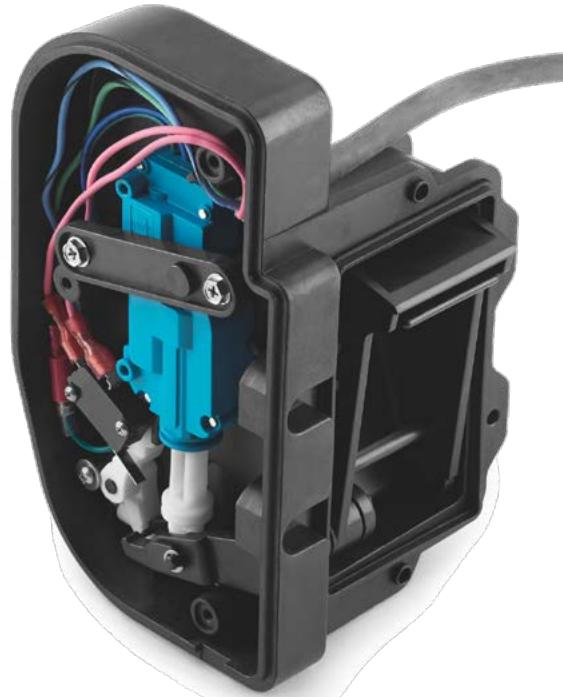
Notes _____

ANATOMY OF VERSAFLO ASSEMBLY

Flow Gate in Heat Position



Flow Gate in Bypass Position



How to Determine Flow Gate Position

Remove Access cover:

Actuator up = water flowing through heat exchanger Actuator down = water bypassing heat exchanger

Notes _____

JXiVFKIT INSTALLATION

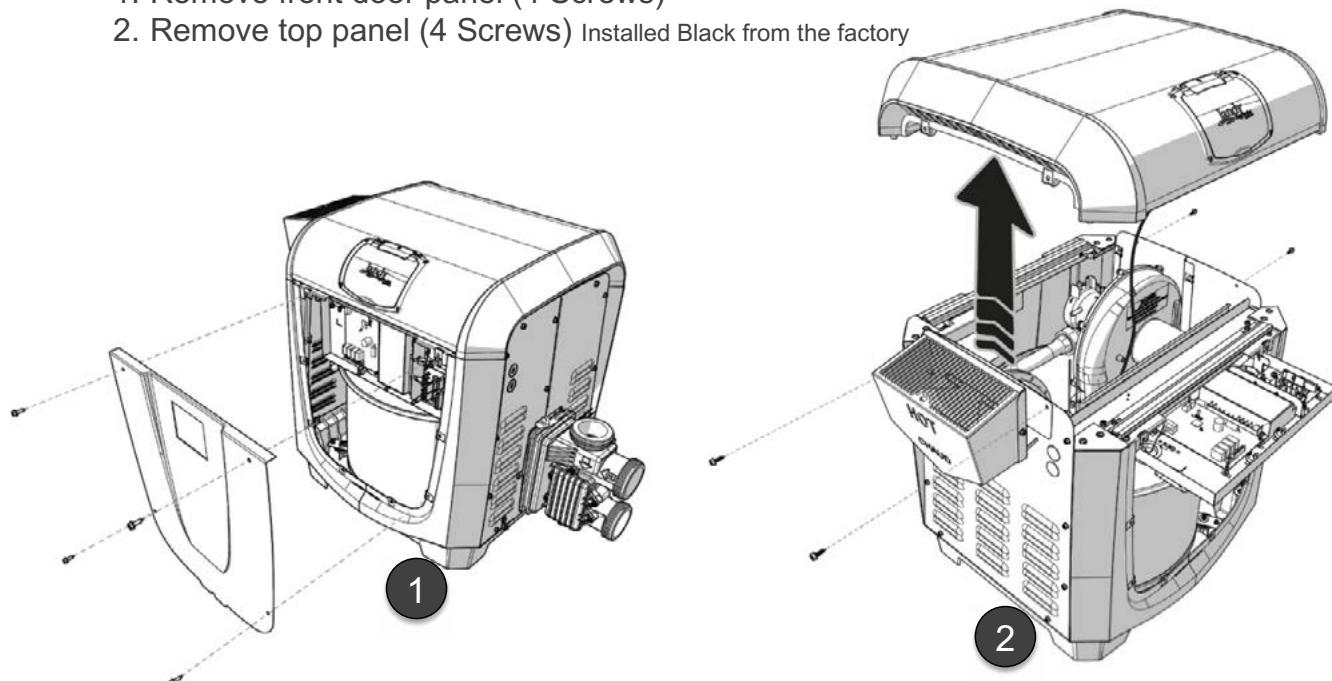


To prevent risk of electrical shock which can result in severe injury or death, ENSURE that the JXi heater is OFF and power to the equipment pad is disconnected before proceeding with installation.

To reduce the risk of electric shock, fire or injury, only licensed electricians or qualified pool professionals should attempt this installation.

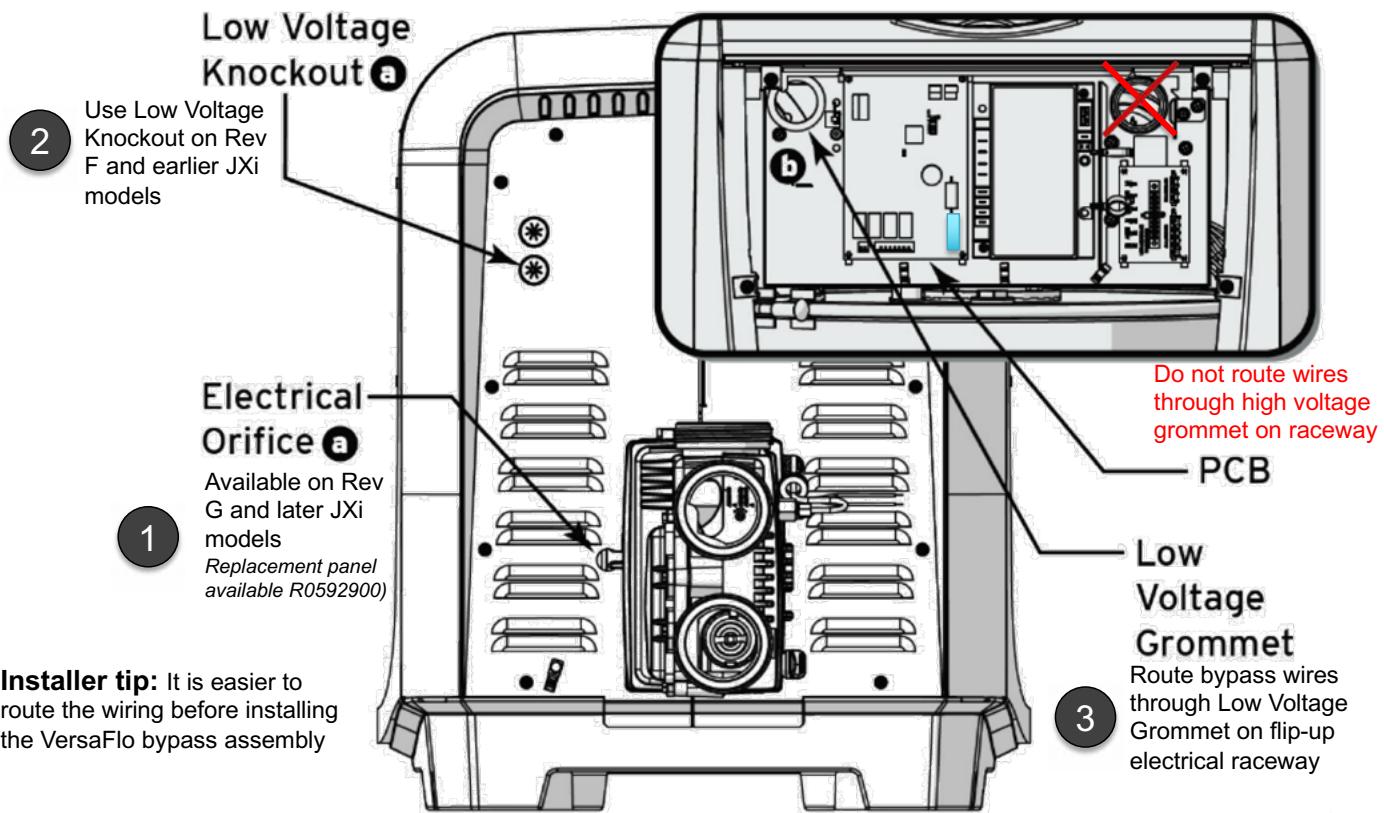
Prepare the JXi™ for Installation

1. Remove front door panel (4 Screws)
2. Remove top panel (4 Screws) Installed Black from the factory



JXiVFKIT FIELD INSTALLATION

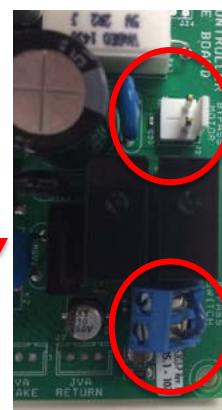
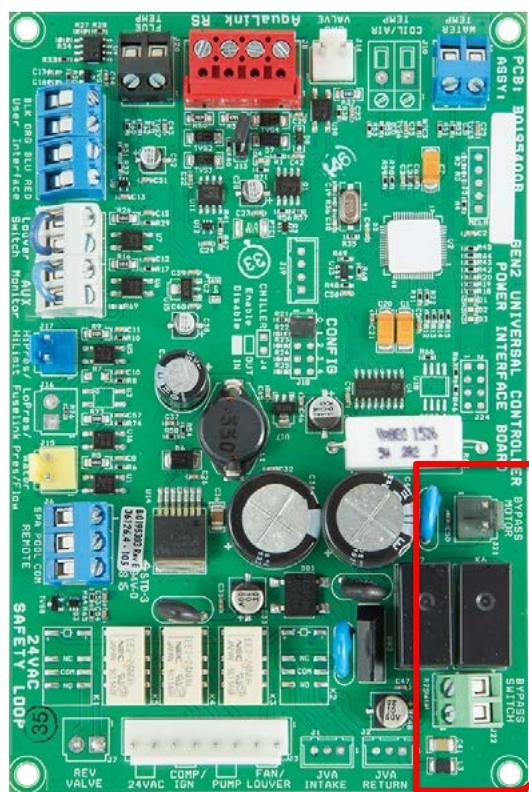
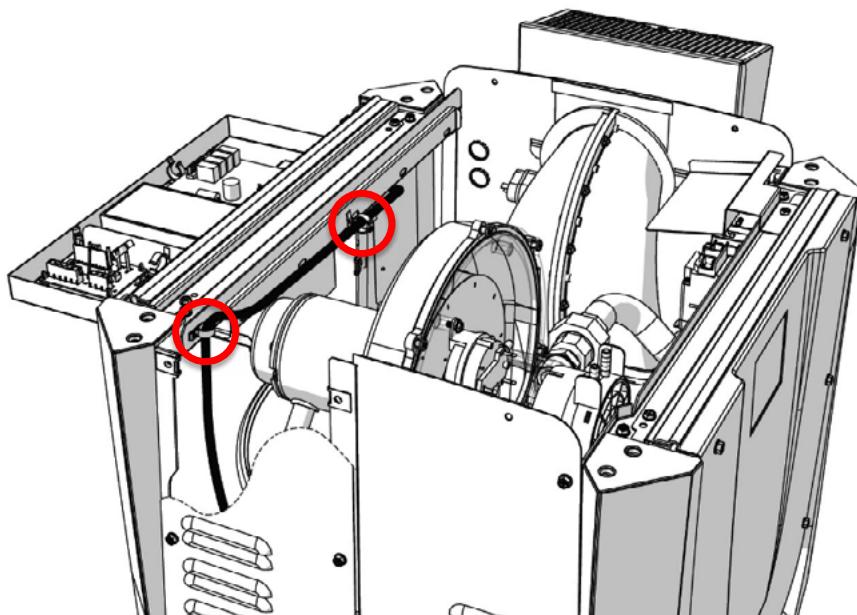
Route VersaFlo™ Wiring through JXi



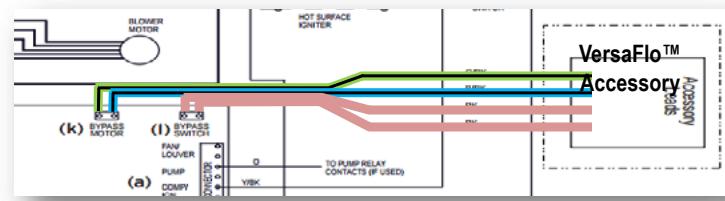
Notes _____

JXiVFKIT FIELD INSTALLATION

Secure Wire Harness using included wire ties



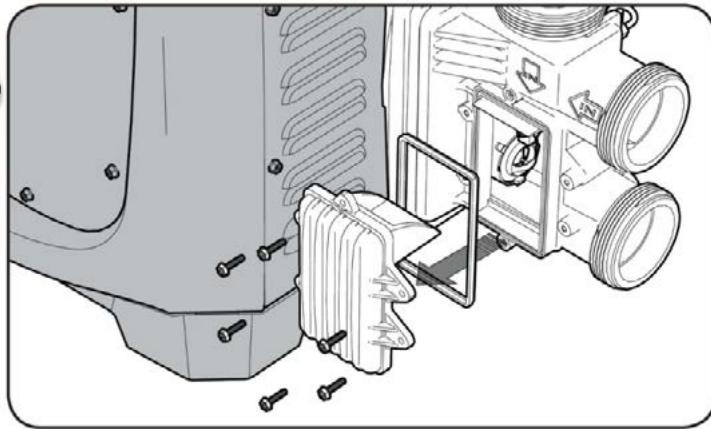
Bypass Motor (Actuator)



JXiVFKIT FIELD INSTALLATION

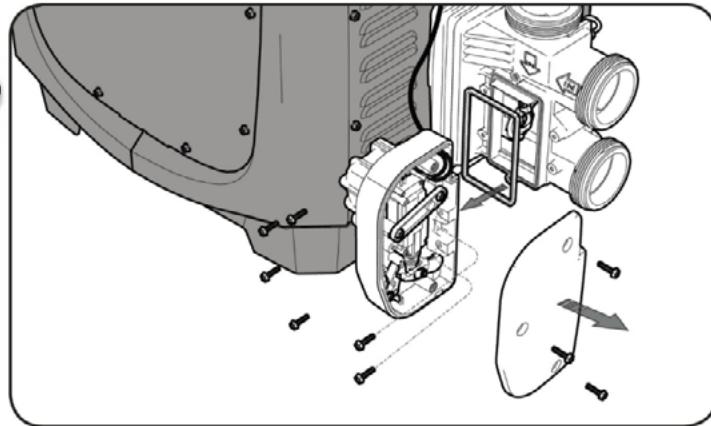
Install JXiVFKIT to header

1. Remove access panel
2. Remove bypass housing cover
3. Install VersaFlo™ Assembly using the six included screws
 - We recommend using the new gasket shipped with the JXiVFKIT
4. Verify proper operation of VersaFlo
(we will cover testing on next set of slides)
5. Re-install Bypass Housing Cover



2

Installer tip: The two screw heads located inside the bypass assembly are difficult to access using a standard driver. Start the screws by hand and tighten using the wrench included with the bypass kit or a standard 5/16" combination wrench



Notes _____

INITIAL START UP

Verify Version operation:

Restore Power to the heater

Confirm VersaFlo™ Bypass is enabled in the heater

- Enter service menu by pressing and holding Menu, Pool and Spa buttons
- Using Up / Down Arrows scroll to VersaFlo Option, press Menu
- Verify “VersaFlo Enabled” is selected, if not, enable VersaFlo
- Exit the Service Menu by pressing Pool or Spa button

Turn on Filter Pump

- Inspect for leaks on the JXi Header and inside the bypass housing.

Keep the heater in the OFF position

- The bypass Actuator should be in the down position (Bypass)

Restore gas to the heater

Press POOL or SPA and raise temperature to initiate a call for heat

- Shortly before the heater fires, the bypass actuator will move to the up position (Heat)
- D3 Diode on the PIB will illuminate green when bypass is in heat position and micro-switch is closed.

Turn the heater OFF

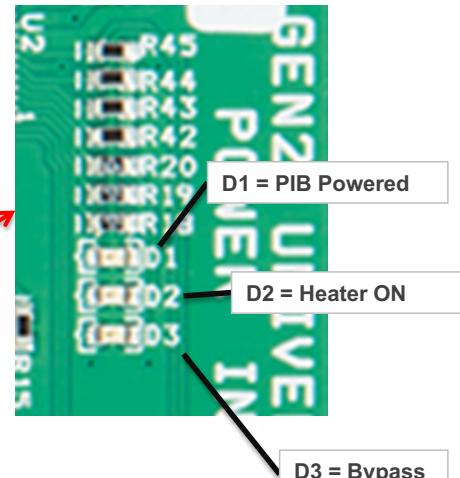
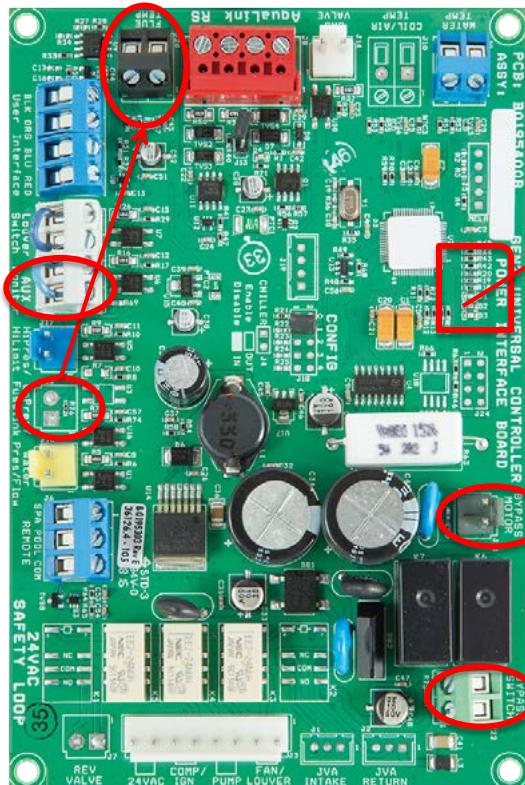
- After about one minute, the bypass actuator will return to the down position (bypass)

Replace Bypass Housing Cover

DIODE INDICATOR LIGHTS

Electronic Flue Sensor Terminals

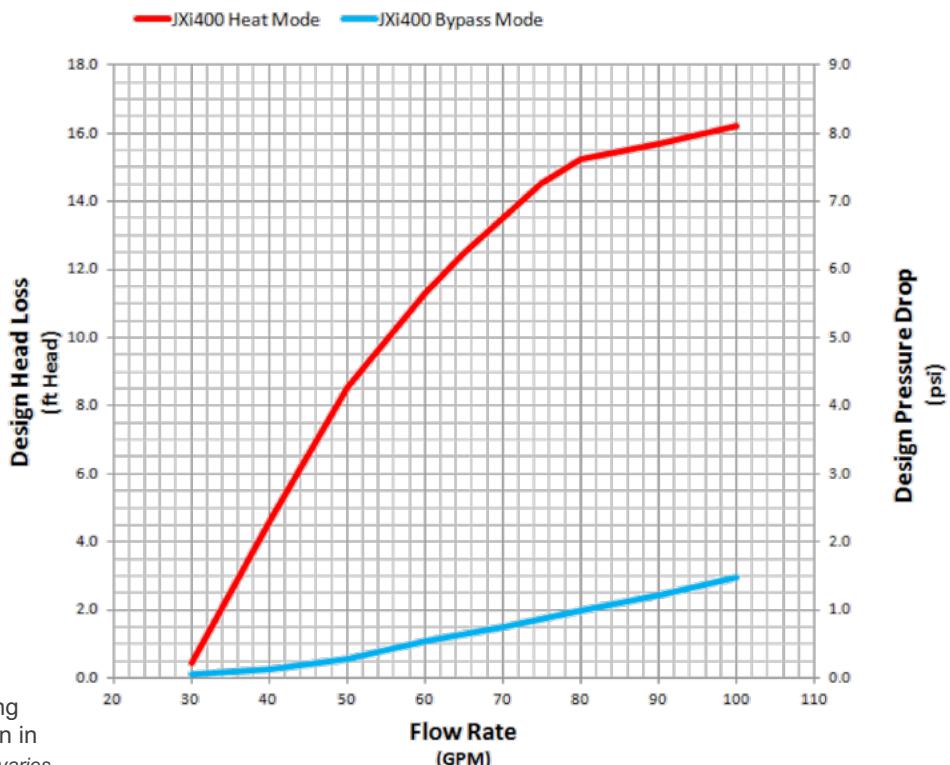
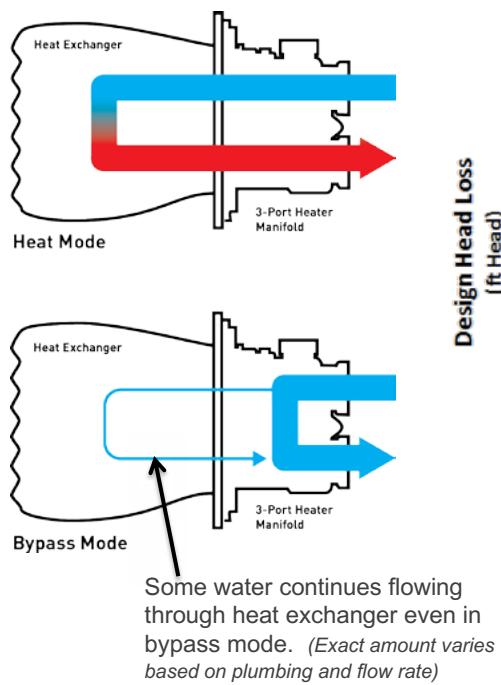
Aux Monitor
(Not Used -
Requires Jumper)



Bypass Motor (Actuator)

Bypass Micro Switch (safety loop)

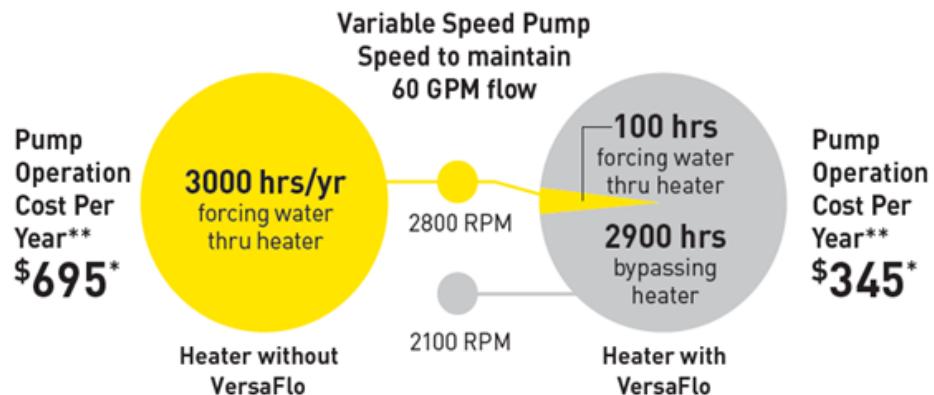
TDH IMPACT OF VERSAFLO BYPASS



Notes _____

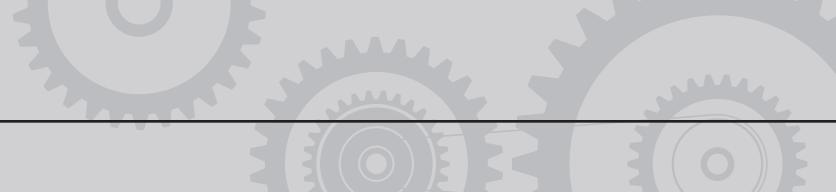
VERSAFLO SAVES MONEY

**Here's How JXi
with VersaFlo
Saves Money**



Heater Use Information	Heater without Versaflo	Heater with Versaflo
Time Water Travels Through Heater***	3000 Hrs	100 Hrs
Time Water Bypasses Heater	0 Hrs	2900 Hrs
Annual Electricity used by Pump Through Heater**	3300 KW	110 KW
Annual Electricity used by Pump Bypassing Heater**	0 KW	1537 KW
Electricity Cost†	0.21 \$/KWHr	0.21 \$/KWHr
Total Cost to Operate Pump**	\$695	\$345

Notes _____



WINTER OPERATING CONDITIONS

Winterization:

No special requirements

Follow Normal Winterization and Start-up Process for JXi™

- Ensure JXi header and bypass assembly is completely drained

Area's with occasional freezing temperatures:

Power to JXi must be kept on to allow freeze protection feature

Works in conjunction with filter pump to keep water moving through heat exchanger to prevent freezing

New JXi PIB includes temperature sensor to measure ambient temperature.

- If Ambient temperature measured at PIB is 38°F or below
 - VersaFlo™ Flow Gate moves to heat position, directing water through heat exchanger to prevent freezing inside heater
 - The VersaFlo gate will remain in the heat position until the ambient temperature measured at the PIB reaches 40°F or higher



Notes _____

ELECTRONIC FLUE SENSOR

Electronic Flue Sensor

(Serial # Rev H and Later)

- Higher reliability
- Also allows technician to view flue temp at UI via special key press
- Field resettable on failure without replacing sensor
 - The heater is set to fault if flue temperature exceeds 464°F (240°C)



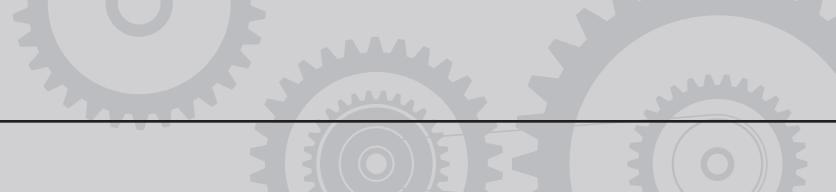
To view Flue Temperature press and hold the MENU and POOL buttons for 5 Seconds, **while the heater is firing**. Release the buttons and the display will continue to alternate between Flue Temperature and Water Temperature for about two minutes.



Special note:

Original Fusible link included a gasket between the fusible link and flue elbow. The electronic flue sensor does NOT use a gasket, do not attempt to reuse gasket from fusible link.

Notes _____



GAS VALVE SUPPLY PRESSURE PORT ACCESS

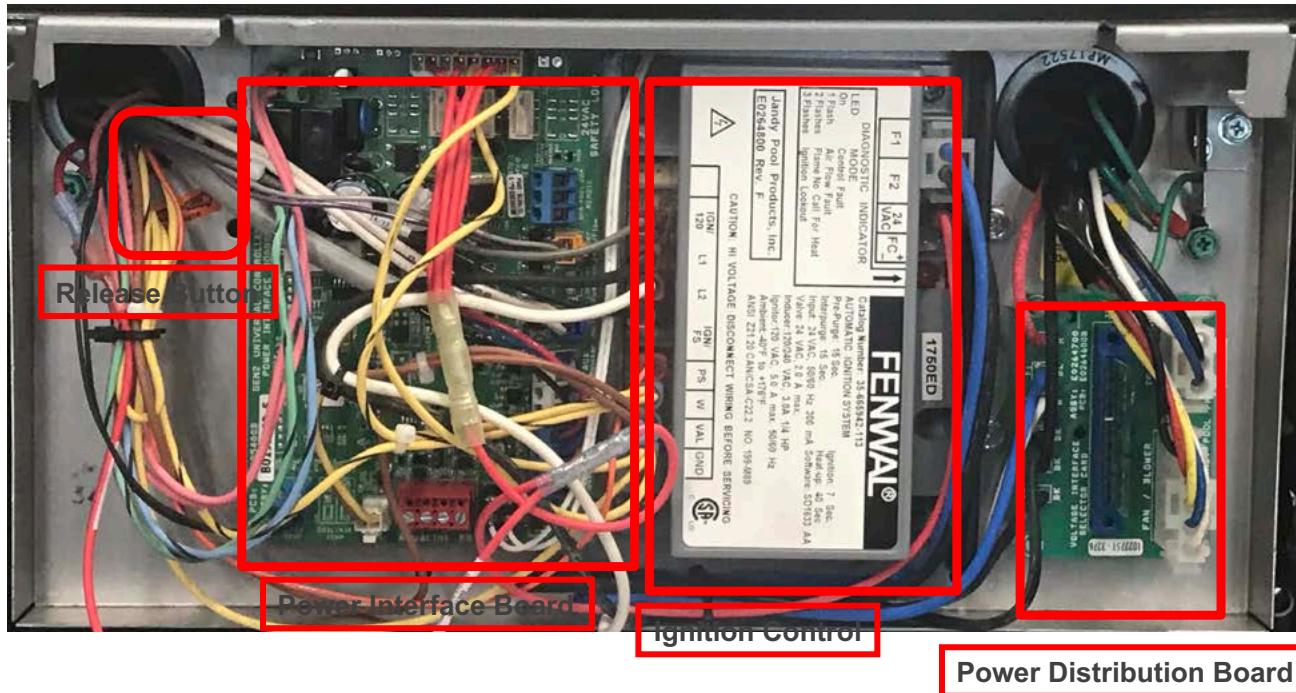
Supply gas pressure test port

- Adding access panel above gas inlet nipple
- Shipping with Flow Bypass

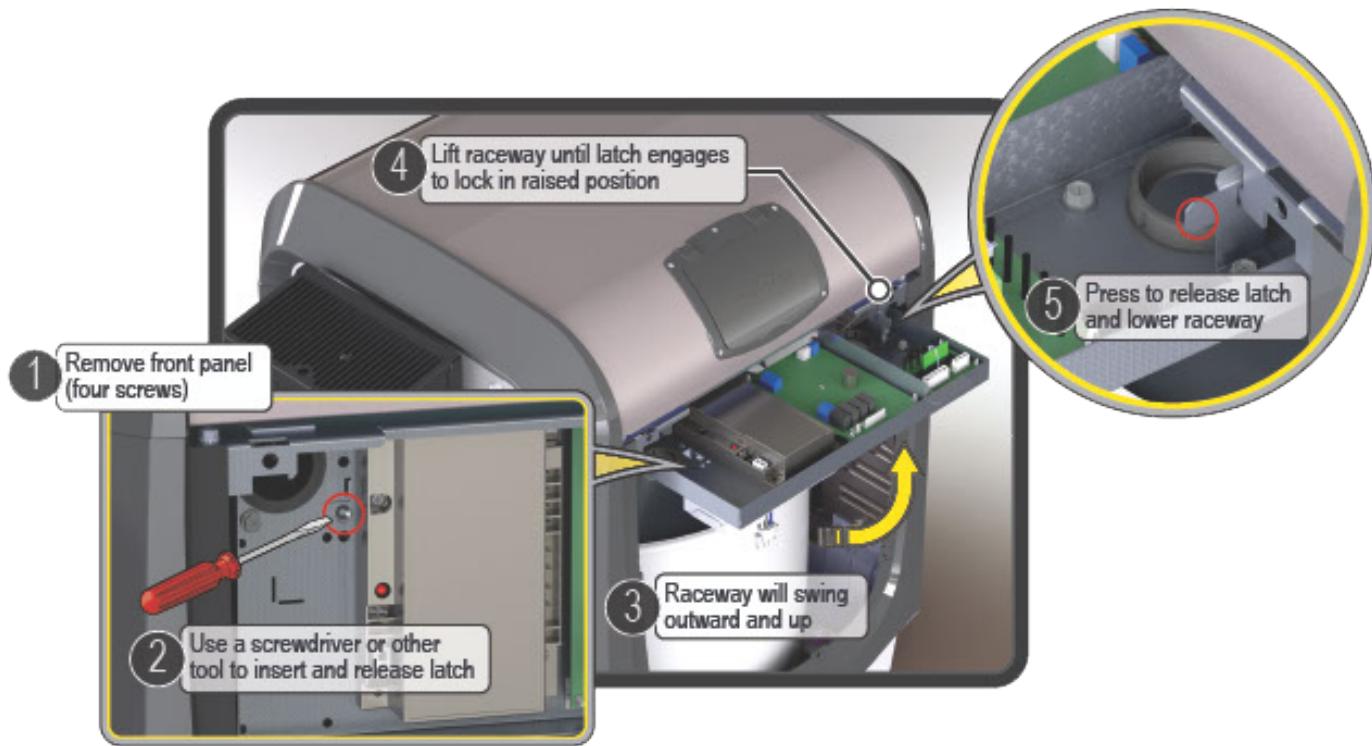


Notes _____

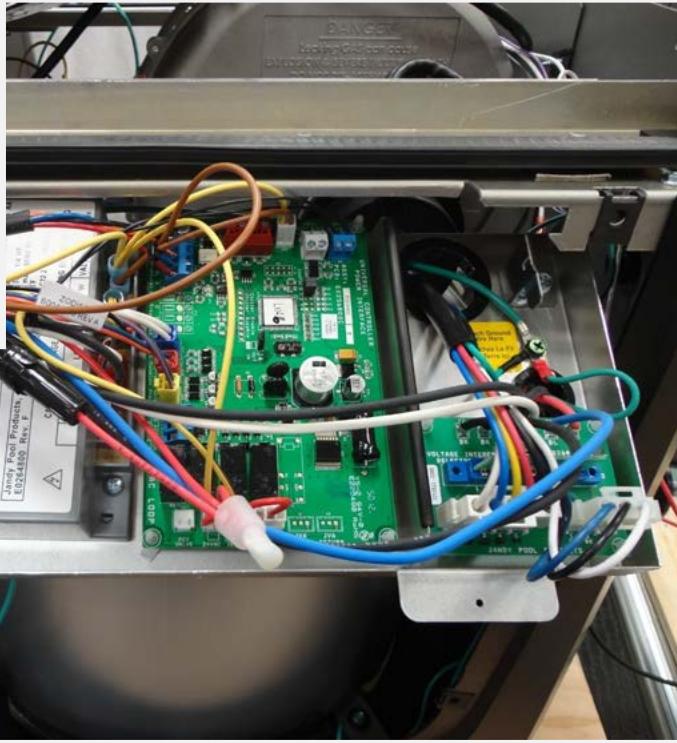
HEATER ELECTRICAL RACEWAY



RACEWAY RELEASE

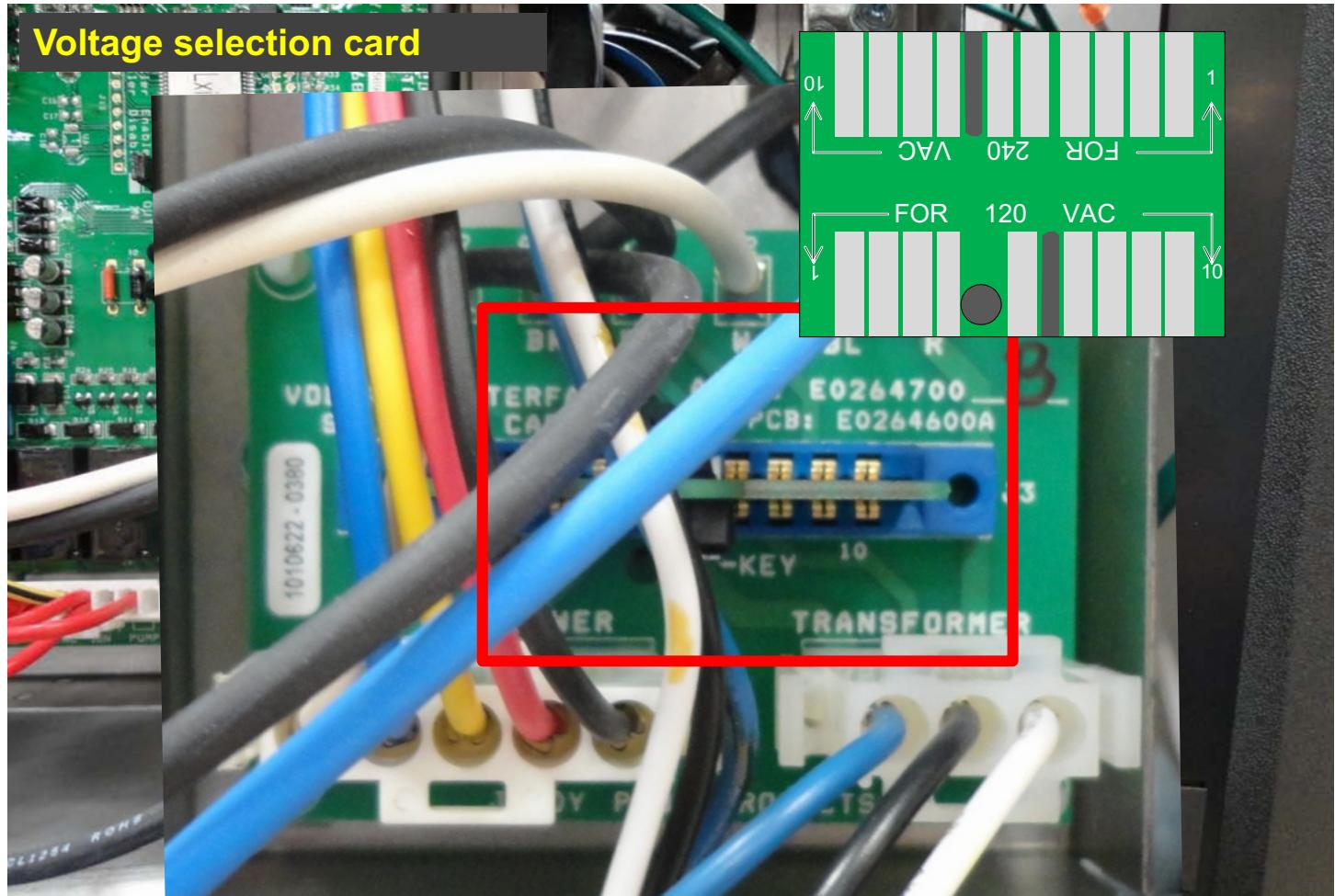


RACEWAY RELEASE



Notes _____

VOLTAGE SELECTION CARD



Notes _____

OLD VS NEW



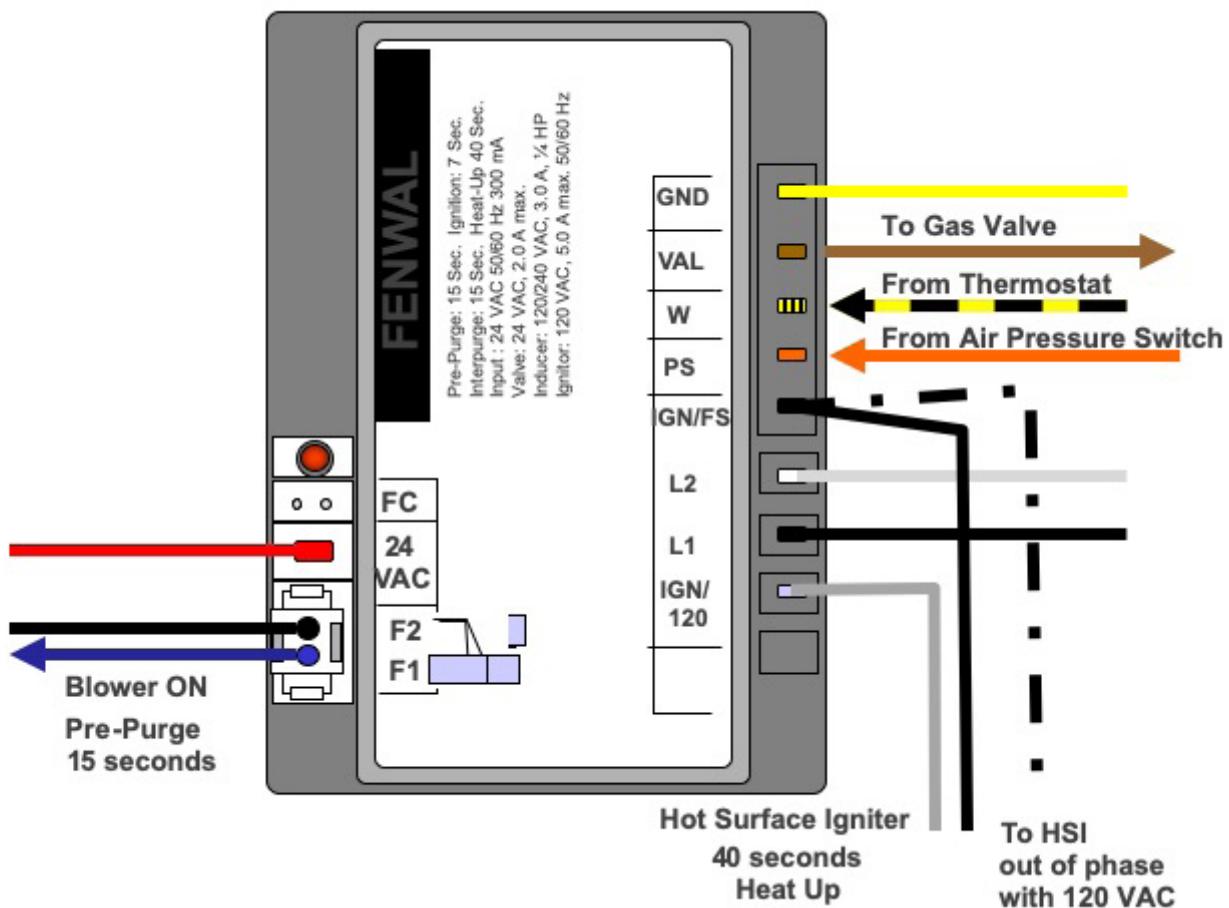
Notes _____

IGNITION CONTROL



Notes _____

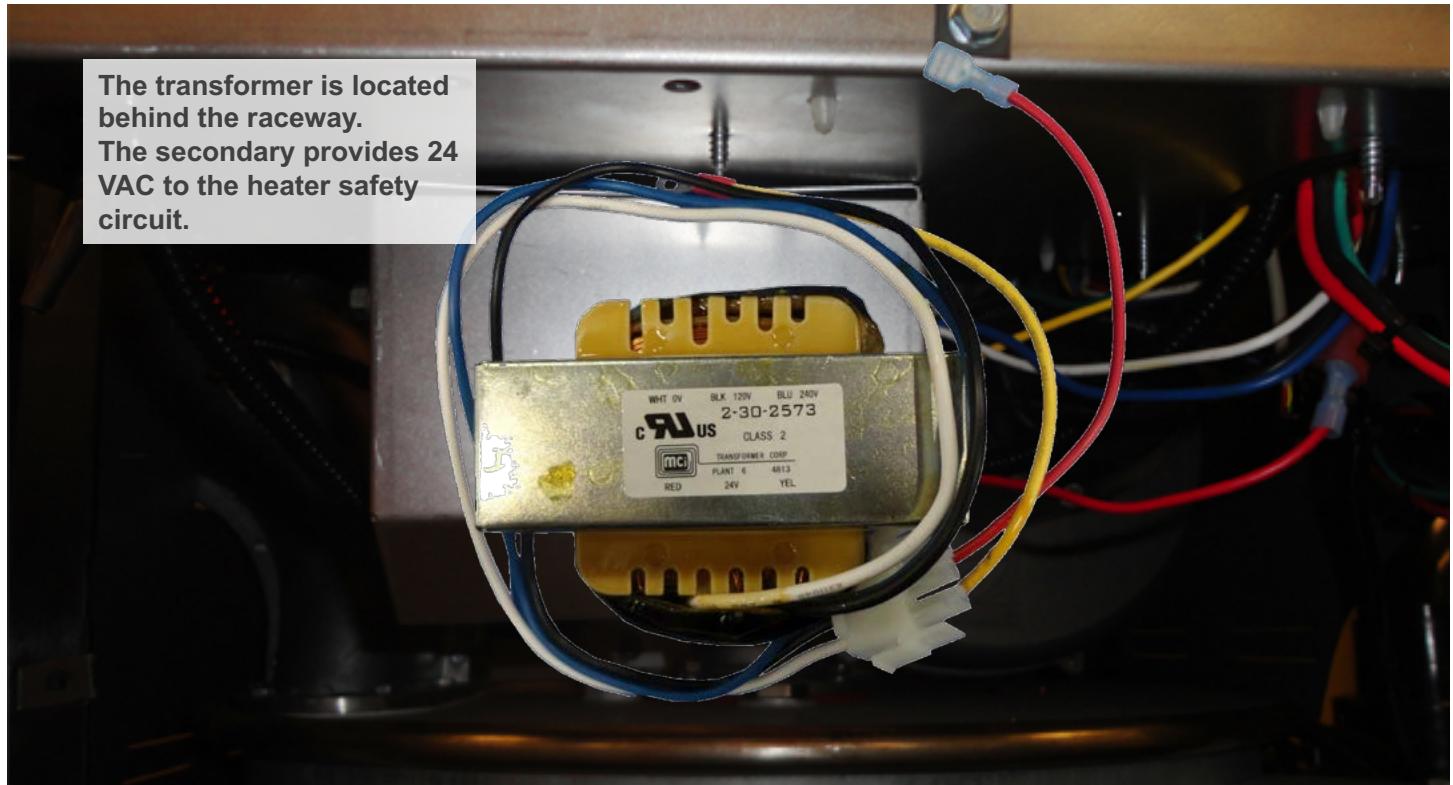
IGNITION CONTROL



Notes _____

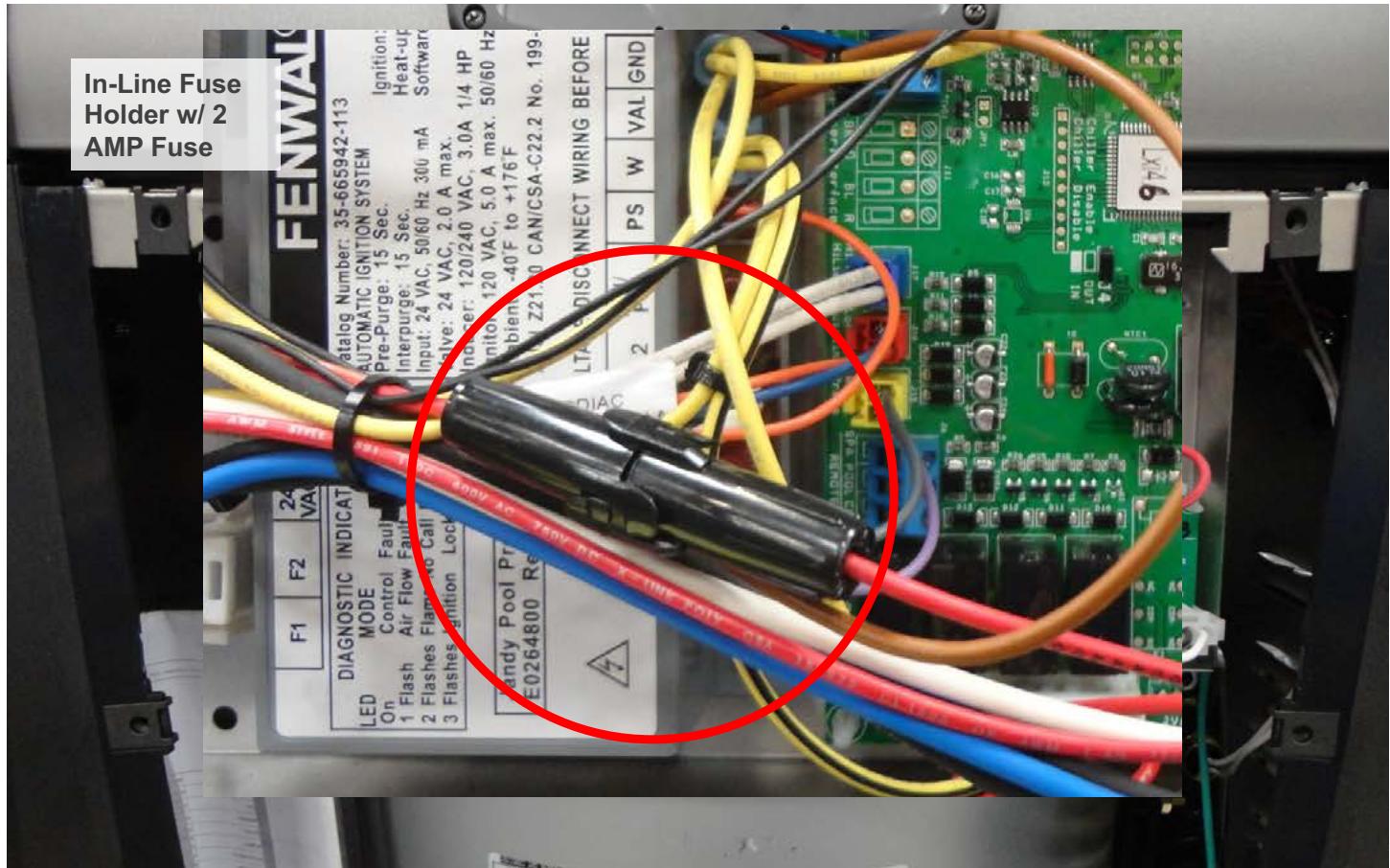


TRANSFORMER



Notes _____

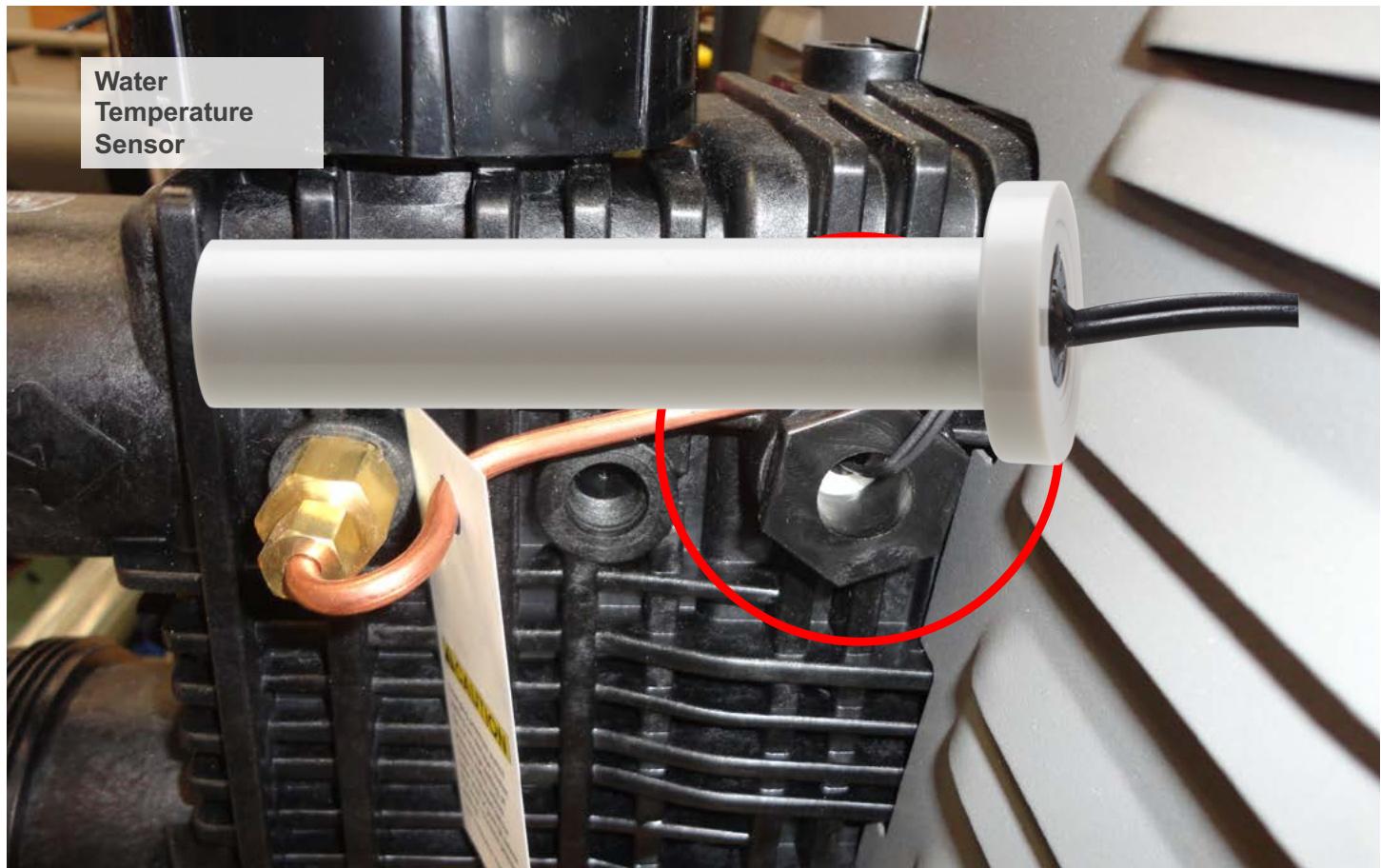
IN-LINE FUSE HOLDER WITH 2 AMP FUSE



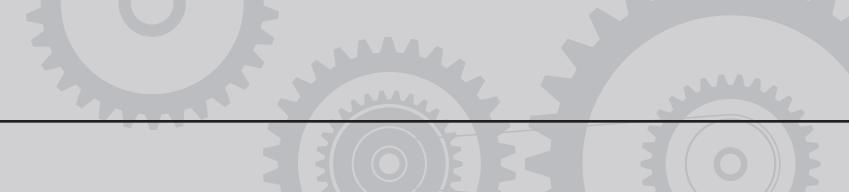
Notes _____



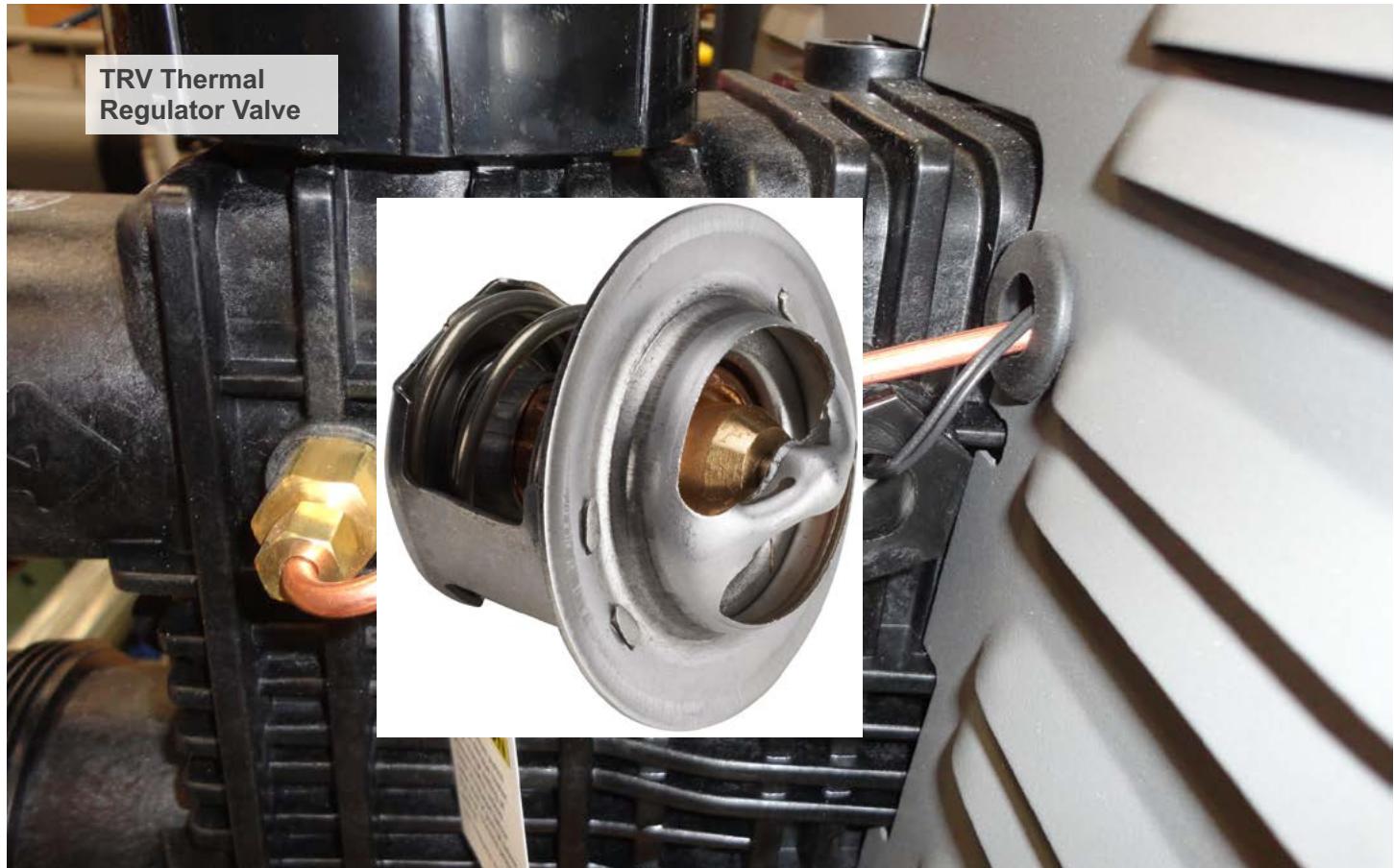
WATER TEMPERATURE SENSOR



Notes _____



TRV THERMAL REGULATOR VALVE



Notes _____

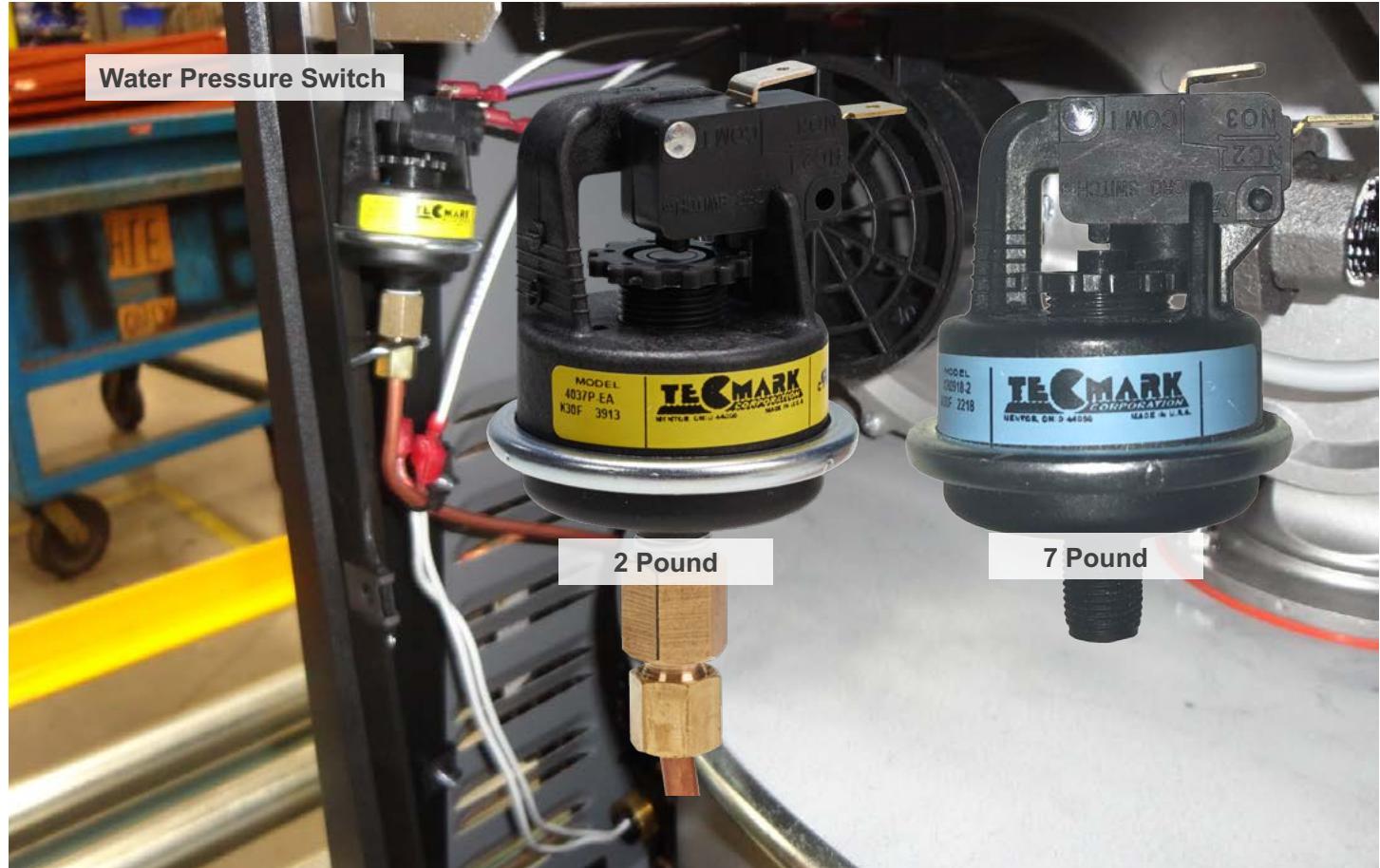


WATER PRESSURE SWITCH



Notes _____

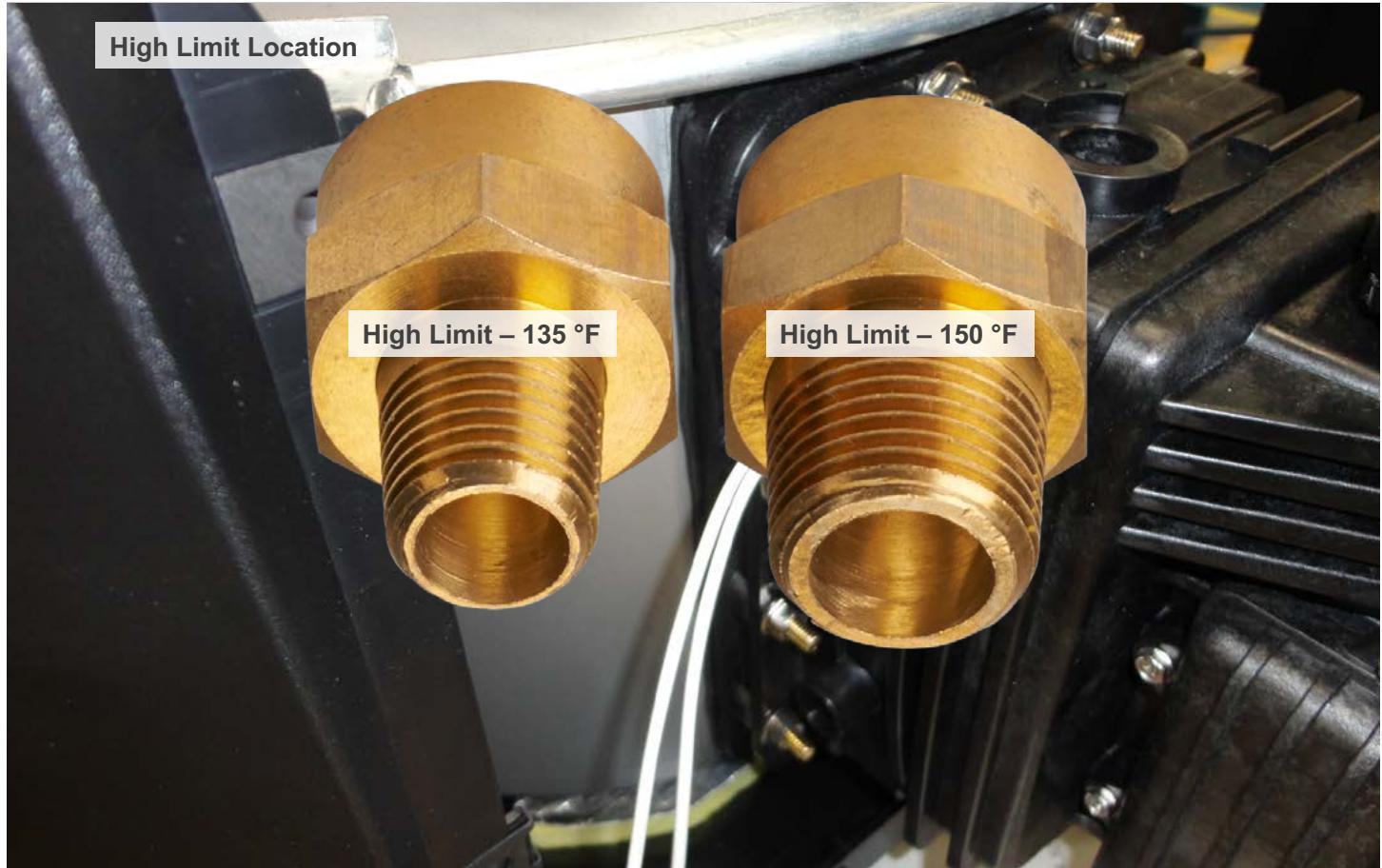
WATER PRESSURE SWITCH



Notes _____



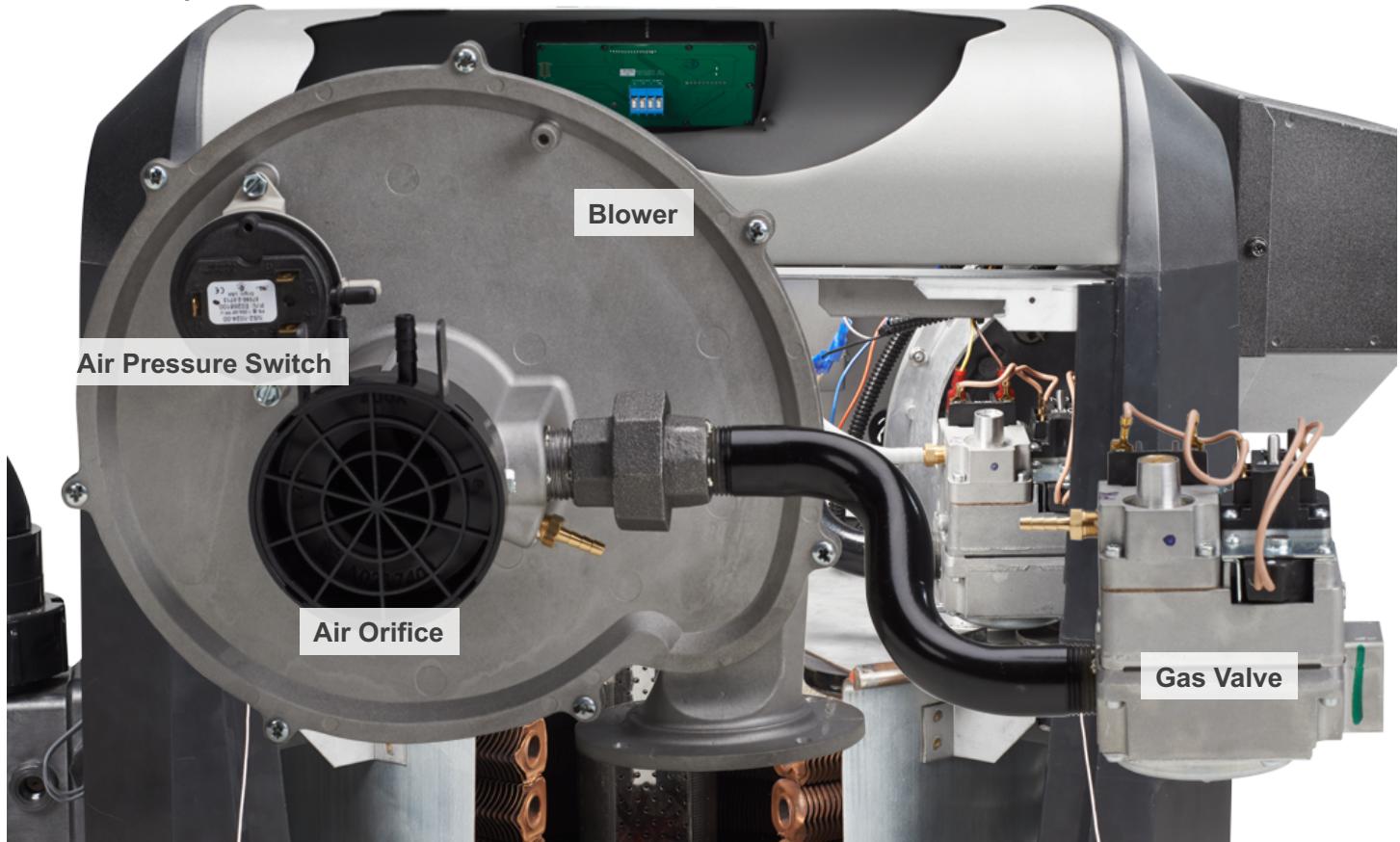
HIGH LIMIT LOCATION



Notes _____

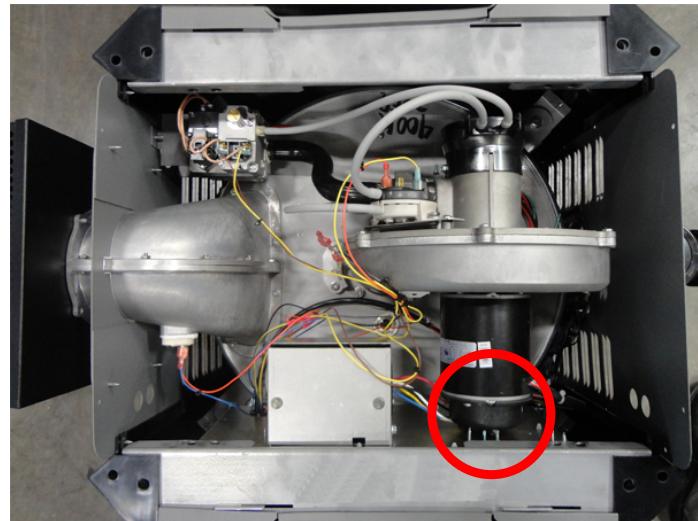
FUEL COMPONENTS

Fuel Components



Notes _____

BLOWER ASSEMBLY



Blower Capacitor location
P/N = R0614500

CAPACITOR R-KIT

Disassembly:

1. KIT PART NO. COMPONENT DESCRIPTION QUANTITY R0614500 (Includes 2 capacitors)

- 8 µF, 50/60 Hz, 370VAC 1
- 10 µF, 50/60 Hz, 370VAC 1

NOTE: Only one capacitor will be used. Use the capacitor with the µF rating that matches the one being replaced.

2. Turn off the electrical power to the heater, and wait at least five minutes before service the unit to allow the capacitor to discharge.
3. Make sure the filter pump is off and will remain off for the duration of the installation procedure.
4. Remove the top of the heater.
5. Locate the capacitor protective cap on the blower and remove three (3) screws to detach the cap.
6. Pull the capacitor up to release the sticky tabs and unclip the connectors (red, brown wires) to disconnect and remove the capacitor.

CAPACITOR R-KIT

Assembly:

1. Clip wire connectors (red, brown wires) into the new capacitor.
NOTE: Wires may be connected in either order; the capacitor is not polarized.
2. Remove protective backing from the sticky tabs and stick the capacitor onto the housing.
3. Replace three (3) screws to secure protective cap.
4. Restore electrical power to the filter pump.
5. Restore electrical power to the heater

CAUTION:

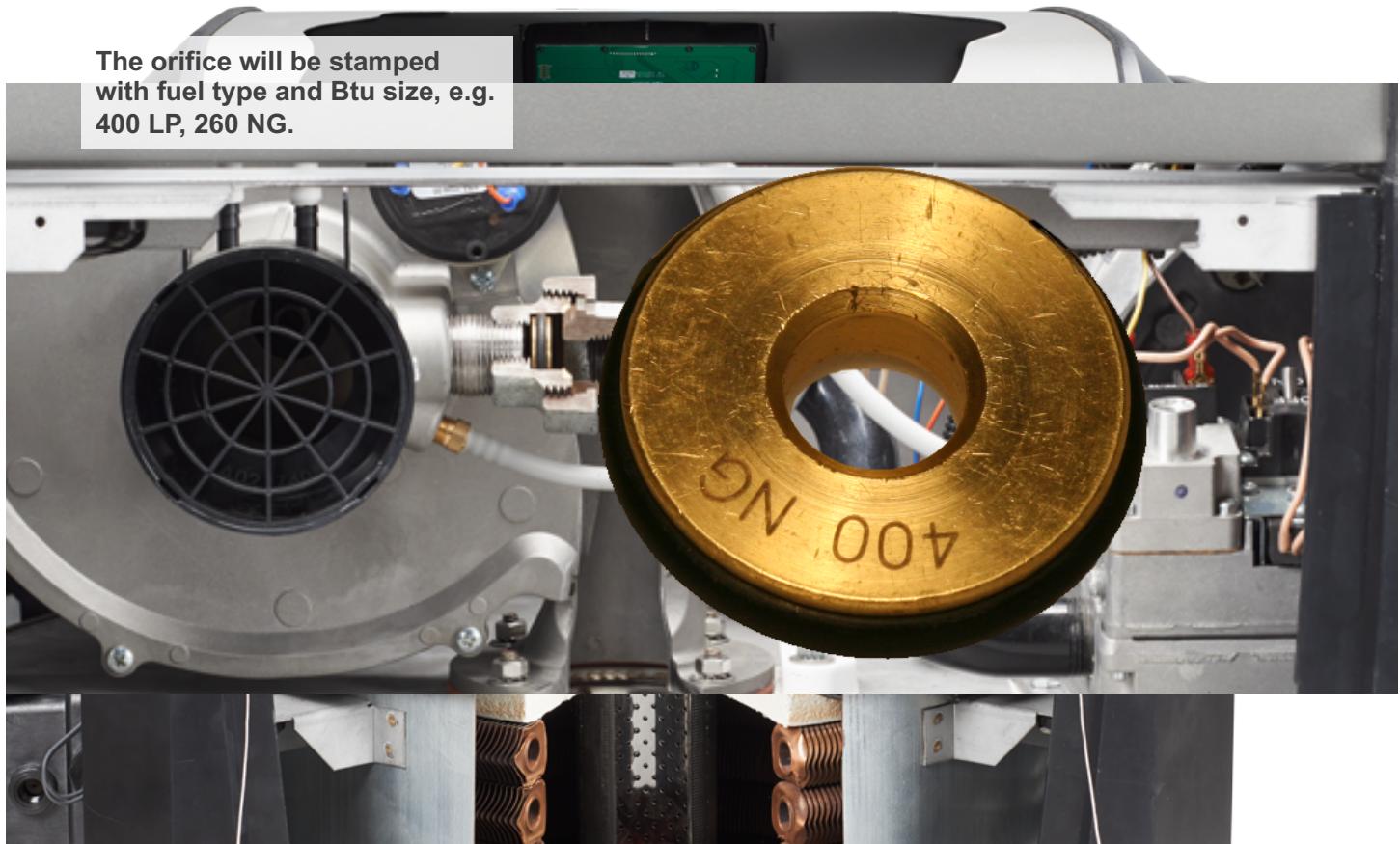
Be sure to match the rating of the capacitor you are replacing with the one you are removing.
If the incorrect Capacitor is installed it may result in reduced life of the blower motor.

AIR INTAKE ORIFICE





GAS ORIFICE



Notes _____

GAS ORIFICE R-KIT

Includes: air orifice, gas orifice, identification gas line plug and sticker



Notes _____

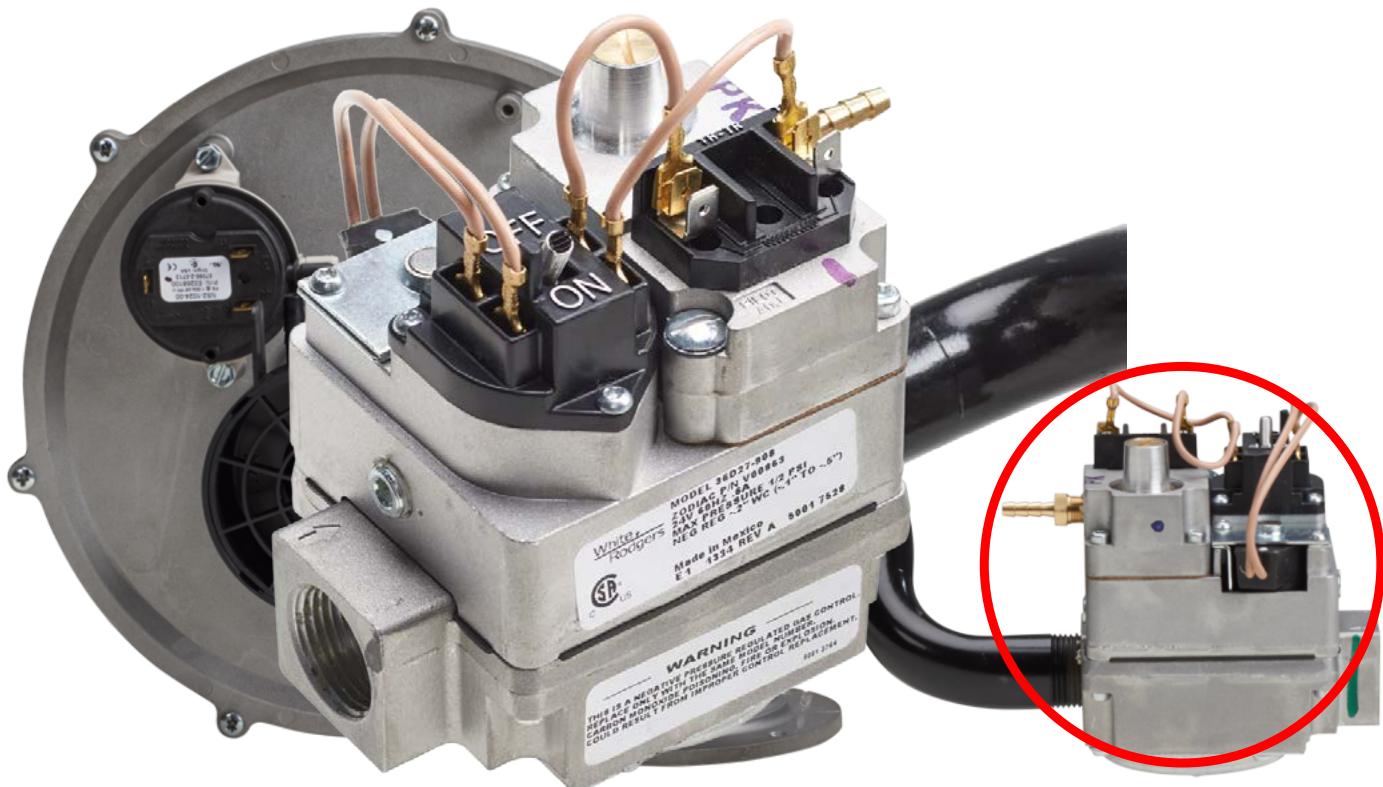


AIR PRESSURE SWITCH



Notes _____

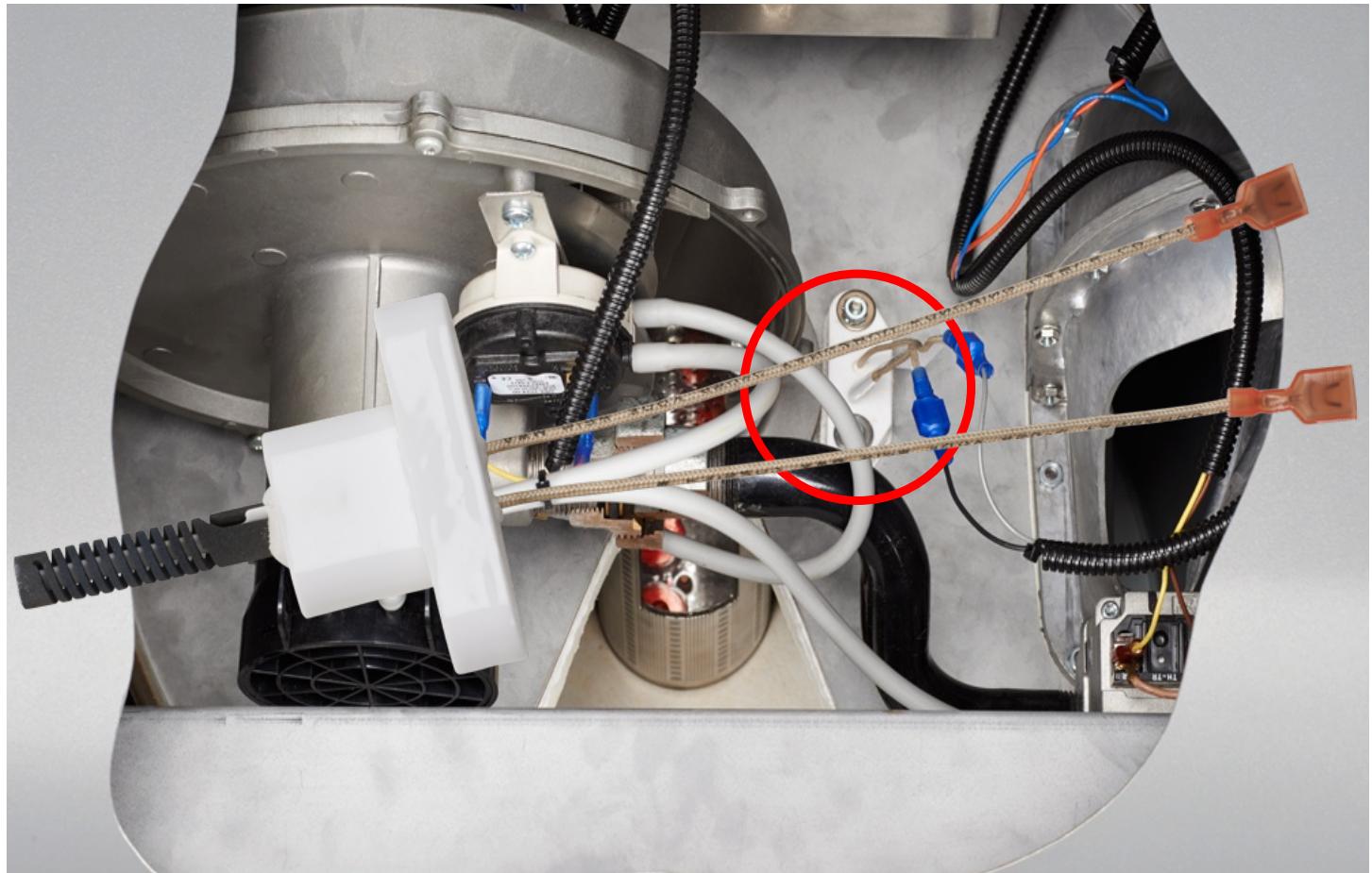
GAS VALVE



Notes _____

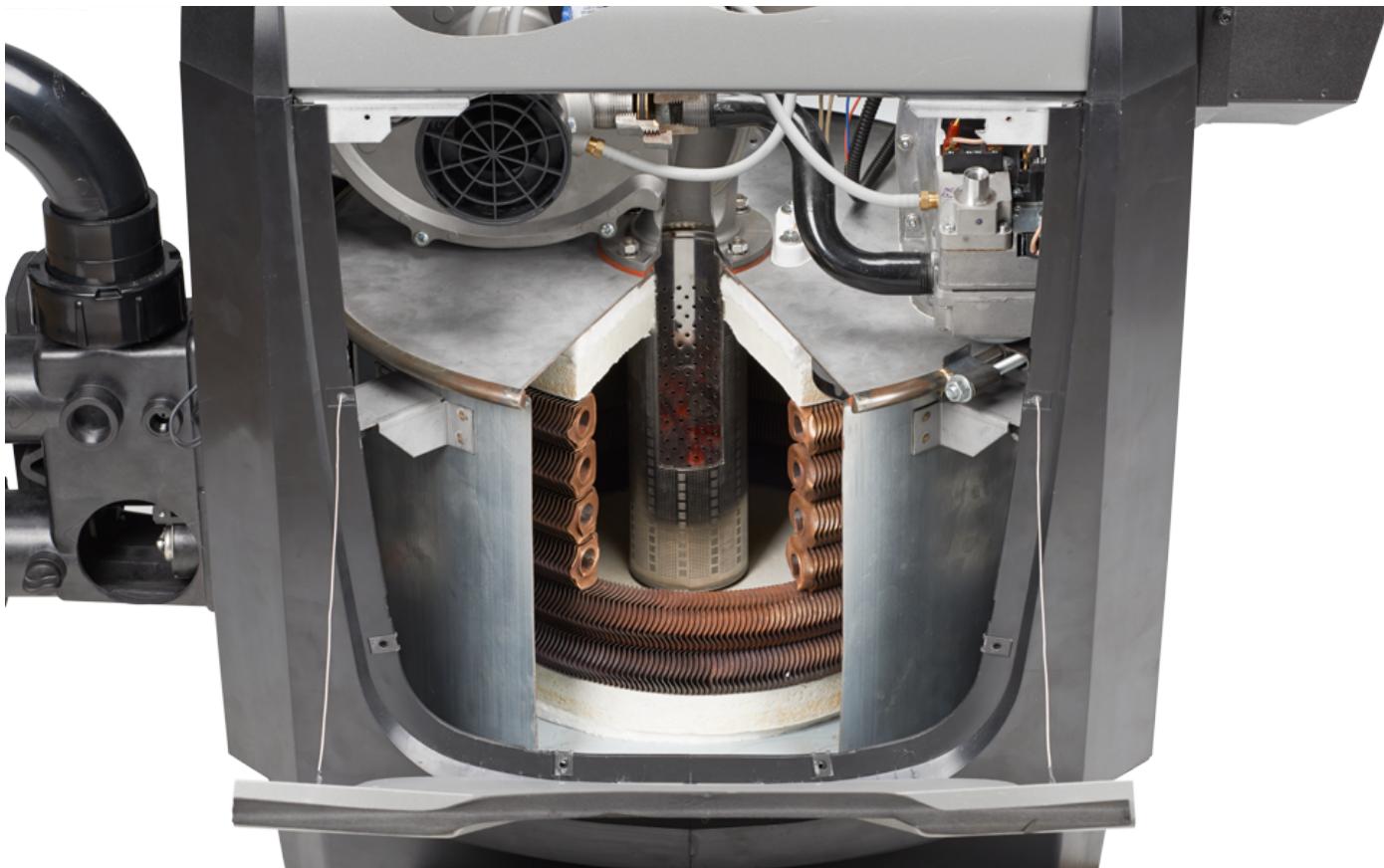


HOT SURFACE IGNITER



Notes _____

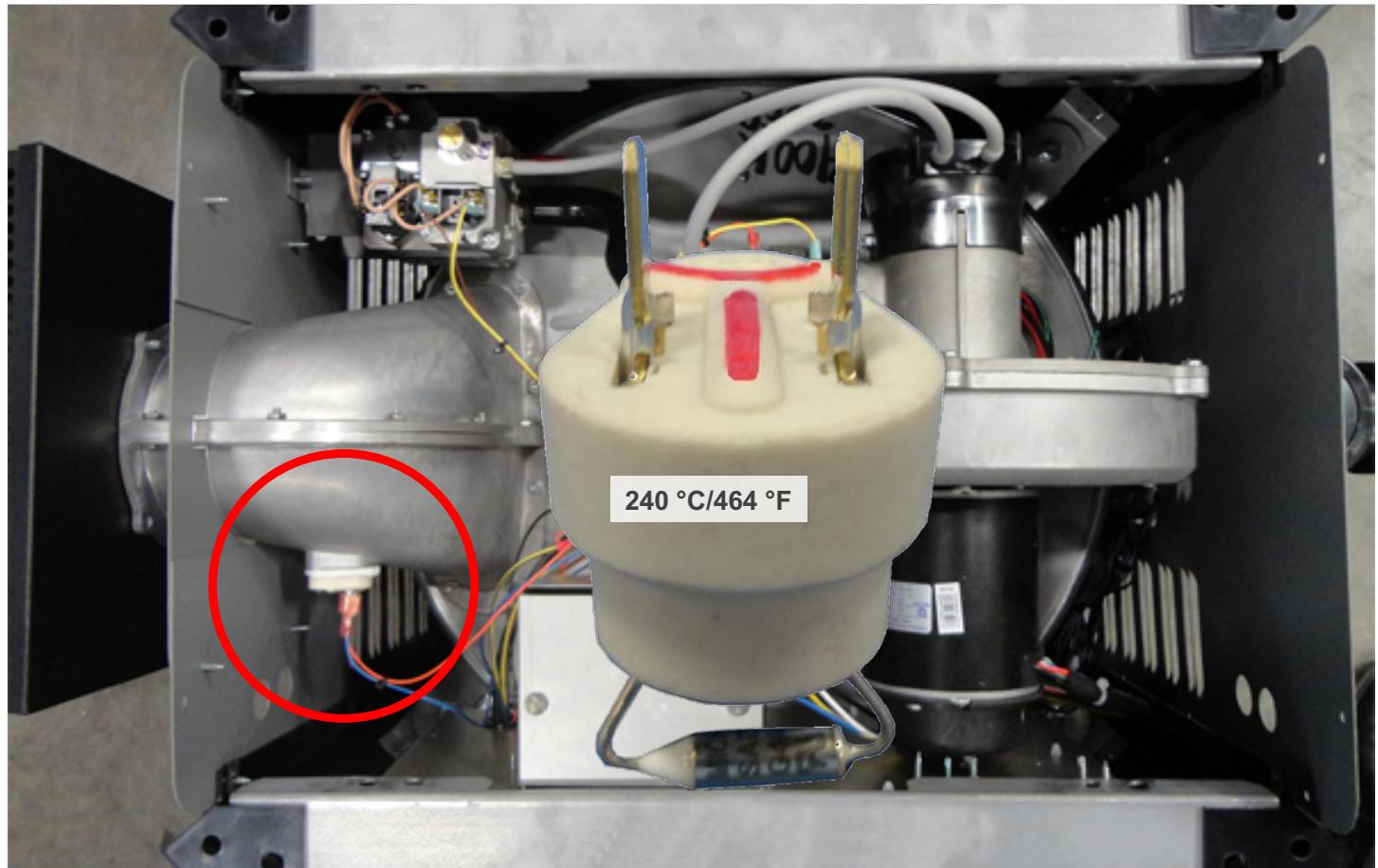
BURNER



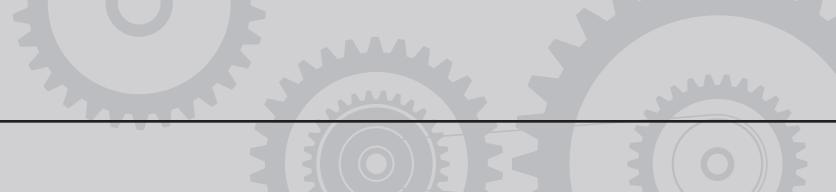
Notes _____



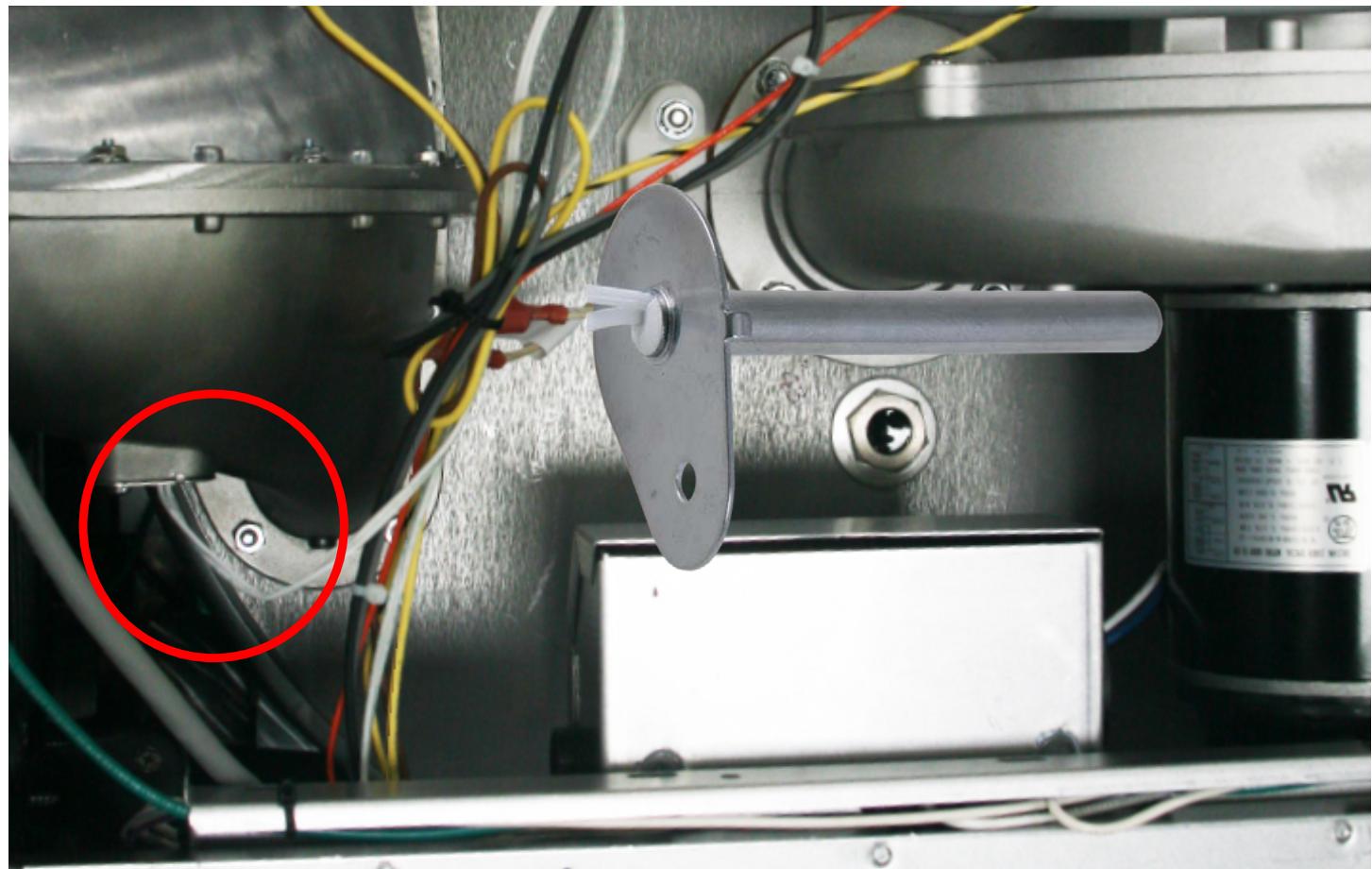
EXHAUST TEMPERATURE SWITCH SERIAL #S REV A - G



Notes _____



FLUE TEMP SENSOR SERIAL #S REV H AND LATER



Notes _____

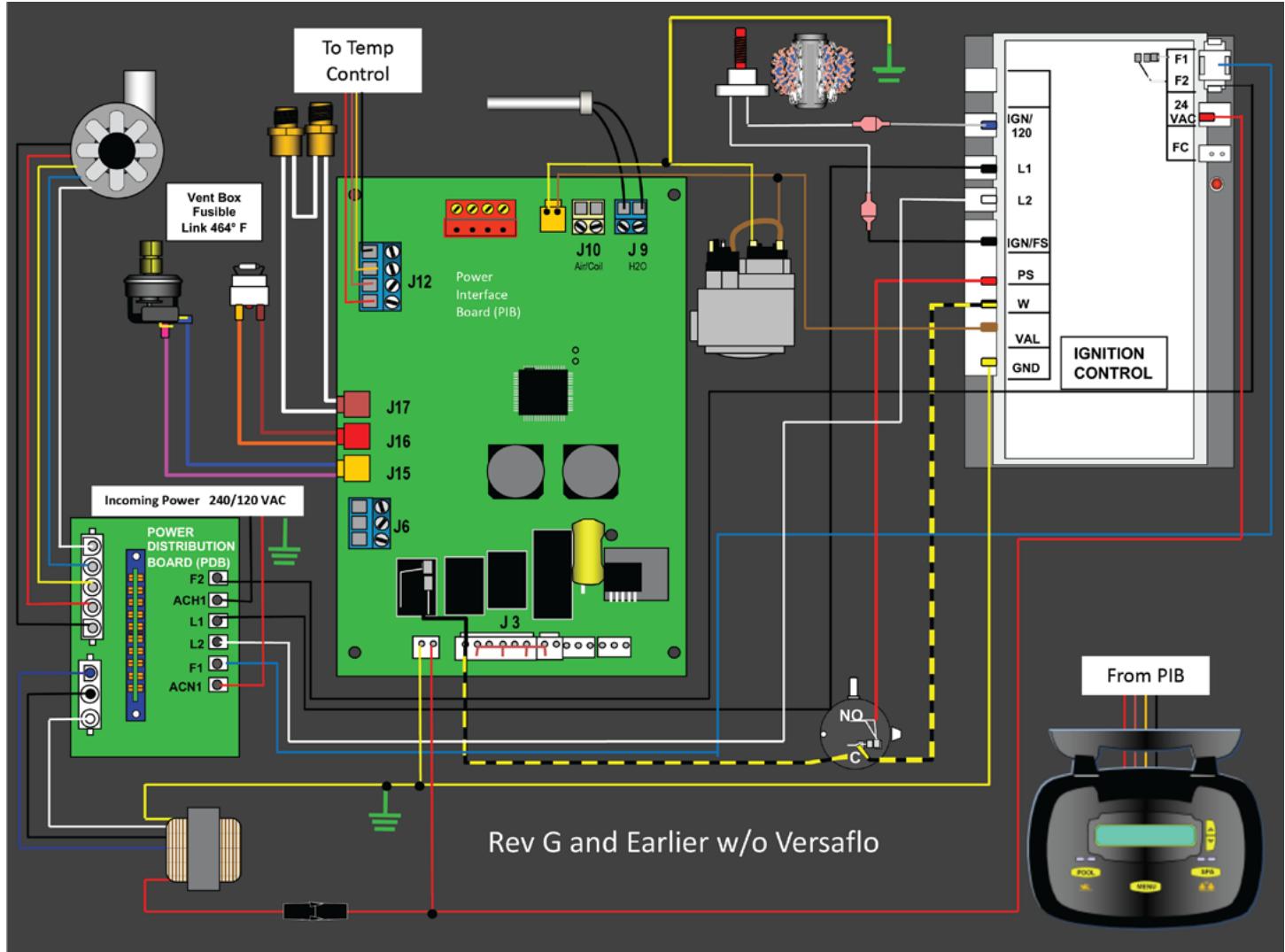
CALL FOR HEAT (SAFETY LOOP COMPLETE)

Black/Yellow Wire W on Ignition Control

1. 24 VAC at W terminal of Ignition Control, Blower ON (Pre-Purge - 15 sec).
2. Air Pressure Switch closes ... 24 V through orange wire to PS terminal on Ignition Control.
3. 120 VAC between IGN/FS and IGN 120 - Igniter begins to heat.
4. Igniter heats up for 40 seconds.
5. At 40 seconds of heat up, 24 V sent through brown wire to Gas Valve and the Gas Valve opens.
6. AC micro-amp signal sent out IGN/FS terminal to the Hot Surface Igniter.
7. Burner ignites. Flame sense, AC signal, passes through flame and returns to Ignition Control through the ground wire as a rectified DC signal.
8. 5 seconds after Gas Valve gets power, or when rectification is confirmed, power goes off to the Igniter.
 - If rectification is not confirmed, power to gas valve shuts off after 7 seconds.
 - A 15 second inter-purge occurs.
 - 2 additional tries (3 total) then shut down/lock out.
 - Turn heater off, then back to pool or spa to reset.
9. If heater is turned on water temperature reaches thermostat setting, the burner goes off (Gas Valve closes), blower stays on for 45 seconds and off, post purge.

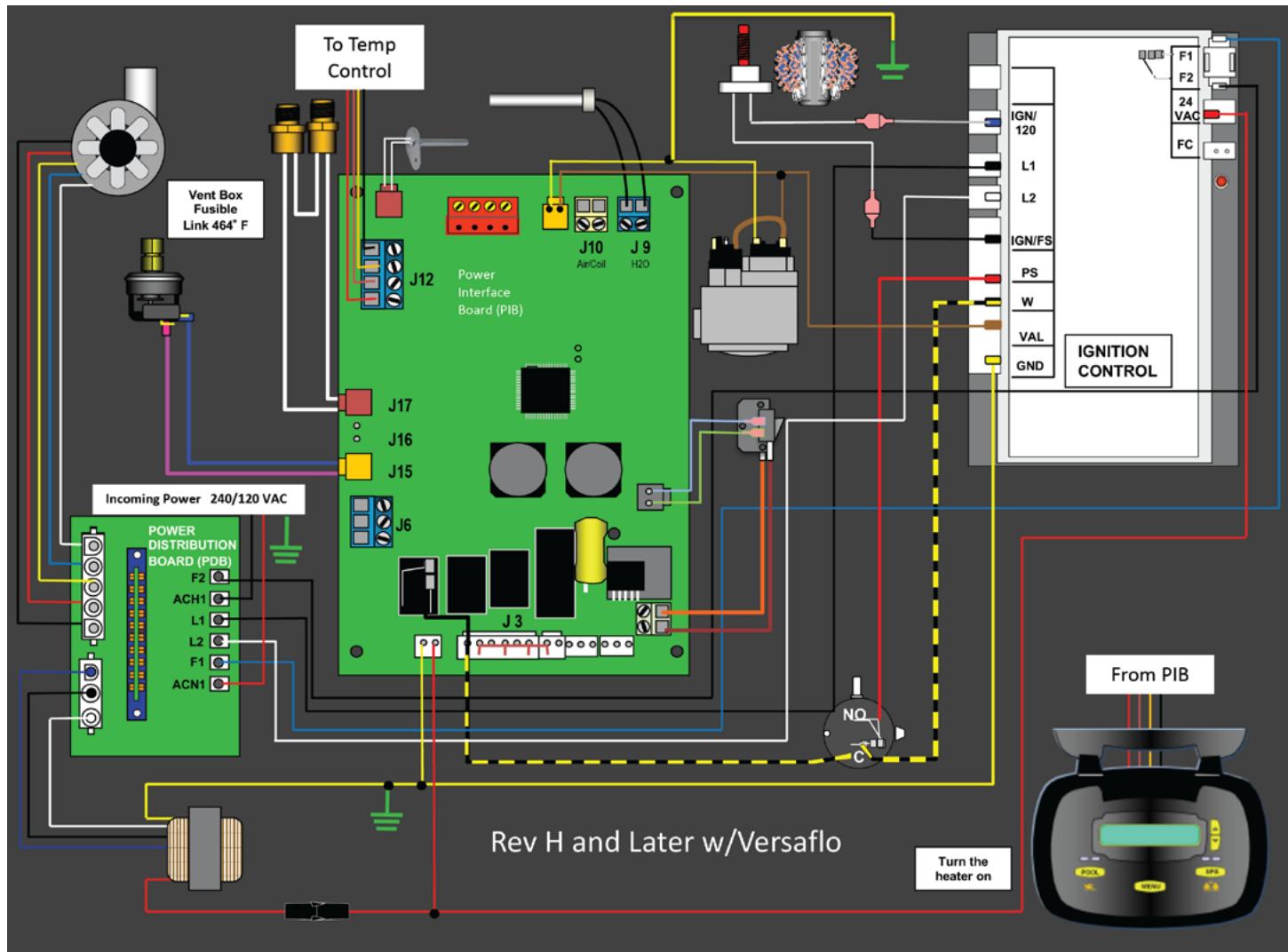
Notes _____

TROUBLESHOOTING



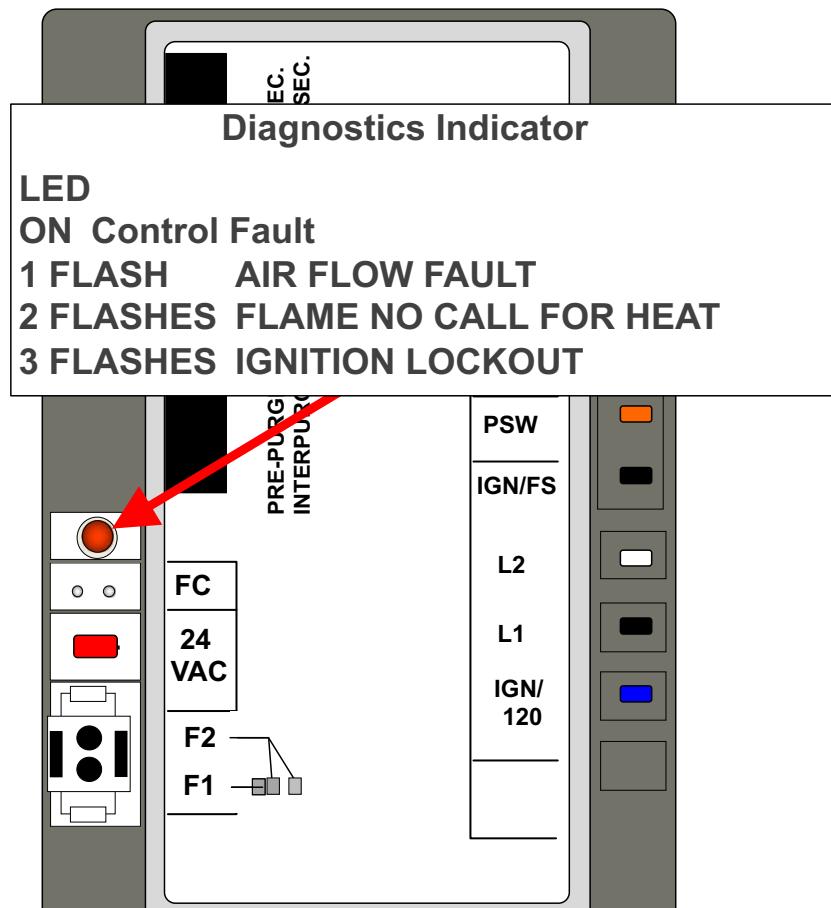
Notes _____

TROUBLESHOOTING



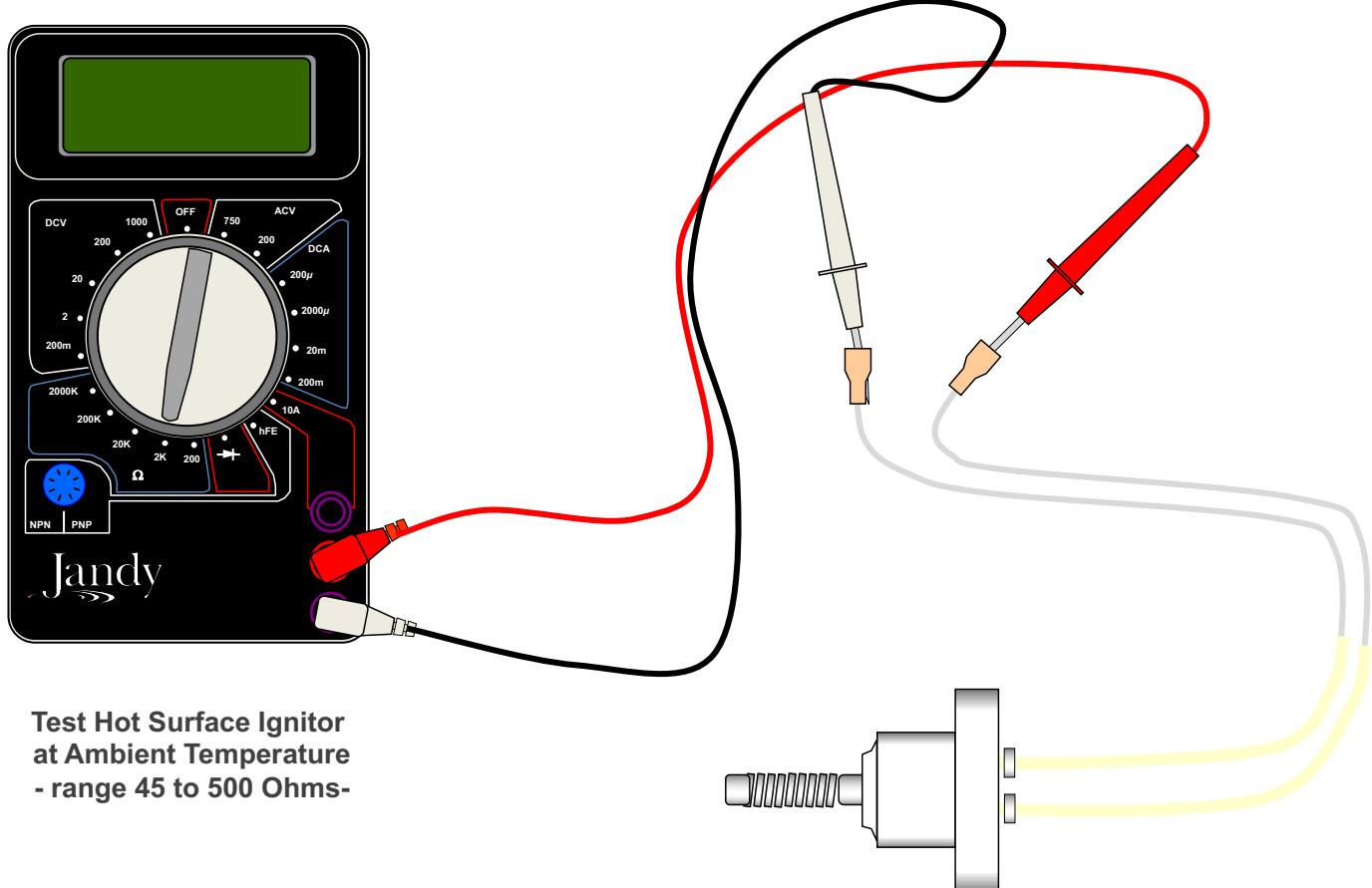
Notes _____

IGNITION CONTROL



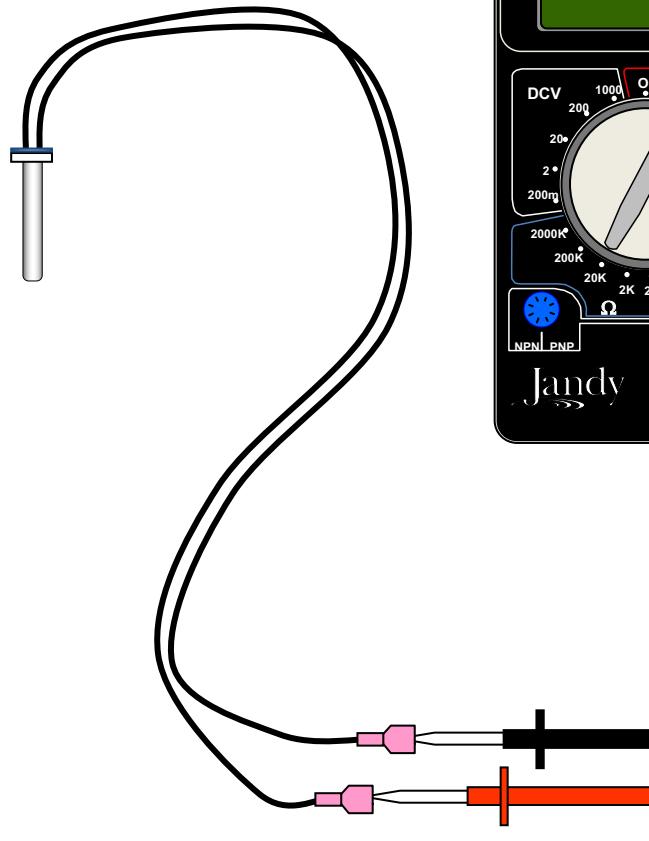
Notes _____

HOT SURFACE IGNITER TEST



Notes _____

TEMP SENSOR TEST



Temp Resistance	Temp Resistance
50° F 19.898 K Ohms	78° F 9.735 K Ohms
51° F 19.435 K Ohms	79° F 9.483 K Ohms
52° F 18.871 K Ohms	80° F 9.284 K Ohms
53° F 18.382 K Ohms	81° F 9.079 K Ohms
54° F 17.902 K Ohms	82° F 8.864 K Ohms
55° F 17.473 K Ohms	83° F 8.655 K Ohms
56° F 16.988 K Ohms	84° F 8.450 K Ohms
57° F 16.549 K Ohms	85° F 8.253 K Ohms
58° F 16.150 K Ohms	86° F 8.057 K Ohms
59° F 15.710 K Ohms	87° F 7.871 K Ohms
60° F 15.314 K Ohms	88° F 7.687 K Ohms
61° F 14.923 K Ohms	89° F 7.509 K Ohms
62° F 14.547 K Ohms	90° F 7.335 K Ohms
63° F 14.193 K Ohms	91° F 7.166 K Ohms
64° F 13.823 K Ohms	92° F 7.001 K Ohms
65° F 13.477 K Ohms	93° F 6.840 K Ohms
66° F 13.138 K Ohms	94° F 6.685 K Ohms
67° F 12.813 K Ohms	95° F 6.531 K Ohms
68° F 12.492 K Ohms	96° F 6.384 K Ohms
69° F 12.186 K Ohms	97° F 6.238 K Ohms
70° F 11.893 K Ohms	98° F 6.099 K Ohms
71° F 11.593 K Ohms	99° F 5.963 K Ohms
72° F 11.309 K Ohms	100° F 5.829 K Ohms
73° F 11.032 K Ohms	101° F 5.700 K Ohms
74° F 10.765 K Ohms	102° F 5.572 K Ohms
75° F 10.502 K Ohms	103° F 5.449 K Ohms
76° F 10.250 K Ohms	104° F 5.327 K Ohms
77° F 10.000 K Ohms	

Notes _____

TROUBLESHOOTING GAS


POOL HEATER

JXi

MODEL NO.	JXI400N	ANSI Z21.56-2013	Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
SERIAL NO.	A14XH0036	CSA 4.7-2013	THIS HEATER EQUIPPED TO BURN INPUT RATE (MAX)
MAX INLET GAS PRESSURE	10.5	"WC	MANUFACTURER'S CERTIFIED EFFICIENCY 83%
MIN INLET GAS PRESSURE	4.0	"WC	MINIMUM THERMAL EFFICIENCY 78%
OFFSET PRESSURE	-0.2	"WC	MINIMUM CLEARANCE FROM COMBUSTIBLE CON-
GAS ORIFICE DIFFERENTIAL	-2.9	"WC*	4 INCHES BLANK SIDE, 4 INCHES REAR SID-
MOUNT AT ELEVATIONS ABOVE SEA LEVEL	50	PSI	PLUMBING SIDE, 48 INCHES TOP (FOR INDO-
MAX WORKING PRESSURE			6 INCHES FRONT
ELECTRICAL RATING:	120/240	VAC	DO NOT INSTALL THIS HEATER UNDER AN OV-
VOLTS	60	Hz	LESS THAN 3' (914MM) FROM TOP. THE ARE-
HERTZ			THE OVERHANG MUST BE OPEN ON THREE SID-
AMPS	<5.0	A	FOR OUTDOOR OPERATION IN AMBIENT TEMPE-
GAS ORIFICE SIZE	0.371		DOWN TO 40°F (4°C)
			FOR INDOOR OR OUTDOOR INSTALLATION.

Notes _____

GAS PRESSURE OFFSET TEST

Connect a tee to the hose from the fan inlet to the gas valve vent port.

Connect a shorter hose to the opposite side of the tee to the gas valve vent port.

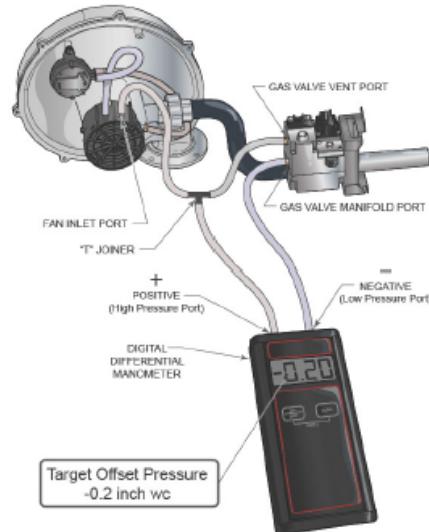
Connect the third part of the tee with a hose to the positive side of the digital manometer.

Connect a barb to the gas manifold pressure port.

Connect the hose to the negative side of the manometer.

Start the heater and record the gas offset pressure with the heater running and the sealing cap firmly in place.

If the offset is incorrect, adjust the gas valve until the correct pressure is obtained.”



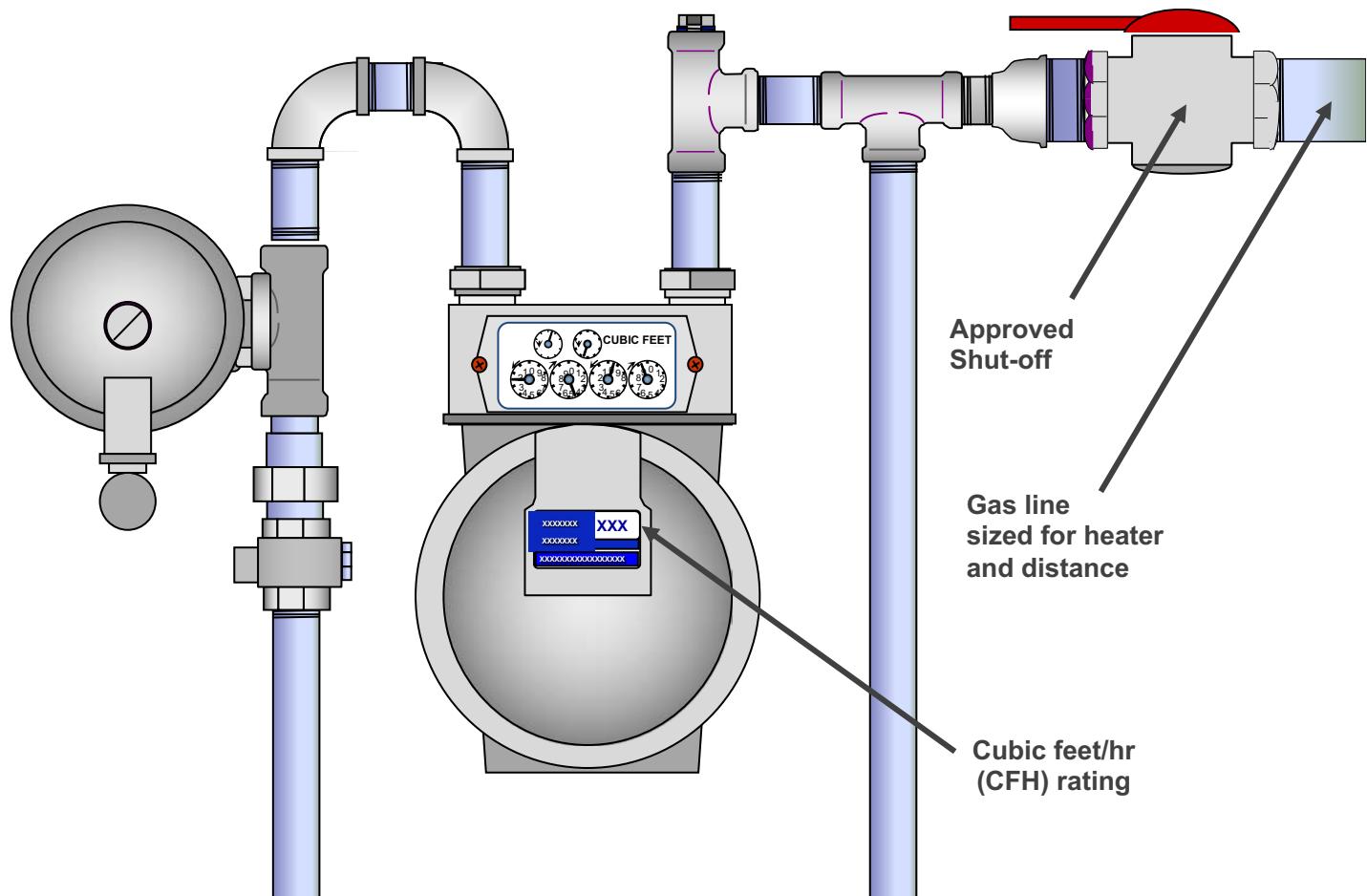
WARNING

Service procedures can be hazardous because they involve fuel gas, electricity, moving parts and procedures which require testing or temporary bypass of safety controls. For this reason, the heater must be serviced only by a qualified professional service technician.

Prior to making any adjustments to the gas valve, conduct a gas inlet pressure test with the supply gas line at full draw.

Notes _____

GAS PRESSURE AND VOLUME TEST



Notes _____

TROUBLESHOOTING THE JXi WITH VERSAFLO

Understanding the Error Codes:

Latching

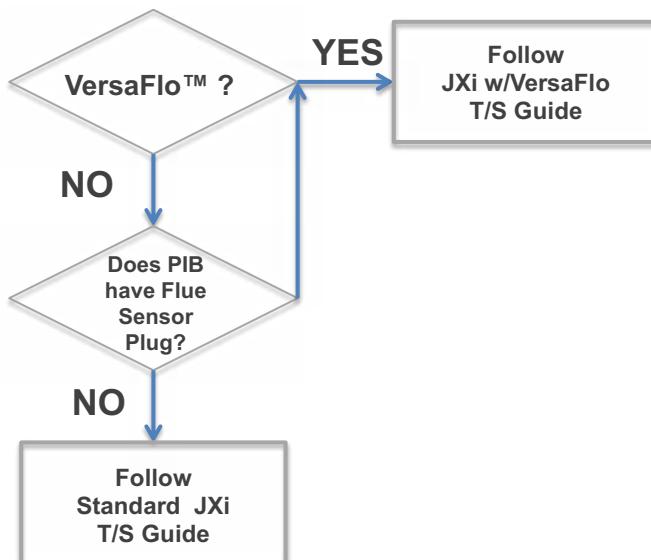
- Latching errors require technician intervention
- Requires a "Cycle" or reset of the heater and professional diagnostics to find the issue(s) causing the error

Non-latching

- Often will reset themselves and attempt to fire
 - ie: Low water levels in the pool causing low flow (fills by auto-fill)
- May also still require intervention
 - ie: Heater fails to fire = Water Hi Limit open

DETERMINING PROPER TROUBLESHOOTING PROCEDURES

Heater Is Not Firing



UNDERSTANDING THE ERROR CODES

Latching Vs Non-latching Errors

SAFETY LOOP

LRZ/LXI/JXI PRE REV 'H'

FAULT DESCRIPTION	NON-LATCHING ERROR	LATCHING ERROR (UNIT SHUTS DOWN DURING LATCHING CODES)		
		UNTIL REPAIRED	NEXT POWER CYCLE	MANUAL FULL RESET
"FAULT – Check VersaFlo"	X			
"FAULT – Check Flow" PREVIOUSLY NAMED "FAULT = Pump"	X			
"FAULT – Check Louver"	X			
"FAULT – Check AUX Monitor"*				X
"FAULT – Check Fuselink"		X		
"FAULT – Shorted H2O Sensor"	X			
"FAULT – Open H2O Sensor"	X			
"FAULT – High H2O Temperature"	X			
"FAULT – Shorted Air Sensor"	X			
"FAULT – Shorted Flue Sensor"	X			
"FAULT - Open Flue Sensor"	X			
"FAULT – High Flue Temperature" *				X
"FAULT – Check Gas Valve"	X			
"FAULT – Check Ign Steps"	X			

H2O SENSOR FAULTS

FLUE FAULTS

NEW CODES * APPLIES TO ALL JXi™ MODELS

Notes _____

VERSAFLO IDENTIFICATION

Does your heater have VersaFlo installed?

YES



Rev H and newer
New PIB ALL models
VersaFlo by-pass Standard on JXI400NK
or field installed

NO



Rev G and Older ALL
models

Notes _____

VERSAFLO ERROR CODES



Display:
CHECK VERSAFLO



Diagnosis:

Signal is coming from Micro switch error:

- Jammed Actuator
- Faulty Micro Switch
- Faulty Actuator Motor
- Open/faulty connection on PIB

Solutions:

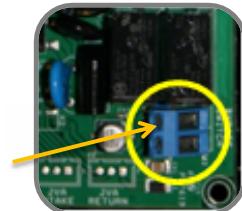
Check wire connection at micro switch terminal

Check wire connection at actuator terminal

Clear header of any obstructions

Re-fire heater – Test 24 VAC at J22 "Bypass Switch" terminal to common

- If NO – Bad Micro Switch - Replace VersaFlo Bypass assembly
- If 24 VAC is present at both terminals and Error still present replace PIB



Notes _____

VERSA ERROR CODES



Display:
CHECK AUX MONITOR



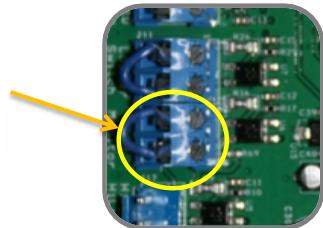
Diagnosis:
AUX Monitor is not currently used and is jumped out at the board.

Solutions:

Check wire connection at AUX terminal and ensure jumper is in place.

Re-fire heater -

If ERROR returns replace PIB.



Notes _____

VERSA ERROR CODES



Display:
SHORTED FLUE SENSOR

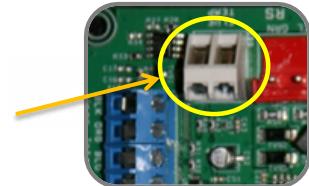


Diagnosis:
Flue Sensor is measuring temperature leaving the heater.

- Sensor is faulty
- Temp is rising too quickly to measure

Solutions:

Inspect clean-air and exhaust venting for obstruction
Do Temp differential test to ensure good water flow
Re-fire heater –
If error occurs replace Sensor.
If error occurs replace PIB.



Notes _____

VERSAFLO ERROR CODES



Display:
OPEN FLUE SENSOR



Diagnosis:

Flue Sensor is measuring temperature leaving the heater.

- Sensor is faulty
- Wiring is faulty
- PIB is faulty

Solutions:

Check wiring connection at "Flue Temp" terminal.

Re-fire heater –

If error occurs remove sensor and test sensor wires for Continuity. Ω

If YES – Replace PIB.

If NO – Replace Sensor.

Notes _____

VERSAFLO ERROR CODES



Display:
HIGH FLUE TEMPERATURE



Diagnosis:

Flue Sensor is measuring temperature leaving the heater.

- Temp has exceeded 464°F (240°C)
- Faulty Flue Sensor
- Faulty PIB
- Condition causing high temp

Solutions:

Inspect clean-air and exhaust venting for obstruction.

Do Temp differential test to ensure good water flow.

Re-fire heater –

If error occurs replace Sensor.

If error occurs replace PIB.



For instruction about Temp differential; see the JXi Workbook, installation manual, or feel free to join us at a training cycle.

See details at www.zodiacacademy.com

Notes _____
