

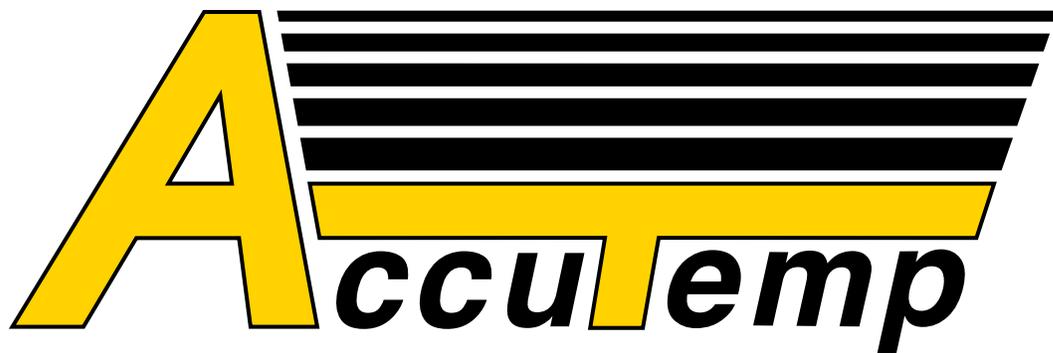


ACCU-STEAM™

WORLD'S BEST GRIDDLE



SERVICE MANUAL SERIAL NUMBERS 2611 AND UP NATURAL GAS AND PROPANE



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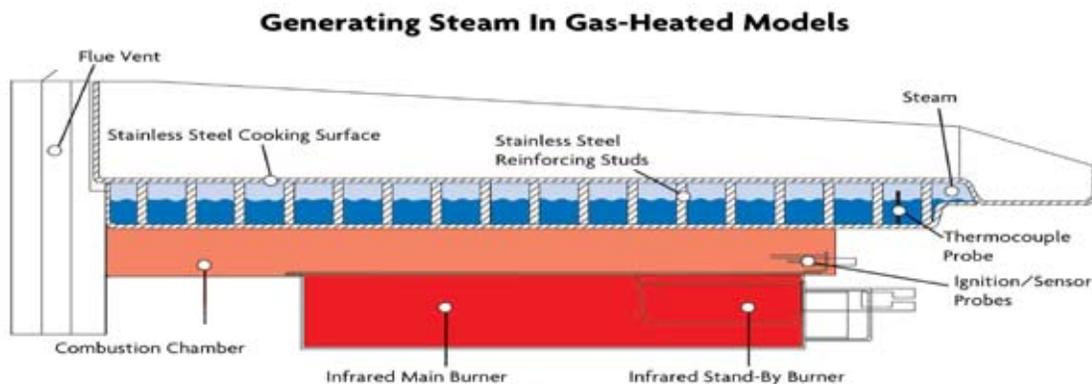
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DOCUMENT HISTORY

CURRENT REVISION	DATE	PRIOR REVISION	DATE	CHANGE
1005	5/14/10	N/A	N/A	Initial release of manual

INTRODUCTION

The griddle is constructed and uses technology like no other griddle in the world. The griddle cooking surface is the top of a chamber which has a unique environment. Welded stainless steel reinforcing studs connect the chamber top to a chamber bottom. The perimeter joints are all robotically welded and produce a vessel that is air tight. The chamber is filled half full with distilled water. The remaining air is removed and the chamber is welded shut. At this point, the chamber becomes a hermetically sealed vessel, never to be opened again. The griddle steam chamber requires no water or maintenance. A thermo-well for a thermocouple and a thermo-well for the over-temp safety shutdown system are also welded into the griddle steam chamber. At temperatures below 212°F (100 C), the chamber is actually in a vacuum, similar to that of a canning jar. At temperatures above 212 °F, the chamber operates under pressure. Located between the water and the bottom of the cooking surface is the best heat transfer medium – steam, the most effective way to transfer heat. The thermocouple senses the temperature of the steam and reports this data to the thermostat, which energizes the burners. This system maintains the griddle cooking surface temperatures to within ± 3 °F over the entire cooking surface and provides a near instant temperature recovery, even on the same spot on the griddle, when turning food in place.



INTERMITTENT IGNITION

SEQUENCE OF OPERATION S/N's 7184 and UP

Power comes in the back of the unit and goes to the transformer. The transformer lowers the voltage to 24 volts VAC. Power is then transferred to the high limit. When the circuit is energized there will always be power to the thermostat. When the thermostat calls for heat it will send power to the ignition module. Once the standby burner is lit and the module is satisfied power will then be transferred to the time delay relay. When the time delay relay times down, the main burners will ignite. When the heat cycle is over all burners will be off.

CONTINUOUS PILOT BURNER

SEQUENCE OF OPERATION S/N 2611 to 7183

120V power is supplied to the primary side of the transformer. 24VAC comes off the secondary side of the transformer which provides power to the over-temp / solder washer assembly. Once the ON/OFF switch is set to the ON position, power is applied to the ignition module through the blue wire and back out the red wire to the main gas control valve. The ignition module will send high voltage to the Ignitor probes thus causing a spark to ignite the standby burner. If the ignition module doesn't sense a flame it drops power to the main gas control valve and will shut down the griddle. If the ignition module receives the acceptable level of flame sense the ignition cycle continues and the time delay relay times out and sends voltage to power to thermostat. The thermostat in conjunction with the temperature sensor regulate the heat as required. If at any time the ignition module flame sense voltage is not acceptable it cuts power to the griddle.

TROUBLE SHOOTING MATRIX

SYMPTOM	POSSIBLE CAUSE	EVALUATION
Unit is cutting out and / or shutting down	Ignition probe	Check for oxidation. Clean probes if oxidized. Check for probes being loose in the ceramic. Make sure the ground probe is touching the ceramic part of the heating element and the other two probes should be the height of a nickel off the ceramic. Millivolt readings, using the recommended probe set, between the orange ignition wire and the green ground wire should read between 30 to 50 DC millivolts (.045 uA or higher) when the stand by burner is ignited. This can be measured at the ignition module. Replace if necessary.
	Flue	Check for grease or food build up in the flue. Clean for proper air flow. Check that the flue has not been pushed in. Straighten if necessary.
	Stand by (Pilot) burner	Check for a cracked or sunken ceramic. Replace if necessary.
	Orifice	Check for a plugged orifice. Clean as necessary.
	Ignition module	Check for loose connections or misaligned pins in the Molex connector. Tighten or replace as necessary. Also check the ignitor cable.
	Gas pressure.	Main burners should be set at 5 and the stand by burner should be set at 3.5 inches of water column for natural gas when the griddle is in operation. For propane units the pilot should be set at 8 inches and the main burner should be set at 10 inches. Check to see if an external gas regulator is affecting the pressures. Gas pressures to be checked with the burners on.
	Venturi tubes	Check for any blockage and clean as necessary.
	Ventilation	Check for down drafts that might be blowing the pilot flame out.
	Valves	Check for loose connections or if they are sticking closed. Replace as necessary.
	Unit will not start	Hi-Limit over-temp
Switches		Check for continuity. Replace as necessary.
On and off contacts		Check for continuity. Replace as necessary.
Gas supply		Check for gas supply to the unit and that the gas valve is open.
Electric supply		Check that power is supplied to the unit. Check the ground fault receptacle if used.
Transformer		Check for line voltage to the primary side and that 24 volts is present at the secondary side. Replace as necessary.
Ignition Cable		Check for cracks or loose connections.
Orifices		Check for any blockage and clean as necessary.
Fuses		Check for continuity. Replace as necessary.

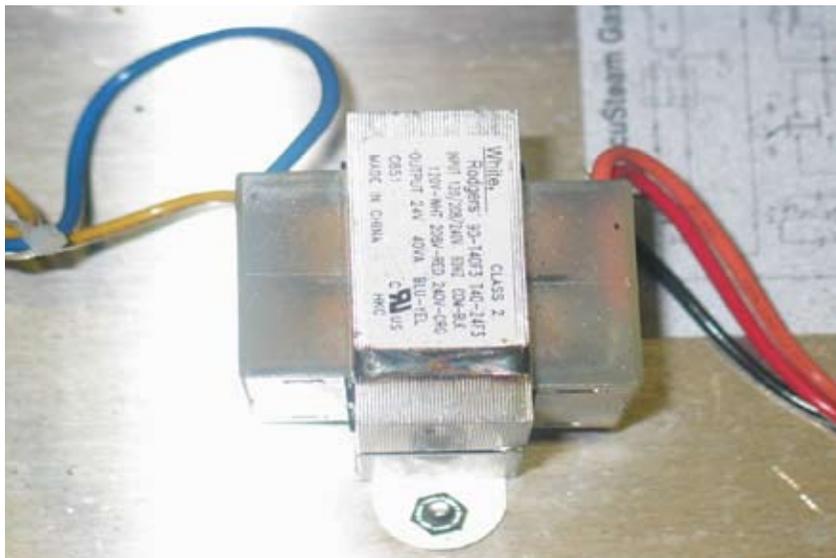
TROUBLE SHOOTING MATRIX

SYMPTOM	POSSIBLE CAUSE	EVALUATION
Unit is over / under temp	Thermostat	This is a type K thermostat. Check that 24 volts AC is present at terminals 4 & 5. For units with serial numbers 7551 and up, the thermostat will be a RTD type.
	Thermocouple	This is a type K thermocouple (red and yellow leads). Refer to the thermocouple chart for proper measurements. For units with serial numbers 7551 and up, this will be a RTD probe. (two red leads) Must use the correct probe with the type of thermostat installed.
Uneven temperatures	Unit installation	Make sure that the unit is level. Perform the 9 point temperature test and correspond with the temperature setting. (three reading across the back, three across the middle and three across the front. All readings should be within 3 degrees. Check for hot spots or leaks. Notify Accutemp Service with any fluctuating readings.
Unit is blowing flames out of the back	Flue	Clean the flue of any obstructions or build up.
	Burners	Check for damaged ceramics. Replace as necessary
	Gas pressure.	Maximum supply gas pressure should not exceed 0.5 psig. (14" WC) External regulators should not be used unless this reading is exceeded.

REMOVAL AND INSTALLATION

TRANSFORMER

1. Unplug the unit
2. Remove the three screws from the front door panel and drop the panel down.
3. Disconnect the wires from the primary and secondary side of the thermostat. Note their locations.
4. Remove the nylock nuts and pull the transformer out.
5. Reassemble in reverse order.



TRANSFORMER
AT0E-1809-1

REMOVAL AND INSTALLATION

LAMPS

The lamps are a neon style lamp that is driven by 24vac.

1. Unplug the unit.
2. Remove the three screws from the front door panel and drop the panel down.
3. Remove the wires from the lamps.
4. Depress the locking ears on the lamp with a pair of pliers and push thru the front of the panel
5. Reinstall in reverse order.



POWER
AT0E-1800-2



HEAT
AT0E-1800-1

ON / OFF SWITCH AND CONTACTS

This switch consists of 4 parts and each can be changed individually if any of the parts failed.

1. Unplug the unit.
2. Remove the three screws from the front door panel and drop the panel down.
3. Remove the wires from the contacts and note their location.
4. Push the spring loaded locking tab on the mounting ring and pull the switch out from the front of the panel.
5. Pry the contacts off of the locking ring.
6. Reinstall in reverse order.



SWITCH, SELECTOR
AT0E-3336-1



MOUNTING BLOCK
AT0E-3339-1



CONTACT, ON
AT0E-3338-1
2 REQUIRED

REMOVAL AND INSTALLATION

THERMOSTAT

WARNING - ALL THERMOSTATS MUST BE CALIBRATED TO 400 °F, (+1 °F,/-4 °F,)

1. Unplug the unit
2. Remove the three screws from the front door panel and drop the panel down.
3. Remove the knob and retaining nut from the front of the panel.
4. Disconnect the wires from the pins on the thermostat. Note their locations.
5. Reassemble in reverse order.

Note: Units with serial numbers 2611 to 7550 have a type K thermostat and thermocouple. (red and yellow leads) Serial numbers 7551 and above have a RTD thermostat and probe. (two red leads). When replacing a thermostat, always use a RTD thermostat and probe.

K Type Temperature Controller - P/N AT0E-2559-3



This was replaced by the RTD Controller P/N AT0E-2559-6 & Thermocouple P/N AT0E-2885-3

Must be used on all older series griddles with the welded in thermocouple

CALIBRATION POT

RTD Type Temperature Controller - P/N AT0E-2559-6



**MUST USE RTD THERMOCOUPLE
P/N AT0E-2885-3**

Calibration Pot

REMOVAL AND INSTALLATION

RTD THERMOSTAT CALIBRATION

The operating temperature range is 200 °F to 400 degrees F. Record the measured griddle surface temperature at the set points of 200 °F, 300 °F and 400 °F to determine if the controller is out of range. The calibration offset potentiometer shifts the range up or down but range or gain width is fixed and cannot be adjusted. If the controller is ± 10 °F out of range, replace it.

1. Open the control panel
2. Plug the unit in and hook up the gas supply.
3. Place a weighted temperature probe on the cooking surface of the griddle in a location above the griddle temperature sensor. Keep the probe off of the dimples and use a small amount of high temperature cooking oil between the surface of the probe and griddle.
4. Set the thermostat at 200 °F, turn the unit on and allow the temperature to stabilize. Take a reading from the thermometer and record the value.
5. Set the thermostat at 300 °F, allow to stabilize and record the value.
6. Set the thermostat at 400 °F, allow to stabilize and record the value.
7. Take a reading from the thermometer. The value should be 400 °F (+1 °F / -4 °F). If not, adjust the offset potentiometer on the thermostat and allow the unit to stabilize.
8. Repeat step 7 as is necessary.
9. Close the control panel, install the retaining screws and allow the unit to stabilize.
10. Observe the thermometer. The indicator reading should be 400 degrees F (+1 °F / -4 °F). If the reading is not, open the panel and repeat steps 7 – 9.

TEMP PROBE

The temperature sensor is screwed into a thermal-well underneath the griddle chamber. It is isolated from the distilled water of the griddle chamber. It is designed to indicate temperature by changing the resistance based on temperature to the thermostat. Be careful if you have to drill out the sensor not to puncture the chamber as it will render the griddle un-repairable.

1. Unplug the unit.
2. Remove the three screws from the front door panel and drop the panel down.
3. On the bottom side of the unit, locate the thermal-well that the probe capillary is screwed into and remove.
4. Remove the leads from pins 6 & 7 on the thermostat.
5. Reinstall in reverse order. (Type K probe, yellow on #6 and red on #7)



PROBE LOCATION
UNDERSIDE OF GRIDDLE



RTD TEMPERATURE SENSOR
AT0E-2885-3

REMOVAL AND INSTALLATION

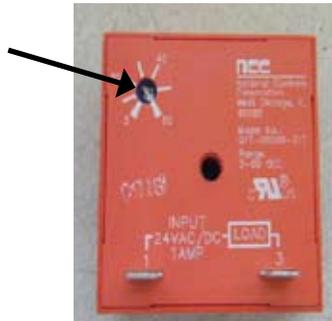
TIME DELAY RELAY

The time delay relay is used to delay a signal to allow for the proper mixture of air and gas before igniting the main burners.

1. Unplug the unit
2. Remove the three screws from the front door panel and drop the panel down.
3. Remove the mounting screw in the middle of the relay and the two wires.
4. Reinstall in reverse order.

Note: Make sure the adjustment pot is set for 20 seconds.

TIME DELAY ADJUSTMENT
SET FOR 20 SECONDS



RELAY, TIME DELAY
AT2H-2500

HI-LIMIT ASSEMBLY

Is a safety designed to turn off the griddle at a preset temperature to limit the pressure of the steam chamber so that it doesn't set off the one time pressure relief valve which will render the griddle un-repairable

1. Unplug the unit.
2. Remove the Hi-Limit access cover located under the griddle. **Verify the Hi Limit rod has pulled and released the switch before proceeding.**
3. Remove the switch bracket and assembly by first removing the two nuts. Be careful not to lose any of the parts located underneath.

Note: The entire assembly will want to drop down when removing the bracket.

4. Replace the rod, solder washer, flat washer and the spring. Put the two washers on the studs and reattach the switch bracket

Note: It is extremely important that the solder washer has good surface contact with the surface of the thermal-well. Make sure the solder washer is installed before the flat washer.

5. Reattach the spring and access cover. **See the drawing on the following page.**



SOLDER WASHER
AT2M-2860-1



WASHER
AT2F-1367-1



ROD
AT2M-2861-1



EXTENSION
SPRING
AT2H-1640-1



COMPRESSION
SPRING
AT2H-1365-1



BRACKET, SWITCH
AT2M-1558

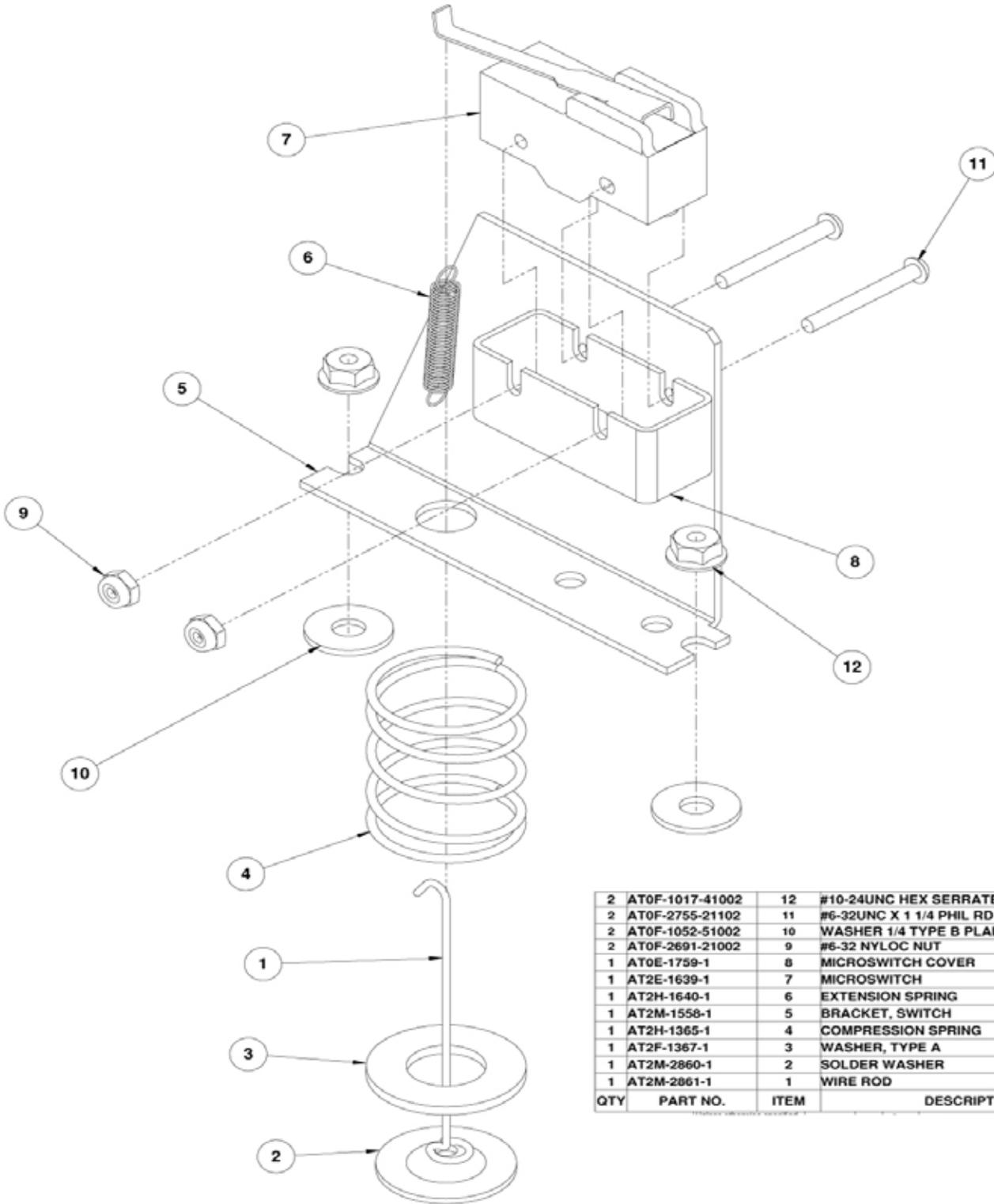


MICROSWITCH
AT2E-1639-1



MICROSWITCH
COVER
AT2E-1759

REMOVAL AND INSTALLATION



2	AT0F-1017-41002	12	#10-24UNC HEX SERRATED NUT
2	AT0F-2755-21102	11	#6-32UNC X 1 1/4 PHIL RD HD MACH SCREW
2	AT0F-1052-51002	10	WASHER 1/4 TYPE B PLAIN
2	AT0F-2691-21002	9	#6-32 NYLOC NUT
1	AT0E-1759-1	8	MICROSWITCH COVER
1	AT2E-1639-1	7	MICROSWITCH
1	AT2H-1640-1	6	EXTENSION SPRING
1	AT2M-1558-1	5	BRACKET, SWITCH
1	AT2H-1365-1	4	COMPRESSION SPRING
1	AT2F-1367-1	3	WASHER, TYPE A
1	AT2M-2860-1	2	SOLDER WASHER
1	AT2M-2861-1	1	WIRE ROD
QTY	PART NO.	ITEM	DESCRIPTION

**HIGH LIMIT OVERTEMP ASSEMBLY
DETAIL VIEW**

REMOVAL AND INSTALLATION

STANDBY BURNER (PILOT BURNER)

This device is a small ceramic burned used to ignite the main burners. It also has the ignition probe and flame sense probe. Improper installation can cause the griddle not ignite or intermittently shutdown

1. Unplug the unit and shut off the gas supply and let the unit cool.
2. Loosen the hose clamp on the venturi.
3. Loosen the two nuts that hold the burner spacer and step bracket.
4. Remove the two nuts on the studs that hold the ignitor sensor bracket.
5. Remove the ignitor cable from the ignitor probe. Inspect for damage.
6. Pull the orifice adaptor out of the venturi and pull the pilot assembly down.

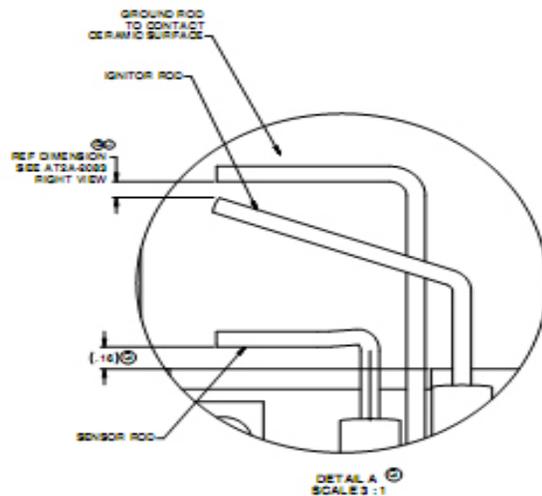
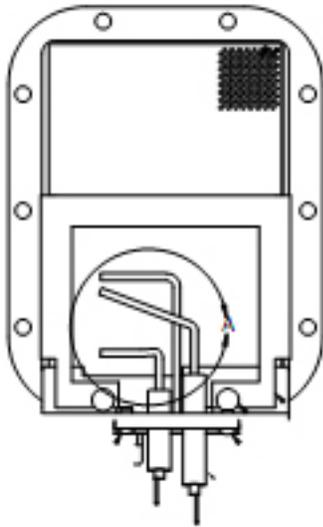
Note: Check the ignitor probes and ground plane assembly for discoloration or oxidation and replace as needed. Also check for proper gapping. See illustration below.

7. Remove the orifice adaptor from the compression elbow and clean.

8. Reinstall in reverse order.

Note: Make sure that the hose clamp does not block the venturi opening.

See Pages XX to XX for instructions on measuring flame sense.



PROBES
IGNITOR & FLAMES SENSE SETTING



STANDBY BURNER
AT2A-2255-2



IGNITOR KIT

REMOVAL AND INSTALLATION

MAIN BURNERS

Main burners are a ceramic burner that supplies the required heat to operate the griddle. If the get wet they should be allowed to dry without applying heat as they will crack and will need replaced

1. Unplug the unit and disconnect the gas and let the unit cool.
2. Remove the retaining nut from the gas supply elbow.
3. Remove the four retaining nuts from burner box flange and drop the box down.
4. Clean the orifices.
5. Reassemble in reverse order and run the unit up to 400 degrees.



36" & 48" MODEL BURNER
AT2B-2991-1



BURNER 24" MODEL
AT2B-2131-1

IGNITION MODULE

Is the electronic device that verifies that the griddle has ignited and is running. If the proper signals are not received from the flame sense it will lockout the griddle.

1. Unplug the unit.
2. Remove the three screws from the front door panel and drop the panel down.
3. Disconnect the ignition cable, mox connector for the wire harness and the mounting screws. Apply silicone dielectric grease to the connections.
4. Reassemble in reverse order.

Note: Serial numbers 7184 and above will have an Interim Intermittent Ignition system in conjunction with the dual solenoid valve. The main gas valve was removed



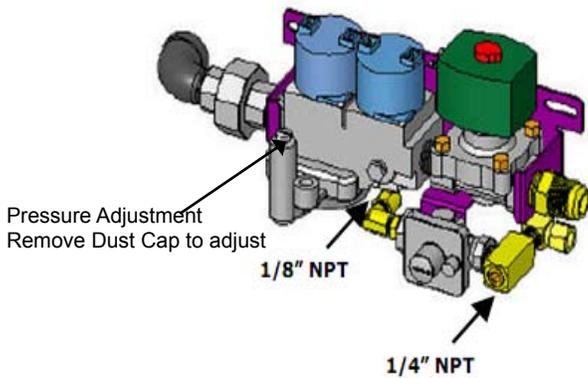
IGNITION MODULE
AT2E-1807-1

REMOVAL AND INSTALLATION

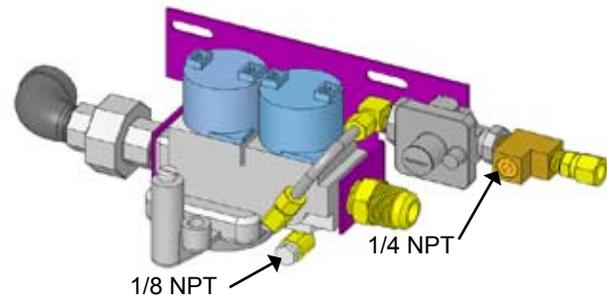
GAS CONTROL VALVE, MAIN BURNER VALVE AND PRESSURE REGULATOR

1. Unplug the unit and disconnect the gas.
2. Remove the three screws from the front door panel and drop the panel down.
3. Disconnect the union on the left hand side and the fitting on the right hand side of the flex hose.
4. Pull the valves out and replace the defective part.
5. Reassemble in reverse order.

OLD STYLE VALVE TRAIN
S/N 2661 TO 7894



NEW STYLE VALVE TRAIN
S/N 7895 & UP



Control Valve and Pilot Valve gas pressures must be adjusted after replacing to assure to assist in correct operation.

GAS PRESSURE CHART

GAS TYPE	MAIN PRESSURE	PILOT PRESSURE
NATURAL	5 INCHES WATER COLUMN	3.5 INCHES WATER COLUMN
PROPANE	10 INCHES WATER COLUMN	8 INCHES WATER COLUMN



CONTROL VALVE
AT2E-1806-2 - NG (5"WC)
AT2E-1806-3 - P (10"WC)



MAIN BURNER VALVE
AT2E-2087-1
S/N 7894 & LOWER



PILOT VALVE
AT0P-2847-1- NG (3.5"WC)
AT0P-2847-2 - P (8" WC)

TESTING

FLAME SENSE MEASUREMENT

The ACCU-STEAM gas griddle has a flame sensing circuit to determine if the system has proper combustion. When the system is turned on gas is sent to the pilot burner and an electronic ignition tries to ignite the griddle. The griddle then checks to see if flame is established in the pilot burner. If the flame sense feedback voltage is within the proper range the system will ignite the main burners and they stay on until the thermostat is satisfied. The griddle flame sense continues to monitor the voltage and as long as it is within the proper range the griddle will stay on.

If the flame sense voltage falls below the threshold the griddle will go into lock out and will shut down the griddle. Cycling the on/off switch will restart the ignition and flame sense test. If it fails again you may need to troubleshoot the ignition/flame sense section.

TROUBLESHOOTING

How to make a diagnosis:

1. Determine that power is present at the griddle
2. Determine that gas is supplied at the proper pressures to the unit.
3. Install an inch-units H₂O manometer onto the port on the side of the main gas regulator valve and onto the pressure tap outboard of the pilot regulator.
4. Install a flame-sensing probe into the flame sense circuit.
 - a. A meter with micro amp (<A) selection or a micro amp adapter must be placed in series with the orange flame sense wire. To check micro amps, disconnect the orange wire from the flame rod, connect the amp meter in series with the flame sensing rod terminal and the orange wire from the wiring harness.
 - b. An Accutemp volt-measuring adapter P/N FT0003 (meter set for millivolts) is placed in parallel with the orange flame sense circuit. Attach one end of the adapter to the orange wire and the other to ground.
5. Turn the unit on (Power lamp is lit)
6. If the pilot burner is not lighting and there is no spark, check for 24 VAC input to the ignition module.
 - a. If there is 24VAC present at the ignition module and all of the ground connections are good, check the ignition cable for an open or a short to ground.
 - b. If there is 24VAC present at the ignition module and all of the ground connections and the ignition cable are good, test for spark by disabling the main regulator gas valve and place the ignitor cable close to ground. Turn the griddle ON. If there is no spark, replace the ignition module.
 - c. If there is a spark, check the ignitor probe spark gap on the pilot burner. Adjust, if necessary. If the probes look badly oxidized, replace the probes.
7. If there is spark but no gas to the pilot regulator, check for 24VAC at the gas valve coil. If 24VAC is not present at the coil of the main regulator gas valve, and the connecting harnesses are good, replace the ignition module.
8. If 24VAC is present at the gas valve coil and no gas is flowing to the pilot regulator, replace the main regulator gas valve. When changing the valve, check for debris in the gas line and valve. Ensure that a drip leg is installed before the unit.
regulator.

TESTING

9. If the pilot burner is lighting, determine if the sensing signal level is 25mV (1.07uA) or higher (see the attached millivolt to micro amp chart).

- a. If the level is less than 25mV (1.07uA), check for proper gas pressures to the main regulator and to the pilot regulator. For natural gas, the pressures must be 5" H₂O for the main gas valve and 3.5" H₂O for the pilot burner regulator. For propane gas, the pressures must be 10" H₂O for the main gas valve and 8.0" H₂O for the pilot burner regulator.
- b. If the gas pressures are good but the sensing signal level is still poor, check the pilot orifice for obstruction. Clean or replace as necessary.
- c. If the gas pressures are good, the pilot orifice is clean, the burner surface is glowing orange to bright orange but the signal level is still poor, replace the ignitor probe set and ground plane.

10. Four types of meter readings are possible: 0 millivolts or 0 micro amps; a steady reading of 25 millivolts or 1.07 micro amps or more; a low reading less than 25 millivolts or 1.07 microamps; or a fluctuating reading that won't stabilize. The possible causes for each type of reading are:

- a. 0 millivolts or micro amps – Look for an open or grounded sensor wire or flame rod, or a defective ignition module. The wire and rod can be diagnosed with an ohmmeter. Make the diagnosis of a defective ignition module after all other possibilities have been exhausted.
- b. 25 millivolts or 1.07 micro amps, with a steady reading – The system is operating within normal parameters.
- c. Fluctuating meter reading – Check that the flame sensor probes are properly located. Also check for drafts that can cause an unstable flame. A dirty orifice can also cause an unstable flame.
- d. Less than 25 millivolts or 1.07 micro amps – Look for a pilot flame that's not properly engulfing the flame-sensing rod. A flame sensor probe too close to the tile will not be in the proper part of the flame, with not enough ionized gas to allow a proper signal level to be conducted. Conversely, the same thing holds true if the flame sensor is too high. Also check the ground connection back to the ignition module. Check that the flame-sensing rod and ground plane are not oxidized. Clean both with a non aluminum oxide abrasive.

Important! The ignition module should be the last item that is replaced. Ignition modules are designed and tested to rigorous standards to ensure safe and consistent operation. Therefore, focus on other less robust components before swapping out the ignition module.

FLAME SENSE MEASUREMENT USING THE VOLTAGE METHOD

1. Connect Flame Tester, AccuTemp P/N FT- 003 to your multi-meter
2. Set multi-meter to DC mv.
3. Connect Flame Tester leads, to Igniter Harness Orange (or Yellow) and Green wires.
4. Verify your reading is above 60 DC mv and the system will shutdown below 19 DC mv.



TESTING CHAMBER INTEGRITY TEST

Tools Required:

- Level
- Calibrated Digital Temperature Meter (Such as the Cooper - Atkins EconoTemp)
- Weighted Temperature Probe - (Such as Cooper/Atkins)



*Digital Temperature Meter
&
Weighted Temperature Probe*

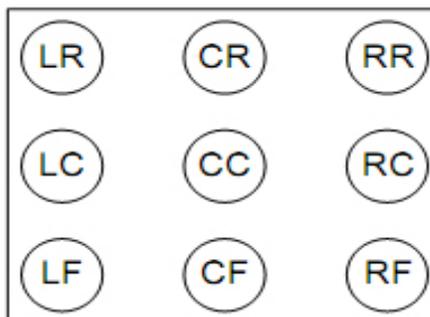
Due to the patented design of our griddle it is imperative that the chamber has no leaks as this allows water to escape and air to move in causing inconsistent temperatures on the cooking surface. This test will determine if the cooking chamber is functioning properly.

Notes:

Do not use a infrared temperature measuring device as it will not work correctly.

1. Verify griddle is level front to back and side to side before attempting this procedure.
2. With the griddle plugged in, set thermostat dial to 200°F and turn on. If this is a internal thermostat model you will need to open the control panel to set the thermostat.
3. Place the weighted temperature probe in the center in the first $\frac{1}{3}$ of the griddle cooking surface on a small amount of high temperature cooking oil. Make sure that the probe is between the griddle weld stud dimples to assure a proper reading.
4. Allow the griddle to heat to the initial temperature setting.
5. Increase thermostat setting to 300°F allow griddle to cycle through two heat cycles.
6. Place weighted temperature probe and record temperatures according to the chart below
7. Temperatures shall be within $\pm 5^\circ \text{F}$ of each other across the entire surface.

Nine Point Chart						
Horizontal Position	Vertical	Temp	Vertical	Temp	Vertical	Temp
Rear	Left		Center		Right	
Center	Left		Center		Right	
Front	Left		Center		Right	



TEMPERATURE SENSOR (THERMOCOUPLE) RESISTANCE CHART

RTD TEMPERATURE SENSOR AT0E-2885-3 RTD PROBE

°F	RTD Resistance Value
0	1000Ω
100	1146Ω
200	1359Ω
300	1569Ω
400	1775Ω

K TYPE TEMPERATURE SENSOR AT0E-2885-2

TYPE K THERMOCOUPLE READINGS - THERMOELECTRIC VOLTAGE IN DC MILLIVOLTS

F°	0	1	2	3	4	5	6	7	8	9	10
70	0.843	0.865	0.888	0.91	0.933	0.955	0.978	1	1.023	1.045	1.068
80	1.068	1.09	1.113	1.136	1.158	1.181	1.203	1.226	1.249	1.271	1.294
90	1.294	1.316	1.339	1.362	1.384	1.407	1.43	1.453	1.475	1.498	1.521
100	1.521	1.543	1.566	1.589	1.612	1.635	1.657	1.68	1.703	1.726	1.749
110	1.749	1.771	1.794	1.817	1.84	1.863	1.886	1.909	1.931	1.954	1.977
120	1.977	2	2.023	2.046	2.069	2.092	2.115	2.138	2.161	2.184	2.207
130	2.207	2.23	2.253	2.276	2.298	2.321	2.344	2.367	2.39	2.413	2.436
140	2.436	2.459	2.483	2.506	2.529	2.552	2.575	2.598	2.621	2.644	2.667
150	2.667	2.69	2.713	2.736	2.759	2.782	2.805	2.828	2.851	2.874	2.897
160	2.897	2.92	2.944	2.967	2.99	3.013	3.036	3.059	3.082	3.105	3.128
170	3.128	3.151	3.174	3.197	3.22	3.244	3.267	3.29	3.313	3.336	3.359
180	3.359	3.382	3.405	3.428	3.451	3.474	3.497	3.52	3.544	3.567	3.59
190	3.59	3.613	3.636	3.659	3.682	3.705	3.728	3.751	3.774	3.797	3.82
200	3.82	3.843	3.866	3.889	3.912	3.935	3.958	3.981	4.004	4.027	4.05
210	4.05	4.073	4.096	4.119	4.142	4.165	4.188	4.211	4.234	4.257	4.28
220	4.28	4.303	4.326	4.349	4.372	4.395	4.417	4.44	4.463	4.486	4.509
230	4.509	4.532	4.555	4.578	4.601	4.623	4.646	4.669	4.692	4.715	4.738
240	4.738	4.76	4.783	4.806	4.829	4.852	4.874	4.897	4.92	4.943	4.965
250	4.965	4.988	5.011	5.034	5.056	5.079	5.102	5.124	5.147	5.17	5.192
260	5.192	5.215	5.238	5.26	5.283	5.306	5.328	5.351	5.374	5.396	5.419
270	5.419	5.441	5.464	5.487	5.509	5.532	5.554	5.577	5.599	5.622	5.644
280	5.644	5.667	5.69	5.712	5.735	5.757	5.779	5.802	5.824	5.847	5.869
290	5.869	5.892	5.914	5.937	5.959	5.982	6.004	6.026	6.049	6.071	6.094
300	6.094	6.116	6.138	6.161	6.183	6.205	6.228	6.25	6.272	6.295	6.317
310	6.317	6.339	6.362	6.384	6.406	6.429	6.451	6.473	6.496	6.518	6.54
320	6.54	6.562	6.585	6.607	6.629	6.652	6.674	6.696	6.718	6.741	6.763
330	6.763	6.785	6.807	6.829	6.852	6.874	6.896	6.918	6.941	6.963	6.985
340	6.985	7.007	7.029	7.052	7.074	7.096	7.118	7.14	7.163	7.185	7.207
350	7.207	7.229	7.251	7.276	7.296	7.318	7.34	7.362	7.384	7.407	7.429

GAS GRIDDLE ORIFICE REFERENCE CHART FOR ALTITUDE AND BTU CONTENT

GAS GRIDDLE ORIFICE REFERENCE TABLE FOR ALTITUDE AND BTU CONTENT

NOTE: This Table represents the standard upper and lower ranges of BTU per cubic foot content. There is no relationship between the natural gas BTU content and the propane BTU content as shown in each section of this Table.

HEAT VALUE BTU/CU FT. (NATURAL GAS - 990, PROPANE GAS - 2200)								
Altitude ft	PILOT BURNER		24" GRIDDLE MAIN BURNER		36" GRIDDLE MAIN BURNER		48" GRIDDLE MAIN BURNER	
	NG	LP	NG	LP	NG	LP	NG	LP
3000	#59	#71	#49	#56	#40	#54	#40	#53
4000	#59	#71	#50	#57	#43	#53	#44	#53
5000	#59	#72	#50	#57	#44	#54	#45	#54
6000	#60	#73	#51	#58	#44	#54	#46	#54
7000	#61	#73	#51	#58	#45	#54	#47	#54
8000	#61	#74	#52	#58	#46	#54	#47	#55
9000	#62	#74	#53	#58	#47	#56	#49	#56
10000	#64	#74	#53	#59	#48	#56	#50	#56

HEAT VALUE								
Altitude ft	PILOT BURNER		24" GRIDDLE MAIN BURNER		36" GRIDDLE MAIN BURNER		48" GRIDDLE MAIN BURNER	
	NG	LP	NG	LP	NG	LP	NG	LP
3000	#59	#71	#49	#57	#42	#54	#43	#55
4000	#59	#71	#50	#58	#42	#54	#43	#55
5000	#60	#72	#51	#58	#45	#54	#44	#56
6000	#61	#73	#52	#58	#45	#55	#44	#56
7000	#62	#73	#53	#58	#46	#55	#45	#56
8000	#63	#74	#54	#59	#46	#55	#45	#56
9000	#64	#74	#55	#59	#47	#55	#47	#57
10000	#65	#74	1.25MM	#60	#48	1.25MM	#48	#58

HEAT VALUE								
Altitude ft	PILOT BURNER		24" GRIDDLE MAIN BURNER		36" GRIDDLE MAIN BURNER		48" GRIDDLE MAIN BURNER	
	NG	LP	NG	LP	NG	LP	NG	LP
3000	#59	#71	#50	3/64	#43	#54	#42	#55
4000	#60	#71	#51	#57	#43	#54	#44	#55
5000	#61	#72	#52	#57	#44	#55	#45	#55
6000	#62	#73	#52	#57	#44	#55	#45	#55
7000	#63	#73	#53	#57	#46	#55	#46	1.25MM
8000	#64	#74	#54	#58	#47	#55	#47	1.25MM
9000	#65	#74	#54	#59	#48	1.25MM	#48	3/64
10000	#65	#74	#54	#59	#49	1.25MM	#49	3/64

GAS GRIDDLE ORIFICE REFERENCE CHART FOR ALTITUDE AND BTU CONTENT

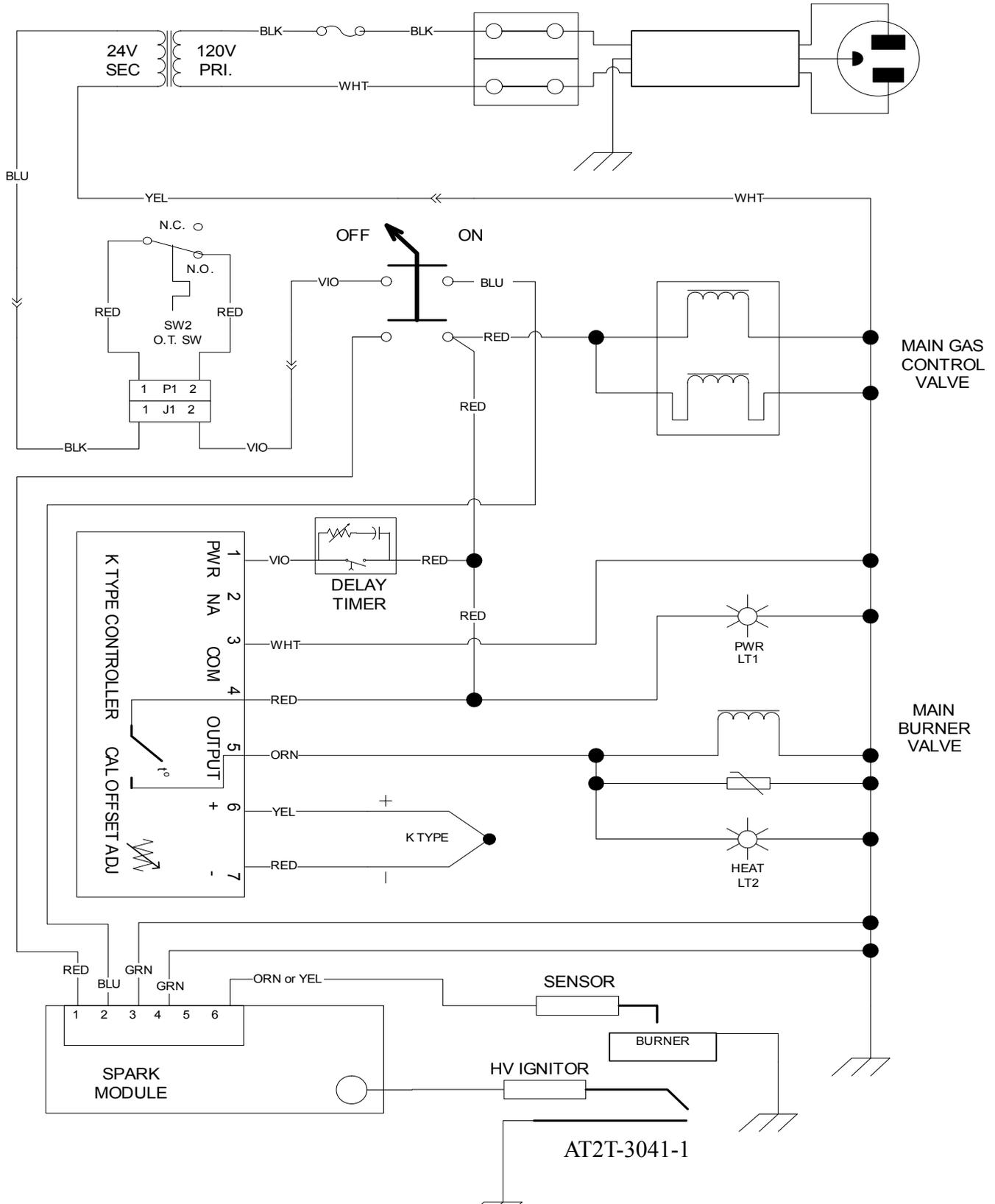
HEAT VALUE		NATURAL GAS - 1200				PROPANE GAS - 2500			
	PILOT BURNER		24" GRIDDLE MAIN BURNER		36" GRIDDLE MAIN BURNER		48" GRIDDLE MAIN BURNER		
Altitude ft	NG	LP	NG	LP	NG	LP	NG	LP	
3000	#60	#71	#51	3/64	#43	#54	#42	#55	
4000	#61	#71	#51	#57	#43	#54	#44	#55	
5000	#63	#72	#52	#57	#44	#55	#45	#55	
6000	#63	#72	#52	#57	#44	#55	#45	#55	
7000	#64	#72	#53	#57	#46	#55	#46	1.25MM	
8000	#65	#72	#54	#58	#47	#55	#47	1.25MM	
9000	#65	#72	#54	#59	#48	1.25MM	#48	3/64	
10000	#66	#72	#54	#59	#49	1.25MM	#49	3/64	

HEAT VALUE		NATURAL GAS - 1300				PROPANE GAS - 2700			
	PILOT BURNER		24" GRIDDLE MAIN BURNER		36" GRIDDLE MAIN BURNER		48" GRIDDLE MAIN BURNER		
Altitude ft	NG	LP	NG	LP	NG	LP	NG	LP	
3000	#60	#71	#52	#56	#46	#53	#45	#54	
4000	#62	#72	#52	#56	#46	#54	#47	#54	
5000	#63	#73	#53	#56	#47	#54	#48	#55	
6000	#64	#73	#54	#58	#48	#54	#48	#55	
7000	#64	#74	#55	#58	#49	#55	#49	#56	
8000	#65	#74	#55	#59	#50	#55	#50	#56	
9000	#66	#74	#55	#60	#51	1.25MM	#50	#56	
10000	#68	#75	#56	#62	#52	1.25MM	#51	#57	

SCHEMATICS

AT2T-3041-1

STANDARD IGNITION
SERIAL NUMBERS 2661 TO 7184



SCHEMATICS

AT2T-3041-3

INTERMITTENT IGNITION WITH MAIN BURNER VALVE

SERIAL NUMBERS 7185 TO 7894

