



**VG40 SHOWN**

## **GAS BRAISING PANS (30 & 40 GALLON)**

VG30 ML-126847

VG40 ML-126848

### **- NOTICE -**

This Manual is prepared for the use of trained Vulcan Service Technicians and should not be used by those not properly qualified. If you have attended a Vulcan Service School for this product, you may be qualified to perform all the procedures described in this manual.

This manual is not intended to be all encompassing. If you have not attended a Vulcan Service School for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Vulcan Service Technician.

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# TABLE OF CONTENTS

GENERAL .....	3
Installation, Operation and Cleaning .....	3
Introduction .....	3
Control Panel .....	3
Model Designations .....	3
Tools .....	3
Specifications .....	3
REMOVAL AND REPLACEMENT OF PARTS .....	4
Covers and Panels .....	4
Power Supply Box Components .....	5
Temperature Controller .....	5
Pan Position/Down Limit Switch .....	6
Thermocouple Probe .....	8
DC Lift Motor .....	9
Gear Reducer .....	10
Gas Combination Valve .....	11
Pilot Burner .....	12
Runner Tube .....	12
Main Burners .....	13
Lid Springs .....	13
SERVICE PROCEDURES AND ADJUSTMENTS .....	15
Temperature Controller Calibration .....	15
Temperature Controller Test .....	16
Thermocouple Test .....	16
Spark Ignition Test .....	17
Pilot Burner Flame Adjustment .....	18
Flame Sense Current Test .....	19
Ignition Control Module Test .....	19
Gas Manifold Pressure Adjustment .....	20
Main Burners .....	21
Inspection .....	21
Air Shutter Adjustment .....	21
DC Motor Controller Test .....	22
Pan Position/Down Limit Switch Adjustment .....	22
Lid Spring Tension Adjustment .....	23
ELECTRICAL OPERATION .....	25
Component Function .....	25
Component Location .....	26
Ignition Control Module .....	27
Sequence of Operation .....	28
Schematic Diagram .....	30
TROUBLESHOOTING .....	31
Gas Heating (Manual Lift or Motorized Lift Option) .....	31
Motorized Lift Option Only .....	32
CONDENSED SPARE PARTS LIST .....	32

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# GENERAL

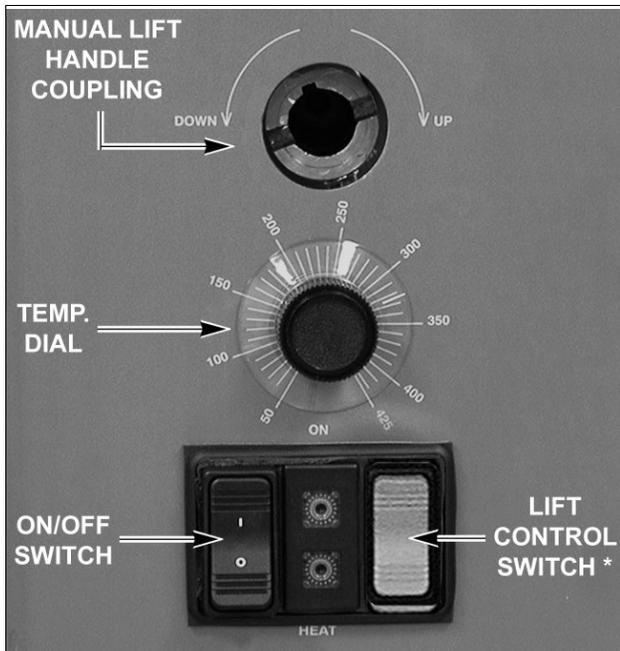
## INSTALLATION, OPERATION AND CLEANING

Refer to the Installation & Operation Manual for specific instructions.

## INTRODUCTION

The tilting braising pan (skillet) is a versatile piece of cooking equipment. It can be used to stew, simmer, steam, sear, pan fry, grill or saute food products over an evenly distributed heating surface. Once the product is fully cooked, the pan can be tilted for ease of product removal.

### Control Panel



\* AUTO LIFT OPTION ONLY

7780

### Model Designations

- VG30 - 30 gallon capacity
- VG40 - 40 gallons capacity

## TOOLS

### Standard

- Standard set of hand tools.
- VOM with an AC current tester and DC micro amp current tester capable of measuring 0-10 micro amps.

**NOTE:** Any quality VOM with a sensitivity of 20,000 ohms per volt can be used.

- U-Tube Manometer.
- Temperature tester (thermocouple type) with surface probe.

### Special

- 1 5/8" open end wrench. Used for removing lid springs and adjusting lid spring tension.
- Field service grounding kit P/N TL- 84919.
- RTV sealant Dow Corning 732 or equivalent. Used for sealing the slot in top cover for the gas combination valve.
- Pipe thread sealant suitable for natural and propane gases.

## SPECIFICATIONS

MODEL	INPUT BTU/HR		MANIFOLD PRESSURE (INCHES W.C.)		LINE PRESSURE (INCHES W.C.)					AMPS (MAX) @ 120V/60HZ
	NAT.	PROP.	NAT.	PROP.	NATURAL		PROPANE			
					RECOMMEND	MIN	RECOMMEND	MIN	MAX	
VG30	90,000	90,000	3.7	10.0	7.0	5.0	11.0	11.0	14.0	3.0
VG40	120,000	120,000	3.7	10.0	7.0	5.0	11.0	11.0	14.0	

# REMOVAL AND REPLACEMENT OF PARTS

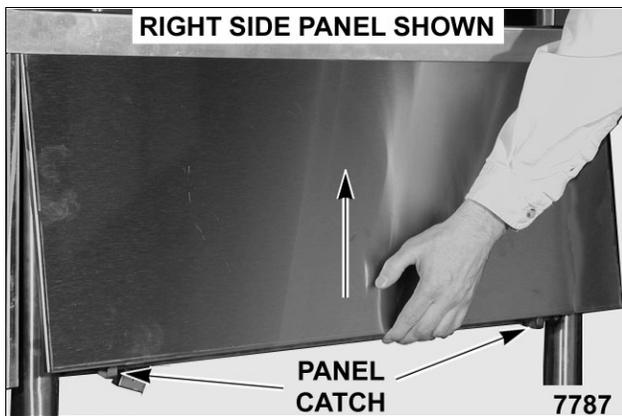
## COVERS AND PANELS



**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

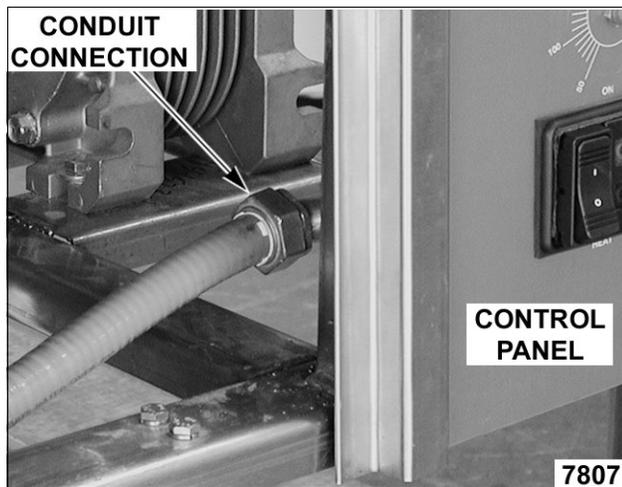
### Front, Rear & Side Panels

1. Lift up on the bottom edge of panel until it clears the catch.
2. Tilt outwards and allow the panel to drop down.
3. Reverse procedure to install.

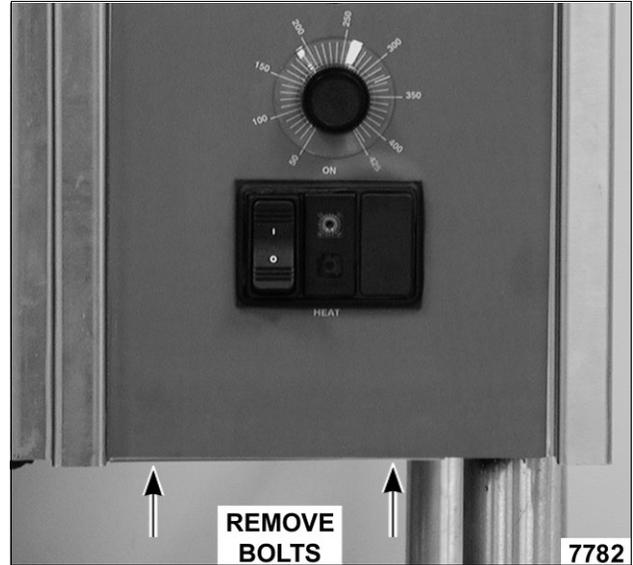


### Control Panel

1. Remove front panel.
2. Disconnect conduit from control box.



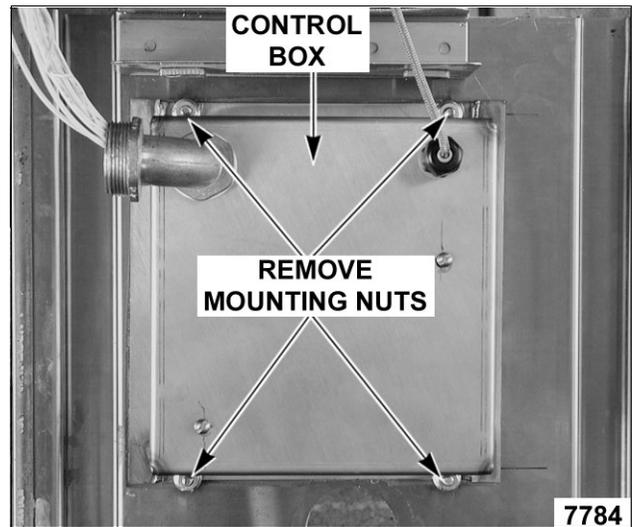
3. Remove manual lift crank handle (if installed).
4. Remove bolts securing control panel to braising pan frame. Bolts are recessed in the frame channel.



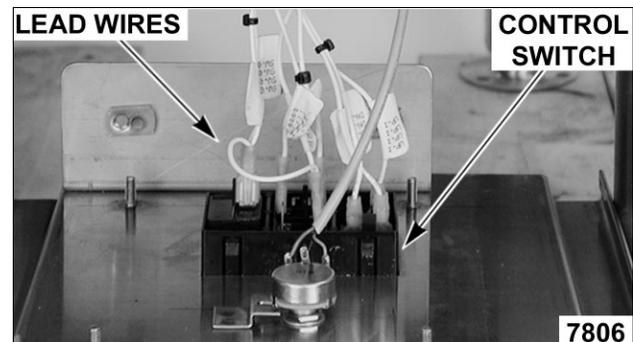
5. Tilt bottom of control panel outwards and pull down.

**NOTE:** The control panel should be supported to remove lead wire strain.

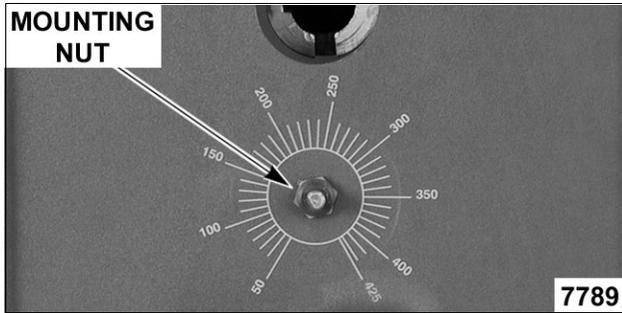
6. Remove control box from control panel.



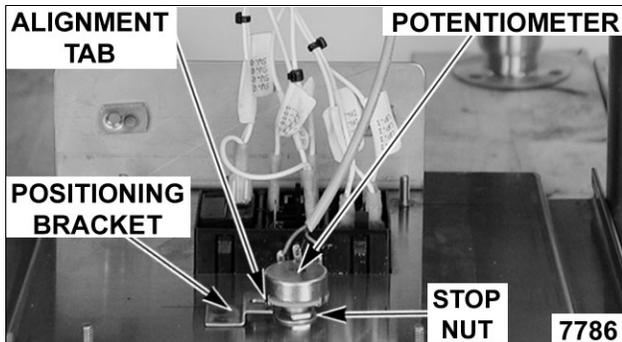
7. Disconnect lead wires from control switch.



- Pull temperature dial from potentiometer shaft and remove mounting nut.



- Control panel is removed.
- To install.
  - Align tab on potentiometer with positioning bracket on panel.
  - Install mounting nut and tighten.
  - Adjust stop nut on potentiometer body (as necessary) to ensure a water tight seal on mounting nut.
  - Attach temperature dial.



- Reverse procedure from step 6 to complete the installation.
- Check calibration as outlined under TEMPERATURE CONTROLLER CALIBRATION.

### POWER SUPPLY BOX COMPONENTS



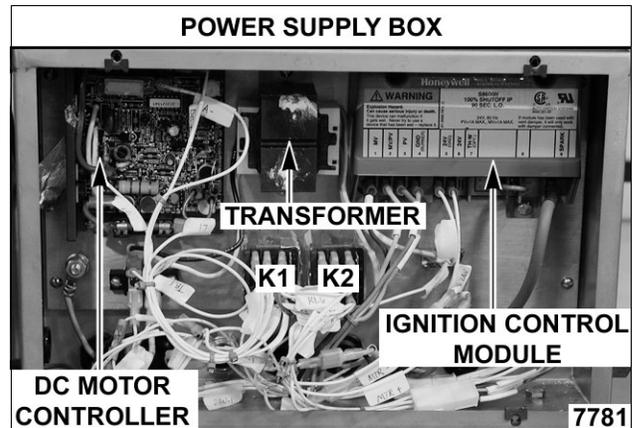
**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

**CAUTION:** Certain components in this system are subject to damage by electrostatic discharge during field repairs. A field service grounding kit is available to prevent damage. The field service grounding kit must be used anytime a control board is handled.

- Remove front panel as outlined under COVERS AND PANELS.
- Remove power supply box cover.



- Remove the component being replaced.
- Reverse procedure to install the replacement component then check for proper operation.

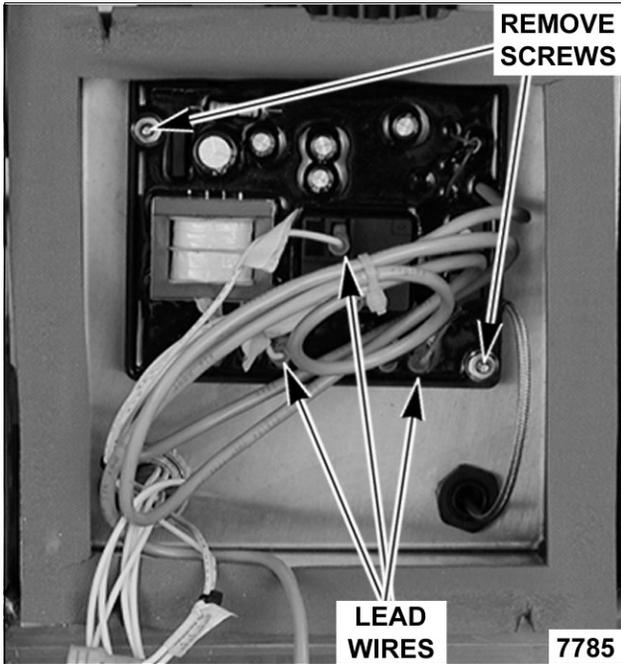


### TEMPERATURE CONTROLLER

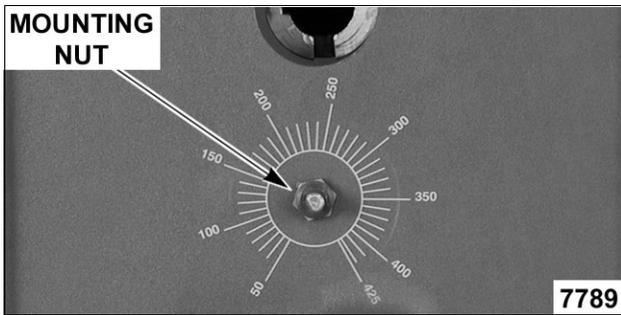


**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

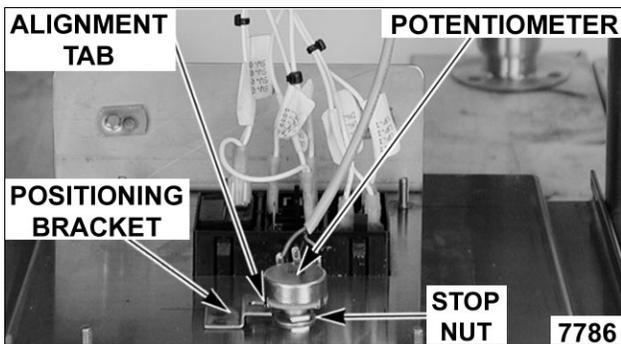
- Remove control box from the control panel as outlined under COVERS AND PANELS.
- Disconnect lead wires from temperature controller.
- Remove temperature controller from control box.



4. Pull temperature dial from potentiometer shaft and remove mounting nut.



5. To install:
  - A. Align tab on potentiometer with positioning bracket on panel.
  - B. Install mounting nut and tighten.
  - C. Adjust stop nut on potentiometer body (as necessary) to ensure a water tight seal on mounting nut.
  - D. Attach temperature dial.



6. Reverse procedure from step 3 to complete the installation.

7. Check calibration as outlined under TEMPERATURE CONTROLLER CALIBRATION.

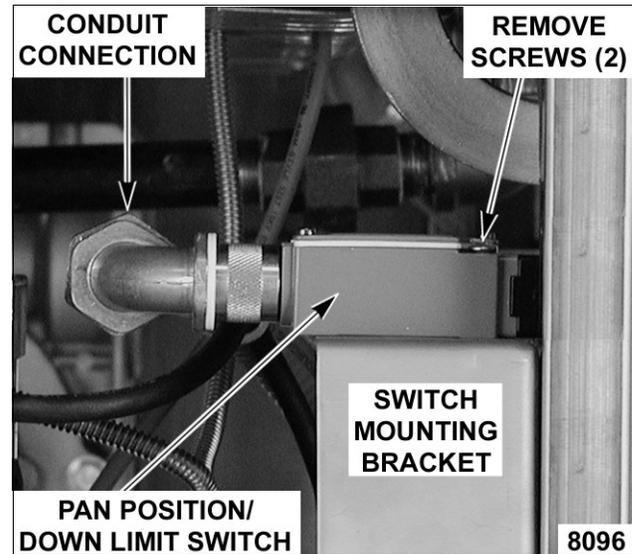
### PAN POSITION/DOWN LIMIT SWITCH



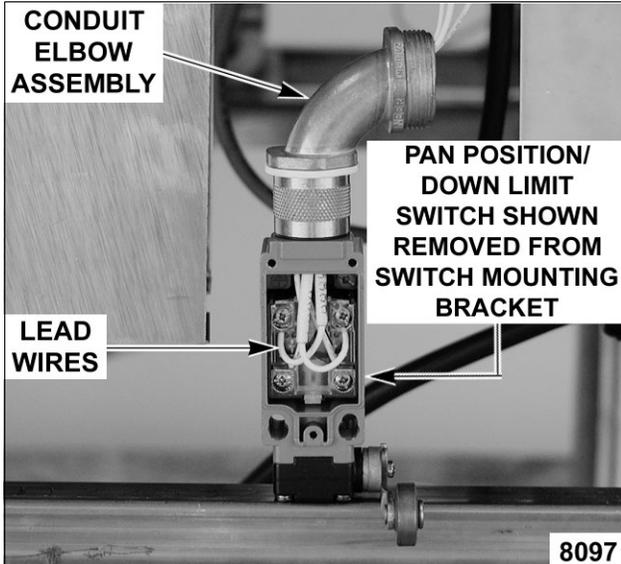
**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

1. Remove front and left side panels as outlined under COVERS AND PANELS.
2. Disconnect conduit and remove pan position/down limit switch from switch mounting bracket.

#### LEFT SIDE VIEW SHOWN



3. Remove cover from switch.
4. Disconnect lead wires and pull wires thru conduit elbow assembly.
5. Remove conduit elbow assembly from switch.



**NOTE:** When installing, replace the o-ring seal (provided) inside the brass fitting and re-use conduit elbow assembly.

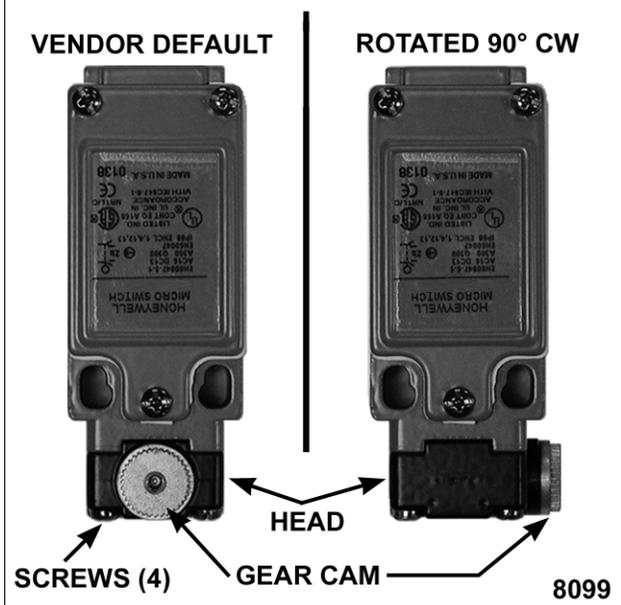
6. To install:
  - A. Position the switch with the head pointing toward installer and gear cam pointing up.

**NOTE:** The plunger on the head is spring loaded and will push the head away from switch body when the last screw is removed.

- B. Remove screws securing the head to switch body, rotate 90° clockwise and tighten screws to secure.

**TOP VIEW SHOWN**

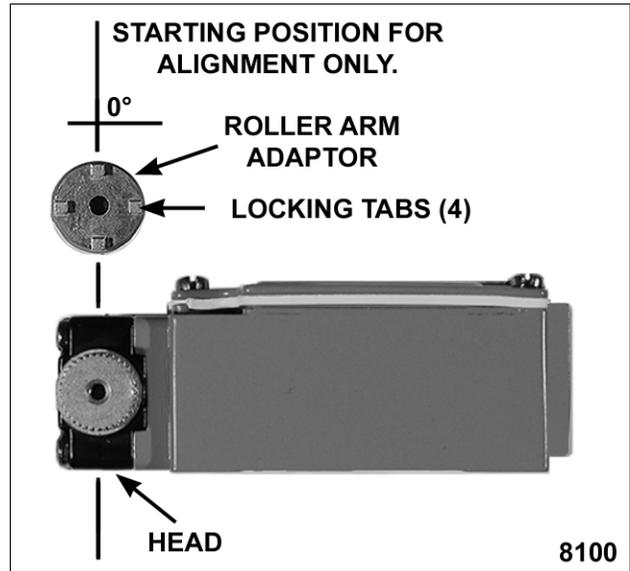
**PAN POSITION/DOWN LIMIT SWITCH HEAD POSITIONS**



- C. Place switch on its side with the head to the left and gear cam pointing up.
  - D. Align roller arm adaptor with the four locking tabs pointing up and position one of the tabs at 0°.

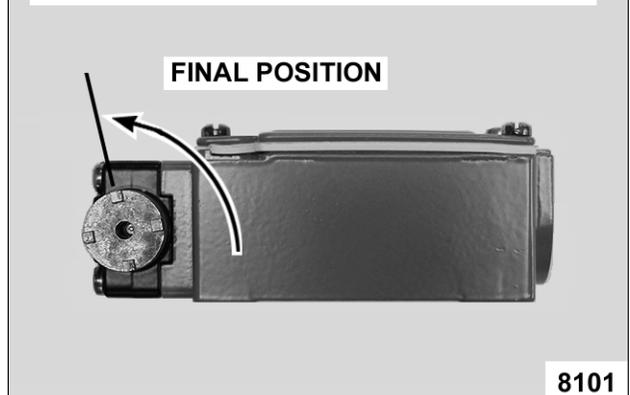
**NOTE:** The 0° position of the roller arm locking tab is the starting point for alignment only. The locking tab cannot remain at the 0° position.

**SIDE VIEW SHOWN**

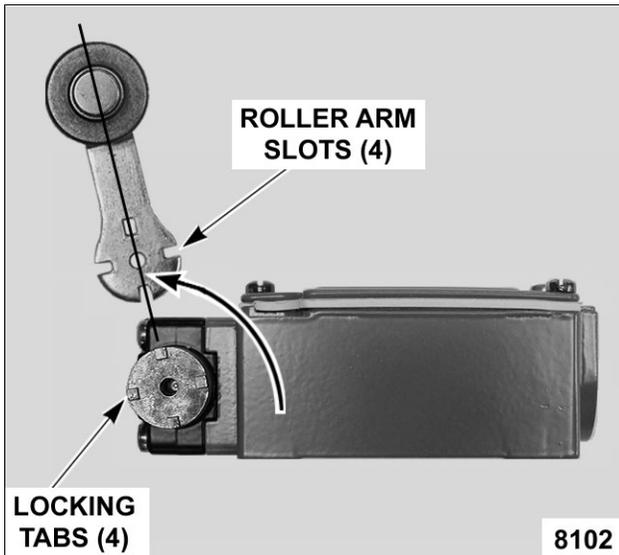


- E. Place roller arm adaptor on the gear cam to engage the teeth. Lift the adaptor until the teeth just slightly disengage from the gear cam. Rotate the roller arm adaptor counterclockwise 1 tooth, re-engage teeth and release the adaptor.

**LIFT AND ROTATE ROLLER ARM ADAPTOR COUNTERCLOCKWISE 1 TOOTH**



- F. Align the roller arm slots with the four locking tabs on the roller arm adaptor and tighten mounting screw to secure.



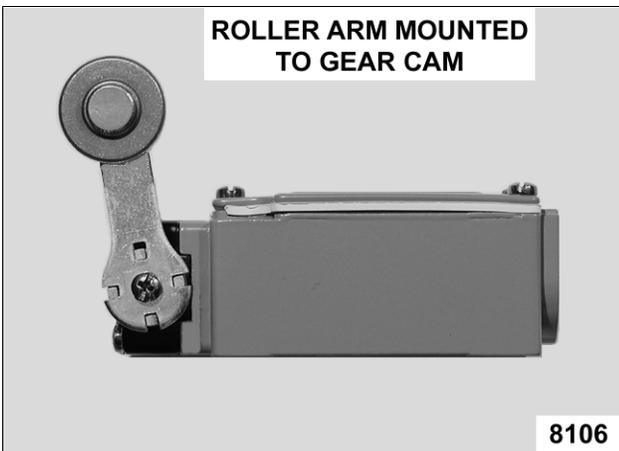
7. Reverse procedure from step 5 to complete the installation.
8. Adjust pan position/down limit switch on switch mounting bracket as outlined under PAN POSITION SWITCH ADJUSTMENT in SERVICE PROCEDURES AND ADJUSTMENTS.

### THERMOCOUPLE PROBE

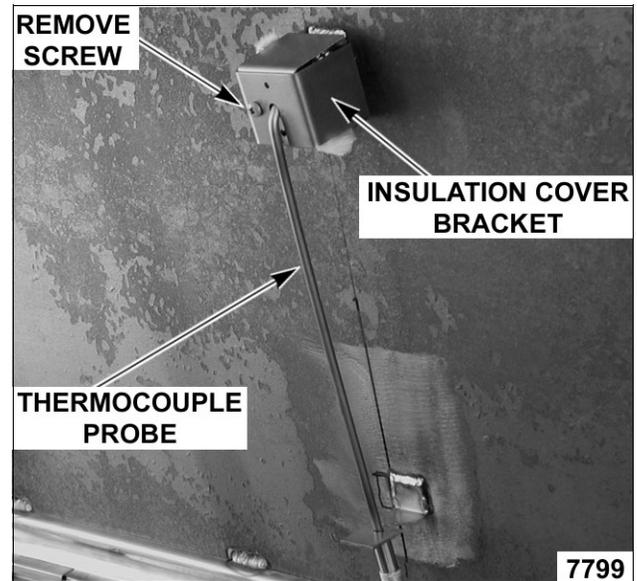
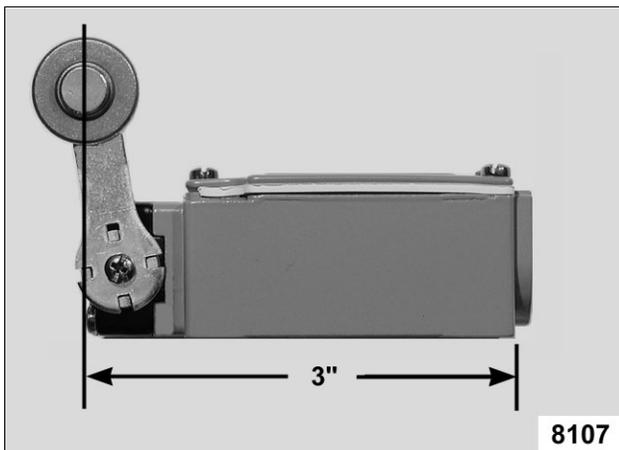


**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

1. Access temperature controller as outlined under TEMPERATURE CONTROLLER .
2. Disconnect thermocouple lead wires.
3. Raise the pan to the full tilt position.
4. Remove insulation cover bracket.



- G. Verify roller arm position on switch.
- 1) Measure the distance from the rear of the switch body to the center of the roller. The distance should be 3".



5. Loosen lock nut and remove threaded probe from pan.

- H. If distance is ok, proceed to step 7.
- I. If distance is not ok, adjust the roller arm position (as necessary) to obtain the 3" roller arm dimension.



- Reverse procedure to install and check for proper operation.

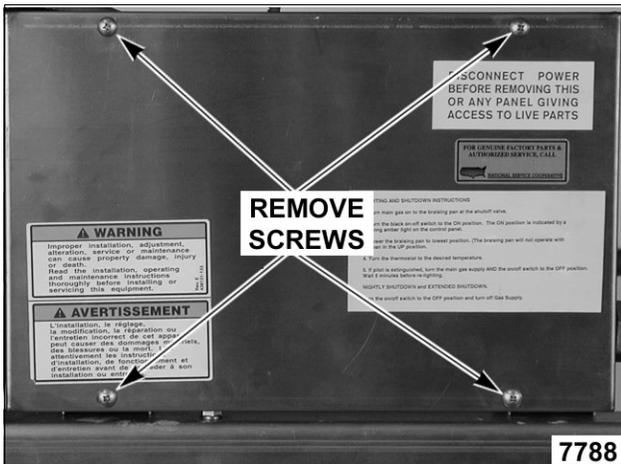
**NOTE:** When installing: Route thermocouple wire in the same manner thru the metal clamps on the hinge & frame. Tighten thermocouple just until it touches the pan; do not over tighten or damage to the thermocouple may occur.

### DC LIFT MOTOR

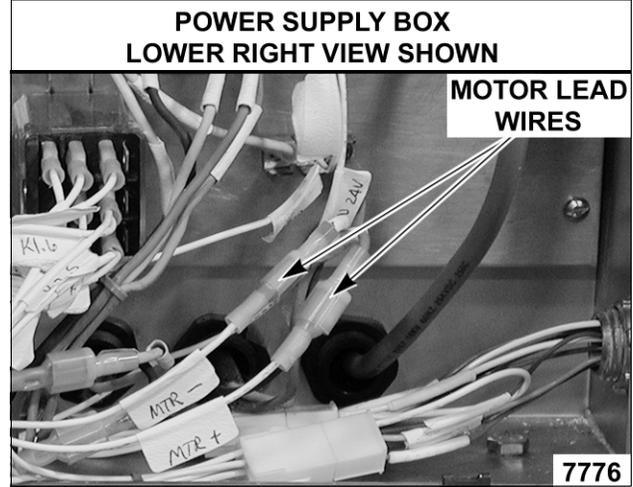


**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

- Remove front, rear and right side panels as outlined under COVERS AND PANELS.
- Remove power supply box cover.



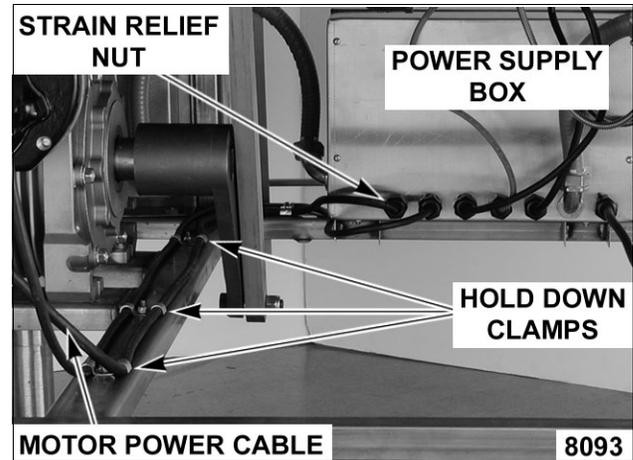
- Disconnect DC lift motor lead wires labeled MTR+ (positive) & MTR- (negative).



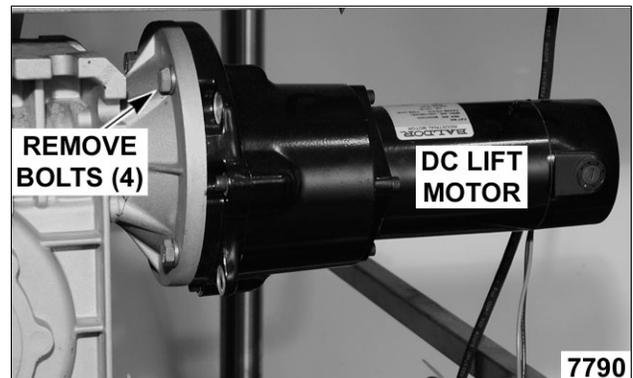
**NOTE:** Lead wires can be identified by label or marking on the wire.

- Loosen the strain relief nut and the hold down clamps for the motors' power cable. Pull the cable thru the strain relief opening and remove the cable from underneath the clamps.

### VG30 REAR VIEW SHOWN



- Remove motor mounting bolts from gear reducer flange.
- Remove motor from gear reducer.



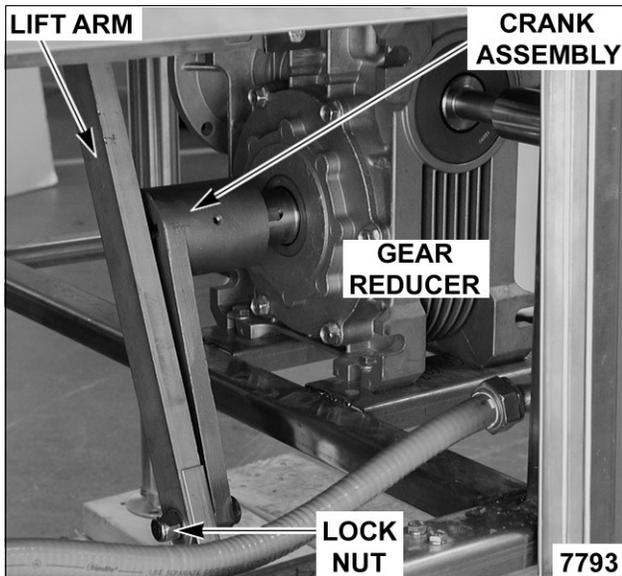
7. To install:
  - A. With drive key on shaft, install motor to gear reducer.
  - B. Route and secure the motors' power cable and re-connect motor lead wires.
  - C. Replace power supply box cover and side panels.
8. Check for proper operation.

## GEAR REDUCER



**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

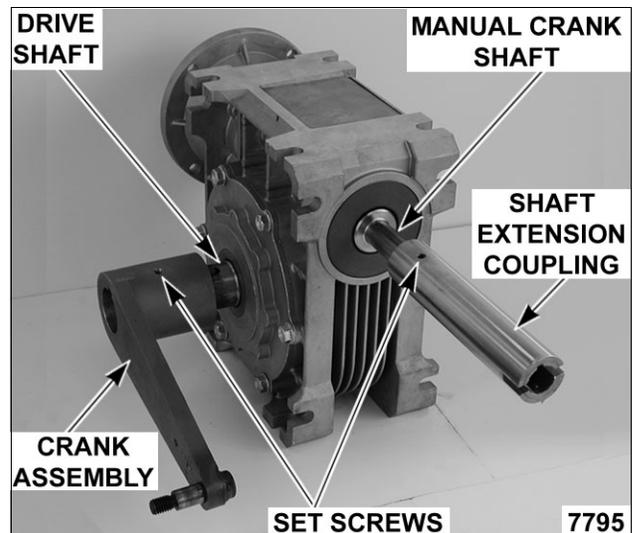
1. Remove right side and rear panels as outlined under COVERS AND PANELS.
2. Lower the pan (use motorized pan lift or manual crank).
3. If DC lift motor is installed, remove motor as outlined under DC LIFT MOTOR.
4. Remove lock nut securing crank assembly to lift arm.



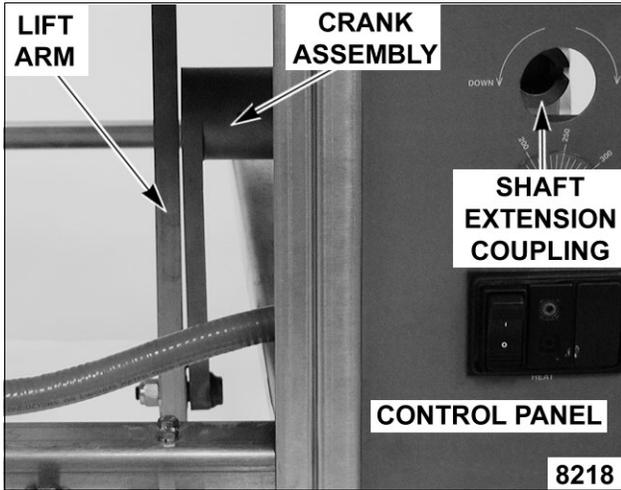
5. Remove bolts securing gear reducer to braising pan frame then remove gear reducer.



6. Loosen set screw on crank assembly and remove the assembly from drive shaft.
7. Loosen set screw on shaft extension coupling and remove the coupling from manual crank shaft.



8. To install:
  - A. With drive key on drive shaft, install crank assembly and tighten set screw against key.
  - B. With drive key on manual crank shaft, install shaft extension coupling and tighten set screw against key.
  - C. Place gear reducer in its mounting location on frame. Position gear reducer so the shaft extension coupling is aligned with the opening in control panel; and the lift arm is vertical and parallel to the crank assembly when connected.



**NOTE:** On the bottom lift arm bushing, the bushing head must be positioned between the lift arm and the crank assembly to create approximately 1/32" spacing.

9. Reverse procedure from step 5 to complete the installation.
10. Check for proper operation.

## GAS COMBINATION VALVE



**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

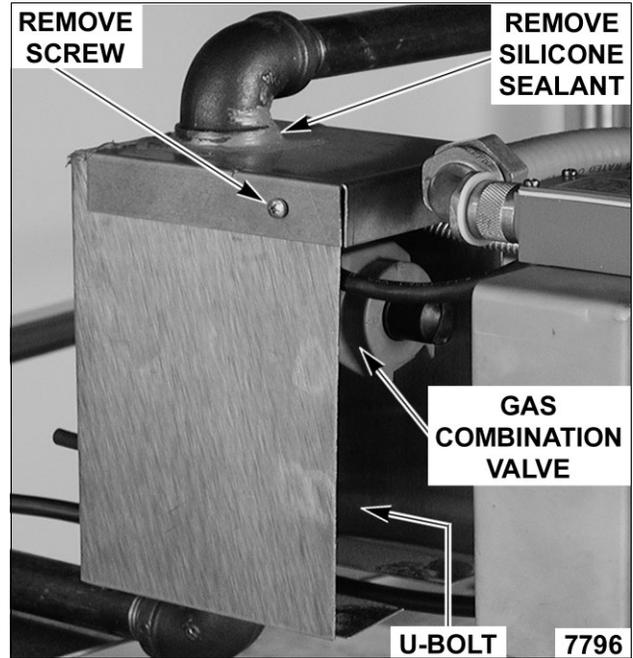
**WARNING:** SHUT OFF THE GAS SUPPLY BEFORE SERVICING THE UNIT.

**WARNING:** ALL GAS JOINTS DISTURBED DURING SERVICING MUST BE CHECKED FOR LEAKS. CHECK WITH A SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME.

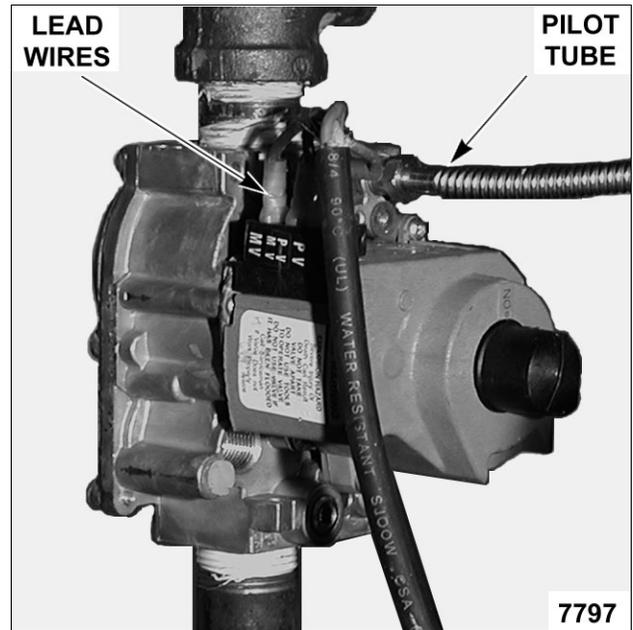
1. Remove front, rear and left side panels as outlined under COVERS AND PANELS.
2. Remove screw from the top cover of gas combination valve box.
3. Remove silicone sealant around the gas pipe and the slot in top cover then remove the cover.

**NOTE:** When installing, clean the areas and apply silicone sealant.

4. Remove U-bolt securing gas valve box to gas pipe then remove box.



5. Disconnect lead wires from gas combination valve.
6. Disconnect pilot tube from gas combination valve.



7. Separate gas pipe union (near manifold), remove U-bolt securing gas pipe to braising pan frame (at rear of pan) then remove the gas combination valve and piping assembly.
8. Remove pipe from gas combination valve.
9. Reverse procedure to install.

**NOTE:** When installing, clean gas pipe threads and apply pipe joint compound to threads. Any pipe joint compound used must be resistant to the action of propane gases.

10. Check for proper operation.

## PILOT BURNER

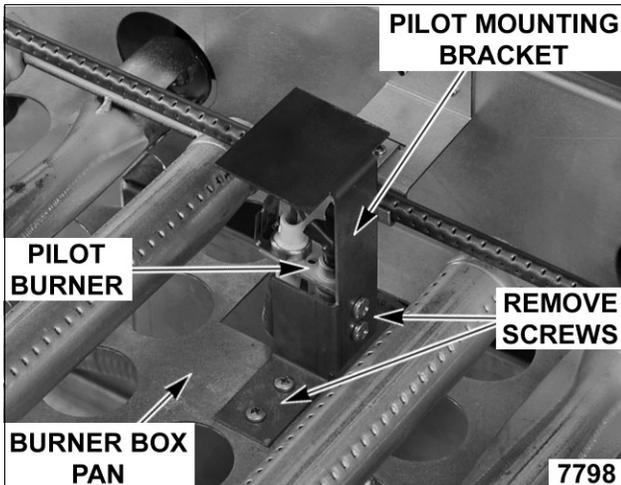


**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

**WARNING:** SHUT OFF THE GAS SUPPLY BEFORE SERVICING THE UNIT.

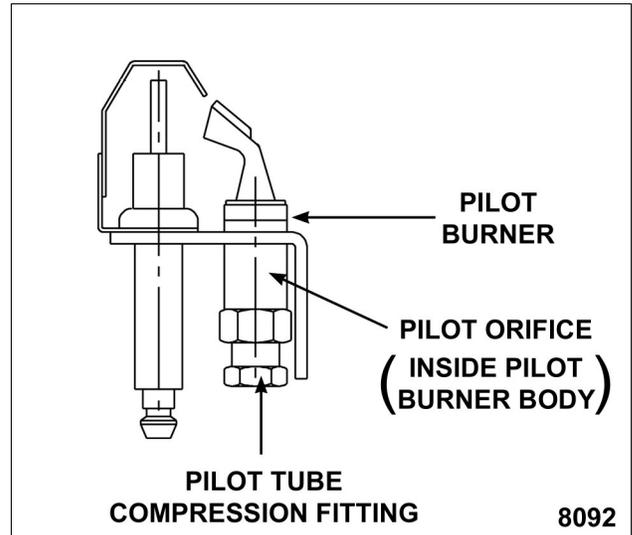
**WARNING:** ALL GAS JOINTS DISTURBED DURING SERVICING MUST BE CHECKED FOR LEAKS. CHECK WITH A SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME.

1. Raise the pan to the full tilt position.
2. Remove pilot burner mounting bracket from the burner box pan.
3. Disconnect ignitor cable from ignitor/flame sense electrode on the pilot burner.
4. Remove pilot burner from pilot mounting bracket.
5. Disconnect pilot tube from pilot burner.



6. To remove gas orifice from pilot burner for inspection or cleaning, disconnect the pilot tube compression fitting from pilot burner body.
  - A. The gas orifice is inserted into pilot burner body and should drop out when compression fitting is removed. If necessary, lightly tap on pilot burner body to free the gas orifice.

**CAUTION:** If orifice is clogged with debris, clean with air or non-flammable liquid only.



7. Reverse procedure to install and check for proper operation.

## RUNNER TUBE

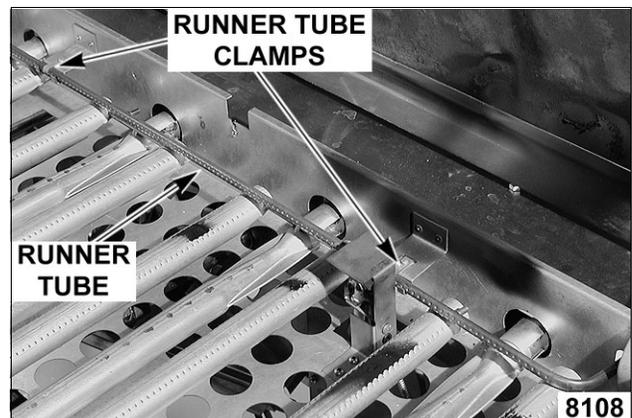


**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

**WARNING:** SHUT OFF THE GAS SUPPLY BEFORE SERVICING THE UNIT.

**WARNING:** ALL GAS JOINTS DISTURBED DURING SERVICING MUST BE CHECKED FOR LEAKS. CHECK WITH A SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME.

1. Raise the pan to the full tilt position.
2. Loosen screw on each runner tube clamp and rotate the clamp away from runner tube.

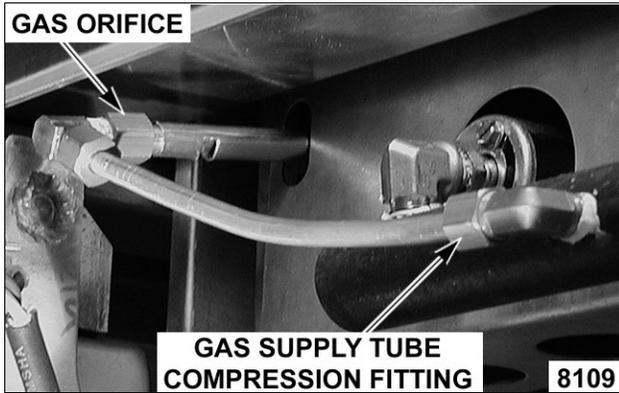


3. Lift runner tube from mounting bracket and off of the gas orifice.

**NOTE:** Runner tube slides onto the gas orifice. When installing, ensure runner tube is fully seated onto gas orifice.

4. To remove gas orifice for inspection or cleaning, disconnect the gas supply tube compression fitting at the manifold.
5. Remove gas orifice from elbow fitting.

**CAUTION:** If orifice is clogged with debris, clean with air or non-flammable liquid only.



6. Reverse procedure to install and check for proper operation.

### MAIN BURNERS

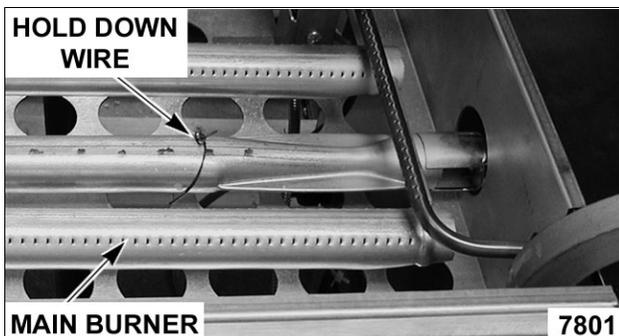


**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

**WARNING:** SHUT OFF THE GAS SUPPLY BEFORE SERVICING THE UNIT.

**WARNING:** ALL GAS JOINTS DISTURBED DURING SERVICING MUST BE CHECKED FOR LEAKS. CHECK WITH A SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME.

1. Raise the pan to the full tilt position.
2. Remove the hold down wire from main burner.



3. Lift burner at rear to clear the locating pin hole and slide burner toward the rear of burner box pan to clear the orifice.
4. To remove gas orifice for inspection or cleaning, remove the gas orifice from the elbow fitting.

**CAUTION:** If orifice is clogged with debris, clean with air or non-flammable liquid only.

5. Reverse procedure to install and adjust air shutter as outlined under MAIN BURNERS.

**NOTE:** When installing, ensure locating pin is in the hole for proper positioning and hold down wire is re-attached.

### LID SPRINGS



**WARNING:** DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES.

1. Lower the lid to the full down position.

**NOTE:** For spring tension to be set correctly, both the left and right side springs must be replaced.

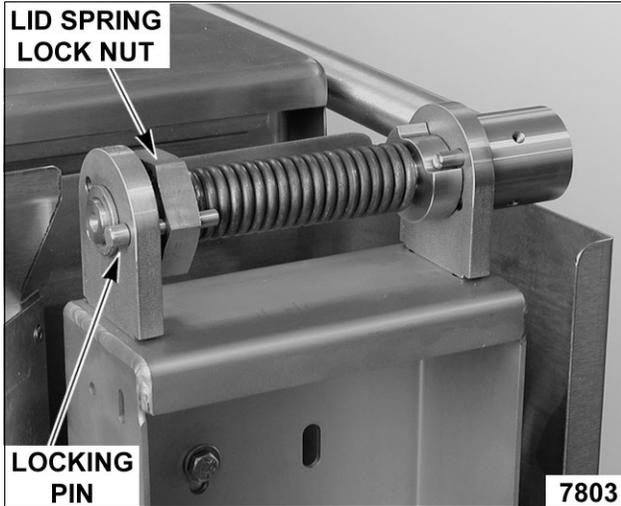
2. Remove spring covers by prying up at the bottom. The covers are held in place by tabs on the bottom of cover.

**RIGHT SIDE REAR VIEW SHOWN**

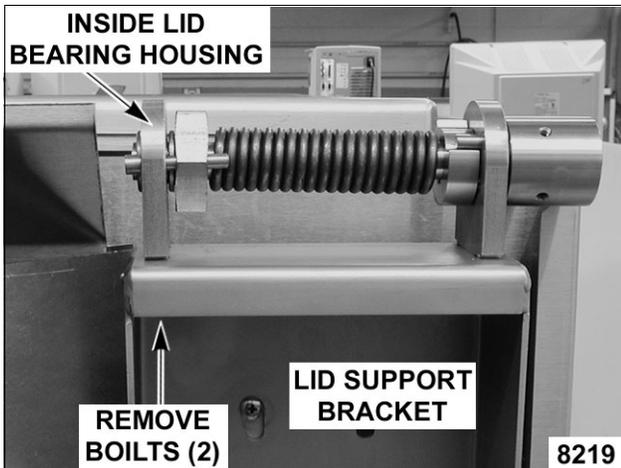


3. Place a 1 5/8" wrench on the lid spring lock nut and apply a downward force until locking pin can be removed. Continue to hold lock nut in place.

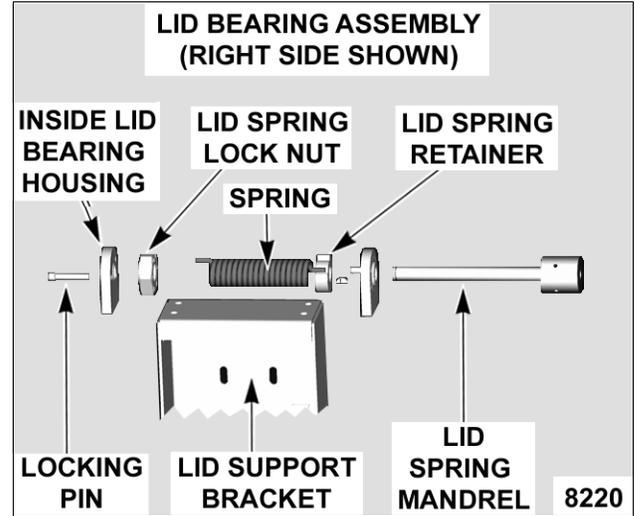
**Caution:** Do not release wrench while locking pin is removed or damage to the braising pan may occur.



- A. Slowly release downwards force to remove spring tension.
- B. Rotate lid spring lock nut to the next hole position then replace locking pin. Continue until all spring tension is removed, one position at a time.
- C. Remove bolts securing the inside lid bearing housing to the lid support bracket.



- D. Remove lid bearing housing, lid spring lock nut and the spring, from spring mandrel.



4. To install:
  - A. Slide the spring onto the lid spring mandrel. Insert spring into locator hole on the lid spring retainer.
  - B. Slide the lid spring lock nut onto the lid spring mandrel. Insert spring into locator hole on the lid spring lock nut.
  - C. Replace lid bearing housing.
5. Replace spring on the opposite side.
6. Adjust spring tension as outlined under LID SPRING TENSION ADJUSTMENT IN SERVICE PROCEDURES AND ADJUSTMENTS.

# SERVICE PROCEDURES AND ADJUSTMENTS

**WARNING:** CERTAIN PROCEDURES IN THIS SECTION REQUIRE ELECTRICAL TEST OR MEASUREMENTS WHILE POWER IS APPLIED TO THE MACHINE. EXERCISE EXTREME CAUTION AT ALL TIMES. IF TEST POINTS ARE NOT EASILY ACCESSIBLE, DISCONNECT POWER AND FOLLOW LOCKOUT / TAGOUT PROCEDURES, ATTACH TEST EQUIPMENT AND REAPPLY POWER TO TEST.

## TEMPERATURE CONTROLLER CALIBRATION

**NOTE:** Verify condition of thermocouple as outlined under THERMOCOUPLE TEST before proceeding.

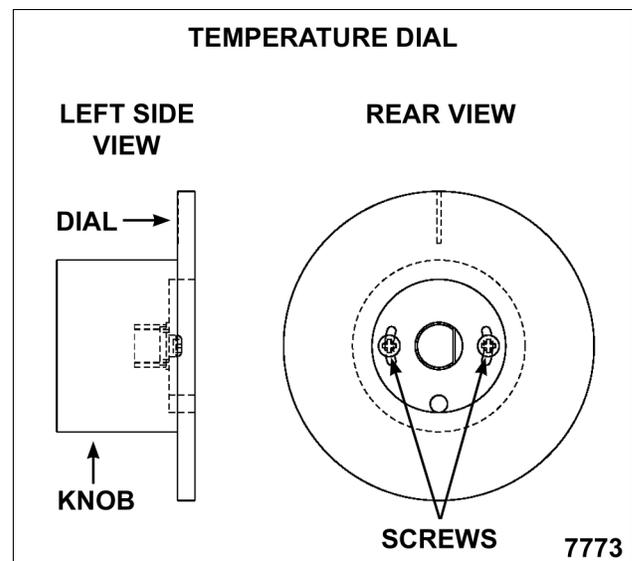
- At the geometric center on the pan cooking surface, clean an area approximately 3" inches in diameter.
- Apply a thin layer of fresh cooking oil to the cleaned area and place a temperature sensing disk on the pan cooking surface.
- Turn on/off switch on and set temperature dial to 250°F.
- Monitor the heat light (red) on the control panel. When temperature controller is calling for heat, light will be on. If temperature controller is satisfied, light will be off.
  - Allow the temperature controller to cycle three times to stabilize the pan temperature.
  - Record the temperature when the temperature controller cycles off and on for the next three cycles.
- Calculate the **differential** by subtracting the temperature indicated when heat light goes out from temperature indicated when heat light comes on.

**Differential = Heat light OFF - Heat light ON**  
**Example: 260° (light off) - 240° (light on) = 20°**

- The differential calculated should be less than 20°F.
  - If the differential is less than 20°F, temperature controller is functioning properly.
    - Proceed to average temperature.
  - If the differential is more than 20°F, the temperature controller is malfunctioning.
    - Install a replacement temperature controller and check calibration.
- Calculate the **average** temperature by adding the temperature indicated when the heat lamp goes out to the temperature indicated when the heat lamp comes on & divide this answer by 2.

**[Temp. (light off) + Temp. (light on)] + 2 = Average Temp.**  
**Example: 260° + 240° + 2 = 250°**

- If the average temperature is less than 10°F of the dial setting, temperature controller is properly calibrated.
  - If the average temperature is more than 10°F of the dial setting, temperature controller calibration must be adjusted.
- Using the temperature scale on the overlay as a guide, align the edge on a short piece of tape to the temperature calculated in step 6 and apply tape to knob as a reference point.
  - Remove temperature dial from shaft.
  - Loosen screws on the back of dial.
    - Hold the knob and rotate dial to the edge of the tape used for reference. This adjustment offsets the indicated temperature on the dial to the actual temperature measured.
- NOTE:** With knob facing user, a clockwise rotation increases temperature and a counter-clockwise rotation decrease temperature.
- Hold the dial & knob together to maintain the adjusted setting and tighten screws.

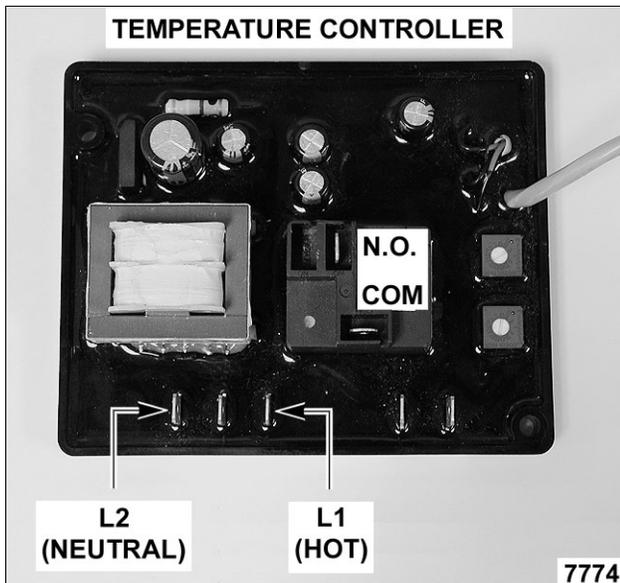


- Replace temperature dial on shaft.
- Turn the temperature dial to the lowest setting then back to 250°F.

12. Repeat the average temperature calculation for up to three attempts. Allow the pan to cycle at least two times between adjustments before performing the calculation.
13. If calibration is unsuccessful, the controller may be malfunctioning and cannot be adjusted properly. Install a replacement temperature controller and check calibration.

## TEMPERATURE CONTROLLER TEST

**NOTE:** The controller is powered whenever supply power is connected to the machine.

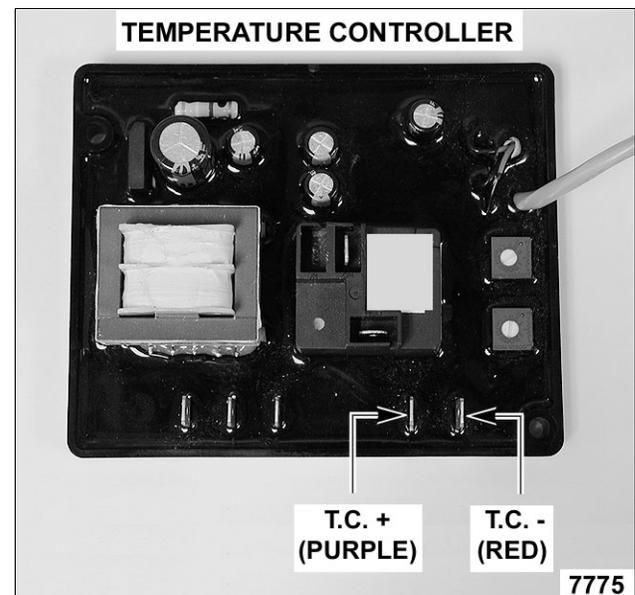


1. Lower the pan to the full down position.
  2. Access the temperature controller as outlined in REMOVAL AND REPLACEMENT OF PARTS.
  3. Re-connect power to the machine.
  4. Verify temperature controller is receiving 120VAC at terminals L1 & L2, polarity is correct and machine is properly grounded.
  5. Turn on/off switch on and set temperature dial to 250°F.
  6. Verify heat light (red) comes on and main burners light.
    - A. If heat light and main burners come on but turn off within 10 seconds, verify condition of thermocouple as outlined under THERMOCOUPLE TEST.
- NOTE:** Temperature controller will de-energize internal relay if the circuitry detects an open thermocouple.
- B. If heat light and main burners do not come on, verify internal relay "HEAT" contacts are operating properly.

7. Disconnect lead wire labeled "HT.0" from the COM terminal on the controller.
8. Verify 24VAC between the disconnected "HT.0" lead wire and ground.
  - A. If correct, re-connect lead wire to COM terminal and proceed to step 9.
  - B. If incorrect, check transformer and the on/off switch for proper operation.
9. Disconnect lead wire labeled "HT.1" from the N.O. terminal on the controller.
10. Verify 24VAC between N.O. terminal on the temperature controller and ground.
  - A. If correct, internal relay "HEAT" contacts are functioning properly. Reconnect lead wire to the N.O. terminal.
  - B. If incorrect, install a replacement temperature controller and check for proper operation.

## THERMOCOUPLE TEST

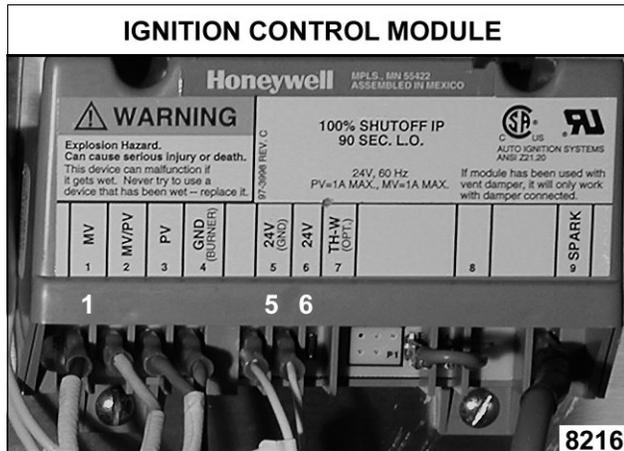
1. Access the temperature controller as outlined in REMOVAL AND REPLACEMENT OF PARTS.
2. Remove thermocouple lead wires from temperature controller.



3. Check the thermocouple for resistance.
  - A. If meter reads an overload (OL) condition (open), or zero ohms (short) replace the thermocouple and check temperature controller for proper operation.
4. If resistance is measured, thermocouple is good.

## SPARK IGNITION TEST

If the ignition control module is not generating a spark or the spark is not sufficient to light pilot burner, perform the following test.



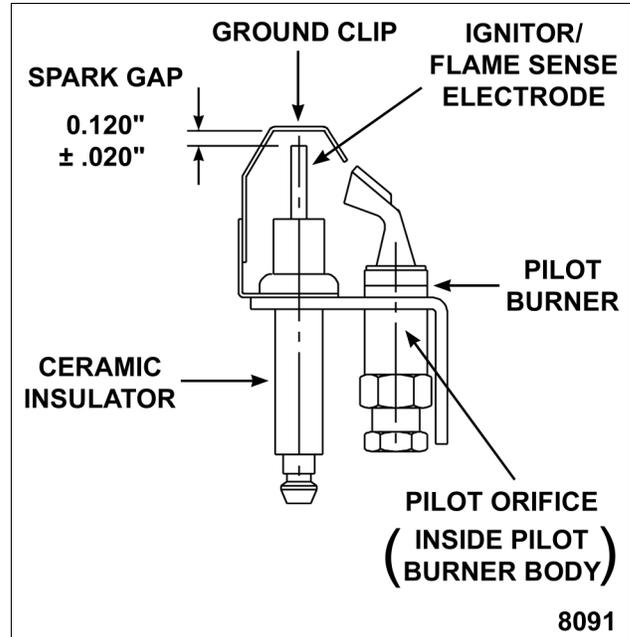
1. Lower the pan to the full down position, turn the on/off switch on and set the temperature dial to call for heat.
2. Verify the ignition control module is receiving 24VAC between terminals 5 & 6.
  - A. If voltage is present, turn the on/off switch off and proceed to step 3.
  - B. If voltage is not present, see schematic diagram.
3. Disconnect power to the machine.

**WARNING:** SHUT OFF THE GAS SUPPLY BEFORE SERVICING THE UNIT.

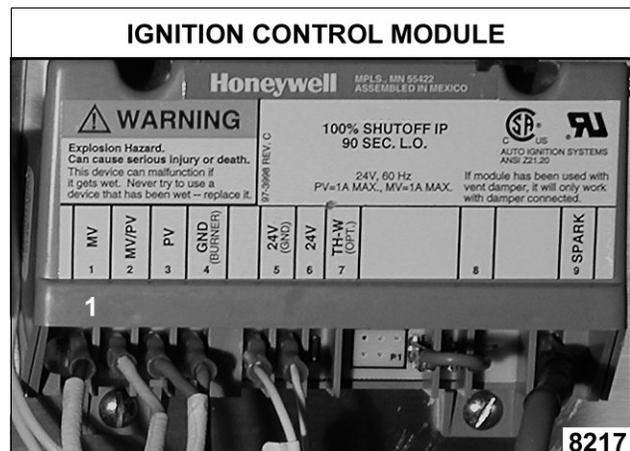
**WARNING:** ALL GAS JOINTS DISTURBED DURING SERVICING MUST BE CHECKED FOR LEAKS. CHECK WITH A SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME.

4. Verify all electrical connections (including ground) on the ignition control module are secure.
5. Access the pilot burner as outlined in REMOVAL AND REPLACEMENT OF PARTS.
6. Verify the ground connection on pilot burner mounting bracket is clean and secure. The pilot burner should have good metal to metal contact to the pilot mounting bracket.
7. Remove pilot burner and check the following:
  - A. Inspect the ceramic insulator on the ignitor/flame sense electrode for cracks or evidence of exposure to extreme heat, which can permit leakage to ground. If either of these conditions exist, then install a replacement pilot burner.

- B. Inspect the ignitor electrode and ground clip for contaminants, or corrosion. Clean those surfaces as necessary.
- C. The spark gap between the ignitor/flame sense electrode and the ground clip should be  $0.120" \pm 0.020"$ . If the gap is outside of this dimension, bend the ground clip as necessary, to make the adjustment.



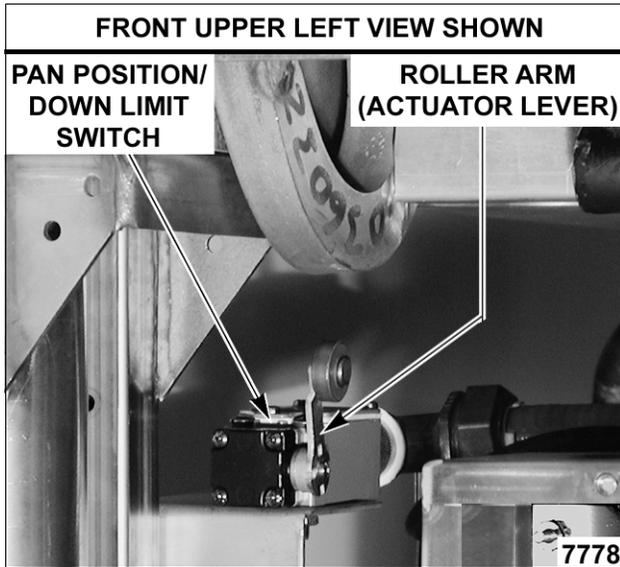
- D. Check the ignitor cable connection for tightness and damaged insulation. If the ignitor cable appears to be damaged, then install a replacement ignitor cable.
8. Install pilot burner and connect ignitor cable.
  9. Disconnect main valve (MV) lead wire from terminal 1 on the ignition control module.



**NOTE:** Removal of lead wire prevents main burners from lighting with the pan raised and the pan position/down limit switch manually operated.

10. Reconnect power to the machine and turn the gas supply on.

11. Turn on/off switch on and set the temperature dial to call for heat.
12. Manually operate pan position/down limit switch and observe spark from ignitor.



- A. If spark from ignitor is present and lights the gas for pilot burner, and pilot burner remains lit, then the system is working properly.
- B. If pilot burner lights but does not maintain an adequate flame during the trial for ignition (90 seconds):
  - 1) Check pilot burner orifice for clogging.

**CAUTION: If orifice is clogged with debris, clean with air or non-flammable liquid only.**

- 2) Check pilot burner flame adjustment as outlined under SERVICE PROCEDURES AND ADJUSTMENTS.
- C. If spark from ignitor is present but does not light the pilot gas before ignition control module locks out, there may not be enough gas in the supply line for ignition.

Release the pan position/down limit switch to remove power and re-set the module. Wait 5 minutes between ignition tries for unburned gas to vent.

Manually operate pan position/down limit switch and sparking should resume. The module may need to be re-set several times before ignition takes place.

- 1) If pilot burner ignition is successful, release the pan position/down limit switch, turn the on/off switch to off and re-connect main valve (MV) lead wire on the ignition control module.

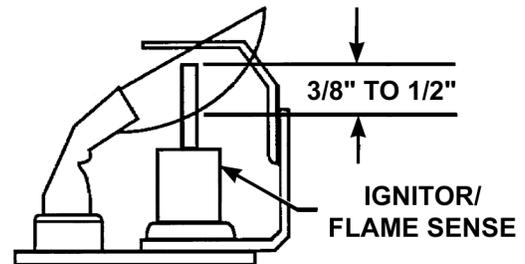
- D. If ignitor is still not sparking, turn the on/off switch off, disconnect power to the machine and turn the gas supply off.

13. Install a replacement ignition control module and check for proper operation.

## PILOT BURNER FLAME ADJUSTMENT

1. Turn the on/off switch off.
  2. Raise the pan to the full tilt position.
  3. Remove left side panel as outlined under COVERS AND PANELS.
  4. Access the ignition control module as outlined under POWER SUPPLY BOX COMPONENTS IN REMOVAL AND REPLACEMENT OF PARTS.
  5. Disconnect main valve (MV) lead wire from terminal 1 on the ignition control module.
- NOTE:** Removal of lead wire prevents main burners from lighting with the pan raised and the pan position/down limit switch manually operated.
6. Reconnect power to the machine.
  7. Turn on/off switch on and set the temperature dial to call for heat.
  8. Manually operate pan position/down limit switch and observe pilot burner flame.

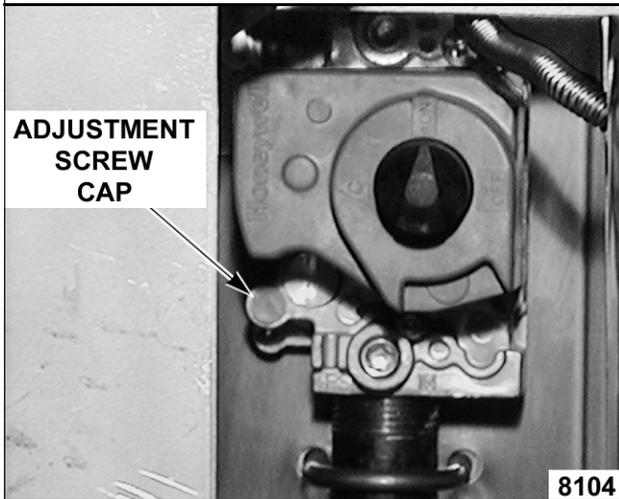
### PILOT BURNER FLAME ADJUSTMENT



8103

- A. If flame envelops 3/8" to 1/2" of the ignitor/flame sense electrode, pilot burner is adjusted properly.
  - B. If flame is outside of the specified range, release the pan position/down limit switch and continue with procedure.
9. Remove adjustment screw cap to access the pilot burner flame adjustment screw.

**GAS COMBINATION VALVE**



10. Manually operate pan position/down limit switch and observe pilot burner flame.
  - A. To increase pilot flame, turn the screw counterclockwise. To decrease pilot flame, turn the screw clockwise.
11. Once the pilot flame has been adjusted correctly, release the pan position/down limit switch, turn the on/off switch off and replace the adjustment screw cap.
12. Re-connect main valve (MV) lead wire from terminal 1 on the ignition control module.
13. Lower the pan to the full down position and check for proper operation.

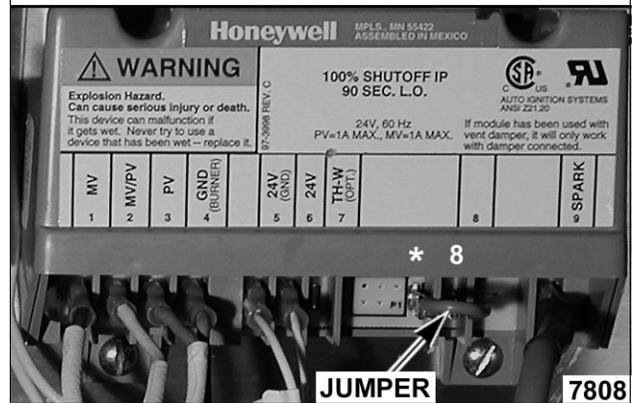
**FLAME SENSE CURRENT TEST**

**NOTE:** You must complete the SPARK IGNITION TEST prior to checking flame sense current.

If pilot burner lights but will not maintain flame, perform the following test.

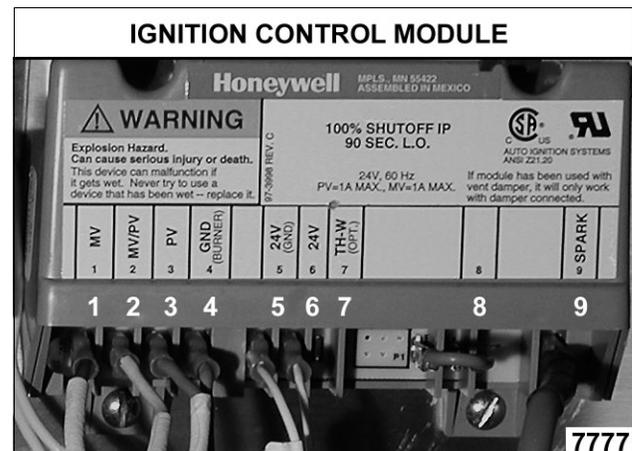
1. Turn the on/off switch off.
2. Access the ignition control module as outlined under POWER SUPPLY BOX COMPONENTS IN REMOVAL AND REPLACEMENT OF PARTS.
3. Remove jumper wire between terminals marked with an asterisk (\*) & 8.

**IGNITION CONTROL MODULE**



4. Set VOM to micro amp scale (DC) and connect the black meter lead (-) to the asterisk (\*) terminal and red meter lead (+) to terminal 8.
5. Turn on/off switch on and set the temperature dial to call for heat.
6. With pilot burner lit, meter reading should be above 1.0 micro amp (minimum) and steady.
  - A. If reading is greater than or equal to 1.0 micro amp then flame sense current is within tolerance.
    - 1) Turn on/off switch off and replace jumper wire.
  - B. If reading is less than 1.0 micro amp and the condition of the ignitor/flame sense has been verified as good, turn on/off switch off.
7. Install a replacement ignition control module and check for proper operation.

**IGNITION CONTROL MODULE TEST**



1. Lower the pan to the full down position, turn the on/off switch on and set the temperature dial to call for heat.

2. Ignition control module is energized and trial for ignition starts (90 seconds).
  - A. Verify 24VAC between terminals 5 & 6.
    - 1) If voltage is not present, see schematic diagram.
3. Pilot valve (PV) contacts close to energize the pilot valve coil, allowing gas flow to the pilot burner.
  - A. Verify 24VAC between terminals 2 & 3.
    - 1) If voltage is not present, replace ignition control module and check for proper operation.
4. At the same time, spark voltage is sent from terminal 9 to the ignitor/flame sense electrode and sparking begins.
 

The pilot burner lights, pilot flame is sensed, spark voltage from terminal 9 is removed and sparking stops. Main valve (MV) contacts close to energize main valve coil, allowing gas flow to the runner tube and main burners.

  - A. Verify 24VAC between terminals 1 and 2.
    - 1) If voltage is not present, replace ignition control module and check for proper operation.
5. With pilot burner lit, the runner tube lights and main burners light.
6. As long as the temperature controller is calling for heat and the ignition control module is sensing a sufficient flame sense current, the pilot valve (PV) and main valve (MV) contacts will remain closed.

**NOTE:** If pilot burner does not immediately light, the ignition control module continues sparking for 90 seconds, then locks out power to the gas combination valve (pilot valve and main valve remain closed). The module remains locked out until the on/off switch is cycled to reset the system re-start the ignition trial cycle.

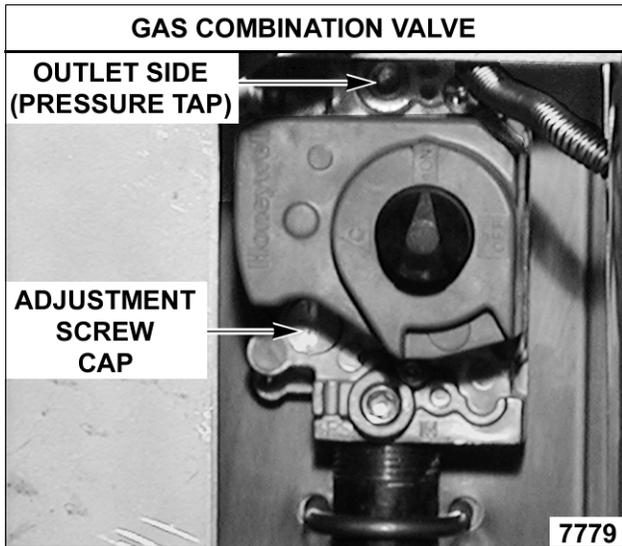
## GAS MANIFOLD PRESSURE ADJUSTMENT

**WARNING:** SHUT OFF THE GAS SUPPLY BEFORE SERVICING THE UNIT.

GAS PRESSURE (INCHES W.C.)				
Gas Type	Manifold	Line		
		Recommended	Min	Max
Natural	3.7	7.0	5.0	14.0
Propane	10.0	11.0	11.0	

**NOTE:** If the incoming line pressure is less than the minimum stated, then the manifold pressure cannot be set correctly.

1. Lower the pan to the full down position.
2. Remove front panel as outlined under COVERS AND PANELS in REMOVAL AND REPLACEMENT OF PARTS.
3. Access the gas combination valve as outlined in REMOVAL AND REPLACEMENT OF PARTS.
4. Remove 1/8" NPT pipe plug on the outlet side of the gas valve (manifold pressure tap).
5. Install a hose barb adaptor at the port and attach a manometer.
6. Turn gas supply, gas combination valve and on/off switch to on.
  - A. Set the temperature dial to call for heat.
  - B. Verify main burners light.
7. Observe manometer pressure reading and compare to the gas pressure table.
  - A. If other appliances are connected to the same gas line, turn them all on and check manometer pressure reading again. If a pressure drop of 1/2" W.C. or more is observed, then the gas supply needs to be checked by the gas line installer or the local gas company for adequate sizing.
  - B. If adjustment is necessary, continue with procedure.
8. Remove adjustment screw cap to access the pressure adjustment screw.
  - A. To increase pressure, turn the screw clockwise. To decrease pressure, turn the screw counterclockwise.



**NOTE:** Accurate gas pressure adjustments can only be made with the gas on and the main burners lit.

9. Set pressure as listed in gas pressure table.
10. Once the correct pressure has been set, turn the on/off switch off, replace the adjustment screw cap and pipe plug.
11. Check for proper operation.

## MAIN BURNERS

### Inspection

1. Access the main burners as outlined in REMOVAL AND REPLACEMENT OF PARTS.
2. Inspect burners for clogged ports or obstructions around air shutter. Clean the burner (as necessary) using a soft bristle brush.
3. Inspect gas orifice for clogging. If clogs are found, remove the orifice and clean with air or non-flammable liquid only.

**NOTE:** If the orifice was removed, be sure to install the orifice in the same location. The outside burners use a slightly larger orifice than the center burner(s).

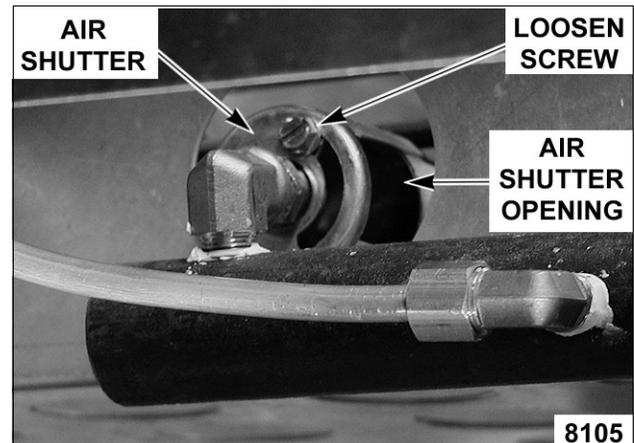
### Air Shutter Adjustment

1. Verify the gas manifold pressure as outlined under GAS MANIFOLD PRESSURE ADJUSTMENT.
2. Turn the on/off switch off.
3. Remove the control panel as outlined in REMOVAL AND REPLACEMENT OF PARTS to gain viewing access to the right side burner.
4. Turn the on/off switch on and set the temperature dial to call for heat.

**CAUTION:** To prevent discoloration of the cooking surface, and possible pan warpage at temperature settings above 250°F, do not operate the braising pan unless the cooking surface is covered with water or a thin layer of cooking oil.

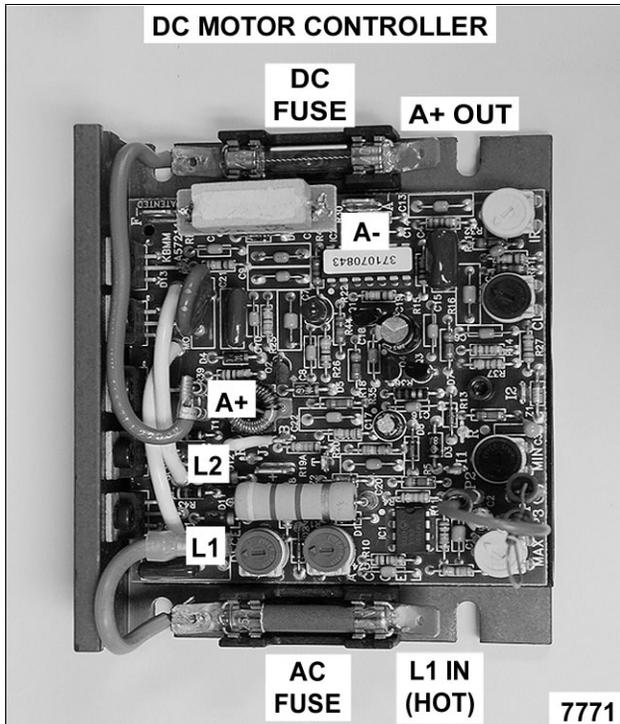
5. Allow burners to remain lit for at least five minutes.
6. Observe each burner's flame thru the opening in the front of the burner box.
  - A. If the flame is blue, air shutter is adjusted properly. A slight tinge of orange in the flame is acceptable.
  - B. If the flame is yellow tipping, this indicates too little primary air (oxygen) for proper combustion. The heating efficiency is reduced, and the amount of soot (carbon) generated as a by-product is increased. Continue with procedure to adjust.
7. Loosen screw on the air shutter for the burner being adjusted. Closing the air shutter will decrease primary air to the burner and opening the shutter will increase primary air the burner.

### FRONT VIEW OF BURNER AIR SHUTTER SHOWN



8. Monitor the burner flame and set the air shutter opening as follows:
  - A. Adjust the air shutter (as necessary) to obtain a blue flame. A slight tinge of orange in the flame is acceptable.
  - B. After the air shutter adjustment is made, tighten the set screw.
9. Adjust the remaining burners as necessary.

## DC MOTOR CONTROLLER TEST



1. Lower the pan to the full down position.
2. Raise the lid to the full open position.
3. Access the DC motor controller as outlined under POWER SUPPLY BOX COMPONENTS in REMOVAL AND REPLACEMENT OF PARTS.
4. Set VOM to measure AC volts and connect meter leads at L1 & L2 on the controller.
5. Turn the on/off switch to on.
6. Verify 120VAC at L1 & L2 on the controller when the lift control switch (momentary) is operated to raise & lower the pan.
  - A. If voltage is present but pan does not raise & lower, proceed to step 7.
  - B. If voltage is not present refer to MOTORIZED LIFT OPTION ONLY under TROUBLESHOOTING.
7. Disconnect power to the machine.
8. Set VOM to measure DC volts and connect VOM leads to terminals A + (positive) & A - (negative) on the controller.
9. Re-connect power to the machine.
10. Verify 90VDC (approximate) from the DC motor controller when the lift control switch (momentary) is operated to raise & lower the pan.

- A. If voltage is present but pan does not raise, refer to MOTORIZED LIFT OPTION ONLY under TROUBLESHOOTING.
- B. If voltage is not present and the fuse is ok, turn the on/off switch off and disconnect power to the machine.

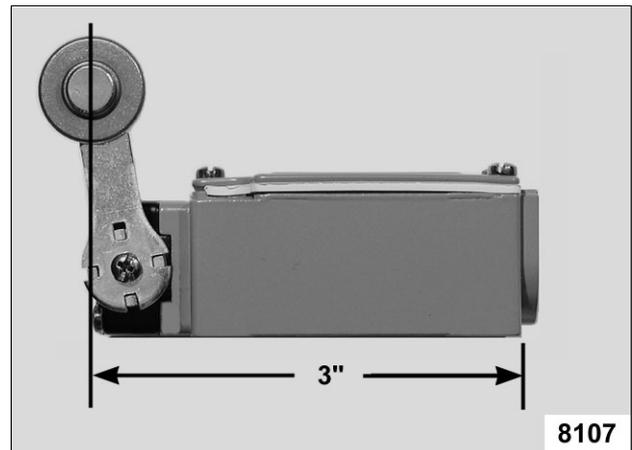
11. Instal a replacement DC motor controller and check for proper operation.

## PAN POSITION/DOWN LIMIT SWITCH ADJUSTMENT

**NOTE:** Do not use the motorized lift (if installed) for this procedure.

1. Turn the on/off switch off.
2. Remove front and left side panels as outlined under COVERS AND PANELS.
3. Insert the manual crank handle.
4. Raise the pan to the full tilt position.
5. Verify roller arm position on switch.
  - A. Measure the distance from the rear of the switch body to the center of the roller. The distance should be 3".

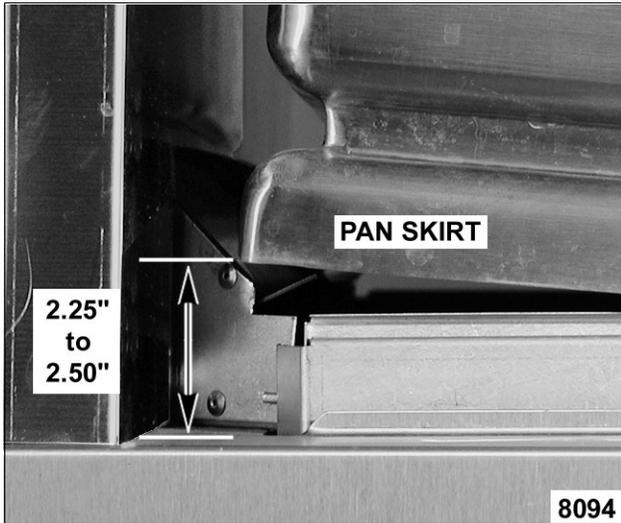
### SIDE VIEW SHOWN



- B. If distance is ok, proceed to step 6.
- C. If distance is not ok, position the roller arm as outlined under PAN POSITION/DOWN LIMIT SWITCH in REMOVAL AND REPLACEMENT OF PARTS.
6. Lower the pan to the full down position. The roller should make contact with the hinge and operate the switch.
7. Verify pan position/down limit switch N.O. contacts are closing.
  - A. Turn the on/off switch on and set the temperature dial to call for heat.
  - B. Heat light (red) comes on and main burners light.

- 1) If main burners do not light, verify 24VAC input to the switch, and that the voltage is output from the switch.
  - 2) If voltage is present on the output side of the switch, the switch is functioning properly.
  - 3) If voltage is not present, install a replacement pan position/down limit switch and repeat this procedure to adjust.
8. Verify pan position/down limit switch N.O. contacts are opening.
- A. Slowly raise the pan until the heat light and burners go out then stop.
  - B. At the rear of the pan, measure the distance from the bottom of the pan skirt to the flat surface covering the frame.
    - 1) Distance should be 2.25" to 2.50".

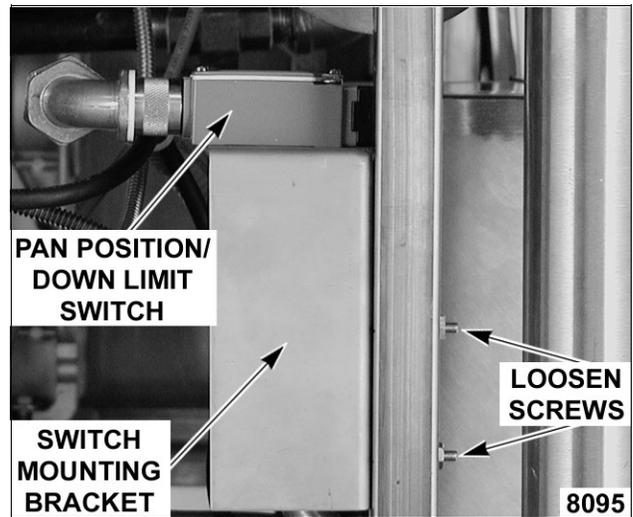
**LEFT SIDE VIEW SHOWN**



**NOTE:** For reference, this is approximately 5 angular degrees.

9. If heat light and main burners go out and the measured distance is within the acceptable range, switch is adjusted properly. If both conditions are not satisfied, adjustment is necessary.
10. To Adjust:
  - A. Loosen screws on the mounting switch bracket.

**LEFT SIDE VIEW SHOWN**



- B. Adjust mounting switch bracket up or down (as necessary) to obtain the rear pan dimension of 2.25" to 2.50".

11. Repeat steps 5 thru 9 to check for proper operation.

**LID SPRING TENSION ADJUSTMENT**

1. Raise the lid and release at several positions thru the range of travel.
  - A. If lid remains in place, no adjustment is necessary.
  - B. If lid does not remain in place (springs up or falls down), continue with procedure.

**NOTE:** For spring tension to be set correctly, each spring must be adjusted the same amount.

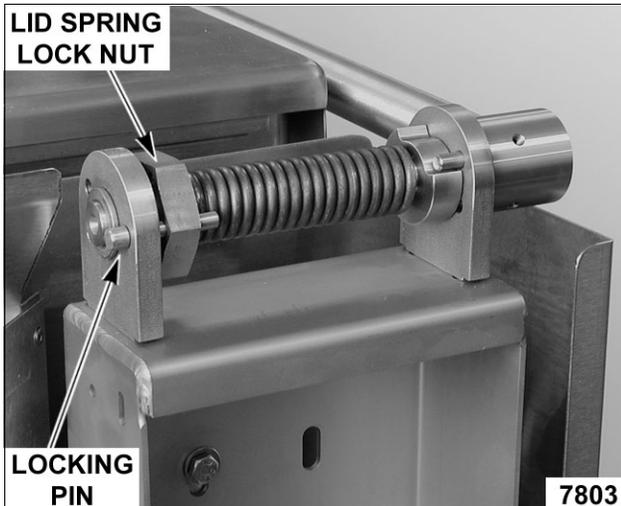
2. Remove spring covers by prying up at the bottom. The covers are held in place by tabs on the bottom of cover.

**RIGHT SIDE REAR VIEW SHOWN**



3. To adjust:
  - A. Place a 1 5/8" wrench on the lid spring lock nut and apply a downward force until locking pin can be removed. Continue to hold lock nut in place.

**CAUTION: Do not release wrench while locking pin is removed or damage to the braising pan may occur.**



- B. Apply additional downward force to increase spring tension; or slowly release downwards force to decrease spring tension.
    - C. Rotate lid spring lock nut to the next hole position then replace locking pin. Adjust the spring tension, one position at a time.
    - D. Repeat tension adjustment on the opposite spring.
4. Repeat step 1 to verify adjustment. Make additional adjustments as necessary.

# ELECTRICAL OPERATION

## COMPONENT FUNCTION

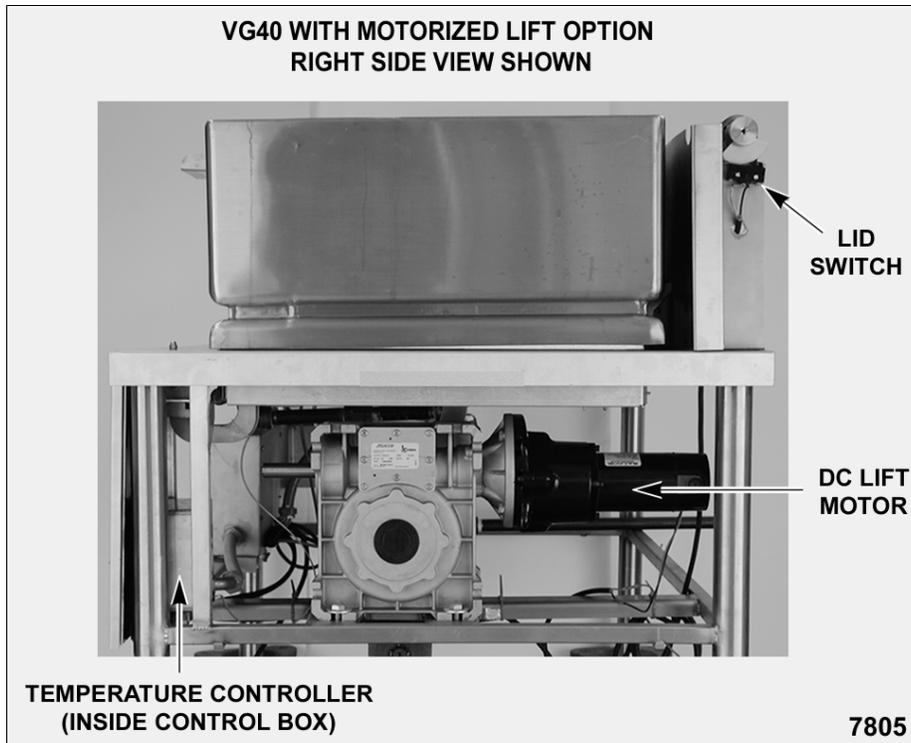
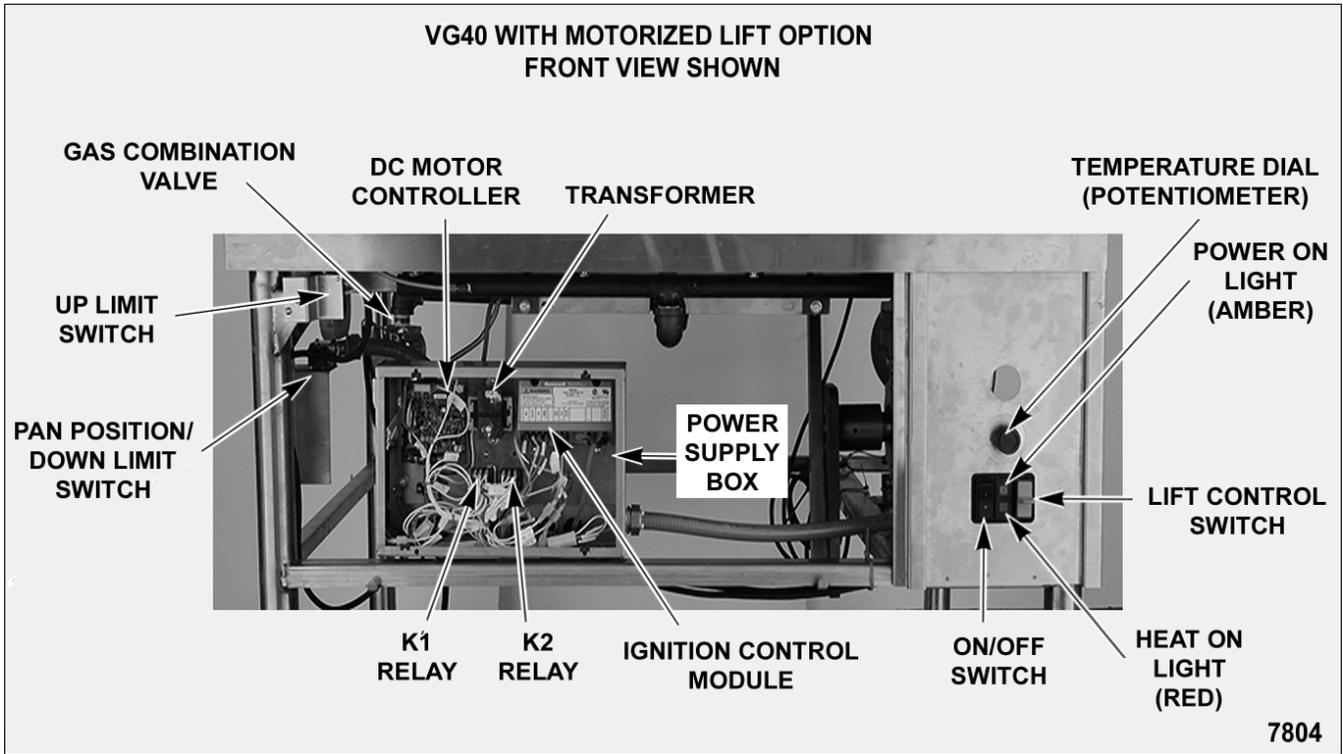
### BRAISING PAN CONTROLS

<b>Temperature Controller</b> . . . .	Monitors thermocouple input (type E) and regulates braising pan temperature. An external set point potentiometer is used for temperature adjustments.
<b>Transformer</b> . . . . .	Supplies 24VAC for heating circuit. If motorized pan lift option is installed, supplies 24VAC for lift control circuit.
<b>ON/OFF Switch</b> . . . . .	Controls 24VAC to the gas heating circuit. If motorized pan lift option is installed, controls power to lift circuit.
<b>Power On Light (Amber)</b> . . .	Indicates on/off switch is turned on.
<b>Heat Light (Red)</b> . . . . .	Indicates temperature controller is calling for heat and pan is down.
<b>Pan Position/ Down Limit Switch</b> . . . . .	N.O. contacts function as pan position switch to power the gas heating circuit when pan is down. Removes power from gas heating circuit when pan is raised. The N.C. contacts are used for the down limit switch (motorized lift option only).
<b>Ignition Control Module</b> . . .	Controls and monitors gas heating. Energizes pilot valve coil to supply gas to pilot, generates spark to light gas at the pilot, monitors the presence of flame and energizes the main valve coil upon a call for heat.
<b>Ignitor/Flame Sense Electrode</b> . . . . .	Ignites pilot burner and senses the presence of a flame. The Igniter/Flame Sense is a component of the pilot burner.
<b>Gas Combination Valve</b> . . . . .	Allows gas flow to the pilot burner when pilot valve coil is energized; and gas flow to the runner tube & main burners when main valve coil is energized. Also, regulates gas manifold pressure.

### MOTORIZED PAN LIFT OPTION CONTROLS

<b>DC Motor Controller</b> . . . . .	Controls DC lift motor operation for raising & lowering of the pan, and provides motor acceleration control each time the controller is powered. The controller outputs approximately 90VDC to power the motor.
<b>DC Lift Motor</b> . . . . .	Operates gear reducer to raise or lower the pan. When the correct voltage polarity is applied thru K1 contacts, motor rotates CW to raise pan. When reverse voltage polarity is applied thru K2 contacts, motor rotates CCW to lower the pan.
<b>Lid Switch</b> . . . . .	Supplies 24VAC power to lift control switch. Used to ensure lid is open before pan can be raised.
<b>Lift Control Switch (Momentary On/Off/On)</b> . . . .	Energizes K1 relay coil thru up limit switch contacts (N.C.) to raise the pan. Energizes K2 relay coil thru down limit switch contacts (N.C.) to lower the pan. The switch positions are: Center neutral (starting) position off; Momentary on - lower pan; Momentary on - raise pan.
<b>Up Limit Switch</b> . . . . .	Removes power from K1 relay coil when pan reaches full tilt (pan travel stops).
<b>Pan Position/ Down Limit Switch</b> . . . . .	N.C. contacts function as down limit switch to remove power from K2 relay coil when pan is lowered to the down position (pan travel stops). The N.O. contacts are used for the pan position switch.
<b>K1 "Up" Relay (3PDT)</b> . . . . .	Supplies power to motorized lift circuit to raise the pan when 24VAC coil is energized.
<b>K2 "Down" Relay (3PDT)</b> . . .	Supplies power to motorized lift circuit to lower the pan when 24VAC coil is energized by the lift control switch. The voltage polarity to the DC motor is reversed thru K2 contacts to turn motor CCW and lower the pan.

**COMPONENT LOCATION**



## IGNITION CONTROL MODULE

The ignition control module is energized when 24 volts is applied between terminals 5 & 6.

The module outputs 24 volts from terminals 2 & 3 to the pilot valve coil (PV) on the gas combination valve, allowing gas flow to the pilot burner.

At the same time, the module generates a spark voltage output of approximately 13K at terminal 9 to begin sparking at the ignitor/flame sense electrode.

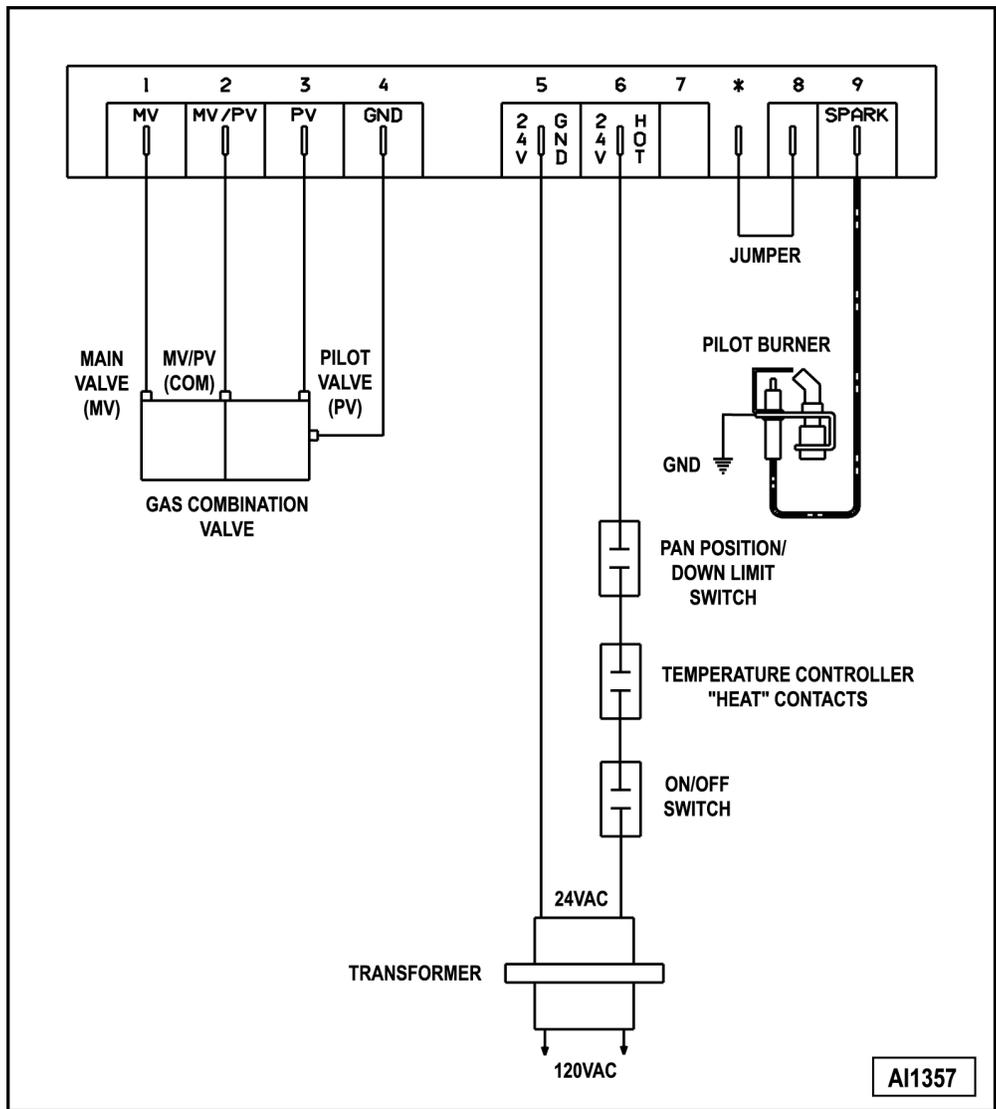
The sparking will continue until an adequate pilot flame sense current is sensed by the module or for a maximum of 90 seconds.

**NOTE:** If pilot is not established within the 90 second ignition trial time, the ignition module locks out by removing power to the gas combination valve. The system remains locked out until the on/off switch is cycled to reset the system and re-start the ignition trial cycle.

With the pilot burner lit, a flame sense current in DC micro amps is rectified thru the ignitor cable back to terminal 9.

When the module senses a sufficient pilot flame current, the module outputs 24 volts from terminal 1 & 2 to energize the main valve coil (MV) on the gas combination valve, allowing gas flow to the runner tube and main burners.

When power to the ignition control module is removed, the output voltages are also removed. The pilot valve coil (PV) and the main valve coil (MV) on the gas combination valve are de-energized and close. Gas flow to the pilot burner, runner tube and main burners stop and all burners go out.



## SEQUENCE OF OPERATION

Refer to schematic diagram AI1341 for the electrical sequence of operation. Manual pan lift is the standard configuration.

### Heating

1. Conditions.
  - A. 120VAC to braising pan, polarity is correct, and is properly grounded.
    - 1) Temperature controller energized.
    - 2) 24VAC transformer energized.
  - B. Temperature dial at lowest setting (potentiometer fully CCW).

**NOTE:** Temperature controller internal relay "HEAT" contacts remain open (N.O.).

  - C. Pan temperature is below 200°F.
  - D. On/off switch off.
  - E. Pan position/down limit switch N.O. contacts closed (pan down).
  - F. Gas supply on.
  - G. Gas combination control valve on.
2. Turn on/off switch on.
  - A. Indicator light (amber) comes on.
3. Set the temperature dial to call for heat.
  - A. Internal relay on temperature controller is energized and the "HEAT" contacts close (N.O.).
    - 1) Heat light (red) comes on.
    - 2) Ignition control module.

**NOTE:** If pan is raised 2.25" to 2.50" at the rear, pan position/down limit switch N.O. contacts will open and de-energize the heating circuit.
4. Refer to IGNITION CONTROL MODULE.
5. Braising pan reaches set point temperature.
  - A. Internal relay on temperature controller is de-energized and the "HEAT" contacts open (N.O.).
    - 1) Heat light (red) goes out.
    - 2) Power is removed from the ignition control module.
6. Braising pan will continue to cycle with the temperature controller until the pan is raised or the on/off switch is turned off.

### Motorized Pan Lift (Option)

Refer to the dashed line sections labeled "MOTORIZED LIFT OPTION" on the schematic diagram for the integration of the motorized pan lift components into the sequence of operation.

1. Conditions.
  - A. 120VAC to braising pan, polarity is correct, and is properly grounded.
  - B. 24VAC transformer energized.
  - C. On/off switch off.
  - D. Lift control switch off (center position).
  - E. Lid switch N.O. contacts closed (lid opened).
  - F. Up limit switch N.C. contacts closed (pan position is less than full tilt).
  - G. Pan position/down limit switch N.O. contacts closed; and N.C. contacts open (pan down).

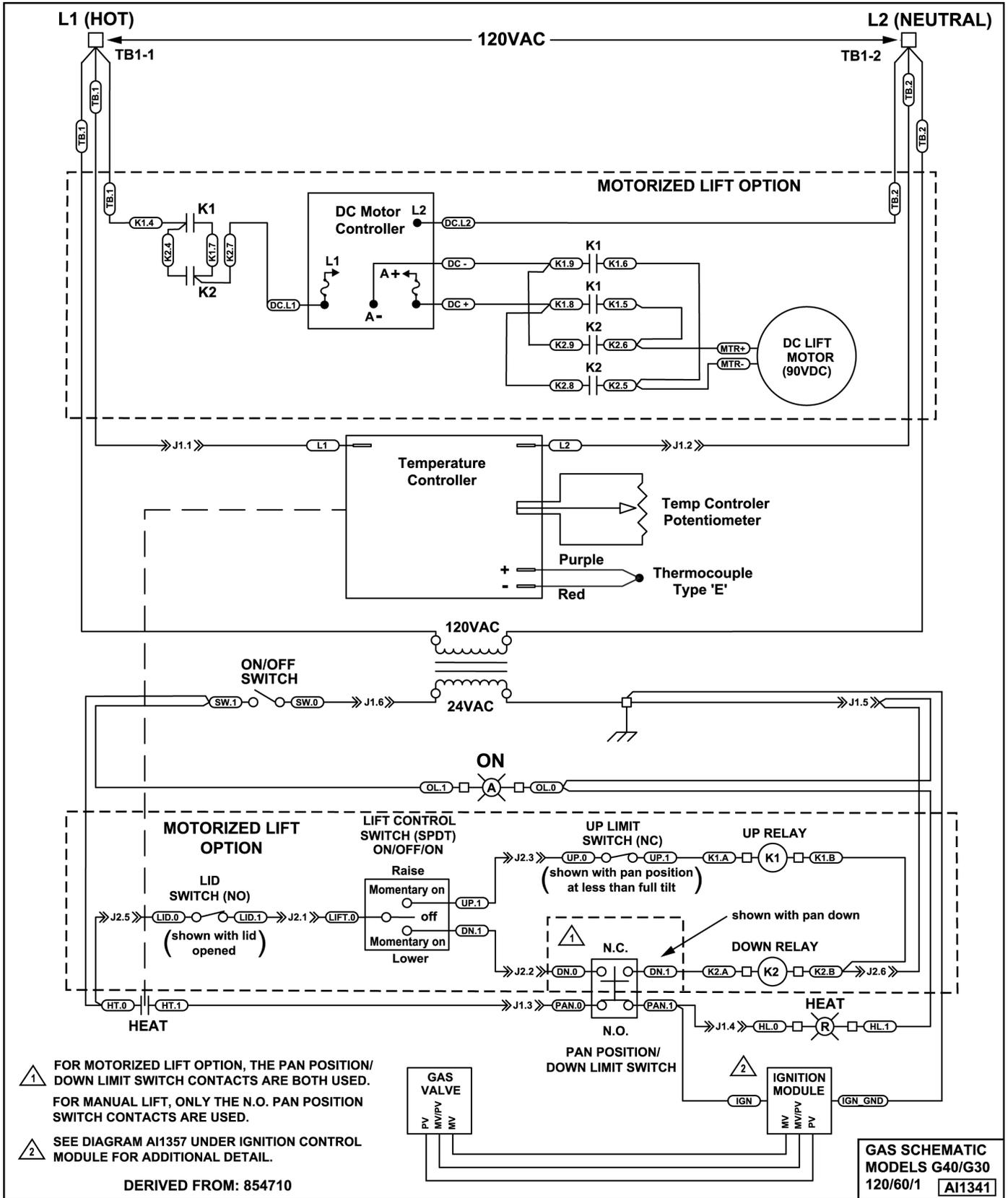
**NOTE:** The pan position/down limit switch are contained in the same switch body. Both sets of DPST contacts are utilized.
2. Turn on/off switch on.
  - A. Indicator light (amber) comes on.

**NOTE:** If the temperature dial is set to call for heat, the ignition trial starts and module begins sparking.
3. Operate the lift control switch to raise the pan (momentary on - raise).
  - A. K1 relay coil is energized thru the up limit switch N.C contacts.
    - 1) K1 4/7 N.O. contacts close.
    - 2) K1 9/6 N.O. contacts close.
    - 3) K1 8/5 N.O. contacts close.
  - B. 120VAC to DC motor controller thru K1 4/7 N.O. contacts.
    - 1) 90VDC output is activated at terminals A + (positive) and A - (negative). DC lift motor powered thru K1 9/6 N.O. contacts, K1 8/5 N.O. contacts and pan raises.
4. When the pan is raised 2.25" to 2.50" at the rear, pan position/down limit switch contacts change state. The N.O contacts open to remove power from the heating circuit; and the N.C contacts close. Power is then available for K2 relay coil thru the N.C. set of contacts.

The pan can still be raised or lowered thru its travel range by operating the lift control switch. Release switch to stop pan travel.

5. Pan reaches full tilt position, the up limit switch N.C. contacts open and K1 relay coil is de-energized.
  - A. The three sets of K1 contacts return to N.O. position. Power is removed from the DC motor controller, the DC lift motor and pan travel stops.
6. Operate the lift control switch to lower the pan (momentary on - lower).
  - A. K2 relay coil is energized thru the down limit switch N.C contacts.
    - 1) K2 4/7 N.O. contacts close.
    - 2) K2 9/6 N.O. contacts close.
    - 3) K2 8/5 N.O. contacts close.
  - B. 120VAC to DC motor controller thru K2 4/7 N.O. contacts.
    - 1) 90VDC output is activated at terminals A + (positive) and A - (negative). DC lift motor powered thru K2 9/6 N.O. contacts, K2 8/5 N.O. contacts and pan lowers.
7. After the pan leaves the full tilt position, the up limit switch N.C. contacts close. The direction of pan travel can then be reversed by un-operating the switch (pan travel stops) then operating the switch to raise the pan.
8. Pan reaches full down position, down limit switch N.C. contacts open and K2 relay coil is de-energized.
  - A. The three sets of K2 contacts return to N.O. position. Power is removed from the DC motor controller, the DC lift motor and pan travel stops.

**SCHEMATIC DIAGRAM**



# TROUBLESHOOTING

## GAS HEATING (MANUAL LIFT OR MOTORIZED LIFT OPTION)

SYMPTOMS	POSSIBLE CAUSES
No spark to ignite pilot burner gas, power on light is lit.	<ol style="list-style-type: none"> <li>1. Pan not fully lowered or pan position/down limit switch malfunction.</li> <li>2. Temperature dial not set to call for heat or temperature controller malfunction.</li> <li>3. Ignitor cable open or grounded (short).</li> <li>4. Ignitor spark gap distance incorrect.</li> <li>5. Shorted electrode or an improper ground on ignitor/flame sense.</li> <li>6. Ignition module not grounded or inoperative.</li> </ol>
Spark at ignitor but pilot burner does not light.	<ol style="list-style-type: none"> <li>1. Gas combination valve off or inoperative.</li> <li>2. Gas supply off or insufficient gas pressure.</li> <li>3. Ignitor spark gap distance incorrect.</li> <li>4. Pilot burner orifice obstructed.</li> <li>5. Ignition Module malfunction.</li> </ol>
Pilot burner lights but will not maintain flame.	<ol style="list-style-type: none"> <li>1. Ignitor/flame sense lead wire connections malfunction.</li> <li>2. Improper ground on pilot burner or ignitor/flame sense; or ignitor/flame sense malfunction.</li> <li>3. Pilot burner misaligned or Ignitor/flame sense malfunction.</li> <li>4. Gas pressure not within specified range.</li> <li>5. Incorrect polarity from transformer to Ignition module.</li> <li>6. Ignition Module malfunction.</li> </ol>
Main burner(s) do not light or will not maintain flame.	<ol style="list-style-type: none"> <li>1. Gas pressure incorrect.</li> <li>2. Runner tube - gas orifice obstructed or malfunction.</li> <li>3. Main burner - gas orifice obstructed or malfunction.</li> <li>4. Main Burner(s) incorrect air shutter position or burner malfunction.</li> <li>5. Gas combination valve malfunction.</li> </ol>
Braising pan does not heat, power on light is lit.	<ol style="list-style-type: none"> <li>1. Temperature controller malfunction.</li> <li>2. Pan position/down limit switch malfunction.</li> <li>3. Ignition module malfunction.</li> <li>4. Gas combination valve malfunction.</li> <li>5. Interconnecting wiring malfunction.</li> </ol>
Braising pan does not heat, power on light is not lit.	<ol style="list-style-type: none"> <li>1. Main circuit breaker off or power not connected.</li> <li>2. On/off switch off or malfunction.</li> <li>3. Transformer inoperative.</li> <li>4. Interconnecting wiring malfunction.</li> </ol>
Excessive or low heat.	<ol style="list-style-type: none"> <li>1. Temperature probe malfunction.</li> <li>2. Temperature controller malfunction.</li> <li>3. Gas pressure incorrect.</li> <li>4. Gas orifice obstructed or incorrect.</li> </ol>

**MOTORIZED LIFT OPTION ONLY**

SYMPTOM	POSSIBLE CAUSES
Pan will not raise.	<ol style="list-style-type: none"> <li>1. Lid switch open (lid not opened) or malfunction.</li> <li>2. Transformer inoperative.</li> <li>3. On/off switch off or malfunction.</li> <li>4. Lift control switch malfunction (momentary on - raise).</li> <li>5. Up limit switch malfunction.</li> <li>6. K1 relay malfunction.</li> <li>7. DC motor controller - Fuses open or controller malfunction.</li> <li>8. DC Lift motor inoperative.</li> <li>9. Gear reducer malfunction.</li> </ol>
Pan will not lower.	<ol style="list-style-type: none"> <li>1. Lid switch open (lid not opened) or malfunction.</li> <li>2. Pan position is below 2.25" to 2.50" at the rear. Raise pan to return pan position/down limit switch N.C. contacts to closed position.</li> <li>3. Transformer inoperative.</li> <li>4. On/off switch off or malfunction.</li> <li>5. Lift control switch malfunction (momentary on - lower).</li> <li>6. Down limit switch malfunction.</li> <li>7. K2 relay malfunction.</li> <li>8. DC motor controller - Fuses open or controller malfunction.</li> <li>9. DC Lift motor inoperative.</li> <li>10. Gear reducer malfunction.</li> </ol>

**CONDENSED SPARE PARTS LIST**

VG30 & VG40 GAS BRAISING PANS		
PART NUMBER	DESCRIPTION	NOTE
854534-1	Board, Temperature	
854537-1	Switch, Control (Manual Lift)	
417980-1	Module, ignitor	
411500-12	Transformer, 120-24	
854517-1	Switch, Limit (Pan Position/Down limit)	
854512-1	Thermocouple (E-Type)	
844129-1	Pilot, Burner (Nat) Elect. Ign.	
844129-2	Pilot, Burner (LP) Elect. Ign.	
844130-1	Cable, Ignitor	
844133-1	Valve, Combo Gas (Nat), Elect. Ign.	
844133-2	Valve, Combo Gas (LP), Elect. Ign.	

BRAISING PANS WITH MOTORIZED LIFT OPTION		
PART NUMBER	DESCRIPTION	NOTE
854495-1	Switch, Control	
854671-1	Controller, Speed	
854545-1	Relay (24VAC)	
411496-F1	Switch, Micro (Lid)	
854717-1	Switch, Micro (Up Limit)	
854653-1	Motor, Gear	