IMPORTANT FOR FUTURE REFERENCE

Please complete this information and retain this manual for the life of the equipment:

Model #: _____

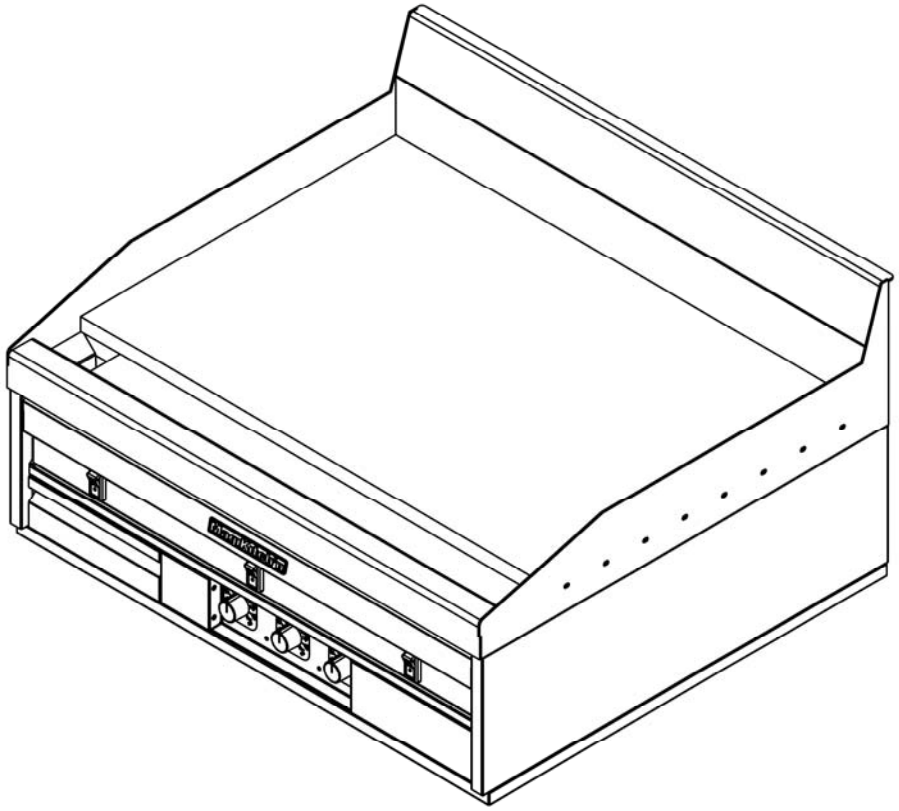
Serial #: _____

Date Purchased: _____

Service Manual

MKE: MagiKitch'n Electric Griddle

March 2011



WARNING

DO NOT store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WARNING

Improper installation, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this appliance.

WARNING

Installation, maintenance and repairs should be performed by a MagiKitch'n Authorized Service and Parts (ASAP) company technician or other qualified personnel. Installation, maintenance or repairs by an unauthorized and unqualified personnel will void the warranty.

WARNING

Installation and all connections must be made according to national and local regulations and codes in force.

WARNING

A country approved all pole circuit breaker with a minimum open contact gap of 3mm must be used for proper installation. (CE countries)

WARNING

During the warranty period if a customer elects to use a non-original part or modifies an original part purchased from MagiKitch'n and/or its Authorized Service and Parts (ASAP) companies, this warranty will be void. In addition, MagiKitch'n and its affiliates will not be liable for any claims, damages or expenses incurred by the customer which arises directly or indirectly, in whole or in part, due to the installation of any modified part and/or received from an unauthorized service center.

WARNING

This appliance, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, or the Canadian Electrical Code, CSA C22.2, as applicable.

WARNING

Adequate means must be provided to LIMIT the movement or this appliance without depending on the electrical cord connection. Single appliances equipped with legs must be stabilized by installing anchor straps. All appliances equipped with casters must be stabilized by installing restraining chains.

WARNING

DO NOT alter or remove structural material on the appliance to accommodate placement under a ventilation hood.

WARNING

This appliance is intended for professional use only and should be operated by fully trained and qualified personnel.

WARNING

If the supplied power cord is damaged, it must be replaced by a MagiKitch'n Authorized Service and Parts (ASAP) company technician, or a similarly qualified person in order to avoid a hazard.

WARNING

The power supply must be disconnected before servicing, maintaining or cleaning this appliance.

WARNING

The appliance is NOT jet stream approved. DO NOT clean the appliance with a water jet.

WARNING

DO NOT attempt to move this appliance or transfer hot liquids from one container to another when the unit is at operating temperature or filled with hot liquids. Serious personal injury could result if skin comes in contact with the hot surfaces or liquids.

WARNING

DO NOT sit or stand on this appliance. The appliance's front panel, cook plate, splash back, side, workshelf not a step. Serious injury could result from slipping, falling or contact with hot surfaces or liquids.

WARNING

NEVER use the appliance as a step for cleaning or accessing the ventilation hood. Serious injury could result from slips, trips or from contacting hot surfaces or liquids.

WARNING

DO NOT use the appliance unless it is properly secured to a table, stand or freezer / refrigerated base suited to handle the weight of the entire appliance.

WARNING

DO NOT operate appliance unless all panels and access covers are attached correctly.

WARNING

It is recommended that this appliance be inspected by a qualified service technician for proper performance and operation on a yearly basis.

Trouble Shooting

Problems and Possible Causes

		PROBLEM					
		Zone is not heating	Switch light does not turn on	Plate temperature is inconsistent from zone to zone	Griddle temperature is inconsistent in one zone	Griddle stays hot or overheats	Contactor is chattering
POSSIBLE CAUSE	Griddle is not plugged in (if so equipped)	X	X				
	Power switch is off	X	X				
	Thermostat is set to "OFF"	X					
	Thermostat is not calibrated			X		X	
	Thermostat failure	X	X			X	
	Transformer failure	X	X				
	Wire harness is disconnected	X	X		X		
	Relay failure (if equipped)	X	X				
	Probe Failure	X	X	X		X	
	Element Failure	X	X		X		
	Switch failure	X	X				
	Contactor failure	X				X	
	Wrong voltage tab on transformer						X
	Snubber failure						X
	Diode in Switch Circuit has been Wired Backwards		X				

Normal Operating Component Properties

		Property
		Normal Resistance (OHMS)(Approximate)
Component	Relay Coil	Check for Continuity
	Contactor Coil	5.8 - 7.0
	10" Element	Check for Continuity
	7" Element	Check for Continuity
	Solid State Relay Coil	Check for Continuity
	Solid State Probe	1466 at 250F
		1680 at 250F
		1894 at 250F
	Electric Tstat coil	Check for Continuity
	Transformer	Check for Continuity
	Fuse	Check for Continuity

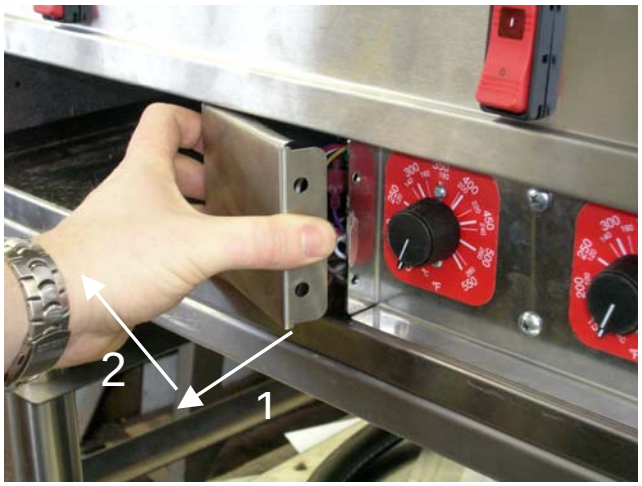
Front and Rear Panels

Removal of Front Panels and Access to Component Panels

Always use caution when removing any of the front panels as live contacts are inside at 24VAC as well as the line voltage. It is highly recommended to turn off power to the unit at the circuit breaker or unplug the unit before removing any of the front panels.

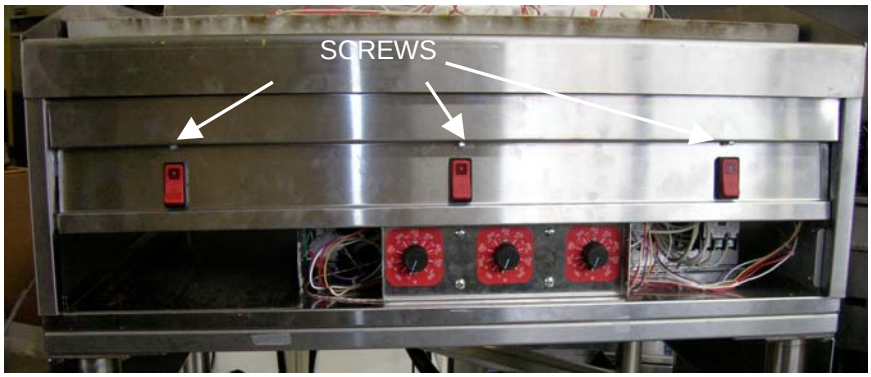
The first step to removing any of the front panels is to remove the grease drawer(s). Always check the grease level in the drawer by slowly pulling the drawer forward. If the Unit has been in operation recently this grease may be hot. Set aside.

The two lower front panels will be next. There are two types of lower front panels: those next to the cabinet wall and those next to a grease drawer enclosure. Both types require the removal of two phillips head screws next to the controller panel. Once the screws are removed the panels may spring forward on the controller panel side. The lower front panel next to a grease drawer enclosure is removed by pulling the controller panel side toward you then moved toward the grease drawer to remove it's tab from a slot in the grease drawer enclosure. Set aside.



The lower front panel next to the cabinet wall is very similar except the tab / slot is reversed. After removing the two retaining screws at the controller panel, pull the lower front panel toward you, then move it towards the controller panel. This removes a tab attached to the cabinet wall from a slot in the lower front panel. Set aside.

At this point, wires may be visible in the two openings where the lower front panels once were. It is recommended that servicing the unit is not attempted through these openings as visibility is poor. Remove at least the switch panel.



Remove the switch panel by first removing the screws above the switches. The screws will have 5/16 hex heads. Once the screws are removed the may drop so support the panel as the last screws are removed. The panel can then be pulled down and toward you. The panel is still connected to the controller circuit. There will be one Molex connector per switch. Remaining on the panel will be the switches, and small harnesses terminating in the pin side of the Molex connectors. This harness contains the diode for the LED light in each of the switches. The Diode will be covered in heat shrink tubing. If this is not the subject of service, set aside.

The majority of the electrical components can now be seen inside this cavity. Further access space to the top of the cavity can be made by removing the switch panel retention bracket, which runs the width of the unit near the top of the unit. To remove, support the bracket and remove a series of screws whose heads now face you down the length of the bracket. When the screws are removed the bracket will fall if not supported. Set Aside.

Assembly of Front Panels

Be sure that all components are in place and wires have been properly dressed and are out of the way. If the controls panel is not in place, do so now.

Place the switch panel retention bracket at the top, front of the component heat shield and align the mount holes. Secure with screws starting from the center and working out from there.

Reconnect the switch panel to its mating Molex connectors in each control circuit. Be sure that the zone 1 controller is connected to the zone 1 switch and so on. Also be sure that the wire number, configuration, and colors match from one side of the Molex union to the other.

The lower left and right corners of the switch panel hook around mounting brackets on the inside of the cabinet walls. Check for wires around the controls panel and above the grease drawer enclosure(s). Grooves in the bottom edge of the switch panel match up with the grease drawer enclosure(s) and the two sides of the controls panel. The switch panel then tips forward until it contacts the retention bracket. Secure with screws.

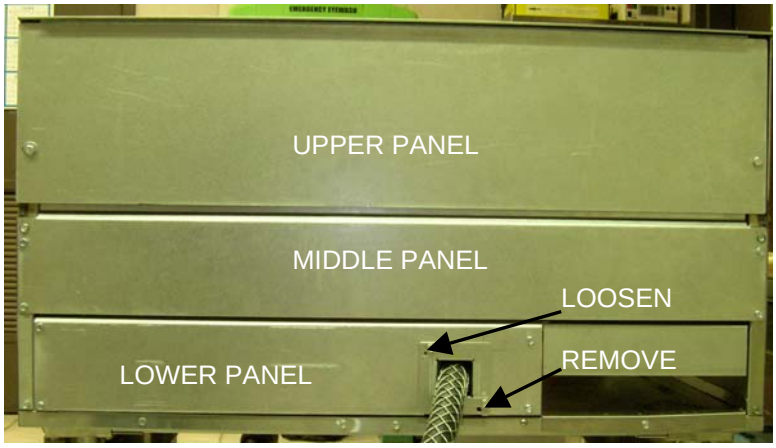
The lower front panels install just as they are removed. The tab of the lower panel hooks into the slot of the grease drawer enclosure(s) and swings into place. The slot of the other lower front panel mates to a tab mounted to the inside of the cabinet side. Then it swings into place. Both lower front panels have flanges that lap over one side of the controls panel and is secured with two screws.

Slide the grease drawer(s) into its enclosure.

Rear Panels

The rear panels are broken up into three sections: Upper, Middle, and Lower. To remove the Upper or Middle panels, remove the screws or bolts securing them. The panel will then come free, set aside. The lower panel contains removable brackets around the power cord(s). By loosening the upper screw(s) and removing the lower screw(s) the lower bracket may be swung out of the way. Then remove the screws securing the panel to the griddle and the panel will come free.

To put a panel back on the griddle, reposition it on the griddle and secure with the screws or bolts previously removed. The Middle and Lower panels have a top edge that sits on the inside of the mating edge of the panel above it. When securing the Lower panel, swing the lower cord bracket around the cord and tighten both screws.

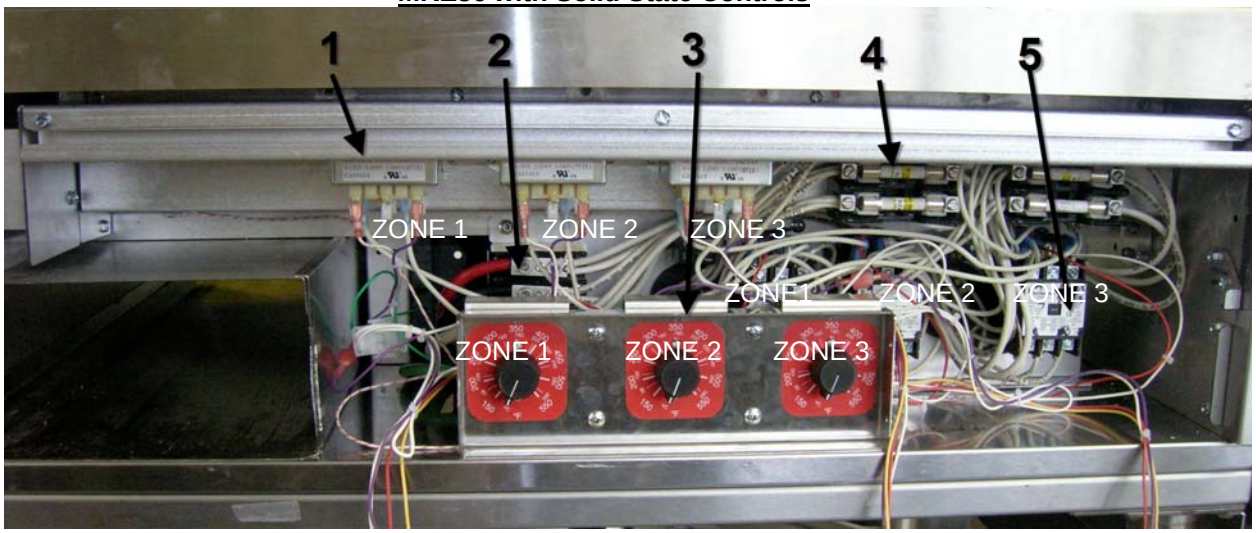


Component Panels

Component Location

To gain access to the component panels remove front panels, see FRONT AND REAR PANELS section.

MKE36 with Solid State Controls

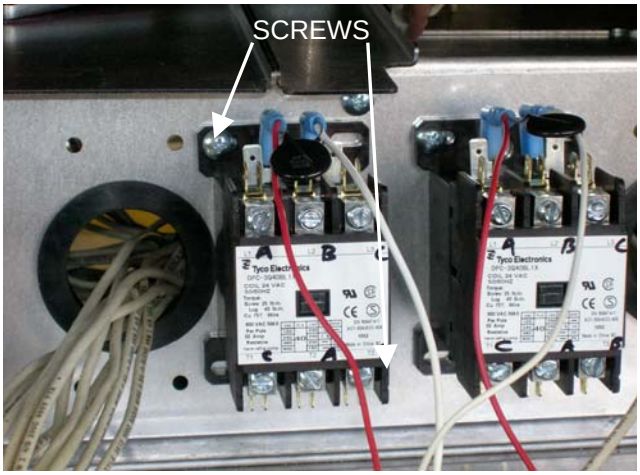


1. **Transformers:** one for each 12" zone of griddle. The left most transformer will power the 24 volt AC control circuit for the left most 12" zone of griddle, "Zone 1", and so on.
2. **Terminal Block:** one per cord. This will power 2 or 3 zones of griddle. There will be one or two terminal blocks per griddle depending on the size (MKE24-36: one terminal block, MKE48-72 two terminal blocks).
3. **Controller panel:** mounting panel for the griddle's temperature controllers. The panel is held in place with four screws.
4. **Fuse Blocks and Fuses:** Six fuses are used for each cord/ terminal block.
5. **Contactors:** one for each 12" zone of griddle. The left most contactor will operate three elements in the left most 12" zone of griddle, "Zone 1", and so on.

Component Replacement

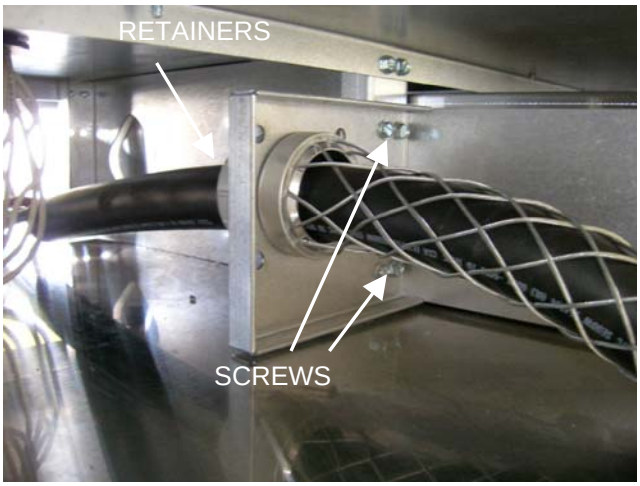
1. Contactors

Each contactor will be connected to 6 wires, three upper wires and three lower wires. The top wires are from the fuse block. The lower wires are the second of two leads from that zone's three elements. Each of the wires should be labeled according to what they attach to. For example: on the contactor all of the way to the left will be for zone 1. The lower wires will be labeled 1 L-2, 2 L-2, and 3 L-2 from left to right. These are leg 2 of element 1, 2, and 3. The upper wires will be labeled by what fuse they go to. The best practice is to transfer one wire at a time from the contactor to be removed to the same location on the contactor to be installed. Then remove the two screws securing the old contactor to the component panel and replace it with the fully wired new contactor.



2. Cord and Plug Sets

Each cord is secured to the griddle at two points: the terminal block in the front of the griddle and the strain relief in the rear. Both front and rear panels need to be removed to install, change, or remove a cord. See the Front and Rear panel section for proper removal. In the front of the unit, disconnect the cord from the terminal block with the appropriate allen wrench and from the ground lug with a flat tip screwdriver. From the rear of the griddle the griddle the strain relief may be loosened or the assembly can be freed as a whole by removing four screws near the cord. The cord is removed from the strain relief by unthreading two retaining collars.



To install a cord, thread it through the strain relief, the sheet metal retainer, then the plastic retainer. Tighten both retainers. Reinstall the cord into the terminal block and the ground wire to the ground lug below the terminal block at the front of the unit.

3. Fuses

Fuses are item #4 the component location diagram. To remove, pull the fuse away from the block. To install a new fuse, place on contacts of the fuse block and press the metallic ends firmly into place. Fuse will snap into place when correctly installed.

4. Relays (Electric Thermostats Only)

Relays are located above and/or below the grommets in the component panel(s). The best practice is to transfer one wire at a time from the old relay to the new one. The relay can then be removed by removing two screws. Replace new relay with screws.

5. Switches

All switches are located in the Switch panel. See the Front and Rear Panels section for removal instructions. Once the panel is removed and the Molex connectors are disconnected the switch and a small wire harness are all that remain on the panel. The wire harness must be removed from the switch first as it cannot fit through the cutout in the panel. The switched circuits are between tabs 2 and 3, and 5 and 6. In this application only one set is used. The leads going to the other tabs are to power the LED lamp in the switch. It is important to note that tab 8 is the positive tab and tab 7 is the negative tab. Tab 8 will be connected to the red lead with the heat shrink tubing on it. This tubing contains a diode to keep the lamp from flickering.

To remove a switch press the thin plastic flaps at the top and bottom of the switch in toward each other. While holding the flaps, the switch can be passed through the opening in the panel toward the rocker side of the switch.

To install a new switch, first orient the switch so that the lamp lens and “I” marking are at the top relative to the switch panel. Then pass the switch through the cut out in the switch panel and press it firmly into place. Thin plastic flaps at the top and bottom of the switch should spring away from the switch locking it in place. Reconnect the harness to the switch as described above.

6. Thermostats

Thermostats are located in the Controls Panel at the lower front of the griddle. A solid state thermostats is connected by quick disconnect to a probe mounted with the front row of elements. This type may be replaced independent of the probe. Electric thermostats are directly connected to a sensory bulb by a capillary, which must all be replaced as a unit. If replacing an electric thermostat see the Elements and Probes section for probe removal instructions.

The Controls panel may be removed from the griddle before preceding. The first step to changing a thermostat is to remove the knob. To remove the knob of an electronic thermostat, pull it towards you and it should slip off a central shaft. The solid state thermostat knob is held in place by a collet. Start by removing the knob face, which is a round disk with a white line on it. This can be done with a fingernail or a thin screwdriver. A brass collet inside the knob is now visible. Loosen the nut to release the knob from its shaft. Do not completely remove the nut from the collet. Then pull the knob towards you to remove.

Both types to thermostats are secured to the Controls Panel with two small screws. Remove the thermostat and transfer the leads to the new one. Secure the new thermostat to the Controls Panel using the screws and reattach the knobs.

See the Calibration section to calibrate all new thermostats.

7. Transformers

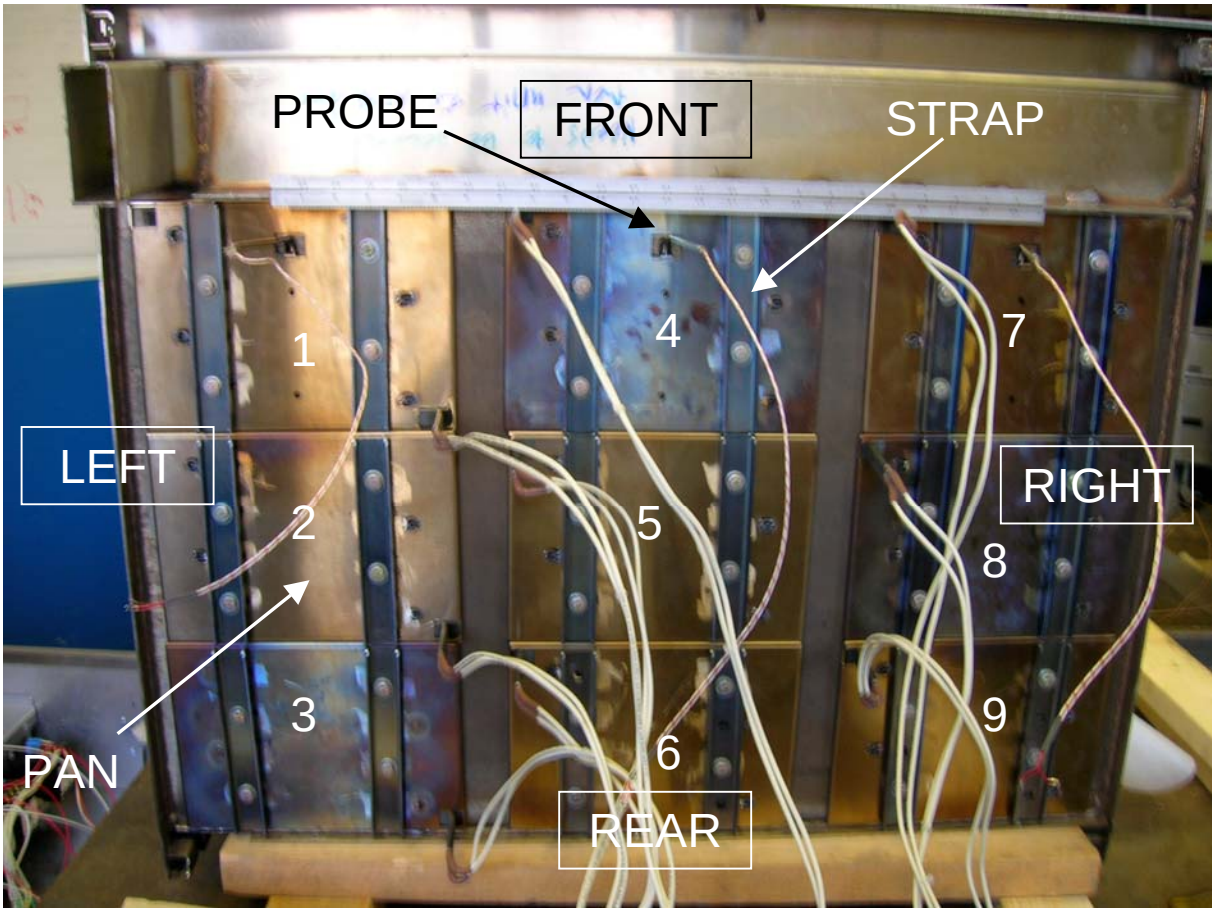
Transformers are located in the upper section of the component cavity. The one powering zone 1 control circuit is on the left, then there is zone 2 to right of that and so on.

To change a transformer, remove the two screws securing it to the component heat shield. Transfer the leads from the old one to the new one, and secure the new one in the old one's place using the two screws.

Elements and Probes

Location and Numbering

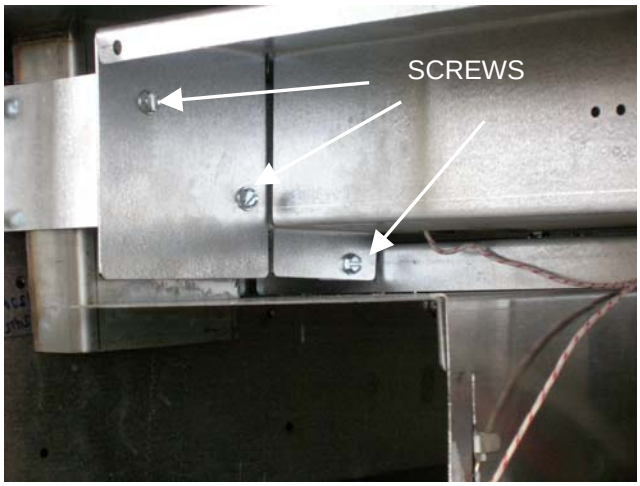
Shown is the element layout of an MKE36 as seen from under the plate. The elements are numbered from front to rear and left to right as seen below. For larger units the numbering pattern continues in the same way. Each element is contained by an element pan. Each element pan is held in place by two straps. The strap pairs are actually two of the same strap with one reversed. Each strap is secured with two Grade 8 ¼-20 x 5/8 bolts through two washers. Do not replace the supplied bolts with lesser or non-rated bolts. The elements have two lead wires. The wires are labeled with the element number and the leg number, leg one or leg two. The difference is that leg one is wired to the fuse block and leg two is wired to a contactor.



Replacing an Element

See the Front and Rear panel section to remove all front panels. If replacing a rear element also remove all of the rear panels.

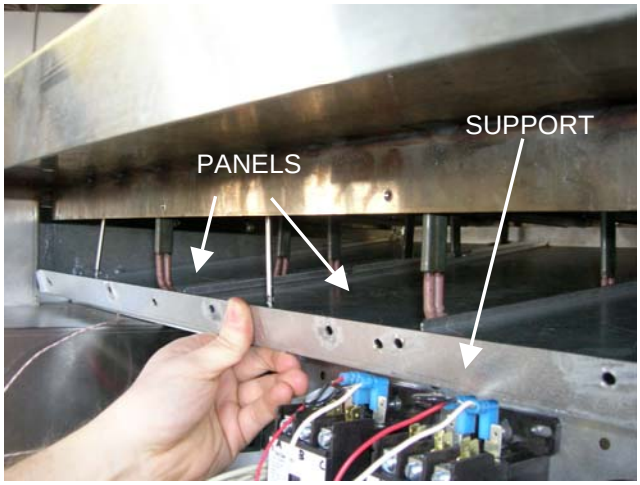
If removing a front or middle row element then the heat shield that the transformers and fuse blocks are attached to must now be removed. The individual components can be removed from the heat shield to avoid unwiring them, or they can all be unwired, left on the panel and removed as one.



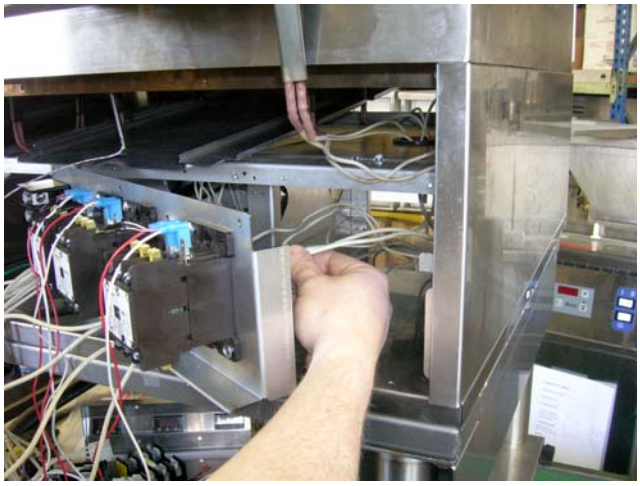
The component heat shield attaches to a bracket on the grease trough side and the cabinet wall on the side without grease trough where applicable. Support the heat shield as you remove the screws retaining it. The assembly can now be removed from the griddle.

The element to be replaced will need to be unwired at two points: the Fuse Block (leg 1) and the contactor (leg 2) for the zone the element is in. Refer to the photograph in the previous section to determine the element number. The leads of the element will be labeled with this number as well as a leg number.

At least one side of the upper heat shield, front or rear needs to be lowered to access the elements. Remove all of the screws along the support to be lowered being sure to prevent the heat shields from dropping. The heat shield panels associated with the element to be changed need to be removed to properly route the wires. Each heat shield panel to be removed can be pulled toward you and out of the griddle. Note: the panel will drop off of the support on the other side of the griddle when it is pulled out. Use caution not to rub a sheet metal edge on an element lead wire when the panel is being removed.



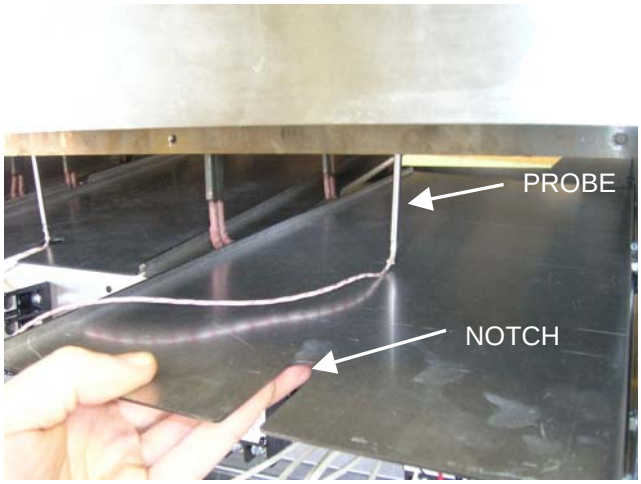
The element will be secured with 4 bolts or 6 bolts if it is zone 1 of a Left-Hand Trough griddle. You will most likely need a 7/16 socket and ratchet to remove the bolts. Note: as you remove all of the bolts supporting a strap it will come free. As you remove the last bolt, support the element pan to prevent it from dropping on your arm. The element and pan can now be removed from the griddle. If removing an element in the first row, in the front of the griddle, see the Replacing a Probe section. Note: Solid state probes may be left in place when replacing the associated element. The element leads will need to be pulled through the grommet in the contactor panel and the grommet in the middle heat shield. Remove the element from the pan.



To install a new element, first place the new element into the element pan by threading the leads through the appropriate cutout (there may be more than one). Use caution not to rub

the element leads on the edge of the cutout. Seat the element in the pan. Some manipulation of the element may be necessary to get to sit flat in the pan. Route the leads through the middle heat shield grommet and the contactor panel grommet where the old element was removed. The contactor panel may need to be pivoted to do this. To pivot the contactor panel, remove all of the screws along to top edge. Pull on the right side to let the panel pivot on the cord connection to the terminal block. Reconnect the leads and secure the contactor panel with its screws.

Place the element and pan in its position on the underside of the griddle plate. If replacing a front element, be sure that the grooved tab in the element pan supports the probe sheath or the capillary. While holding it in place secure a strap to the pan with a bolt and washer. Thread and tighten the remainder of the bolts with washers. Note: only tighten each bolt to 35 inch-pounds or 3 foot-pounds torque. Always verify that the element is sitting flush with the griddle plate. There should be a .020 to .040 gap between the underside of the griddle plate and the element pan. A mirror may be necessary to observe this. It is possible for an element pane to be too close to the perimeter of the griddle and get hung up on the weld bead in this area. If this occurs, loosen the four bolts for the affected element and slide it off of the weld bead and retighten the bolts.



The upper heat shield must now be put back in place. The notch in the upper heat shield is positioned toward the front side of the griddle. Then slide the panel into the griddle below the elements and above the middle heat shield. The first edge into the griddle must be lifted onto the ledge of the opposite support bracket. Note: as each panel is slid into position, do not rub any wires on the sheet metal edges. Now the panel should have its far edge supported by the opposite support bracket and the near edge resting on the support bracket that was previously removed. The probe sheath or capillary should be positioned to pass through the notch in the panel on the front side of the griddle. The smaller panels fit between the larger panels next to the vertical legs of the elements. It may be necessary to insert them with their short edge vertical and twist them flat once in position. As always, be careful not to rub the sheet metal edges on any wires when inserting a heat shield panel into the griddle. They are supported on the support brackets the same way the larger panels are. Once all panels are in place, there will not be any open spaces in the heat shield layer, lift the support bracket and all of the heat shield panels into place. Be careful not to catch the small vertical flanges of the panels on the element legs or the cabinet sides. Secure the bracket with the center screw first, then secure the others.

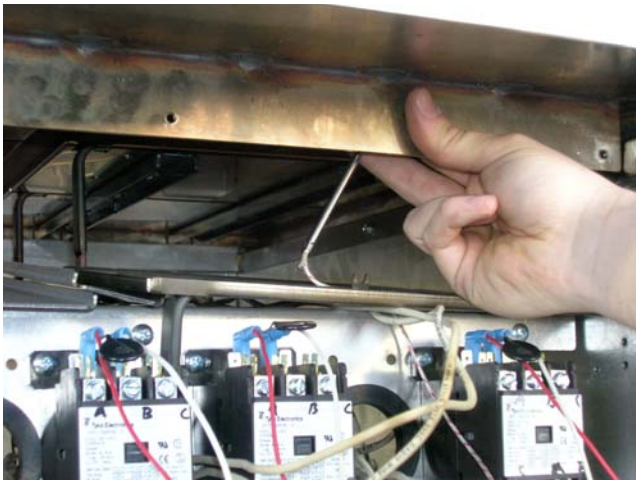
The component heat shield must now be lifted back into position and secured on the left and right sides with screws. If removed, all components must be secured to the panel and any disconnected connectors reconnected.

Replacing a Probe

Remove the front element associated with the probe from the griddle plate per instructions listed in the previous section. Keep the element in the pan and do not unwire it.

Solid State Probe: Disconnect the probe from the thermostat. Pull the probe toward you until it reached the metal plate as shown. Then tip the metal sheath to one side or the other until it is parallel with the floor. The probe will want to move in the opposite direction that you are tipping it. Now the probe can be pulled down at the bend to clear the sheet metal edge. Pull the probe straight toward you and out

of the griddle. Remove the leads from the cutout in the element pan. Thread the new element leads through the cutout being careful not to rub the leads on the edge of the cutout. Insert the tip of the new probe into the slot in the griddle plate where the old probe came out of. At the end of the slot there is a drilled whole for the probe. Insert the probe into the hole with the last leg of the probe sheath parallel to the floor. Rotate the leg to be perpendicular to the floor and push it forward into the griddle plate until it stops. Reattach the element.



Electric Thermostat Probe: Once the element has been dropped, the bulb can be fed through the cutout on the element pan and removed. Thread the new bulb through the cutout and place in the center of the cradle. While reattaching the element to the griddle, use caution to keep the bulb in the center of the cradle and not to damage the capillary.

Thermostat Calibration

Each control operates a set of three elements. The controls were set at the factory. However, if the griddle's surface temperature varies greatly from the setting on the thermostat knob, adjust the thermostat using the following procedure:

Electric Thermostat

1. Turn all the control knobs to the desired temperature setting.
2. Wait 30 minutes (or 1 hour if griddle was cold) for surface to stabilize.
3. Place a reliable Griddle surface thermometer, or test instrument thermocouple, (able to register 300°F), in the location above the thermostat being calibrated as described in section 2.2.2. Check the temperature every 5 minutes until the temperature stabilizes and does not change by more than 30°F over a 15 minute span.

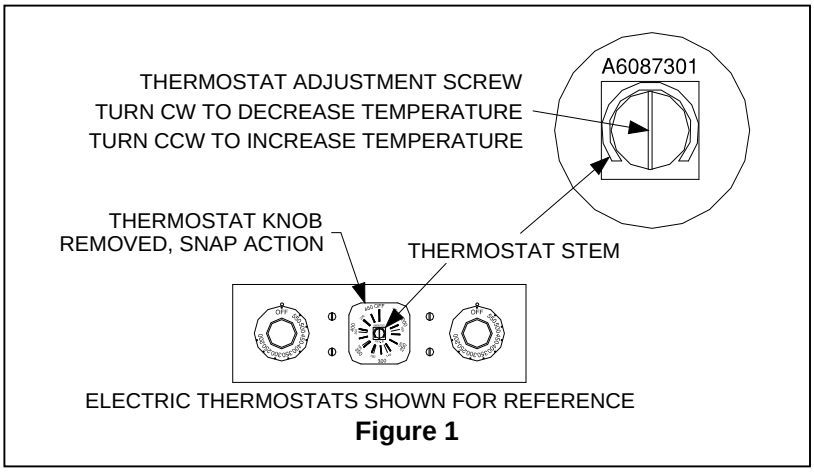


Figure 1

4. If the average temperature over any burner set is not within +/-15°F of the knob setting (300°F), adjust the corresponding thermostat. This is done by removing the knob, holding the thermostat knob stem, see picture above, (***do not allow the stem to turn or the temperature setting will not be accurate***), then turn the adjustment screw located within the center of the stem in small increments. Turn this screw counter clockwise to increase the temperature, and clockwise to decrease the temperature.
5. Check the temperature after 15 minutes and repeat adjustment as needed until the correct temperature is indication on the measuring instrument.

NOTICE

The adjustment screw on the thermostat is sealed by the Manufacturer to protect the calibration. It may be necessary to remove this seal to be able to adjust the thermostat.

Solid State Thermostat

1. Turn all the control knobs to the desired temperature setting.
2. Wait 30 minutes (or 1 hour if griddle was cold) for surface to stabilize.
3. Place a reliable Grill surface thermometer, or test instrument thermocouple, (able to register 300°F), In the location above the thermostat being calibrated described in section 2.2.2. Check the temperature every 5 minutes until the temperature stabilizes and does not change by more than 30°F over a 15 minute time period. You will need to remember the average temperature for the next step.

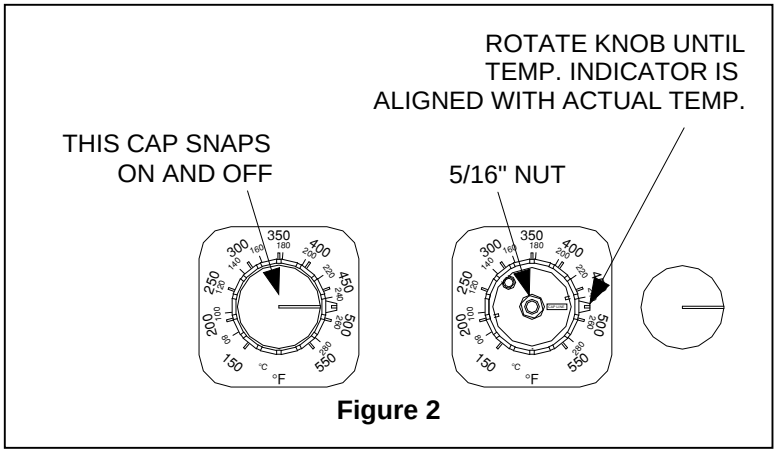


Figure 2

4. Carefully remove the cap on the thermostat knob with the white indicator line see picture this section. While holding the knob, loosen the 5/16" nut on the thermostat shaft, (***DO NOT REMOVE***), once the nut is loose the knob can be rotated so that the cap line marker is aligned with the actual temperature that the Grill surface thermometer is indicating.

Re-tighten the 5/16" nut while holding the knob in position, (do not allow the stem to turn or the temperature setting will not be accurate). Replace cap

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