# UNIVERSE PLUS STGL & STGM SERIES GAS TILTING SKILLETS

# INSTALLATION - OPERATION - MAINTENANCE



**OPEN LEG BASED MODELS** 

- □ 30P-STGL
- □ 40P-STGL



**CLOSED BASED MODELS** 

- □ 30P-STGM
- ☐ 40P-STGM









Telephone: (802) 658-6600 Fax: (802) 864-0183

www.marketforge.com

Your Service Agency's Address:	Model
	Serial number
	Skillet installed by
	Installation checked by

### **IMPORTANT**

WARNING: Improper installation, adjustment, alternation, service or maintenance can cause property damage, injury or death. Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment.

INSTRUCTIONS TO BE FOL-LOWED IN THE EVENT THE USER SMELLS GAS MUST BE POSTED IN A PROMINENT LO-CATION. This information may be obtained by contacting your local gas supplier.

#### **FOR YOUR SAFETY**

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

Keep the appliance area free and clear from combustibles.

Do not obstruct the flow of combustion and ventilation air.

Adequate clearances must be maintained for servicing and proper operation.

The information contained in this manual is important for the proper installation, use, and maintenance of this skillet. Adherence to these procedures and instructions will result in satisfactory baking results and long, trouble free service. Please read this manual carefully and retain it for future reference.

**ERRORS:** Descriptive, typographic or pictorial errors are subject to correction. Specifications are subject to change without notice.

#### TABLE OF CONTENTS

#### **INSTALLATION**

Service Connections	2
Installation Instructions	3
General Installation	3
Caster Installation	4
Before First Use.	4
OPERATION	
Operating Instructions	5
Start-Up Procedure	5
Shutdown Instructions	5
Prolonged Shutdown	5
Operation	5
Cooking Tips	6
Suggested Cooking Temperatures	7
MAINTENANCE	
Cleaning & Maintenance	9
Daily Cleaning	9
Replacement of Temperature Control	9
Adjustment of Interlock Switch	9
Adjustment of Motor Tilt-Stop Switches	9
Wiring Diagram 1	0
Troubleshooting	2

#### **SUMMARY OF SAFETY NOTICES**

The following general safety notices supplement the specific warnings and cautions contained in this technical manual. They are recommended precautions that must be understood and adhered to during the installation, operation, and maintenance of these electrically operated appliances.



#### WARNING:

Do not get water on wiring in controls. Be sure to wash inside of skillet pan, inside of cover including under drip-lip, and pouring spout area.



#### CAUTION:

Do not install in such a manner that the service person cannot remove the control box cover.

Supply wires must be suitable for temperature of at least 90°C. Additionally, all wiring must conform to the requirements of local and national electric codes. Conduit and fittings should be watertight type.

Unit is equipped with an interlock switch that shuts off gas to the burners when skillet pan is more than 10° above normal horizontal cooking position.

#### **Service Connections**

#### **GAS SUPPLY**

Model	Model kW/Hr BTU/Hr		Supply Pressure (W.C.)		
Wiodei	KVV/ПI	Біб/пі	Natural	Propane	
30 gallon	27.2	93,000	7"-14"	11"-14"	
40 gallon	36.9	126,000	(178-356mm)	(279-356mm)	

#### **SERVICE CONNECTIONS**

G	<b>Gas Connection</b> - Supplied through 3/4" NPT pipe. A gas shut-off valve must be installed in supply piping convenient and adjacent to appliance.
E	Electrical Connection - 120V units supplied with 8' cord with 3 prong plug. Total Amps: 3
C & H	Cold/Hot Water - 3/8" O.D. NPT (Optional faucet)
D	Drain - 1-1/2" drain NPT (Optional drain pan assembly)

#### **DIMENSIONS**

Model	Α	В	С	D	E
30 gallon	36 [914]	32.63 [829]	27.88 [708]	25.75 [654]	18 [457]
40 gallon	46 [1168]	42.63 [1083]	37.88 [962]	25.75 [654]	23 [584]

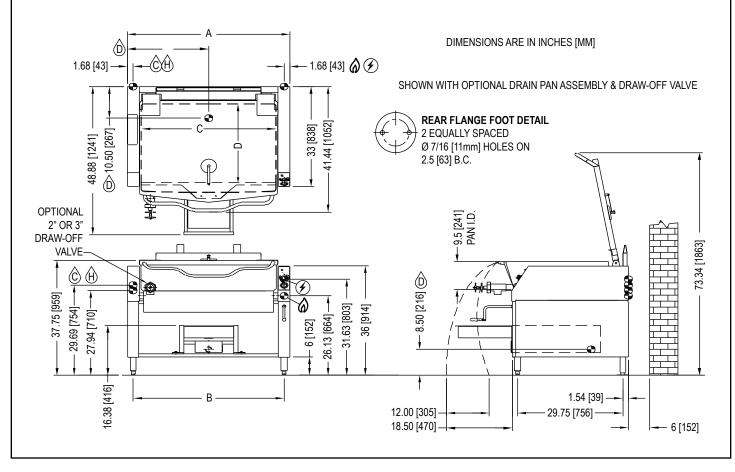


Figure 1

## A

#### **△** CAUTION: BE SURE TO READ!

- Keep this appliance area free and clear of combustibles.
- Do not obstruct the flow of combustion and ventilation air.
- Allow adequate ventilation to unit. Install under exhaust hood.
- Keep this manual for future reference.
- This installation must conform with local codes or, in the absence of local codes, with National Fuel Gas Code, ANSI Z223.1 – latest edition; or the Natural Gas Installation Code, CAN/CGA– B149.1; or the Propane Installation Code, CAN/ CGA-B149.2, as applicable.
- The griddle and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressure in excess of ½ psig (3.45 k/Pa).
- The griddle must be isolated from the gas supply system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than ½" psig (3.45 k/PA).
- This unit is serviceable from the front. Do not install in such a manner that a service person cannot remove front panels if provided.
- When installed, this appliance must be electrically grounded in accordance with local codes, or, in the absence of local codes, with the National Electric Code, ANSI/NFPA No. 70 latest edition.
- In Canada, this installation must conform to C.S.A. Standard C22.2 Canadian Electrical Code.
- The wiring diagram adhesive label is located on the inside of the control box cover.
- The product must be installed in a room with adequate air supply for complete gas combustion.
- Do not place on or directly against the unit any objects that would block air openings into the combustion chamber.
- Suitable for use on combustible floors.
- Clearances from both combustible and noncombustible construction are 0" (0 mm) from side walls, 10" (254 mm) from rear wall.

This unit has a flexible cord wired into electrical system.

#### **GENERAL INSTALLATION**

- Remove carton from skid, being careful not to dent or scratch finished surface of the unit.
- 2. Inspect unit carefully for shipping damage. File clam with carrier immediately if damage is found.
- 3. Remove screws holding unit to skid.
- Transfer unit to desired position and make level and steady by adjusting feet to compensate for floor irregularities. Bolt the flange feet to the floor.
- Raise skillet cover to full open position. Raise skillet by turning crank clockwise. Check to make sure burners and carryover tube are in position and securely seated.
- Lower skillet by turning hand crank counterclockwise until fully seated on frame. Skillet is equipped with interlock switch, which does not permit burners to ignite until skillet is lowered to less than 10° off normal horizontal cooking position.
- 7. Gas service conditions:

# DO NOT CONNECT GAS LINES. Only qualified installer or service person should make the installation.

- a. This unit is factory-adjusted for gas consumption of 93,000 BTU/Hour (on 30 gallon units) or 126,000 BTU/Hour (on 40 gallon units) at the pressure indicated. Please read rating plate on top of control box. If this plate is marked for a different gas than that supplied, notify your dealer immediately.
- b. Use new 3/4 I.P.S. iron or steel pipe complying with ANSI Standard for wrought-steel and wrought-iron Pipe B36- latest edition, properly threaded, reamed and free from chips, oil and dirt. If pipe dope is used, apply a moderate amount, leaving two end threads bare. Gas connection is on the rear of the right console. Pipe in a gas shut-off valve accessible to the operator.
- c. Natural gas units are equipped with a pressure regulator factory-adjusted to give 3.5" (89mm) water column manifold pressure. The supply pressure must be at leaset 7" (178mm) water column pressure.

INSTALLATION

#### Installation Instructions

- d. Propane gas units are equipped with a pressure regulator factory adjusted to give 10" (254mm) water column manifold pressure. The supply pressure must be at least 11" (279mm) water column pressure.
- e. Maximum supply pressure must not exceed 1/2 PSIG (3.45 kPa) for both natural and propane gas.
- f. Perform a gas leak test of all newly-made joints, as well as those leading to the main gas control valve pilot burner, using a soap solution. DO NOT USE FLAME!
- Electrical service connection Connect skillet controls to 110/120 volt AC, 60 Hz, 1 pH (phase) branch circuit rated 15 Amps capacity. Wiring will conform to the requirements of national and local electrical codes. ONLY A LICENSED ELECTRICIAN SHOULD MAKE ELECTRICAL CONNECTIONS!

#### **CASTER INSTALLATION**

- Installation shall be made with a connector that complies with the Standard for Connectors for Moveable Gas Appliances, ANSI Z21.69, CAN/CGA-6.16, and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use with Gas Fuel, ANSI Z21.41 or the Standard for Quick-Disconnect Devices for Use with Gas Fuel, CAN-6.9.
- Adequate means must be provided to limit the movement of the applicance without depending on the connector and quick disconnect device or its associated piping to limit the appliances movement.
- The location(s) where the restraining means may be attached to the appliance shall be to the optional bracket located on the lower end of the right hand pan cover post assembly in the rear of the unit.

#### **BEFORE FIRST USE**

Using a non-corrosive, grease-dissolving commercial cleaner, clean the protective metal oils from all surface parts and the interior of the tilting braising pan. Follow the cleaner manufacturer's directions. Rinse thoroughly and drain the pan. Wipe dry with a soft clean cloth.

#### START-UP PROCEDURE

- Open manual gas shut-off valve.
- 2. Ensure that the braising pan is in the DOWN position.
- Turn the THERMOSTAT dial to desired setting. The RED TEMPERATURE LIGHT will come on. This will turn on the electronic ignition, which will light the burners.
- 4. If the burners do not come on after 30 seconds, turn the THERMOSTAT dial to OFF and then ON again to restart.
- 5. When braising pan has reached set temperature, the red TEMPERATURE LIGHT will go off and the burners will shut off. The burners will cycle on and off thereafter to maintain set temperature. The red TEMPERATURE LIGHT will be on when the burners are on and off when burners are off.
- If gas supply is interrupted during operation, turn THERMOSTAT dial to OFF position and turn gas supply OFF. Wait five minutes, then repeat Steps 1 through 4 to restart.
- 7. Turn the THERMOSTAT dial to OFF when braising pan is not in use.

#### SHUTDOWN INSTRUCTIONS

Turn the THERMOSTAT dial counterclockwise to the OFF position.

#### PROLONGED SHUTDOWN

- Turn the THERMOSTAT dial counterclockwise to the OFF position.
- 2. Turn the GAS VALVE located at the right rear to the OFF position.

#### **OPERATION**

- Check to see that the correct gas connection has been made to the unit and the electric 110/120-volt connection has been made.
- 2. Be sure skillet has been or is cleaned before using.
- Be certain skillet is lowered to the normal horizontal cooking position so burners will light.
- 4. Set the thermostat to the desired temperature. See Cooking Tips for thermostat settings.
- 5. Preheat to desired setting before grilling, pan frying, or any other type of cooking except boiling.
  - NOTE: For best results, allow unit to cycle ON/OFF once.
- 6. Cover should be up for most types of cooking, except

- simmering or boiling. The cover has a lip at the rear that will direct condensate into the skillet rather than onto the cabinet base.
- When food is cooked, it should be immediately removed from skillet to prevent overcooking.
- To lower skillet, merely turn tilt skillet hand crank counterclockwise. To raise skillet, turn hand crank clockwise.
- For cleaning instructions, see Cleaning and Maintenance.



#### **CAUTION: BE SURE TO READ!**

- Disconnect the power supply to skillet before cleaning or servicing.
- Keep this appliance area free and clear of combustibles.
- Do not obstruct the flow of combustion and ventilation air.
- If skillet pan is difficult to raise, the lift gears may need to be lubricated. The gears are located on the right side under the control box. Apply a liberal amount of grease along the helical thread of the worm where it engages the worm gear. Use multi-purpose, NLGI #2 lithium-based, waterresistant grease.
- Keep this manual for future reference.
- Consult the factory, the factory representative, or a local service company to perform maintenance and repairs.
- In the event of a power failure, do not operate appliance.
- Periodically examine the flue outlet located behind the skillet cover for any obstructions.
- Appliances with casters are always to be restrained from movement. If removal of the restraint is necessary, always reconnect the restraint when the appliance is returned to its originally installed position.

5 OPERATION

#### **Cooking Tips**

The Universe Plus Skillet is one of the most versatile pieces of equipment to be found in any restaurant or institution kitchen. This unit will stew, simmer, pan-fry, braise, grill and saute all with a very uniform heat pattern.

NOTE: DO NOT ATTEMPT TO DEEP FRY WITH YOUR SKILLET!

- For best results, the tilting skillet should always be preheated and allowed to cycle once.
- A great deal of heavy lifting and transferring foods from one pan to another can be eliminated and therefore pot washing will be reduced.
- This type of equipment usually reduces the total cooking time by as much as 25% on combination dishes.
- Sauces usually lose less moisture as the cover reduces evaporation.
- Large batches of gourmet items can be prepared with less work and with more uniform results.
- Frozen vegetables can be cooked in the Universe Plus skillet in the serving pan, then removed and transferred directly to the serving line.
- · The following temperatures should be used:

Simmering	Maximum of 200°F
Sauteing	225-275°F
Searing	300-350°F
Frying	325-375°F
Grilling	350-425°F

- Temperatures of approximately 200°F should always be used for milk-based products, or scorching will take place. Lower temperatures to 150-175°F to prevent thickening.
- Some items should be started at a high temperature and then reduced. This permits sealing for about 20% of the time and cooking for the remaining 80%.
- The cover has a lip at the back edge that directs the condensate on the cover back into the skillet.
- The unit tilts easily to 90°, and receiving pan is always approximately 2 inches from the pouring lip of the skillet.

- The stainless steel Universe Plus skillet is rapidly cleaned with a mild detergent. Water, waste, and scraps are easily removed into the receiving pan for disposal. (It is always recommended that this type of unit be presoaked if possible.).
- Breakfast foods such as sausage, bacon, pancakes, fried eggs, scrambled eggs, and French toast are a few of the more common items that can be cooked in the Universe Plus Skillet.
- When cooking meat or poultry, all pieces should be of fairly uniform size and weight and should be turned at least once while simmering.
- This unit can be converted to a proof box by placing a small amount of water in the pan to form steam and then placing the food in another pan. The thermostat should be set very low (100 - 150°F).
- The unit can also be used as a holding cabinet by adding water and setting the thermostat at approximately 175°F.
- When using water over and over for vegetable cooking, be sure to add water occasionally to keep level at about 3 4 inches. Thermostat should be set at 250°F.
- Perforated 2 1/2" deep pans are suggested for vegetables for the most satisfactory results. The pan can then be removed easily and transferred to the serving line.

# **Suggested Cooking Temperatures**

				20 Callan	20	40 Callan	40
ITEM	PORTION SIZE	THERMOSTAT SETTING	BATCHES PER HOUR	30-Gallon QTY. PER LOAD	30 Gallon YIELD	40-Gallon QTY. PER LOAD	40 Gallon YIELD
BREAKFAST FOODS							
Bacon	3 slices	350°	12	12 lbs.	10	3 lb.	15
Eggs	1 egg						
Boiled-Hard	1 egg	225°	5	5	50	75	75
Boiled-Soft	1 egg	225°	8	8	50	75	75
Fried	1 egg	400°	4	4	30	45	45
Poached	1 egg	225°	5	5	36	60	60
Scrambled	1 1/2 eggs	300°-200°	1	1 gal.	720	28 gal.	1100
French Toast	3 slices	450°	7	7 Slices	12	50 slices	17
Reqular Oatmeal	1/2 cups	250°	2	2 lbs.	500	40 lb.	1000
Pancakes	2 each	400°	10	10 each	15	50 each	25
FISH		1	1	1			
Clams	1 pt.	400°	10	10 qts.	20	15 qts.	30
Fish Cakes	2 oz.	400°	5	5 oz.	35	110-3 oz.	55
Haddock Filet	4 oz.	400°	4	4 oz.	60	90-4 oz.	90
Halibut Steak	5 oz.	450°	3	3 oz.	60	90-4 oz.	90
Lobster	1-1 lb.	350°	4	4 lb.	20	30-1 lb.	30
Swordfish	5 oz.	450°	3	3 oz.	50	75-5 oz.	75
SAUCES, GRAVIES A	ND SOUPS				'		
Brown Gravy	1 oz.	350°-200°	2	2 gal.	2300	35 gal.	4500
Cream Sauces	2 oz.	250°-175°	1	1 gal.	1150	35 gal.	2250
Cream Soups	6 oz.	200°	1	1 gal.	375	35 gal.	725
French Onion Soup	6 oz.	225°	1	1 gal.	350	35 gal.	700
Meat Sauce	4 oz.	350°-200°	1	1 gal.	575	35 gal.	1100
MISCELLANEOUS						,	
Grilled Cheese	1 sand.	400°	8	35 sand	35	40 sand.	50
Macaroni & Cheese	8 oz.	200°	2	2 gal.	300	35 gal.	525
Rice	4 oz.	350°-225°	1	1 lb.raw	320	40 lb.	650
Spaghettie	4 oz.	350°-225°	2	2 lb.	200	12 lb.	300
MEAT							
American Chop Suey	6	400°-225°	2	2 gal.	350	35 gal.	700
Beef Stew	8	300°		18 gal.	280	35 gal.	560
Corn Beef Hash	5	400°	5	5 lb.	50	25 lb.	75
Cheeseburger	3	300°	12	12 lb.	35	10 lb.	50
Hamburger	3	300°	15	15 lb.	35	10 lb.	50
Meatballs	1	400°-225°	3	3 lb.	65	18 lb.	100
Pot Roast	2	350°-200°		120lb.	500	180 lb.	750
Salisbury Steak	5	400°	3	16 lb.	50	24 lb.	75
Sirloin Steak	6	400°	5	15 lb.	40	22 1/2 lb.	60
Swiss Steak	4	300°-200°	1	25 lb.	100	40 lb.	160

7

OPERATION

# **Suggested Cooking Temperatures**

ITEM	PORTION SIZE	THERMOSTAT SETTING	BATCHES PER HOUR	30-Gallon QTY. PER LOAD	30 Gallon YIELD	40-Gallon QTY. PER LOAD	40 Gallon YIELD
FRANKFURTERS	FRANKFURTERS						
Grilled	2	300°	8	22 lb.	176	33 lb.	264
Boiled	2	250	12	16 lb.	128	25 lb.	200
POULTRY							
Chicken, Pan-Fired	2 1/4's	350°	3	50 pieces	25	80 pieces	40
Chicken, Whole	2 oz.	350°-200°		16-5 lb.	40	24-5 lb.	265
Turkey, Off Carcass	2 oz.	400°-200°		3-26-30 lb.	200	4-26-30 lb.	275
Turkey, On Carcass	2 oz.	400°-200°		4-16-20 lb.	175	6-16-20 lb.	265
OTHER			-	·			
Ham Steak	3 oz.	400°	8	10 lb.	50	15 lb.	75
Pork Chops	5 oz.	400°	4	15 lb.	50	25 lb.	75
Sausage Links	3 links	350°	7	30 lb.	120	45 lb.	180
VEGETABLES							
Canned	3 oz.	400°	6	30 lb.	125	45 lb.	200
FRESH VEGETABLE	S						
Beans	3 oz.	400°	3	25 lb.	125	50 lb.	250
Beets	3 oz.	400°	1	30 lb.	125	60 lb.	300
Broccoli	3 oz.	400°	3	25 lb.	125	40 lb.	200
Cabbage	3 oz.	400°	5	20 lb.	80	30 lb.	125
Carrots	3 oz.	400°	2	35 lb.	150	70 lb.	300
Cauliflower	3 oz.	250°	5	15 lb.	75	25 lb.	125
Corn	1 ear	400°	8	50 ears	50	75 ears	75
Potatoes	3 oz.	400°	2	40 lb.	200	60 lb.	300
Spinach	4 oz.	225°	10	6 lb.	25	9 lb.	35
Turnips	4 oz.	400°	2	20 lb.	100	30 lb.	150
FROZEN VEGETABLES							
Beans	3 oz.	400°	6	15 lb.	60	22 1/2 lb.	90
Lima Beans	3 oz.	250°	4	15 lb.	60	22 1/2 lb.	90
Broccoli	3 oz.	400°	8	12 lb.	50	18 lb.	75
Sliced Carrots	3 oz.	250°	6	15 lb.	60	22 1/2 lb.	90
Baby Carrots	3 oz.	250°	3	15 lb.	50	22 1/2 lb.	90
Corn	3 oz.	250°	18	15 lb.	50	22 1/2 lb.	90
Baby Onions	3 oz.	250°	7	15 lb.	50	22 1/2 lb.	90
Peas	3 oz.	400°	10	15 lb.	75	22 1/2 lb.	110
Spinach	3 oz.	400°	3	15 lb.	75	22 1/2 lb.	110
DESSERT ITEMS							
Cherry Cobbler	3 oz.	200°	1	19 gal.	750	36 gal.	1500
Chocolate Sauce	1 oz.	200°	1	20 gal.	2300	37 gal.	4500
Cornstarch Pudding	4 oz.	200°	1	21 gal.	575	38 gal.	1100
Fruit Gelatin	3 oz.	250°	2	22 gal.	750	39 gal.	1500



## ♠ IMPORTANT!

#### **DISCONNECT ELECTRICAL POWER SUPPLY** BEFORE CLEANING.

#### **DAILY CLEANING**

- 1. The skillet should be cleaned daily.
- Wash the skillet with a mild detergent and hot water. If food is stuck to the surface of the skillet pan, soak it and use a little heat to loosen the food. Then, wash with clean water and wipe dry.
- 3. Be sure to wash under the skillet cover and rinse with clean water.
- 4. Check the skillet pouring lip corners to be sure they are clean. Also, wash around the exterior of the skillet. Rinse with clean water and air dry.

#### REPLACEMENT OF TEMPERATURE CONTROL

- 1. Place circuit breaker in off position.
- Remove skirted dial knob by loosening two set screws in the knob. (Use a 5/64 Hex key to loosen screws).
- 3. Tilt control box up by first removing two pan head screws in the lower front of the console. Use the prop up arm located inside, in the rear vertical column, to keep the console cover tilted open.
- Disconnect all wire leads from temperature control.
  - NOTE: Leads should be marked appropriately to facilitate re-installation.
- 5. Remove temperature control by removing two (2) pan head screws from side of control box.
- 6. Install new temperature control and reverse steps 1 - 5.

#### ADJUSTMENT OF INTERLOCK SWITCH

- 1. Tilt skillet pan all the way in the downright position.
- 2. Place circuit breaker in off position.
- 3. Tilt control box up by first removing two pan head screws in the lower front of the console. Use the prop arm located inside, in the rear vertical column, to keep the console cover tilted open.
- 4. To reduce the angle where the switch disengages when the pan is tilted, use a pair of heavy duty needle nose pliers and lightly bend the tilt tab on the trunnion up. To increase the angle, bend the tilt-tab down.

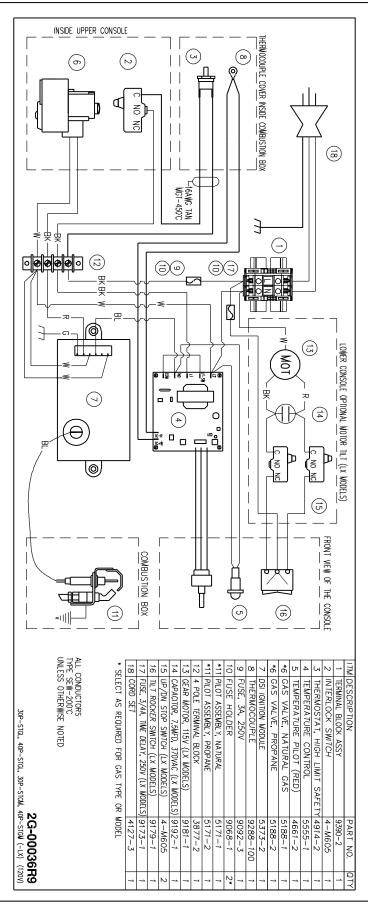
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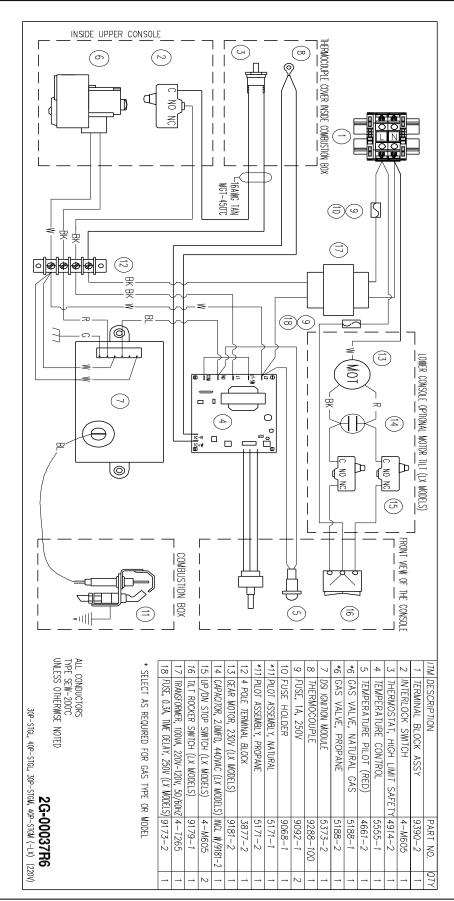
- Test by tilting the pan and checking at what angle the switch clicks. The switch should click off at approximately 10E tilt of the pan from the horizontal position.
- 5. Close and fasten the control console by tightening the two screws at the lower front of the box.
- 6. Place circuit breaker in on position.

#### ADJUSTMENT OF MOTOR TILT-STOP SWITCHES

- 1. Tilt skillet pan all the way in the down or horizontal position until the stops in the back engage.
- 2. Tilt control box cover up by first removing two pan head screws in the lower front of the console. Use the prop arm located inside, in the rear vertical column, to keep the console cover tilted open. Caution, circuit is live! Electrical power has not been turned off.
- 3. Remove control console lower side cover to expose motor, tilt cam and switches.
- 4. Using a 9/64 hex key, loosen the two set screws on the tilt cam located on the outside hub of the tilt gear.
- 5. Turn the cam so that one of the arms just engages the upper-right tilt switch as the arm is turned clockwise. Hold the cam/arm in that location and tighten the set screws.
- 6. Using the tilt UP/DOWN switch on the control panel, test the full travel up and down on the pan. The motor should stop just before the pan back stops engage in the horizontal position. It should stop at about 80E in the up or vertical position.
- 7. Repeat steps 4 to 6 until motor tilt stops as described in step 6.
- Replace the control console lower side cover in its original position. Close and fasten the control console by tightening the two screws at the lower front of the box.

**MAINTENANCE** 





11

# **Troubleshooting**

PROBLEM	PROBABLE CAUSE	REMEDY
Uneven or poor heating.	Temperature control out of calibration or defective.	a. Replace temperature control.
	b. Unit attached to wrong gas supply.	b. Compare to specifications on data plate.
	c. Combination gas control set to wrong pressure.	c. Adjust manifold pressure to equal that listed on data plate.
2. Signal light out.	a. Burnt out bulb.	a. Replace.
	b. Broken temperature control.	b. Replace.
	c. Loose electrical connection.	c. Repair.
3. Unit fails to heat.	a. Circuit breaker is off.	a. Reset circuit breaker.
	b. Malfunction of interlock switch.	b. Adjust or replace.
	c. Broken ignition module.	c. Replace.
	d. Broken ignitor/sensor.	d. Replace.
4. No 110 Volts output.	a. Defective temperature control.	a. Replace.
	b. Broken temperature sensor.	b. Replace.
5. No gas to unit.	a. Defective gas valve.	a. Replace.