

STAR-MASTER SERIES ELECTRIC APPLIANCE - MODEL 301HL ELECTRIC COUNTER FRYERS

GENERAL INSTALLATION DATA

This StarMaster Series Electric Fryer is equipped for the voltage and wattage indicated on the nameplate mounted on the underside of the front edge. This appliance is designed for use on alternating current (AC) only.

DO NOT CONNECT TO DIRECT CURRENT (DC)

**INSTALLATION:**

The installation of this appliance should conform to the:

NATIONAL ELECTRIC CODE AND ALL ELECTRIC CODES AND  
ORDINANCES AND THE LOCAL ELECTRIC COMPANY RULES AND REGULATIONS

For your protection, we recommend that a qualified electrician install this appliance. He should be familiar with electrical installations and all electrical codes.

**POWER SUPPLY:**

This unit is wired for operation on single phase power supply only. The supply circuit should be properly fused and equipped with a means of disconnection, as required by local electrical code. The body of the appliance should be grounded. Do not ground to a gas supply line. Proper connections and power supply are essential for efficient performance. The external wiring should be in a flexible conduit or an approved flexible cable suitable for operation at 90°C and the proper size to carry the load.

**CONNECTION:**

A large connection compartment is located at the rear of the fryer. Remove the lower back panel for access to this compartment. A 7/8" diameter hole is located in the bottom of this compartment for attaching the conduit or cable with the proper clamp.

All wires must be so spliced or joined as to be electrically or mechanically secure and be covered with an insulation equal to that of the wire. Loose connections, or ones improperly made, can result in arcing, which in turn, can easily cause a fire.

**LEVELING UNIT:**

Level unit by adjusting the (4) feet which have an adjustment of 1" for accurate leveling and perfect line up with other StarMaster Series units.

**HI-TEMPERATURE LIMIT CONTROL:**

This unit is equipped with a high temperature limit control. The high limit control turns the fryer off, if for any reason the fat temperature rises above 425°F. To re-activate the fryer, push the reset button located on the back side of the fryer body.

**CAUTION:** Hot fat is potentially dangerous. Do not come in direct contact with hot fat.

## STAR-MASTER SERIES ELECTRIC APPLIANCE - MODEL 301HL ELECTRIC COUNTER FRYER

## OPERATING INSTRUCTIONS

1. Clean kettle thoroughly before using. Remove baskets, grasp element lift handle, and push catch (located on the left side of element housing) down and hold it there. Now raise elements to an almost vertical position. Grasp the kettle by the two handles and raise straight up to remove it from the body. The kettle may be washed in the sink like any other pot or container.
2. To lower heating elements, grasp element lift handle and release the catch by pushing it down and holding it there. Now lower heating elements down into the kettle.
3. Add Fat - Place 15 lbs. of fat into the fryer kettle. A fat level line on the rear of the kettle will guide you in determining the 15 lb. minimum fat level. A higher fat level can be used when frying bulky foods, such as chicken or fish cakes. The level should be chosen carefully so that the foaming action of the fat does not spill out of kettle. If solid shortening is used, pack carefully around the elements.
4. On-Off Switch - Turn the on-off switch knob to the "on" position and the thermostat dial knob to 200°.
5. Temperature Control - The thermostat is an on-off heat control. The signal light next to it indicates when the electric heating elements are on. When the fat reaches the temperature set on the thermostat knob, the signal light will go out.
6. Fry - When the fat has melted, turn the thermostat knob to the desired temperature required to properly fry the food. See frying chart for procedures and coating suggestions. Do not fry more food per batch than you can fry efficiently. Too much per batch causes excessive temperature drop, wastes fat, and nothing is gained in capacity.
7. Lowering Basket - When the fat has reached the proper temperature, the signal light will go out. After this has occurred, lower the basket and food slowly into the fat. When moist food is lowered too quickly into hot fat, the fat will foam and spatter excessively.
8. Drain - After the food has finished frying, raise the baskets and hang them on the handles of the kettle. Allow the excess fat to drain back into the kettle.
9. Idling - During idle periods, lower the temperature setting of the thermostat to approximately 200°. It is not necessary to maintain full cooking temperature during idle periods, for the fat can be re-heated quickly to the desired temperature. This practice will result in longer fat life and less power consumption.
10. To Turn Off Fryer - Turn the on-off switch knob to the "Off" position.
11. To Drain The Kettle - Turn the on-off switch knob to the "Off" position and remove the baskets. Raise the heating elements up until they lock in the drain position. After they have drained, grasp the element handle and release the catch by pushing it down. Now raise the heating elements until they lock in a vertical position. Siphon the oil out of the kettle. **DO NOT ATTEMPT TO REMOVE THE KETTLE FILLED WITH HOT OIL.** If you do not have a siphon, dip the oil out of the kettle. After the oil is drained, remove the kettle for cleaning.
12. Cleaning The Exterior - The exterior surfaces can be kept clean and attractive with regularly wiping it with a clean soft cloth. Any discoloration can be removed by nonabrasive cleaner.
13. Reassembling - After the kettle has been cleaned and the fryer body wiped off, return the kettle to its opening. Grasp the element handle and release the catch by pushing down and holding it there. Now lower the elements down into the kettle.

TROUBLE SHOOTING CHART

TROUBLE	CAUSE	REMEDY
1. Fryer does not heat.	A. On-off switch not on. B. Fuse blown. C. Power line disconnect open. D. Heating Element burned out. E. Bad thermostat. F. Plug disconnected. G. Hi-Limit Control Activated.	Turn switch to "On". Replace fuse. Reset disconnect switch. Call service station.  Call service station. Connect. Push reset button.
2. Fryer not hot enough.	A. Thermostat out of calibration.	See instructions on thermostat recalibration.
3. Fryer too hot.	A. Thermostat out of calibration.	See instructions on thermostat recalibration.
4. Fat foams over.	A. Bad or old fat. B. Too much fat.	Replace fat (See Care of Fat) Fill only to fat level line.
5. Fries too slow.	A. Too large load.  B. Improper thermostat setting. C. Thermostat out of calibration. D. Wrong voltage	See Item 5, Operating Instructions. Reset thermostat.  Recalibrate  Call electrician

THERMOSTAT RECALIBRATION:

1. To determine whether or not the thermostat should be recalibrated, use an accurate thermometer located approximately in the center of the kettle with the bulb 1" below the top of the fat.
2. Set thermostat to 350° and check the thermostat when pilot light goes off. Temperature should be approximately 5°F less than the thermostat dial setting.
3. If not:
  - a. Pull knob forward and remove from shaft.
  - b. Turn screw in center of shaft clockwise to decrease temperature or counterclockwise to increase temperature. NOTE: 1/4 turn of this screw will result in a change of approximately 30°F.
  - c. Replace knob.

# CAUTIONS FOR ALL DEEP FAT FRYERS

NEVER LEAVE AN OPERATING FRYER UNATTENDED

REMEMBER HOT OIL IS DANGEROUS – **RESPECT IT!**



## WARNING – INSTALLATION

- Locate your fryer in a protected place so that it cannot be tipped over or knocked off its support. A mechanical restraint should be installed to prohibit the fryer from tipping or moving. Consult your local codes for allowable methods of restraint.
- Install an automatic fire extinguisher over the fryer and in the exhaust duct.
- Be sure your power supply is installed properly and in accordance with the local and national codes.
- Install a shut-off switch or gas valve close to the fryer. It must turn off the fryer immediately.
- Failure to add a mechanical restraint can result in oil splashing out and contacting the skin, leading to serious injury or death!



## WARNING – HOT OIL

- Hot oil is dangerous – Severe burns can result when hot oil contacts the skin.
- Hot oil is flammable – Keep open flames away from hot oil and its vapors.
- Never allow water or ice to get in hot oil.  
**IT CAN EXPLODE!**



## WARNING - ENVIRONMENT

- Keep your floors clean and free of grease and all other substances so no one slips accidentally and contacts the hot fryer.
- Keep areas and filters clean above your fryers – Oil soiled lint or dust can ignite easily and flames will spread rapidly.



## WARNING – MAINTENANCE

- Have your equipment checked regularly to insure its safe and properly functioning.
- If your fryer starts to smoke or boil abnormally, cut off the power supply immediately and determine the reason for the smoking or boiling before attempting to use it again.



## WARNING – TRAINING

- Train all personnel to understand the hazards of hot oil. Instruct them on the proper action to take if something does not seem to be acting properly.
- Instruct your personnel on what to do if there is an oil fire. Do not use water on an oil fire! Use only fire extinguishers of the approved type and never direct such extinguishers so as to blow the oil out of the oil container.

## CARE OF FAT

In three to six months you may spend as much for fat as you paid for your kettle. So fat is an item you want to know all about; how to select it; how to manage it. The more production you can get from each pound of fat, the more profitable your frying operation will be.

To get a high rate of production per pound of fat you have to avoid two things. One is early breakdown and spoilage of the compound so that you have to throw it away before it does enough work to "earn its keep." The other is excessive sponging up of fat by the food being fried.

The main cause of fat breakdown is excessive heat. On the other hand abnormal absorption is caused by frying too long at too low temperatures. One answer to both problems is exact control of heat — so that fat neither smokes up nor soaks up.

Of course, no fat "keeps" forever. Not only heat, but air and moisture, salt particles and crumbs of food work to break it down. But you can slow up fat deterioration by maintaining proper temperatures and by draining your kettle, filtering or straining the fat once or twice a day and by keeping the kettle itself absolutely clean.

A number of commercial devices and materials are available to aid in eliminating fat impurities. There are several excellent models of pressure filters as well as strainer-type filters, which, if used regularly, will prolong life of fat.

However, no purification device will renew broken down or rancid fat or put new life into it. Once you have allowed fat to break down it becomes unsuitable for frying — in fact browning is impossible.

In addition to filtration, you can prolong the usefulness of fat by sweetening it with fresh compound every day - replacing about 15% of the bulk you started with. If you do enough frying so that normal absorption of fat in food amounts to 15% to 20% of the capacity of your kettle every day - then you can call that your turn-over food. It means you can add the recommended 15% of fresh fat without discarding any of the old.

### 10 POINT PROGRAM TO PRESERVE FAT AND PRODUCE THE FINEST FRIED FOODS

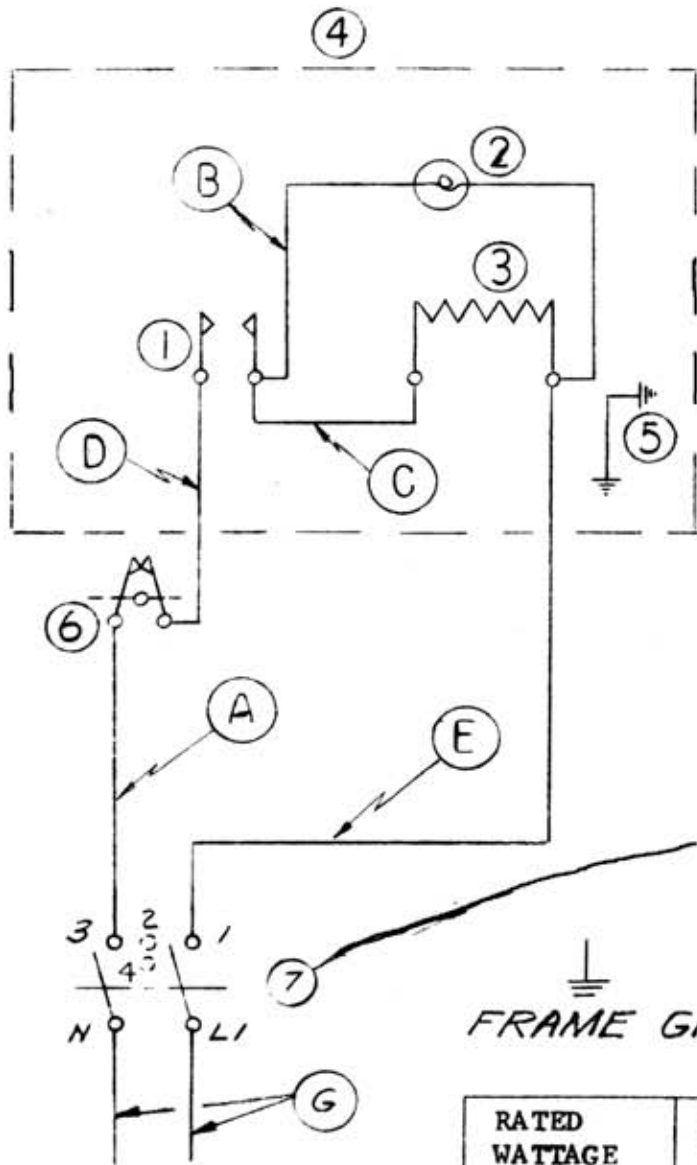
1. Choose a fat that does not break down quickly. Hydrogenated shortening, corn, and peanut oils are less likely to break down under high temperatures.
2. Do not fry foods at temperatures above those recommended. The higher the fat temperature, the more rapid the rate of fat deterioration. Above 400°F fats quickly deteriorate.
3. During short intervals between frying, turn the heat down. Do not keep heat on for long periods between batches.
4. Keep fat clean. Strain or filter daily or at end of each shift. Add at least 15% fresh fat to your kettle daily.
5. At least once a day, cool a small amount of fat and taste it to see if it has picked up foreign flavors.
6. Discard fat that tends to bubble excessively before food is added.
7. Do not overload baskets-pieces should not touch when frying. Shake baskets to prevent food from sticking together. Fry similar sizes together.
8. Never salt foods directly over fat, salt in fat reduces its life.
9. Raw, wet foods, such as potatoes and oysters, should be drained or wiped dry before frying to extend the life of the frying fat. Have foods to be fried at room temperature.
10. Keep fat temperatures below smoking point to minimize frying odors.

## HANDY FRYING CHART

FOOD	COATING	PROCEDURE	TEMP	TIME IN MINUTES
<b>POTATOES</b>				
Standard French Fries		Cut in uniform pieces 1/2"	350°	5-7
Blanch Only		square the long way	350°	3-1/2
Brown Only			350°	3-1/2
Long Branch		Cut in uniform pieces 3/4"		
		square the long way	350°	7-10
Julienne (shoe string)		Cut in uniform pieces 1/8"		
		to 1/4" square the long way	350°	3-6
Chips		Soak in cold running water until water does not run milky	350°	2-3
<b>CHICKEN</b>				
Large Pieces	Batter or	Some prefer rolling in	325°	9-11
Small Pieces	Breading	seasoned flour, dipping in egg	340°	7-10
Pre-cooked		wash, and frying	350°	3-4
<b>FISH</b>				
Fillets (Large)	Breading	Select fillets of uniform	350°	4
Fillets (Small)	or Batter	size, skin out and dry.	350°	3
Oysters	Breading	Use Oyster liquor in batter		
	or Batter	or breading	350°	5
Clams	Batter		350°	1
Scallops	Breading		350°	4
Shrimp	Batter	Some prefer soaking 1/2 hour		
		in cold seasoned milk	350°	3
Smelts	Breading	Cut spinal cord several	350°	4
		places to prevent curling		
<b>MEATS</b>				
Chicken Fried Steak	Breading	Sever all connecting membranes		
		at one inch intervals to prevent		
		curling	360°	3-4
Cutlets	Breading		350°	3-4
Chops	Breading		340°	3-4
Meat Balls	Breading or			
	rolled in flour		340°	4-6
Brains	Breading		340°	3-5
<b>VEGETABLES</b>				
Asparagus	Batter or crumbs	Pre-cook in salted water	350°	3
Cauliflower	Batter or crumbs	Pre-cook and separate flowers	350°	3
Egg Plant	Crumb Breading	Peel, cut cross-wise into 1/4"		
		slices	350°	3
Onions	Light batter	Slice thin, soak in milk for		
		two hours	350°	3
<b>FRITTERS</b>				
Fruit (bananas, pineapples, apricots, berries)		Serve with fruit juice	350°	3-5
Corn	Batter	Serve with syrup or jelly	350°	3-5
Vegetable (peas, green beans)		Serve with tomato cheese sauce	350°	5-8
<b>MISCELLANEOUS</b>				
Croquettes	Breading		360°	3
Chinese Noodles			375°	1-2
French Toast			375°	1
<b>DOUGHNUTS</b>				
Cake			375°	1-1/2 - 2
Yeast, raised			375°	1

# MODEL 301-HL

# WIRING DIAGRAM



- ① THERMOSTAT
- ② SIGNAL LIGHT
- ③ HEATING ELEMENT (5500 WATTS)
- ④ ELEMENT HOUSING
- ⑤ GROUND
- ⑥ HI LIMIT THERMOSTAT
- ⑦ ON-OFF SWITCH

### WIRE SIZES:

- Ⓣ #14 GA.
- ALL OTHER WIRING IS #12 GA.

### CAUTION:

**DO NOT** MAKE ANY CONNECTIONS TO TERMINALS 2 AND 4.  
A DEAD SHORT WILL RESULT.

Ⓣ  
FRAME GROUND

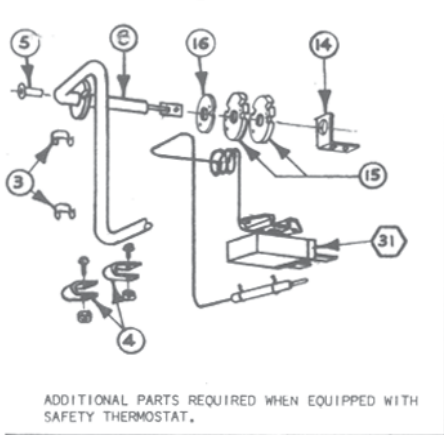
### REVISIONS

A  
B  
C  
D  
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F

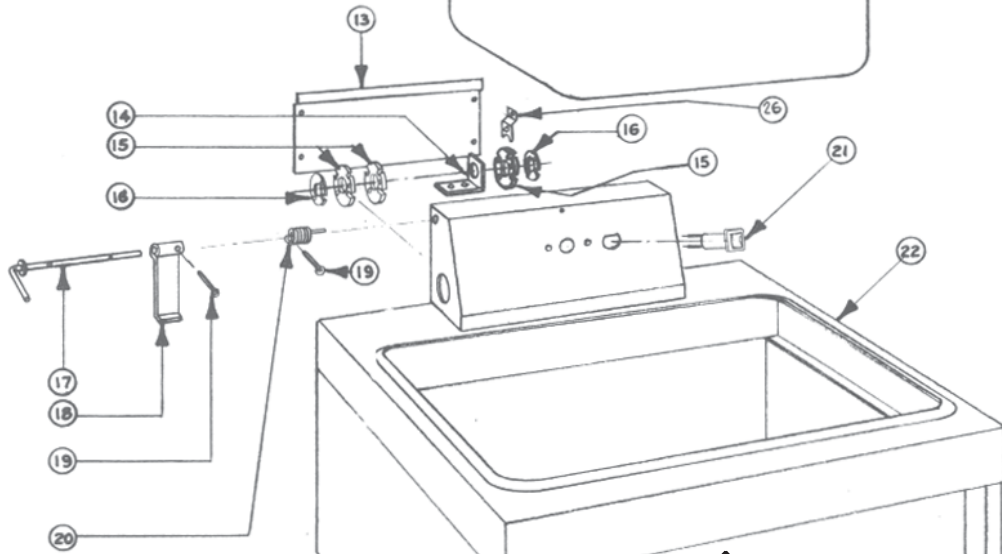
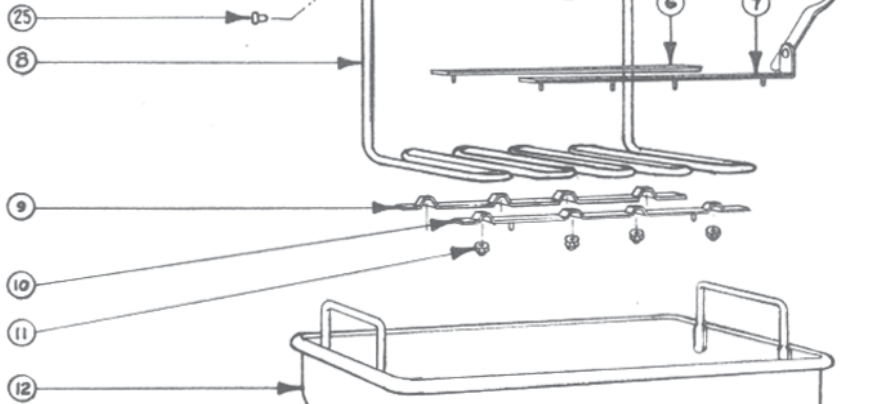
POWER  
SUPPLY

RATED WATTAGE	SINGLE PHASE	NOMINAL AMPS	FOR POWER SUPPLY CONNECTIONS USE NO.
5500	208V	26.4	10 AWG OR LARGER
	240V	22.9	12 AWG OR LARGER

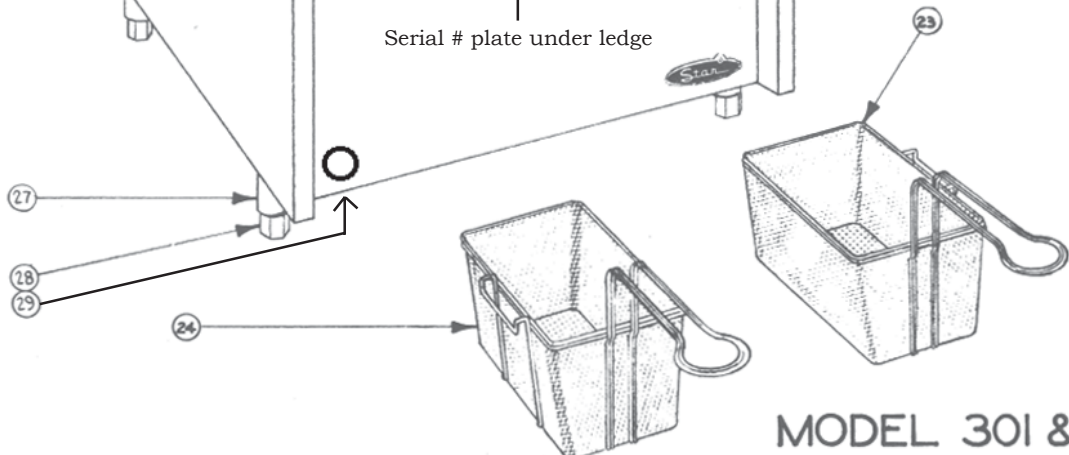
NOTE: FOR SUPPLY CONNECTIONS USE COPPER WIRE ONLY SUITABLE FOR AT LEAST 90°C (194°F)



ADDITIONAL PARTS REQUIRED WHEN EQUIPPED WITH SAFETY THERMOSTAT.



↑  
Serial # plate under ledge



# MODEL 30I & 30IHL

STAR MANUFACTURING COMPANY

ST. LOUIS, MO. 63132 DIVISION OF HERCULES GALION PRODUCTS INC.





MODEL 301 & 301HL

Key Number	Part Number	Number Per Unit	Description
1	2T-Z7268	1	Thermostat
2	2R-9263	1	Knob, Thermostat
3	2P-5737	5	Clip, Capillary Tube
4	E1-7363	4	Clamp, Thermostat Bulb
5	E3-9288	2	Bushing - Split
6	E3-9280	1	Clamp - Element, Rear
7	301010 = <b>NLA</b>	1	Handle and Clamp Assembly
8	2N-Z2920	1	Element, 208/240V
9	9303 = <b>NLA</b>	1	Strap - Element, Rear
10	301008 = <b>NLA</b>	1	Strap - Element, Front
11	2C-2555	8	Nut, Acorn (8-32)
12	2D-301007	1	Kettle Assembly
13	E3-9262	1	Back, Element Housing
14	E3-7674	2	Angle - Retainer
15	E3-9270	3	Plate - Element Support
16	E3-9269	4	Bearing, Pivot
17	2A-301005	1	Release Rod Assembly
17a	9572 = <b>NLA</b>	1	Release Arm
18	E3-9276	1	Arm - Pawl
19	2A-5401	2	Pin - Cotter
20	2P-9274	1	Spring - Release
21	Z1-301013	1	Pilot Light Assembly
22	301001 = <b>NLA</b>	1	Top Assembly
23	2B-301042	1	Basket Assembly, Right Hanger
24	2B-301041	1	Basket Assembly, Left Hanger
26	2P-Y1621	1	Clip - Ground
27	Z1-115006	4	Leg Assembly ( <i>Less Foot</i> )
28	2A-7612	4	Foot
29	2E-3966	1	Switch - Rotary, On/Off
29a	2R-Y2303	1	Knob, Switch ( <i>not shown</i> )
31	2T-Z3209	1	Safety Thermostat ( <i>short bulb</i> )
			<b><u>PARTS REQUIRED TO ADD SAFETY THERMOSTAT</u></b>
3	2P-5737	1	Clip, Capillary Tube
4	E1-7363	2	Clamp, Thermostat Bulb
5	E3-9288	1	Bushing - Split
14	E3-7674	1	Angle - Retainer
16	E3-9269	1	Bearing, Pivot

IMPORTANT: WHEN ORDERING, SPECIFY VOLTAGE OR TYPE GAS DESIRED  
INCLUDE MODEL AND SERIAL NUMBER

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OF 1

Some items are included for illustrative purposes only and in certain instances may not be available.



Star Manufacturing International, Inc.