



A Division of Star Mfg. Int'l, Inc.

Installation, Operation, and Maintenance Instructions

Thermostat Drop-In Griddle

Models:

136T-DI

148T-DI

160T-DI

Safety

THE INFORMATION IN THIS MANUAL IS CRUCIAL AND MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

DANGER

POTENTIALLY HAZARDOUS SITUATION, WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH.



WARNING

POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.



CAUTION

POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY.



NOTICE

Helpful operation and installation instructions and tips are present.












FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

WARNING: IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

Model #:	Purchased from:
Serial #:	Location:
Date purchased:	Date installed:
Purchase order #:	For service, call:

CAUTION	<p>THE GRIDDLE IS EXTREMELY HEAVY. FOR SAFE HANDLING, INSTALLER SHOULD OBTAIN HELP AS NEEDED, OR EMPLOY APPROPRIATE MATERIALS HANDLING EQUIPMENT (SUCH AS A FORKLIFT, DOLLY, OR PALLET JACK) TO REMOVE THE UNIT FROM THE SKID AND MOVE IT TO THE PLACE OF INSTALLATION.</p> <p>ANY STAND, COUNTER OR OTHER DEVICE ON WHICH GRIDDLE WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE GRIDDLE.</p>	
	<p>BE SURE THE POWER SUPPLY VOLTAGE MATCHES THE VOLTAGE SPECIFIED ON THE NAMEPLATE LOCATED ON THE TOP OF THE CONTROL BOX</p> <p>SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.</p>	
DANGER	<p>THIS APPLIANCE MUST BE GROUNDED AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE APPLIANCE COULD RESULT IN ELECTROCUTION AND DEATH.</p>	
WARNING	<p>INSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.</p>	
NOTICE	<p>The data plate is on top of the control box. The griddle voltage, wattage, serial number, wire size, and clearance specifications are on the data plate. This information should be carefully read and understood before proceeding with the installation. The installation of any components such as a vent hood, grease extractors, fire extinguisher systems, must conform to their applicable National, State and locally recognized installation standards. During the first few hours of operation, you may notice a small amount of smoke coming off the unit, and a faint odor from the smoke. This is normal for a new griddle and will disappear after the first few hours of use.</p>	 
CAUTION	<p>ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS.</p> <p>KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.</p>	
NOTICE	<p>The times and temperatures in this chart are intended as a general guide and starting point. Your actual times and temperatures may vary from this chart.</p>	
WARNING	<p>KEEP WATER AND SOLUTIONS OUT OF CONTROLS. NEVER SPRAY OR HOSE CONTROL CONSOLE, ELECTRICAL CONNECTIONS, ETC.</p>	
CAUTION	<p>MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN TO WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING.</p>	

Safety

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CAUTION:

ANY STAND, COUNTER OR OTHER DEVICE ON WHICH GRIDDLE WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE GRIDDLE.



SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.

DANGER:

THIS APPLIANCE MUST BE GROUNDED AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE APPLIANCE COULD RESULT IN ELECTROCUTION AND DEATH.



WARNING:

INSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.

The data plate is on top of the control box. The griddle voltage, wattage, serial number, wire size, and clearance specifications are on the data plate. This information should be carefully read and understood before proceeding with the installation.



The installation of any components such as a vent hood, grease extractors, fire extinguisher systems, must conform to their applicable National, State and locally recognized installation standards.

NOTICE:

During the first few hours of operation, you may notice a small amount of smoke coming off the unit, and a faint odor from the smoke. This is normal for a new griddle and will disappear after the first few hours of use.



CAUTION:

ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS.

KEEP THE FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.

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General Information

Exterior

The griddle dimensions are 26" (66cm) Deep, 5 3/8" (13.65cm) High, and width is dependent on model number.

The griddle surface is constructed of 1" thick highly polished steel to reduce hot and cold spots, recovery problems, and ensured even heat through out the griddle.

Controls

Each twelve-inch section has its own easy to use manual thermostat with a temperature range from 175°F to 450°F in 25° increments.

Each twelve-inch section has a set of 6 kW elements for high efficiency, quick recovery and outstanding performance.

Unpacking

Receiving the Griddle

Upon receipt, check for freight damage, both visible and concealed. Visible damage should be noted on the freight bill at the time of delivery and signed by the carrier's agent. Concealed loss or damage means loss or damage, which does not become apparent until the merchandise has been unpacked. If concealed loss or damage is discovered upon unpacking, make a written request for inspection by the carrier's agent within 15 days of delivery. All packing material should be kept for inspection. Do not return damaged merchandise to Lang Manufacturing Company. File your claim with the carrier.

Location

Prior to un-crating, move the griddle as near its intended location as practical. The crating will help protect the unit from the physical damage normally associated with moving it through hallways and doorways.

Un-crating

The griddle will arrive completely assembled inside a wood frame covered by cardboard box and strapped to a skid. **Remove the cardboard cover, cut the straps and remove the wood frame.**

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CAUTION	ANY STAND, COUNTER OR OTHER DEVICE ON WHICH GRIDDLE WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE GRIDDLE.
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CAUTION	SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.
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Remove griddle from skid and place in the intended location.

Installation

DANGER	THIS APPLIANCE MUST BE GROUNDED AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE APPLIANCE COULD RESULT IN ELECTROCUTION AND DEATH.	
WARNING	INSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.	
NOTICE	The data plate is on top of the control box. The griddle voltage, wattage, serial number, wire size, and clearance specifications are on the data plate. This information should be carefully read and understood before proceeding with the installation.	
NOTICE	The installation of any components such as a vent hood, grease extractors, fire extinguisher systems, must conform to their applicable National, State and locally recognized installation standards.	

Cabinet Preparation

Cabinet Base must have cross air ventilation. It does not matter if it is on the ends or sides.

If vents are not installed, the controls may overheat and damage the griddle.

For best results provide a knockout for the control panel a minimum of 4½ inches away from the griddle support surface as shown on next page.

Installing Griddle into Cabinet

Turn the griddle over, taking care not to kink the thermostat capillary tubes.

Set the griddle on the table that it is to be installed in (leaving a hole big enough to slip the control panel through).

Insert the control panel through the hole and out the control opening of the cabinet.

The hole must be such that the control box can come out of the cabinet 18" for serviceability.

Lower the griddle plate to sit flat in the table opening.

Electrical Connection

The electrical connection must be made in accordance with local codes or in the absence of local codes with **NFPA No. 70**; latest edition (in Canada use: **CSA STD. C22.1**).

A power connection box is provided for power connection.

This box must be installed a minimum of 18 inches away from the heating elements in the cabinet box.

All electrical connections can be made at this box.

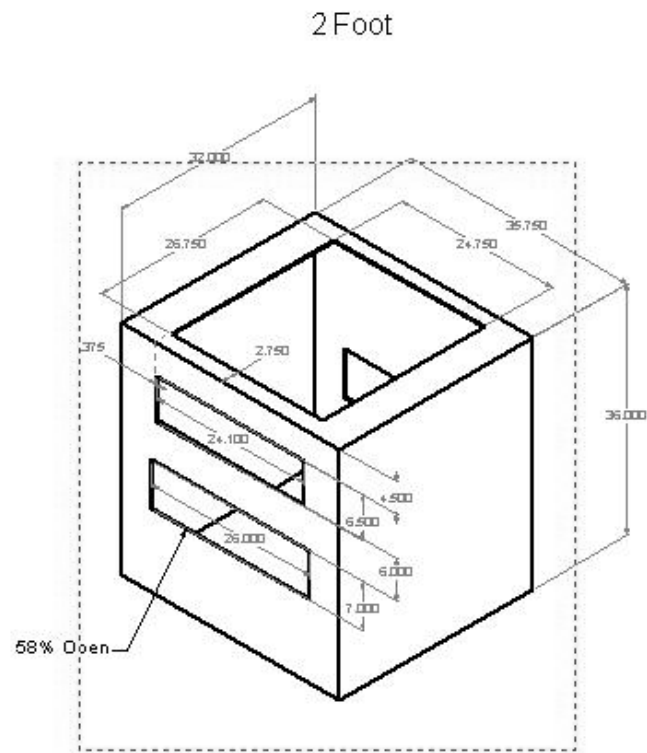
The griddle can now be connected to power.

CAUTION	VERIFY THE POWER SUPPLY VOLTAGE MATCHES THE VOLTAGE SPECIFIED ON THE NAMEPLATE LOCATED ON THE TOP OF THE CONTROL BOX
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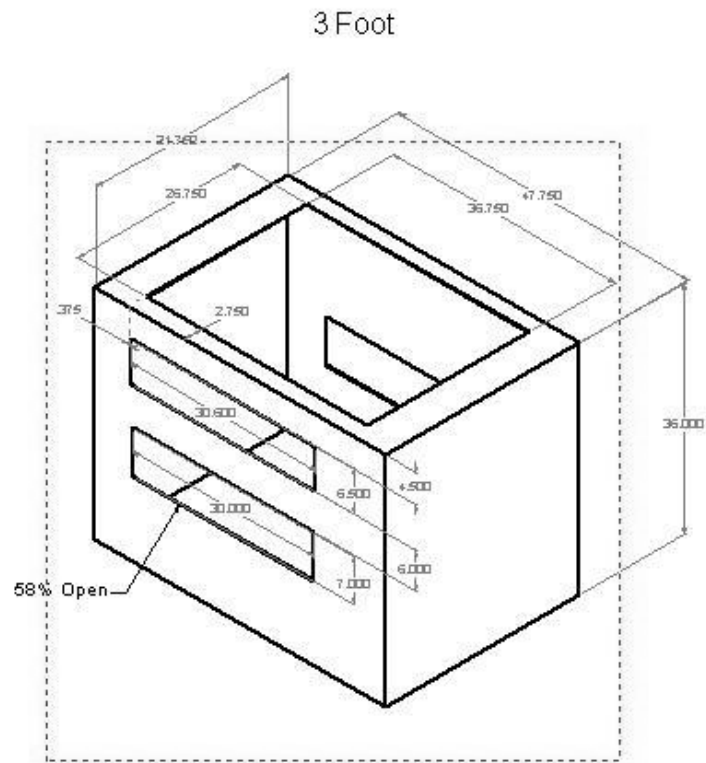


Installation cont'd.

24 Cabinet Cut-out

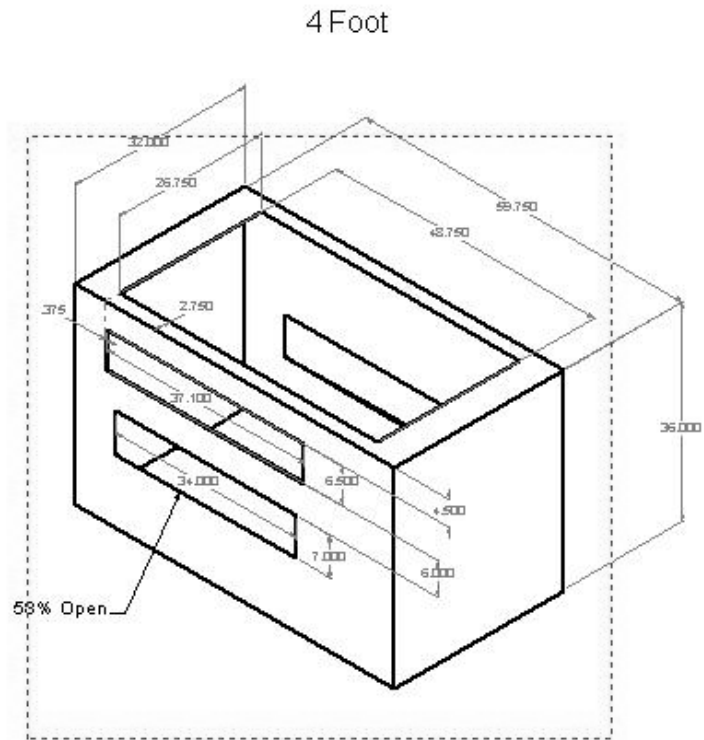


36 Cabinet Cut-out

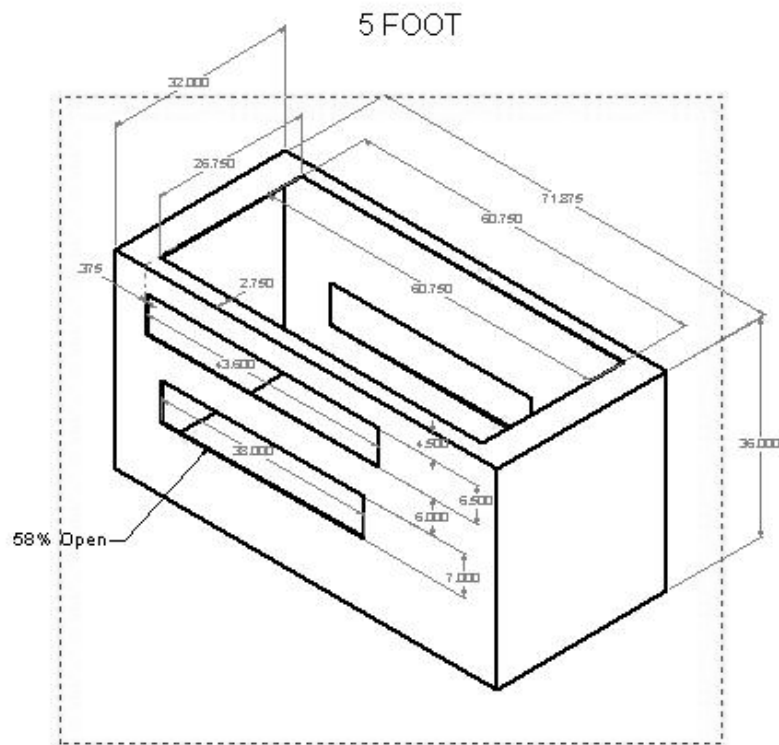


Installation cont'd.

48 Cabinet Cut-out

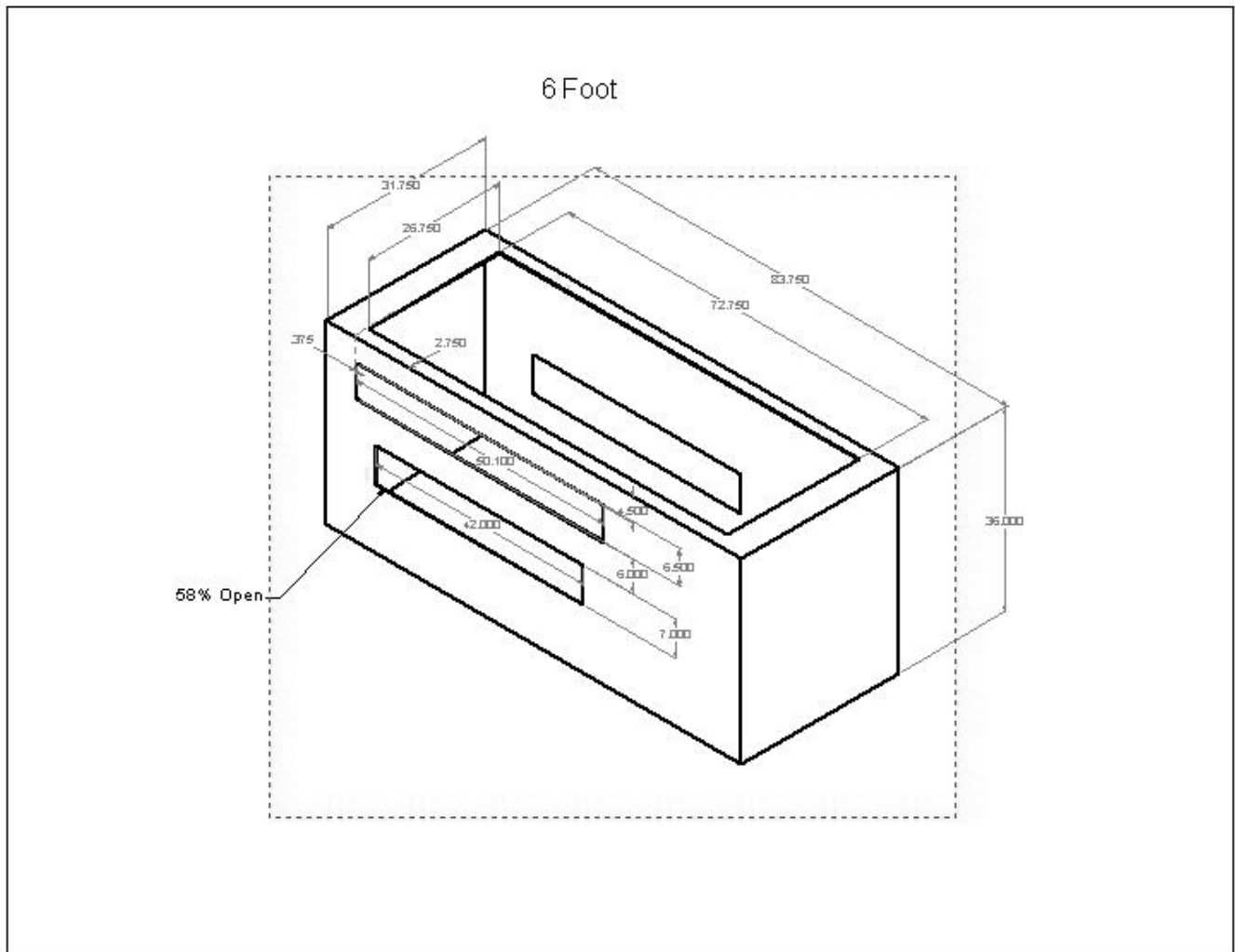


60 Cabinet Cut-out



Installation cont'd.

72 Cabinet Cut-out



Initial Start Up

NOTICE During the first few hours of operation, you may notice a small amount of smoke coming off the unit, and a faint odor from the smoke. This is normal for a new griddle and will disappear after the first few hours of use.

Pre-Power On

Before turning the griddle on verify all electrical connections and remove excess shipping grease from the griddle surface.

Power On

Set the temperature dials to 200°F (93°C).

Heat the griddle at 200°F (93°C) for 2 hours to evaporate any moisture that may be in the elements.

After 2 hours at 200°F (93°C), turn the griddle temperature up to 350°F (177°C) for 30 minutes.

After the griddle reaches 350°F (177°) for 30 minutes, turn the griddle up another 50°F (10°) for another 30 minutes and repeat this until the griddle is at 450°F (232°C) for 30 minutes

The griddle may emit a small amount of smoke as the cooking surface passes the 300°F (149°C) point. Do not be alarmed as the smoke is caused by oils associated with the manufacturing process and will stop when the griddle reaches 350°F (177°C).

Seasoning Cooking Surface

The cooking surface must be "seasoned" in order to eliminate product sticking during cooking.



To season, heat the griddle to 250°F (121°C).

Once at 250°F (121°C), coat the cooking surface with non-salted vegetable oil.

Allow the griddle to stand at 250°F (121°C) until the cooking surface looks dry then coat it again.

Heat the griddle to 350°F (177°C) and repeat the procedure.

Cleaning and Maintenance

CAUTION	ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS.KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.	
WARNING	KEEP WATER AND SOLUTIONS OUT OF CONTROLS. NEVER SPRAY OR HOSE CONTROL CONSOLE, ELECTRICAL CONNECTIONS, ETC.	
CAUTION	MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNING AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.	

Cleaning

The griddle should be thoroughly cleaned at least once a week in addition to the normal daily cleaning to insure against the accumulation of foreign material.

Electric equipment is inherently clean and sanitary, but may become unsanitary if dirt is allowed to accumulate on it. Take advantage of the clean, sanitary features of electric equipment, give it the regular attention that it deserves the same as any other highly perfected machinery, to insure best results and continued high operating efficiency.

Always start with a cold griddle and follow the cleaner manufacturer's instructions when using any cleaner.

Griddle surface may be cleaned using Lang Carbon Release (61-72804-32) cleaner. Always apply these cleaners when the griddle is cold and rub in the direction of the metal's grain.

CALIBRATION

Calibration Check

Place thermometer or thermocouple in the center of griddle directly over the sensor.

Set thermostat to 350°F(177°).

Allow the griddle to Preheat for at least 30 minutes.

Note cycle “ON” temperatures and cycle “OFF” temperatures for 3 cycles. (Red indicator light indicates when the griddle is calling for heat)

After 3 cycles average the temperature. (Add all six temperatures and divide by 6).

The temp should be +/-10°F (-12°C).

Calibration Adjustment

A 1/16” flat blade screwdriver with a 2” shaft is required to make adjustments on the thermostat.

Maintain the griddle temperature at 350°F(177°C).

Without turning the thermostat, remove the knob.

Locate the adjustment screw at the base of the shaft and insert the screwdriver.

Grasp the shaft and turn the screwdriver. Counter clockwise to increase and clockwise to decrease (1/8 of a turn will move the temperature 5-7° (in either direction).

Reinstall the thermostat knob and recheck the griddle temperature.

Troubleshooting

Symptoms

Troubleshooting is not an exact science. Several factors may play a part in why your machine is not operating correctly. The following symptoms are a general idea of what may be causing the malfunction and should not be considered the complete answer to the situation that you have with your machine. Here are some of the possible problems you may encounter and possible solutions to those problems.

If the information does not assist you in correcting the problem, contact the nearest Lang service agent or Star Manufacturing International.

Refer to the Symptoms column to locate the type of failure then to the Possible Cause for the items to be checked.

To test for a possible cause, refer to the TEST section and locate the possible cause then refer to test to identify test procedures.

What follows is a chart of Symptoms, Possible Causes, and Remedy's to aid in diagnosing faults with the griddle.

Refer to the Symptoms column to locate the type of failure then to the Possible Cause for the items to be checked and the Remedy to column for possible solutions.

SYMPTOM	POSSIBLE CAUSE
Griddle will not heat	<ul style="list-style-type: none">• No power to unit• Defective thermostat• Defective element
Product is under cooked	<ul style="list-style-type: none">• No power to griddle• Thermostat out of calibration• Defective thermostat
Product is burning	<ul style="list-style-type: none">• Thermostat out of calibration• Defective thermostat

NOTICE

Qualified personnel must perform service on this or any other, Lang appliance. Consult your authorized service agent directory. You can call our toll free number 1-800-807-9054 or visit our website WWW.STAR-MFG.COM for the service agent nearest you.



WARNING

BOTH HIGH AND LOW VOLTAGES ARE PRESENT INSIDE THIS APPLIANCE WHEN THE UNIT IS PLUGGED/WIRED INTO A LIVE RECEPTACLE. BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY.



Troubleshooting cont'd.

TESTS

If an item on the list is followed by an asterisk (*), the work should be done by a factory authorized service representative.

POSSIBLE CAUSE	TEST
Product is cooked too long	<ul style="list-style-type: none">• No test available, operational condition
Failed thermostat	<ul style="list-style-type: none">• Verify calibration• Replace thermostat*
Failed element	<ul style="list-style-type: none">• Remove the wires and check for continuity across the element *• Replace element*

CAUTION

USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY LANG OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.



PARTS LIST

May 31, 2007, Rev B

Models: 136T-DI

Part No.	Description	Qty	Application
2E-30500-03	TRM STRP 6 POLE 30A 300V	2	136TDI
2E-30500-07	TRM BLOCK 3PLELRGE 125AMP	2	136TDI
2E-30500-07	TRM BLOCK 3PLELRGE 125AMP	1	136TDI-480V
2J-31601-01	PILOT LT 250V 6LEAD BLK	3	136TDI
2J-31601-02	PILOT LT 480V 6LEAD BLK	4	136TDI-480V
2N-11030-29	ELE GRD 208/240V4.5KW/6KW	3	136TDI
2N-11030-30	ELMNT GRID 208V 1257W	3	136TDI
2N-11030-31	ELMNT GRID 480V 5991W	4	136TDI-480V
2P-50100-05	GROOVED GRIDDLE CLEANING	AR	
2P-50100-051	GRVED GRDLE BRUSH REPL	AR	
2P-50100-052	GRVED GRDLE BRUSH REPL	AR	
2T-30402-08	STAT ADJ 450o 72 C/T	3	136TDI
K9-50302-05	ELEMENT PAN ASSY XL/LG	3	136TDI
K9-LGD-228	GREASE BUCKET ASSY	1	136TDI
Y9-70701-16-1	KNOB 450o A PHANTOM	3	136TDI, 136TDI-480V

Models: 148T-DI

Part No.	Description	Qty	Application
2E-30500-02	TRM STRP 4 POLE 30A 600V	2	148TDI
2E-30500-07	TRM BLOCK 3PLELRGE 125AMP	6	148TDI
2E-30500-07	TRM BLOCK 3PLELRGE 125AMP	2	148TDI-480V
2J-31601-01	PILOT LT 250V 6LEAD BLK	5	148TDI
2J-31601-02	PILOT LT 480V 6LEAD BLK	5	148TDI-480V
2N-11030-29	ELE GRD 208/240V4.5KW/6KW	4	148TDI
2N-11030-30	ELMNT GRID 208V 1257W	4	148TDI
2N-11030-31	ELMNT GRID 480V 5991W	4	148TDI-480V
2P-50100-05	GROOVED GRIDDLE CLEANING	AR	
2P-50100-051	GRVED GRDLE BRUSH REPL	AR	
2P-50100-052	GRVED GRDLE BRUSH REPL	AR	
2T-30402-08	STAT ADJ 450o 72 C/T	4	148TDI
K9-50302-05	ELEMENT PAN ASSY XL/LG	4	148TDI
K9-LGD-228	GREASE BUCKET ASSY	1	148TDI
Y9-70701-16-1	KNOB 450°F A PHANTOM	4	148TDI

PARTS LIST

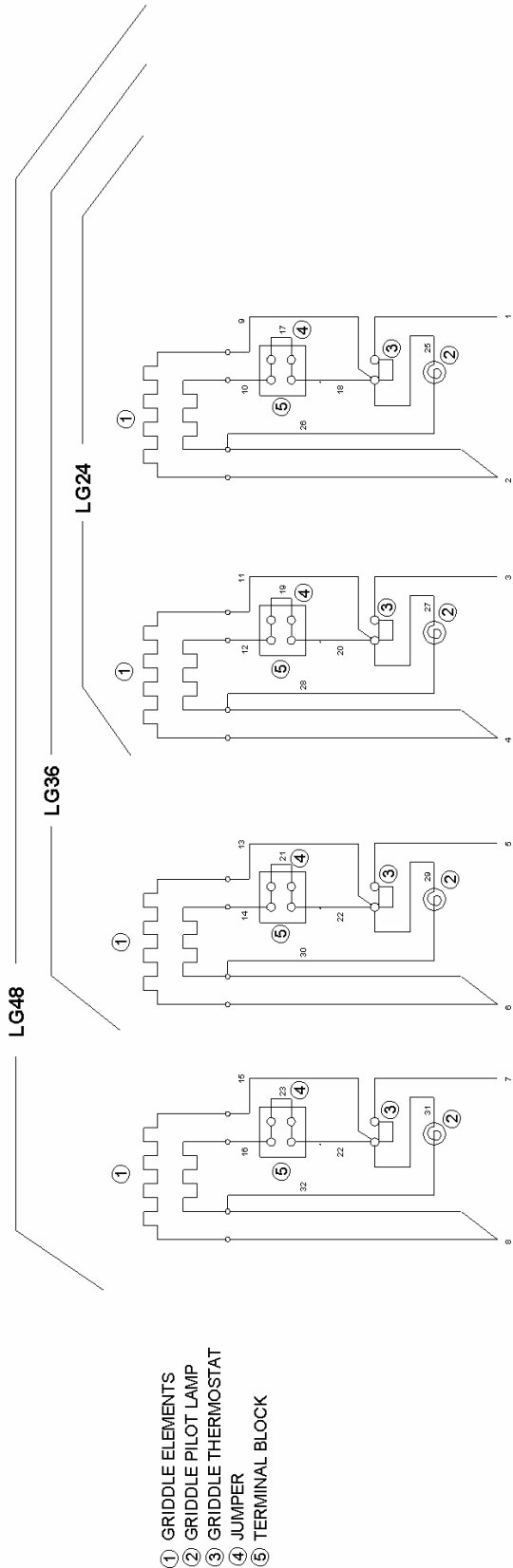
May 31, 2007, Rev B

Models: 160T-DI

Part No.	Description	Qty	Application
2E-30500-07	TRM BLOCK 3PLELRGE 125AMP	2	160TDI
2E-30500-07	TRM BLOCK 3PLELRGE 125AMP	3	160TDI-480V
2J-31601-01	PILOT LT 250V 6LEAD BLK	5	160TDI
2J-31601-02	PILOT LT 480V 6LEAD BLK	5	160TDI-480V
2N-11030-29	ELE GRD 208/240V4.5KW/6KW	5	160TDI
2N-11030-30	ELMNT GRID 208V 1257W	5	160TDI
2N-11030-31	ELMNT GRID 480V 5991W	5	160TDI-480V
2P-50100-05	GROOVED GRIDDLE CLEANING	AR	
2P-50100-051	GRVED GRDLE BRUSH REPL	AR	
2P-50100-052	GRVED GRDLE BRUSH REPL	AR	
2T-30402-08	STAT ADJ 450o 72 C/T	5	160TDI-480V
K9-50302-05	ELEMENT PAN ASSY XL/LG	5	160TDI
Y9-70701-16-1	KNOB 450°F A PHANTOM	5	160TDI

Wiring Diagram

Revision Block		DESCRIPTION		DR.	MFG.	ENG.	DATE
REV.	ECN NO.	REVISED AND REDRAWN		CDS	DLG		10/15/2002
E							
F		ADDED 220VAC FOR LGCL					12/13/2002



NOTES:
LG60 & LG72 HAVE TWO POWER SUPPLY CONNECTIONS
LG60: CONN #1 USE LG36
CONN #2 USE LG24
LG72: CONN #1 USE LG36
CONN #2 USE LG36

MODEL	VOLT	Kw			AMP TOTALS			AMPS 1 PHASE	THREE PHASE			SINGLE PHASE		
		L1/L2	L2/L3	L1/L3	TOTAL	L1	L2		L3	L1	L2	L3	L1	L2
LG24	208	6.0		6.0	12.0	50.0	28.9	28.9	57.7					
	220	6.7		6.7	13.4	52.9	30.5	30.5	60.9	1.4	2	3	1.3	2.4
	240	6.0		6.0	12.0	43.3	25.0	25.0	50					
LG36	208	6.0	6.0	6.0	18.0	50.0	50.0	50.0	86.5					
	220	6.7	6.7	6.7	20.1	52.9	52.9	52.9	91.4	1.4	2.5	3.6	1.3,5	2.4,6
	240	6.0	6.0	6.0	18.0	43.3	43.3	43.3	75					
LG48	208	12.0	6.0	6.0	24.0	76.3	76.3	50.0	115.4					
	220	13.4	6.7	6.7	26.8	80.6	80.6	52.9	121.8	1.4,7	2.5,8	3.6	1.3,5,7	2.4,6,8
	240	12.0	6.0	6.0	24.0	66.1	66.1	43.3	100					

ELEMENT HOOKUP	
208-220 V	240V
INSTALL	REMOVE
JUMPER	JUMPER
(ITEM 4)	(ITEM 4)



DWN BY: DLG /

OWN DATE: 12-13-02 /

REV BY: /

CHK DATE: /

DESCRIPTION: LANG GRIDDLE 208-240/220VAC

CAD FILE FROM ACAD

DWG. NO: 61114-01

SHEET 1 OF 1

REV: F

Wiring Diagram 208/240 Volt

