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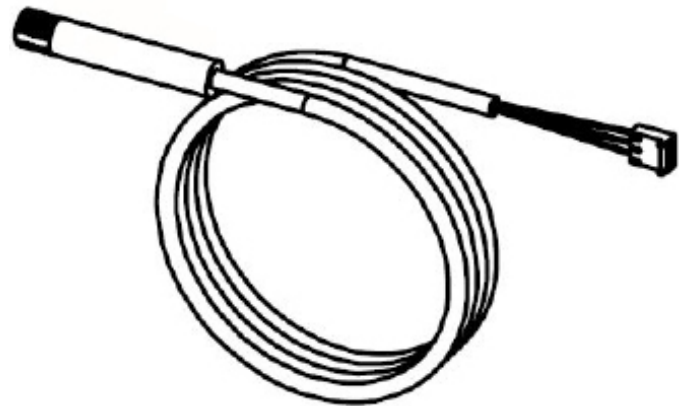
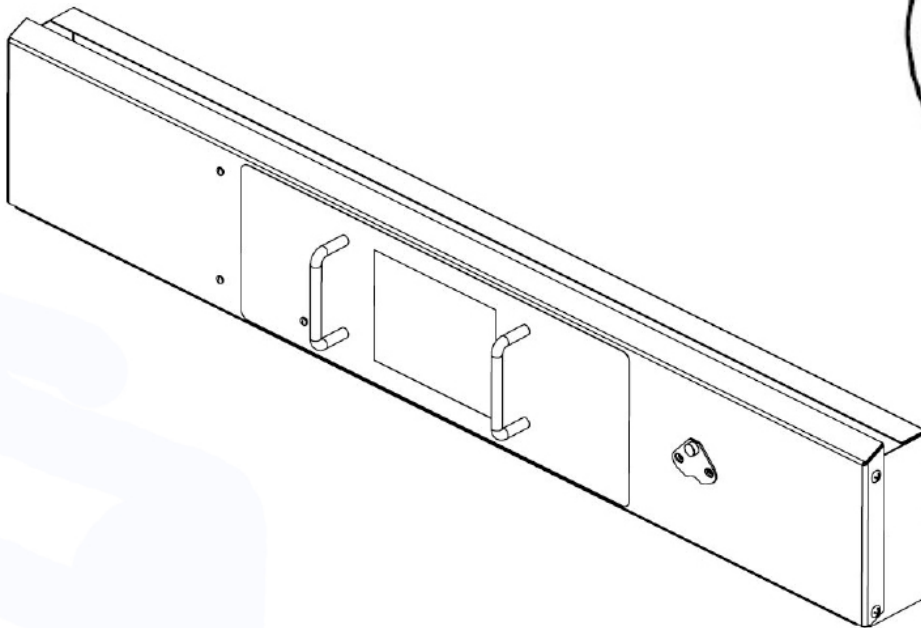
Installation Instructions

TSC - TSCM Retrofit

KIT #600531

Control Replacement

Humidity Probe Replacement



CAUTION: Please read this manual completely before attempting to install, operate or service this equipment

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IMPORTANT SAFETY INSTRUCTIONS

Throughout this manual, you will find the following safety words and symbols that signify important safety issues with regards to operating or maintaining the equipment.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Indicates Important Information



Indicates electrical shock hazard which, if not avoided, could result in death or serious injury and/or equipment damage.



Indicates hot surface which, if not avoided, could result in minor or moderate injury.



In addition to the warnings and cautions in this manual, use the following guidelines for safe operation of the unit.

- Read all instructions before using equipment.
- For your safety, the equipment is furnished with a properly grounded cord connector. Do not attempt to remove or disconnect the grounded connector.
- Install or locate the equipment only for its intended use as described in this manual.
- Do not use corrosive chemicals on this equipment.
- Do not operate this equipment if it has a damaged cord or plug, if it is not working properly, or if it has been damaged or dropped.
- This equipment should be serviced by qualified personnel only. Contact the nearest Duke authorized service facility for adjustment or repair.
- Do not block or cover any openings on the unit.
- Do not immerse cord or plug in water.
- Keep cord away from heated surfaces.
- Do not allow cord to hang over edge of table or counter.

The following warnings and cautions appear throughout this manual and should be carefully observed.

- Turn the unit off, disconnect the power source and allow unit to cool down before performing any service or maintenance on the unit.
- The procedures in this manual may include the use of chemical products. You must read the Material Safety Data Sheets before using any of these products.
- The unit should be grounded according to local electrical codes to prevent the possibility of electrical shock. It requires a grounded receptacle with dedicated electrical lines, protected by fuses or circuit breaker of the proper rating, in accordance with all applicable regulations.
- Disposal of the unit must be in accordance with local environmental codes and/or any other applicable codes.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.



TOOLS NEEDED FOR INSTALLATION



Phillips Screw Driver



Corless Drill

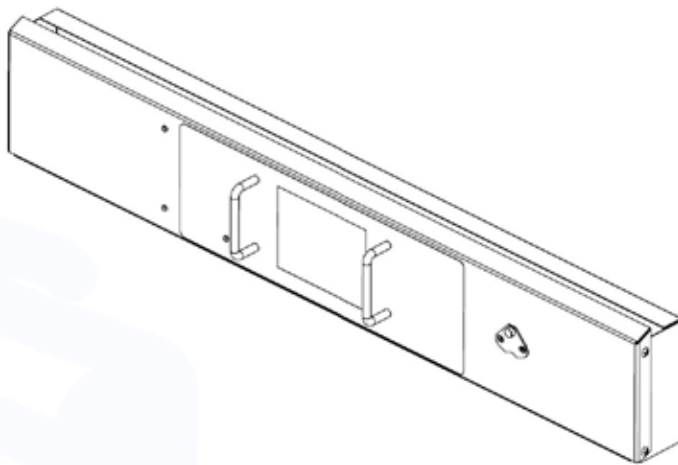


Needle Nose Pliers

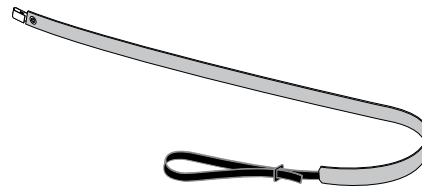


11/32 Socket and Ratchet

PARTS INCLUDED IN KIT



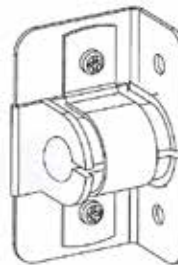
120179 Control Assembly



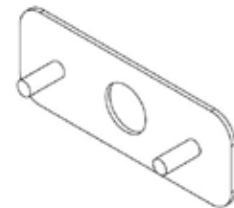
512418 ESD Wrist Strap



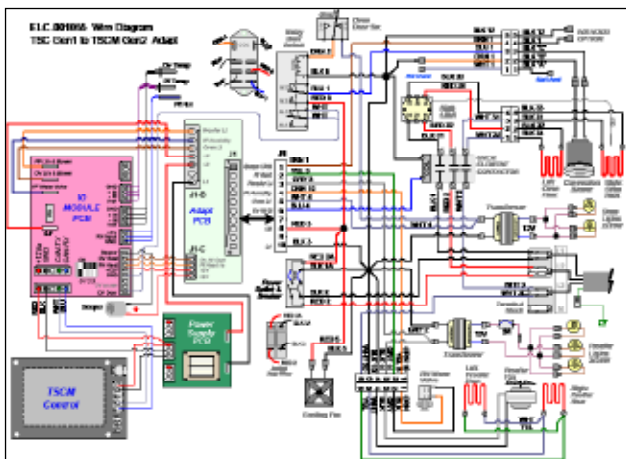
155680 Nut



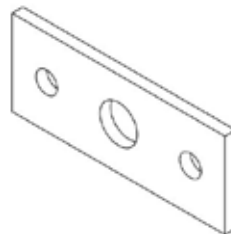
512009 Assembly RH



512014 RH Bracket



ELC-001055 Wire Diagram



512011 Gasket



120037 RH Sensor



512018 Drill Template

GETTING STARTED

WARNING



TURN OFF LINE SUPPLY POWER TO THE TSC OVEN AT MAINS SUPPLY CIRCUIT BREAKER. FOLLOW LOCK OUT / TAG OUT PROCEDURES.

CAUTION



An ESD Wrist Strap is required when coming in contact with Touchpad Controller.

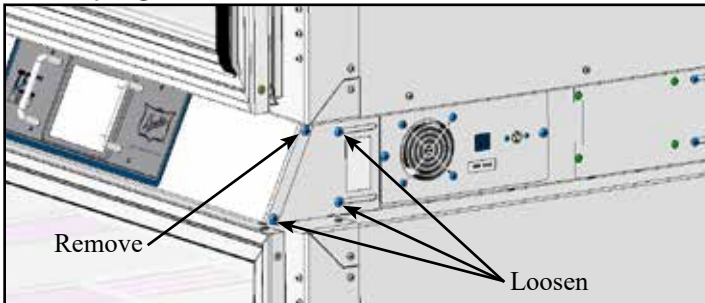
REMOVAL OF OLD CONTROL PANEL

Step 1

Verify line power to the unit is disconnected and arrange for access to the rear of the unit.

Step 2

Loosen, but do not remove the bottom and rear screws on each side of the slide out. Remove top left and top right screws. **DO NOT DISCARD**



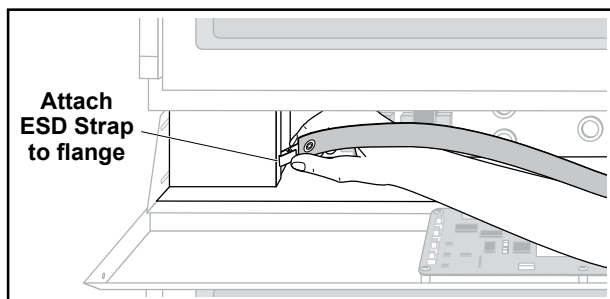
Step 3

Slide the control panel forward and tilt down.



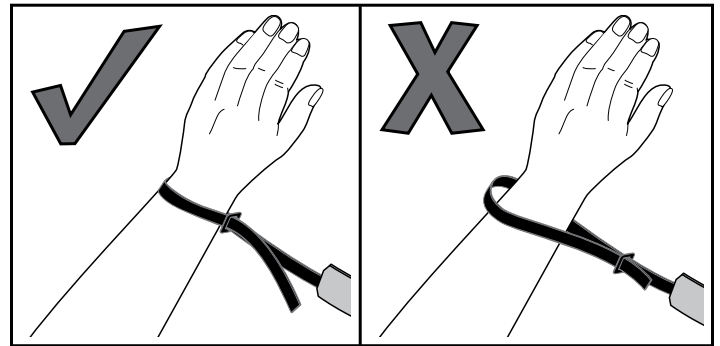
Step 4

Connect ESD Wrist strap to Unit in location shown.



Step 5

Place ESD strap on wrist and tighten. Strap must be tight around wrist to be effective.



Step 6

Disconnect all wire harnesses from control board.



Step 7

Remove front panel. Remove two (2) screws one at each end of control panel. Discard front panel.



NOTE: Retain screws to install new panel.



REMOVAL OF OLD CONTROL PANEL - continued

Step 8

Remove two white wires from the left side of the relay on the back wall of the control cavity. Cut removed wires and discard.



Step 9

Remove two wires from the beeper in the upper left corner of the control cavity.



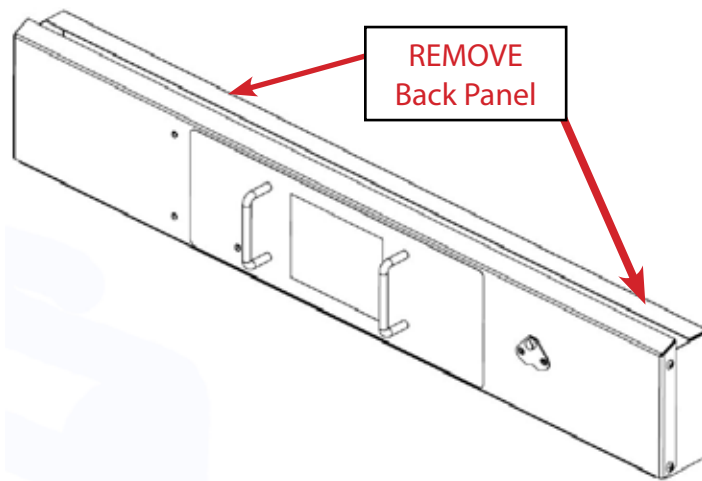
INSTALLATION OF NEW PANEL

Step 1

Unpack new control making sure ESD protocol is followed. Check for any damage.

Step 2

The control is shipped with a protection cover on the back. This needs to be removed and discarded.



Step 3

Using the two (2) Screws removed in step 7 of removal install new panel.

NOTE: Do not tighten screws.

NOTICE:

More of the low voltage components are located on the front panel.

**BEEPER CONNECTIONS
STEP 5**

**RELAY CONNECTIONS
STEP 6**



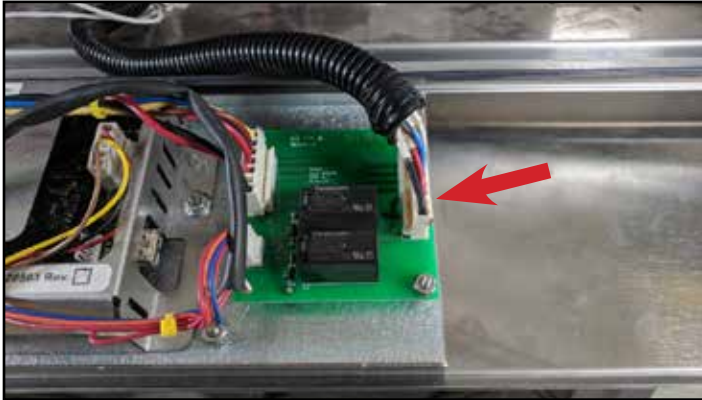
INSTALLATION OF NEW PANEL - continued

Main power harness

Step 4

Connect the main power harness to the control board.

Green board on right side. See Below.



Step 6

From the new control board connect the two white wires to the relay on the back wall of the control cavity.



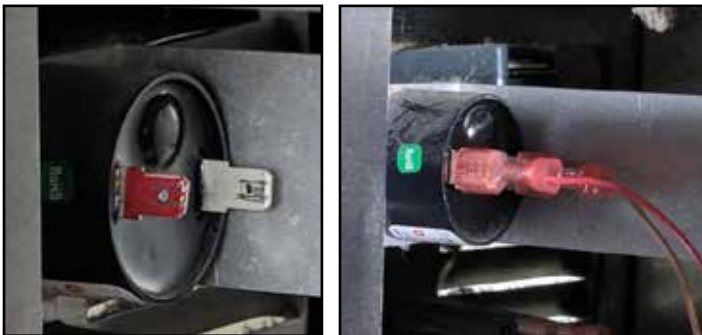
Beeper and Relay Harness

Step 5

Connect the brown and red wires to the beeper in the upper left hand corner of the control cabinet.

CAUTION

The red wire must be connected to the red terminal of the beeper or it will not work.



Oven and Proofer RTD's

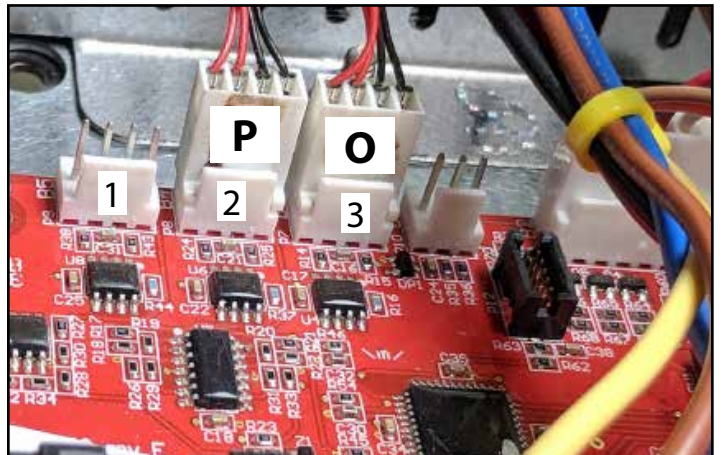
Step 7

Connect the RTD's from the unit to the RED PCB board to the left of the touch screen (two (2) four (4) pin connectors).

NOTE: See below

One marked P for Proofer- Second Position

One marked O for Oven - Third Position



HUMIDITY PROBE REPLACEMENT

PREPING UNIT FOR NEW SENSOR

Step 1

Verify line power to the unit is disconnected and arrange for access to the rear of the unit.

Step 2

Remove the three (3) screws holding the back electrical panel, set panel and screws aside.



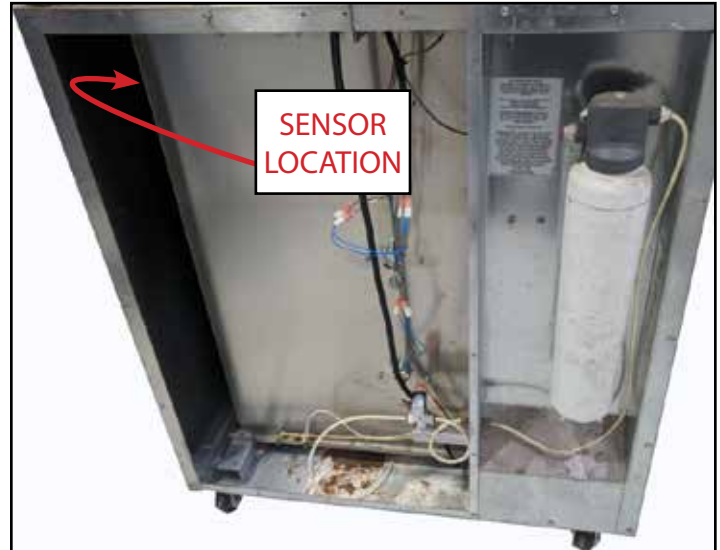
Step 3

Loosen the top center screw (with keyhole slot) holding the back lower panel in place.



Step 4

Remove the other eighteen (18) screws holding the back panel in place and set panel aside.



NOTICE:

LOOKING FROM THE BACK OF THE UNIT, IF YOUR UNIT DOES NOT HAVE A HUMIDITY SENSOR ON THE LEFT SIDE OF THE CAVITY CONTINUE ON.

NOTE: UNIT ABOVE DOES NOT HAVE SENSOR.

IF UNIT HAS A SENSOR THEN SKIP TO STEP 7 ON NEXT PAGE .

Step 5

Remove wire racks, false bottom panel, & right side plenum duct assembly by removing screws on both, front and rear, and at top of air duct if installed.



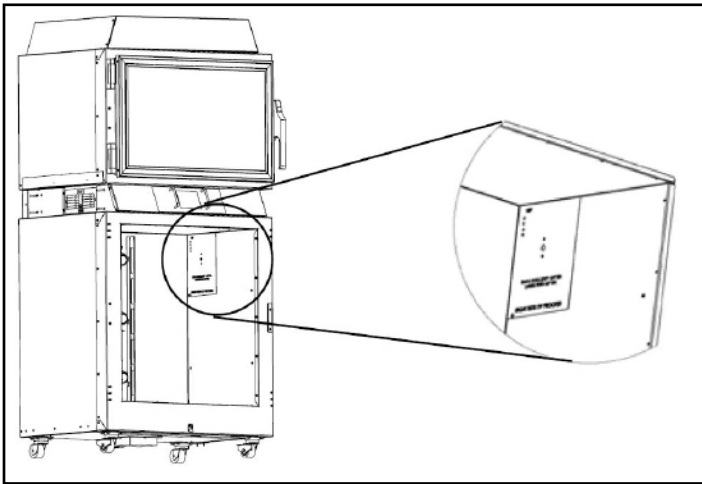
HUMIDITY PROBE REPLACEMENT - continued

Step 6

Next align drill template 512018 to the upper rear corner of the right hand side of the unit. (See illustration below) Use the tape to secure the template in place. Drill holes to appropriate size as indicated on the template. **Skip to Installing new sensor.**

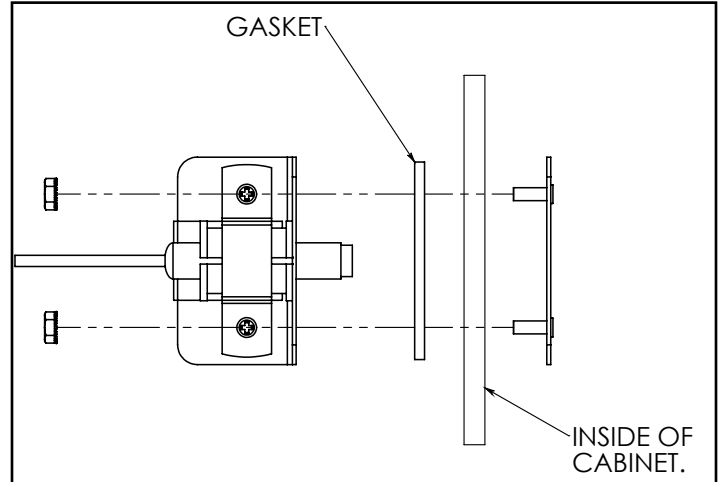
CAUTION

Do not force bit through as this may damage outer finished panel. Remove all shavings from unit interior.



Step 7

Remove the old RH sensor assembly from the unit by removing the two Keps nuts with a 11/32 socket. Discard old sensor and bracket.

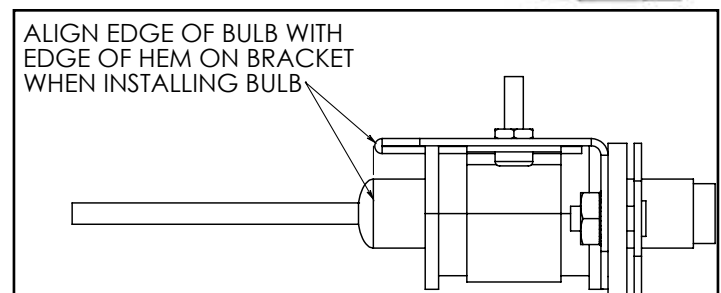
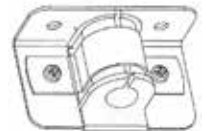


INSTALLING NEW SENSOR

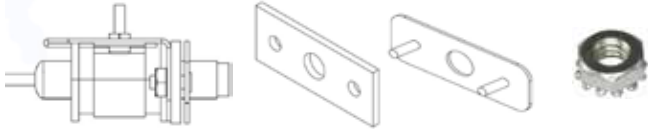
Step 1

Install the new 120037 RH Assembly probe to the new 512009 TSC Humidity Sensor Assembly (included in kit) and install the probe onto the bracket. Using screw driver to tighten screws enough to maintain sensor position.

NOTE: Do not overtighten you may damage sensor. See diagram to the right for sensor bracket alignment location.



HUMIDITY PROBE REPLACEMENT - continued

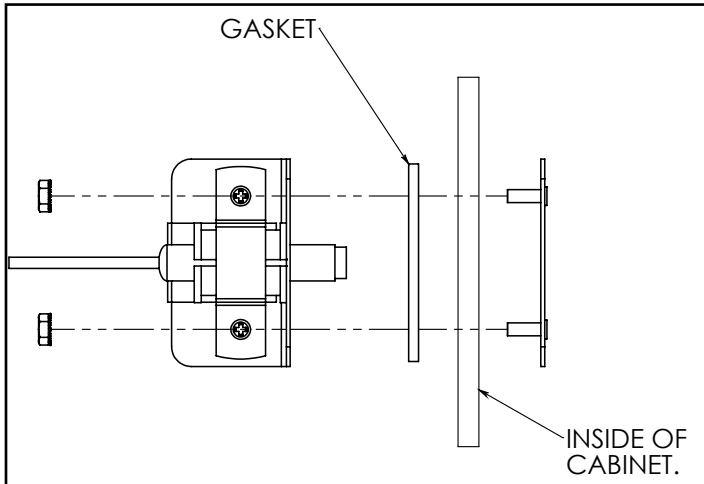


Step 2

Install the studded bracket of the 512014 assembly into the drilled holes from inside of the unit. Using tape to hold the studded bracket in place.

NOTE: Do not cover the center hole where the Humidity probe will go through.

From the rear of the unit install the gasket over the studs. Next install the probe thru the hole of gasket and bracket taped to the liner wall. Install Keps nuts using Ratchet and 11/32 socket and tighten until you get a snug fit to seal the hole. See diagram below for how the assembly should look from the rear of the unit.



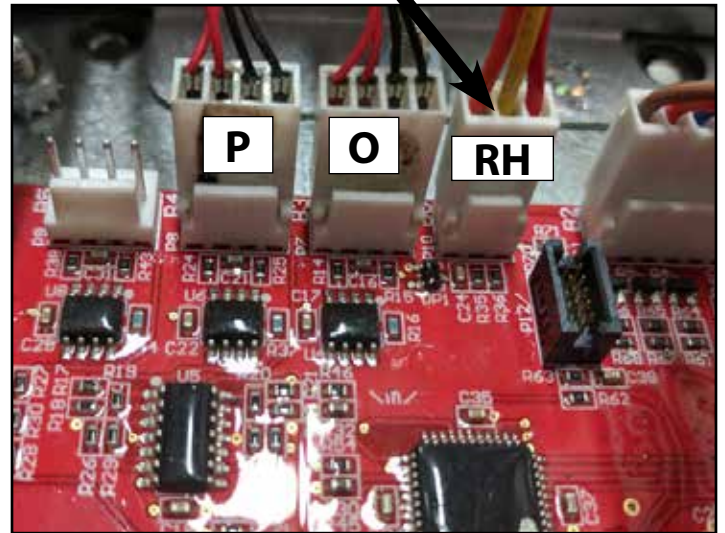
Step 3

Route the three pin connector end of the new RH Assembly through the lower wiring feed and through the rear wall of the controls section to the front of the TSC Oven control cavity.



Step 4

Connect the three pin connector of the RH sensor in the three pin connection on the red PCB board.



CLOSING UP UNIT

Step 1

Install right side panel with screws. Replace false bottom tray and shelving.



Step 2

Clean any dirt or grime off the wire diagram on the inside of the back cover. Peel backing off new wire diagram and cover old diagram.

Step 3

Place back panel on unit and secure with the eighteen (18) screws. Tighten once all are started.



Step 4

Replace back electrical panel shield with three (3) screws



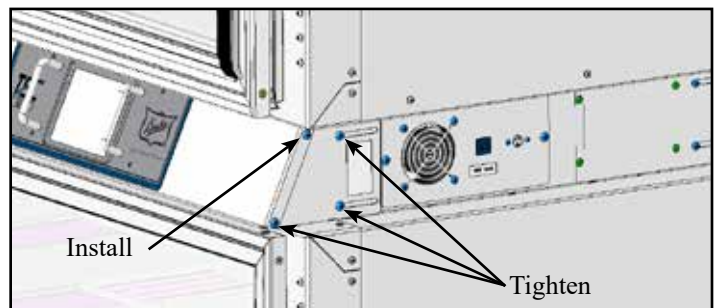
Step 5

In front control panel bundle any old unused wires and secure inside control cavity.

Step 6

Tilt up and slide back the control panel. Replace the Top 2 screws and tighten all 8 screws on both sides.

NOTE: Verify wiring is not trapped, pinched or visible under the controls panel after fully slid into position.



Step 7

Slide unit back into place.

Step 8

Reconnect power or remove Lockout/Tagout on unit.

Step 9

Turn on unit and verify operation.

OPERATING INSTRUCTIONS

Touch Screen Definitions

Main Tool Bar

*Screen Sleep Button** *Info Button*

Oven Recipe Information Bar

Recipe Temp *Recipe Time*

Recipe Name

Power Button or Back

Page Back

Page Forward

Proofer Recipe Information Bar

Recipe Humidity *Recipe Temp* *Recipe Time*

Door Open

With oven door open, DOOR OPEN will flash in the Main Tool Bar and oven icon background is orange.

Touch to start Dry-Out cycle at end of use for each day.

Follow instructions on screen.

* Screen Sleep Button only available when Oven and Proofer are off

AUDIBLE ALARMS

The Oven/Proofer has various audible alarms.

1 chirp	Keystroke acknowledgement
3 short chirps	Oven and Proofer up-to-temperature notification
4 beeps (Continuous until cleared)	Oven door open alarm
3 long chirps	Proofer stagger load alarm
3 beeps (Continuous until cleared)	Proofer end of cycle
2 beeps (Continuous until cleared)	Oven end of cycle



OPERATING INSTRUCTIONS - continued

DAILY OVEN/PROOFER START-UP



1. Turn power on to the unit with the power switch on the left side of the unit. Boot Screen is displayed and automatically transitions to the Main Screen.
2. Turn the Oven and Proofer ON by touching the  and  buttons located at the left of the touch screen. The Oven, Proofer and Recipe Buttons will turn to BLUE background. The Oven and Proofer lights will turn on and start preheating.



Figure: Main Screen

3. Check to make sure that the oven and proofer fans are running.
4. Open the oven door; the oven fan should stop.
5. Close the door; the fan should resume.
6. Allow the oven and proofer to pre-heat for at least 30 minutes. An audible alarm will sound (3 short chirps) when the oven and/or proofer reach the ready state. Your Duke Proofer Oven is now ready to operate.

If there are any problems refer to the Trouble Shooting section of this manual.

PROOFER OPERATING INSTRUCTIONS


1. Turn the proofer ON by touching the  button or the desired RECIPE button. The Proofer and Recipe Buttons will turn to BLUE background. The Proofer lights will turn on and proofer will start preheating.



Figure: Proofer Main Screen

2. Proofer will preheat for 10 minutes after reaching setpoint to ensure proper proofing conditions. An audible alarm will sound (3 short chirps) when the proofer reaches the ready state.



Figure: Proofer Starting Up Screen
(If under temperature set point)



Figure: Proofer Starting Up Screen
(10 Minute Starting Up Timer)

OPERATING INSTRUCTIONS - continued






- Once a Proofer recipe has been selected (i.e. **60 MINUTES** ) and the display has changed to the Proofer Recipe Ready to start 1/3rd Timers screen, the proofer's humidity should be visually verified before loading.




Figure: Proofer Recipe Ready Screen to Start


- Watch for a light fog to appear on the interior door glass; the proofer is ready to be loaded with dough.
- Increase humidity, if door glass does not fog as the humidity is set too low; press  button of the  (Relative Humidity). The RH% will increase on the Proofer Recipe Information Bar.
- Decrease humidity if water is running down door glass as the humidity is set too high; press  button of the  (Relative Humidity). The RH% will decrease on the Proofer Recipe Information Bar.

Is RH% right?



75%RH to 85%RH is usually between fogged glass & droplets running in most ambient environments

- Load the first proofer section with dough and touch UPPER, MIDDLE or LOWER Start Timer , depending on where dough is loaded. This will prevent over-proofing of the dough remaining in proofer after the first load has been moved to the oven. The remaining time will be displayed in the button area and the progress bar will change to visually show elapsed and remaining proof time.

Since the proofer can hold more pans than the oven can bake, an alarm beeps and LOAD NEXT TRAY is displayed in the Main Tool Bar 1/3rd of the time thru the proofer cycle so that loads can be staggered. Load the next proofer section with dough and touch Start Timer  for the respective section.

NOTE: You can cancel an active timer with touch and hold for 2 to 3 seconds on the count down timer.



Figure: Proofer Running Screen


- When the proof is complete, an alarm for the respective timer will beep to alert the operator which level is ready to be moved to the oven. Touch the Timer  to cancel the alarm.



Figure: Proofer Complete Alarm Screen

OPERATING INSTRUCTIONS - continued

9. You can add 5 minutes to proofing time by touching the **+5** button adjacent to any of the respective count down timers. This can be done at any time during the proof or at the end of a proofing cycle. You must add time in 5 minute increments.
10. Adjust the time, if necessary, depending on type of dough and desired results.
11. Bake bread when dough rises to desired size.

NOTE: Excessive humidity on the door glass is probably caused by a humidity setting that is too high or by having the humidity on when there is no dough loaded in the proofer.

OVEN OPERATING INSTRUCTIONS


1. Turn the oven ON by touching the  button or the desired RECIPE button. The oven lights will turn on and the Oven will start preheating. An audible alarm will sound (3 short chirps) when the oven reaches the ready state.



Figure: Oven Main Screen





1. Allow the oven to preheat 20–30 minutes and keep the oven door closed, except during loading and unloading.
2. Once an Oven recipe has been selected (i.e. ) , the display will change to the Oven Recipe Ready to Start screen (if preheating is complete).



Figure: Oven Recipe Preheat Screen (if under temperature setpoint):



Figure: Oven Recipe Ready to Start

1. Load the oven with dough and touch the start timer  button. The remaining time will be displayed in the button area and the progress bar will change to visually show elapsed and remaining bake time.

NOTE: You can cancel an active timer with press and hold for 2 to 3 seconds on the count down timer.



Figure: Oven Count Down Timer

OPERATING INSTRUCTIONS - continued

1. When the bake is complete, an alarm will beep to alert the operator. Touch the Timer **0:00** or open the oven door to cancel the alarm.



Figure: Oven Bake Complete Alarm

1. You can add 1 minute to baking time by touching the **+1** button adjacent to the count down timer. This can be done at any time during the bake or at the end of a baking cycle. You must add time in 1 minute increments.
2. Adjust the time, if necessary, depending on type of dough and desired results.

BAKING TIPS

- Always select the oven recipe and allow preheat time prior to loading product. Only load when the Oven Recipe Ready to Start Timers screen is displayed. Load the oven with six pans of dough and touch the start button.
- If the bread color is uneven, reduce temperature and extend bake time in recipe (see Programming Controls).
- If the bread is too dark, reduce the bake time in the recipe (see Programming Controls). If the bake time is reduced and the bread is still too dark, reduce the temperature by 15° F (10° C) and bake longer.
- When baking partial loads, center the pans in the oven and start loading at the bottom shelf and work up to the top.
- Opening oven door allows heat to escape. Under normal conditions, quick loading and unloading will not be a problem. If door is left open too long, oven performance will be affected.

NOTE: The Proofer Oven has a "Default" run mode. This mode is only active when there is a Touchscreen control communication error and with power to the balance of the controls. This mode allows for your Proofer Oven to maintain approximately 350° F (177° C) in the baking oven and approximately 105° F (41° C) and 80%RH in the proofer. When the Proofer Oven is operating in this mode, you will witness the Proofer and Oven lights blinking off for approximately 2 seconds every minute. This mode allows you to continue using your Proofer Oven for baking and proofing until the unit is properly serviced.

The "Default" run mode is disabled with an open oven door.

CARE AND CLEANING

⚠️ WARNING



PROOFER OVEN INTERIOR AND RACKS ARE VERY HOT AND COOL SLOWLY.

ALLOW TO COOL BEFORE HANDLING.

⚠️ CAUTION



ELECTRICAL SHOCK HAZARD:

DO NOT WASH WITH WATER JET OR HOSE.

CAUTION

DO NOT USE OVEN CLEANERS, CAUSTIC CLEANERS, DEGREASERS, ACIDS, AMMONIA PRODUCTS, ABRASIVE CLEANERS, STEEL WOOL, OR ABRASIVE PADS CONTAINING IRON. THESE CAN DAMAGE THE STAINLESS STEEL, DOOR GASKETS AND PLASTIC SURFACES.



Figure: Proofer Main Screen


- Follow instructions given on screen after touching **DRY OUT** . This special function allows automatic water dry out after daily proofer use is completed.




Figure: Proofer DRY OUT Screen

Proofer will turn off when DRY OUT is complete.

NOTE: DRY OUT is a 60 Minute cycle with extra heat and without water to dry out the Proofer for cleaning.

DAILY CLEANING INSTRUCTIONS

- Empty and clean Drip Pan with clean damp cloth.
- Clean stainless steel exterior with stainless steel cleaner or polish, or with hot soapy water followed by a clean water rinse.
- Clean oven and proofer doors with a glass cleaner.
- Clean oven and proofer interiors with a damp cloth. If heavy soil areas exist clean with hot soapy water and follow with clean damp cloth.
- Run Dry Out cycle. Touch **DRY OUT**  on the main screen.

PROGRAMMING CONTROLS


To access the SPECIAL FUNCTIONS, touch  button on the Main Tool Bar.






Figure: Main Tool Bar



Figure: Special Functions Screen




RECIPE EDIT PROGRAMMING INSTRUCTIONS


1. Touch the  button and then enter pin code 5 6 7 8 and Touch the  button when prompted.
2. Touch the button for the recipe you want to edit (i.e. ).

NOTE: The 6 oven recipes are listed in the top 3 rows and the 6 proofer recipes are listed in the bottom 3 rows.




FIGURE: Recipe Edit Selection Screen

3. To edit Time, Temperature or Humidity (Proofer Only), touch the  or  button adjacent to the field you want to change. Touch the  button to save the changes.








NOTE: You must touch the  button in each field to save the changes you made.



4. To edit the recipe name, touch the  button for the EDIT RECIPE NAME screen.

NOTE: Typing will add letters/characters to the end of the text.

PRESS:






-  TO TOGGLE THE KEYBOARD BETWEEN THE UPPER/LOWER CASE CHARACTER SET.
- ,  AND  FOR THE NUMBER AND SYMBOL KEYBOARDS.
-  TO SPACE
-  TO CLEAR ALL TEXT
-  TO DELETE/BACKSPACE



PROGRAMMING CONTROLS - continued



Figure: Edit Recipe Name Screen

CONFIG (CONFIGURATIONS)

1. Touch the  button and then enter pin code 2 3 4 5 and Touch the  button when prompted.
2. Touch the button for the setting you want to edit.
 - DATE/TIME – Touching will display DATE/TIME edit screen. Touch the  or  button adjacent to the field you want to change. Touch the  button to save the changes.
 - LANGUAGE – Touching will display a list of included languages. Touch the preferred language button to select.
 - C/F SELECT – Touching will toggle between CENTIGRADE MODE ENABLED and FAHRENHEIT MODE ENABLED.
 - DEFAULT RECIPE – Touching will reload factory defaults.
 - SYSTEM STATUS – Touching will display Proofer Oven status.

5. Touch the  button to save the changes and return to the RECIPE EDIT Screen. If no changes are required touch the  button to go back to the RECIPE EDIT Screen.

NOTE: You must touch the  button to save the changes you made.




6. When complete, touch the  button to go back to the previous screen. Press multiple times to return to the main screen.



Figure: Configurations Screen

PROGRAMMING CONTROLS - continued

FILES (FILE MANAGEMENT)

1. Touch the  button and then enter pin code 3 4 5 6 and Touch the  button when prompted.
2. Insert USB drive with the file, until seated, into the USB Host Device.

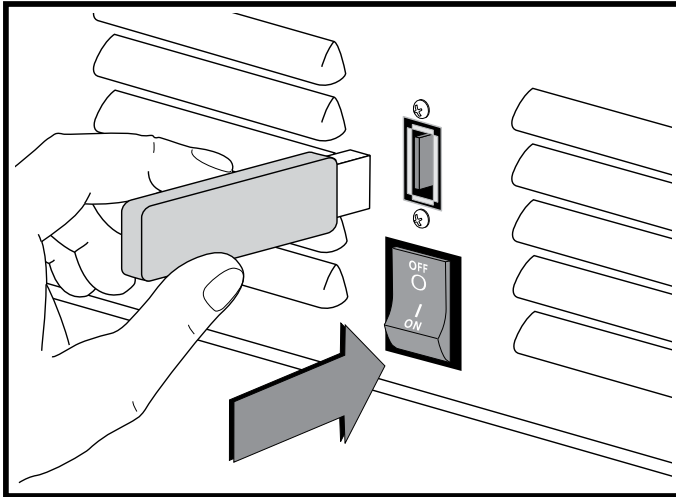


Figure: Inserting USB Drive Into USB Host Device

3. Select file operation from list and follow instruction on the display screen.



Figure: File Management Screen

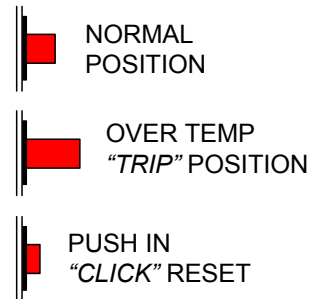
TROUBLESHOOTING

PROBLEM	YES	NO
1. Oven does not heat with oven switch in the ON position and Oven Temperature not set at 0°.		
a. Are oven indicator lights on?	Observe Oven Fan. Go to "b".	Reset Hi-limit Switch
b. Does Oven Fan work?	Call Duke Service.	Check Proofer Operation. Go to "d".
c. Is Oven Door Securely closed?	Call Duke Service.	Close Door securely. Go to "e".
d. Is Supply Circuit Breaker tripped?	Reset Circuit Breaker. Try oven again. Go to "e".	Check Fuses on Control Box. Goto "e".
e. Does oven work?	Troubleshooting complete.	Call Duke Service.
2. Proofer does not heat with Proofer Switch in the ON position		
a. Are Proofer indicator lights on?	Observe Proofer Fan. Go to "b".	Check Oven Operation. Go to "c".
b. Does Proofer Fan appear to work?	Call Duke Service.	Check Oven Operation. Go to "c".
c. Does Proofer work?	Call Duke Service.	Check Supply Circuit Breaker. Go to "d".
d. Is Supply Circuit Breaker tripped?	Reset Circuit Breaker. Try Proofer again.	Call Duke Service.
e. Does Proofer work?	Troubleshooting complete.	Call Duke Service.
3. Oven/Proofer lights not working.		
a. Is more than one light not working?	Replace inoperative light bulbs and recheck. Go to "b".	Call Duke Service.
b. Do lights work?	Troubleshooting complete.	Call Duke Service.
4. Proofer Humidity not working/ insufficient with Humidity Control not set to Off.		
a. Does there appear to be a light fog on Wait 15 minutes. Go to "b".	Decrease humidity if too much moisture on the Proofer door?	Increase humidity if not enough moisture on proofer door. Go to "b". proofer door.
b. Does Proofer Fan appear to work?	Go to "c".	Call Duke Service
c. Confirm water supply to unit is on.	Go to "d".	Turn water supply on. Go to "d".
d. Check for restrictions in water line. (Kinks in water line, Clogged filter or inlet strainer)	Troubleshooting complete.	Call Duke Service.

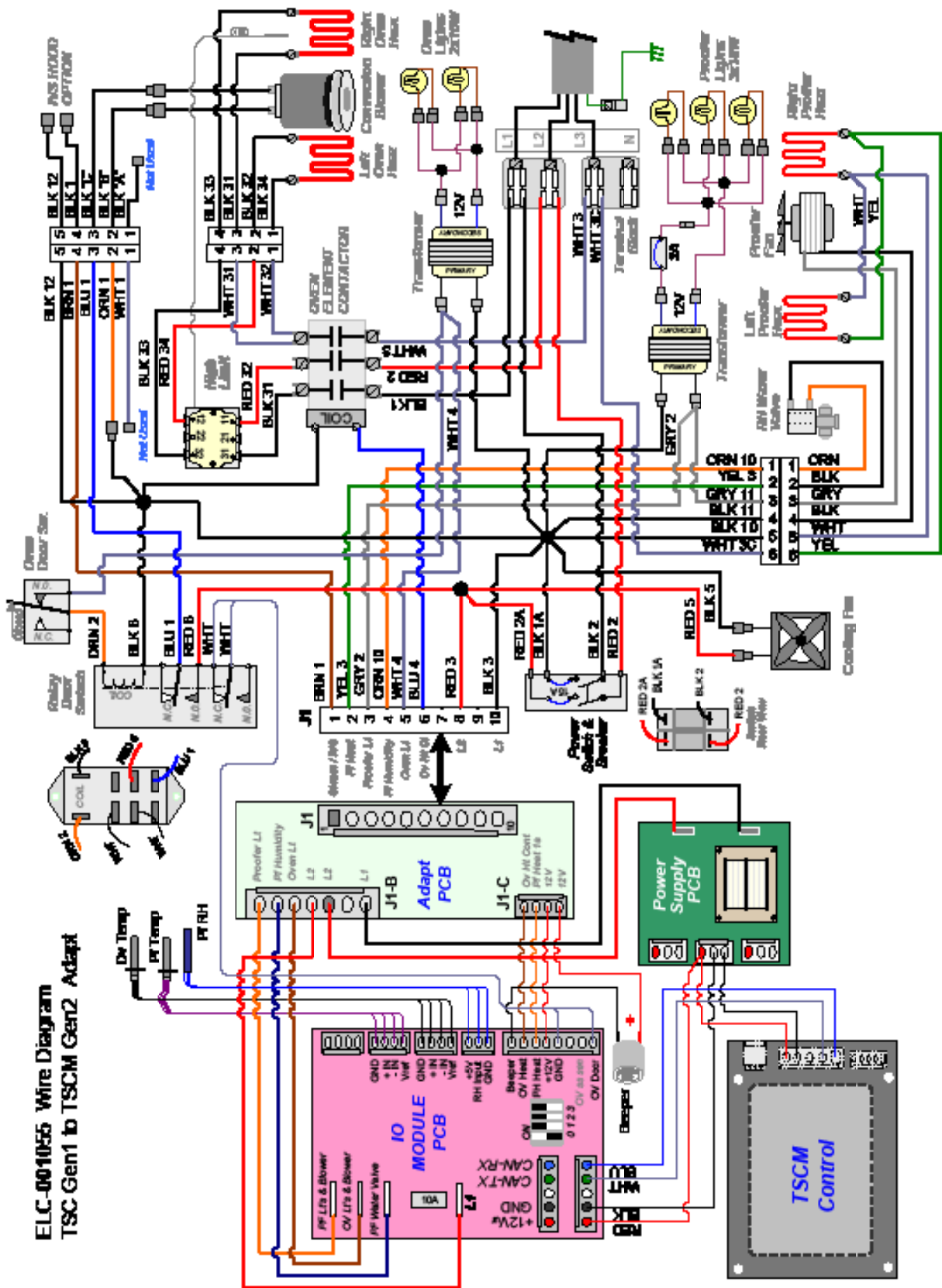
A Manually reset high temperature safety limit is provided on the right side of the control section of the unit to protect the oven elements. The high limit will not trip under normal operating conditions. Should the oven high limit trip, push the RESET button. The high limit will reset with a "click" if an over temperature trip occurred. If condition persists, call Duke Service.

HIGH LIMIT PROTECTOR FOR OVEN ELEMENTS

LOACTED ON RIGHT SIDE OF CONTROLS SECTION



WIRE DIAGRAM



NOTES





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