

INSTRUCTIONS FOR CONVERSION OF LAKESHORE TEC2000 CONTROLLED XLC500/1200 FREEZERS TO TEC3000 CONTROL.

READ INSTRUCTIONS COMPLETELY BEFORE PROCEEDING.

UNITS AFFECTED

This kit and procedure applies to XLC500/1200 freezers originally equipped with the LakeShore TEC2000 control system

PARTS SUPPLIED

PART #	DESCRIPTION	QTY.
13223908	PANEL BACK TEC3000 CABINET	1.000
13223836	PANEL FRONT TEC3000 W/TEXT	1.000
13281972	WIRE HARNESS TEC 3000	1.000
10713354	TEMP PROBES	2.000
13319521	PURGE VALVE ASSY LSCI TO T3 KIT	1.000
13319539	FILL VALVE ASSY LSCI TO T3 KIT	1.000
11795030	POWER SUPPLY 30VDC 1.2A	1.000
10946596	POWER CORD DETACHABLE 18/3	1.000
13319547	INSTR UPGRD LSCI TO T3000 CAB	1.000
13319707	GROMMET 3/8"ID *5/8"HOLE*1/16" PANEL	2.000
11513101	SENSOR ASSY DUAL TUBE	1.000
13289481	MNL QK START TEC 3000 ENGLISH	1.000

TOOLS REQUIRED

Screw Driver Phillips #1
Screw Driver Phillips #2
Adjustable wrench
Tube cutter capable of cutting 1/8" OD tube

GENERAL

This modification replaces the existing LakeShore rear control panel and front display panel with TEC3000 components. Since the new TEC3000 control system and its required power supply are not capable of providing 24VAC to the existing valves on the freezer, replacement valves (purge and fill) are supplied as well. New temperature sensors are provided, since the existing sensors will not connect to the new TEC3000 control system and would not work with it if they could be connected. Since the new probes will not fit the existing temperature sensor tube, a new dual tube assembly is also provided.

NOTE: If the freezer is equipped with a gas bypass, it will be necessary to replace the existing bypass sensor and valve. The freezer will operate properly without the bypass until a new sensor and valve can be obtained (it should be left connected to the plumbing until the replacement components arrive). Contact Chart Customer/Technical Service at 770-257-1299 or 800-482-2473 and request P/N 13319643, KIT UPGRADE LSCI BYPASS TO TEC3000.

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DISCONNECT THE POWER CORD FROM THE WALL OUTLET.

SHUT OFF THE LN2 SUPPLY AND DISCONNECT THE TRANSFER HOSE FROM THE FREEZER.

CONVERSION PROCEDURE

1. Disconnect 24VAC input power cable from the rear panel.
 2. Remove the rear control panel from the cabinet. Reference Figure 6.
 3. Disconnect wire harness, temperature cable, display cable, and tubing from the control panel.
 4. Remove the rear cabinet panel from the cabinet.
 5. Remove the front cabinet panel from the cabinet.
 6. Disconnect the display cable from the back of the display panel. Reference Figure 4.
 - 6.1. The existing display cable (34 wire) will not be reused, but it should not be removed from the cabinet yet, as it will be used to pull the new cable through the cabinet.
 7. Remove the display from the top panel.
 8. Remove the temperature cable (4wire) end connections from the top panel. Reference Figure 5.
 - 8.1. The existing temperature cable will not be reused, but it should not be removed from the cabinet yet, as it will be used to pull the new temperature sensors through the cabinet.
 9. Install the supplied grommets in the two holes where the temperature cable was installed.
 10. Tie the sensor end of the new temperature sensors to the original temperature cable and pull them through the cabinet using the original cable.
 11. Feed the new temperature sensors through the grommets in the top panel.
 12. Install the new display.
 13. Install the new rear panel in the rear of the cabinet where the original panel was installed.
 - 13.1. The rear cabinet panel must be placed close enough to the unit for the display cable from the rear control panel to reach the front of the unit.
- NOTE: This is cumbersome. Patience is required.
14. Tie the end of the display cable that is attached to the new rear panel (it has an RJ45 network type connection on it) to the end of the original display cable and pull it through the cabinet using the original cable.
 15. Connect the new display cable to the new display.

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16. Connect the new temperature sensors to the new rear panel at connections provided on the bottom of the panel.
17. Connect the new wire harness provided to the matching connector that is hanging from the new control panel.
18. Locate the connection on the wire harness for the purge valve (end connectors are labeled) and tie it to the leads feeding from the purge valve at the front of the freezer and pull it through to the front of the cabinet.
19. Remove the existing purge valve (Reference Figure 3) and replace with the new purge valve assembly provided (reference Figure 7), making sure to use Teflon tape on the pipe threads and to reconnect the copper and vinyl tubing.

NOTE: It should be possible to reuse the existing compression nut on the end of the copper purge gas tube by tightening it approximately 1/8 to 1/4 turn past finger tight. This connection should be checked for leaks with a soap solution during the first 30 seconds of the fill cycle to make sure that it is leak free. If it cannot be made to seal, cut off the end of the tube and use the compression nut provided with the valve assembly.
20. Connect the leads of the purge valve assembly to the wire harness at the connection labeled "purge valve".
21. Remove the existing fill solenoid valve (Reference Figure 2 and Figure 6) and replace with the new fill valve assembly provided (Reference Figure 8).

NOTE: If the new and old valves are physically identical, it will be possible to simply swap the coils. If they are not identical, it will be necessary to replace the entire valve. Make sure to use Teflon tape on all pipe threads.
22. Connect the leads from the new valve to the wire harness connection labeled "fill valve".
23. Connect the level sensor tube to the hose barb on the valve of the new panel. Reference Figure 1.
24. Connect the 30VDC input cable from the power supply to the receptacle on the bottom of the new rear control panel. Reference Figure 1. This cable will have to pass out of the cabinet through the bottom.
25. Reinstall the rear cabinet panel.
26. Reinstall the front cabinet panel.
27. Replace the existing sensor tube assembly inside the freezer with the new assembly provided. Reference Figure 5.
28. Connect the mains power cord provided to the new power supply. If the freezer has a bracket to hold the old power supply, it should hold the new power supply, however, the feet on the new power supply will not mate with the existing holes in the bottom of the bracket.
29. Follow the instructions in the new quick start manual provided for startup check out and programming.

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For additional technical information on the new TEC3000 control system, contact Chart customer/technical service at 770 257-1299 or 800 482-2473 and order the technical manual P/N 13289499.

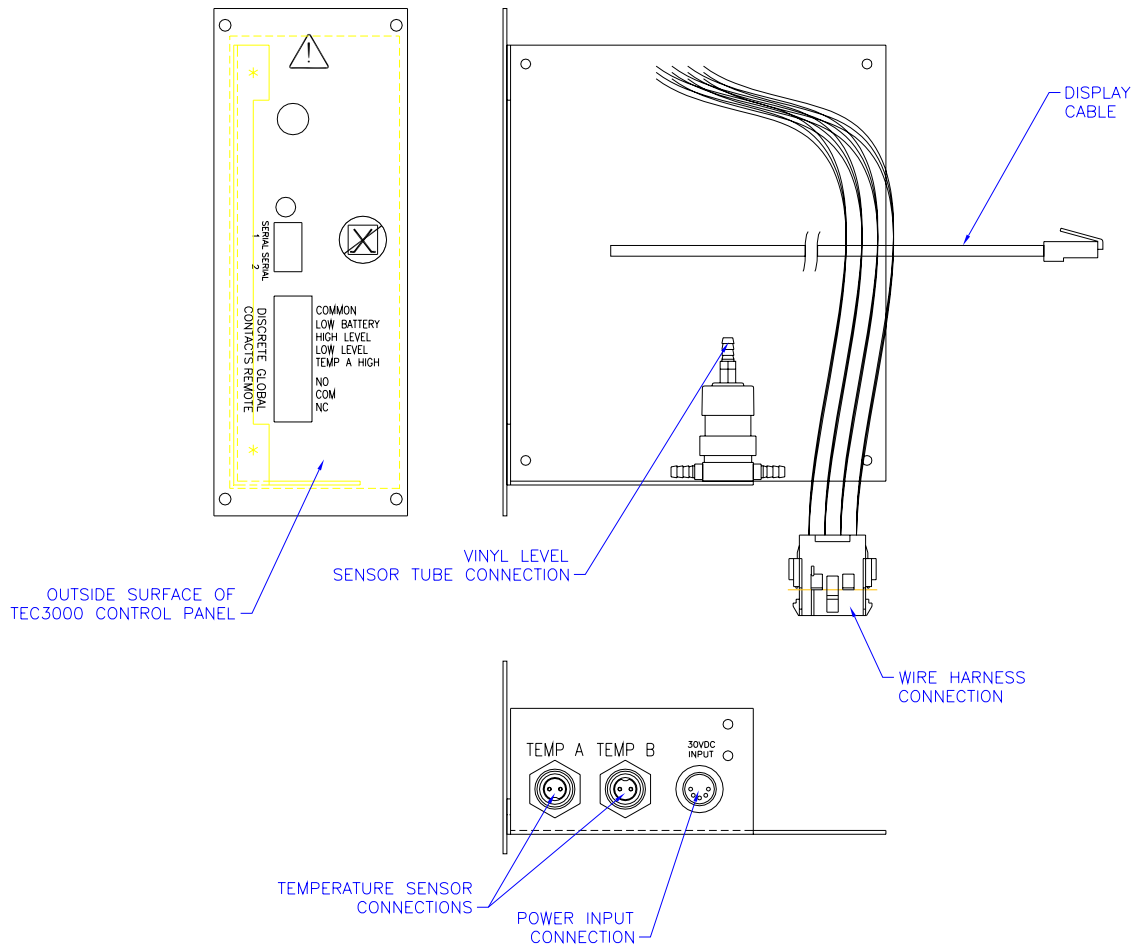


Figure 1, TEC3000 CONTROL PANEL DETAILS

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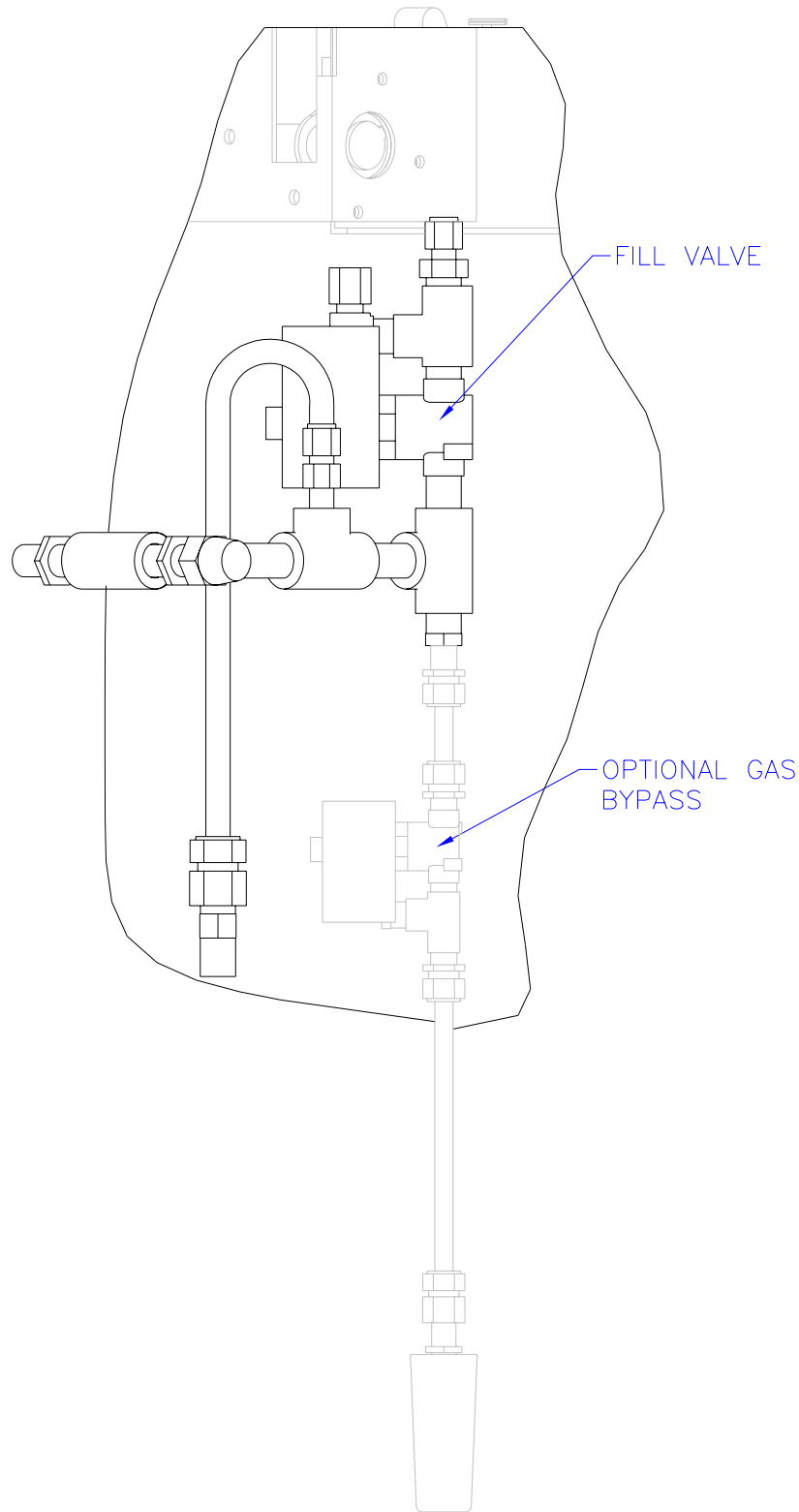


Figure 2, PLUMBING ASSEMBLY DETAIL

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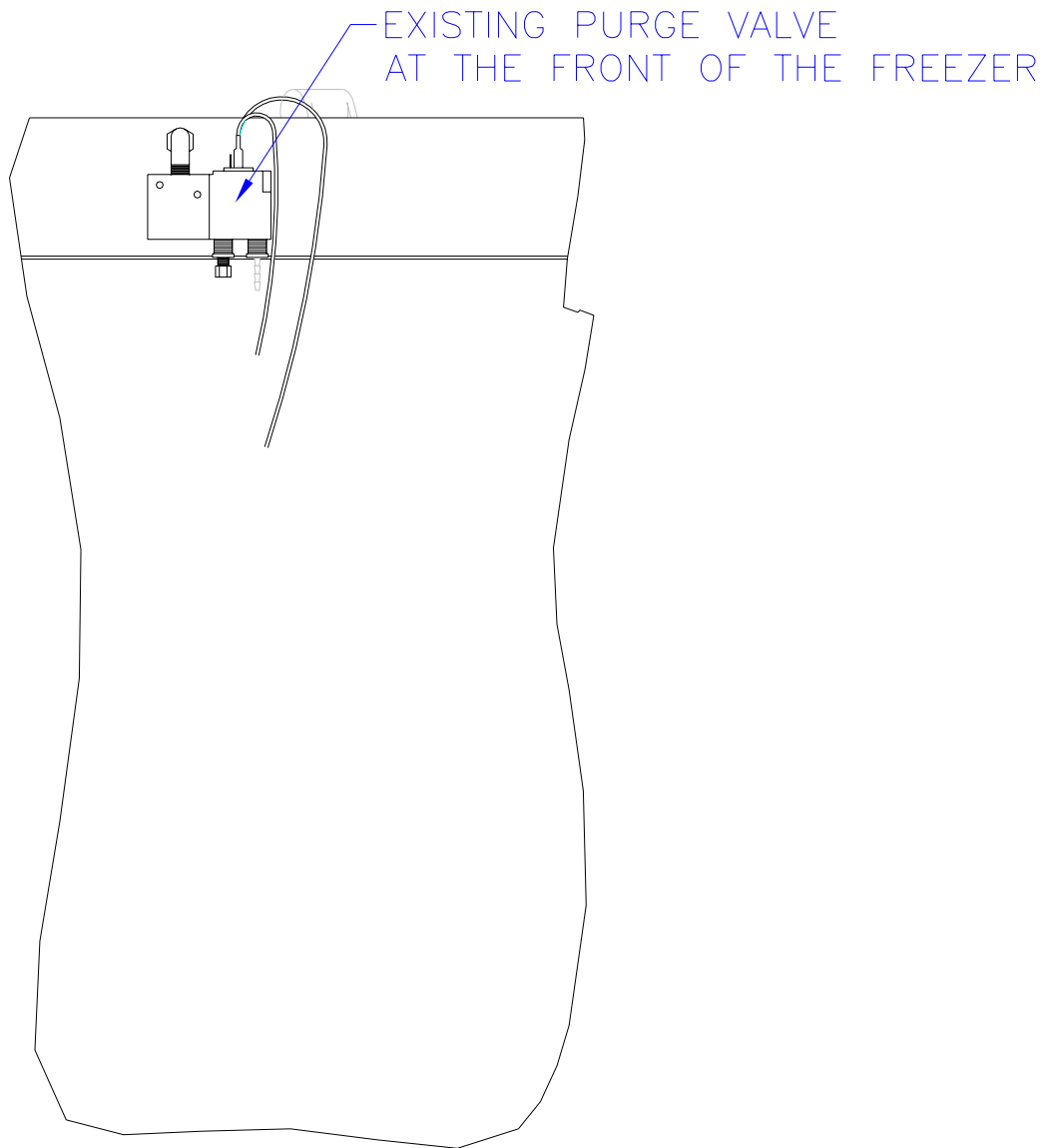


Figure 3, PURGE VALVE DETAIL

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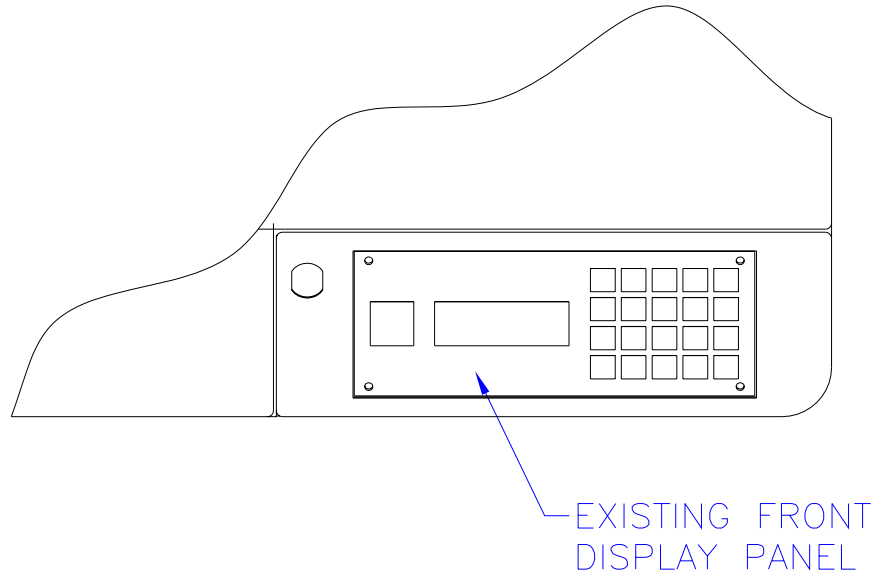


Figure 4, FRONT PANEL DETAIL

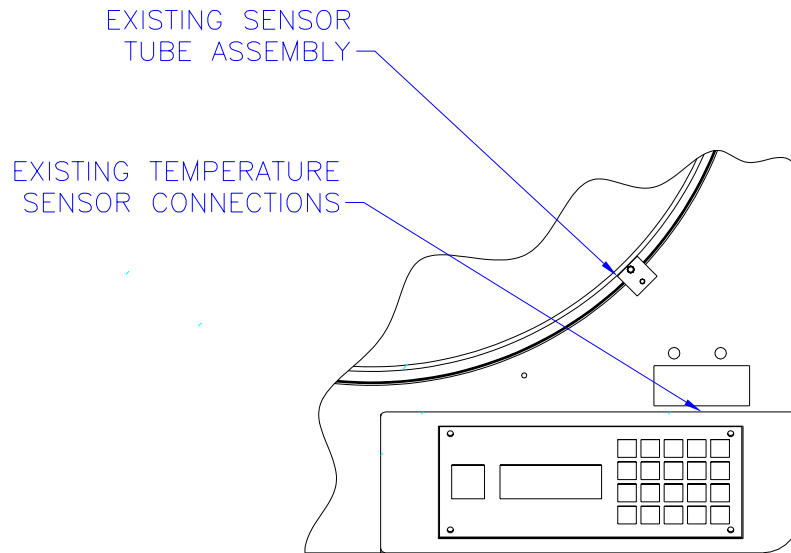


Figure 5, SENSOR CONNECTION AND TUBE

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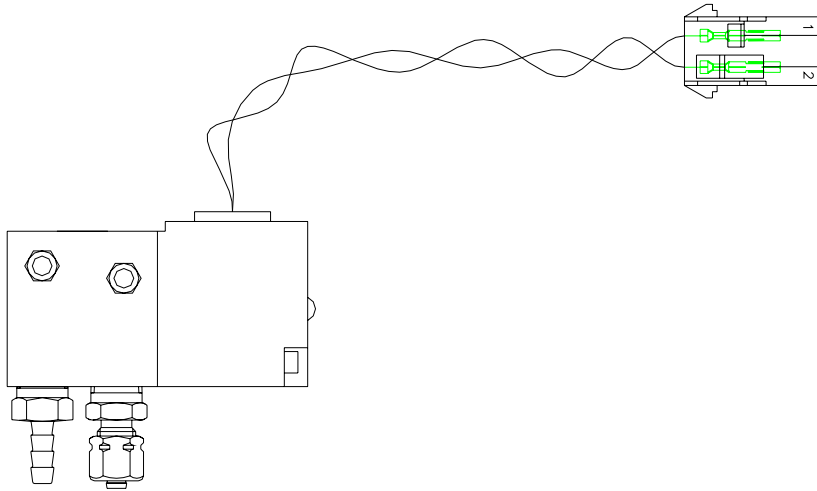


Figure 7, NEW PURGE VALVE ASSEMBLY

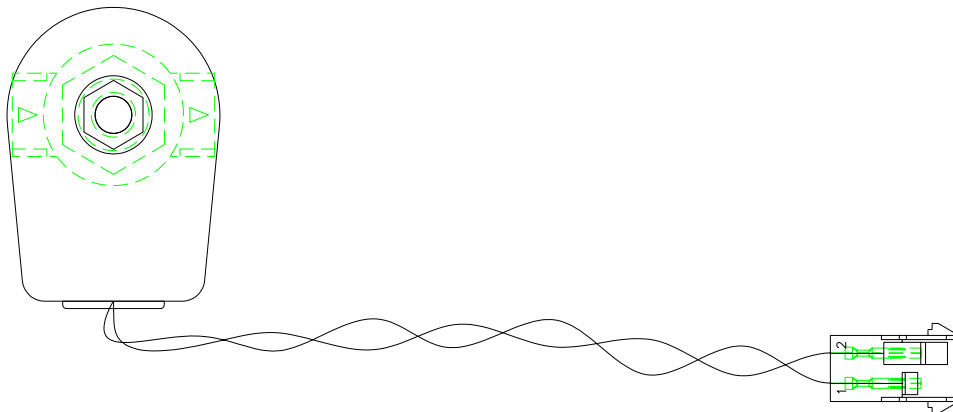


Figure 8, NEW FILL VALVE ASSEMBLY