



Changing
how food is served.

OPERATION/MAINTENANCE MANUAL



QUICKSWITCH TOP SERIES DI-QSGT SYSTEM

CUSTOM FABRICATORS OF FOODSERVICE EQUIPMENT

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INSPECTION

Upon receipt, the crate should be inspected for visual damage. Any damage should be reported immediately to the carrier.

SAFETY PRECAUTIONS

This manual includes safety and operating instructions for QSGT QuickSwitch series cold/hot top. LTI recommends reading all safety precautions and statements to ensure safe operation before installing and operating. Below are the precautions that are explained in more detail. Please read carefully.

DANGER

Danger warns of imminent hazard which will result in serious injury or death.

WARNING

Warning indicates the presence of a potential hazard or unsafe practice that will or can cause severe personal injury or death.

CAUTION

Caution indicate the presence of a hazard or unsafe practice that will or can cause minor or moderate personal injury if the caution is ignored.

NOTICE:

Used to note information that is important but not hazard-related.



WARNING

ELECTRIC SHOCK HAZARD

- Unit must be installed by a qualified electrician. Installation must conform to all local electrical codes. In the absence of local codes, use the latest version of the National Electrical Code.
- Unit should be safely and adequately grounded in accordance to local codes, or in the absence of local codes, the most up to date version of the National Electrical Code ANSI/NFPA70, to protect the user from electrical shock.
- The unit requires a grounded system and a dedicated circuit.
- The unit must be serviced by qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.
- Control panel must be mounted on a vertical surface/wall and installed in the vertical position. Mounting control panel in the horizontal position may result in collection of liquids and lead to electrical shock.
- Turn OFF power, unplug power cord/turn off power at circuit breaker, and allow unit to cool if needed to before performing any cleaning, adjustments, or maintenance.

FIRE HAZARD

- Risk of fire do not install closer than 1 inch to sides and bottom of unit.

- Do not use flammable cleaning solutions to clean this unit.



CAUTION

BURN HAZARD

- Exterior surfaces on the unit may become hot. Use caution when touching these areas.

NOTICE:

- Units are voltage specific. Refer to specifications label for electrical requirements before installation.
- Units are intended for indoor use only. Recommended room temperature 86°F.
- Units require a minimum of 119 CFM of fresh airflow across the condenser. Failure to provide proper airflow can cause premature compressor failure and will void any factory warranty.
- Service access must be incorporated in order to service and gain access to components.
- Do not recirculate exhaust air inside the cabinetry in front or behind the condensing unit for adequate ventilation.
- Install and transport unit in a upright position. Failure to do so may result in damage of refrigeration components.
- Use non-abrasive cleaners and cloths only. Abrasive cleaners and cloths could scratch finish of unit, marring its appearance and making it susceptible to soil accumulation.
- Do not use steel wool for cleaning.
- Do not use harsh chemicals such as bleach, cleaners containing bleach, or oven cleaners to clean this unit.

NOMENCLATURE

DI – QSGT – 42 – G – 2T – T
A B C D E F

A – DI = DROP-IN

B – QSGT = QUICKSWITCH TOP

C – SURFACE LENGTH

28”

42”

D – SURFACE MATERIAL

G = CERAN GLASS

E – TWO TIER OPTION

2T = TWO TIER UNIT

NONE = SINGLE COUNTER UNIT

F – EDGE TYPE

T = TURNDOWN

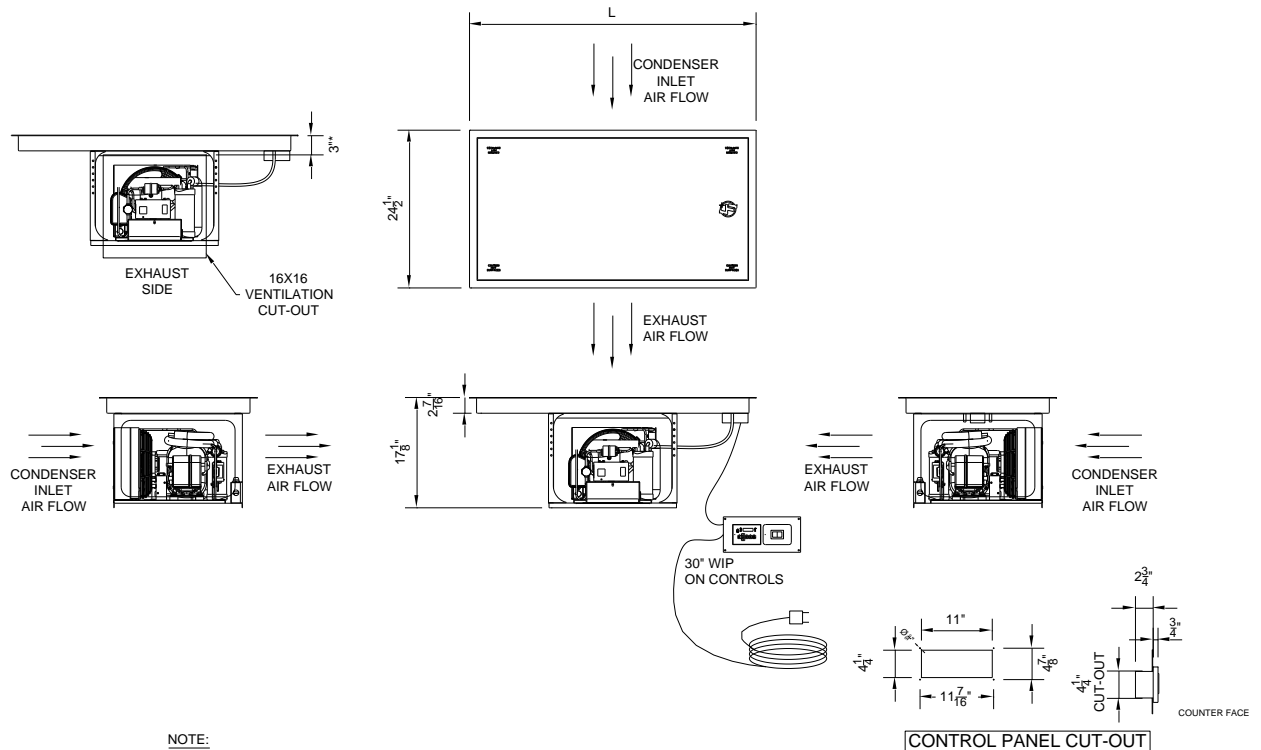
H = HUGGED

NONE = FLAT

UNIT INSTALLATION INSTRUCTIONS / SPECIFICATION

LTI: QSGT Series is a refrigeration and heating system designed for short term display and dispensing of cold & hot food products in maximum ambient temperature of 86°F. Refer to figures and tables provided below for standard cut out sizes for the QSGT units.

DI-QSGT



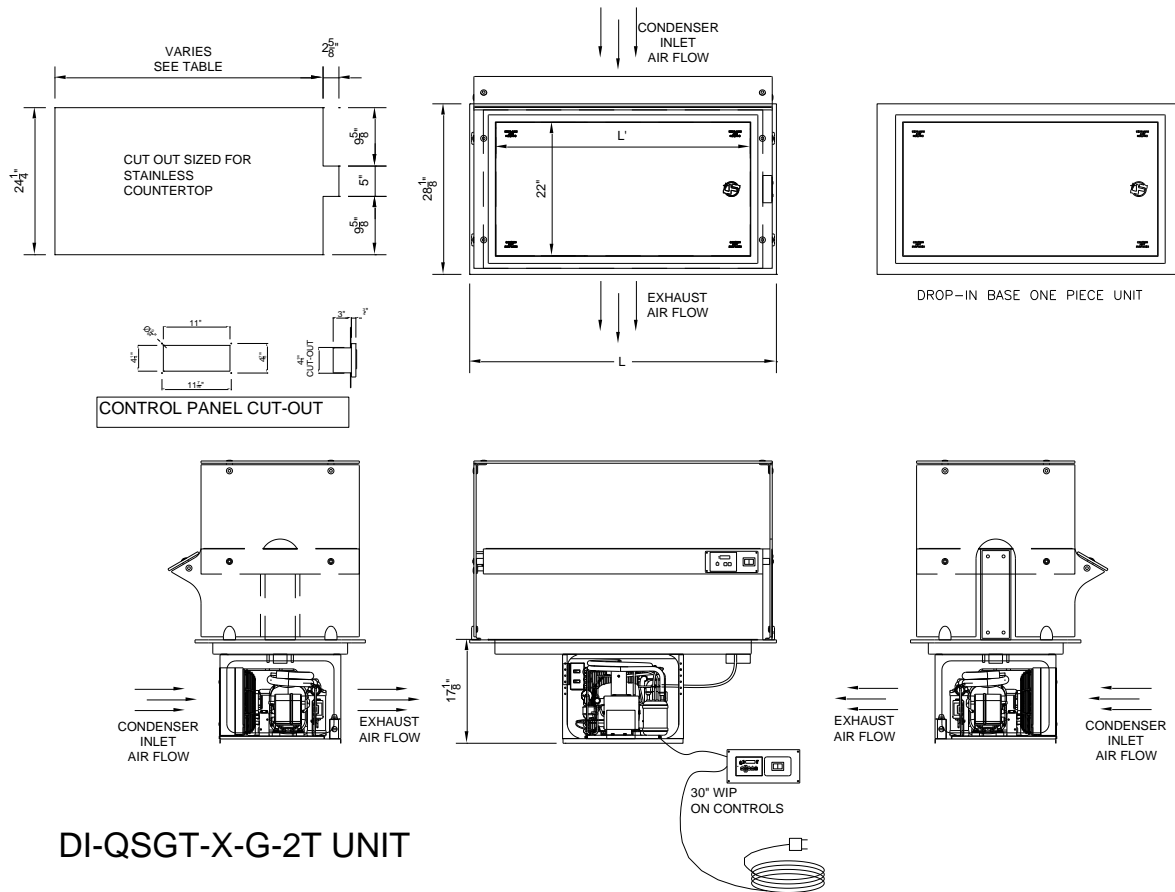
NOTE:

* 3" IS THE VERTICAL DISTANCE FROM THE TOP OF THE OF THE THAT MAKES CONTACT WITH THE COUNTER TOP TO THE 16X16 VENTILATION CUT-OUT. NOTE LEFT TO RIGHT LOCATION OF CUT-OUT IS CENTER OF UNIT.

CONDENSING UNIT LOCATION AND ORIENTATION IS SUBJECT TO CHANGE PER CUSTOMER REQUEST. ALWAYS REFER TO APPROVAL DRAWINGS IF POSSIBLE AND CHECK LOCATION OF THE CONDENSING UNIT BEFORE INSTALLING.

MODEL	OVERALL LENGTH (L)	DEPTH	HEATED AREA	CUT-OUT SIZE	CONTROL PANEL CUT-OUT SIZE	AMPS (120V)	NEMA PLUG	REFRIGERANT
DI-QSGT-28-G	30 1/2"	24 1/2"	616 sq/in	28 3/4 x 22 3/4	4 1/4" x 11"	7.5	5-15	R449A
DI-QSGT-42-G	44 1/2"	24 1/2"	924 sq/in	42 3/4 x 22 3/4	4 1/4" x 11"	7.5	5-15	R449A

These units are intended for indoor use only. A room temperature of no more than 86°F (36°C) is recommended.



DI-QSGT-X-G-2T UNIT

MODEL	WIDTH (L)	DEPTH	HEAT ED AREA	CUT-OUT SIZE SEE FIGURE FOR NOTCH	CONTROL PANEL CUT-OUT SIZE	AMPS (120V)	NEMA PLUG	REFRIGERANT
QSGT-28-G-2T	30 1/2"	24 1/2"	616 sq/in	30 1/4 x 24 1/4	4 1/4" x 11"	12.5	5-20	R449A
QSGT-42-G-2T	44 1/2"	24 1/2"	924 sq/in	44 1/4 x 24 1/4	4 1/4" x 11"	15	5-20	R449A

These units are intended for indoor use only. A room temperature of no more than 86°F (36°C) is recommended.

The counter cut-out sizes and power requirements are shown on the specifications sheets. A gasket is provided with each unit to be installed around the flange of each unit. The weight of the unit on the gasket forms a seal preventing liquids from seeping into the cut-out opening. *(Silicone is an optional seal not provided.)*

OPENINGS

IMPORTANT NOTE:

Self-contained refrigerated units require a minimum of (190 cubic feet per minute) of fresh airflow across the condenser for proper operation of the compressor.

ATTENTION: *Failure to provide proper airflow can cause premature compressor failure and will VOID any factory warranty.*

Ventilation Openings

A recommended minimum opening or removable panel 16" x 16" (256 square inches) is required in front of the condenser. The rear must also have an opening to permit the exhaust of heated air and servicing the unit. The recommended rear opening is 16" x 16" (256 square inches)

Refer to *Installation Procedures and DI-QSGT illustration/specifications* for recommended louvered front and rear openings.

ATTENTION: *Warranty on refrigeration systems will be VOID if installation instructions are not followed.*

IMPORTANT NOTE:

On counters that cannot meet any of the above installation instructions requirements you can contact LTI's Engineering department at 1-888-584-2722 for recommendations on the installation requirements of the refrigerated drop-ins. Detailed counter drawings may be required to provide recommended installation instructions.

NOTICE

WARRANTY **DOES NOT** COVER COST OF REMOVING DROP-IN UNIT FROM COUNTER IF THERE ARE NO SERVICE ACCESSES PROVIDED TO MAKE REPAIRS.

WARRANTY ALSO **DOES NOT** COVER COST OF REPLACING UNIT BACK INTO COUNTER AFTER REPAIR HAS BEEN MADE.

Installation Procedures

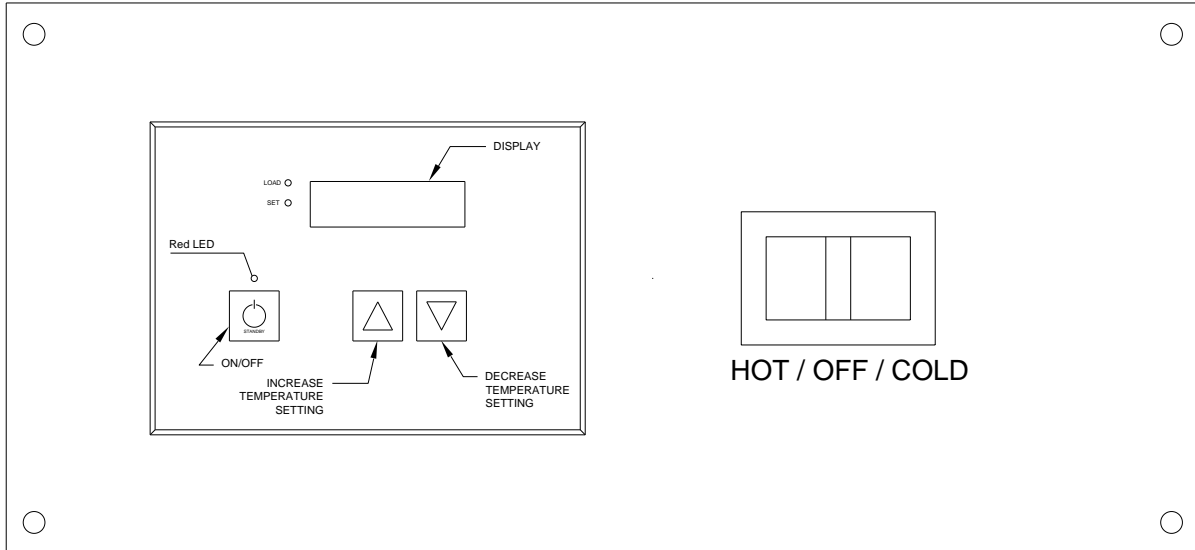
1. Cut the appropriate opening in the countertop for unit being installed. Refer to *Technical Specifications Table* for countertop cutout dimensions.
2. Make structural modifications or add bracing underneath the countertop to ensure the countertop will support the unit being installed.
3. Cut the necessary openings in counter to provide proper ventilation to the condensing unit as well as recommended service access openings for any service needed to repair unit. Louvered or grill-style panels should be installed where ventilation openings are located to protect the condensing unit.
 - a. Self-contained refrigerated units require a minimum of (190 cubic feet per minute) fresh airflow across the condenser. Cut-Out openings/access should be a minimum of 16"X16" (256 square inches) to remove condensing unit if needed without removing complete unit.
 - b. Openings/louvers should be in front of the condenser and shrouded to provide fresh air across the condenser with the other opening on the opposite side.
 - c. Louvered or grilled style panels should be around 75-85 sq in total and positioned in front of condenser and shrouded.

Refer to the *Illustration and Technical Specifications Table* for ventilation cut-out locations.

NOTE: ALWAYS measure the location of the condenser unit to insure proper location of ventilation openings.

ATTENTION: Failure to provide proper airflow can cause premature compressor failure and will VOID any factory warranty.

OPERATING INSTRUCTIONS

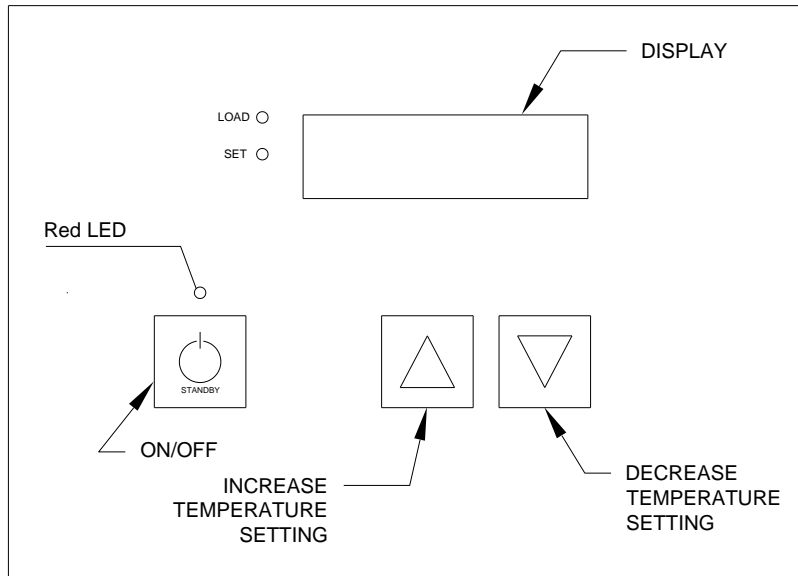


Turning ON QSGT unit:

1. Turning ON COLD Operation
 - a. To turn the unit to COLD press the three way rocker switch to the cold position.
 - b. The units will turn on the condensing unit and being cooling the glass surface.
2. Turning ON HOT Operation
 - a. To turn the unit to the HOT mode, press the three way rocker switch to the HOT position.
 - b. The unit will turn on the GT controller, display the current setting and begin heating. If the control is in the OFF mode refer to the steps below for operating the GT controller.

Turning OFF QSGT Unit:

To turn OFF the QSGT unit switch the three way rocker switch to the center "OFF" position. This will cut off the unit completely whether in the HOT or COLD operation.



Operating GT Controller

Turning ON GT Controller:

3. Press and Hold the STANDBY key for the unit to begin heating.
4. The target temperature setting will display and begin heating.

Turning OFF GT Controller:

1. Press and Hold the STANDBY key for 2-3 sec for the unit to stop heating.
2. OFF will be displayed.

Changing Settings:

1. While heating is active, press and hold the up or down arrow key for 2-3 sec
2. The SET led will blink.
3. Use the Up and Down arrow keys to adjust the target temperature.
4. Wait 3-5 sec and the new setting will be saved automatically, and the unit will begin heating at the saved setting.

Setpoint Settings:

100 -100°F heat blanket temperature
 125 -120°F heat blanket temperature
 150 -150°F heat blanket temperature
 175 -175°F heat blanket temperature
 185 -185°F heat blanket temperature
 195 -195°F heat blanket temperature
 205 -205°F heat blanket temperature
 235 -235°F heat blanket temperature
 250 -250°F heat blanket temperature

CLEANING INSTRUCTIONS

To maintain the performance and finish of the unit clean the unit daily. Make sure to use cleaning supplies and cleaners designed for cleaning stainless-steel and glass ceramic surfaces.

The factory recommends avoiding using abrasive sponges or scouring agents. Harsh chemical cleaners like oven sprays or stain removers are also unsuitable, as are bathroom or household cleaners.

Stainless steel:

Use soft cloths, microfiber, sponges, or plastic scouring pads. Avoid using scrapers wire brushes, steel wool or anything that might scratch the surface. Always clean stainless-steel parallel with the “grain.” Use cleaners that contain alkaline, alkaline chlorinated, or non-chloride chemicals.

Ceran Glass:

Avoid using abrasive chemical cleaners and sponges/scour pads. These are too harsh for ceramic tops and can cause surface scratches. Using a metal scraper to clean is recommended first to take off baked on foods and water/mineral stains. Then using recommended cooktop cleaners rub a few drops in with a paper towel or soft rag. Once done use a wet cloth and wipe down the glass top and dry with a clean rag.

Recommend Cleaners:

- **Cerama Bryte**
- **Carbona**
- **Affresh Cooktop Cleaner**

For more information on cleaning please visit Schott Ceran Site:

<https://www.schott-ceran.com/en/tips-and-care>

PREVENTATIVE MAINTENANCE

To ensure that your equipment will continue to operate properly, please follow these simple steps:

1. The QSGT unit should be cleaned thoroughly every day. Food spillage left on glass should be cleaned as soon as possible to prevent damage to the glass-ceramic cooktop.
2. Always wipe the unit down with a damp cloth. Do not spray water directly on the control panel areas.
3. The ceran surface should be cleaned thoroughly every day. Food spillage can cause damage to the unit. The acidic base of foods over time can cause pitting of the units.
4. Always wipe the unit down with a damp cloth. Do not spray water directly on the control panel areas or on areas with exposed heating elements.

Ceran Glass:

Ceran

Avoid using abrasive chemical cleaners and sponges/scour pads. These are too harsh for ceramic tops and can cause surface scratches. Using a metal scraper to clean is recommended first to take off baked on foods and water/mineral stains. Then using recommended cooktop cleaners rub a few drops in with a paper towel or soft rag. Once done use a wet cloth and wipe down the glass top and dry with a clean rag.

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TROUBLESHOOTING

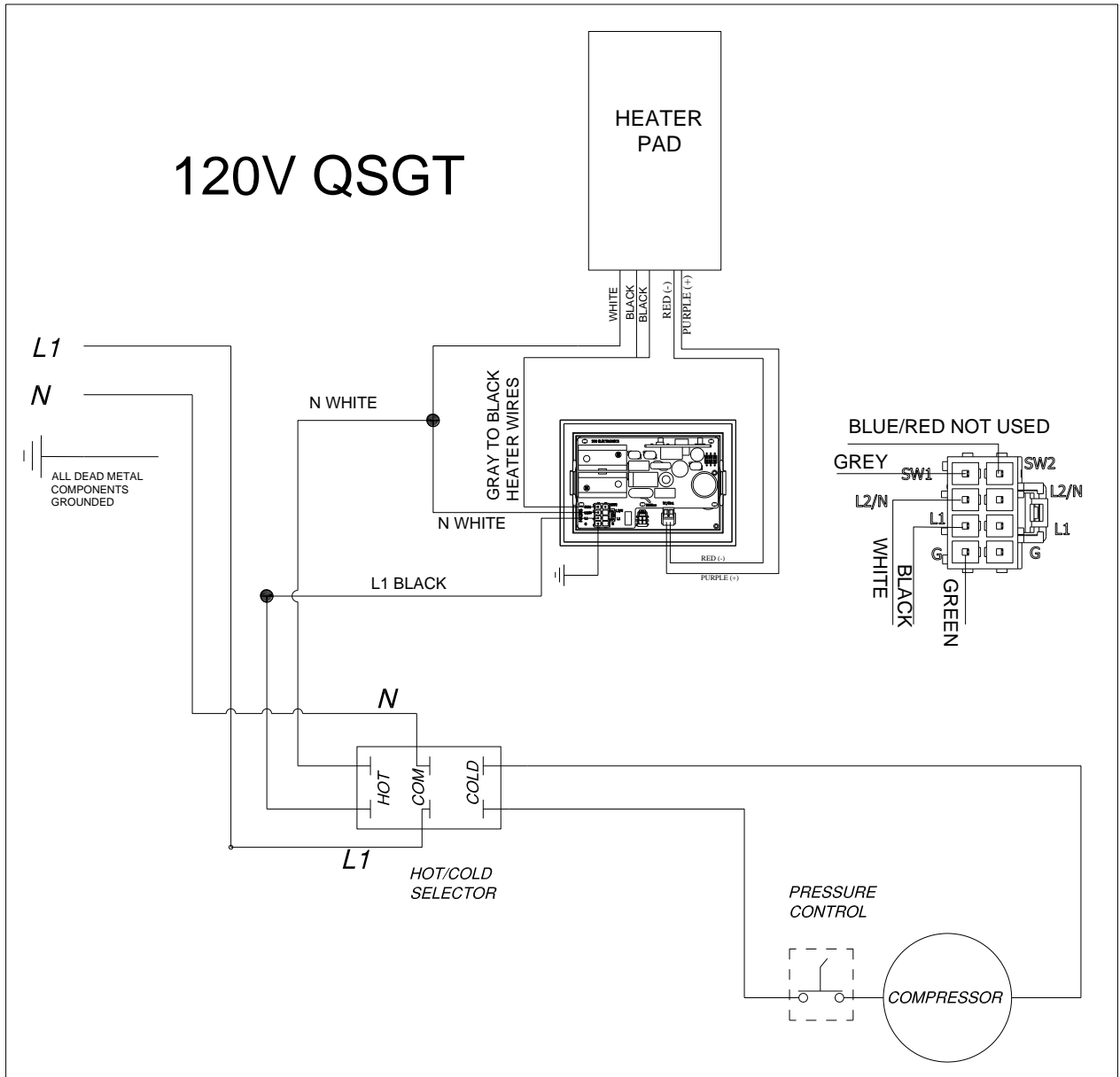
HEATING ISSUES		
COMPLAINT	PROBLEM	SOLUTION
UNIT WILL NOT HEAT	POWER CORD UNPLUGGED.	PLUG INTO RECEPTACLE.
	MASTER SWITCH/CONTROLLER OFF.	TURN MASTER SWITCH/CONTROLLER ON.
	NO POWER OUT OF CONTROLLER.	REPLACE CONTROLLER.
	POWER TO HEATER BUT NOT HEATING.	REPLACE HEATER.
	NO POWER TO RECEPTACLE.	CHECK BREAKER.
	POWER AT ROCKER SWITCH HAS NO POWER GOING TO CONTROLLER.	REPLACE ROCKER SWITCH.
"tc" ERROR ON IMMEDIATE START UP	THERMOCOUPLE CONNECTION IS LOST.	CHECK THERMOCOUPLE CONNECTION. RE-SPLICE IF NEEDED.
"tc" ERROR ON WITHIN 15MIN OF START UP	THERMOCOUPLE PURPLE AND RED LEADS ARE REVERSED.	CHECK THERMOCOUPLE LEADS AND MAKE SURE PURPLE (+) AND RED(-) ON CONNECTOR PLUG IN.
	POTENTIAL ISSUE WITH HEATER NOT HEATING PROPERLY.	CHECK TO MAKE SURE HEATER IS HEATING. IF NOT REPLACE HEATER.

REFRIGERANT TROUBLESHOOTING		
COMPLIANT	PROBLEM	SOLUTION
COMPRESSOR WILL NOT START	LINES DISCONNECTED / SWITCH OPEN	CLOSE START ON DISCONNECT SWITCH
	FUSE REMOVED OR BLOWN	REPLACE FUSE
	CONTROL STUCK IN OPEN POSITION	REPAIR OR REPLACE CONTROL
	CONTROL OFF DUE TO COLD LOCATION	RELOCATE CONTROL
COMPRESSOR WILL NOT START, HUMS BUT TRIPS OVERLOAD PROTECTOR	LOW VOLTAGE TO UNIT	CALL POWER SUPPLIER
	STARTING CAPACITOR DEFECTIVE	REPLACE CAPACITOR
	RELAY FAILING TO CLOSE	REPLACE RELAY
	COMPRESSOR MOTOR HAS A WINDING OPEN OR SHORTED	REPLACE COMPRESSOR
	INTERNAL MECHANICAL TROUBLE IN COMPRESSOR	REPLACE COMPRESSOR
COMPRESSOR STARTS AND RUNS, BUT SHORT CYCLES ON OVERLOAD PROTECTOR	LOW VOLTAGE TO UNIT	CALL POWER SUPPLIER
	OVERLOAD PROTECTOR DEFECTIVE	CHECK CURRENT, REPLACE PROTECTOR
	RUN CAPACITOR DEFECTIVE	REPLACE CAPACITOR
	EXCESSIVED DISCHARGE PRESSURE	CHECK VENTILATION, RESTRICTIONS IN COOLING MEDIUM, RESTRICTIONS IN REFRIGERANT SYSTEM
	COMPRESSOR TOO HOT, RETURN GAS HOT	CHECK REFRIGERANT CHARGE (FIX LEAK IF NECESSARY)
	COMPRESSOR MOTOR HAS A WINDING SHORTED	REPLACE COMPRESSOR
UNIT RUNS OKAY, BUT SHORT CYCLE ON	OVERLOAD PROTECTOR	CHECK CURRENT, REPLACE PROTECTOR
	THERMOSTAT	DIFFERENTIAL SET TO CLSE, WIDEN
	HIGH PRESSURE CUT OUT DUE TO: INSUFFICIENT AIR, OVERCHARGE, OR AIR IN SYSTEM	REDUCE REFRIGERANT CHARGE, PURGE. CHECK AIR SUPPLY TO CONDENSER, REDUCE REFRIGERANT CHARGE, PURGE
UNIT OPERATES LONG OR CONTINUOUSLY	SHORTAGE OF REFRIGERANT	FIX LEAK, ADD CHARGE
	CONTROL CONTACTS STUCK OR FROZEN/CLOSED	CLEAN CONTACTS, OR REPLACE CONTROL
	REFRIGERANT OR AIR CONDITIONED SPACE HAS EXCESSIVE LOAD OR POOR INSULATION	DETERMINE FAULT AND CORRECT
	EVAPORATOR COIL ICED	DEFROST
	RESTRICTION IN REFRIGERANT SYSTEM	DETERMINE LOCATION AND REMOVE
	DIRTY CONDENSER	CLEAN CONDENSER
	FILTER DIRTY	CLEAN OR REPLACE
START CAPACITOR OPEN	RELAY CONTACTS NOT OPENING PROPERLY	CLEAN CONTACTS OR REPLACE IF NECESSARY
	PROLONGED OPERATION ON CYCLE DUE TO LOW VOLTAGE, IMPROPER RELAY	CALL POWER SUPPLIER, OR REPLACE
RUN CAPACITOR OPEN, SHORTED OR BLOWN	EXCESSIVE SHORT CYCLE	DETERMINE REASON FOR SHORT CYCLE
	IMPROPER CAPACITOR	DETERMINE CORRECT SIZE AND REPLACE
	EXCESSIVELY HIGH LINE (100% OF RATED-MAX)	CALL POWER SUPPLIER
SPACE TEMPERATURE TOO HIGH	CONTROL SETTING TO HIGH	RESET CONTROL
	INADEQUATE AIR CIRCULATION	IMPROVE AIR MOVEMENT
SUCTION LINE FROSTED OR SWEATING	EXPANSION VALVE STUCK	CLEAN VALVE OFF FOREIGN PARTICLES, REPLACE IF NECESSARY
	EVAPORATOR FAN NOT RUNNING	DETERMINE REASON AND CORRECT
	OVERCHARGE OF REFRIGERANT	CORRECT CHARGE

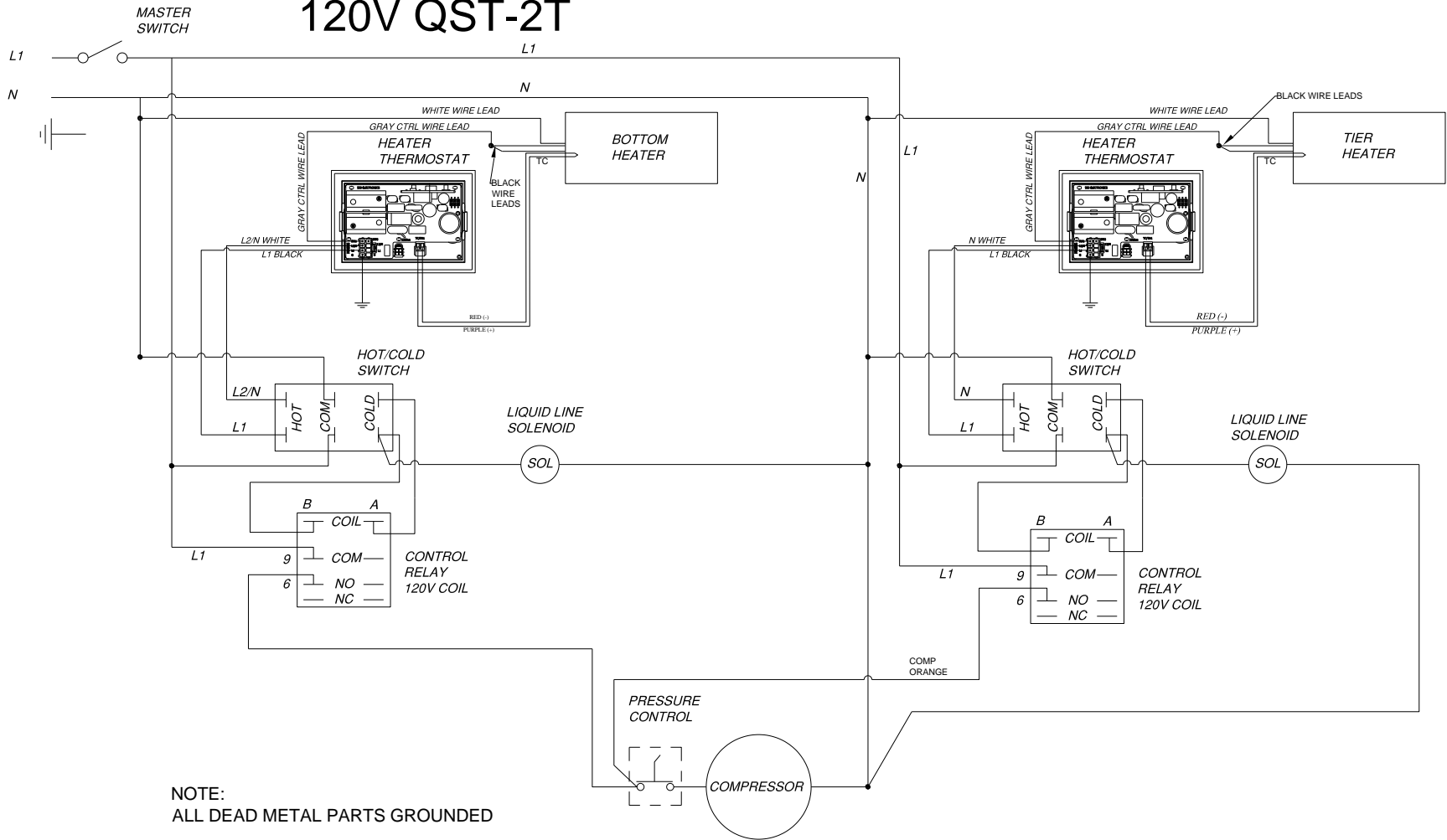
REPLACEMENT PARTS

ITEM NO.	DESCRIPTION	STOCK NO.	MFG NO.	MANUFACTURER
1	CONDENSING UNIT	311935	AE2415Z-AA1AXZ	TECUMSEH
1A	COMPRESSOR	311983	AE1157E-679-J7	TECUMSEH
2	CONDENSING UNIT	311937	AE2420-AA1BXM (BOM-2E294-1)	TECUMSEH
2A	COMPRESSOR AE2420Z-DS1B	311982	AE1322E-679-J7	TECUMSEH
3	PRESSURE CONTROL	311938	900-11968	TECUMSEH
4	FILTER/DRIER	282300	C-052-S-T	PARKER HANNIFIN
5	SIGHT GLASS	282400	SA-12S	PARKER HANNIFIN
6	ACCUMULATOR	311810	102-10034	TECUMSEH
7	SOLENOID	281610	E3S120	PARKER HANNIFIN
8	TXV VALVE R-449	282586	EFD-1/5-ZP	PARKER HANNIFIN
9	HEATER(20"X40"120/240V-900W) CERAN - QS	195363	LT2040SE	THERMO
10	HEATER(20"X26"120/240V-600W) CERAN - QS	195364	LT2026SC	THERMO
11	GLASS TOP 28"x 22"x 1/4"	120470	NA	SCHOTT
12	GLASS TOP 42"x 22"x 1/4"	120480	NA	SCHOTT
13	ROCKER SWITCH QS GLASS TOP	335916	LTIGM721-6S-BL-RC/GN-WBL	ZF ELECTRONICS
14	GT CONTROLLER	195436	330.2021.10	330 Electronics

DIAGRAMS



120V QST-2T



WARRANTY

Effective date July 1st, 2020

The LTI parts and labor warranty for all products is (1) year for all products (some product families have total of two-year parts and labor); The warranty period commences with the date of installation, or six (6) months from date of shipment from the factory, whichever is sooner. Refrigeration compressors come standard with a 5-year compressor warranty. The warranty covers all products used in United State and Canada. All labor and parts expense after the expiration of the warranty shall be the responsibility of the owner.

The QuickSwitch Family, TempestAir and ThermalWell families all include a 2yr parts and labor warranty.

K-12 warranty is 2 years parts and labor on ALL equipment.

All warranty labor is to be pre-authorized by the factory. To request warranty please go to <https://lowtempind.com/resources/warranty/> or call 888-584-2722 for pre-authorization and ask for the warranty department.

The warranty includes travel time to portal, not to exceed 100 miles round trip, or two hours total travel time. The warranty requires that all labor must be performed during regular work hours. Overtime premiums will be charged to the owner or must be pre-approved prior to the service call. The warranty does not apply to any equipment or component parts which have been subjected to shipping damage, improper voltage, improper installation, alteration, abuse, or misuse. The warranty does not cover routine maintenance activities, any failure that results from lack of, or improper equipment maintenance activities. The warranty does not cover any loss of business profits, any loss of food, or other products, or damage to property due to electrical, gas or mechanical malfunction or to any incidental or consequential damages of Purchaser or any third party. Damage due to floods, fire or other acts of God also are not covered.

Due to the custom nature of the products returns are not allowed. All inquiries concerning this warranty must be directed to LTI.

LTI

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