Caldwell Liquid Propane Gas Vaporizer

Installation and Operating Manual

Manual for Vaporizer Model No. LPV-34 to be used on NGE-PE Heaters with Serial No. 7711 and up. Read Manual thoroughly before Installing or Operating Unit.

Packing List

Qty.	Part No.	Description
1	702381	Plumbing Assembly (LP)
1	702035	Vaporizer
1	701946	Copper Tube Assembly
1	720797	Top Vaporizer Bracket (28" Unit)
	or 720789	Top Vaporizer Bracket (24" Unit)
1	720904	Bottom Vaporizer Bracket (28" Unit)
	or 720896	Bottom Vaporizer Bracket (24" Unit)
1	714808	Regulator, ½" NPT, 1-50 P.S.I.
1	712612	Thermostat, Closes 150° - Opens 160°
1	712620	Thermostat Clip, ½" O.D. Tube
1	714493	Bell Reducer, 3/4"-½", Blk. (Used on 28" units only)
1	851626	Line Strainer, Y Type, ½"
1	715276	Hose - ½" male, 3/8" female
1	708859	Serial No. Plate - 1½" x 3"
1	712935	Pipe Plug - 3/8" NPT, Blk.
3	714147	Nipple - ½" x 2", Blk. (2 used on 24" units, all 3 used on 28" nipples)
4	708487	Sheet Metal Screw - #10 x ½"
2	714246	Elbow - ½" x 90°, Blk.
1	714261	Elbow - ½" male brass, 90°
1	714451	Elbow - ½" female brass, 90°
2	735894	Square Head Set Screw - #10 x ½"
4	708164	Nut - 5/16" hex
2	708313	Lockwasher - 5/16"
1	Bulletin 962	Assembly Instructions

Installation of Vaporizer Kit

1. 2 - 7/8" x 2" knockouts are provided for the vaporizer, knock them out using a hammer and punch. Place the vaporizer in the slots. Now slide the top vaporizer bracket on the top pipe and the bottom vaporizer bracket on the bottom pipe. To be sure you have the brackets placed correctly, the square head set screws should be facing out as shown on page 4. Now drill 11/64" dia. holes in the heater housing centered in each slot on the brackets. Screw the (4) #10 x ½" sheet metal screws in the holes but do not tighten yet.

2. Two 3/8" diameter knockouts are provided for the liquid plumbing line. The location of the holes are below the vapor plumbing line. Thread a 5/16" nut on each eyebolt and then assemble the liquid plumbing line onto the heater housing with a 5/16" lockwasher and nut on each eyebolt. Refer to page 4 for typical installation.

3. To install the regulator, the present plumbing assembly will need to be moved away from the heater housing. This is accomplished by removing the nut on the eyebolt support and the set screw at the burner inlet.

4. Refer to page 4 for proper installation. Thread the regulator on the $\frac{1}{2}$" x 2" nipple securely. It is very important that the regulator is assembled to the plumbing correctly. On the bottom of the regulator the inlet and outlet are noted as IN and OUT. Be sure to assemble the regulator as shown on page 4. Assemble the regulator onto the plumbing assembly. Add a 2" nipple and $\frac{1}{2}$" female brass elbow as shown on page 4.

NOTE: Teflon ribbon sealant tape or pipe dope should be placed on all threads to obtain a leak proof assembly.

5. Thread elbows on the vaporizer inlet and outlet. Connect the liquid propane hose to the vaporizer inlet, then to the liquid plumbing line.

6. Thread a 2" nipple into the vaporizer outlet then the $\frac{1}{2}$" line strainer and $\frac{1}{2}$" male brass elbow.

7. Connect the copper tube assembly onto the regulator inlet and line strainer outlet as shown on page 4.

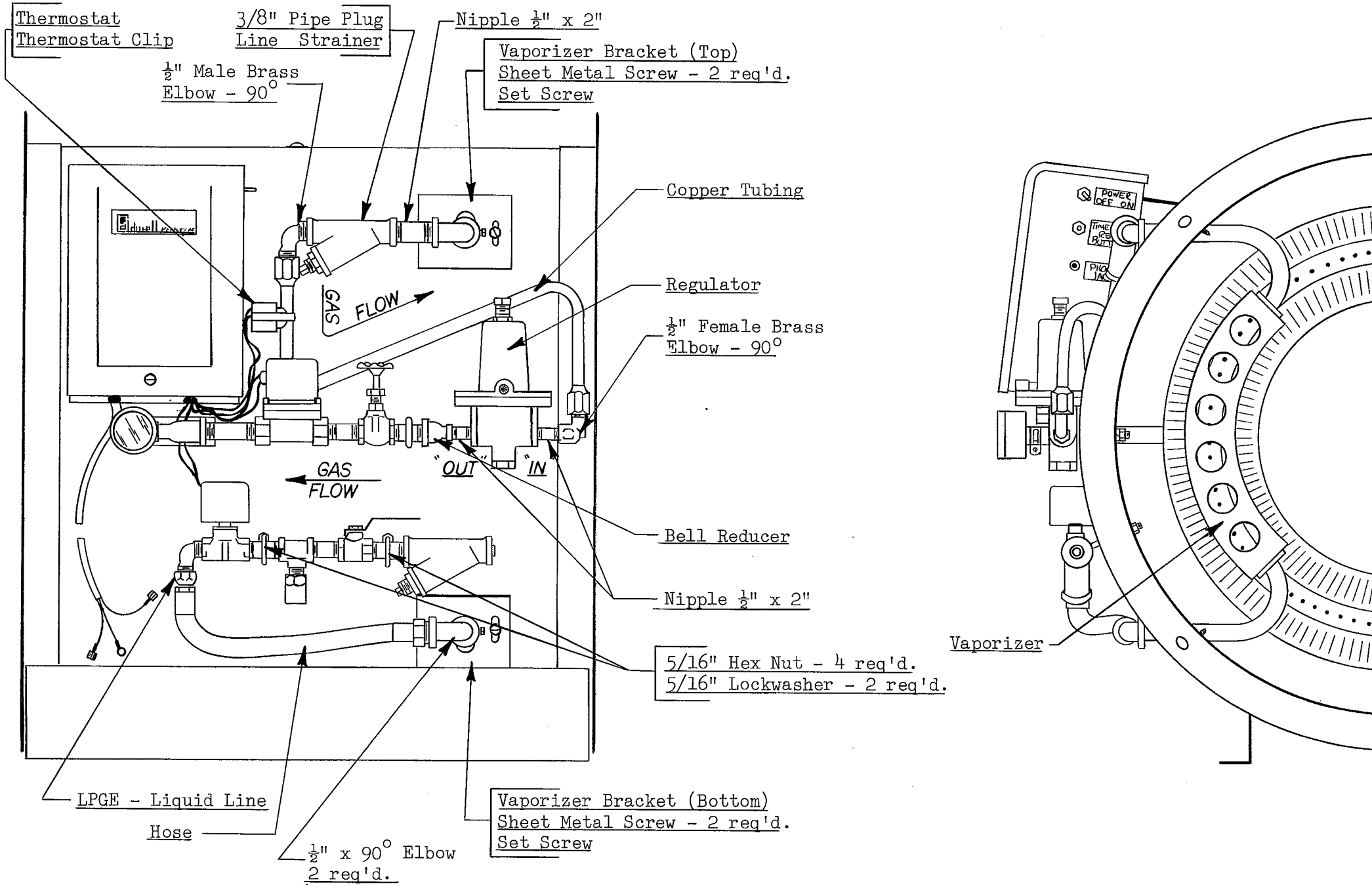
8. Connect the vaporizer thermostat to the copper tubing with the thermostat clip.

9. Reassemble the eyebolt on the regulator plumbing line and make sure the eyebolts on the liquid plumbing line are secure. Center the plumbing outlet on the burner inlet cone and secure the set screw on the burner inline bracket. Adjust the vaporizer and secure the 4 sheet metal screws and 2 set screws on the vaporizer bracket.

10. The burner should be located such that the front edge of the burner is approximately $\frac{1}{4}$" from the vaporizer core. This allows maximum heat generation from the vaporizer.

11. Wiring of Liquid Solenoid and Vapor Thermostat:

Page 5 illustrates the location of the liquid solenoid and vapor thermostat wiring terminals. Also note the elimination of the ETA jumper wire. When the heater is rewired, leave the gas off and check to see that the unit has spark. If no spark is present, check wiring connections, Page 5 and wiring schematic.


Thermostat
Thermostat Clip
3/8" Pipe Plug
Line Strainer
Nipple ½" x 2"
Vaporizer Bracket (Top)
Sheet Metal Screw - 2 req'd.
Set Screw
½" Male Brass
Elbow - 90°
Copper Tubing
Regulator
½" Female Brass
Elbow - 90°
GAS FLOW
GAS FLOW
"OUT"
"IN"
Bell Reducer
Nipple ½" x 2"
5/16" Hex Nut - 4 req'd.
5/16" Lockwasher - 2 req'd.
Vaporizer
LPGE - Liquid Line
Hose
½" x 90° Elbow
2 req'd.
Vaporizer Bracket (Bottom)
Sheet Metal Screw - 2 req'd.
Set Screw
POWER OFF ON

12. Gas hook up at tank and vaporizer:

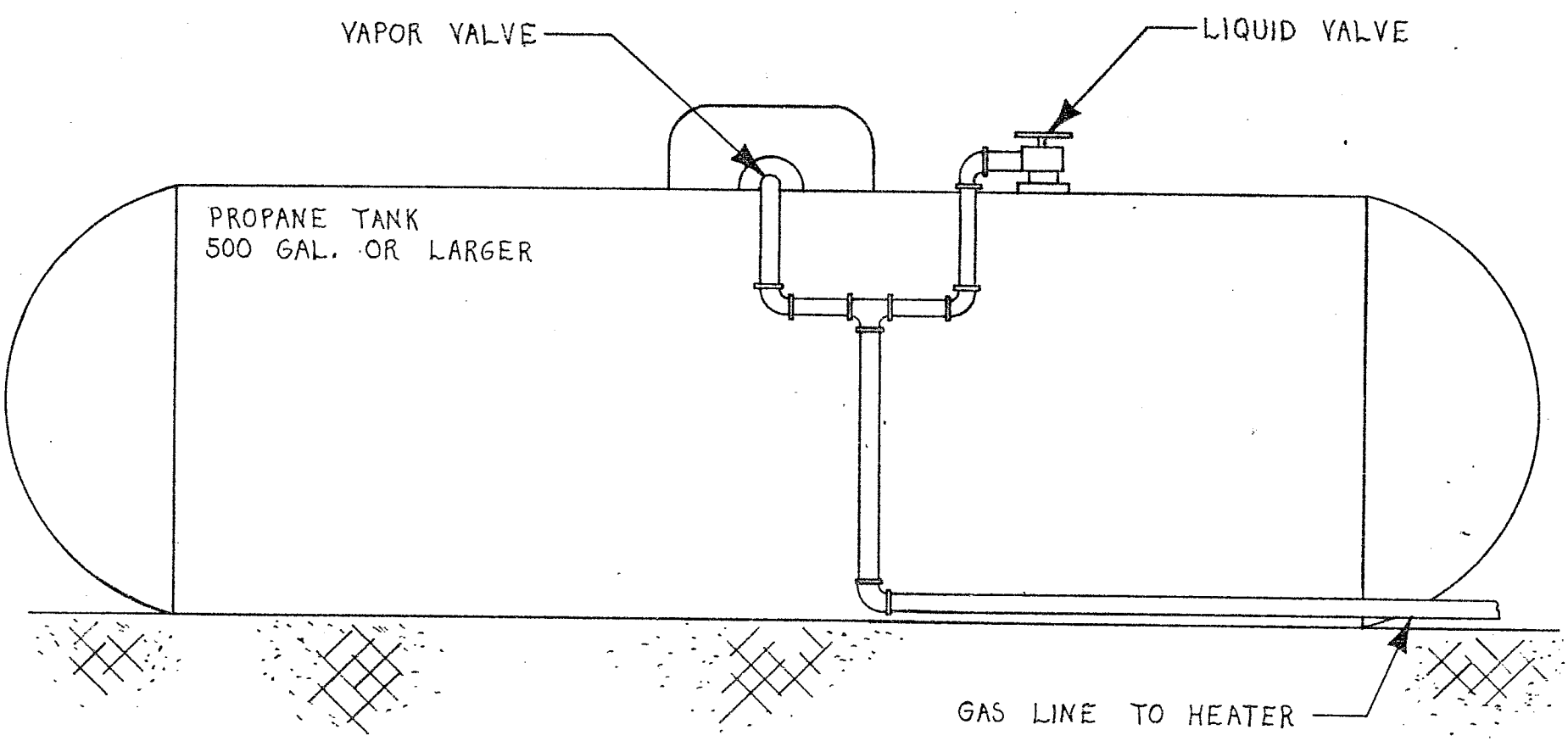
Caldwell Manufacturing Company suggests using $\frac{1}{2}$" O.D. copper refrigeration tubing for gas line. Hook up at tank should be made with $\frac{1}{2}$" O.D. tube to both the vapor and liquid valves on the tank. Bring both lines together at a tee and run a line from there to heater for hook up. Hook line into $\frac{1}{4}$" line strainer at vaporizer. Page 6 shows hook up at tank. Be sure line is clean before hooking up to heater unit.

Operating Instructions

1. Heater operation is the same as outlined in heater instructions except when first starting unit or when shutting unit down. When starting burner, open only the vapor line from tank to the burner. Run burner on vapor until the copper line between the vaporizer and the regulator on the heater feel hot to the touch or for approximately 2 minutes. Then go to the tank and open the liquid line approximately one turn. The gas pressure should start to increase. Shut off vapor line and regulate liquid line for desired heat. Liquid line valve does not have to be opened very much. The gas volume will increase as it is changed to vapor. When unit is to be shut down, valves at tank should be shut off and gas burned out of the lines before shutting unit off. To restart go through same procedure as mentioned before. The reason for starting unit on vapor is to allow the vaporizer itself to get preheated so that it will be hot enough to start vaporizing the liquid gas as soon as it enters the vaporizer. If it is not preheated, the vaporizer could possibly freeze up.

NOTE: Freezing of vaporizer may occur due to ambient temperature changes and changes in drying system during the drying process. Caution should be taken to keep the vaporizer properly adjusted eliminating the possibility of gas valves freezing in the open position. If gas valves freeze in the open position, a loss of gas will occur and possible danger of explosion will be present when unit is re-started.

2. Vaporizer may require adjusting to meet required vaporizing temperature. This is done by loosening set screw on both outer vaporizer brackets and adjusting the vaporizer in or out.



PART NO.

C		
B		
A		
	ERO. NO.	DATE
REVISIONS		

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS ±1/32
DECIMALS ±.010
ANGLES ±½°

AUTHORIZED	BY	DATE
DRAWN	M.L.V	8/26/77
CHECKED	QJO	8/26/77
APPROVED		

PART NAME: LPGE VAP. KIT TANK HOOK UP

MATERIAL: ASSEMBLY (BULLETIN) 6 of 6

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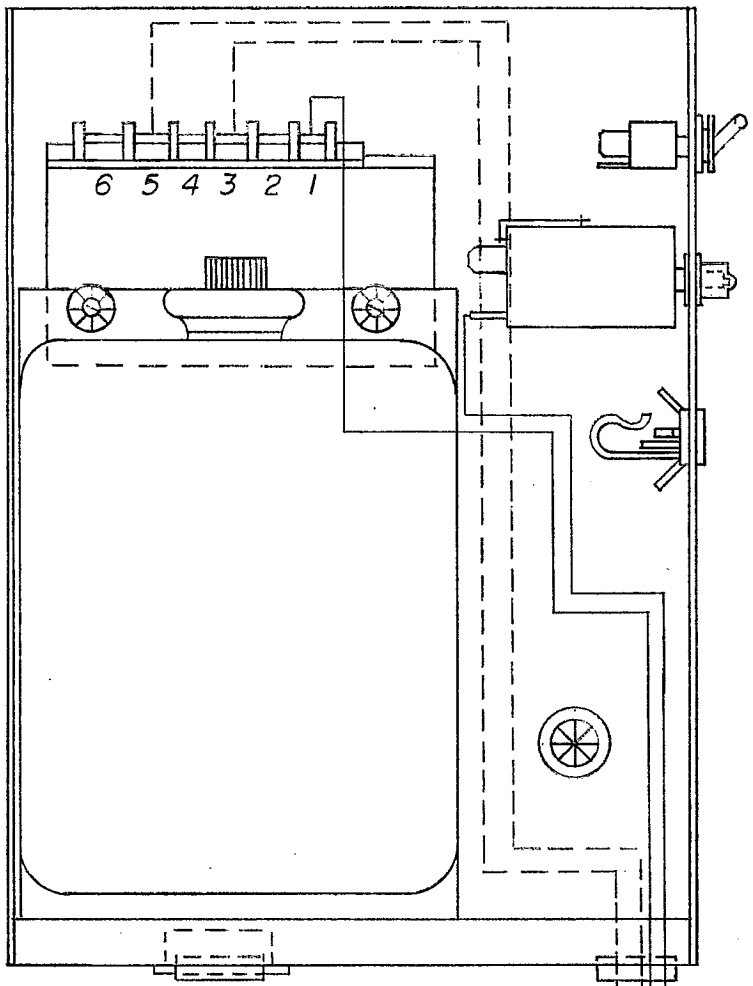
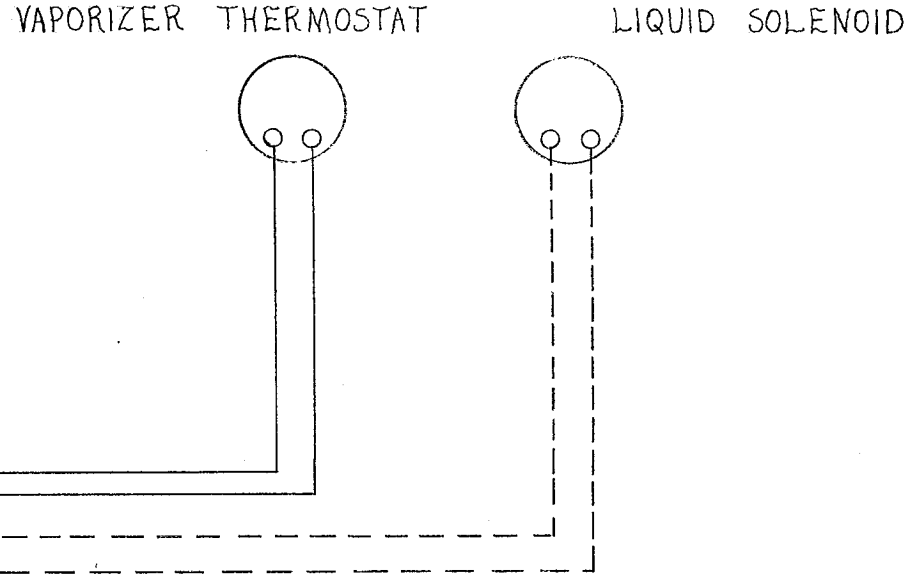
SIZE	SCALE	PART NO.
A	NONE	203-3-0349 "723874"



NOTE: THE 6" JUMPER WIRE WITH Q-DISCONNECTS, ON NGE-PE ONLY, WIRED TO TERMINAL 1 & THE ETA SWITCH IS TO BE ELIMINATED. WIRE THE LIQUID SOLENOID & VAP. THERMOSTAT AS SHOWN



PART NO.

C			
B			
A			
	ERO. NO.	DATE	
REVISIONS			

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS ±1/32
DECIMALS ±.010
ANGLES ±¼°

AUTHORIZED	BY	DATE
DRAWN	M.L.V.	8/26/77
CHECKED	[illegible]	8/26/77
APPROVED		

PART NAME: LPGE VAP. KIT WIRING SCHEMATIC

MATERIAL: ASSEMBLY (BULLETIN) 962 5 of 6

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SIZE	SCALE	PART NO.
A	½" = 1"	203-2-0213 "723338" 962

Form No. 902-04062