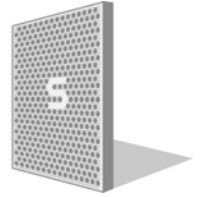


# INSTALLATION / OWNER'S MANUAL

**Schwank**  
INNOVATIVE HEATING SOLUTIONS



patioSchwank  
patioSchwank

## SERIES 1100

HIGH EFFICIENCY/COMBINED INTENSITY  
INFRA-RED PATIO HEATER

### **FOR YOUR SAFETY:**

Do not store or use gasoline or other flammable vapours and liquids in the vicinity of this or any other appliance.

#### **If you smell Gas:**

- >Extinguish any open flames
- >Don't touch electrical switches
- >Call your Gas supplier immediately

### **FIELD CONVERTIBILITY:**

“The conversion shall be carried out in accordance with the requirements of the authorities having jurisdiction and in accordance with the requirements of the B149.1 (latest edition) INSTALLATION CODE” in Canada, and the ANSI Z223.1 (latest edition) in the U.S.A.



MEMBER OF



Canadian Restaurant  
and Foodservices  
Association

Association canadienne  
des restaurateurs et des  
services alimentaires



**NOTICE:**

*Schwank reserves the right to make changes to equipment and specifications without obligation or notification.*

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*Schwank  
5285 Bradco Boulevard  
Mississauga, Ontario,  
L4W 2A6  
Phone: (905) 712-4766  
Fax: (905) 712-8336  
1-866-361-0417*

*PO Box 988, 2 Schwank Way  
Waynesboro, Georgia,  
USA 30830  
Phone: (706) 554-6191  
Fax: (706) 554 9390  
1-877-446-3727*

*e-mail: [info@schwankheaters.com](mailto:info@schwankheaters.com)*

***<http://www.schwankheaters.com>***



# 1100 SERIES

## HIGH EFFICIENCY/COMBINED INTENSITY INFRA-RED PATIO HEATER

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## **1. GENERAL**

The Schwank gas fired infra-red combined intensity heaters are suitable to be installed for heating of outdoor and indoor spaces. These installation instructions are intended for the patioSchwank Series 1100 Heaters. All installations in Canada must conform to local and national code requirements including the current CSA-B149.1-00 installation code for gas burning appliances and equipment, and Canadian Electrical Code PART 1 CSA C22.1 latest edition must be observed. All installations in the U.S. A. must conform to local and national code requirements including, National Fuel Gas code ANSI Z223.1 and the National Electrical Code ANSI/NFPA No 70 (latest edition). Due to ever changing standards and requirements, revision to our equipment and installation procedures may be necessary. In case of discrepancies, the latest installation manual will take priority.

## **2. INSTALLATION REQUIREMENTS**

### **2.1 MOUNTING CLEARANCES**

The patioSchwank Series 1100 Heater must be mounted with minimum clearances as shown in Section 8.3 and 8.4. It should also be located with respect to building construction and equipment so as to provide sufficient clearance and accessibility for servicing and cleaning of burners and ignition control.

### **2.2 HEATER MOUNTING**

The patioSchwank Series 1100 Heaters are approved for both horizontal and angle mounting. When angle mounting, the short axis may be rotated to a maximum of 30° with venturi always in the upper position. Refer to Diagram 4 on Page 8. Improper angle mounting can result in damage to the heater or unsafe operation, and will void warranty.

***IMPORTANT:*** For either horizontal or angle mounting, the long axis of the heater must be level. Use only non-combustible mounting hardware. Diagram 2 on Page 7 illustrates typical suspension hardware that may be used.

### **2.3 GAS SUPPLY LINE INSTALLATION**

- ◆ All piping must be installed according to local codes.
- ◆ An approved flexible connector between the heater and gas piping must be installed. The same is available as an option from Schwank.
- ◆ A drip-pocket at the inlet connection must be provided.
- ◆ On propane-fired units, a main line filter is recommended.
- ◆ Piping joint compounds must be resistant to the action of liquefied petroleum gases.
- ◆ All piping joints should be tested for leaks with a soap and water solution.

**CAUTION:** DO NOT INSTALL ANY GAS PIPING IN HEAT ZONES.  
DO NOT SUBJECT HEATER CONTROLS TO LEAK  
TEST PRESSURES WHEN CHECKING THE MAIN SUPPLY PIPING.

### **2.4 GAS PRESSURE**

The maximum supply pressure must be limited to 14" W.C. (0.5 psi). If the line pressure is above 14" W.C., then a separate pressure reducing regulator must be used. The minimum pressure at the inlet to the heater regulator must be equal to or greater than 6.0" W.C. for natural gas and 11.0" W.C. for propane gas.

A sealed regulator is supplied with the heater, which maintains the proper manifold pressure when the main burner is operating under the following pressure:

	<u>LINE PRESSURE IWC</u>		<u>MANIFOLD PRESSURE IWC</u>
	<u>MINIMUM</u>	<u>MAXIMUM</u>	<u>AT TAP IN GAS VALVE</u>
NATURAL GAS	<b>6.0</b>	<b>14.0</b>	<b>5.0</b>
PROPANE GAS	<b>11.0</b>	<b>14.0</b>	<b>10.0</b>

Natural gas models are orificed for 1000 BTU/CU.FT.  
 Propane gas models are orificed for 2500 BTU/CU.FT.

## **2.5 ELECTRICAL REQUIREMENTS**

All electrical installations must meet local and the latest edition Electrical Code PART 1 CSA C22.1 in Canada and ANSI/NFPA N0 70 in the U.S.A. The heater must be electrically grounded in accordance with the local electrical code.

**Single heater** requires 24 Volt, 60 Hz electrical transformer sized at 40VA.

**Multiple heaters** connected to a single 24 Volt, 60 Hz transformer, require 40 VA for the first heater and 30Va for all subsequent additions. For example, four heaters wired together in parallel, equals a 130Va load, (40Va + 30Va + 30Va + 30Va), the closest rated transformer **HIGHER** than the 130Va total rating is 150Va so a 150 Va Transformer is the correct selection. Five heaters wired together in parallel equal a 160Va load (40Va + 30Va +30Va +30Va + 30VA). In this case the next size transformer with a **HIGHER** Va rating than 160Va must be selected, and a 200Va Transformer is the correct selection.

### **Note:**

Total load of all heaters must be considered in determining the required contact rating of the controller, particularly when grouping the heaters in a zone. It is not recommended to install more than 12 heaters per zone and proper wiring polarity **MUST BE** maintained throughout.

### **Low Voltage Wiring:**

Total low voltage wiring distances must be allowed for, with low voltage wiring correctly sized by an approved electrician to conform with the total transformer Va rating. Proper electrical rating in the system can be checked by voltage readings at ignition module terminals with **ALL** heaters **ON** under full load. To avoid system malfunction, the voltage range must be within **21.6 Volts to 26.4 Volts**.

Malfunction of the heating system will result if the voltage varies by more than -10% or +10% (21.6v to 26.4v) or if the polarity happens to be reversed

## **3. INSTALLATION PROCEDURES**

- a) Properly install gas line as outlined in Section 2.3., Page 5.
- b) Mount heaters by using non-combustible mounting hardware as illustrated in Diagram 2 on Page 7. Observe the minimum clearances as outlined in Sections 8.3 to 8.4. on page 8, and suggested mounting distances in section 8.5 on page 9.
- c) Connect heater to the main gas line. A 1/2" flexible connector available as an option from Schwank Inc. must be used to absorb gas line expansion and any vibration.
- d) Check gas line for leakage by using soap test or gas meter test. Ensure gas pressure meets the requirements outlined in Section 2.4, Page 5.

**WARNING:** *When testing the main gas line pressure, ensure that the isolation valve and combination gas valve are "OFF", otherwise damage to the combination gas valve will result.*

- e) Ensure proper electrical rating in the system by checking voltage at ignition module terminals. To avoid system malfunction, the voltage range must be within 21.6 Volts to 26.4 Volts.
- f) Test-fire the heating system by following the lighting instructions as shown below and on heater.

#### **4. LIGHTING INSTRUCTIONS**

- a) Open the isolation valve in the main gas line, and turn gas control knob on the combination gas valve in the heater to the "ON" position.
- b) Switch on electrical circuit.
- c) The heater should attempt ignition, and ignite within thirty seconds.
- d) If ignition does not occur, turn off electrical power.

#### **5. SHUT DOWN INSTRUCTIONS**

- a) For temporary shutdown, turn off the electrical circuit.
- b) For complete shutdown, turn off the electrical circuit and turn gas control knob to the "OFF" position.

#### **6. AIR BORNE PARTICLES**

Under certain conditions, heater may discolour due to ambient air borne particle deposits on the outside surface of the delta chamber. These deposits are normal and in no way affect the operation of the heater or manufacturer's warranties.

#### **7. SERVICING GUIDE**

##### **7.1 GENERAL SERVICING**

Servicing of heater is essential for continued efficient operation. Servicing should be carried out annually by qualified service personnel as follows:

- ◆ Clean the ceramic tile with compressed air. Avoid directing air stream at gasket material between tile and heater body. The air pressure must be **lower** than 20 psig.
- ◆ Clean the venturi tube with compressed air. The air pressure must be **lower** than 20 psig.
- ◆ Clean the reflectors, by opening the access cover near the Venturi, revealing the end of the bottom rod that holds the front cover securely in place. Extract rod with long nosed pliers and front will unlock and hinge freely on the top rod, to allow for cleaning access. **Don't forget to replace rod and lock cover upon completion of service.**

**WARNING:** If heater backfires during operation, it must be turned off immediately.

##### **Indication of back firing:**

- ◆ Loud ignition noise, followed by distinct hissing sound.
- ◆ Little or no visible burning on the ceramic tile surface.
- ◆ Combustion is taking place inside the burner body.

##### **Cause & remedy of back firing:**

- ◆ Improper gas pressure entering the venturi tube:
  - check gas pressure, and check orifice for insect and spider webs
  - adjust pressure and clean out orifice as required using a soft pipe cleaner.
- ◆ Breakage of a ceramic tile and or gasketing:
  - replace damaged part.
- ◆ Faulty sealing of the ceramic tile to the burner body, caused by breakdown of gasket material:
  - contact Schwank or your Schwank distributor.

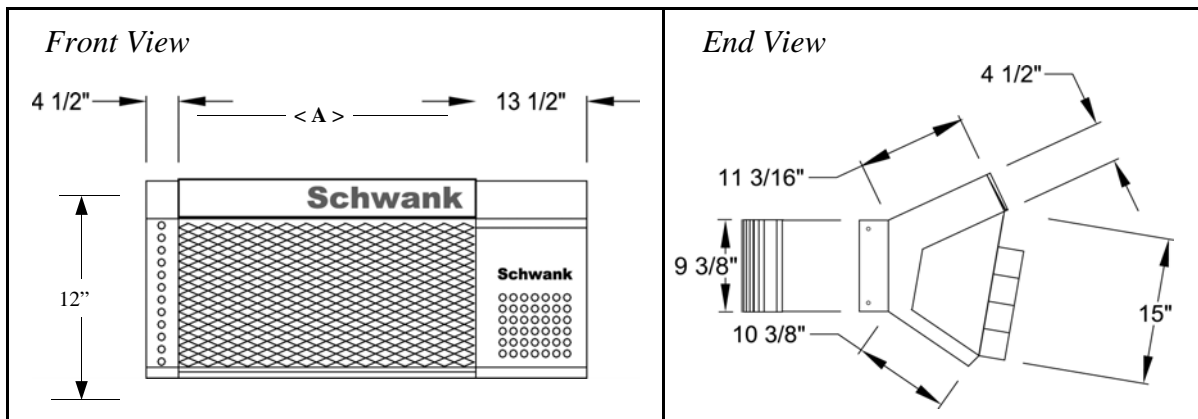
## 8. CONFIGURATIONS:

### 8.1 DIMENSIONS & CONFIGURATIONS FOR THE SERIES 1100 COMBINED INTENSITY HEATERS

Table 1: Capacities & Configurations

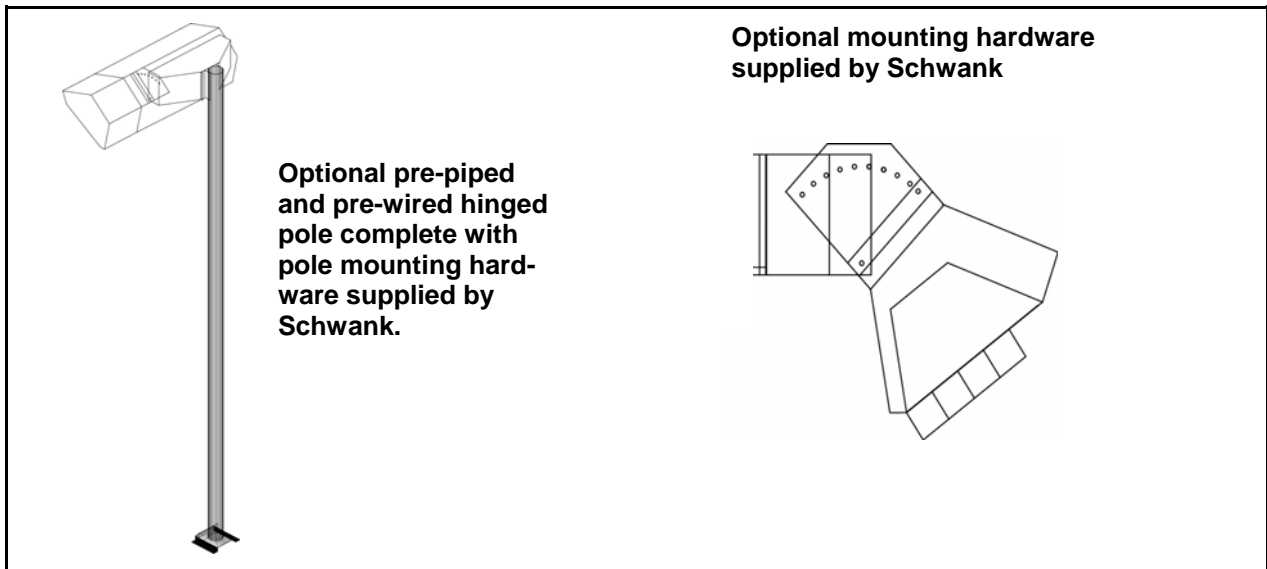
MODEL	Voltage VAC	Current amps	Capacity		Total Weight lbs.	Length < A >
			Btu/hr input	Radiant output		
1110	24	40 VA	29,500	23,900	49	21 1/4"
1115			44,000	35,600	65	32 3/4"
1120			59,000	47,800	74	43 1/2"
1130			88,500	71,700	94	65"

Diagram 1: Dimensions



### 8.2 OPTIONAL MOUNTING HARDWARE FOR THE SERIES 1100 COMBINED INTENSITY HEATERS.

Diagram 2: SUSPENSION HARDWARE





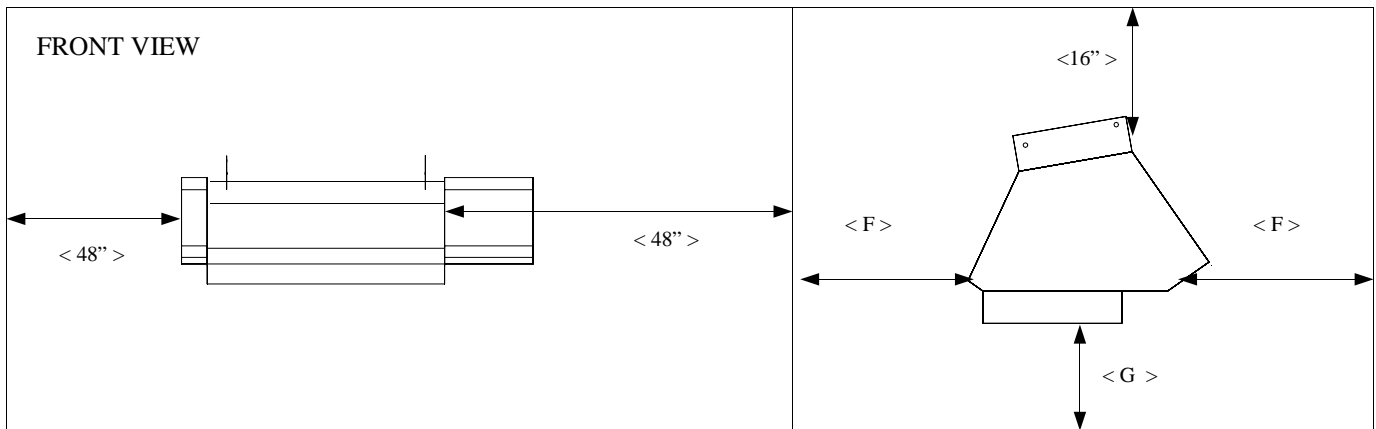
### **8.3 MINIMUM CLEARANCES TO COMBUSTIBLES**

Table 2:

MODEL	Front and rear of heater < F >	Below heater < G >	Front of heater < L >
1110	30"	90"	66"
1115	30"	96"	66"
1120	33"	100"	69"
1130	36"	105"	72"

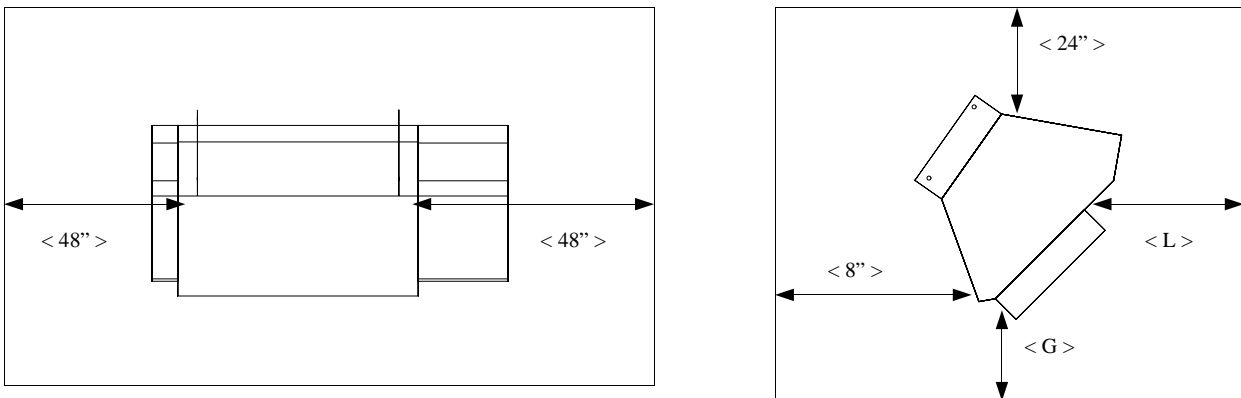
The clearances to combustibles are established at points reaching a surface temperature of 160° F. Some materials such as awnings or plastic may require higher distances. Respect clearances as shown

**Diagram 3: horizontal mounted**



### **8.4 MINIMUM CLEARANCES TO COMBUSTIBLES**

**Diagram 4: angle mounted up to 30°**



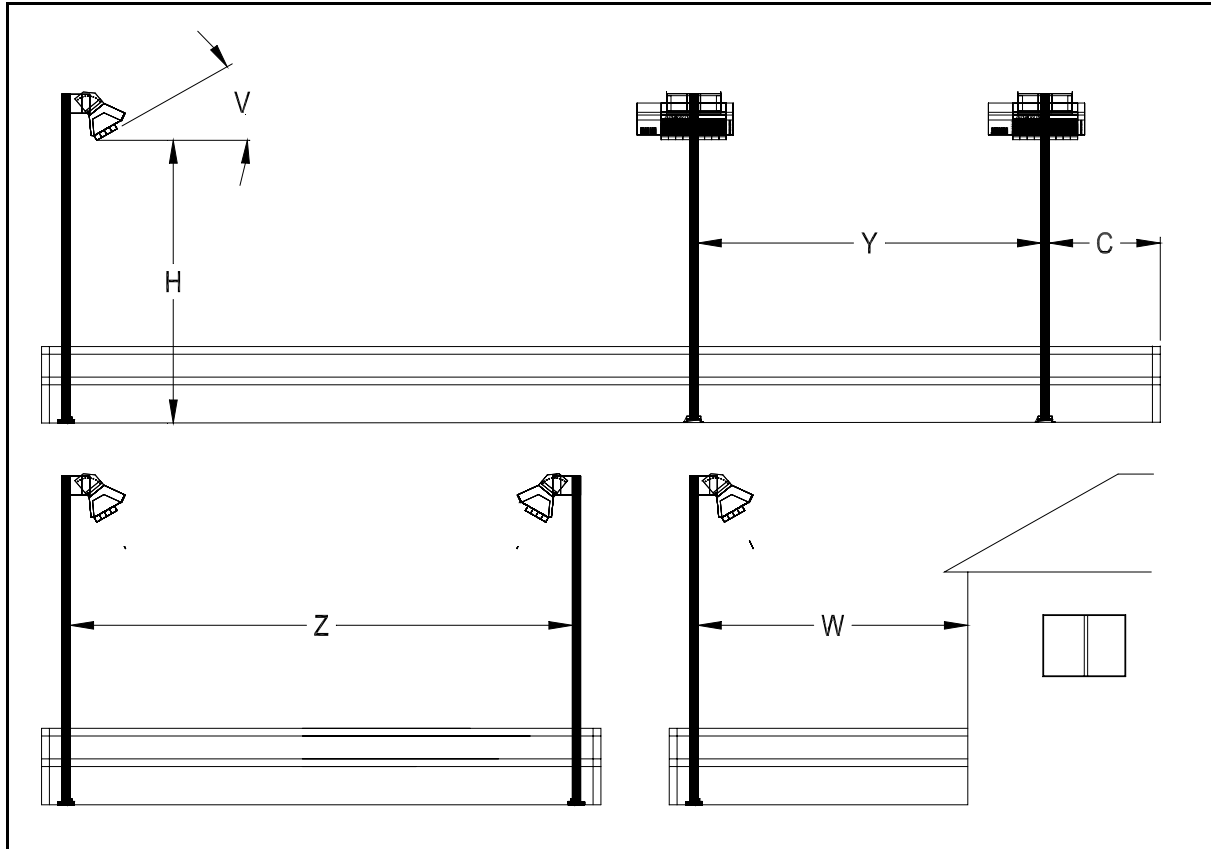
## 8.5 SUGGESTED MOUNTING DISTANCES FOR COMFORT\*\*

Table 4: Mounting Parameters ***	MODEL 1110			MODEL 1115		
	Horizontal	15°	30°	Horizontal	15°	30°
V—Mounting angle						
H—Mounting height to patio floor	11' 0"	10' 0"	10' 0"	12' 0"	12' 6"	12' 6"
C—Side distance to patio edge	5' 0"	4' 6"	4' 6"	6' 6"	6' 0"	6' 0"
Y—Side distance between heaters	10' 0"	9' 0"	9' 0"	13' 0"	12' 0"	12' 0"
W—Distance to wall in front	6' 0"	8' 0"	10' 0"	8' 0"	10' 0"	12' 0"
Z—Distance to heater in front	16' 0"	18' 0"	20' 0"	18' 0"	20' 0"	24' 0"

\*\*\* Note: These mounting distances are suggested, and are subject to on site conditions. If in doubt, please contact Schwank or your Schwank distributor.

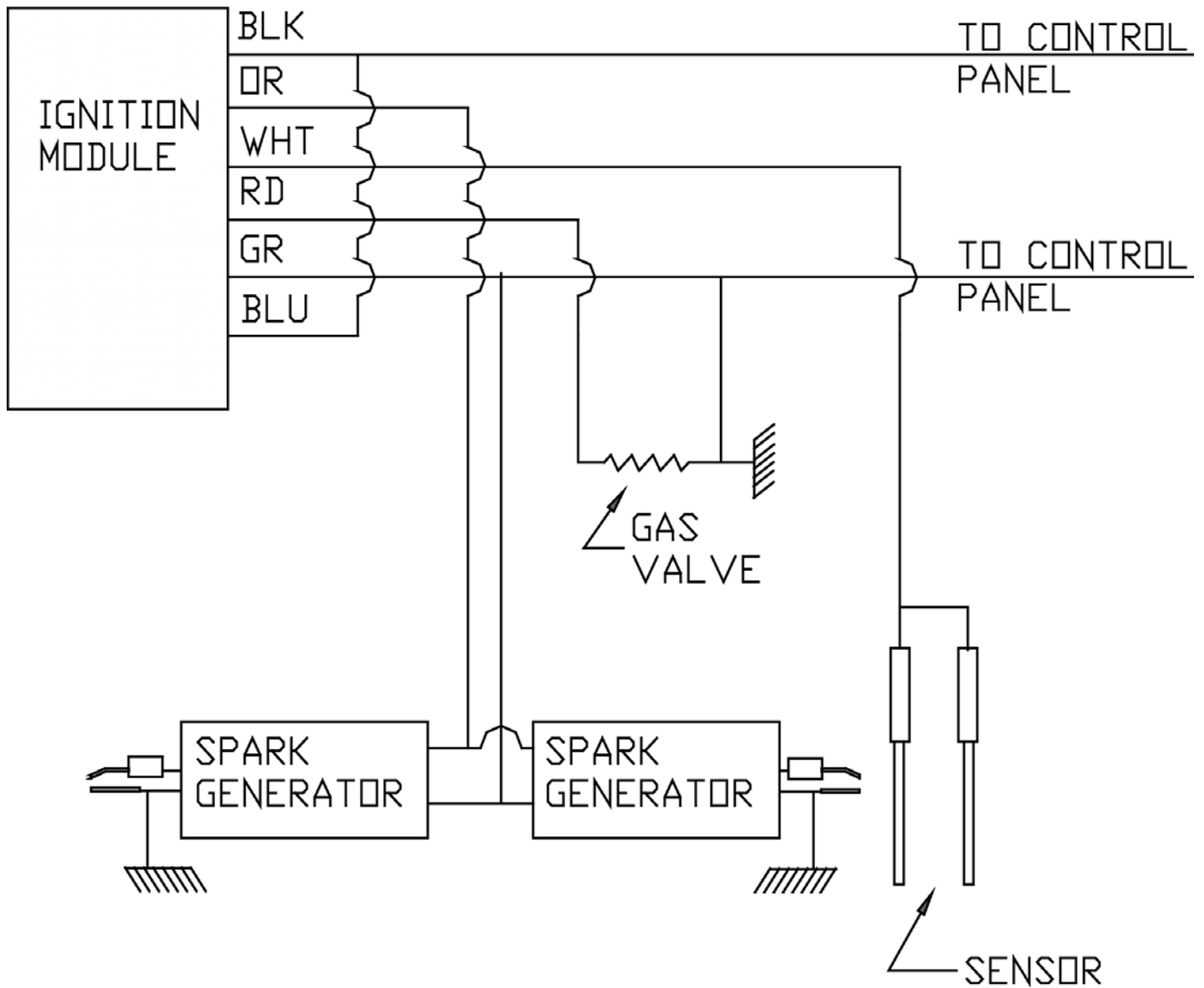
\*\* Note: For mounting parameters for models 1120 & 1130 contact Schwank.

**Diagram 5: Mounting Distances**



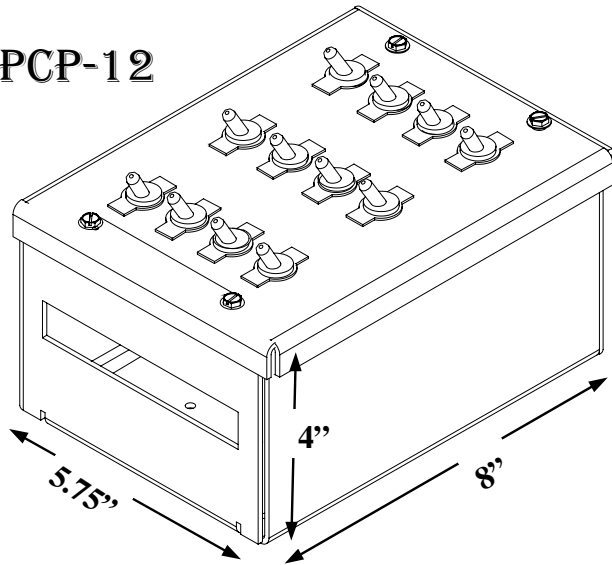
**8.6 WIRING DIAGRAM**

patioSchwank 1100 SERIES



# patioSchwank 24 volt CONTROL PANEL

PCP-12



## Low Voltage Wiring:

Low voltage secondary wiring from remote Transformer to panel must be adequately sized for the total load. (ie 14 gauge wire)

Each model is supplied wired for individual heater operation of 4 up to 24 heaters per panel as required. It is not recommended to install more than 12 heaters per zone.

Total low voltage wiring distances must be allowed for, with low voltage wiring correctly sized by an approved electrician to conform with the total transformer Va rating. Proper electrical rating in the system can be checked by voltage readings at ignition module terminals with ALL heaters ON under full load.

To avoid system malfunction, the voltage range must be within 21.6 Volts to 26.4 Volts. Malfunction of the heating system will result if the voltage varies by more than -10% or +10% (21.6v to 26.4v) or if the polarity is reversed.

The best mode of control for each individual heater is by "ON/OFF" switch. If a thermostat is to be incorporated into the system it must be installed downstream of the control panel.

## For multiple Patio heater installations:

PCP-4, PCP-8, PCP-12 share the same common panel 8" x 5.75" x 4" to switch up to a MAXIMUM of 12 heaters.

PCP-16, PCP-24 share the same common panel 9.75" x 8" x 4" to switch up to a MAXIMUM of 24 heaters.

Designed to be surface mounted INDOORS only, and preferably out of the reach of patrons.

## WARNING:

**MUST** be used for low voltage wiring only. To avoid system malfunction, **PROPER WIRING POLARITY MUST BE MAINTAINED**, particularly when grouping the heaters in a zone.

Multiple heaters connected to a single 24 Volt, 60 Hz transformer, require 40 VA for the first heater and 30Va for all subsequent additions. For example, four heaters wired together in parallel, equals a 130Va load, (40Va + 30Va + 30Va + 30Va), the closest rated transformer HIGHER than the 130Va total rating is 150Va.

Total wiring distances of up to 200 feet must use a minimum 16 gauge electrical wire, and wiring distances of over 200 feet must use minimum 14 gauge electrical wire. (Malfunction of the heating system will result if the voltage varies by more than + 10% or -10%. or if polarity is reversed.)

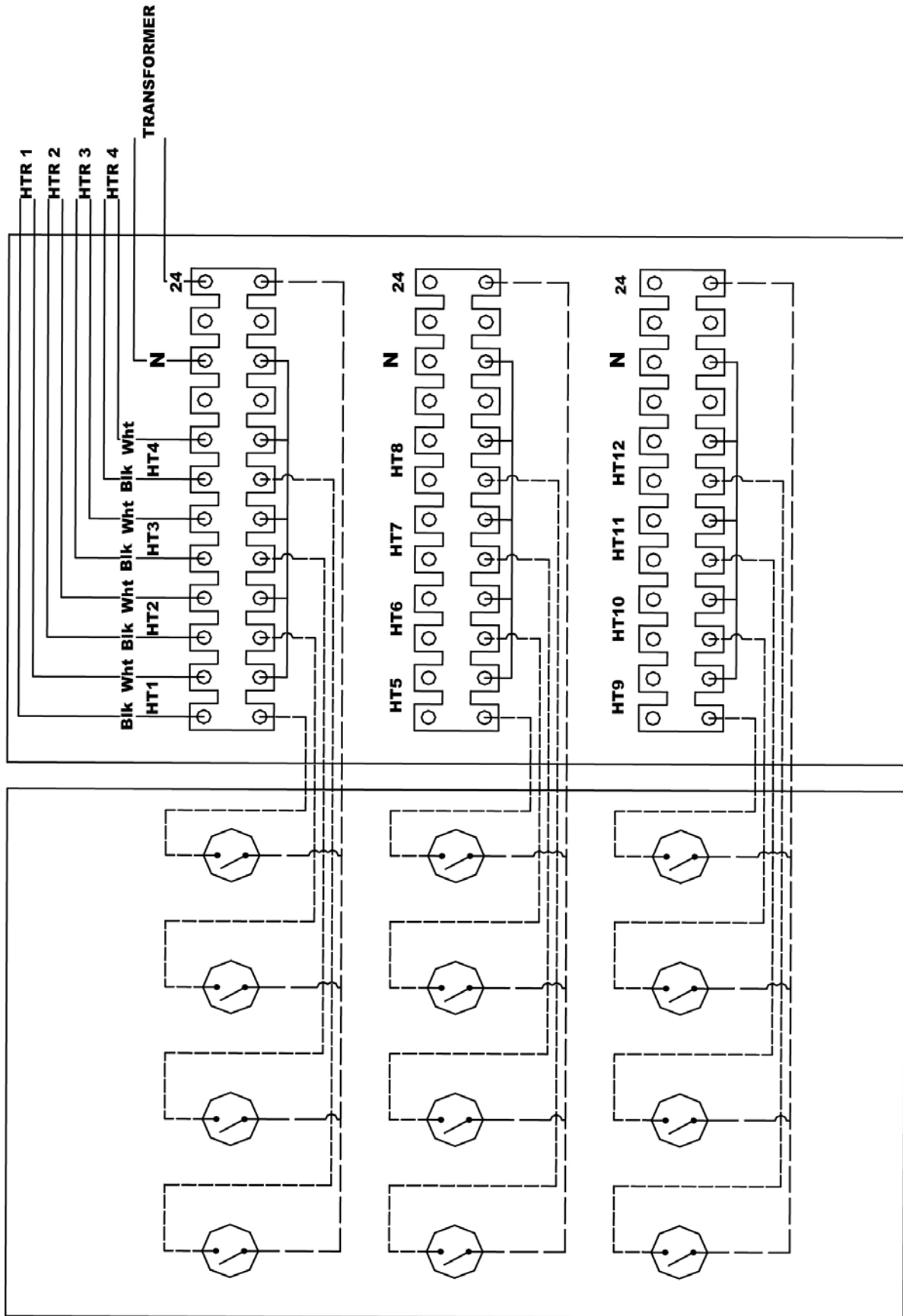
The heater can be controlled by a line voltage moisture proof thermostat or "off-on" switch. Total load of all heaters must be considered in determining the required contact rating of the controlling thermostat or switch.

The heater must be electrically grounded in accordance with the local electrical code.

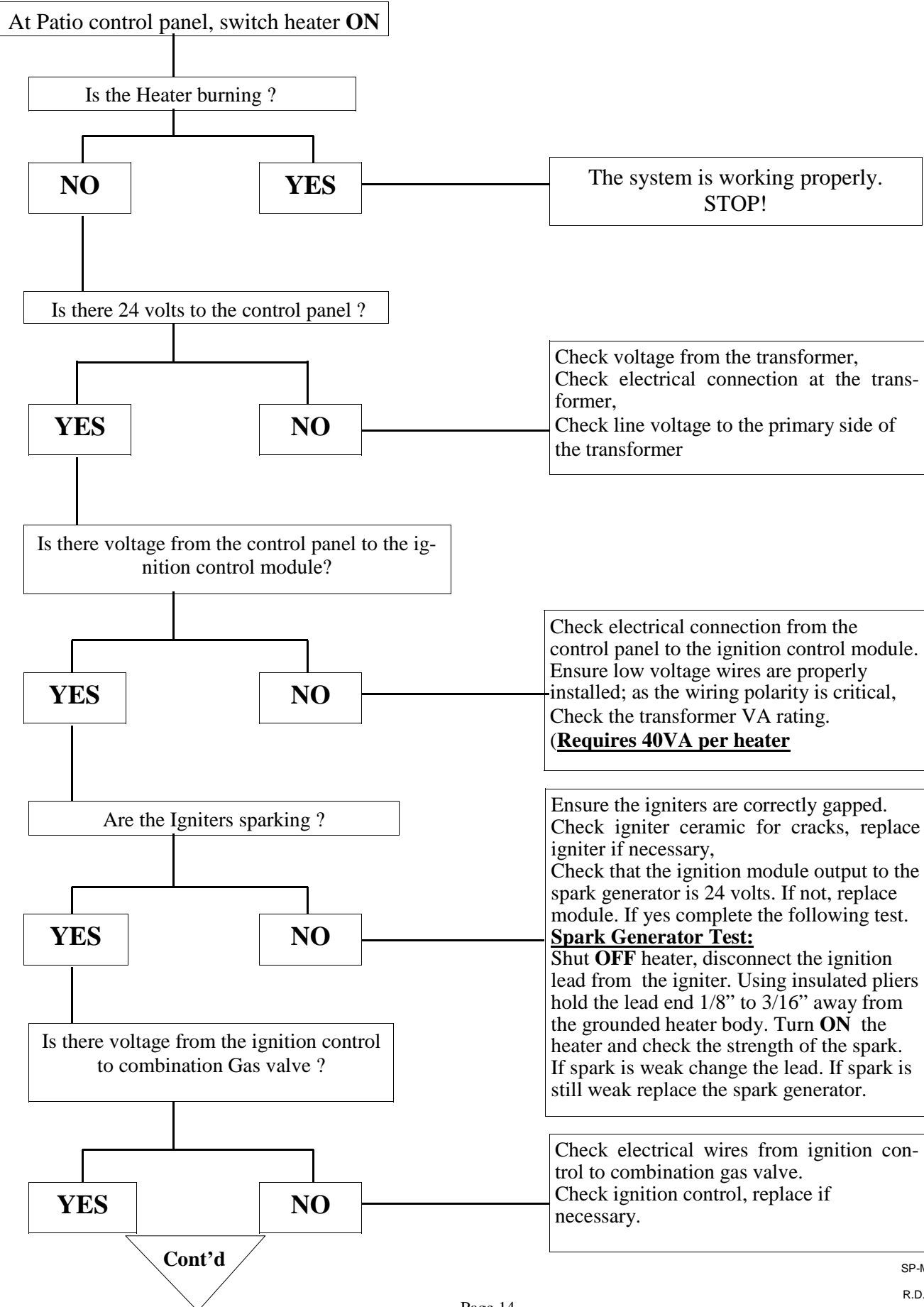
PCP Patio Control Panel  
RD: Dec, 2004  
RL: 1  
TM

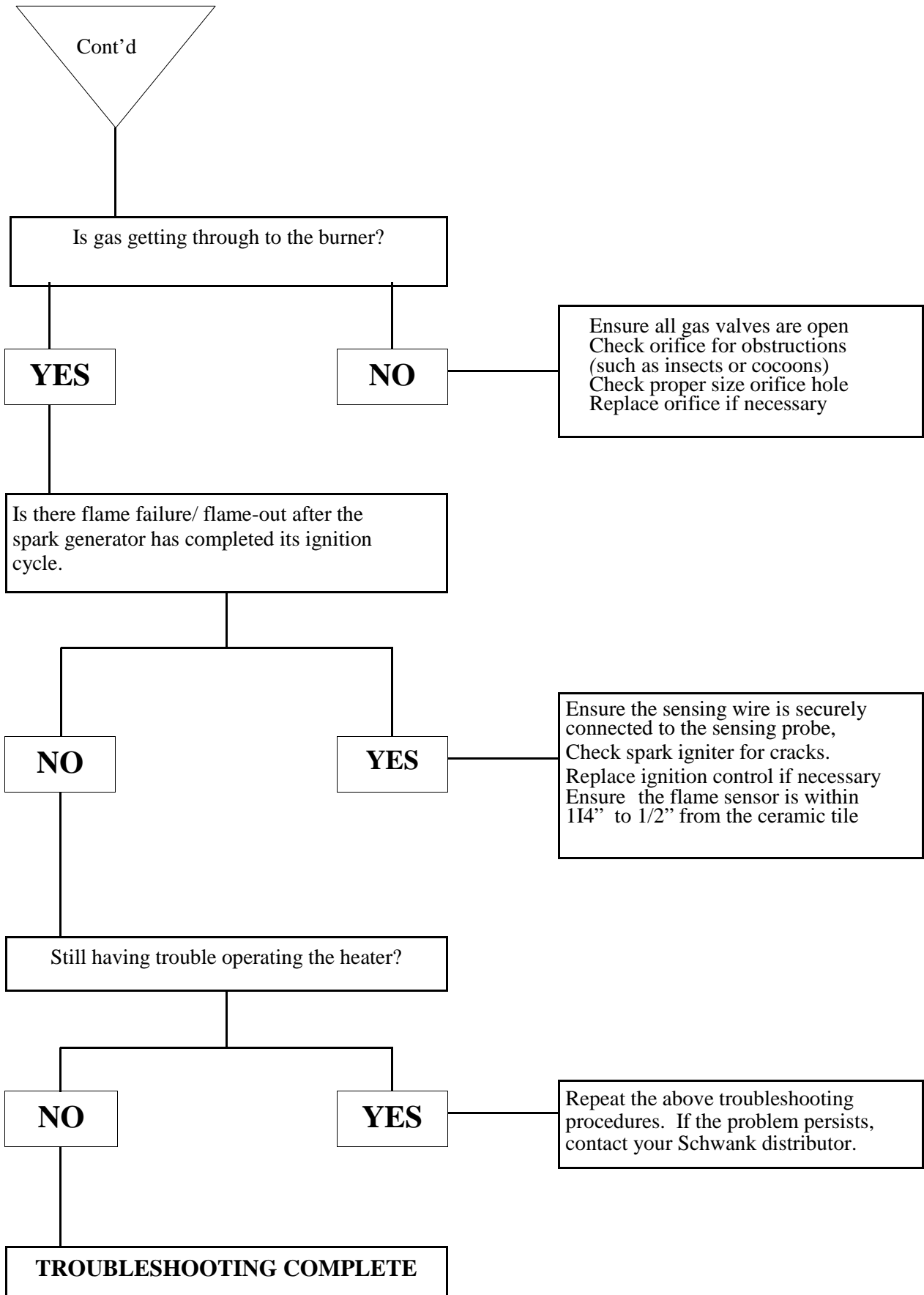
SP-M110-CX-05B  
1100 Manual  
R.D.: March 2006  
R.L.: 5B  
KH

# 8.7 PCP-12 PATIO PANEL



## 9. TROUBLESHOOTING GUIDE











**GAS-FIRED INFRA-RED PATIO HEATER : 1100 SERIES:**

The Manufacturer warrants that this product is free from defects in material or workmanship under normal use and service subject to the terms of this document.

**TWO YEAR WARRANTY**

Subject to the conditions and limitations stated herein, during the term of this limited warranty, we will supply any component part (at our option a new or repaired component part) of the heater, as defined below, excluding any labor, which the Manufacturer's examination determines to be defective in workmanship or material for a period of two years (2 years) from the date of installation, unless otherwise specified below. This warranty applies to the heater's original owner, and subsequent transferees and only if the unit is installed and operated in accordance with the printed instructions accompanying the unit and in compliance with all applicable installation, building codes and good trade practices. Warranty is only applicable to Schwank components, other parts are limited to their own Manufacturers warranty. (1 year)

**TWO YEAR WARRANTY**

Subject to the conditions and limitations stated herein, during the term of this limited warranty, we will repair or replace (at our option) any component part of the heater as defined below, which the Manufacturer's examination determines to be defective in workmanship or material for a period of two years (2 years) from the date of installation, unless otherwise specified below. This warranty applies to the heater's original owner, and subsequent transferees and only if the unit is installed and operated in accordance with the printed instructions accompanying the unit and in compliance with all applicable installation, building codes and good trade practices. Warranty is only applicable to Schwank components, other parts are limited to their own Manufacturers warranty. (1 year)

**WHAT IS NOT COVERED**

This warranty does not cover heating products improperly installed, misused, exposed to or damaged by negligence, accident, corrosive or contaminating atmosphere, water, excessive thermal shock, impact, abrasion, alteration or operation contrary to the owner's manual or if the serial number has been altered, defaced or removed. This warranty shall not apply if the input to the heating product exceeds by more than 2% of the rated input on the rating plate. The Manufacturer shall not be responsible for any expenses, including service, labor, diagnosis, analysis, material or transportation charges incurred during removal or reinstallation of this product, or any of its components or parts. All labor or service charges shall be paid by the owner. The Manufacturer shall not be liable for any default or delay in performance by its warranty caused by any contingency beyond its control, including war, government restrictions, or restraints, strikes, fire, flood, acts of God, or short or reduced supply of raw materials or products.

**WARRANTY PROCEDURE**

To establish the installation date for any purpose under this Limited Warranty, you must retain the original records that can establish the installation date of your unit. If you do not provide such documents, the start date of the term of this Limited Warranty will be based upon the date of unit manufacture, plus thirty (30) days. Failure to maintain the equipment through regular annual service maintenance by a qualified service technician shall void the warranty.

**LIMITATIONS AND EXCLUSIONS**

This document contains all warranties made by the Manufacturer and may not be varied, altered or extended by any person. There are no promises, or agreements extending from the Manufacture other than the statements contained herein. **THIS WARRANTY IS IN LIEU OF ALL WARRANTIES EXPRESSED OR IMPLIED, TO THE EXTENT AUTHORIZED BY THE LAWS OF THE JURISDICTION, INCLUDING SPECIFICALLY THE WARRANTIES OR MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE.**

It is understood and agreed that the Manufacturer's obligation hereunder is limited to repairing or replacing parts determined to be defective as stated above. In no event shall the Manufacturer be responsible for any alleged personal injuries or other special, incidental or consequential damages. As to property damages, contract, tort or other claim the Manufacturer's responsibility shall not exceed the purchase price paid for the product.

Some Authorities do not allow certain warranty exclusions or limitations on how long a warranty lasts or the exclusions or limitations of incidental or consequential damages. In such cases, the above limitations or exclusions may not apply to you and are not intended to do so where prohibited by law. This warranty gives you specific legal rights. You may also have other rights which vary by each jurisdiction.