INSTALLATION /OWNER'S MANUAL

patioSchwank

infrasave radiant heaters
ISO 9001:2000 REGISTERED

2300 & IO-210

SERIES

HIGH EFFICIENCY
INFRA-RED PATIO HEATER
FOR OUTDOOR AND NON RESIDENTIAL
INDOOR SPACES

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:
>Shut off gas to the appliance
>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.

CERTIFIED

MEMBER OF

crfa
Canadian Restaurant and Foodservices Association
Association canadienne des restaurateurs et des services alimentaires

DESIGN CERTIFIED

GP-M230-BX-06A
2300 / IO 210 Manual
RD: Sept, 2005
R.L. 6
KH

NOTICE:

The manufacturer reserves the right to make changes to equipment and specifications without obligation or notification.

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2300 /IO-210
SERIES

INFRA-RED PORTABLE PATIO HEATER FOR OUTDOOR AND NON RESIDENTIAL INDOOR SPACES

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IMPORTANT NOTICES AND WARNINGS:

Important notice To Installer:

Installation and repairs should be done by a qualified service person.

This Operation & Instruction manual is not to be removed from the site. It MUST be given in its entirety to the consumer and retained for future reference.

Warning

- Improper Installation, adjustment, alteration, service or maintenance can cause injury or property damage. READ the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. It is imperative that control compartment, burners and circulating air passageways be kept clean and unobstructed.

Warning

- Due to the effects of radiant heat upon certain materials it is not recommended to store or place items that could be damaged or distorted, directly under this heater....i.e. Non combustible patio furniture etc.

- Children and Adults should be alerted to the hazards of high surface temperatures and should be careful to avoid burns or clothing ignition.
- Young children should be carefully supervised when in the area of a heater.
- Clothing or other flammable materials should not be hung from, or placed near to the heater.

Warning

Keep this appliance area free from combustible materials, gasoline and other flammable vapours and liquids.

1. GENERAL

The gas fired infra-red combined intensity heaters are suitable to be installed for heating of outdoor and non residential indoor spaces. These installation instructions are intended for the Series 2300 / IO 210 Heaters.
All installations must conform to the following:, all local and national code requirements including the current CAN/CGA-B149.1 installation code for gas burning appliances and equipment as well as the Canadian Electrical Code PART 1 CSAC22.1 (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 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

Series 2300 / IO 210 Heaters must be mounted with minimum clearances as shown in Section 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. Minimum mounting height is to be no less than 96". Do not store or place anything directly underneath heater

2.2 HEATER MOUNTING

Series 2300 / IO 210 Heaters are approved for both horizontal and angle mounting. When angle mounting, the short axis may be rotated to a maximum of 45°; however this may direct a large portion of infrared heat above the heads of seated occupants in many applications. Schwank recommends a 30° mounting angle in most applications. Refer to Diagram 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 5 illustrates typical suspension hardware that may be used., and provided by Schwank as an optional component.*

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.

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 installed. 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.

CAUTION: *DO NOT INSTALL ANY GAS PIPING IN HEAT ZONES.*

Proper manifold pressure will be maintained when the main burner is operating under the following supply pressure:

	LINE PRESSURE w.c."		MANIFOLD PRESSURE w.c."
	MINIMUM	MAXIMUM	AT GAS VALVE TEST POINT
NATURAL GAS	6.0	14.0	5.0
PROPANE GAS	11.0	14.0	10.0

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

3. INSTALLATION PROCEDURES

a) Properly install gas line as outlined in Section 2.3.

b) Mount heaters by using non-combustible mounting hardware as illustrated in Diagram 2. Observe the minimum clearances as outlined in Sections 8.4 and suggested mounting distances in section 8.5

WARNING: *When using Wall Mounting Bracket JP-2300-MB, or Arm Mounting Bracket JP-2300-MA, ensure the anchoring to the structure is of sufficient strength, quality and workmanship, to support the weight of the heater and any other loads such as snow.*

c) Connect heater to the main gas line. An approved 1/2" flexible connector (available as an option from the manufacturer) must be used to absorb gas line expansion and any vibration - check local code requirements.

(d) Check gas line for leakage by using soap test or gas meter test. Ensure gas pressure meets the requirements out lined in Section 2.4 (above).

WARNING: *When testing the main gas line pressure up to 0.5 psig, ensure that the isolation valve and combination gas valve are "OFF", otherwise damage to the combination gas valve will result. When testing gas line in excess of 0.5 psig the appliance and shut off valve must be disconnected from the gas supply piping system during any such pressure testing.*

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, and correct polarity must be maintained throughout the system.

f) Test-fire the heating system by following the lighting instructions as shown below and on heater.

4. LIGHTING INSTRUCTIONS

1. Ensure the correct voltage is supplied and gas valve is in the ON position.
2. Turn on power to heater, set thermostat (if applicable) to desired setting, the heater will light.
3. If heater does not light: Turn off power to heater, turn gas valve to OFF position.
4. Wait for five minutes and repeat steps above. If heater does not light after three attempts, call a qualified service technician.

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. STAINLESS STEEL PARTS

Under certain conditions, heater may discolour due to ambient air borne particle deposits on the surface. These deposits are normal and in no way affect the operation of the heater or the manufacturer's warranties. The stainless steel does not rust but will darken at flue outlet of perforated screen over time/with extended use.

7. SERVICING GUIDE (See Heater servicing on next page)

Servicing of heater is essential for continued efficient operation. Servicing should be carried out annually by qualified and licensed 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**.

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 pressure.*
- *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 contact your Schwank distributor.*

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

HEATER SERVICING INSTRUCTIONS:

WHEN USING WALL MOUNT BRACKET JP-2300-MB:

1. Slacken the upper bolt to allow the rotation of the mounting bracket and the heater.
2. Remove the lower bolt securing the bracket and rotate the bracket up to the service position.
3. Insert the bolt in the upper hole to hold the heater for servicing, and apply locking nut to bolt for extra safety. Heater panel can now be accessed and serviced safely.
4. **NOTE: Do not start up the heater when in this Service position as the gas valve is in a compromising position. Before starting the heater, ALWAYS restore the heater bracket back to its original plane and correct support position.**
5. To restore bracket, lift and support the weight of the heater and remove nut and bolt from upper hole.
6. Slowly rotate the heater back down to the correct lower position.
7. Insert and fasten the bolt in the bottom hole, and secure with the nut.
8. At completion of service, ensure that both support bolts are tightened securely.

8. CONFIGURATION

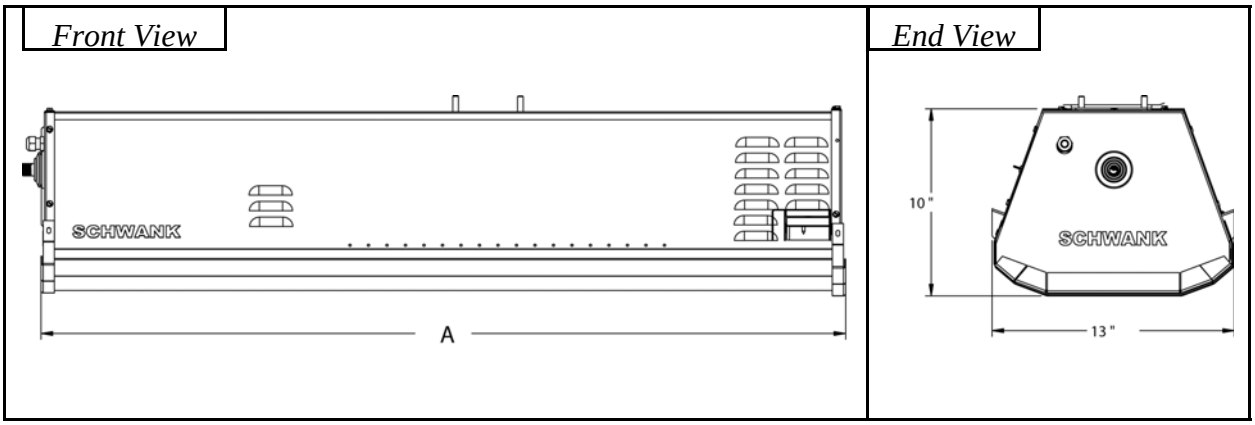
8.1 DIMENSIONS & CONFIGURATIONS FOR THE SERIES 2300 HIGH INTENSITY HEATERS

CAPACITIES & CONFIGURATIONS

MODEL	Voltage VAC	Current amps	Btu/hr input	Total Weight (lbs).	Length < A >
2312 / IO 212 -NG	24	40 VA*	23,000	32	30 1/2”
2312 / IO 212 -LP			23,000	32	30 1/2”
2313 / IO 213 -NG			35,000	44	43 1/2”
2313 / IO 213 -LP			35,000	44	43 1/2”
2315 / IO 215 -LP			50,000	48	43 1/2”
2315 / IO 215 -NG			50,000	48	43 1/2”

*** For a multiple installation, the first heater is sized at 40 VA and each consecutive heater will be sized at 20 VA. The sum total will be the required Transformer size. If total VA exceeds one size (in between sizes) select the next highest VA rating.**

Diagram 1: DIMENSIONS



8.2. MOUNTING KITS (NOTE: For unusual mounting application contact manufacturer.)

The heater is supplied with chain mounting bracket; JP-2300-HS
Other optional mounting kits are available:

ITEM NO	PART NUMBER	DESCRIPTION	QTY
1	JP-2300-MB	WALL MOUNTING BRACKET	1
2	JP-2300-MA	ARM MOUNTING BRACKET	1
3	JP-2300-PC	POST BRACKET	1

WARNING: *When using Wall Mounting Bracket JP-2300-MB, or Arm Mounting Bracket JP-2300-MA, ensure the anchoring to the structure is of sufficient strength, quality and workmanship, to support the weight of the heater and any other loads such as snow.*

8.3 MOUNTING OPTIONS FOR THE 2300 SERIES HIGH INTENSITY HEATERS

Diagram 2: MOUNTING KIT OPTIONS

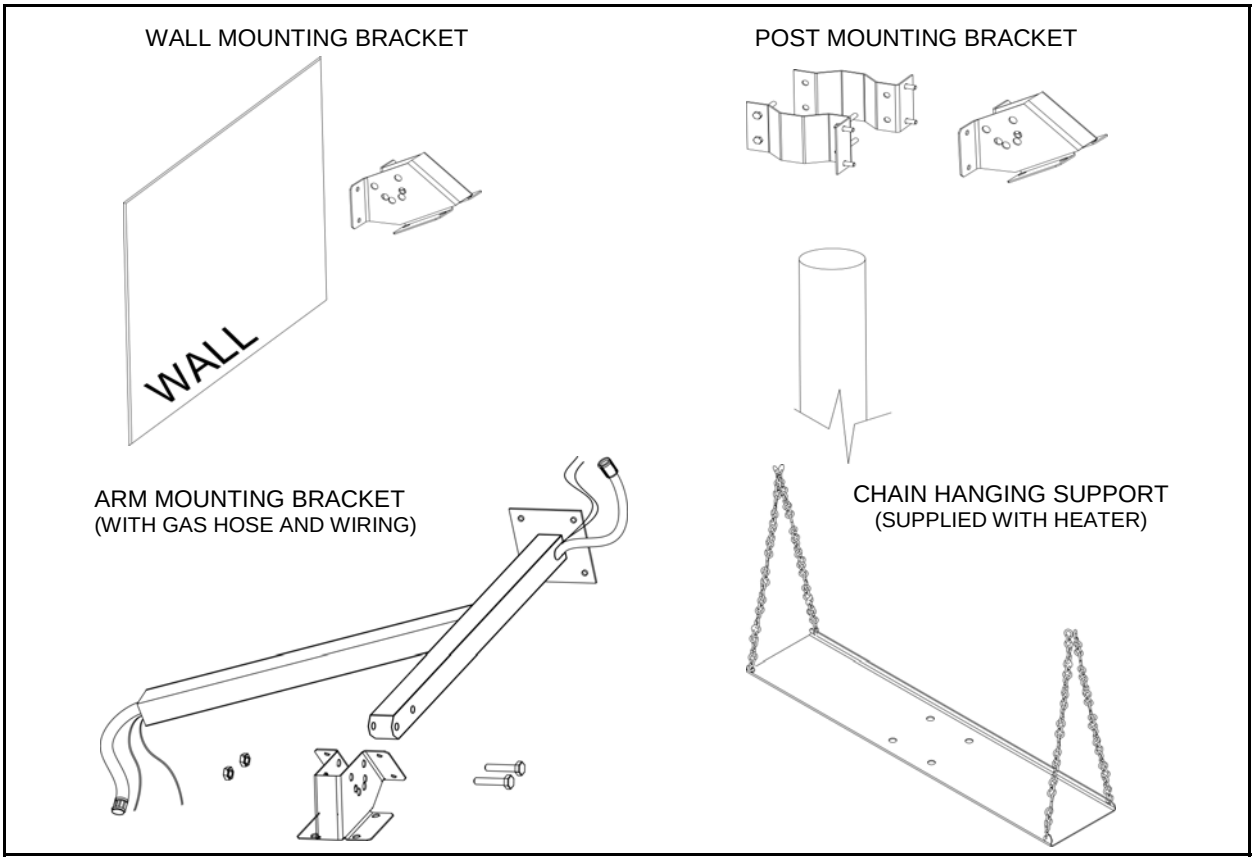


Diagram 3: MOUNTING OPTIONS

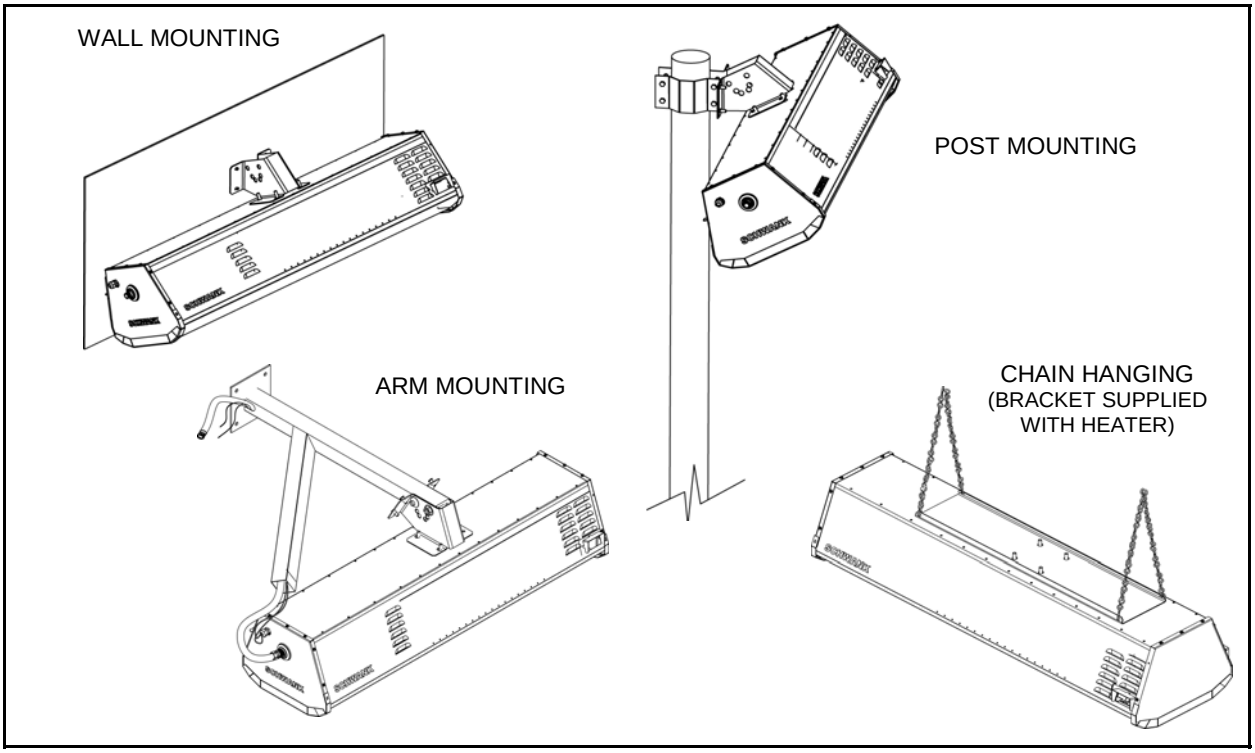


Diagram 4: **2300 MOUNTING ARM TEMPLATE**

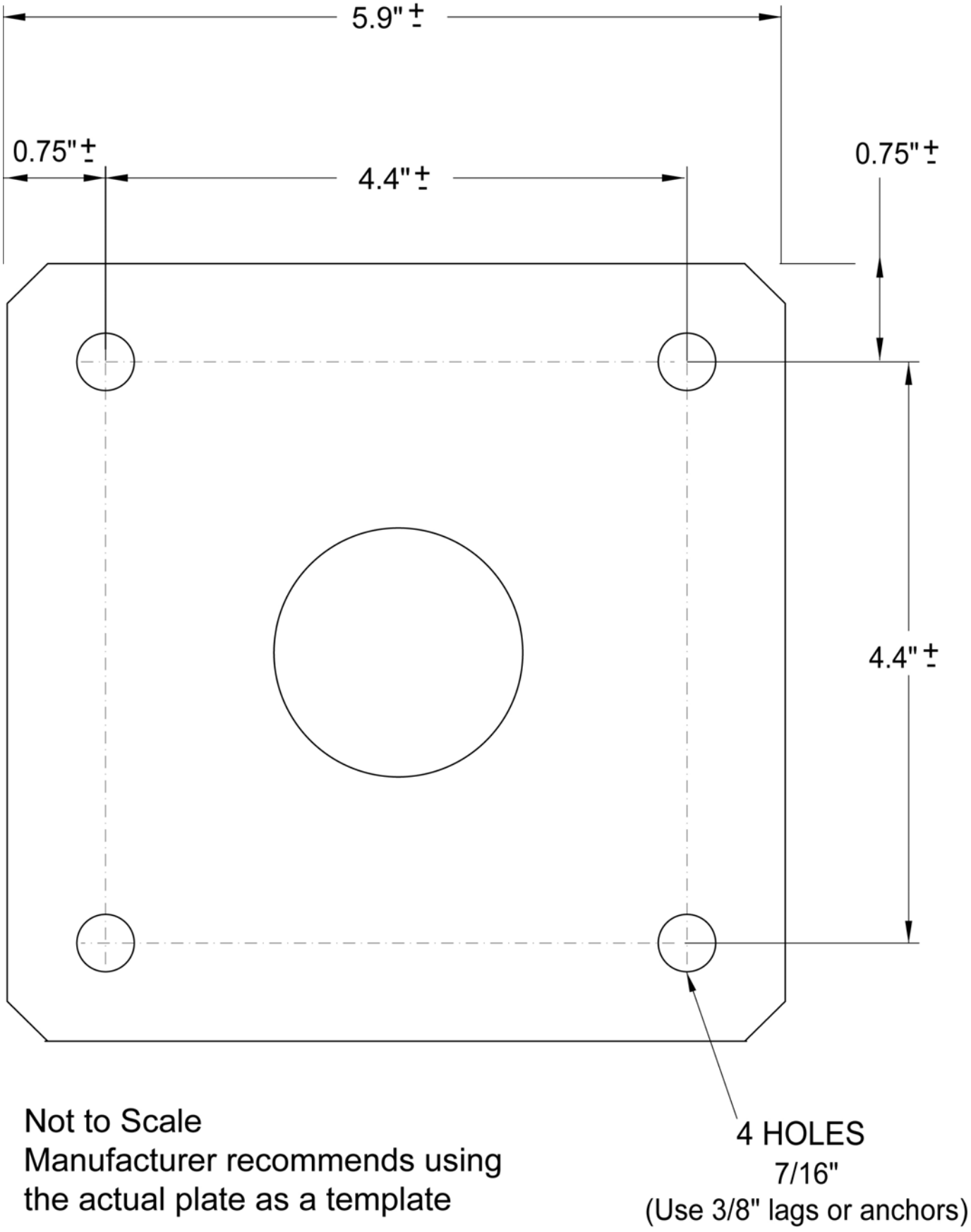
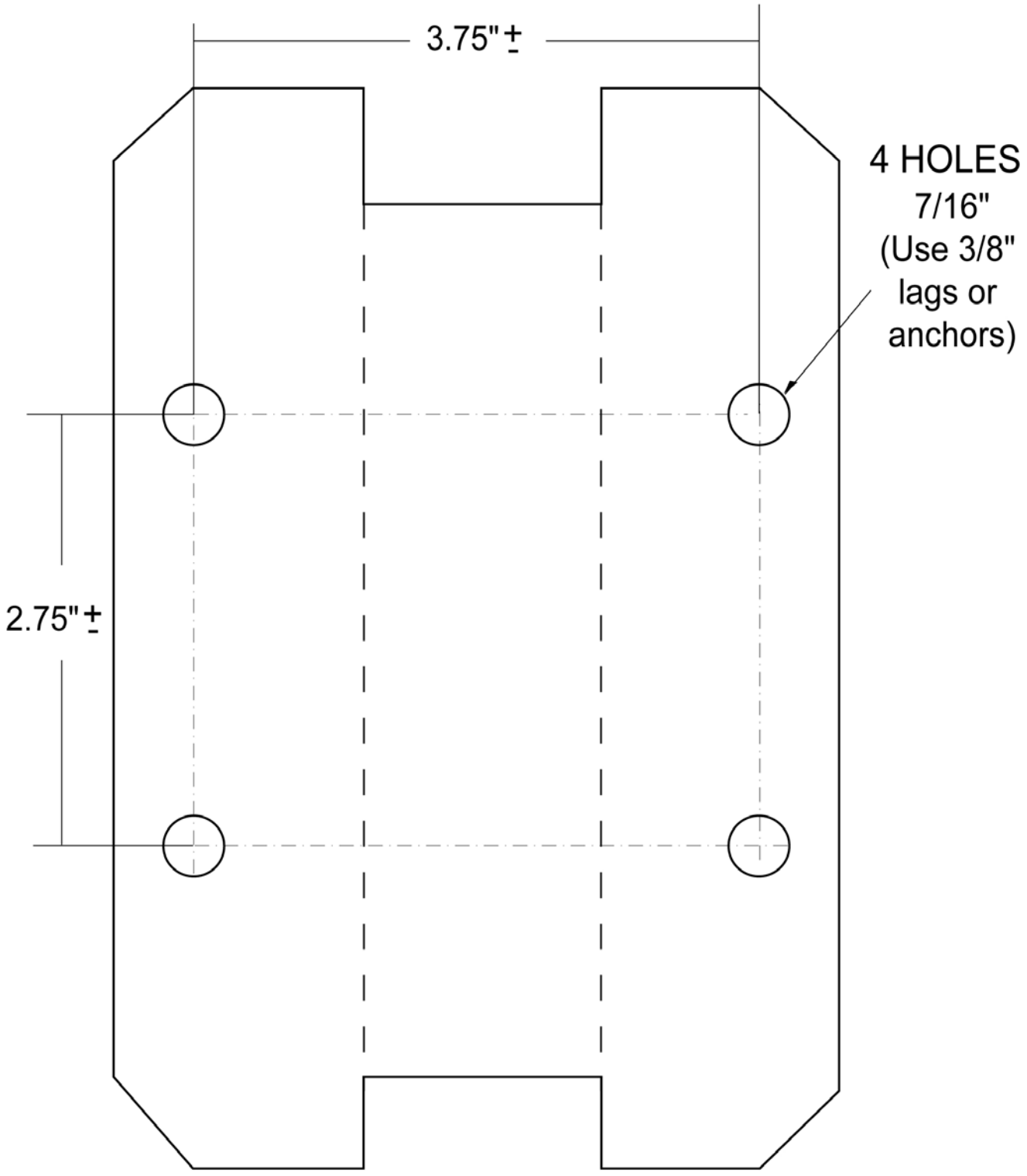
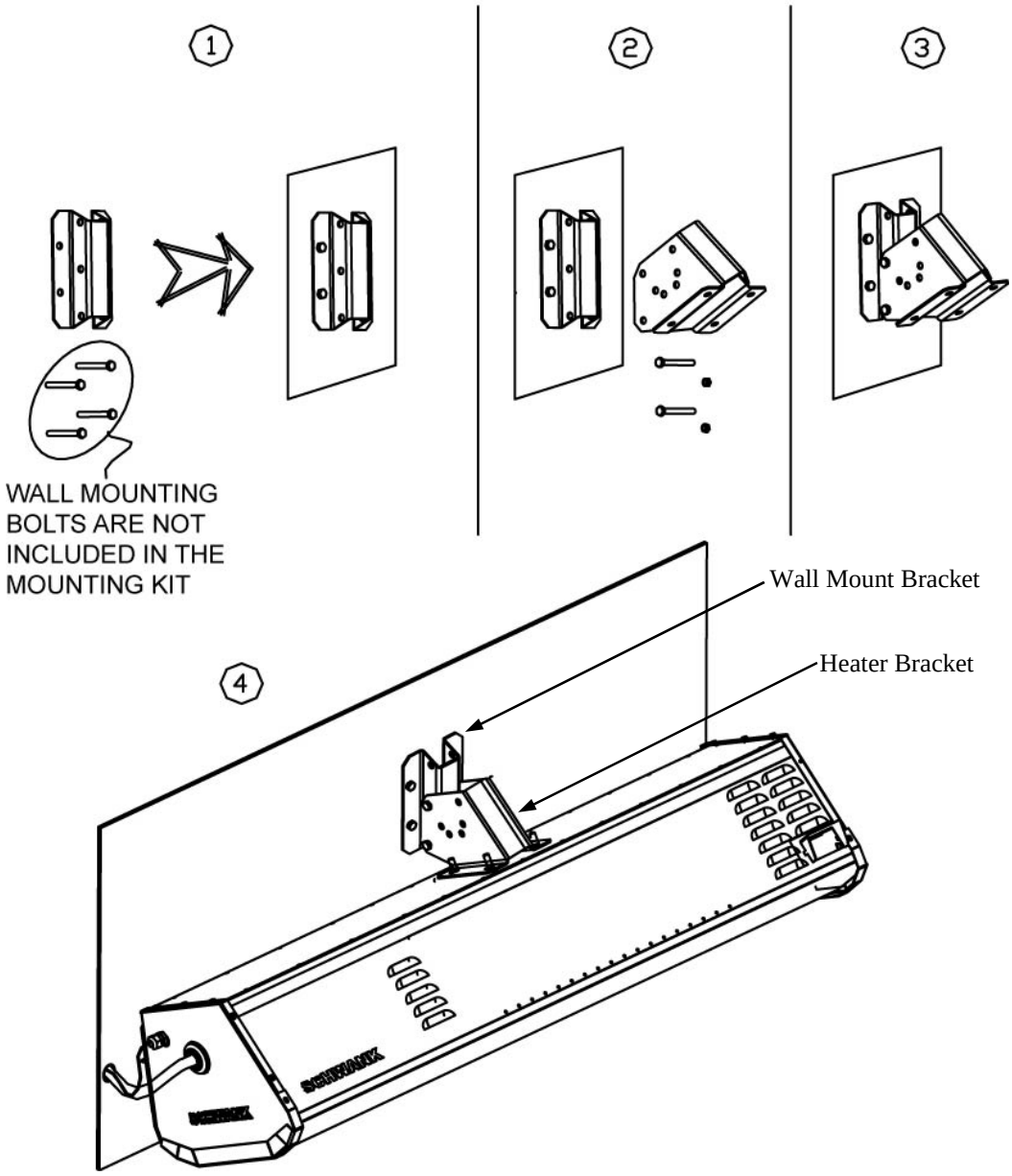


Diagram 5: **2300 WALL BRACKET TEMPLATE**



Not to Scale
Manufacturer recommends using
the actual plate as a template

Diagram 6: HEATER INSTALLATION



1. Install the Wall Mount Bracket on the wall, using four bolts...(not supplied). See warning note (page 5)
2. Install the heater bracket on the heater using four nuts.
4. Install the heater bracket to the wall mount bracket, and remove the chains from the top of the heater.

NOTE: The heater should be installed with enough slack on the wiring and a flexible gas connector to allow the rotation of the heater up to the service position.

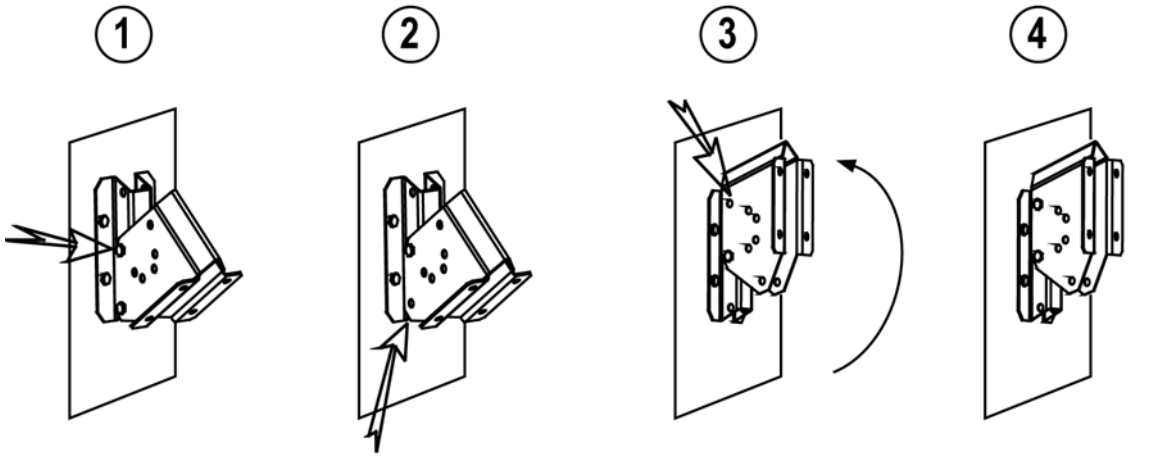
(See service installation on the next page).

Diagram 7: **SERVICING HEATER**

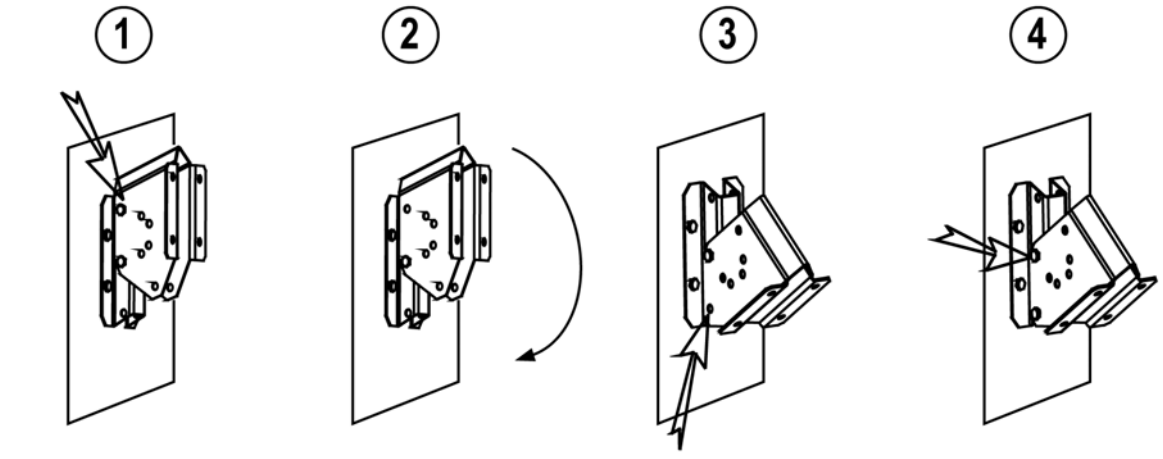
FOR SERVICING HEATER:

IT IS NOT NECESSARY TO REMOVE HEATER FROM SUPPORT BRACKET
DRAWINGS SHOW JUST THE BRACKET FOR BETTER VIEW

ROTATE TO SERVICE POSTITION



LOWER TO OPERATING POSITION



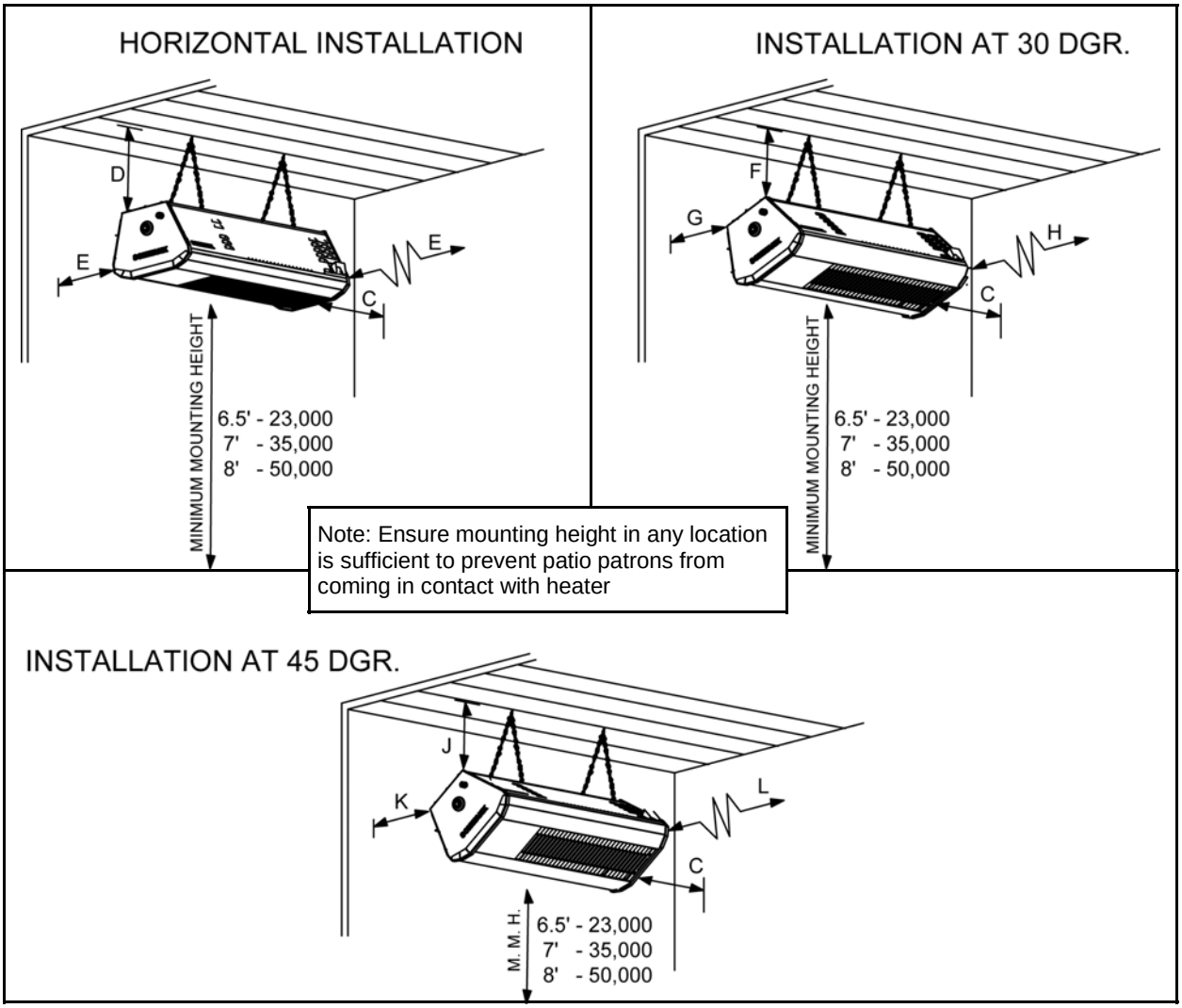
8.4 MINIMUM CLEARANCES TO COMBUSTIBLES: Table 2

MODEL NO		Ends	Horizontal		30° Angle			45° Angle		
		C	D	E	F	G	H	J	K	L
2312 / IO 212 -N\L	OUTDOOR	3”	5.5”	7”	9.5”	1”	9.5”	12.5”	1”	11.5”
2312 / IO 212 -N\L	INDOOR	4”	8”	10”	12.5”	2.5”	14”	16”	2”	15.5”
2313 / IO 213 -N\L	OUTDOOR	5”	7.5”	9”	9.5”	1.5”	21”	10.5”	1.5”	23”
2313 / IO 213 -N\L	INDOOR	6”	10.5”	14.5”	14.5”	2.5”	26”	17”	2.5”	28”
2315 / IO 215 -N\L	OUTDOOR	16”	8”	13.5”	10”	2”	21”	12.5”	2”	24.5”
2315 / IO 215 -N\L	INDOOR	17”	11”	19”	16.5”	3”	28.5”	18.5”	3”	30”

The clearances to combustibles are established at points reaching a surface temperature of 160^0 F. Some materials such as awnings or plastic may require higher distances. Respect clearances as shown above.

Diagram 8: MOUNTING CLEARANCES

Note: Do not store or place anything directly under heater



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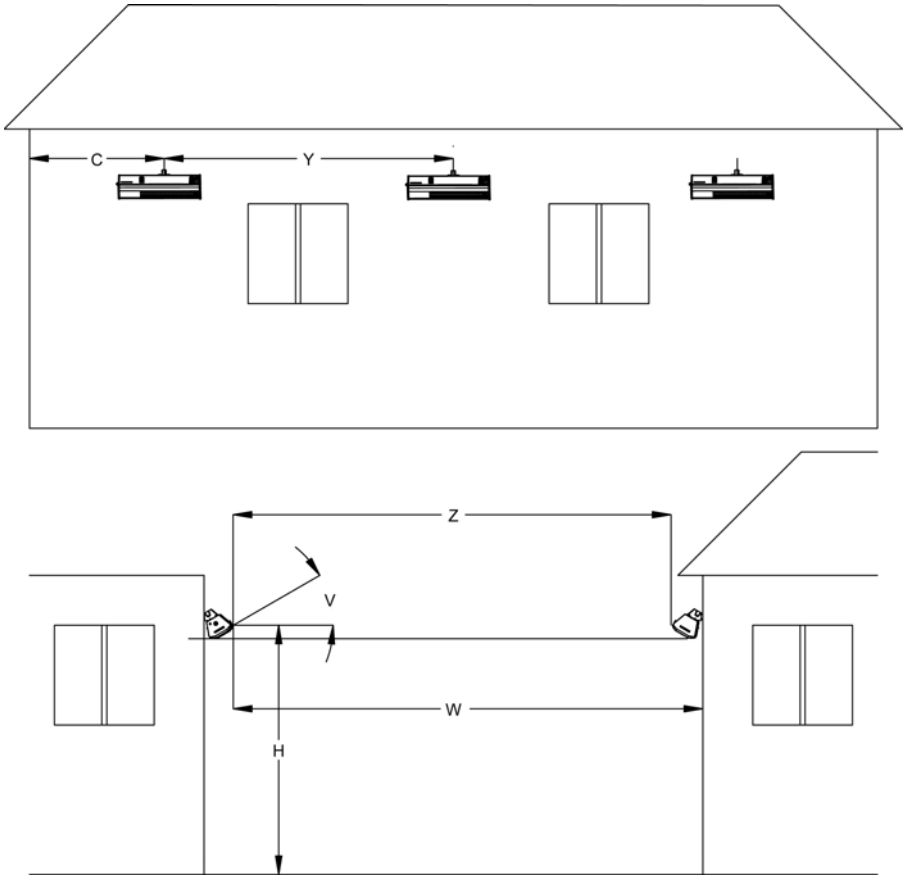
8.5 SUGGESTED MOUNTING DISTANCES FOR COMFORT

Mounting Parameters ***	**MODELS 2312 / IO 212**		**MODELS 2313 / IO 213**		**MODELS 2315 / IO 215**	
V—Mounting angle	**Horizontal**	**30^0**	**Horizontal**	**30^0**	**Horizontal**	**30^0**
H—Minimum mounting height to patio floor	6’ 6”	6’ 6”	7’ 0”	7’ 0”	8’0”	8’ 0”
C—Side distance to patio edge	3’ 6”	3’ 6”	4’ 0”	4’ 0”	5’ 0”	5’ 0”
Y—Side distance between heaters	6’ 0”	6’ 0”	8’ 0”	8’ 0”	10’ 0”	10’ 0”
W—Distance to wall in front	6’ 0”	7’ 0”	7’ 0”	8’ 0”	8’ 0”	9’ 0”
Z—Distance to heater in front	12’ 0”	14’ 0”	14’ 0”	16’ 0”	16’ 0”	18’ 0”

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

Diagram 9: Distances/ Mounting Parameters



9. ELECTRICAL REQUIREMENTS AND THERMOSTAT CONTROL

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.. Single heater requires 24 Volt, 60 Hz electrical transformer sized at 40 VA. If multiple heaters are connected to a single transformer, the proper transformer is 24 Volt, 60 Hz, sized at 40 VA for the first heater, and 20 VA each for all subsequent additions. For example, four heaters wired together (parallel), require a transformer of 100 VA. It is not recommended to install more than 12 heaters per zone. PROPER WIRING POLARITY MUST BE MAINTAINED, particularly when grouping the heaters in a zone.

Total wiring distances of up to 200' must use minimum 16 gauge electrical wire, and wiring distances of over 200' must use minimum 14 gauge electrical wire. The heater must be electrically grounded in accordance with the local

electrical code. Malfunction of the heating system will result if the voltage varies by more than +10% or -10%.

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

9.1. REMOTE CONTROL

Patio Heaters can be operated with Remote Control Option; JP-1234-RK and handset JP-1234-HS. Refer to the manual accompanying the remote control for installation.

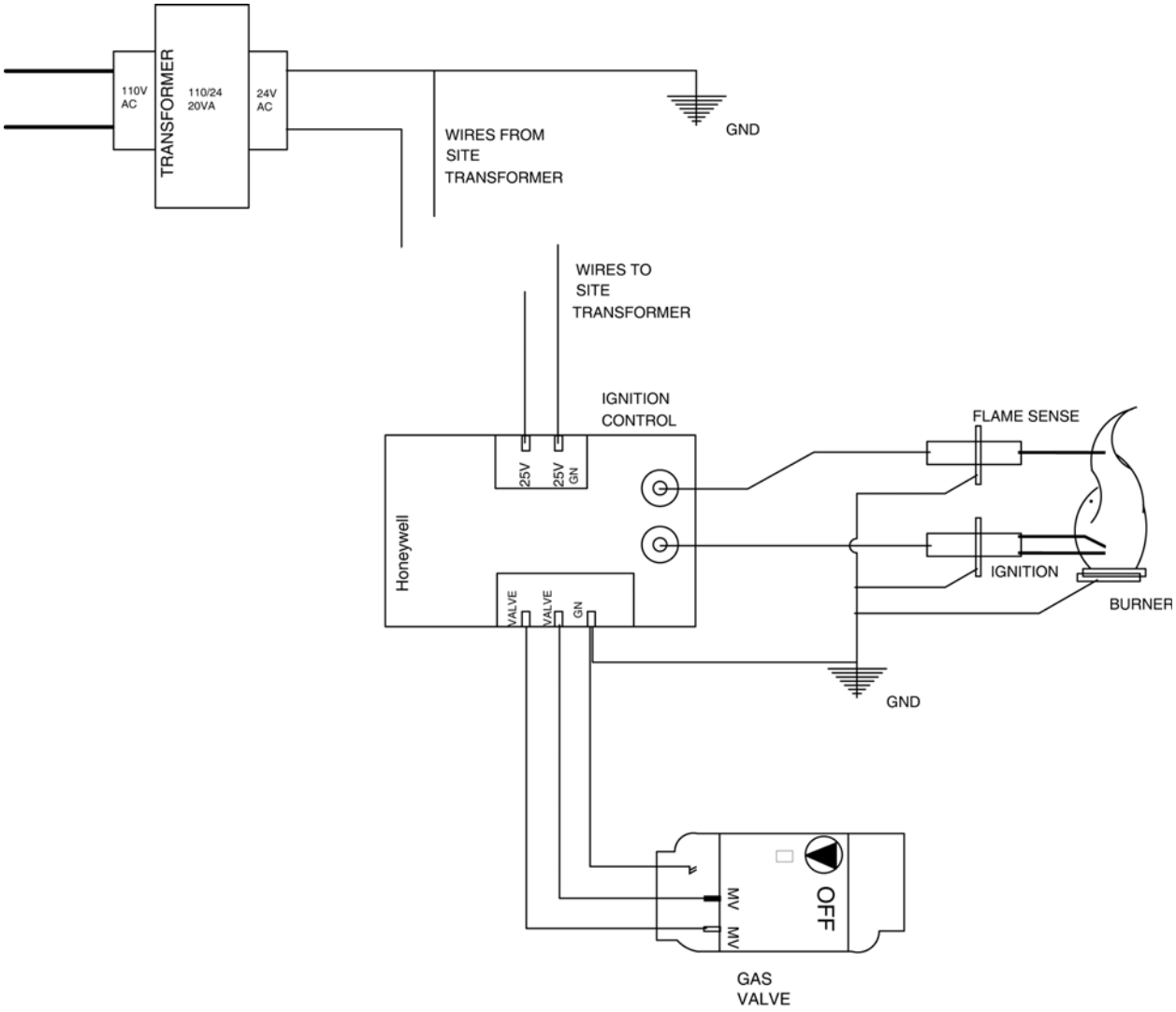
10. SEQUENCE OF OPERATION: HONEYWELL S87C DSI CONTROL

(See page 19 for FENWAL Control)

1. On A call for heat the S87C DSI Control will check for a false flame condition or short to ground. The module will lock out if a false flame condition is present. (Reset is usually done manually from the Thermostat).
2. Spark (30,000volts) is generated at the Spark Ignition Stud, for direct ignition of the main Burner by the single Spark Igniter.
3. Main Gas Control Valve is powered and OPENS lighting off the Main Burner.
4. Seperate Flame Sensor, relays the presence of Main Burner flame back to the DSI Control by a rectified dc voltage signal. (TFI period)
5. If this dc signal is a minimum of 1.5ua (microamps) the flame remains established and the DSI Control discontinues the ignition spark.
6. This is the 21 second T.F.I (Trial For Ignition) period where flame has to be established first, and confirmed with a minimum signal strength of 1.5 uAmps(microamps) back to the DSI Control. Failing this the DSI will go into a Safety Lockout Mode and shut down the Burner. (Reset is manually done from the Thermostat).
7. On a loss of power the S87 allows the system to shut down safely. Start up is initiated when power is restored
8. On a loss of Main Burner flame, the timed T.F.I. is repeated. Safety Lock-out occurs if the flame is not re-established within the T.F.I period. After a 5 minute complete shut off period has expired, the heater may be reset manually from the Thermostat.

11. WIRING DIAGRAM FOR 2300 / IO 210 SERIES with Honeywell S87C DSI Control (See page 18 for FENWAL control wiring)

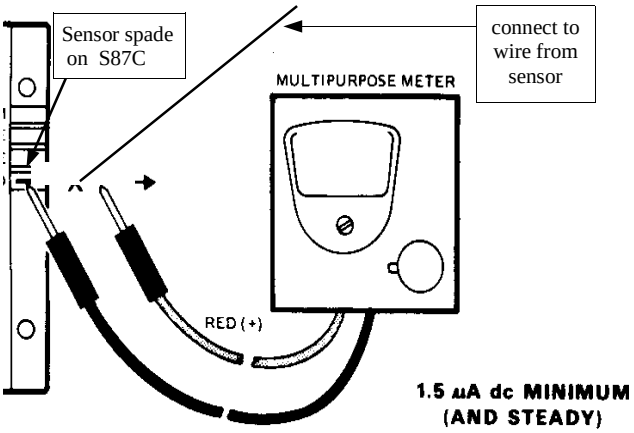
If installing remote control; JP-1234-RK, refer to wiring diagram in the remote control manual

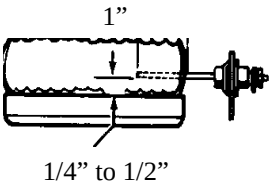


12. FLAME SENSING CIRCUIT - HONEYWELL S87C DSI CONTROL

Flame current is the current which passes through the flame from the sensor to ground. The minimum flame current necessary to keep the Honeywell S87C system from lockout is 1.5 uAmps (microamps). The output of the flame sensing circuit cannot be checked directly on the S87C Control body. The flame sensing circuit current can be checked by bridging the flame sensing current from the sensor to the S87C as follows.

1. Connect a meter (dc microammeter scale) in series with the flame sensor wire as shown below. Using the Honeywell W136A Test Meter or equivalent. Disconnect the sensor wire from the S87C, Connect the red (positive) meter lead to the free end of the sensor wire. Connect the black (negative) meter lead to the quick-connect sensor terminal on the S87C.
2. Restart the system and read the meter. The flame sensor current must be at least 1.5 uA and steady. If the reading is less than 1.5uA or unsteady, see LOW OR UNSTEADY FLAME CURRENT section, below.
   If a flame is present at sensor and a reading of zero uA is obtained, check for a secondary ground connection to the 25V (GND) terminal. If secondary connection exists, temporarily remove connection and measure flame current again.





A good rectifying flame is achieved with approx 1" of sensor in a strong blue flame, positioned 1/4" to 1/2" away from flame source surface.

A lazy or weak flame is not a good rectifying flame. Check gas pressure and gas line/orifice etc for insects. and spider cocoons.

LOW/ UNSTEADY FLAME CURRENT

If the current to the S87C flame circuit is less than 1.5 uA or is unsteady, check the burner flame, flame sensor location and electrical connections as follows.

Electrical Connections and Shorts

Connections at the flame sensor must be clean and tight. If wiring needs replacement, use moisture resistant #18 wire rated for continuous duty up to 105^0 C [221^0 F].

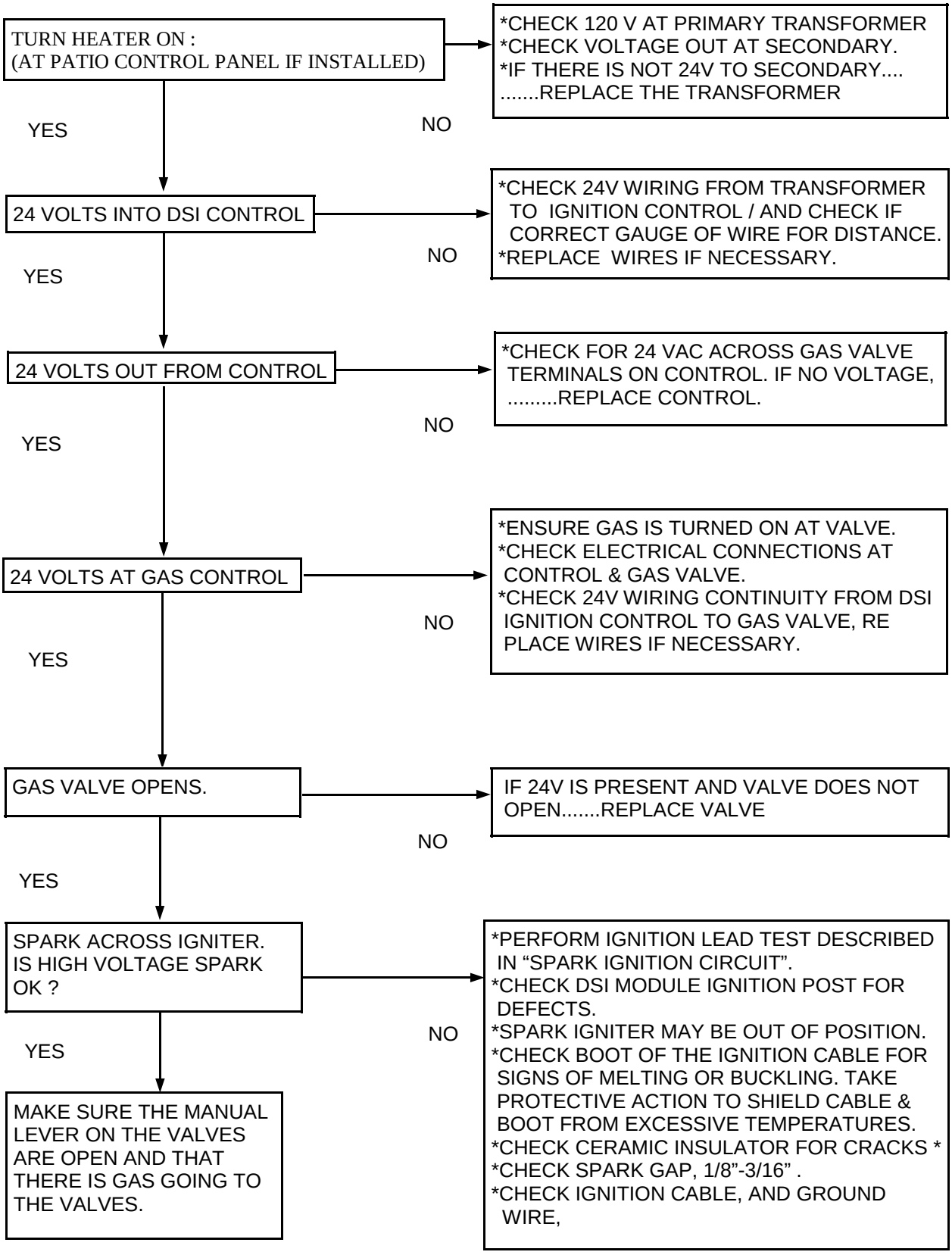
Flame Sensor

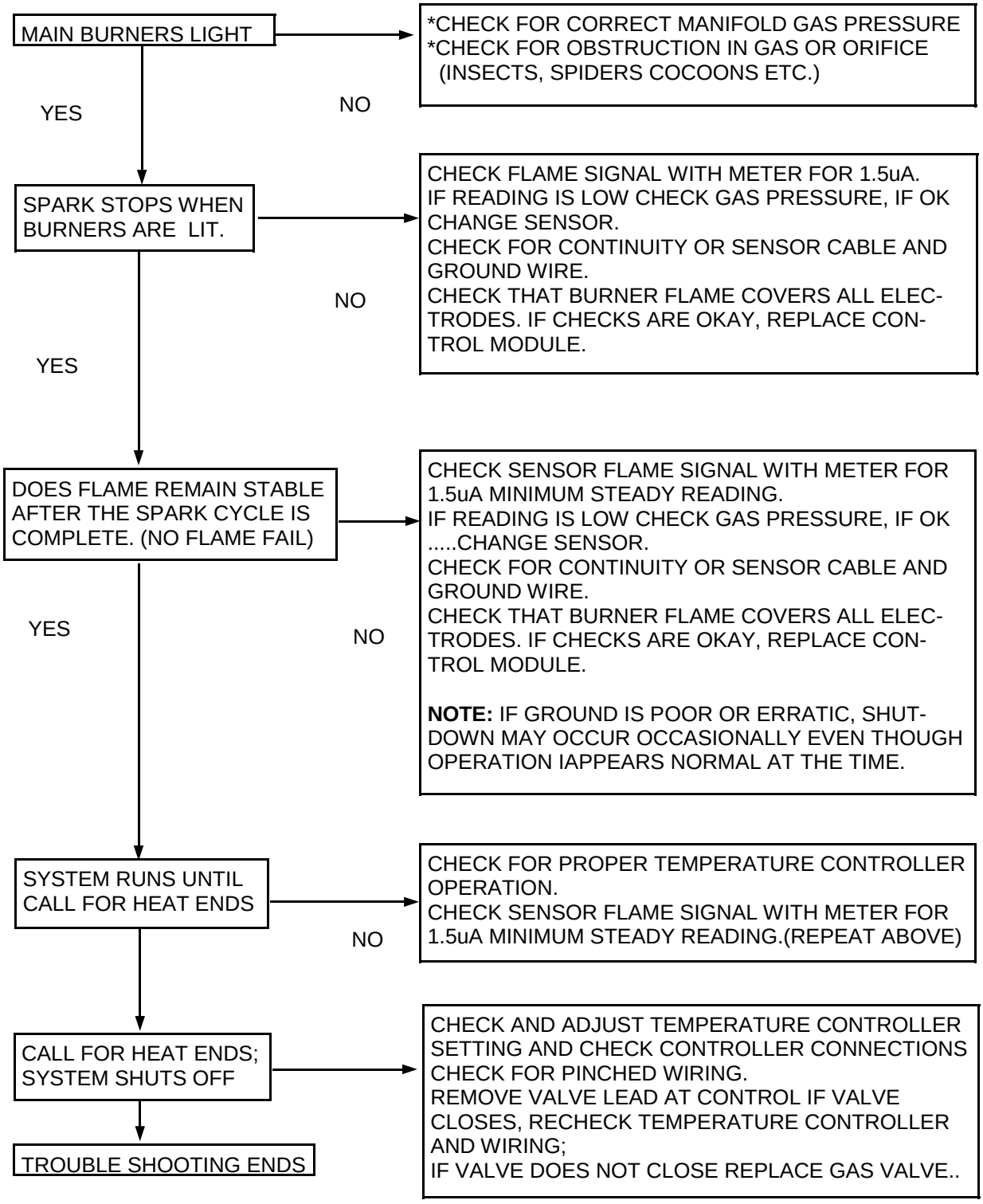
The flame signal is best when about 1 in. [25 mm] of flame rod is immersed in the burner flame. A bent flame rod, or mounting bracket or a cracked ceramic insulator can affect flame signal. Replace flame sensor if necessary.

Burner Flame

The flame sensor must be constantly immersed in flame. Check burner flame conditions as shown opposite. Observe Burner rating plate for the correct gas pressure, and check it with a manometer. If gas pressure is OK check gas line and orifice for obstructions.

13. TROUBLESHOOTING GUIDE

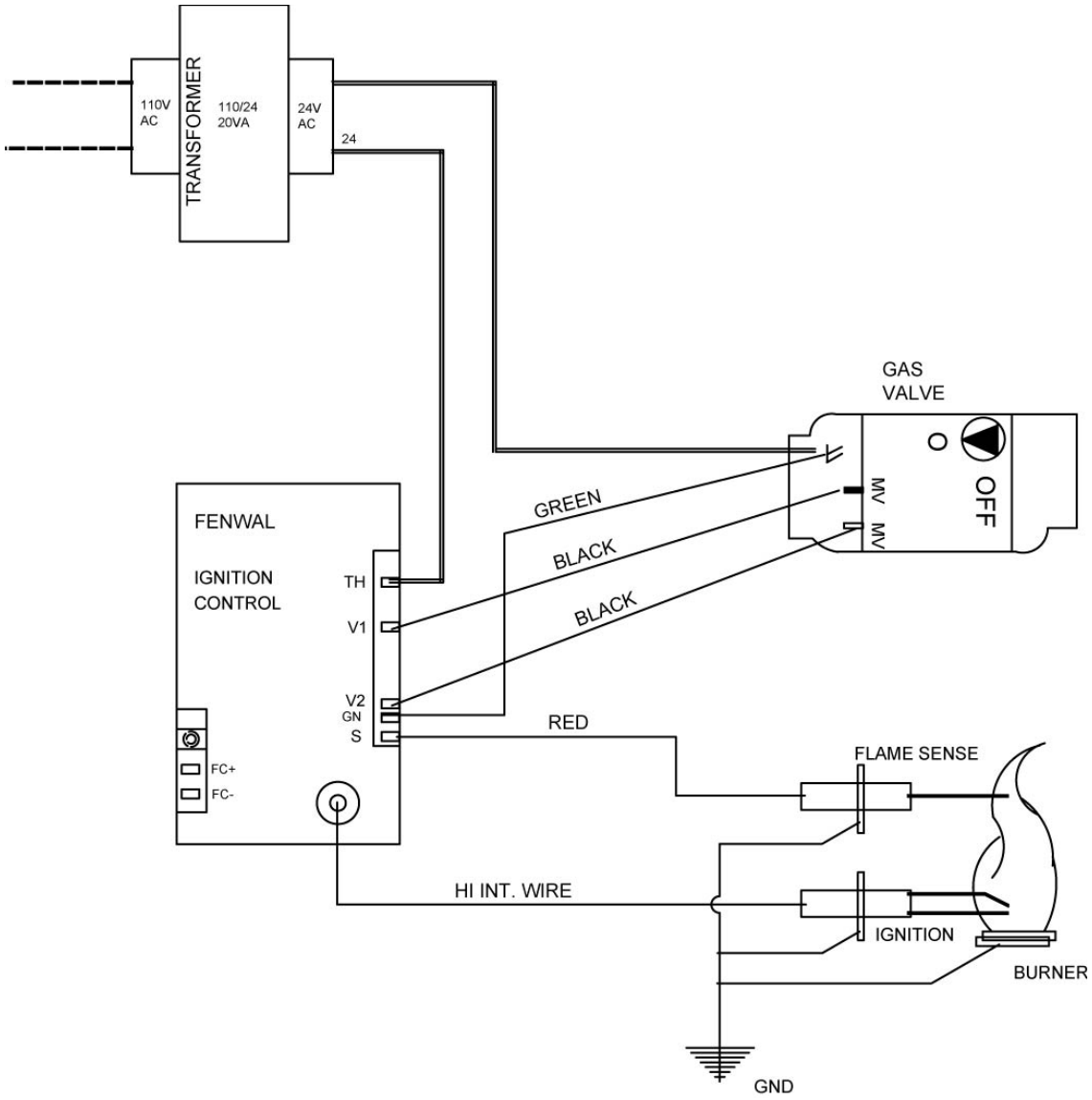




NOTE: IF CONTROL GOES INTO LOCKOUT, THE SYSTEM CAN BE RESET BY INTERRUPTING THE POWER SOURCE:

14. WIRING DIAGRAM FOR 2300 / IO 210 SERIES with Fenwal 35-60 DSI Control (See page 14 for HONEYWELL control wiring)

If installing remote control; JP-1234-RK, refer to wiring diagram in the remote control manual



Fenwal Control Terminal Designation	
TH/W	Thermostat Input
GND	System Ground
V1	Valve Power
V2	Valve Ground
NC	Alarm
S1	Remote Flame Sensor

Error Mode	LED Indication
Internal Control Failure	Steady on
Flame with No Call for heat	2 flashes
Ignition Lockout	3 flashes

Fault Conditions:

The LED will flash on for 1/4 second, then off for 1/4 second during a fault condition. The pause between fault codes is 3 seconds.

15. SEQUENCE OF OPERATION FOR FENWAL 35-60 DSI CONTROL

(See page 13 for HONEYWELL control)

Start up - Heat Mode:

On a call for heat the Fenwal 35-60 control will reset, perform a self check routine, flash the diagnostic LED for up to four seconds. The gas valve and spark are energized commencing the trial for ignition period. When flame is detected during the trial for ignition, spark is shutoff immediately and the gas valve remains energized. The thermostat and main burner flame are constantly monitored to assure the system continues to operate properly. When the thermostat is satisfied and the demand for heat ends, the gas valve is de-energized.

Flame Failure - Multi Trial Model:

Should the main burner fail to light, or the flame is not detected during the first trial for ignition period, the gas valve is deenergized and the control goes through an interpurge delay before another ignition attempt. The control will attempt two additional ignition trials before going into lockout and the valve relay is de-energized.

Recovery from lockout requires a manual reset by either resetting the thermostat or removing 24 volts for a period of 5 seconds. If the thermostat is still calling for heat after one hour the control will automatically reset and attempt to ignite the burner again.

Flame Failure - Re-Ignition:

If the established flame signal is lost while the burner is operating, the control will respond within 0.8 seconds. The HV spark will be energized for a trial ignition period in an attempt to relight the burner.

If the burner does not light the control will make two more attempts to relight the burner before de-energizing the gas valve. If the burner does not relight, the control will go into lockout as noted above in “Failure to light”. If flame is re-established, normal operation resumes. Multi-try models will allow three tries for ignition including interpurges.

Cautions:

1. Ceramic insulators should not be in or close to the flame.

2. Electrode assemblies should not be adjusted or disassembled. Electrodes should have a gap spacing of 1/8”- 3/16” (3.12± 0.81 mm). If this spacing is not correct, the assembly must be replaced. Electrodes are preset and NOT field adjustable.

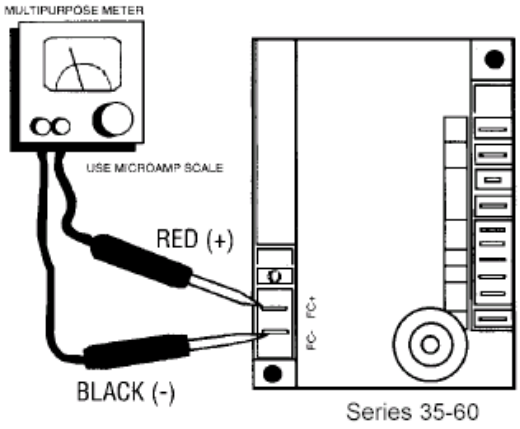
3. Exceeding the temperature limits can cause nuisance lockouts and premature electrode failure.

The control must be secured in an area that will experience a minimum of vibration and remain below the maximum operating temperature of 160°F.

Flame current is the current which passes through the flame from the sensor to ground. The minimum flame current necessary to keep the Fenwal 35-60 system from lockout is 0.7 microamps (uA). To measure the flame current, connect analog DC microammeter to the FC-FC+ terminals.

Meter should read 0.7 uA or higher. If the meter reads below "0" on scale, meter leads are reversed. Disconnect power and reconnect meter leads for proper polarity.

Check S87C Flame sensing Circuit on page 11 for **Flame Sensor** and **Burner Flame** characteristics.



16. SPARK IGNITION CIRCUIT

The step-up transformer in the ignition control provides spark ignition at 30,000 volts (open circuit). To check the spark ignition circuit, proceed as follows.

1 Shut off gas supply to the gas control
2 Disconnect the ignition cable at the ignition control stud terminal to isolate the circuit from the spark igniter or igniter/sensor
3 Prepare a short jumper lead, using heavily insulated wire such as ignition cable

CAUTION

In the next step, DO NOT allow fingers to touch either the stripped end of the jumper or the stud terminal. This is a very high voltage circuit and electrical shock can result.

1 Perform this test immediately upon energizing the system before the ignition control goes into safety lockout and interrupts the spark circuit. Touch one end of the jumper firmly to the ignition control GND terminal. (DO NOT remove the existing ground lead.) Slowly move the other end of the jumper wire toward the stud terminal on the ignition control to establish a spark.
2 Pull the wire away from the stud and note the length of gap at which spark discontinues.
3 A spark length of 1/8 in. (3mm) or more indicates satisfactory voltage output. If no arc can be established, or the maximum spark is less than 1/8 in. (3mm), and power to the ignition control input terminals was proved, replace the ignition control.

17. COMMISSIONING REPORT
AS PER I&O MANUAL AND LOCAL CODES

CONTRACTOR NAME: .....DATE.....

ADDRESS:.....

.....

CITY:.....

PHONE:.....

CELL: .....

JOB SITE.....CITY.....

HEATER MODEL NUMBER:.....

HEATER SERIAL NUMBER: .....

EQUIPMENT HAS BEEN FACTORY FIRED AND TESTED BEFORE DELIVERY, NEVERTHELESS IT IS NOT A PLUG IN APPLIANCE..IT DOES REQUIRE COMMISSIONING AND FIELD ADJUSTMENTS

TO ENSURE THAT SITE CONDITIONS ARE COMPATIBLE WITH THIS HEATER, AND TO ALLEVIATE NUISANCE CALL BACKS FOR THE CONTRACTOR, THE FOLLOWING START-UP NEEDS TO BE COMPLETED BY THE LICENSED GAS INSTALLER.

A CONTRACTOR CALLING FOR TECHNICAL SUPPORT *MUST* PROVIDE THE FOLLOWING INFORMATION FROM HIS COMPLETED COMMISSIONING REPORT (NEXT PAGE)

ON NEXT PAGE

FAX COMPLETED FORM TO TECHNICAL SERVICES: CANADA - 905-712-8336 USA - 706-554-9390

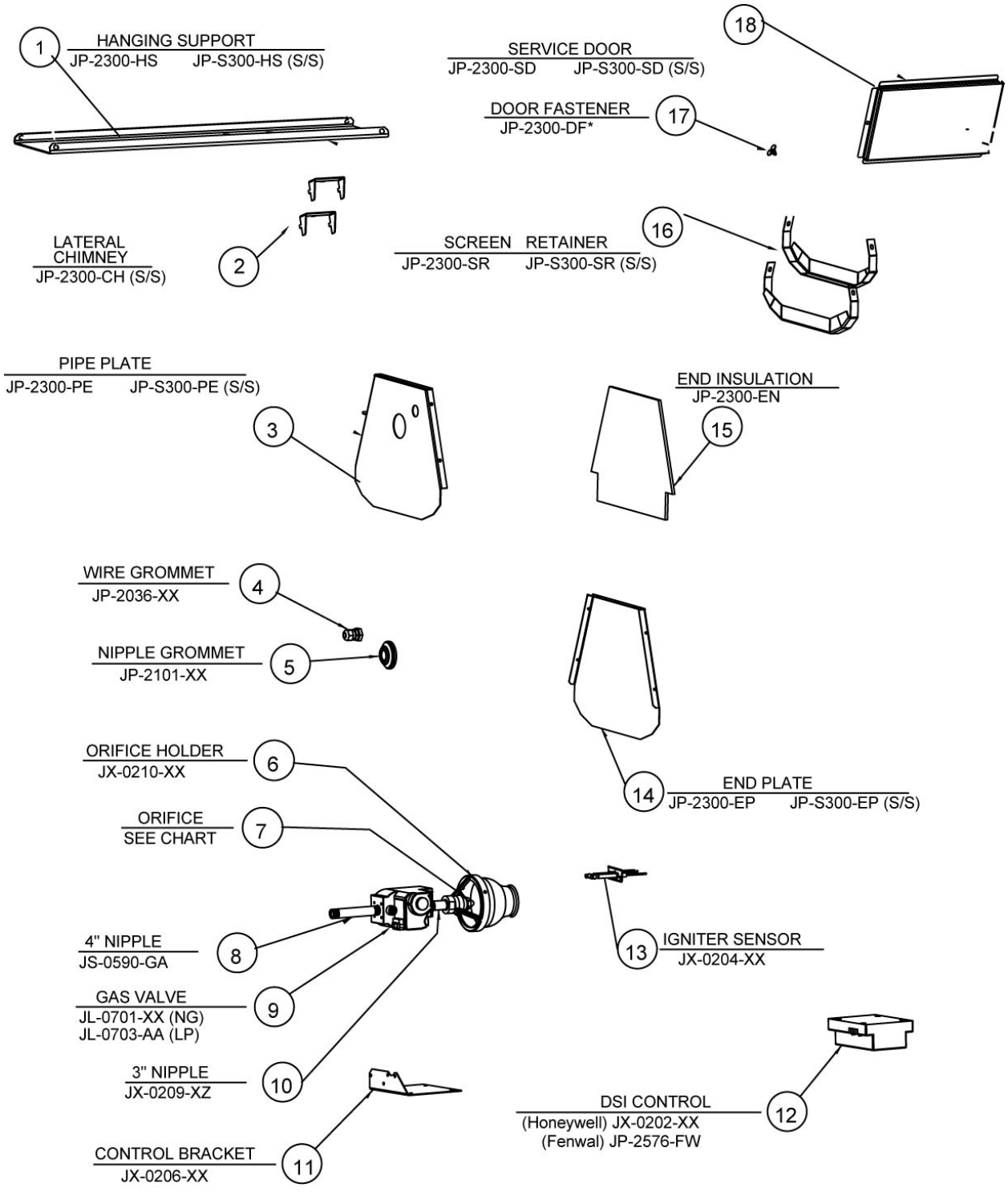
TO BE COMPLETED BY THE LICENSED INSTALLER:
PATIO HEATER COMMISSIONING REPORT

TYPE OF GAS:	NG ☐	LP ☐
IS HEATER EXPOSED TO CHEMICAL OR CORROSIVE ATMOSPHERE:	YES ☐	NO ☐
IS AN OPEN FLAME COMPATIBLE WITH THE INSTALLED LOCATION:	YES ☐	NO ☐
MINIMUM CLEARANCES CONFORM AS PER I&O MANUAL:	YES ☐	NO ☐
IF THIS IS A HIGH ALTITUDE AREA WHAT IS THE ALTITUDE ABOVE SEA LEVEL	☐	Feet
IS HEATER SHORT AXIS HORIZONTAL WITH THE VENTURI ON TOP:	YES ☐	NO ☐
IS GAS SUPPLY LINE ADEQUATELY SIZED FOR SYSTEM VOLUME:	YES ☐	NO ☐
HAVE GAS LINES AND BRANCHES BEEN PURGED OF AIR:	YES ☐	NO ☐
THIS HEATER WAS FIELD TEST FIRED WITHOUT ANY MALFUNCTION:	YES ☐	NO ☐
INLET GAS SUPPLY PRESSURE WITH HEATER OPERATING:	☐	WC"
GAS VALVE OUTLET (Manifold) PRESSURE WITH HEATER OPERATING:	☐	WC"
HAS THE WIRING POLARITY BEEN MAINTAINED THROUGHOUT:	YES ☐	NO ☐
WHAT IS THE VOLTAGE READING AT THE IGNITION MODULE:	☐	VOLTS
WHAT IS THE FLAME SIGNAL STRENGTH IN uA FROM SENSOR:	☐	uA (microamps)
IS THE HEATER CONTROLLED BY A THERMOSTAT:	YES ☐	NO ☐
IS THE THERMOSTAT STRATEGICALY LOCATED:	YES ☐	NO ☐
TOTAL HEATERS SUPPLIED FROM ONE SINGLE TRANSFORMER:	☐	TOTAL
WHAT IS THE RATING OF THE TRANSFORMER IN VA:	☐	V.A.
WHAT IS THE TOTAL LENGTH OF THE LOW VOLTAGE WIRING:	☐	FEET
WHAT IS THE GAUGE OF THE LOW VOLTAGE WIRING:	☐	GAUGE
DOES THE HEATER HAVE GOOD ELECTRICAL GROUNDING:	YES ☐	NO ☐

*** FAX COMPLETED FORM TO TECHNICAL SERVICES: CANADA - 905-712-8336 USA - 706-554-9390**

18. Replacement Parts List

Only the following illustrated parts are available. For any other parts please contact the manufacturer.



Schwank infra-red gas heaters ISO 9001:2000 REGISTERED

LIMITED WARRANTY CERTIFICATE

infrasave radiant heaters ISO 9001:2000 REGISTERED

GAS-FIRED INFRA-RED PATIO HEATERS : 2300 / IO 210 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.

ONE 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 one year (1 year) 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.

BURNER AND CERAMIC TILE - THREE YEAR WARRANTY

The manufacturer warrants the burner and ceramic tile for a period of three years. (3 years)

WHAT IS NOT COVERED

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. 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, normal wear due to use, 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 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 MERCHANTIBILITY 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 priced paid for the product.

All replacement parts will be warranted for the unused portion of the warranty coverage period remaining on the applicable unit.

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.

5285 BRADCO BLVD. MISSISSAUGA, ON, L4W 2A6
2 SCHWANK WAY, WAYNESBORO, GEORGIA. 30830-8336

SCHWANK INC. **Ph: 905-712-4766 Fax: 905-712-8336**
INFRASAVE INC. **Ph: 1-866– INFRASV (463 7278) Fax: 1-866-724 –9265**

GP-D230-BX-03A
2300 / IO 210 WARRANTY
AUGUST 2005
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