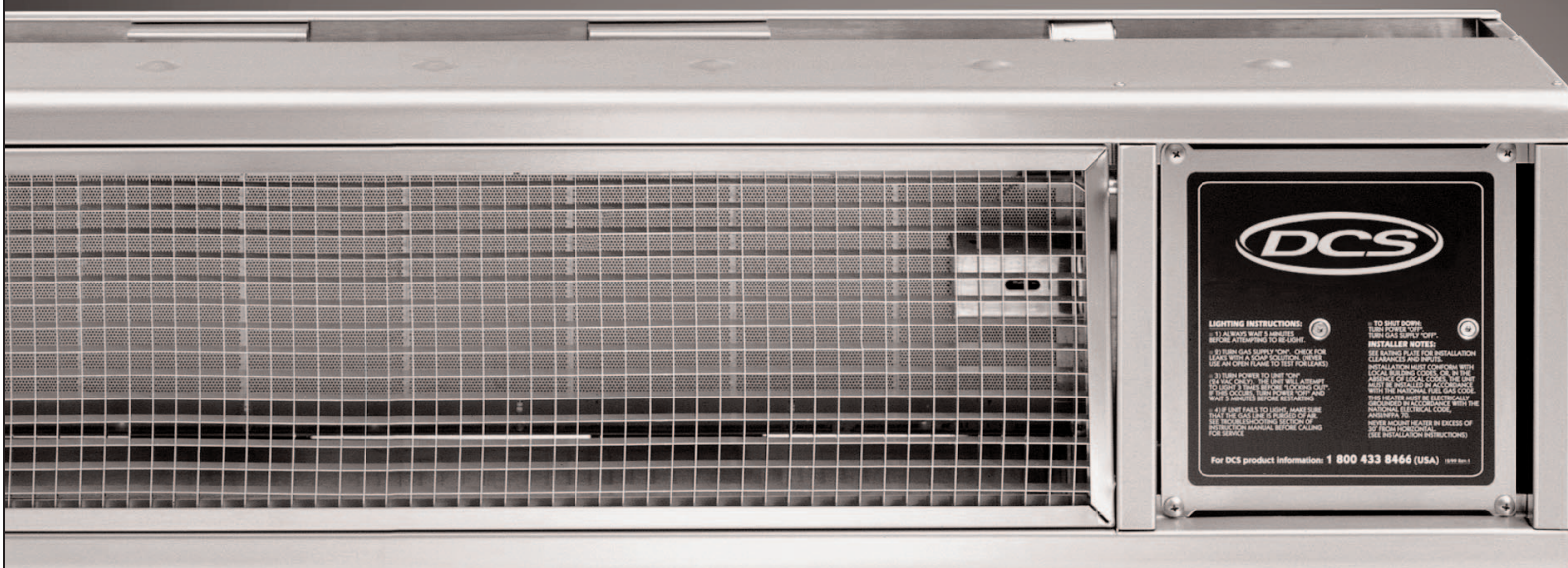




PERFECT HEAT.

PROFESSIONAL DEL REY HEATER

Use and Care Guide and Installation Instructions



MODELS:
DCS-DRH48N



A MESSAGE TO OUR CUSTOMERS

Thank you for selecting DCS Professional Del Rey Heater. Because of this appliance's unique features we have developed this Use and Installation Guide. It contains valuable information on how to properly operate and maintain your new appliance for years of safe and enjoyable use.

To help serve you better, please fill out and submit your Ownership Registration Card by visiting our website at www.dcsappliances.com and selecting "Customer Service" on the home page and then select "Ownership Registration" or submit the enclosed Ownership Registration Card to the address below. In addition, keep this guide handy, as it will help answer questions that may arise as you use your new appliance.

For your convenience, product questions can be answered by a DCS Customer Care Center by phone: 1-888-396-2665 or by mail:

DCS
Attention: Customer Care Center
5800 Skylab Road
Huntington Beach, CA 92647

www.dcsappliances.com



WARNING

Improper installation, adjustment alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before use, installing or servicing this equipment. For outdoor use only.



WARNING

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

FOR YOUR SAFETY

IF YOU SMELL GAS:

- 1. Shut off gas to the appliance.**
- 2. Extinguish any open flames.**
- 3. If odor continues, immediately call your gas supplier.**

PLEASE RETAIN THIS MANUAL FOR FUTURE REFERENCE.

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SAFETY PRACTICES AND PRECAUTIONS

- When properly cared for, your Del Rey Heater will give safe, reliable service for many years. However, extreme care must be used since the heater produces intense heat and can increase accident potential. When using this appliance basic safety practices must be followed, including the following:
- Read this Care and Use Guide carefully and completely before using your heater to reduce the risk of fire, burn hazard or other injury. Begin by ensuring proper installation and servicing. Do not repair or replace any part of the heater unless specifically recommended in this manual. All other service should be referred to a qualified technician.



WARNING

Do not try lighting this appliance without reading the "LIGHTING INSTRUCTIONS" section of this manual.

- Do not use in an explosive atmosphere, keep heater away from areas where gasoline or other flammable liquids or vapors are stored or used.
- Before each use check for damaged parts such as hoses, or burner.
- Do not attempt to alter unit in any manner.
- It is imperative that the control compartment, burners, and circulation air passageways of the heater must be kept clean. The heater should be inspected before each use, and at least annually by a qualified service person, for the presence of spiders, webs or other insects. The burner area is a common and desired spider haven.



INSECT WARNING

Spiders and insects can nest in the burner of this and any other heater. Spider webs can present a dangerous condition which can damage the heater and render it unsafe for use.

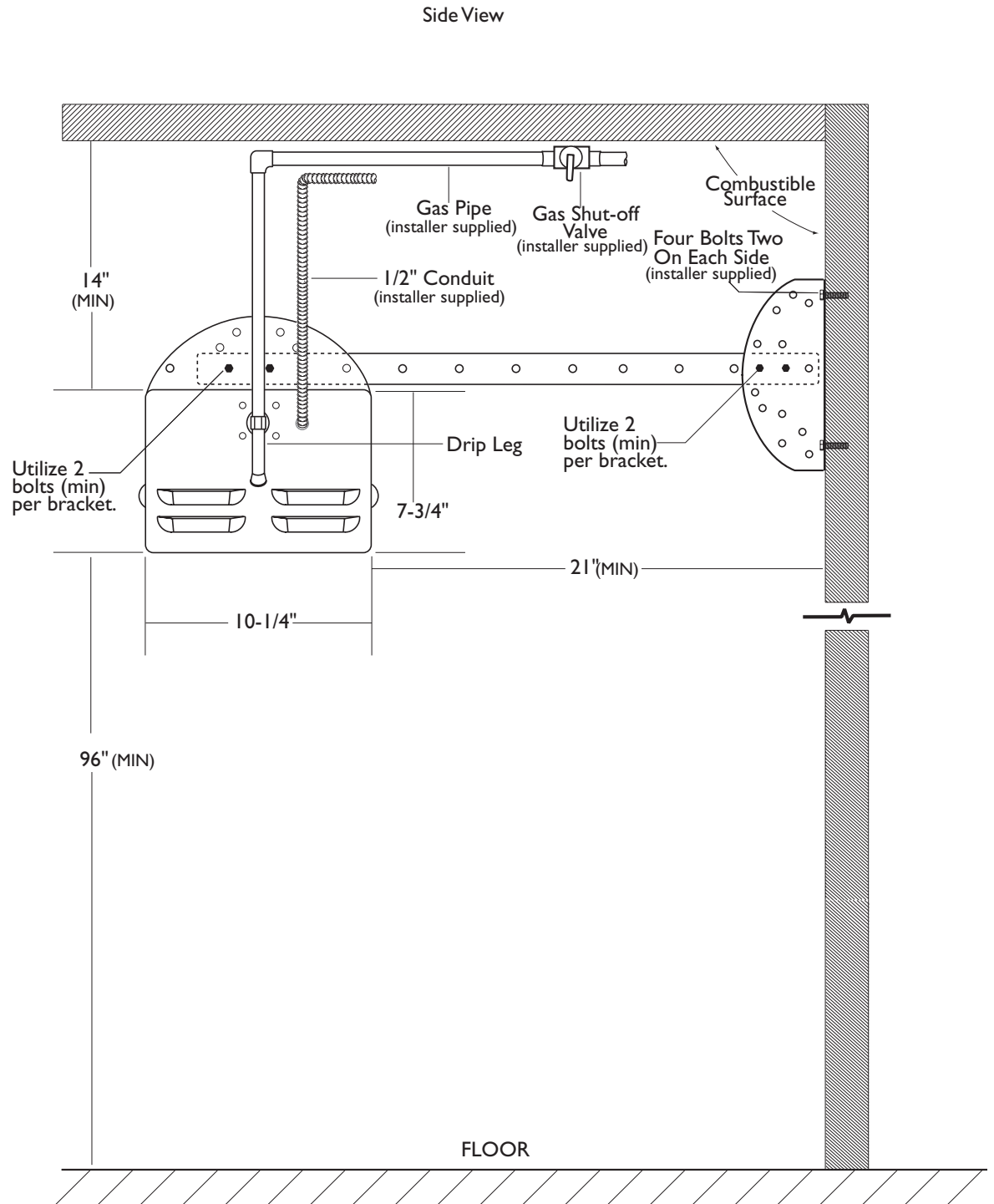
SAFETY PRACTICES AND PRECAUTIONS

- Children should not be left alone or unattended in an area where the heater is being used. Never allow them to sit, stand or play on or around the heater at any time. When in use, portions of the heater get hot enough to cause severe burns.
- Never let clothing, or other flammable materials come in contact with or too close to any part of heater or hot surface until it has cooled. Fabric may ignite and result in personal injury.
- Begin by insuring proper installation and servicing. Follow the installation instructions provided with this product. Have your heater installed by a qualified technician. Have the installer show you where the gas supply shut off valve is located so that you know where to shut off the gas to the heater. If you smell gas, your installer has not done a proper job of checking for leaks. If the connections are not perfectly seated and tightened, you can have a small leak and therefore a faint gas smell. Finding a leak is not a “do-it-yourself” procedure. Some leaks can only be found with the heater in operation mode and for your protection it must be done by a qualified service technician. Never use an open flame to locate leak.
- Clean the heater with caution. Avoid steam burns; do not use a wet sponge or cloth to clean the heater while it is hot. Some cleaners produce noxious fumes or can ignite if applied to a hot surface.
- Be sure all heater controls are turned off and the heater is cool before using any type of aerosol cleaner on or around the heater. The chemical that produces the spraying action could, in the presence of heat, ignite or cause metal parts to corrode.
- Do not operate the heater under unprotected combustible construction, maintain clearances. Use only in well ventilated areas.
- Keep the area surrounding the heater free from combustible materials, trash, or combustible fluids and vapors such as gasoline or charcoal lighter fluid. Do not obstruct the flow of combustion and ventilation air.
- To avoid the risk of burns or accidental cloth ignition, do not touch the heater anywhere near the burner assembly during operation.
- Do not touch the burner assembly until after the heater has cooled.
- Carefully monitor young children in the vicinity of any operating heater.
- Do not hang clothing or any other flammable materials from, on, or near the heater.
- All leak tests should be done with a soap solution. Matches should never be used for this purpose.
- This outdoor heater is primarily for temporary heating of outdoor patios, decks, spas, pool, and work areas.

CLEARANCES/INSTALLATION SPECIFICATIONS

0° INSTALLATION

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIAL.

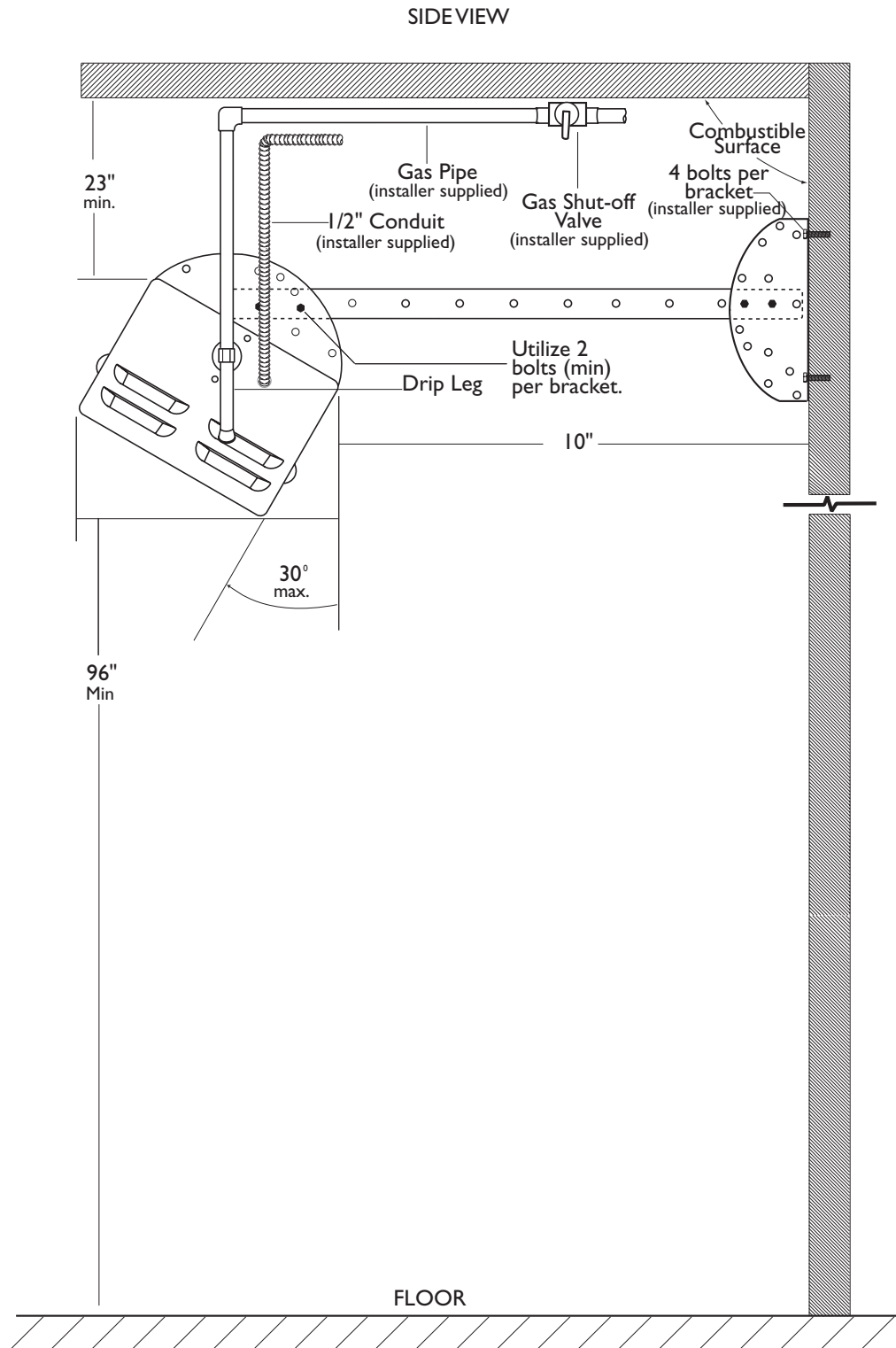


CLEARANCES

30° INSTALLATION

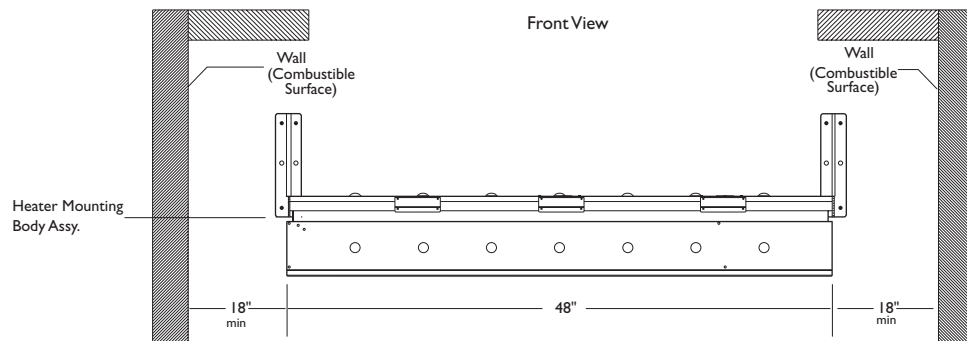
MINIMUM CLEARANCES TO COMBUSTIBLE MATERIAL.

Note: Mounting channels can be hacksawed 13" for use in 30° installations.

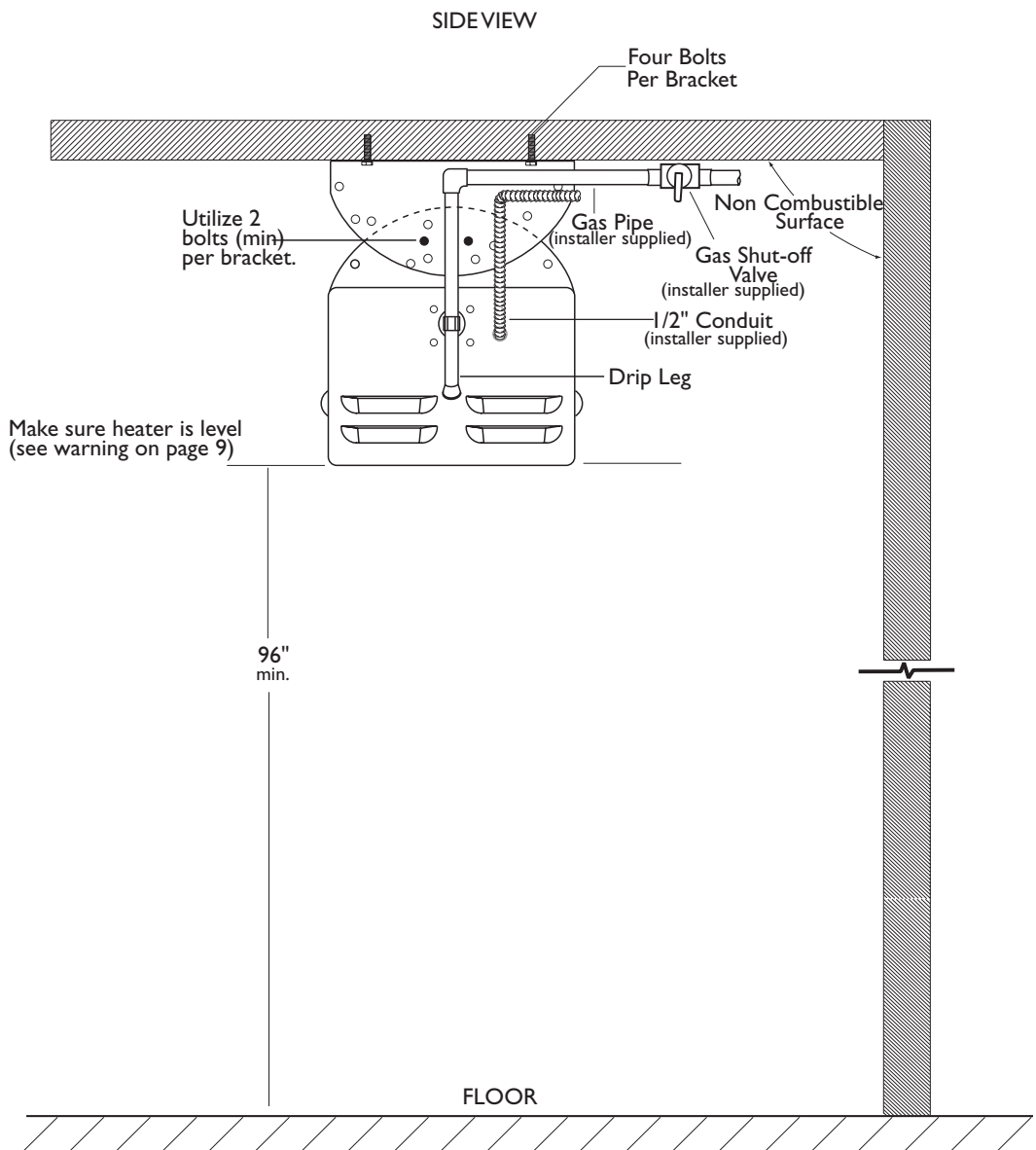


CLEARANCES

0° & 30° INSTALLATION (MINIMUM CLEARANCES TO COMBUSTIBLE MATERIAL).



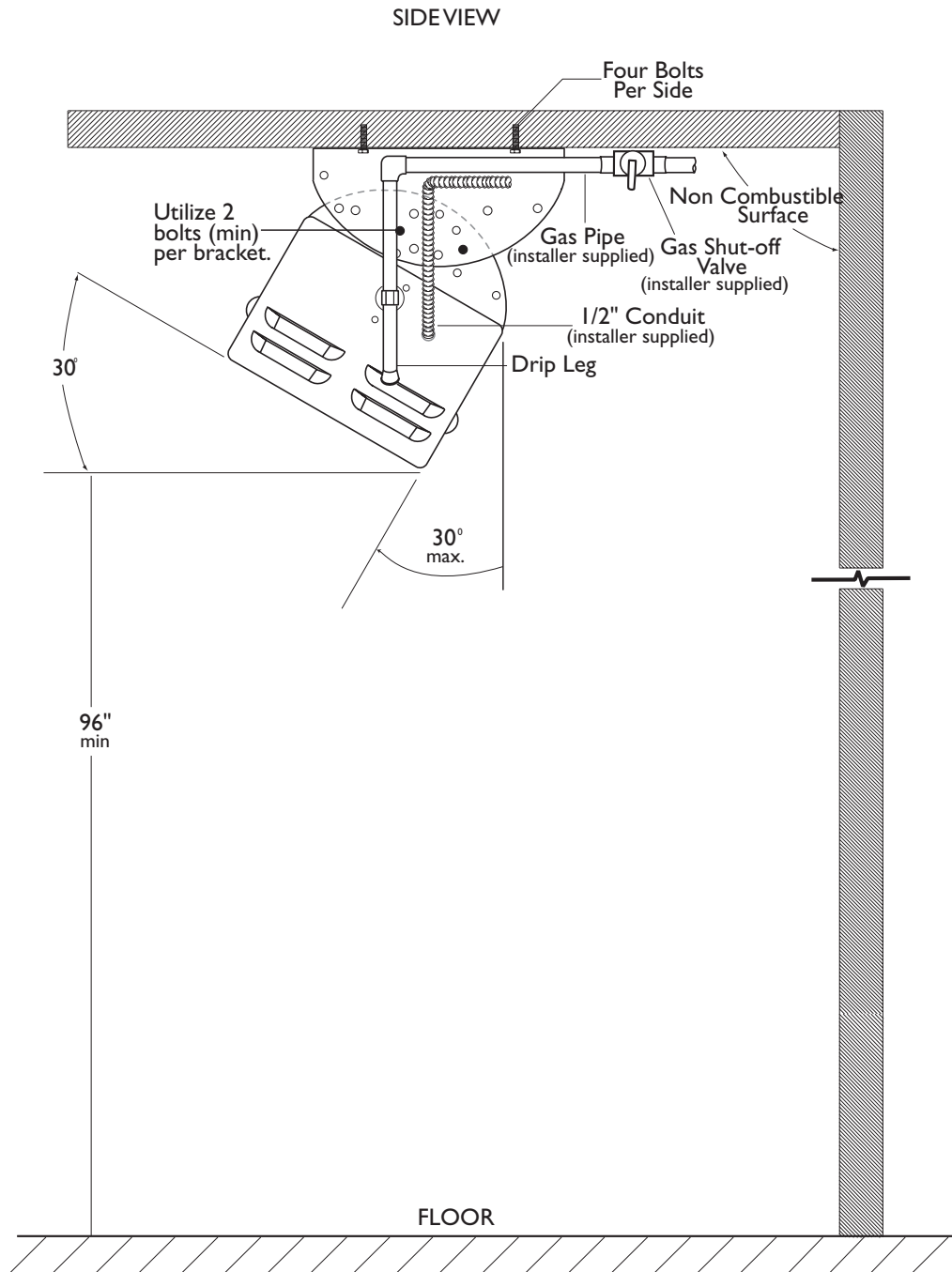
0° INSTALLATION (MINIMUM CLEARANCES TO NON-COMBUSTIBLE MATERIAL).



CLEARANCES

30° INSTALLATION

MINIMUM CLEARANCES TO NON-COMBUSTIBLE MATERIAL.



INSTALLATION

INSTALLATION:

The Del Rey Heater provides radiant warmth *indoors (commercial applications only) or outdoors with a powerful 58,000 Btu/hr natural gas. All units are equipped with hot surface ignition and 100% shutoff valve for safety. Del Rey Heaters to be installed in Aircraft Hangers must be installed in accordance with American National Standards for Aircraft Hangers, ANSI/NFPA No. 409. Heaters to be installed in public garages must be installed in accordance with NFPA No. 88A standards for parking structures. Heaters must be installed so that minimum clearances marked on the heater will be maintained from vehicles parked below the heater.

The installation must conform with ANSI standard No. Z223.1 National Fuel Gas Code and any applicable local codes. In Canada, the installation must conform with local building codes or, in the absence of local codes, with National Standards of Canada CAN/CGA-B 149.1 & 2-M86. Each heater must be electrically grounded in accordance with the National Electrical Code, ANSI/NFPA 70 when an external electrical source is utilized. In Canada, the CSA Canadian Electrical Code, C22.1, Part 1 applies.

The gas inlet supply and normal operating manifold pressure for each heater are as follows. For gas supply line pressures in excess of 1/2 psig, contact your dealer or the factory.

GAS INLET PRESSURE

maximum: pressure Natural Gas: 1/2 psig

minimum: pressure Natural Gas: 6 W.C.

manifold: pressure Natural Gas: 5 W.C.

The heater has an internal 5" W.C. regulator.

Note: This unit is for use with natural gas only.



WARNING:

- 1. This product must be installed by a licensed plumber or gas fitter when installed within the Commonwealth of Massachusetts.*
- 2. When installing Mounting Body Assembly, make sure left hand and right hand Body Assembly are level. If not, escaping heat could easily cause damage to the components inside the compartment.*

INSTALLATION

Do not locate either the gas or electrical supply line directly over the flue outlet of the heater. Electrical supply line shortage and / or control overheating may occur. The heater must be installed in a location such that it is accessible for servicing and have no restriction of air flow to the air inlet of the heaters casing.

MOUNTING

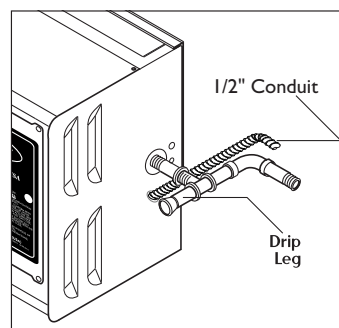
Each heater must be installed such that the minimum clearance to combustibles are maintained. Combustible materials are defined as wood, paper, foliage, plastic, plexiglass or other materials capable of being ignited and burned. Such materials shall be considered combustible even though flame-proofed, fire retardant treated or plastered. Additional clearances may be required for glass, painted surfaces and other materials which may be damaged by radiant or convection heat.

ELECTRICAL

A 24 VAC, 40 VA transformer has been included with the product. The on-off control of the heater should be controlled from 120 VAC side of the transformer. A UL approved outdoor wall switch must be used for this purpose. The transformer must be mounted a minimum of 12" from the heater in a weather protected cover. Do not put the transformer in the heater (this will damage the unit.) A step down transformer approved as having at least a 40 VA rating must be utilized for each connected heater. Control wires used to electrically connect one or more heaters together must have both adequate capacity and insulation temperature ratings for the total connected load. Use at least 18 ga. wire up to 50 ft. from heater to transformer or wall switch. Use 16 ga. over 50 ft. distance. If the original wires supplied should need replacement, they must be replaced with wiring material having a temperature rating of at least 105 degrees Centigrade.

GAS PIPING

A minimum pipe size of 1/2" is required for inlet piping. A 1/2" lever handled shut-off gas cock should be installed within 6 feet of the appliance for servicing the unit. Check with local and state plumbing and heating codes regarding sizing of the gas lines. Installation of a drip leg in the gas supply line going to each heater is required to minimize the possibility of any loose scale or dirt within the gas supply line from entering the heater's control system.



LEAK TESTING

IMPORTANT:

VENTILATION

A minimum building ventilation rate of 4 CFM per 1,000 BTU's of installed heater input must be provided. This rate of ventilation may be obtained through either gravity or mechanical ventilation of the building. In conjunction with building ventilation system, adequate fresh air into the building must be provided through fresh air inlets and/or building inlets. It is recommended local code be checked to assure the ventilation system and heat installation are in compliance with local and/or state codes.

When checking for gas leaks, do not use an open flame. Use a soap and water solution. Installation of 1/8" NPT plugged tapping, accessible for test gage connections, is required upstream of the gas supply connection to the heater.

NOTE: Gas connections on the heater are leak tested at the factory prior to shipment.

PRECAUTIONS:

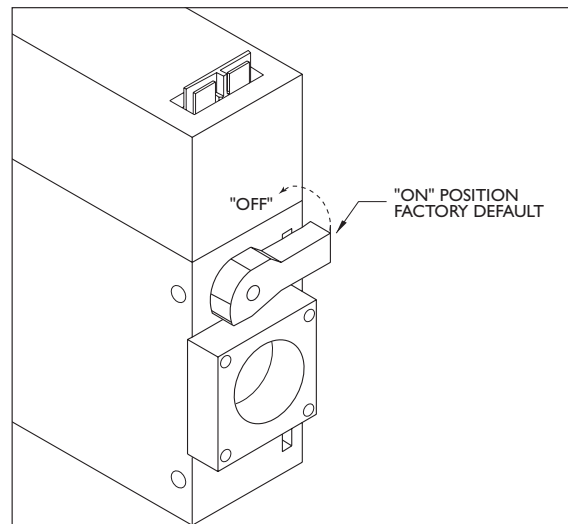
- Periodically check the whole gas system for leaks or immediately check if the smell of gas is detected. Extinguish all open flames.
- Never leak test while smoking.
- Do not use heater until all connections have been leak tested and do not leak.
- When leak testing, refer to the connections diagrams.
- Only those parts recommended by the manufacturer should be used.
- Substitution can void warranty.

LEAK TEST:

Make a soap solution of one part liquid detergent, and one part water. The soap solution can be applied with a spray bottle, brush or rag, soap bubbles will appear where a leak is present.

Turn the gas supply "ON" check for leaks at leak points. If a leak is present, turn off supply, tighten any leaking fittings, turn gas on and recheck.

Note: There is a manual shut-off lever on the internal heater control valve/regulator. This lever is shipped in the "ON" position (Default position).



LIGHTING/OPERATION INSTRUCTIONS

LIGHTING INSTRUCTIONS

Upon installation of the heater and completion of the gas line and electrical supply to each heater, follow the steps below for Lighting Instructions. Lighting instructions are also provided on the control panel of the heater.

Turn gas and power to "ON". The igniter should light within the first 4 seconds. If not, the electrode sensor will shut off the hot surface igniter. The igniter will attempt to light 3 times before "locking out". During initial installation, this will happen if the gas line is not purged. To reset the control, shut off the power to the unit and wait 5 seconds. Turn power back to "ON" position. This will allow for 3 more lighting attempts.

TO START HEATER

1. Turn manual gas valve to "ON" position.
2. Turn electrical supply "ON".

TO SHUT DOWN HEATER

1. Turn electrical supply "OFF".
2. Turn manual gas valve to "OFF" position.



WARNING

If burner fails to ignite, shut down electrical power and wait 5 minutes before turning power "ON" to allow any gas to dissipate.

CARE & CLEANING / BASIC TROUBLESHOOTING

CARE AND CLEANING

To keep your Del Rey Heater in maximum performance, we recommend the following to be performed annually.

1. With an air hose regulated to 30 psig, blow off any dust and dirt that has accumulated around the burner and inside the control compartment of the heater. Proper eye protection required.
2. From the front of the heater, direct the air hose from a distance of approximately 12 inches over the entire exposed area of each burner's ceramics.
3. Do not insert air hose into the inlet of the burner.
4. Remove main burner orifice, clean and re-install.
5. Check to insure heater is securely mounted and the clearance from combustible materials is maintained.
6. If additional service to the heater is required contact your local dealer or the factory.

BEFORE CALLING FOR SERVICE – BASIC TROUBLESHOOTING

If no glow from hot surface igniter:

- a) Check power supply, should have 24 volts between power wires. Use volt meter between inlet wire and ground terminal inside heater control box to measure 24 volts.
- b) Check continuity by using an ohmmeter. Check resistance between valve wire and ground. Ohmmeter should read almost no resistance or (# ohms) through valve. If high resistance, check wire connectors.
- c) Be sure connectors are fully inserted into ignition control.

If insufficient gas flow:

- a) Manual gas valve not fully to "ON" position. Turn valve handle to full "ON" position. Also ensure internal lever is in the "ON" position (as shown on page 11).
- b) Burner orifice plugged. Remove service panel, remove burner orifice (7/16" wrench) and thoroughly clean. Insects may crawl into orifice hole and block the orifice.

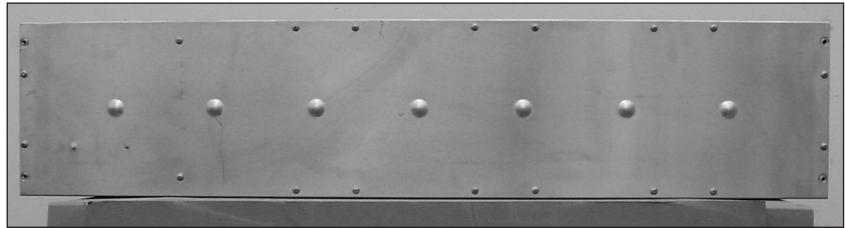
REMOVAL OF BURNER

Turn off gas and electrical before attempting any service to this appliance. Heater may be serviced by following instructions below:

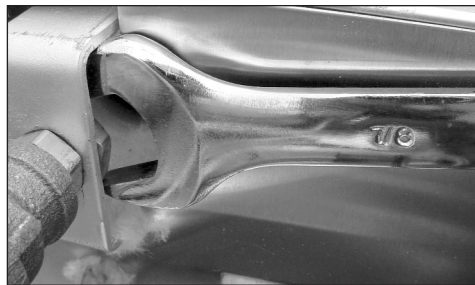
- a. Remove the four screws on the control service panel.
- b. Remove the hex nut that is holding the orifice fitting to the infrared burner's bracket.
- c. Remove the burner windscreen by removing the screw on the windscreen's frame. Then pull the windscreen down and slowly slide it out.
- d. Remove the collector box, then loosen both screws on the igniter and the electrode sensor.
- e. Last, pulling infrared burner out of the heater, extreme care should be taken. To prevent the burner from contacting the fragile electrode sensor or the igniter when removing or reinstalling the burner. Unscrew the four screws that are holding the infrared burner to the burner and channel baffles. Remove the four screws holding the burner in place. Be careful not to let the burner fall out.
- f. Lift up the left side of the infrared burner by the burner channel and slide it out of the heater.
- g. To reinstall burner, reverse procedure.

GAS VALVE REPLACEMENT

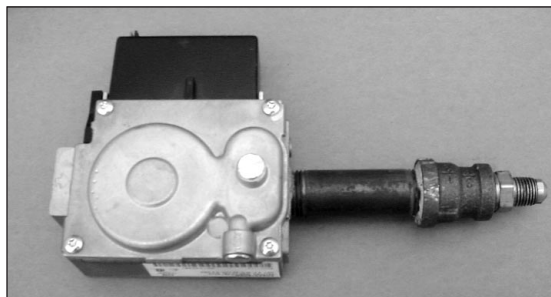
- Turn off gas supply.
- Turn off electrical supply.
- Disconnect gas & electrical supply.
- Remove unit from hangers.
- Remove screws securing the rear panel and remove the panel.



- Use a 7/8" open end wrench to hold orifice nut.



- Remove the existing black pipe and install it in the new valve.

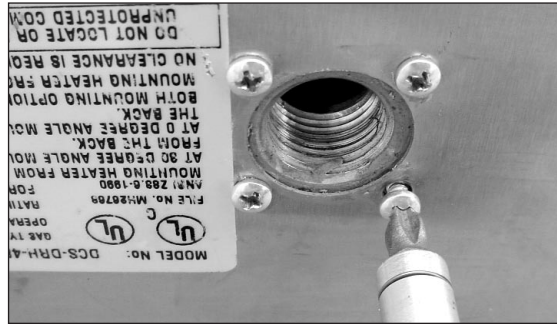


- Reverse disassembly order to install new valve.

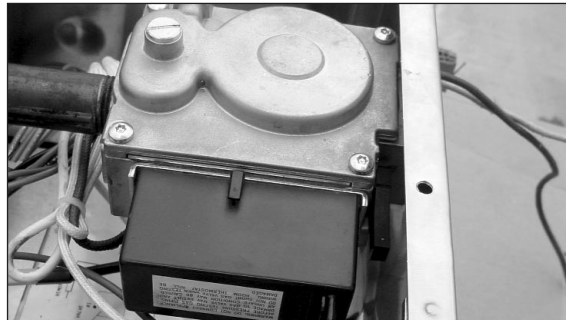


GAS VALVE REPLACEMENT

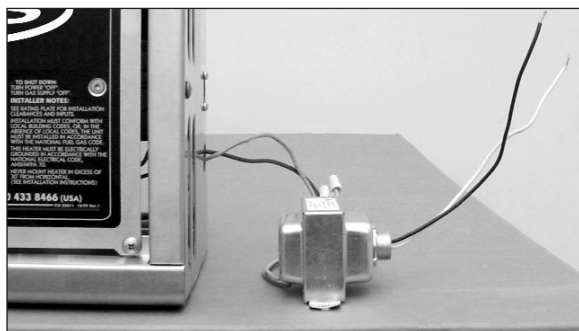
- Reinstall (4) screws securing valve to case.



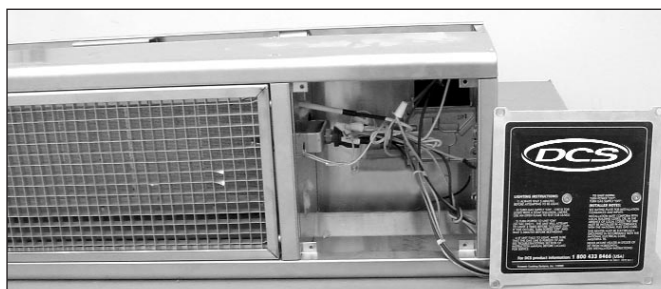
- Re-connect leads to valve.
- Be sure valve switch is on (in the up position).



- The transformer must be mounted outside of unit to protect it from the heat and ensure long service life. Refer to page 10.



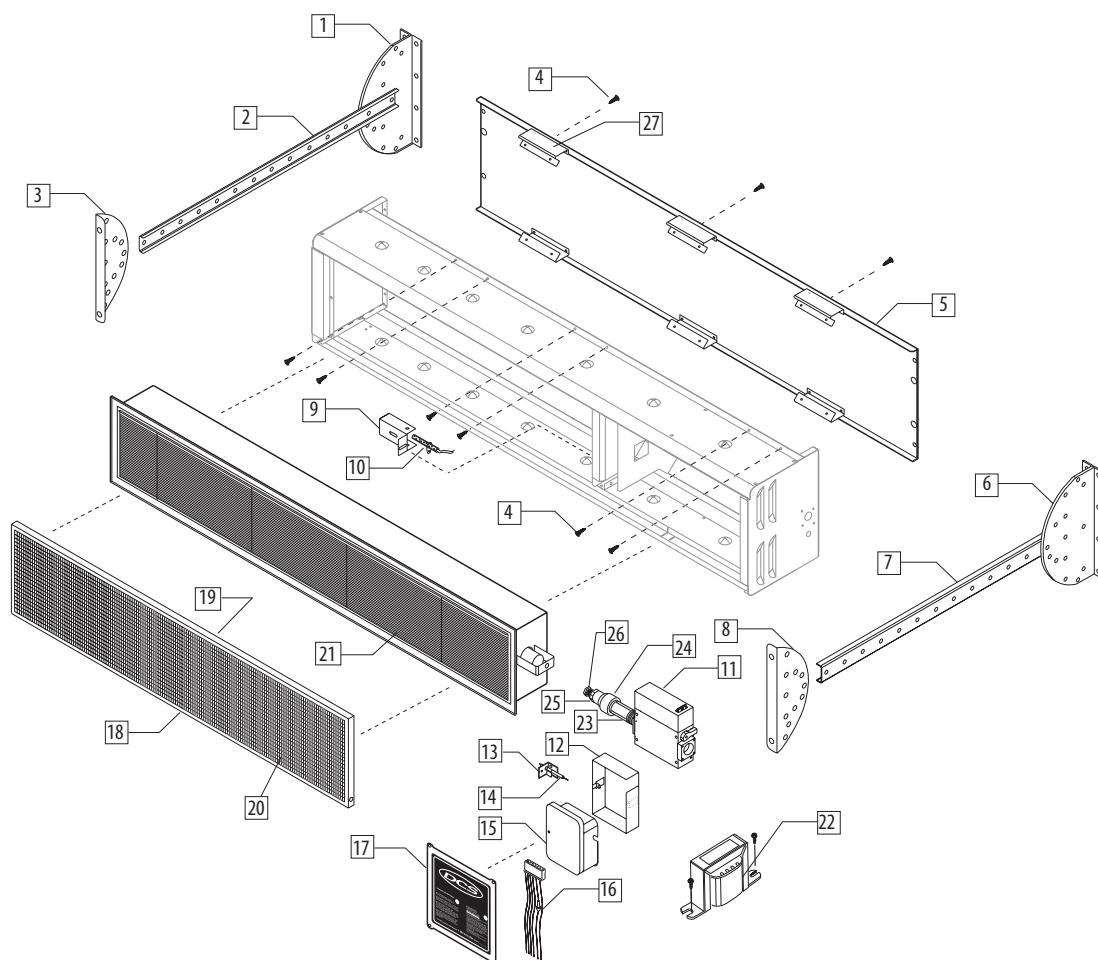
- Do not install transformer inside unit.



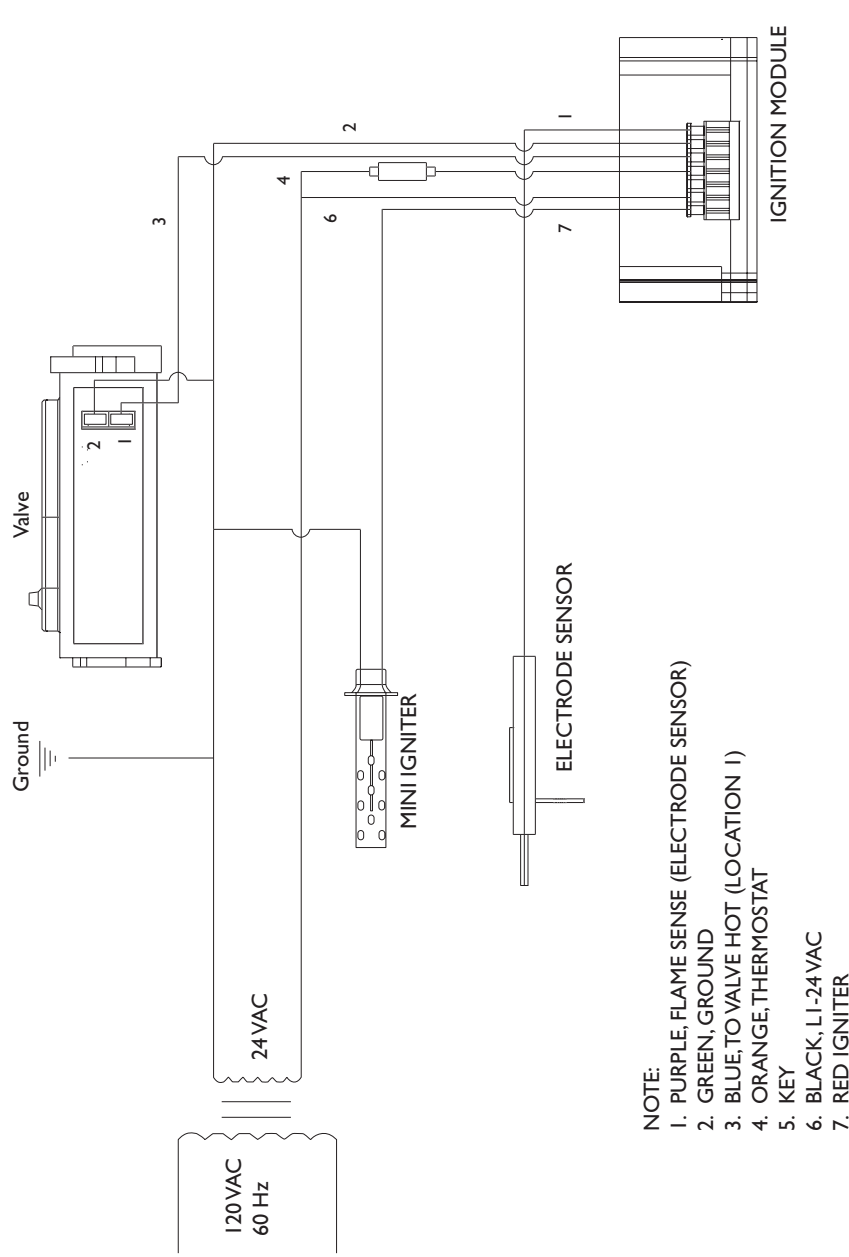
HEATER PARTS LIST

ITEM	DESCRIPTION	PART NO.
1)	Wall Plate R/H	22019
2)	Mounting Channel	22014
3)	Body Plate R/H	22012
4)	Screws	15001-26
5)	Back Panel	22002
6)	Wall Plate L/H	22019
7)	Mounting Channel	22014
8)	Body Plate L/H	22012
9)	Collector Box	22016
10)	Mini Ingiter	16325
11)	Control Valve	18270
12)	Ignition Module Cover	22022
13)	Remote Sensor Bracket	22015

ITEM	DESCRIPTION	PART NO.
14)	Remote Sensor	13055-5
15)	Ignition Module	18271
16)	Wiring Harness	18272
17)	Service Panel	22006
18)	Frame Windscreen Bottom	22007-02
19)	Frame Windscreen Top	22007-01
20)	Egg Crate	22010
21)	I/R Burner	18227
22)	Transformer	16381
23)	Nipple Blk 1/2 NPT x 3-1/4	18018-21
24)	Reducer 1/2 x 3/8 NPT	18130
25)	Orifice Fitting	13024
26)	Orifice Spud Type #29	13025-29
27)	Flue Spacer	22003

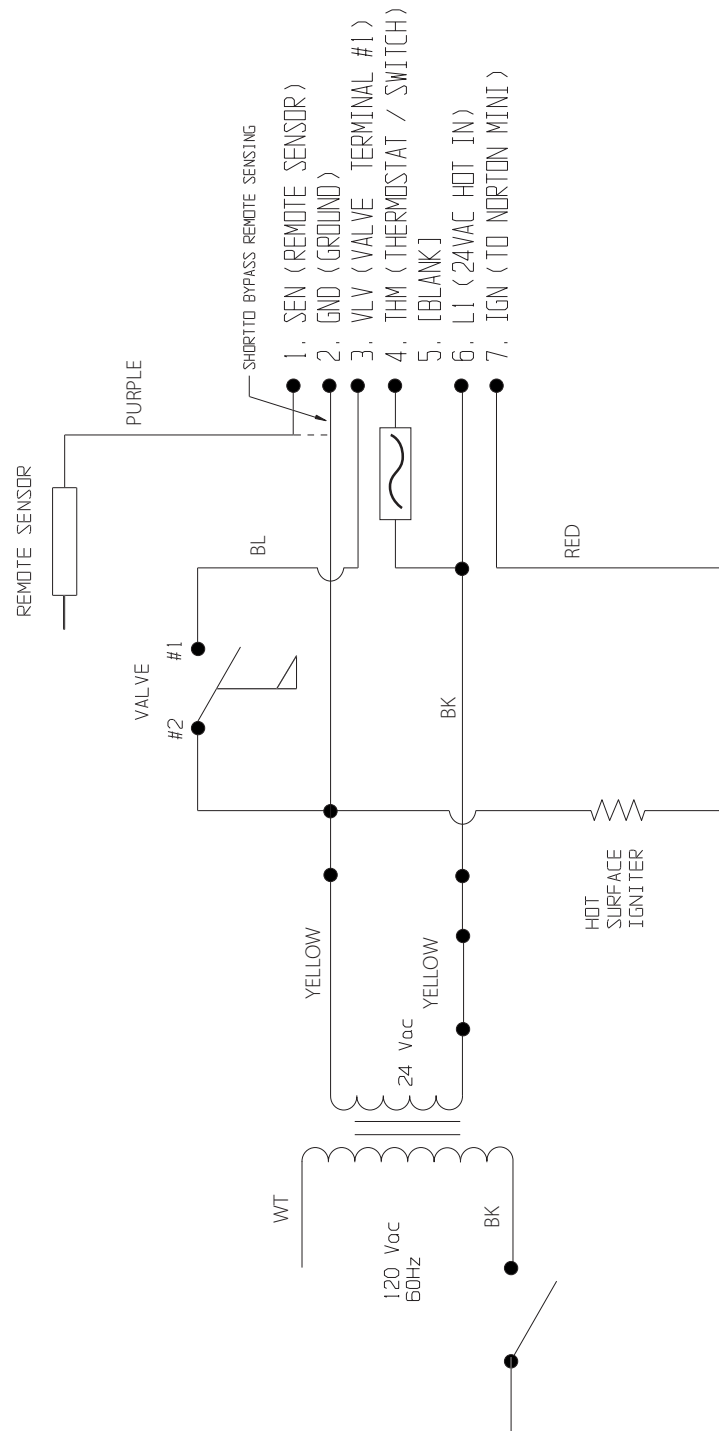


WIRING DIAGRAM



969 FIG09 EPS

WIRING SCHEMATIC



WARRANTY

LENGTH OF WARRANTY

This warranty applies to appliances used in residential and commercial applications.

One (1) Year Full parts and Labor Covers the entire product.

Five (5) Year limited warranty on all stainless steel components (not including surface corrosion and discoloration).

DCS WILL COVER:

All repair labor and parts found to be defective due to materials or workmanship for one full year from date of purchase. Service must be provided by an Authorized Factory Service Agent during normal working hours.

DCS WILL NOT COVER:

- Installation or start-up
- General maintenance
- Shipping damage
- Service by an unauthorized agency
- Damage or repairs due to service by an unauthorized agency or the use of unauthorized parts.
- Service during other than normal working hours
- Improper installation, such as improper hook-up, etc.
- Service visit to teach you how to use the appliance; correct the installation; reset circuit breakers or replace home fuses
- Repairs due to other than normal household use.
- Damage caused from accident, abuse, alteration, misuse, incorrect installation or installation not in accordance with local codes

This warranty is for products purchased and retained in the 50 states of the U.S.A., the District of Columbia and Canada. This warranty applies even if you should move during the warranty period. Should the appliance be sold by the original purchaser during the warranty period, the new owner continues to be protected until the expiration date of the original purchaser's warranty period.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

SERVICE

HOW TO OBTAIN SERVICE:

For warranty service, please contact your local service provider or DCS Customer Care Center at (888) 281-5698, Monday thru Friday, 6:00 am – 4:30 pm PST. Before you call, please have the following information ready:

- Model Number
- Serial Number
- Date of installation
- A brief description of the problem

Your satisfaction is of the utmost importance to us. If a problem cannot be resolved to your satisfaction, please write:

Write:

DCS
Attention: Customer Care Center
5800 Skylab Road
Huntington Beach, CA 92647

www.dcsappliances.com

BEFORE YOU CALL FOR SERVICE:

1. Is the circuit breaker tripped or the fuse blown?
2. Is there a power outage in the area?
3. Check power to transformer (circuit breaker tripped).
4. Check for any sounds like clicking or humming coming from the heater unit with power turned on.
5. Make sure all gas valves are in the open position.
6. Is there a windy condition not allowing the unit to light?
7. Turn off the power supply for 5 minutes and restart.

NOTES



PERFECT HEAT.

5800 Skylab Road, Huntington Beach, CA 92647
Tel: 714.372.7000 • Fax: 714.372.7001
Customer Care Center: (888) 281-5698
www.dcsappliances.com

As product improvement is an ongoing process at DCS, we reserve the right to change specifications or design without notice.

P/N 10955 Rev. B
Litho in USA 01/2004