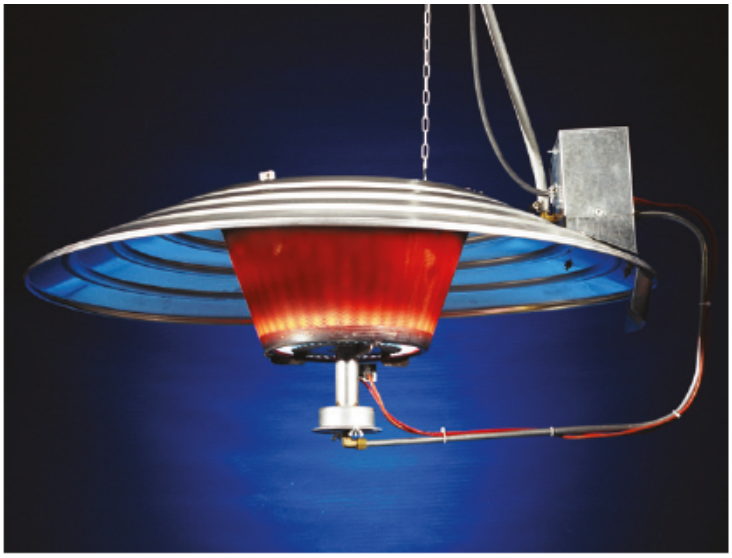
Shen Glow®



ROXELL®

FOR YOUR SAFETY

If you smell gas:

1. **Open Windows**
2. **Don't touch electrical switches**
3. **Extinguish any open flame**
4. **Immediately call your gas supplier**

POUR VOTRE SURETE

Si vous sentez une odeur de gaz:

1. **Ouverz les fenêtres**
2. **Ne touchez pas aux de commutateurs électriques**
3. **Eteindre n'importe quelle ouverture flambe**
4. **Immédiatement appeler votre fournisseur de gaz**

FOR YOUR SAFETY

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

POUR VOTRE SURETE

Pas l'essence de magasin ou usage ou les autres vapeurs et les liquides inflammables à proximité de cet ou l'autre appareil.

WARRANTY

Roxell USA., Inc. warrants each new product manufactured by it to be free from defects in material or workmanship for one (1) year from and after the date of initial installation by or for the original purchaser. If such a defect is found by Manufacturer to exist within the one-year period, the Manufacturer will, at its option, (a) repair or replace such product free of charge, F.O.B. the factory of manufacture, or (b) refund to the original purchaser the original purchase price, in lieu of such repair or replacement. Labor costs associated with the replacement or repair of the product are not covered by the Manufacturer.

Conditions and Limitations

1. The product must be installed by and operated in accordance with the instructions published by the **Manufacturer or Warranty will be void**.

2. Warranty is void if **all components** of the system are not original equipment supplied by the Manufacturer.

3. This product must be purchased from and installed by an authorized distributor or installer or a certified representative thereof **or the Warranty will be void**.

4. Malfunctions or failure resulting from misuse, abuse, mismanagement, negligence, alteration, accident, or lack of proper maintenance, or from lightning strikes, electrical power surges or interruption of electricity shall not be considered defects under the Warranty. Corrosion, material deterioration and/or equipment malfunction caused by or consistent with excessive additions of chemicals, minerals, sediments or other foreign elements with the product shall not be considered defects under the Warranty.

5. This Warranty applies only to systems for the care of poultry and livestock. Other applications in industry, commerce, or residential applications are not covered by this Warranty and are **strictly prohibited**. Any such use **will void the Warranty**.

Manufacturer shall not be liable for any **Consequential or Special Damage** which any purchaser may suffer or claim to suffer as a result of any defect in the product. **"Consequential"** or **"Special Damages"** *as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.*

THIS WARRANTY CONSTITUTES THE MANUFACTURER'S ENTIRE AND SOLE WARRANTY AND THIS MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD AND DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

Distributors are not authorized to modify or extend the terms and conditions of this Warranty in any manner or to offer or grant any other warranties for the products in addition to those terms expressly stated above. An officer of the Manufacturer must authorize any exceptions to this Warranty in writing. Manufacturer reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

Effective 08/08

Roxell USA., Inc.
720 Industrial Park Road
Anderson, Missouri 64831
Ph.: 417-845-6065 Fax: 417-845-6069
Internet: http//www.roxell.com
for additional manuals or more information, see our website at www.roxell.com

WARNING !

SERIOUS PERSONAL INJURY AND/OR DEATH MAY RESULT FROM USE OF THIS HEATER IN AN UNVENTILATED BUILDING OR IN HUMAN LIVING AREAS.

LE RESULTAT DE MAI DE MORT DE ET/OU DE BLESSURE PERSONNEL SERIEUX DE L'USAGE DE CET APPAREIL DE CHAUFFAGE DANS UN CONSTRUISANT UNVENTILATED OU DANS L'HUMAIN SECTEURS VIVANTS

EL USO DE ESTA CALENTADORA EN UN EDIFICIO SIN VENTILACIÓN O EN UNA AREA HUMANA PUEDE RESULTAR EN ENFERMEDAD Y/O MUERTE

⚠ Do not use the heater to heat human living areas. The intended use of the heater is to provide warmth for poultry and hog buildings. Adequate ventilation must be provided.

⚠ Ne pas utiliser l'appareil de chauffage pour chauffer humain habiter les secteurs. L'usage voulu de l'appareil de chauffage sera obligé à fournir la chaleur pour les bâtiments de volaille et cochon. La ventilation suffisante doit être fournie.

⚠ Use only the type of gas being supplied to the unit as marked on it (Propane or Natural Gas). Do not operate with improper fuel. Ventilation air and combustion air must not be obstructed.

⚠ Utiliser seulement le type de gaz étant fourni à l'unité comme marqué dessus (le Propane ou le Gaz Naturel). Ne pas fonctionner avec le carburant déplacé. L'air de ventilation et l'air de combustion ne doivent pas être encombrés.

⚠ Test all pipe and pipe joints for leaks by a suitable means (Example: soap and water solution or a pressure check). Do not use open flame to test for gas leaks. Do not operate the heater until this test has been performed.

⚠ Essayer tous joints de tuyau et tuyau pour les fuites par un moyens convenables Pas l'usage ouvre la flamme pour essayer pour les fuites de gaz. (l'Exemple : la solution de savon et eau ou un contrôle de pression). Ne pas fonctionner l'appareil de chauffage jusqu'à ce que ce test a été préformé.

⚠ Do not move, handle, repair, or adjust height of the heater while in operation or when still hot. Do not bypass any safety devices.

⚠ Pas le mouvement, la poignée, la réparation, ou ajuster la hauteur de l'appareil de chauffage pendant que dans l'opération ou quand calme chaud. Ne pas sauter d'appareils de sûreté.

⚠ Before each use, a visual inspection of the heater is essential to insure safe and satisfactory heating. Replace or repair defective components before operating heater. Failure to do so will void warranty and could result in injury or property damage.

⚠ Avant que chaque usage, une inspection visuelle de l'appareil de chauffage est essentielle pour assurer le chauffage sûr et satisfaisant. Remplacer ou réparer des composants le défectueux avant de fonctionner appareil de chauffage. L'échec pour ainsi faire annulera la garantie et pourrait avoir pour résultat les dommages de blessure ou propriété.

⚠ The installation of these appliances is to be in accordance with CAN/CGA-B149., B149.2 and National Fuel Gas Code, ANSI 2223.1/NFPA 54 installation codes for gas burning appliances and equipment and/or local codes.

⚠ L'installation de ces appareils sera obligé à être conformément à CAN/CGA-B149.1, B149.2 et Code de Gaz de Carburant National, ANSI 2223.1/NFPA 54 codes d'installation pour le gaz appareils ardents et et/ou d'équipement codes locaux.

⚠ WARNING: Improper installation, adjustment, alteration, service or maintenance could cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

⚠ L'AVERTISSEMENT : l'installation Déplacée, l'ajustement, le changement, le service ou l'entretien peuvent causer les domages de propriété, la blessure ou la mort. Lire l'installation,fonctionnant et les instructions d'entretien à fond avant d'installer ou entretenir cet équipement.

⚠ WARNING Failure to follow the WARNINGS in this manual could result in serious personal injury or significant property damage.

THESE INSTRUCTIONS SHOULD BE LEFT WITH THE APPLIANCE AND THE USER TO RETAIN FOR FUTURE REFERENCE.

READ THESE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

⚠ **Before lighting, sniff all around the appliance area for a gas odor. Be sure to sniff next to the floor because propane gas is heavier than air and may temporarily exist at floor level.**

Avant d'allumer, renifle tout autour le secteur d'appareil pour une odeur de gaz. Etre sûr de renifler à côté du plancher parce que le gaz de propane est plus lourd que l'air et peut exister temporairement au niveau de plancher.

Antes encender, huele por todas partes el área de aparato para un olor de gas. Esté seguro oler junto al gas de piso porque propano está más pesado que aéreo y puede existir temporalmente en el nivel de piso.

⚠ **DO NOT ALLOW POWER CORDS AND/OR GAS SUPPLY HOSES TO REST ON THE CANOPY, HANGING BRACKETS OR OTHER HOT SURFACES OF THE UNIT OR TO COME WITHIN 12" OF THE HEATER.**

Ne pas permettre tuyaux à la provision de gaz de et/ou de cordes de pouvoir pour se reposer sur le baldaquin, pendant des crochets ou les autres surfaces chaudes de l'unité Ou venir dans 12 › de l'appareil de chauffage.

No permita cuerdas de poder y/o mangas de suministro de gas para descansar en el dosel, colgando paréntesis u otras superficies calientes de la unidad O para venir dentro de 12' de la calentadora..

⚠ **DSI UNITS MUST BE PROPERLY GROUNDED. DO NOT ALTER ELECTRICAL CORD.**

LES UNITES DE DSI DOIVENT ETRE CONVENABLEMENT FONDE. Ne PAS CHANGER LA CORDE ELECTRIQUE.

Las UNIDADES de DSI se DEBEN PONER EN TIERRA APROPIADAMENTE. No ALTERE CUERDA ELECTRICA.

⚠ **Plug in the three-prong power cord to a correctly grounded three-prong electrical outlet.**

Brancher sur le cordon d'alimentation de trois-broche à un a fondé correctement la trois-broche sortie électrique.

Conecte la cuerda de tres polos del poder a un molió correctamente salida eléctrica de tres polos.

⚠ **The installation of this appliance must in all cases conform with local and national building codes or in the absence of local codes with the current National Fuel Gas Code ANSI Z223.1/NFPA 54, or the Natural Gas and Propane Installation Codes, CSA B149.1 and B149.2.**

L'installation de cet appareil doit dans tous cas conforme avec les codes de bâtiment locaux et nationaux ou en l'absence de codes locaux avec le Carburant le Gaz le Code ANSI Z223.1/NFPA National actuel 54, ou le Gaz Naturels et le Codes d'Installation de Propane, CSA B149.1, B149.2

La instalación de este aparato debe en todos casos se conforma con códigos locales y nacionales de edificio o en ausencia de códigos locales con el Código Nacional actual de Gas de Combustible ANSI Z223.1/NFPA 54, o el Gas natural y Códigos de Instalación de Propano, CSA B149.1, B149.2

⚠ **Heaters must be electrically grounded in accordance with the National Electrical Code, ANSI\NFPA 70 or the current Canadian Electrical Code, CSA C22.1. Polarity of Line voltage and neutral wires must be maintained. The total load of all heaters in a circuit must be considered for overload control of that circuit.**

Les appareils de chauffage doivent être électriquement fondé conformément au Code Electrique National, ANSI\NFPA 70 ou le Code Electrique, canadien et actuel, CSA C22.1. La polarité de tension de Ligne et de fils neutres doit être maintenue. Le chargement total de tous appareils de chauffage dans un circuit doit être considéré pour le contrôle de surcharge de ce
circuit.

Las calentadoras basado en eléctricamente la conformidad con el Código Eléctrico Nacional, ANSI\NFPA 70 o el Código Eléctrico, canadiense y actual, CSA C22.1. La polaridad del voltaje de la Línea y alambres neutrales se debe mantener. La carga total de todas calentadoras en un circuito se debe considerar para el control de sobrecarga de ese circuito.

LARGE INFRARED BROODER - PARTS LIST & ASSEMBLY INSTRUCTIONS

ZONE

INDIVIDUAL

DSI

TOOLS REQUIRED FOR ASSEMBLING BROODER:
Phillips Screwdriver,
Open End Wrenches (3/8, 5/8, 7/16, 9/16, 1/2, 11/16 & 3/4)
Nut driver 5/16
Pliers and an adjustable wrench

Tested and Evaluated by C.S.A. International.

Assembled in the U.S.A.

DANGER
Check fitting for leaks. **Do Not Use** an open flame to check for leaks.

DANGER
Do not attempt to clean the unit while it is operating or while it is still hot.

CAUTION
Ventilation air and combustion air must not be obstructed.

CAUTION:
Before each use, a visual inspection of the brooder/heater is essential to insure safe and satisfactory heating. Replace or repair defective components before operating brooder/heater. Failure to do so will void warranty and could result in injury or property damage.

CAUTION:
Before attaching heater to gas supply line, purge gas supply line to free the supply of any contaminants.

CAUTION:
Do not expose brooder to rain, snow, sleet, or water. The brooder/heater is designed for indoor use only.

CAUTION
Use only the connections and/or fittings supplied with the unit.

CAUTION
Use only the type of gas being supplied to the unit as marked on it (Propane or Natural Gas). Do not operate with improper fuel.

CAUTION
This applicance is hot during normal operation. Avoid physical contact.

THE STATE OF CALIFORNIA REQUIRES THE FOLLOWING WARNING:
WARNING
Combustion by-products produced when using this product contain carbon monoxide, a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm).

WARNING!

During normal operation, the surfaces of the unit become very hot. It is VERY IMPORTANT that the power cords and gas supply hoses DO NOT TOUCH or REST ON ANY surface of the unit or to come within 12” of the heater.
During and after winching, make certain that ALL hoses and power supply cords are NOT resting on the heater nor are within 12” of the heater.
Failure to follow these instructions could result in serious personal injury or significant property damage.

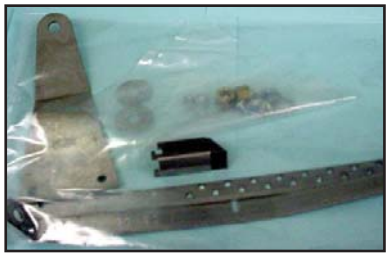
WARNING!

Failure to comply with all applicable local, state, and federal gas codes could result in serious personal injury and/or serious property damage.

DO NOT ALLOW ANYONE WHO HAS NOT READ THESE INSTRUCTIONS TO INSTALL, ASSEMBLE, LIGHT, ADJUST OR OPERATE THIS HEATER.

ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THESE INSTRUCTIONS SHOULD USE OR SERVICE THIS HEATER.

PARTS BAGS



16550142
for valve models

16550120 **for DSI**

16-104093 Brkt: Universal Brooder Control

16-10335 Washer: 3/8 X 11/4 Fen

16-11176 LOCKNUT: HEX STEEL

18003945 Screw 10-24 X 3/8”

18000021 Nut 10-24 Star Kep

11000118 COMP SLEEVE 1/4

11000191 COMP NUT 1/4

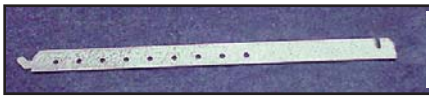
18000658 COMP SLEEVE 3/8

18000657 COMP NUT 3/8

16-101443 Nut: Hex 10-24 18.8 SS

11004900 S-Hook Large

21004002
Back “T” Hanger



21014002
Front “T” Hanger

11000187 1/4-20 Nut

11000028 1/4-20 x 5/8 Bolt

11000338 1/4-20 Washer Lock Split

28024042 PILOT BODY
FINISHED

16550048 CLIP F/ RING W/LEGS

11010033 Canopy
34” HDA
11011008 Canopy
34” Galv.

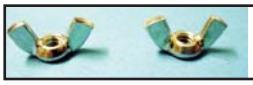
11000030 Cone Insulation
Infrared 42

16550065 Large
Infrared Emitter Asm.

16550068 Burner Asm. LP Pilot
16550069 Burner Asm. NAT Pilot
16550070 Burner Asm. DSI LP
16550071 Burner Asm. DSI NAT

13005235 Screw 8 x 1/2 Tek

16-1111 DISC: AIR PORT **LP**



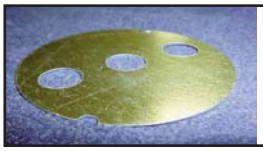
13005190 NUT 10-24 WING

16-101069 ELL: BRASS
3/8 COMP X 1/8 MPT

11010215 LP ORIFICE #48
11010210 NAT ORIFICE #37 H42

21007088 PILOT BRKT SQ PILOT

21002400 Shield: Control Heat



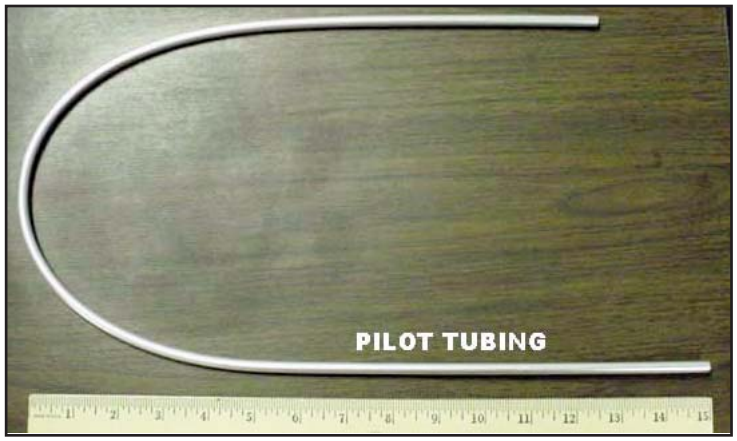
16-1102 - DISC: AIR RESTRICTOR **NAT.**

31044002 - PILOT ASM INFRARED LP CGA

31034002 - PILOT ASM INFRARED NAT CGA

11002205 LP ORIFICE #78 ONE PIECE

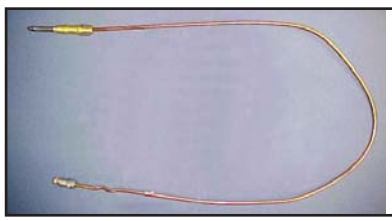
11002203 NAT ORIFICE #73 ONE PIECE



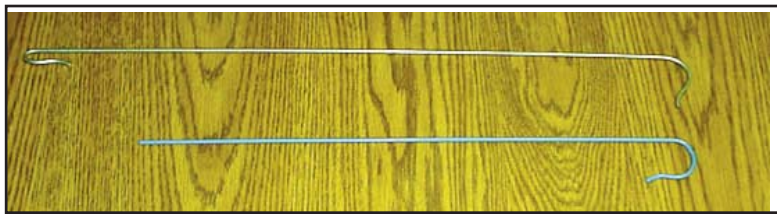
For Individual Models
Burner Tubing - 16000001 TUBE ALUM 3/8 X .035 X 20 1/2
Pilot Tubing - 21260326 TUBE ALUM 1/4 X .032 x 32

For 7000 valve Zone Models
Burner Tubing - 16000001 TUBE ALUM 3/8 X .035 X 20 1/2
Pilot Tubing - 21260326 TUBE ALUM 1/4 X .032 x 32

For DSI Models
Burner Tubing - 16000003 TUBE ALUM 3/8 X .035 X 32

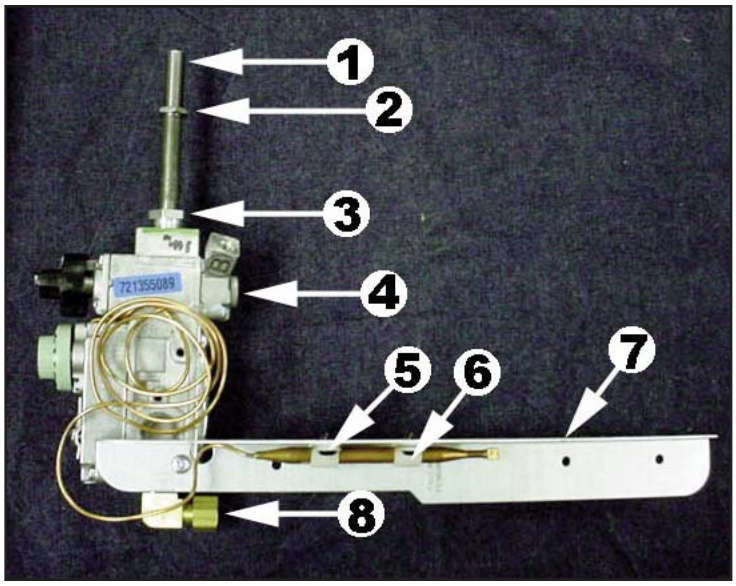


11000663 Thermocouple: 30”



CGA ONLY

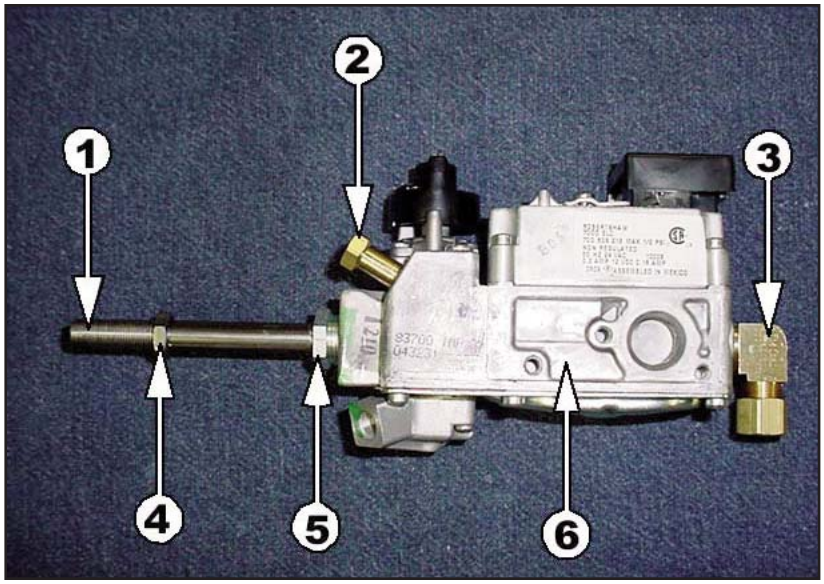
16500082 - Tube Protector IND & ZONE
16500083 -Tubing Protector LG INF DSI



16500165 - CTRL ASM: LP & NAT

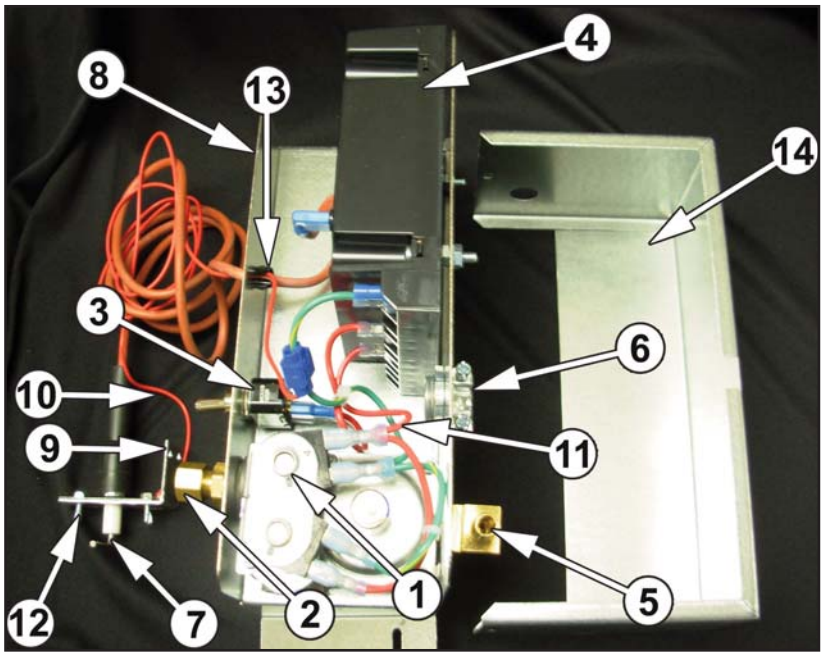
1 - 16000000	NIPPLE: GALV 1/8 X 3-1
2 - 16-11176	LOCKNUT: HEX STEEL
3 - 16-11194	BUSHING: GALV STDHEX
4 - 16000106	VALVE 7000 SLC
5 - 16000036	RIVET:NYLON PUSH-IN Rivet
6 - 11000033	CLAMP WIRE NYLON
7- 16-104219	SHIELD: UNIVERSAL BRDR
8- 16-10052950	ELL:BRASS3/8MPTX3/8COM

not shown - 11003995 - comp nut & sleeve 1/4" (same as #2 in illustration below)



16-104443 - SG RZ CTRL ASM

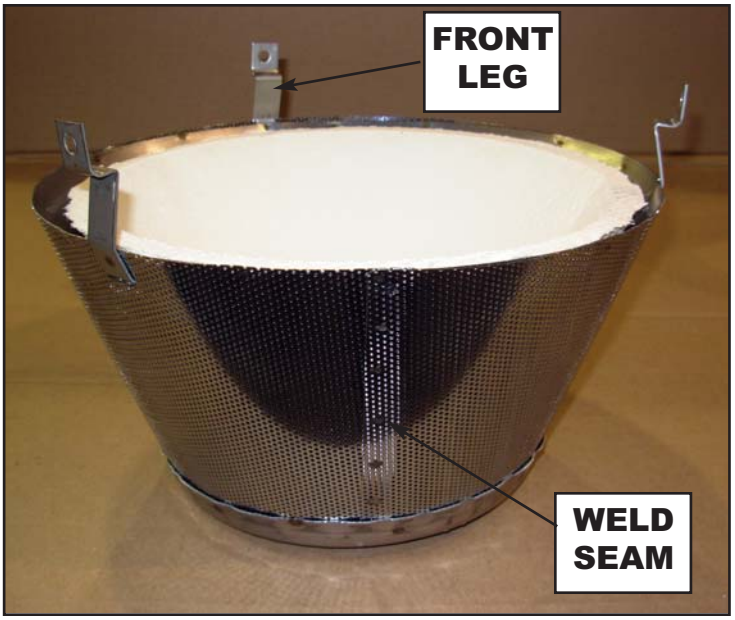
1 - 16000000 - 1/8 x3-1/2 Galv. Pipe
2 - 11003995 - Comp Nut & Sleeve 1/4"
3 - 16-10052950 ELL: BRASS 3/8MPT X 3/8COMP
4 - 16-11176 - Locknut Hex Steel
5 - 16-11194 - Bushing: GALV STDHEX 1/2X1/8
6 - 11004081 - Bare Valve 7000 ELC



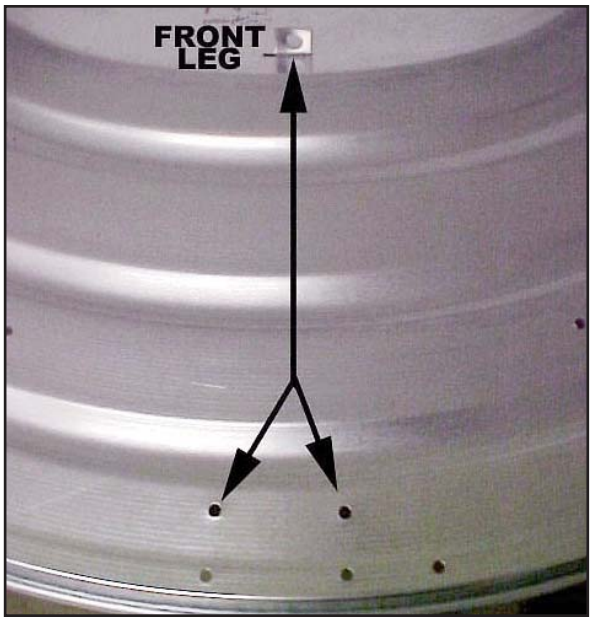
31003025 - DSI CTRL ASM

1 - 11001238 - Valve WR 25M For DSI
2 - 11000643 - Conn Brass
3/8 mpt x 3/8 Comp
3 - 13005282 - Switch Toggle SP/ST
4 - 16-101068 - Board: CTRL IGN DSI
5 - 11003838 - Elbow Brass
3/8 mpt x 3/8 hose barb
6 - 13005072 - Wire Strain Relief
7 - 16-101197 - Ignitor DSI Single
8 - 21106077 - Control Box Bottom
9 - 23004502 - Igniter Bracket
10 - 16500145 - Ground Wire Assy
11 - 11003030 - Wire Harness
12 - 13005235 - Screw 8 x 1/2 Tek
13 - 13008108 - Strain Relief
14 - 21116077 - Control Box Cover

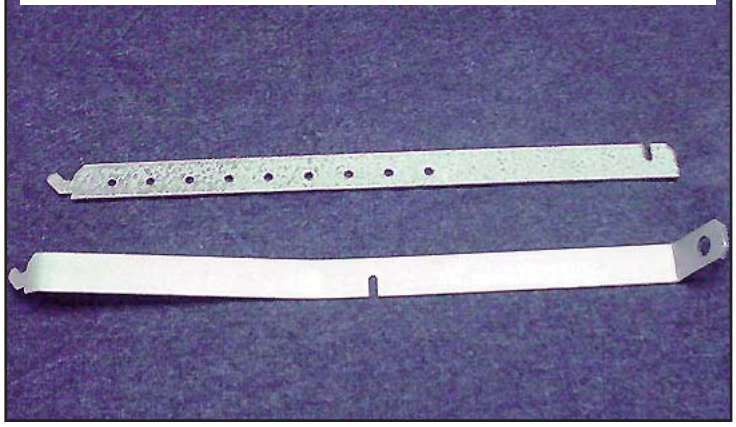
(**1**) Place **CONE INSULATION** inside the **EMITTER**.

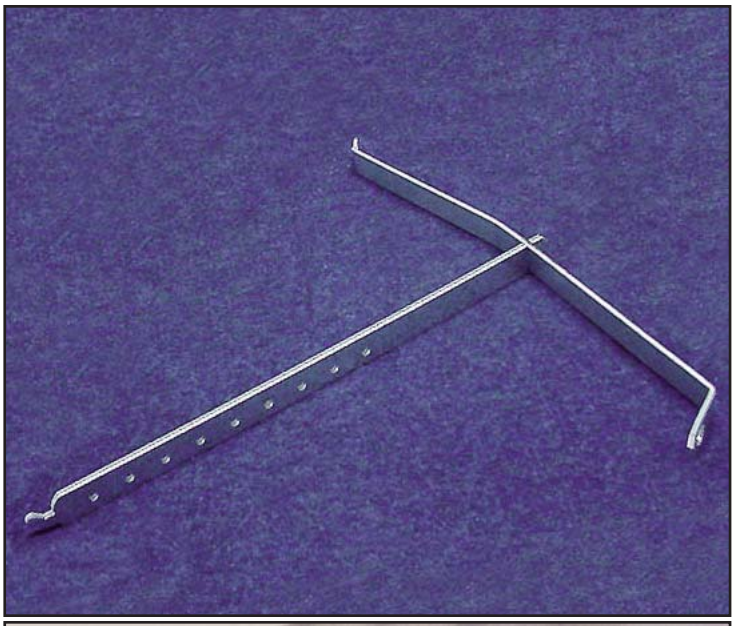


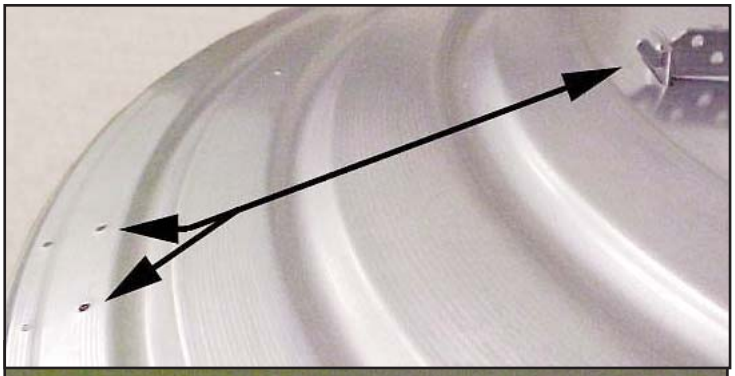
(**2**) Place the **CANOPY** over the Emitter legs with the two holes in the outer edge of the canopy aligned with the front leg.

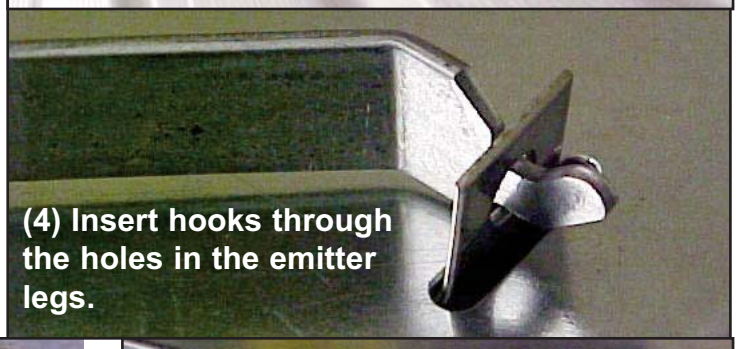


(**3**) Insert the slot in the middle of the BACK T-HANGER into the slot in the end of the FRONT T-HANGER

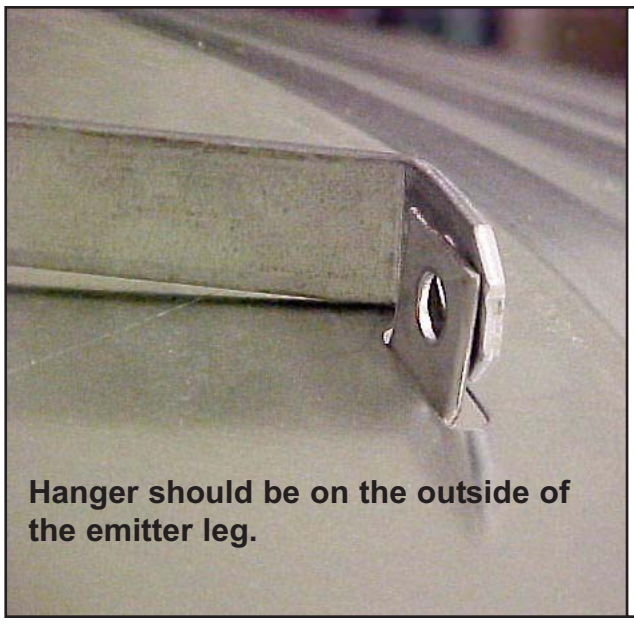








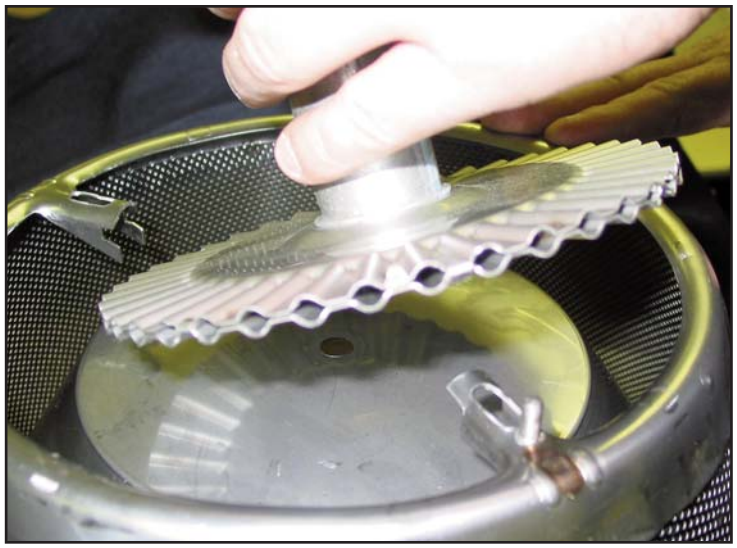
(4) Insert hooks through the holes in the emitter legs.



Hanger should be on the outside of the emitter leg.

Secure with **1/4 BOLT**, **WASHER**, and **NUT.**

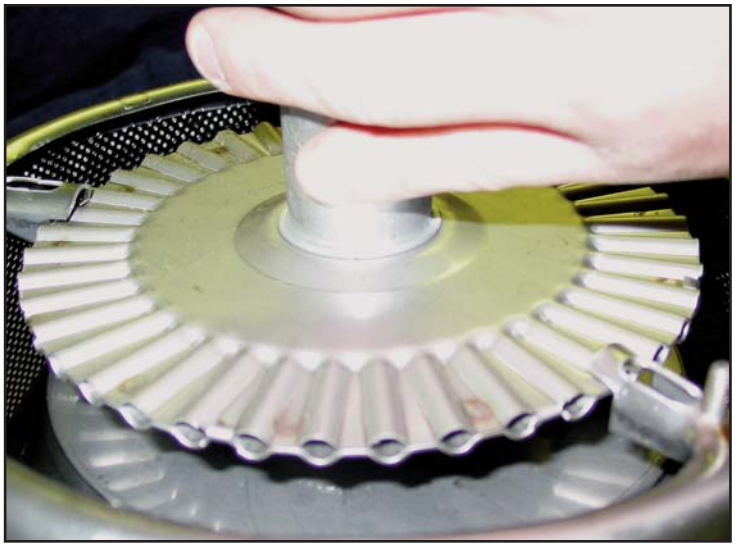
(1) Slide BURNER into EMITTER.



PILOT INLET MUST FACE TOWARD THE HOLES IN THE CANOPY.

(2) Insert edge of burner into slots.

(3) Lift burner into position as shown.



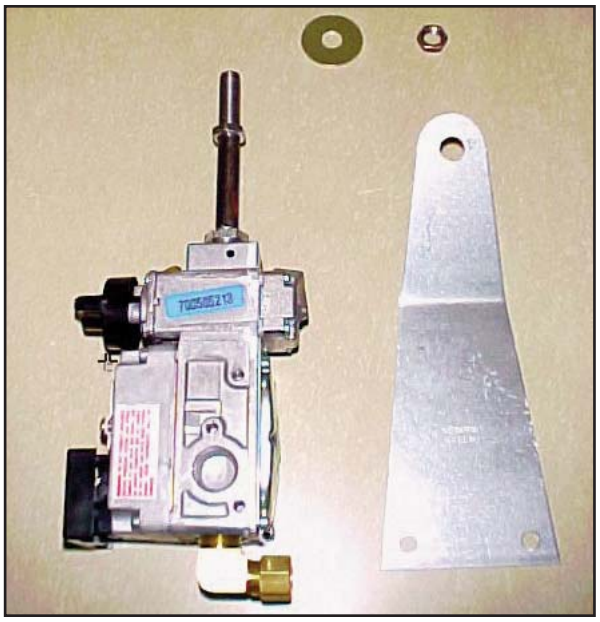
(4) Slide clip legs under burner, hole over pem stud.

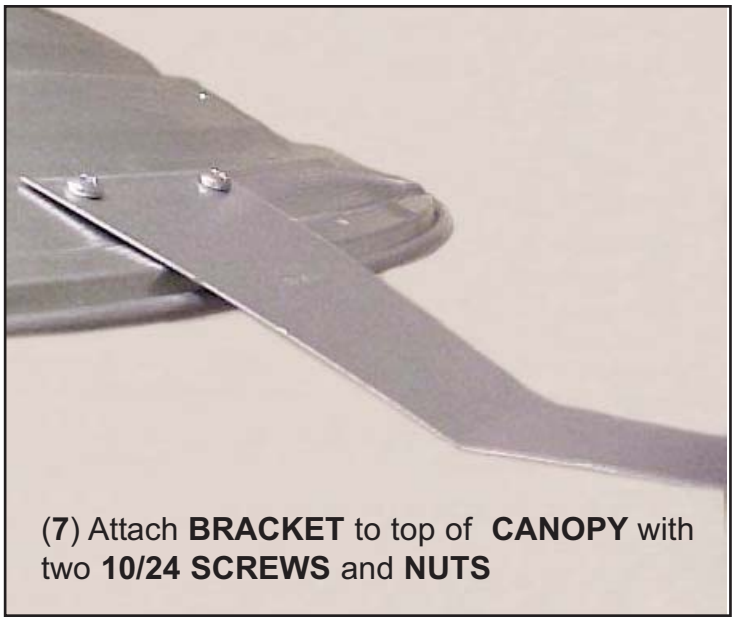
(5) Secure burner to Emitter with a 10/24 SS nut.

THIS PAGE FOR ZONE CONTROL

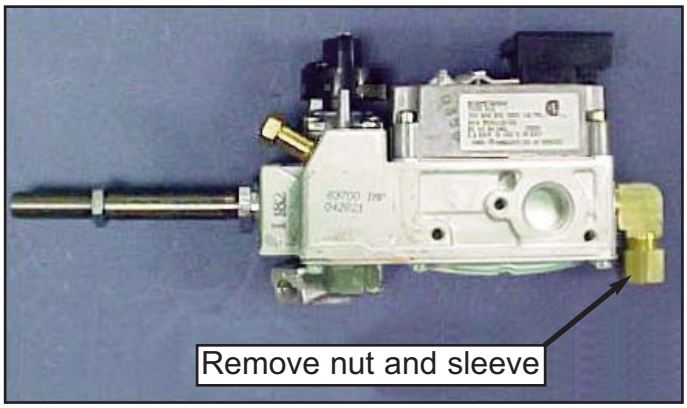
FOR INDIVIDUAL CONTROL, SEE PAGE 14

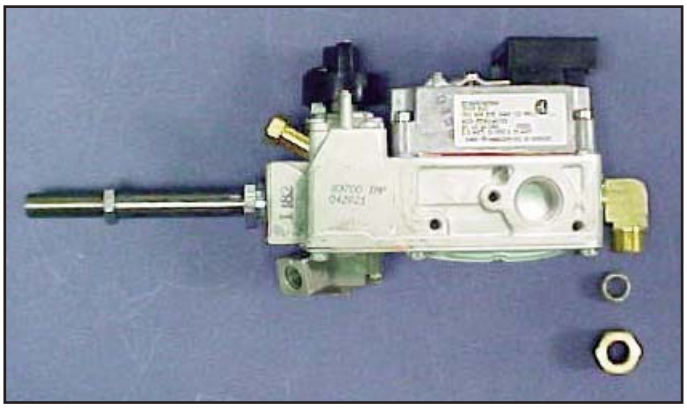
FOR DSI CONTROL, SEE PAGE 18

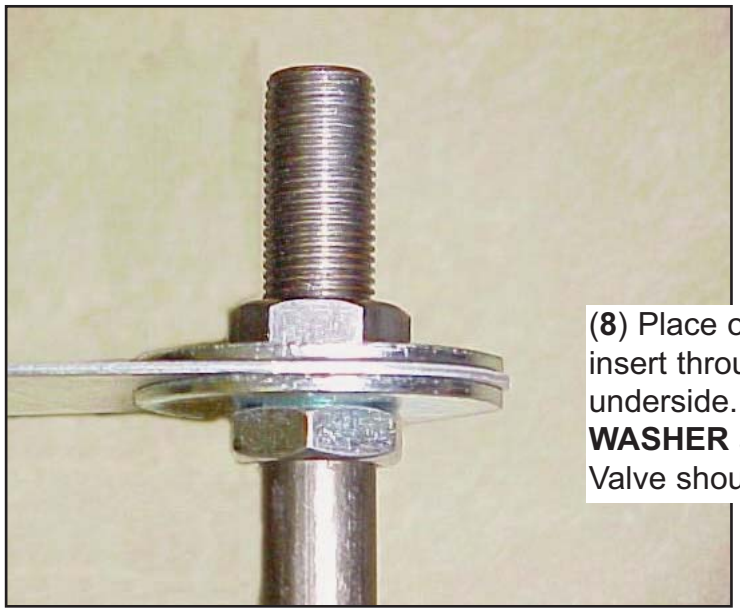




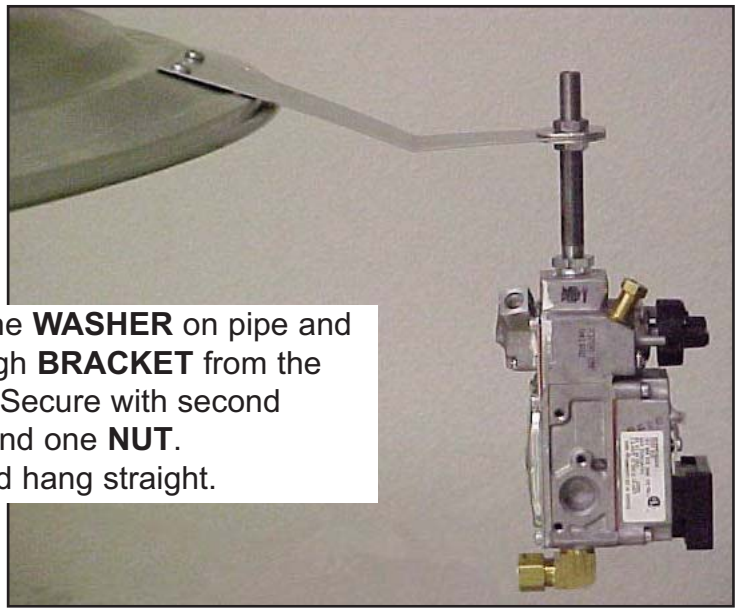
(**7**) Attach **BRACKET** to top of **CANOPY** with two **10/24 SCREWS** and **NUTS**



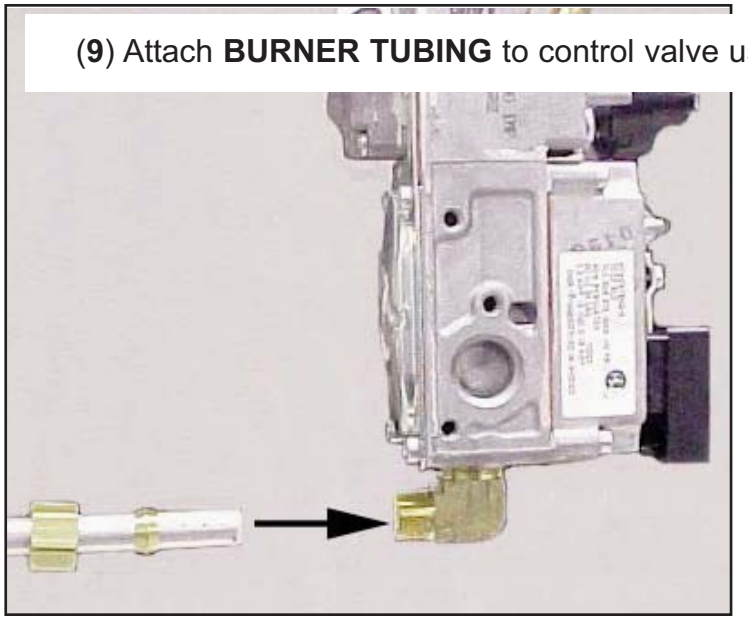




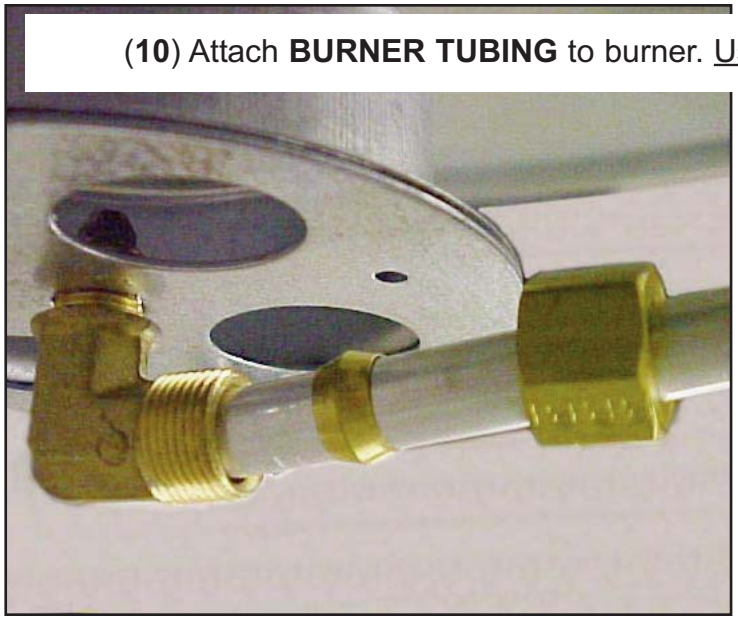
(**8**) Place one **WASHER** on pipe and insert through **BRACKET** from the underside. Secure with second **WASHER** and one **NUT**.
Valve should hang straight.



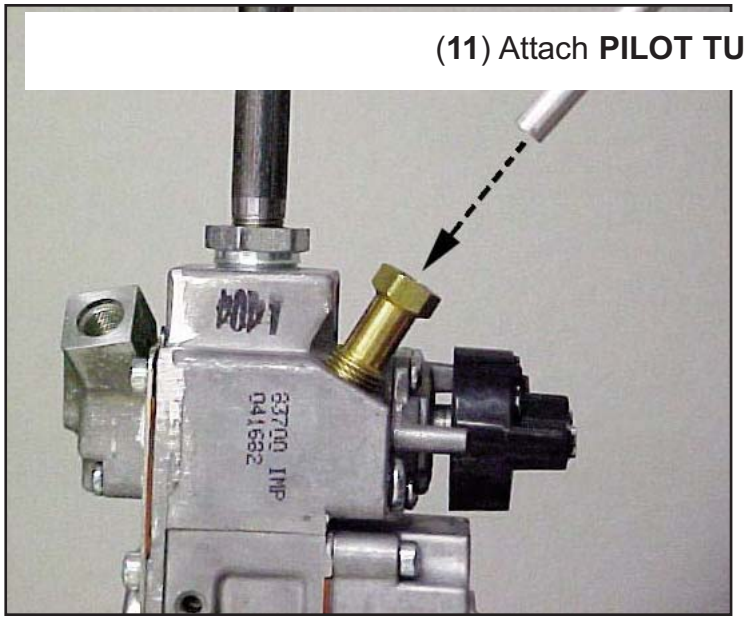
(**9**) Attach **BURNER TUBING** to control valve using two wrenches to prevent damaging tubing.

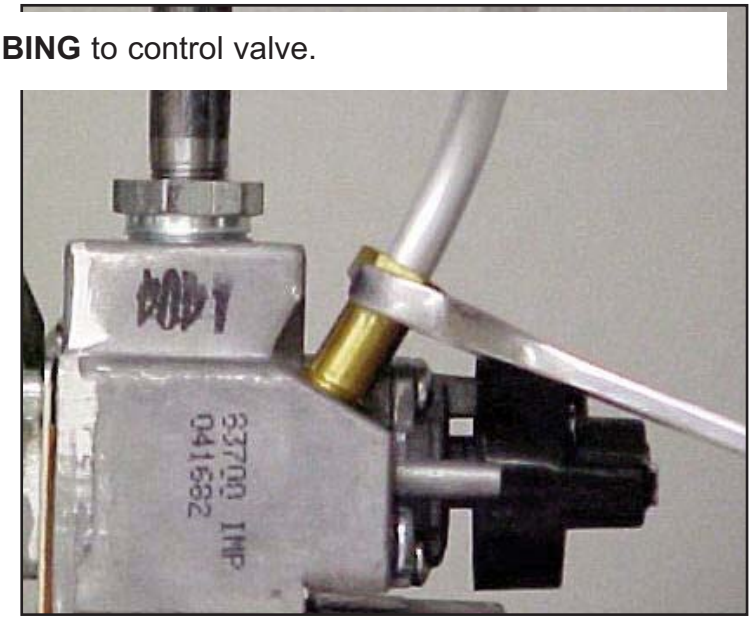


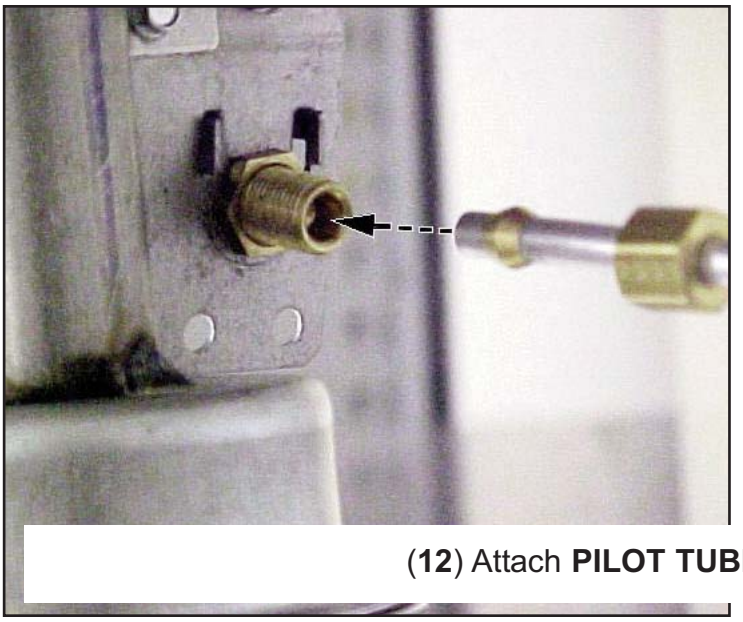
(**10**) Attach **BURNER TUBING** to burner. <u>Use two wrenches to avoid damage to burner</u>.

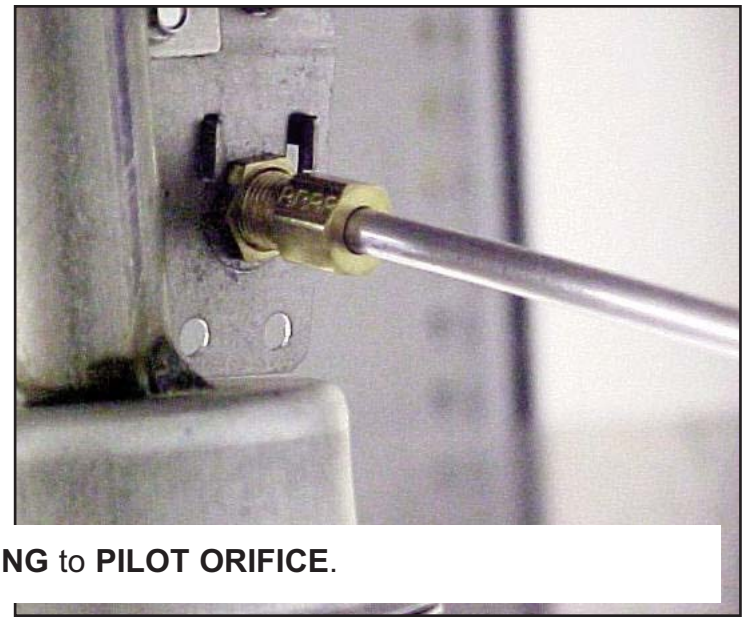


(**11**) Attach **PILOT TUBING** to control valve.

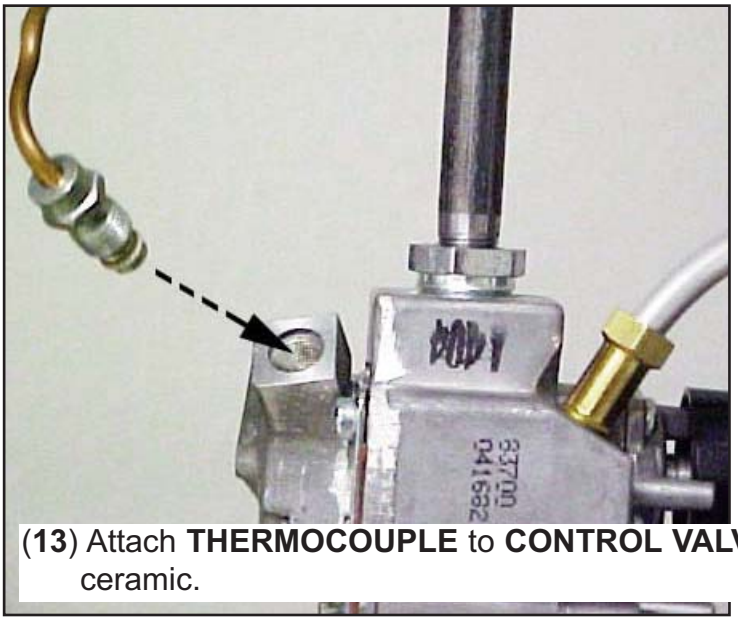




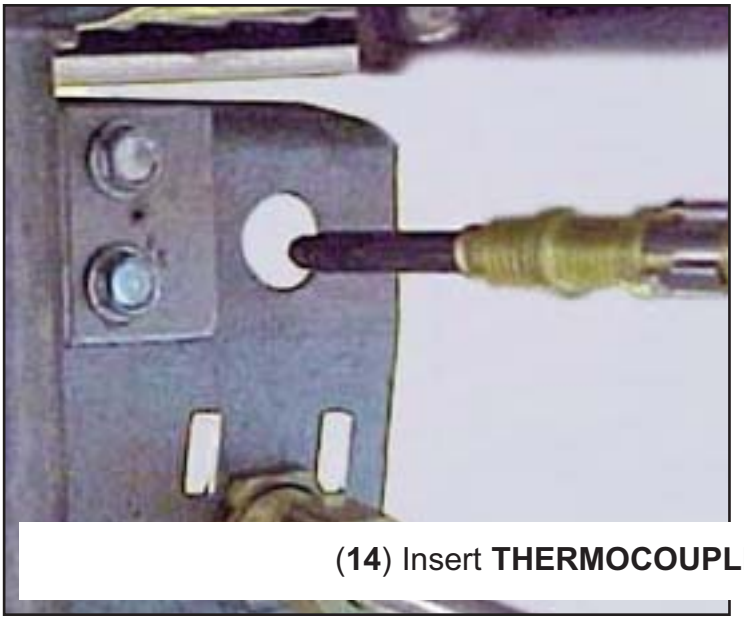


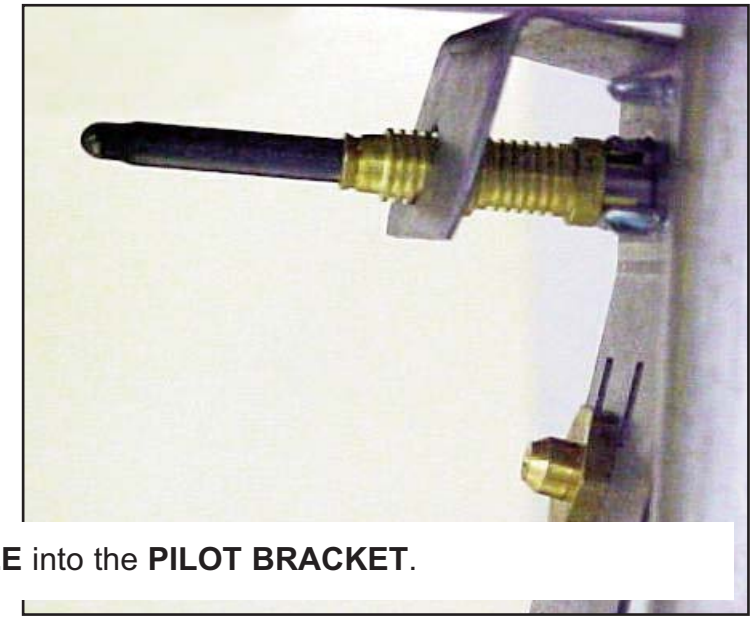


(**12**) Attach **PILOT TUBING** to **PILOT ORIFICE**.

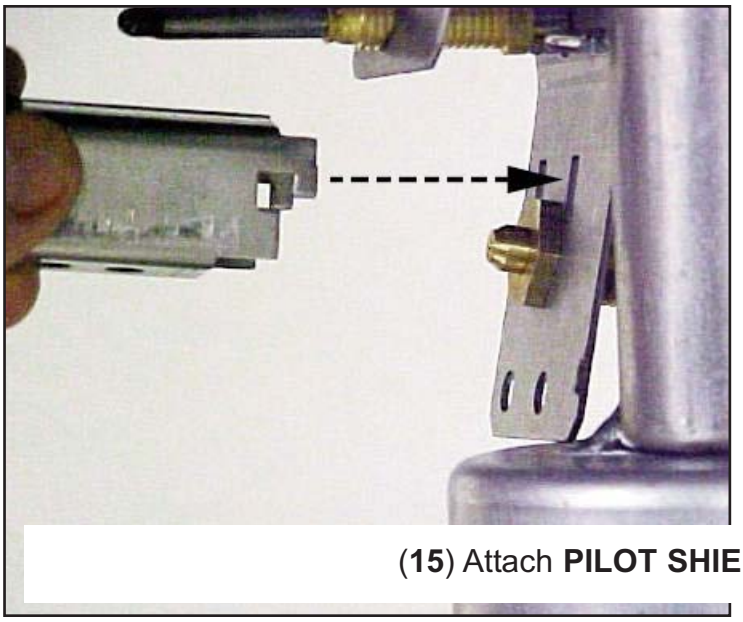


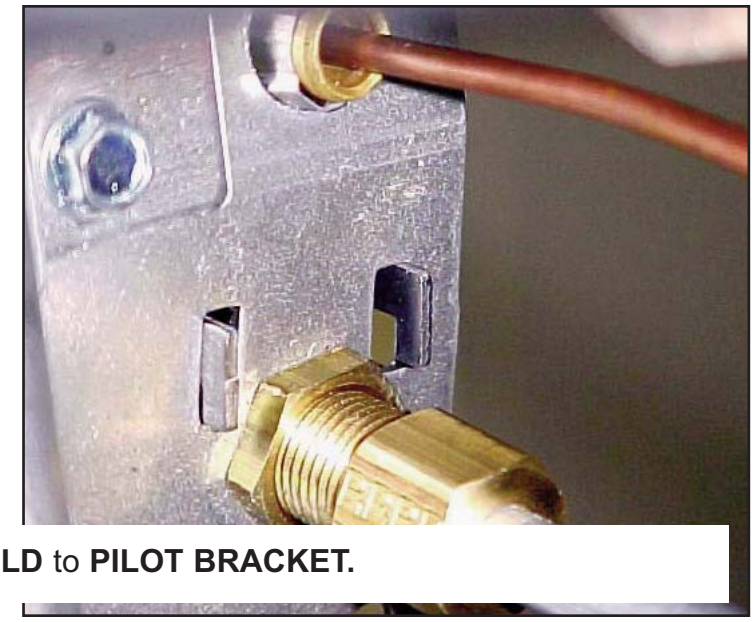
(**13**) Attach **THERMOCOUPLE** to **CONTROL VALVE**. **Finger tight** plus 1/4 turn to avoid damaging ceramic.



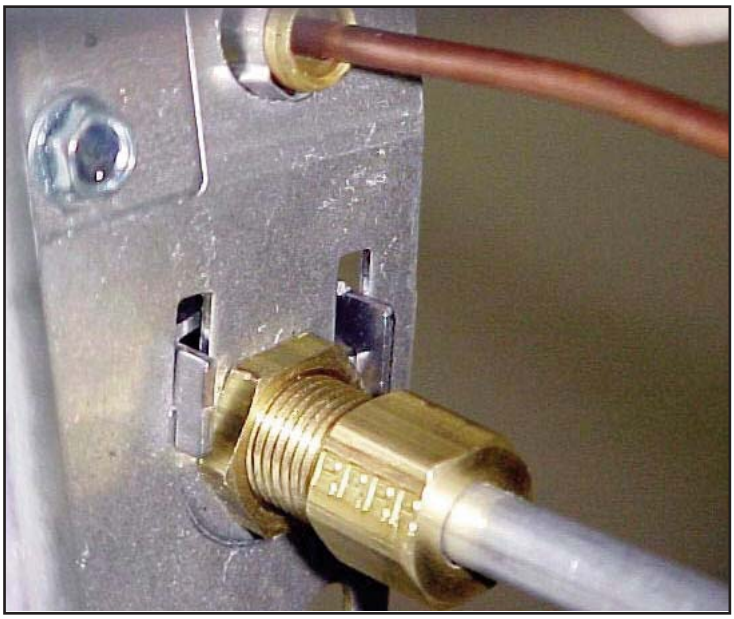


(**14**) Insert **THERMOCOUPLE** into the **PILOT BRACKET**.





(**15**) Attach **PILOT SHIELD** to **PILOT BRACKET.**



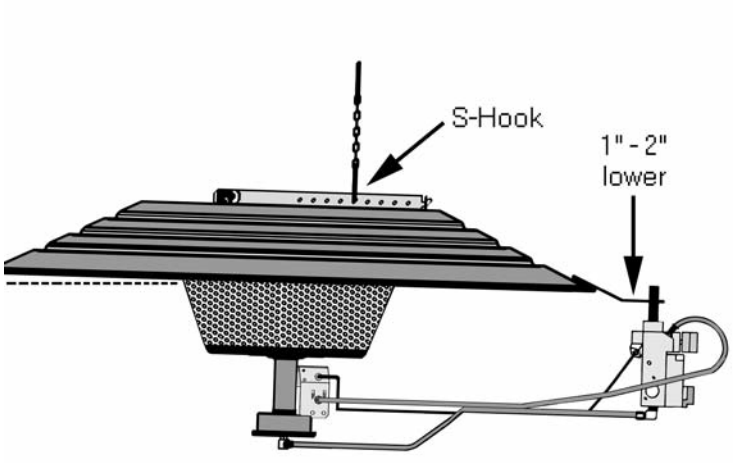
Lock shield into place by pressing down on shield, hooks on shield will slide down past the opening in the pilot bracket.

Note: Two S Hooks should be used to adjust tilt between holes if needed.

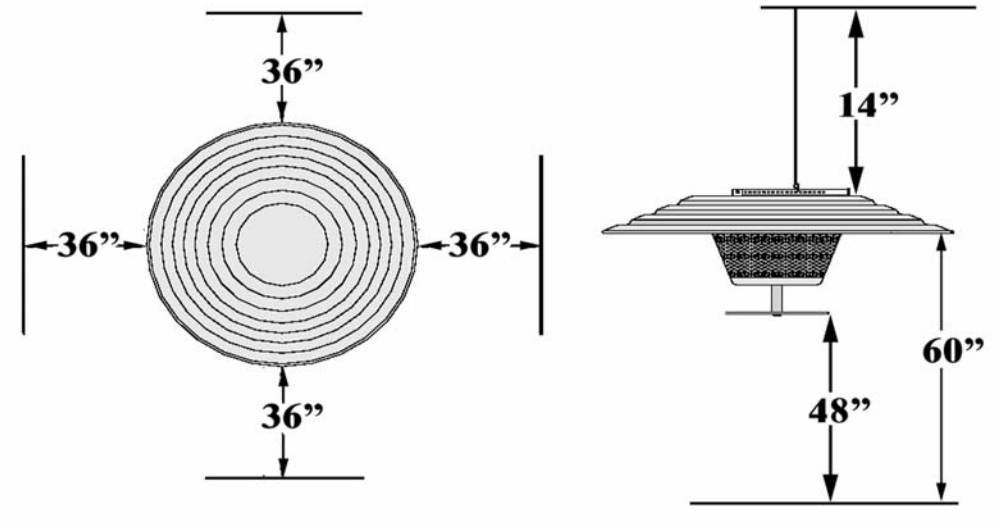
SUSPEND THE HEATER.

To level the unit, support the heater underneath and then move the s-hook forward or backward. We recommend that the valve side of the canopy be slightly lower (1”-2”) to insure that the gas valve does not overheat. After it is level, clamp both ends of the s-hook shut. Normally the heater is attached to a winch cable used for lowering and raising.

In addition we require that a safety cable or chain be attached to prevent the heater from falling to the litter if the cable should break.



The heater must be located so that there is a minimum clearance of 14” above the heater and 36” from the sides. Any combustible material must not be adjacent to the heater. The heater should be hung with a minimum clearance of 60” from the edge of the canopy or 48” from the bottom of the pan to the floor.



Installer MUST comply with all local, state and federal gas codes for your area.

It is recommended that the regulator be sized to 130% of the load it is supplying.
Gas layout and pipe sizing guidelines are available through your distributor.

GAS PRESSURE should be CHECKED and ADJUSTED to recommended settings.

1. Connect the gas hose to the unit using hose clamps. (not provided)

2. Turn on gas supply to the unit and check all fittings and connections for leaks with a gas sensing meter or soap solution. Burner connections can only be checked with the burner burning.

WARNING!

Failure to comply with all applicable local, state, and federal gas codes could result in serious personal injury and/or serious property damage.

DANGER!

LP GAS

1. Go to the stove furthest from the regulator and connect the pressure gauge to the Press Tap on the gas valve. Light only the stove you are testing or if you have a zone system, light all the stoves in the zone. Set the pressure at a maximum of 11 1/4” WC.

2. Light all stoves in the house and check the pressure again, the pressure should not drop below 10 1/2” WC. If the pressure does fall below that, then the gas distribution system is inadequately designed. The problem may be a regulator or pipe sizing, etc.

NATURAL GAS

Use the same procedure as for LP GAS except the pressure should not exceed 7 1/4” WC with only one stove or zone operating. The pressure should not fall below 6 1/2” WC with all stoves running.

Lighting Instructions

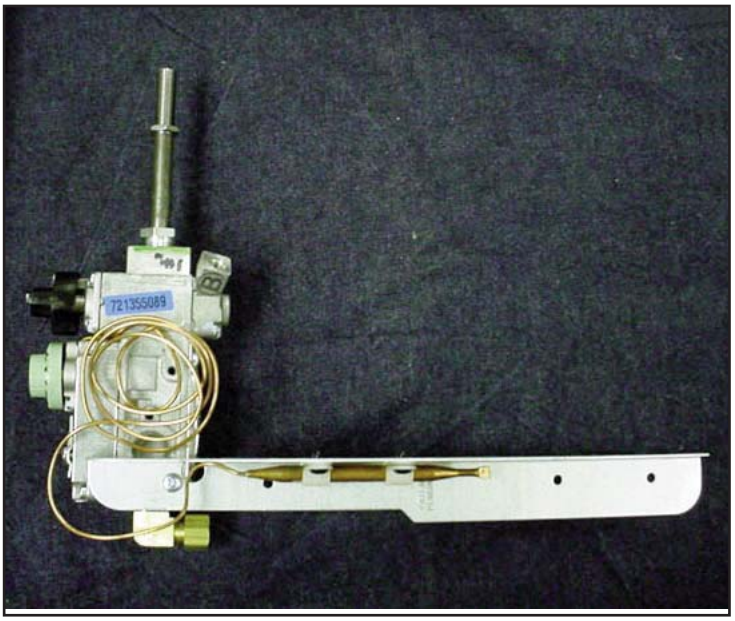
1. Turn gas dial to “OFF” and connect main gas supply to supply pipe.
2. Turn gas to “PILOT”.
3. Depress and hold “RESET” button and light the pilot. Allow pilot to burn for 45 seconds before releasing.
4. Turn gas dial to “ON” and turn the zone thermostat to desired setting.

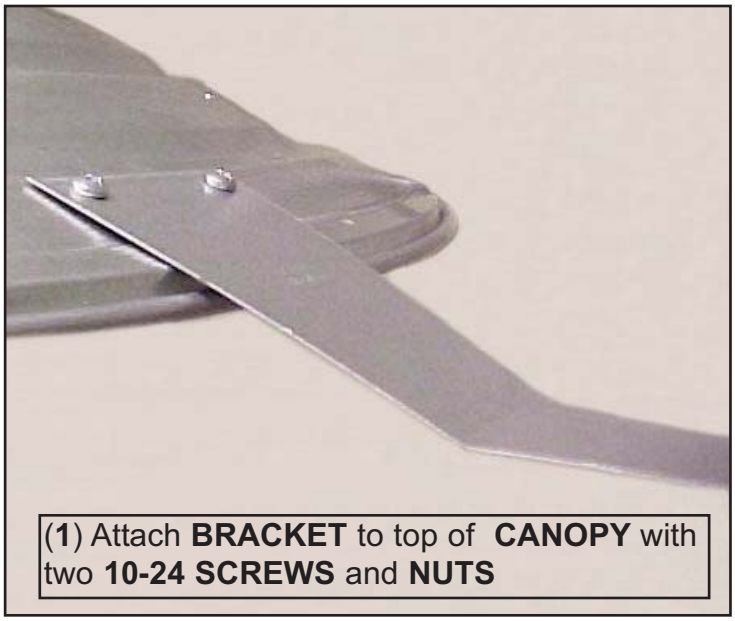
TO SHUT OFF HEATER

Turn the gas dial to “OFF” and turn the zone thermostat dial to lowest setting.

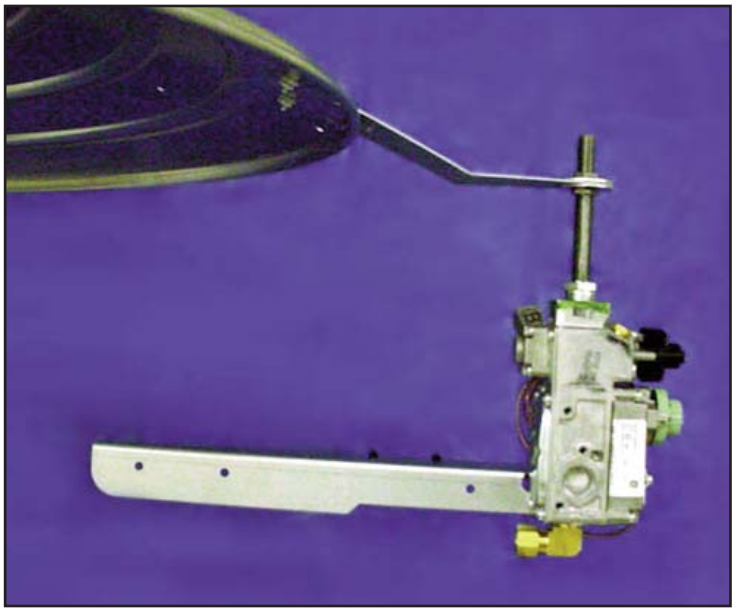
DO NOT ALLOW POWER CORDS AND/OR GAS SUPPLY HOSES TO REST ON THE CANOPY, HANGING BRACKETS OR OTHER HOT SURFACES OF THE UNIT OR TO COME WITHIN 12” OF THE HEATER.
During and after winching, make certain that ALL hoses and power supply cords are NOT resting on the heater nor are within 12” of the heater.

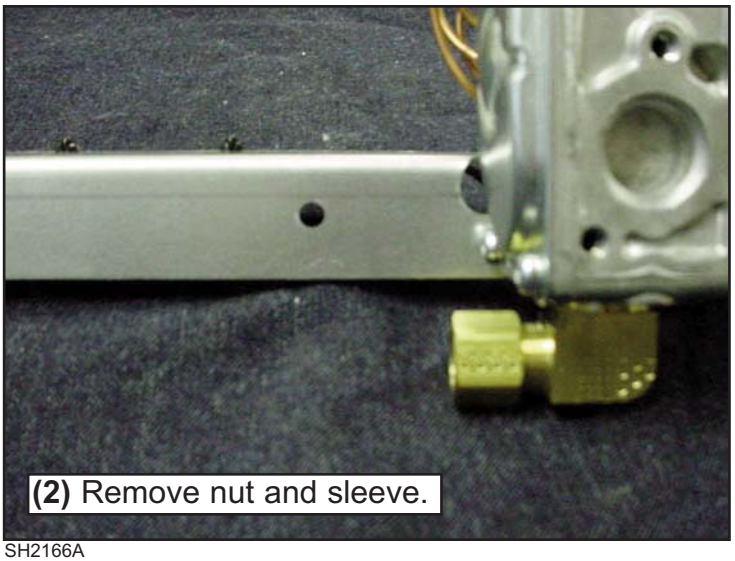
INDIVIDUAL CONTROL INSTRUCTIONS



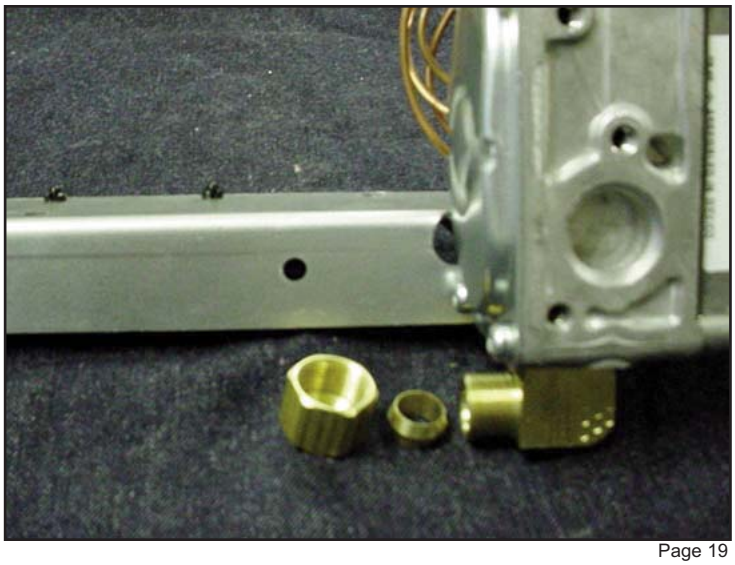


(**1**) Attach **BRACKET** to top of **CANOPY** with two **10-24 SCREWS** and **NUTS**

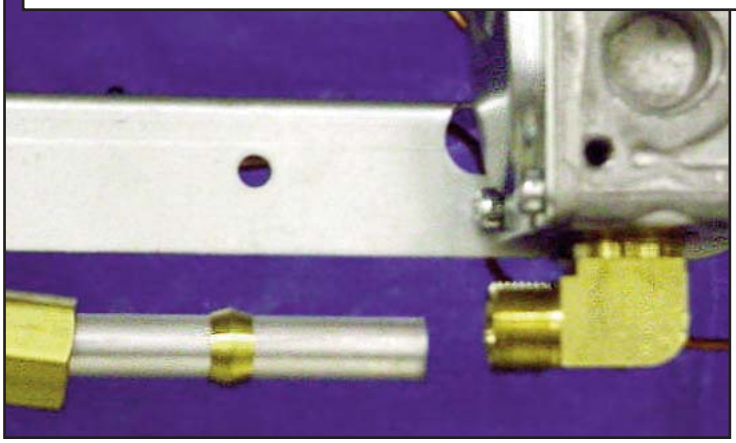




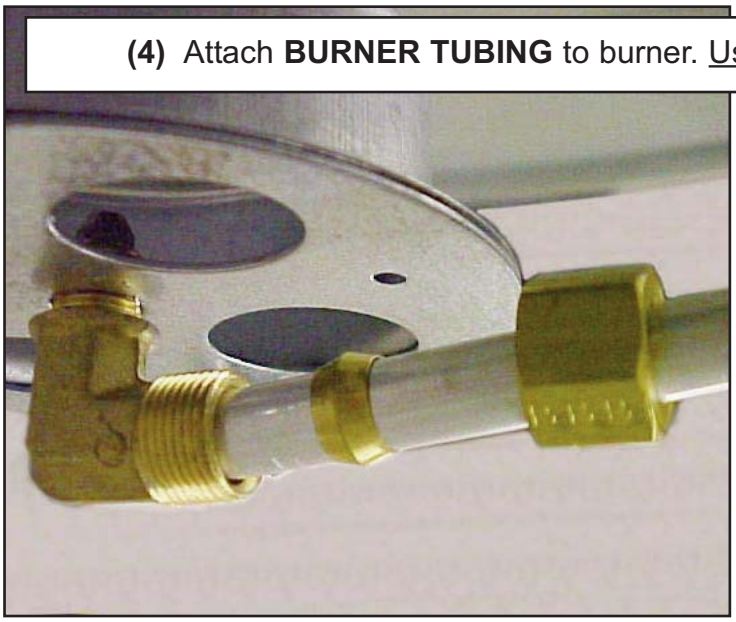
(2) Remove nut and sleeve.

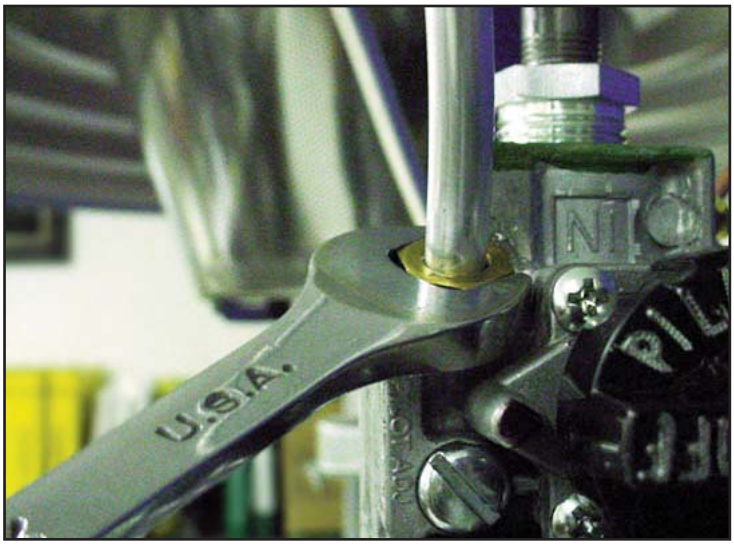


(3) Attach **BURNER TUBING** to control valve using two wrenches to prevent damaging tubing.

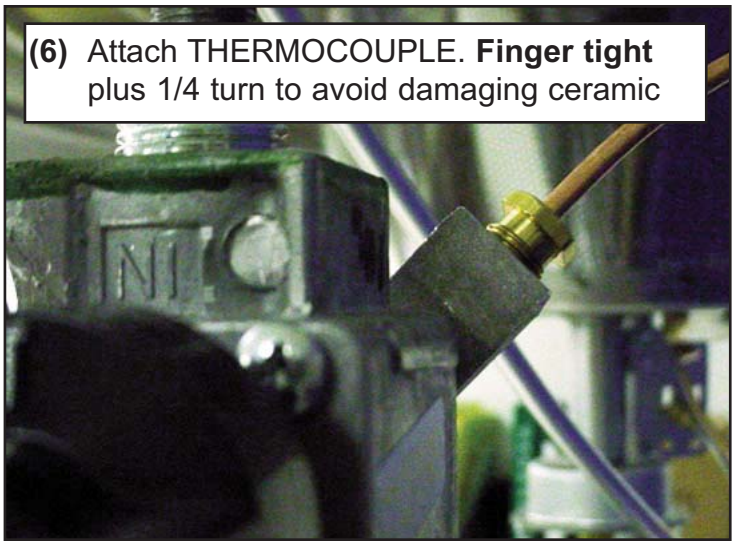


(4) Attach **BURNER TUBING** to burner. Use two wrenches to avoid damage to burner.

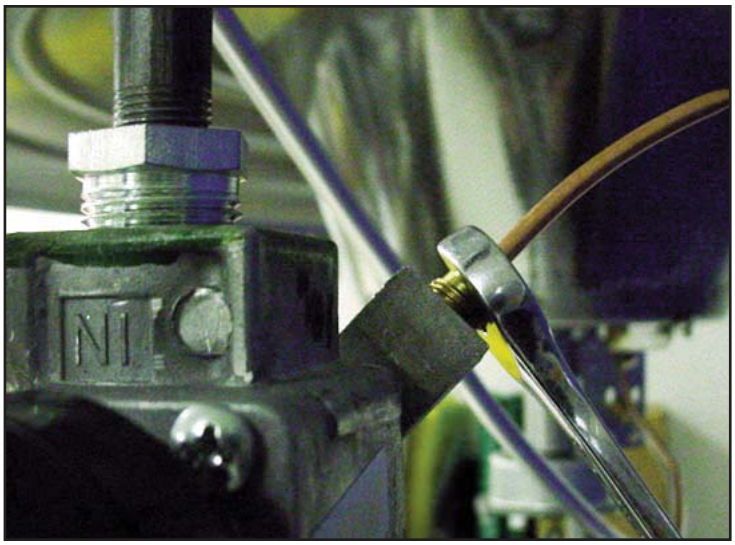




(5) Attach PILOT TUBING.



(6) Attach THERMOCOUPLE. **Finger tight** plus 1/4 turn to avoid damaging ceramic



Suspend the heater. To level the unit, support the heater underneath and then move the s-hook forward or backward. We recommend that the valve side of the canopy be slightly lower (1”-2”) to insure that the gas valve does not overheat. After it is level, clamp both ends of the s-hook shut. Normally the heater is attached to a winch cable used for lowering and raising.

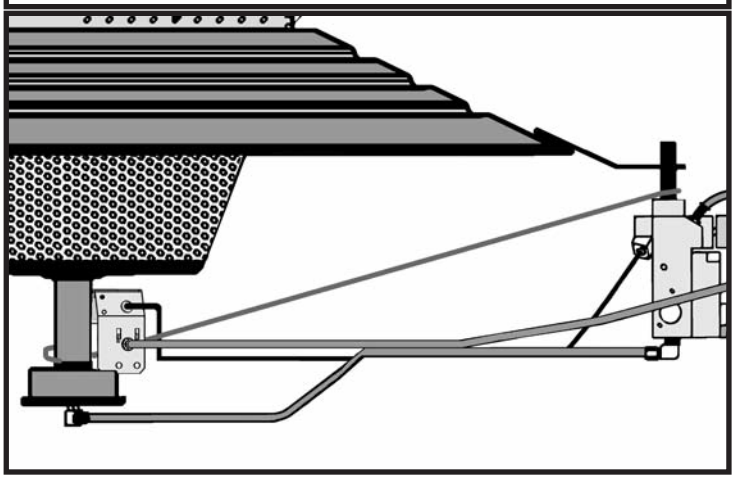
In addition we require that a safety cable or chain be attached to prevent the heater from falling to the litter if the cable should break.

The heater must be located so that there is a minimum clearance of 14” above the heater and 36” from the sides. Any combustible material must not be adjacent to the heater.The heater should be hung with a minimum clearance of 60” from the edge of the canopy or 48” from the bottom of the pan to the floor. Be sure to comply with all local, state and federal gas codes for your area.

FOR CGA ONLY:

Individual and Zone Brooders

Attach tubing protector by hooking the narrow loop end around the pipe nipple on the valve and snapping the wide loop end around the burner, between the burner pan and the air intake cup.



GAS PRESSURE should be CHECKED and ADJUSTED to recommended settings.

1. Connect the gas hose to the unit using hose clamps. (not provided)
2. Turn on gas supply to the unit and check all fittings and connections for leaks with a gas sensing meter or soap solution. Burner connections can only be checked with the burner burning.

LP GAS

1. Go to the stove furthest from the regulator and connect the pressure gauge to the Press Tap on the gas valve. Light only the stove you are testing or if you have a zone system, light all the stoves in the zone. Set the pressure at a maximum of 11 1/4” WC.
2. Light all stoves in the house and check the pressure again, the pressure should not drop below 10 1/2” WC. If the pressure does fall below that, then the gas distribution system is inadequately designed. The problem may be a regulator or pipe sizing, etc.

NATURAL GAS

Use the same procedure as for LP GAS except the pressure should not exceed 7 1/4” WC with only one stove or zone operating. The pressure should not fall below 6 1/2” WC with all stoves running.

Lighting Instructions

1. Turn gas dial to “OFF” and connect main gas supply to supply pipe.
2. Turn gas to “PILOT”.
3. Depress and hold “RESET” button and light the pilot. Allow pilot to burn for 45 seconds before releasing.
4. Turn gas dial to “ON” and turn the temperature dial to desired setting.

TO SHUT OFF HEATER

Turn the gas dial to “OFF and turn the temperature dial to “1” or lowest setting.

24 VOLT ZONE BROODERS/HEATERS

1. Mount "Auto-Switch-Over" (A.S.O.) Power supply in convenient location near electrical panel and WITHIN 3 FEET OF OUTLET. Outlet should be separately fused -- 15 AMP.
2. Mount junction box over each thermostat location selected.
3. Run 14-2 romex from connections on A.S.O. to nearest junction box and continue on to other junction boxes (if used).
4. Run 14-2 romex over each line of brooders to be hooked up to Zone Control. Line should be run adjacent the gas line. If more than one thermostat (zones) is to be used -- black wire should be cut between zones.
5. Choose either 5a or 5b for connecting your thermostat to the power pack.
   a. Cut outer insulation ONLY on romex over each brooder to expose black and white wires. DO NOT CUT OR STRIP WIRES. Bare ground wire is not used. Using "T" tap connectors, connect wire from brooder valve (24V) to romex -- white to white; black to black. Note -- cut off excess wire from valve. Tape wire to gas hose and romex to make a neat installation.
   b. With one wire nut connect black from feed (A.S.O.), black to next junction box (if used), and black from thermostat. With another wire nut connect white from feed (A.S.O.), white to next junction box (if used), and white from line over brooders. Finally connect white from thermostat to black from line over brooders
6. Light brooder in usual manner and set ZONE thermostat for desired temperature.
7. Check for any voltage drops to brooder.

WARNING!

Failure to comply with all applicable local, state, and federal gas codes could result in serious personal injury and/or serious property damage.

WARNING!

Failure to follow the instructions in this manual could result in serious personal injury or property damage.

LIGHTING INSTRUCTIONS

DANGER!

DO NOT ALLOW POWER CORDS AND/OR GAS SUPPLY HOSES TO REST ON THE CANOPY, HANGING BRACKETS OR OTHER HOT SURFACES OF THE UNIT OR TO COME WITHIN 12” OF THE HEATER.

During and after winching, make certain that ALL hoses and power supply cords are NOT resting on the heater nor are within 12” of the heater.

MAINTENANCE

BEFORE PERFORMING ANY MAINTENANCE ON THE HEATER, MAKE CERTAIN THAT ALL POWER AND FUEL HAS BEEN SHUT OFF TO THE UNIT.

Proper care and maintenance of your brooder cannot be over emphasized!!

A POORLY MAINTAINED HEATER WILL:

- Raise Operating Costs- due to poor combustion.
- Lower Air Quality
- Cause Inconsistent Temperatures
- Decrease the Life of the Heater

MAINTENANCE PROGRAM

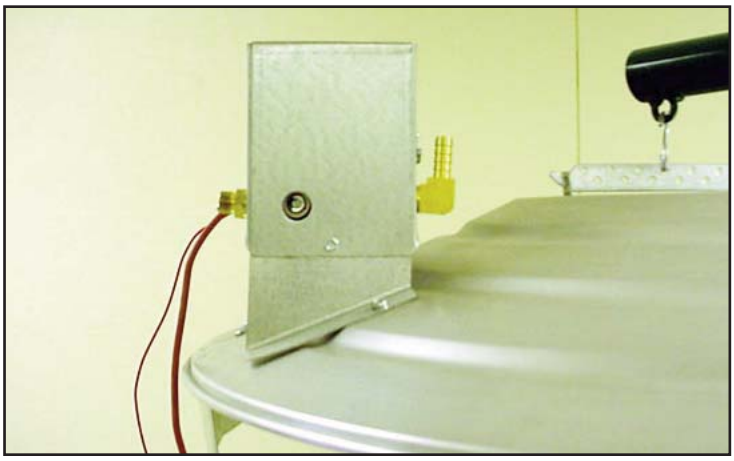
- Daily: Check burner, it should be burning clear and blue; if not, clean as required or check gas pressure. Note: ¾" yellow tip is a common characteristic of the flame on this brooder.
- Clean brooder/heater after each flock
- Inspect for any orifice blockage caused by spider webs in the pilot or burner assemblies.

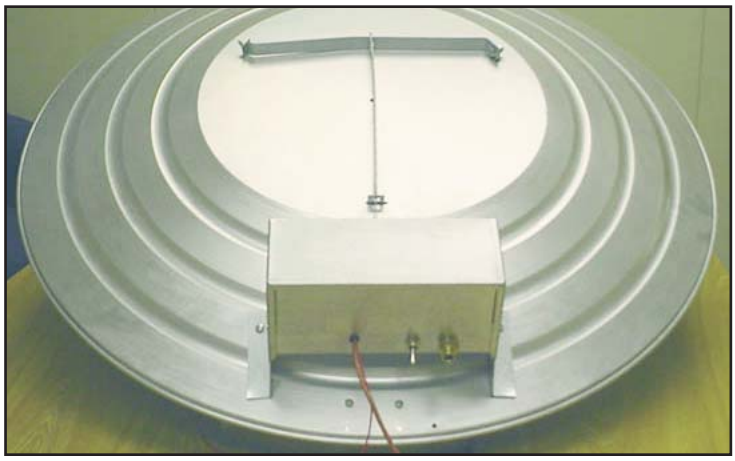
  ⚠**DANGER!** Never spray penetrating oil (WD-40) on the control valve. This will cause the loss of high temperature valve grease and cause the valve to leak.

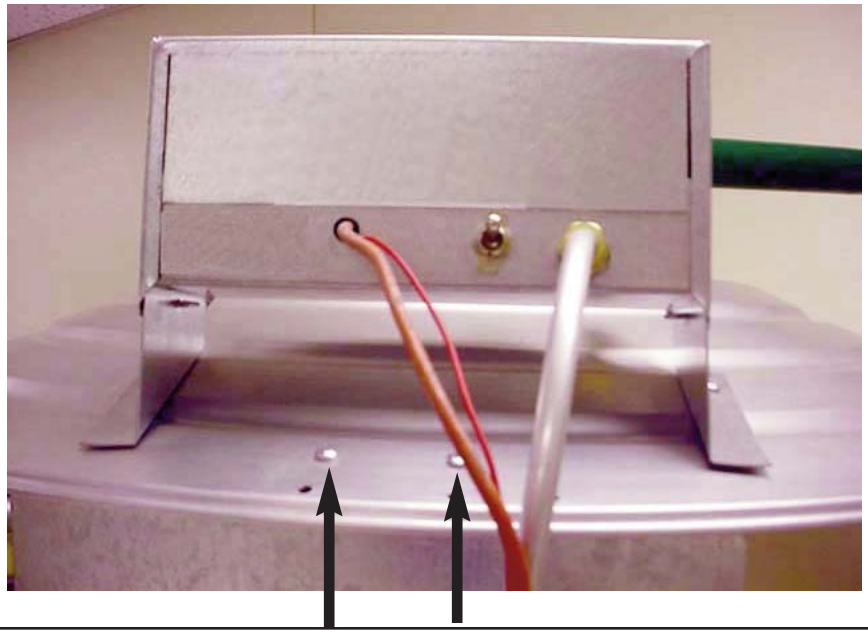
- Clean dust and dirt from pilot and burner ports with compressed air. If an air compressor is not available turn the brooder/heater to a vertical position and tap on the side of the pilot and burner brackets with a screwdriver, pliers, or any other suitable object, to knock the dust from the unit.
- If houses are washed down, care should be taken to prevent moisture from accumulating on control valve, pilot and burner assemblies. Before washing, cover the valve with plastic, after wash downs we recommend that you light the brooders/heaters to dry up any excess moisture.
- During wash down, do not get fiber radiant wet.
- For proper combustion it is important that the small holes in the Emitter be clean and unobstructed. The Emitter can be cleaned by inserting a long brass bristle brush between the outer and inner cones.
- Clean air intakes with a small brush
- Extreme care must be taken not to enlarge or distort the pilot and burner orifices.
- If brooder/heater is disconnected from the gas line, use tape to seal the open connections. This will keep moisture, dust, and insects out and prevent future problems.

DSI CONTROL INSTRUCTIONS

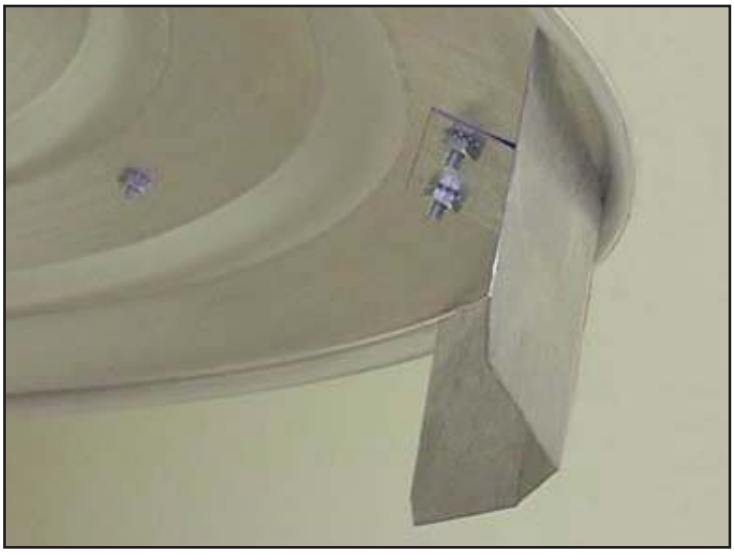
(1) Attach DSI control to **TOP** side of canopy using screw and star washers. On/Off switch must face to the outer edge of the canopy.



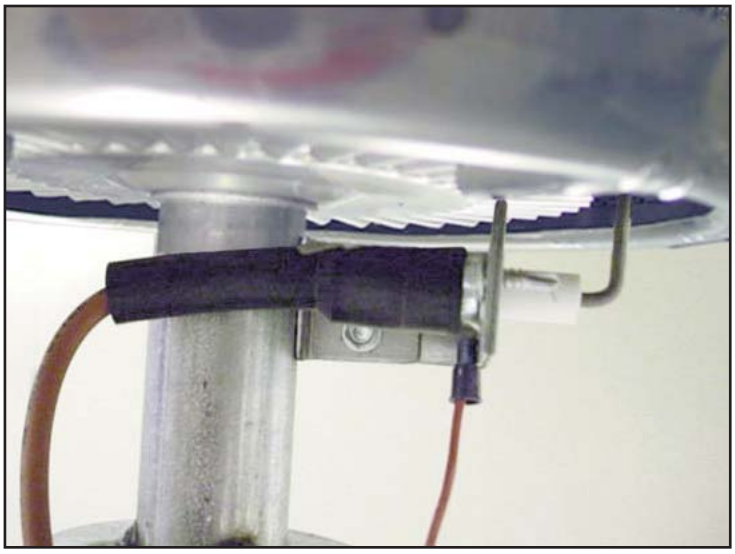


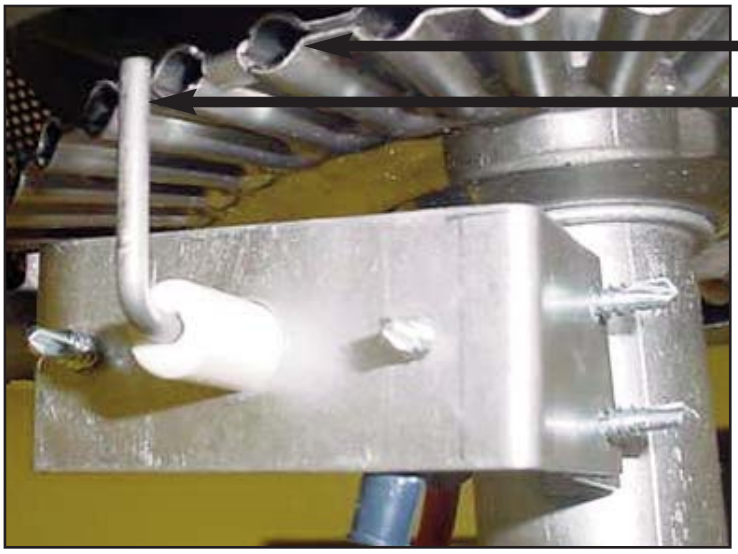


(2) Attach heat shield to the UNDERSIDE of the canopy using hardware supplied, in the holes shown.

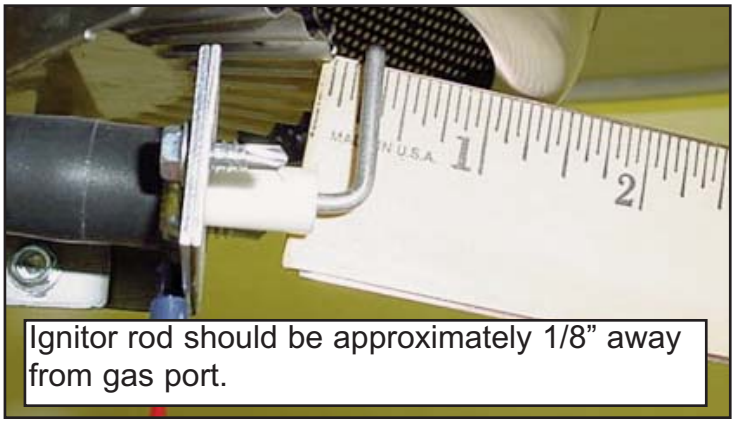


(3) Secure ignitor bracket to burner as shown using tek screws. Bracket can be adjusted to align ignitor with gas port. **DO NOT BEND IGNITOR ROD**



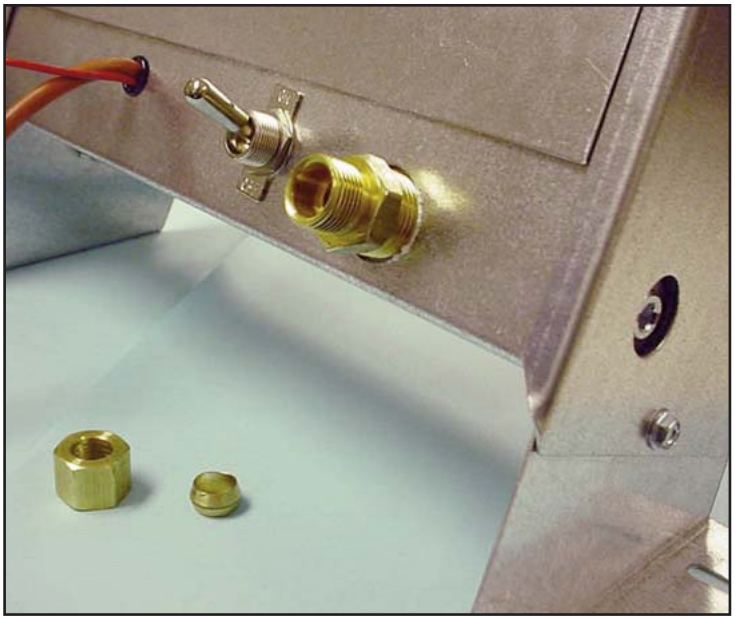


Ignitor bracket should be installed so that ignitor rod is in front of a gas port with the tip of the ignitor even with or above the port.

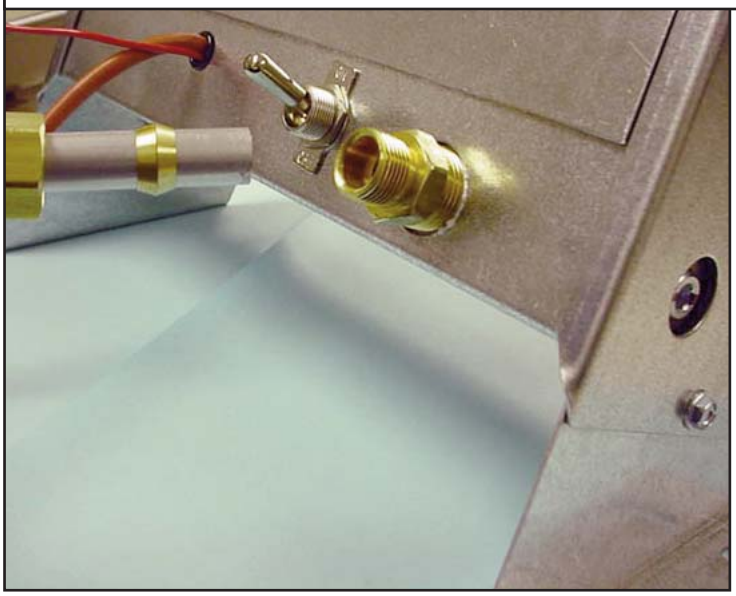


Ignitor rod should be approximately 1/8” away from gas port.

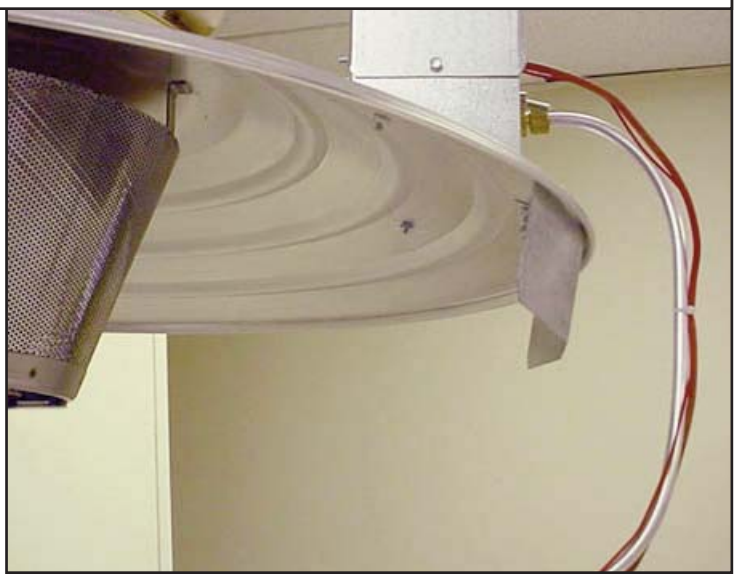
(4) Remove brass nut and sleeve.

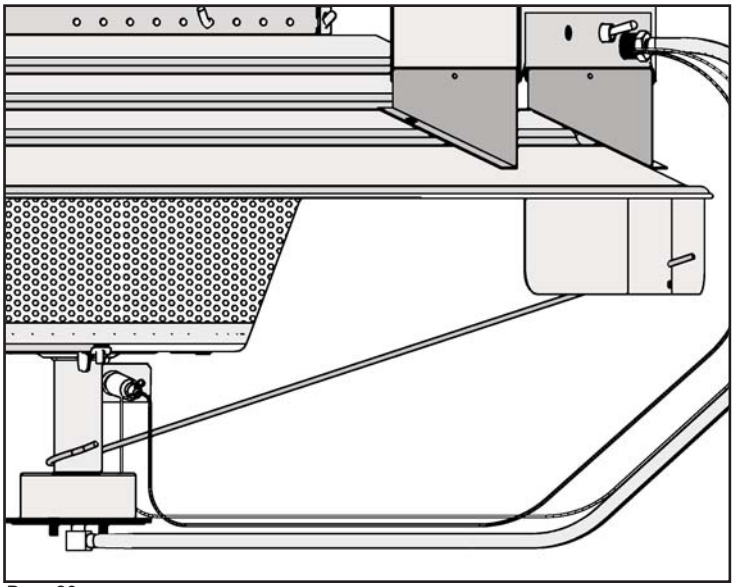


(5) Insert tubing into brass fitting. Use wrench to tighten brass compression nut.



(6) Hand form tubing to connect to burner. To avoid damaging burner, use two wrenches to tighten brass fitting. Secure wires to tubing using wire ties. DO NOT WRAP WIRE AROUND TUBING. **DO NOT CLOSE TIES TOO TIGHTLY ON WIRES.**



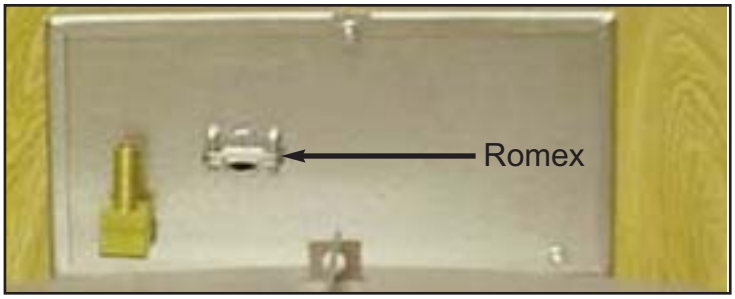


FOR CGA ONLY:

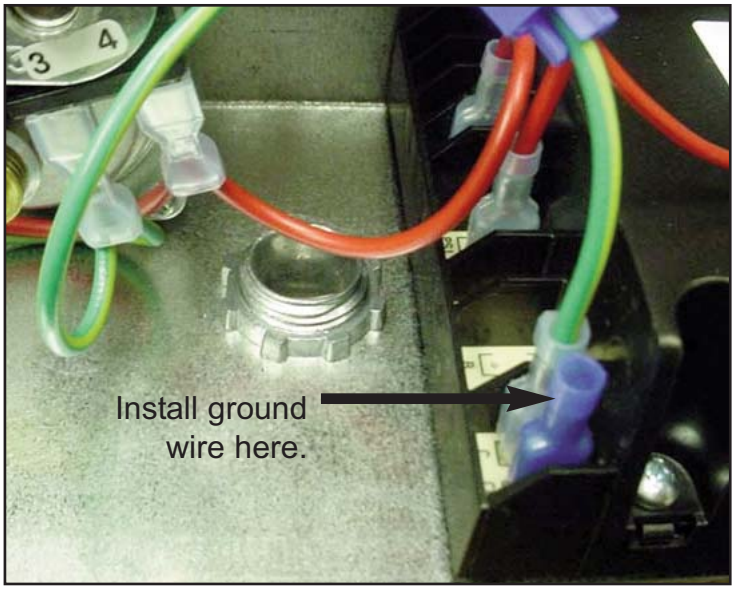
Attach tubing protector by hooking looped end around burner base and inserting other end through hole in heat shield.

TO CONNECT POWER TO THE DSI UNIT:

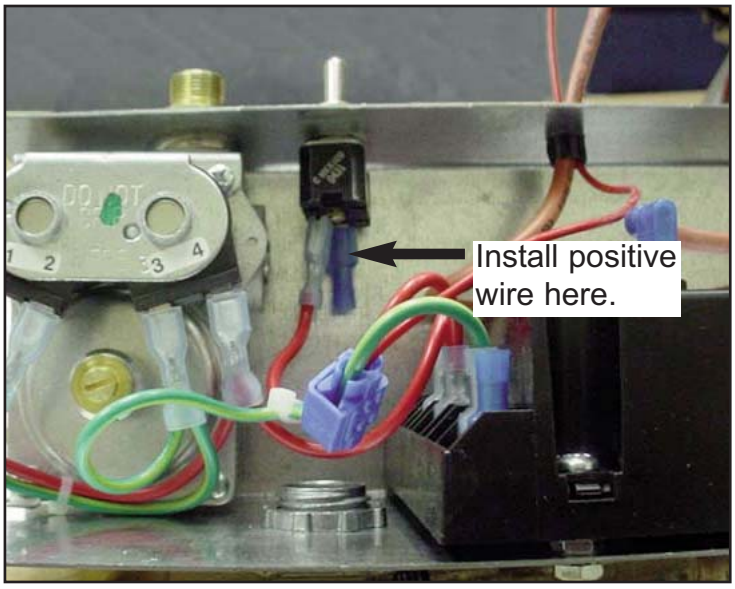
Insert wire through the romex connector located on the back of the assembly.



Connect the ground wire to the first terminal on the control board using the pre-installed empty blue connector. Crimp wire in connector.



Connect the positive wire to the empty blue connector pre-installed on the toggle switch. Crimp wire in connector.



SUSPENDING THE HEATER.
To level the heater, simply support the heater underneath and then move the s-hook forward or backward. We recommend that the valve side of the canopy be slightly lower (1 to 2 inches) to insure that the gas valve assembly does not over heat. **Note:** Two S Hook may be used as shown on Page 17. After it is level, clamp both ends of the s-hook shut. Normally the heater is attached to a winch cable used for raising and lowering.

In addition, we require that a safety cable or chain be attached to the heater to prevent the heater from falling to the litter if the cable should happen to break.

The heater must be located so that there is a minimum clearance of 14” above the heater and 36” from the sides to combustible material. The heater should be hung with a minimum clearance of 60” from the edge of the canopy or 48” from the bottom of the pan to the floor. Be sure to comply with all local, state and federal gas codes for your area.

CONNECTING THE GAS HOSE TO THE UNIT.
Attach the hose (use only a CGA approved gas hose assembly in accordance with CAN/CGA - B149.1 and B149.2) from the gas supply to the hose barb on the control using hose clamps (not provided). Check all connections for leaks before lighting brooder. Turn on gas supply to the unit and check all fittings and connections for leaks with a Gas Sensing Meter and /or soap solution.

Note: The burner connections can only be checked with the burner burning.

DANGER!

DO NOT ALLOW POWER CORDS AND/OR GAS SUPPLY HOSES TO REST ON THE CANOPY, HANGING BRACKETS OR OTHER HOT SURFACES OF THE UNIT OR TO COME WITHIN 12” OF THE HEATER.
During and after winching, make certain that ALL hoses and power supply cords are NOT resting on the heater nor are within 12” of the heater.

GAS PRESSURE - should be CHECKED AND ADJUSTED to recommended settings.

LP GAS:
FIRST - go to the furthest stove from the regulator and connect the pressure gauge to the Press Tap on the gas valve. Light only the stove you are testing or if you have a zone system light all the stoves in the zone. Set the pressure at a maximum of 11 ¼" WC.
SECOND - light all stoves in the house and check the pressure again. The pressure should not drop below 10 ½" WC. If the pressure does fall below 10 ½" WC, then the gas distribution system is inadequately designed. The problem may be a regulator, pipe sizing, etc.

NATURAL GAS:
Use the same procedure as for LP Gas above, except the pressure should not exceed 7 ¼" WC with only one stove or zone operating. The pressure should not fall below 6 ½" WC with all stoves running.

LIGHTING INSTRUCTIONS

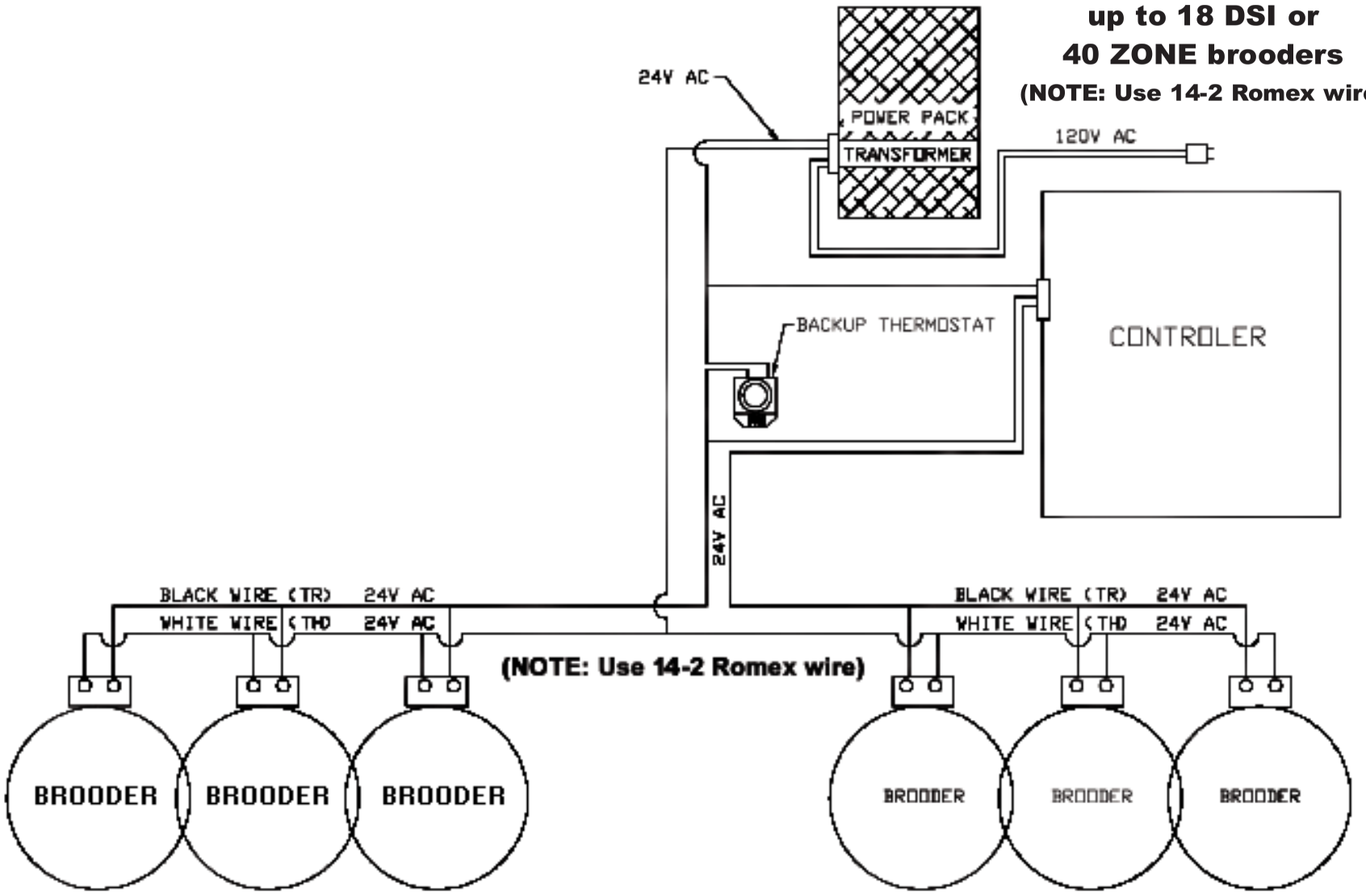
1. Move toggle switch to **"OFF"** position and connect electrical supply to brooder.

2. Move the toggle switch to **"ON"** and turn the thermostat to desired position.

TO TURN UNIT OFF :

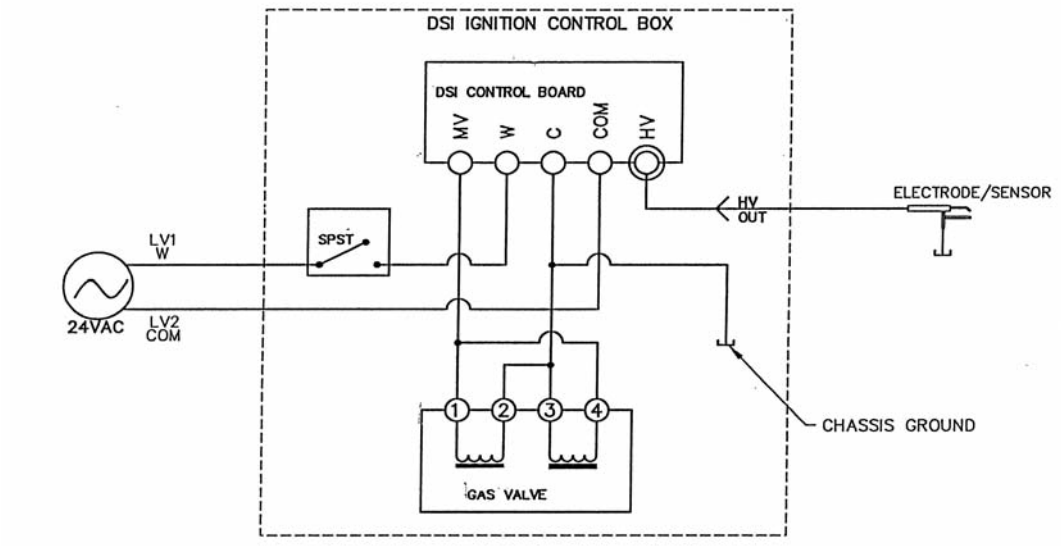
1. Turn off the gas
2. Move toggle switch to the **"OFF "** position.

24 Volt Wiring Diagram for 120 Volt AC Supply
Spark Ignition



TROUBLESHOOTING TABLE

Problem:	Possible Solution:
Brooder does not light.	Use the torch to try to light brooder. If it lights with the torch and not the spark, then electrode is in wrong position or not sparking properly.
Brooder fires and goes out within a few seconds.	Improper grounding. Check chassis ground wire connection.
Brooder fires with a puff after a few seconds delay.	Electrode out of position, shorting to metalwork. The spark should be at the tips of electrode and in front of burner ports.
If it still does not light.	Check output of board to valve (voltage). (24 VAC) Check status of valve. Is solenoid working? (Check for continuity) If solenoid is sticking, tap top with screwdriver. Check Coil / Solenoid continuity. If not open, then O.K.
Brooders in zone fire when adjacent zone fires, even though one zone is not calling for heat.	Wiring is inconsistent. LV1 and LV2 have been interchanged. The switched Thermostat/Computer contact **must** feed terminal W on the DSI Board. (SEE WIRING DIAGRAM)



TROUBLESHOOTING THE DSI BOARD.

To maintain correct operation the polarity of W & COM must be maintained.
The DSI Board controls the following parts:

Spark - good or bad
- Output to gas control valve.
- Flame Sensing
  - Spark gap = 7/64”.
  - Position sparking at gas flow.
    - If no spark - check wire condition.

Tight Connections
- Wire.
- Nuts & Bolts.
- Good chassis ground.
- Ground between box & burner.
- Continuity between box and post or electrode.

Thermostat
- Switch W.

DIRECT SPARK IGNITION TROUBLE CODES *

LED Flashing	Possible Cause	Corrective Action
3 Flashes	No ignition, False flame detected or GV output not matching drive.	Check fuel supply, Check ignitor, Check gas valve
4 Flashes	Too many flame losses within one call for heat; Improper flame sensing drive.	Check air flow (flame blown away from ignitor)*

*Must remove cover on Control Box to check trouble codes. Trouble Codes are erased when power is cycled off. Board flashes trouble codes when Brooder is in Lock Out condition (See Above)

DSI TROUBLE SHOOTING

1. Verify gas pressure. 11” wc for LP, 7” wc for Nat.

2. Be sure wiring is heavy enough, 12-2 or 14-2 on trunk lines, from junction box to heaters can be 18 GA lamp cord or SJ cable.

3. Check for proper voltage. 24 - 27 VAC, no less than 20 VAC, with all brooders on.

4. BE SURE POLARITY IS CORRECT TO ALL BROODERS. (see wiring diagram.)

5. Check for stray voltage, can be present on winch system.

6. Check electrode placement in flame.
   a. Check for loose electrode in ceramic.
   b. Check electrode distance to burner tube, 1/8 - 3/16”

7. Check spark - sensor electrode for corrosion, clean with steel wool.

8. Check spark and sensor wire for good insulation, no tickling your hand, also check for continuity & no resistance, stretch wire slightly while checking.

9. If spark is intermittent remove plastic ties holding wire to tubing. If OK, bad wire.

10. If there is brooder failure, check for blinking light on electronic board.
    See page 31 for codes.