



Chi-Town Heater

Installation & Operation

PNEG-297

Date: 12-05-07

GSI GROUP



PNEG-297

Check List

1. All wire connections
2. Ignitor gap - .125
3. Pipetrain tightness and gas leaks
4. Flame probe adjusted
5. Fuse in place, extra fuse provided
6. Reset lockout after 30 second flame out.
7. Indicator light
8. Pressure gauge
9. Regulator adjusted
10. Solenoid valve operates correctly
11. Unit cycles ON to OFF
12. Burns evenly around ring
13. All decals and serial number tag
14. Aesthetic appearance
15. Manual

Tester Signature _____

Date _____

Model #: _____

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1. INTRODUCTION

Thank you for choosing a GSI product. It is designed to give excellent performance and service for many years.

This manual describes the operation of the Chi-Town Heater. It is designed for low to medium temperature grain conditioning, and is ideal for the aeration of rice, popcorn or other select grains. It is designed to be used with propane vapor or natural gas.

The principal concern of the The GSI Group Inc. ("GSI") is your safety and the safety of others associated with grain handling equipment. This manual is written to help you understand safe operating procedures, and some of the problems that may be encountered by the operator or other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment, or who are in the dryer area. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.

General Safety Statements

The GSI Group Inc's Principal concern is your safety and the safety of others associated with grain handling equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist and inform all personnel associated with, or in the area of the product. Safety precautions may be required from the personnel. This product is ideal for the conditioning of corn, soy beans or other select grains. Avoid any alteration to the equipment, such alterations may produce a very dangerous situation, where serious injury or death may occur.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.



NOTE indicates information about the equipment that you should pay special attention to.

2. SAFETY

Safety Alert Symbol



BE ALERT! DANGER!

Personnel operating or working around electrical equipment should read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

Roof Damage Warning and Disclaimer



GSI DOES NOT WARRANT ANY ROOF DAMAGE CAUSED BY EXCESSIVE VACUUM OR INTERNAL PRESSURE FROM FANS OR OTHER AIR MOVING SYSTEMS. ADEQUATE VENTILATION AND/OR "MAKEUP AIR" DEVICES SHOULD BE PROVIDED FOR ALL POWERED AIR HANDLING SYSTEMS. GSI DOES NOT RECOMMEND THE USE OF DOWNWARD FLOW SYSTEMS (SUCTION). SEVERE ROOF DAMAGE CAN RESULT FROM ANY BLOCKAGE OF AIR PASSAGES. RUNNING FANS DURING HIGH HUMIDITY/COLD WEATHER CONDITIONS CAN CAUSE AIR EXHAUST OR INTAKE PORTS TO FREEZE.

3. SAFETY DECALS

The GSI Group Inc. recommends that you contact your local power company and have a representative review your installation so your wiring will be compatible with their system and so that you will have adequate power supplied to your unit.

If a decal is damaged or missing contact:

The GSI Group Inc.
 1004 E. Illinois St.
 Assumption, IL 62510
 Ph: 1-217-226-4421

A free replacement will be sent to you.



⚠ WARNING
 Flame and pressure beyond door can cause serious injury. Do not operate with service door removed. Keep head and hands clear.



⚠ WARNING
 Stay clear of rotating blade. Blade could start automatically. Can cause serious injury. Disconnect power before servicing.

DC-1559



CAUTION
 Do not operate above rated maximum BTU output. Fire damage to grain product and drying structure will occur. Refer to operator's manual for burner specifications.

DC-1718

READ OWNERS MANUAL BEFORE OPERATING

OFF	ON	<input type="radio"/>	HIGH FLAME
		<input type="radio"/>	VAPOR HI-LIMIT
		<input type="radio"/>	THERMOSTAT
		<input type="radio"/>	RESET

HEATER CANNOT START IF RESET LIGHT IS BLINKING. TO RESET TURN SWITCH OFF FOR 10 SECONDS THEN BACK ON.

DC-1878



3. SAFETY DECALS

⚠ DANGER



HIGH VOLTAGE.

- Will cause serious injury or death.
- Lockout power before servicing.

The GSI Group 217-226-4421

DC-1224

CAUTION

Thermostat must be installed for operation.
Failure to do so may damage equipment
and cause fire.

DC-1702

IMPORTANT

THIS UNIT IS WIRED FOR
115 VOLT, 1-PHASE
POWER SUPPLY

420-1422-5



Heater Specifications

Common Measurements

Inside Diameter	25-7/8"
Bolt Circle Diameter	27-3/16"
Length	18"
Weight	110 lbs

All Models

Propane Vapor	
Orifice (inches)	5/32
Maximum Fuel Flow (CFH)	475
Min. Operating Pressure (psi)	1
Max. Operating Pressure (psi)	15
Min. Supply Line (inches)	1/2
BTU Rating @ Max. Pressure	1,100,000
Natural Gas	
Orifice (inches)	7/32
Maximum Fuel Flow (CFH)	1083
Min. Operating Pressure (psi)	1
Max. Operating Pressure (psi)	8
Min. Supply Line (inches)	3/4
BTU Rating @ Max. Pressure	1,100,000

5. INSTALLATION

Heater Installation

1. Install three(3) mounting brackets on fan as indicated by the arrows shown in *Figure 5A*. Install loosely.
2. Set heater in place and install fourth (4) mounting bracket.
3. Level heater and tighten mounting brackets.
4. Attach heater to mounting brackets using 1/4" bolts and nuts.

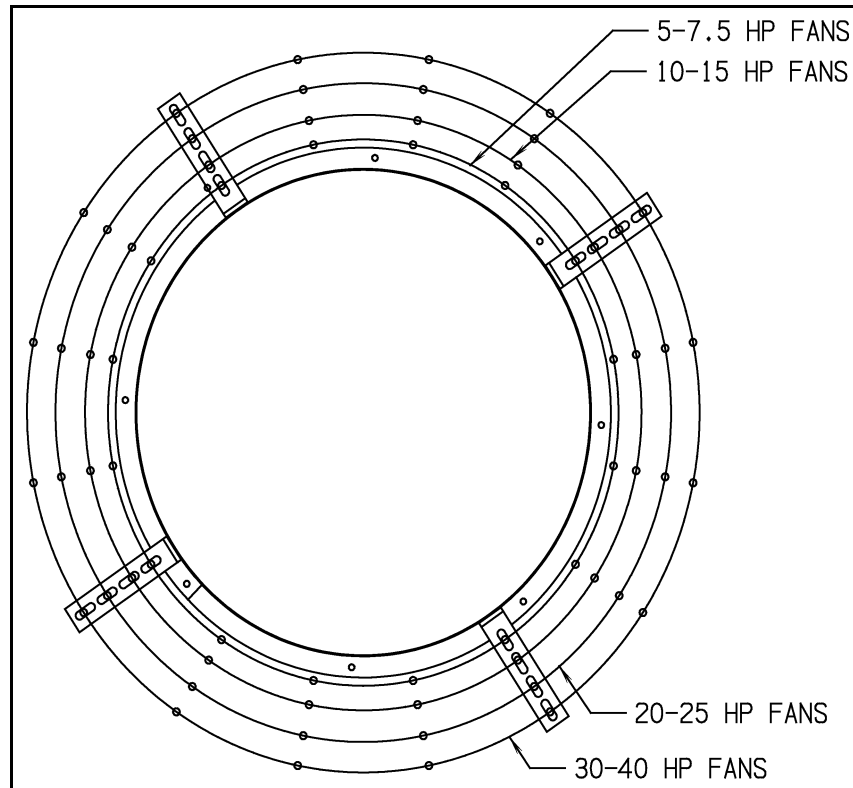


Figure 5A Heater Mounting Brackets Illustration

Fuel Connection

Important: Do not use propane tanks which have previously been used for ammonia unless they have been purged according to procedures of the National L.P. Association. Investigate to be sure that the fuel supply system complies with all local codes for L.P. gas installations.

Propane Vapor Models

1. Propane vapor models are designed to run directly off of supply tank or from a separate external vaporizer.
2. Run proper size line (see specification on [Page 9](#)) to pipetrain on heater. Have a qualified gas service person inspect installation to be sure everything is installed according to local codes and ordinances.
3. After installation is complete check all connections for leaks.

Natural Gas Models

1. Natural gas models are similar to vapor models, but have a larger orifice to accommodate lower pressure, sometimes found with natural gas.
2. Run proper size line (see specifications on [Page 9](#)) to pipetrain on heater. Have a qualified gas service person inspect installation to be sure everything is installed according to local codes and ordinances.
3. After installation is complete check all connections for leaks.

Electrical Connection



ALWAYS DISCONNECT AND LOCK OUT POWER BEFORE WORKING ON OR AROUND HEATER

Standard electrical safety practices and codes should be used when working with a heater. Refer to the National Electric Code Standard Handbook by the National Fire Protection Association. *A qualified electrician should make all wiring installations.*

1. Connect power cord to fan control box.
2. Make field connections in fan box as shown in [Figure 5B](#).

Important: Heater must be interlocked with fan for safe operation.

3. Connect deluxe thermostat control (optional) as shown in [Figure 5B](#).

Important: Thermostat must be installed for safe operation.

5. INSTALLATION

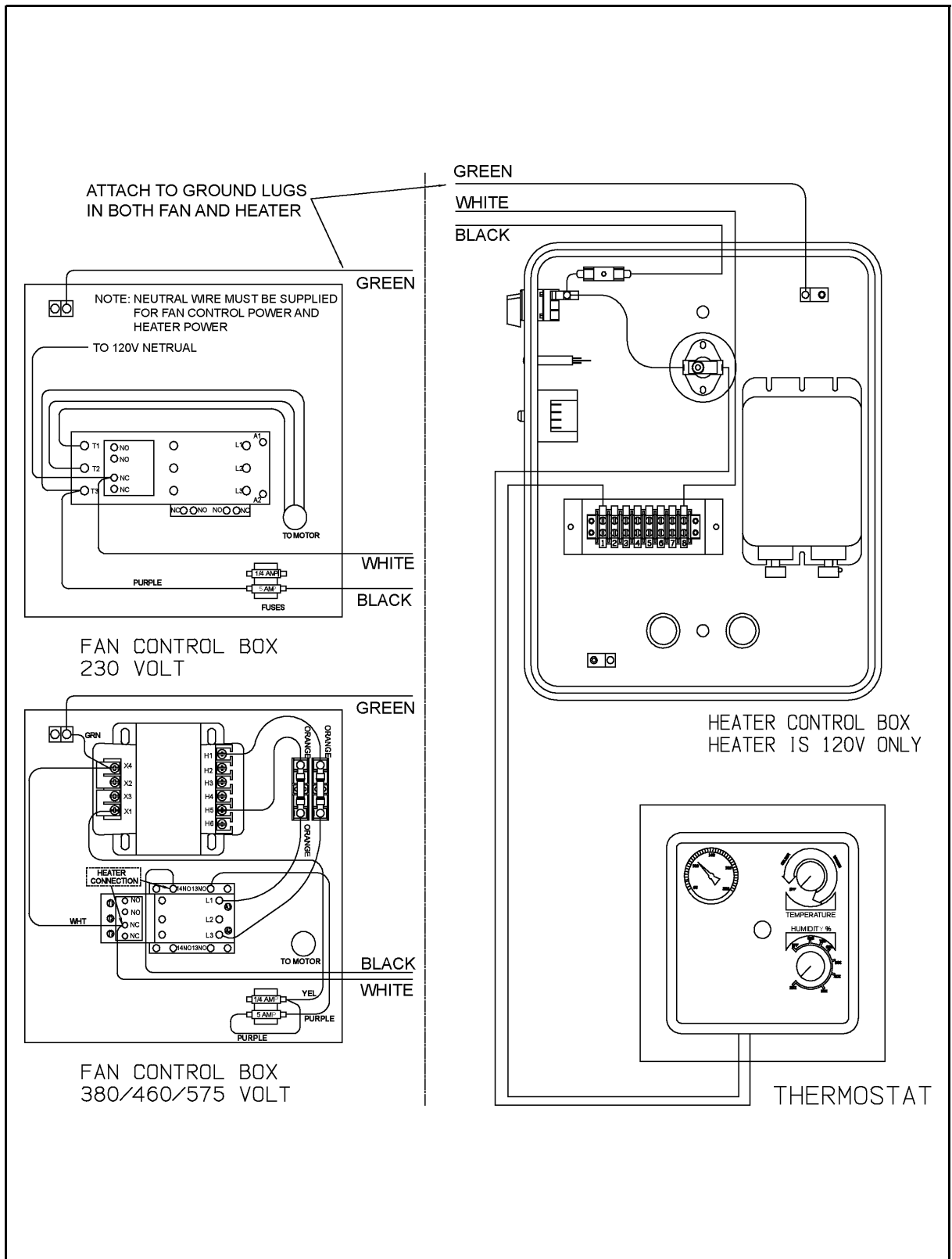


Figure 5B Heater Wiring Installation on a Fan Unit

Second Heater Installation

Two standard heaters may be connected to one grain drying system and wired so they cycle together. One of the heaters should have a thermostat connected to it as per the installation instructions. That heater will be referred to as the primary. The other heater (without the thermostat) will be referred to as the secondary.

1. Install relay base (TD-100283) in primary heater control box.
2. Connect wire between terminal 13 on relay base to terminal 3 on terminal strip in primary heater.
3. Connect wire between terminal 14 on relay base to terminal 6 on terminal strip in primary heater.
4. Run 2 wires (18 gauge) between primary and secondary heater.
5. Connect wires to terminals 5 and 9 (points A and B) on relay base in primary heater.
6. Connect wire from terminal 9 in primary to terminal 5 (point F) in secondary unit.
7. Connect wire from terminal 5 in primary to terminal 8 (point G) in secondary unit.
8. Install relay (TD-100282) in relay base.

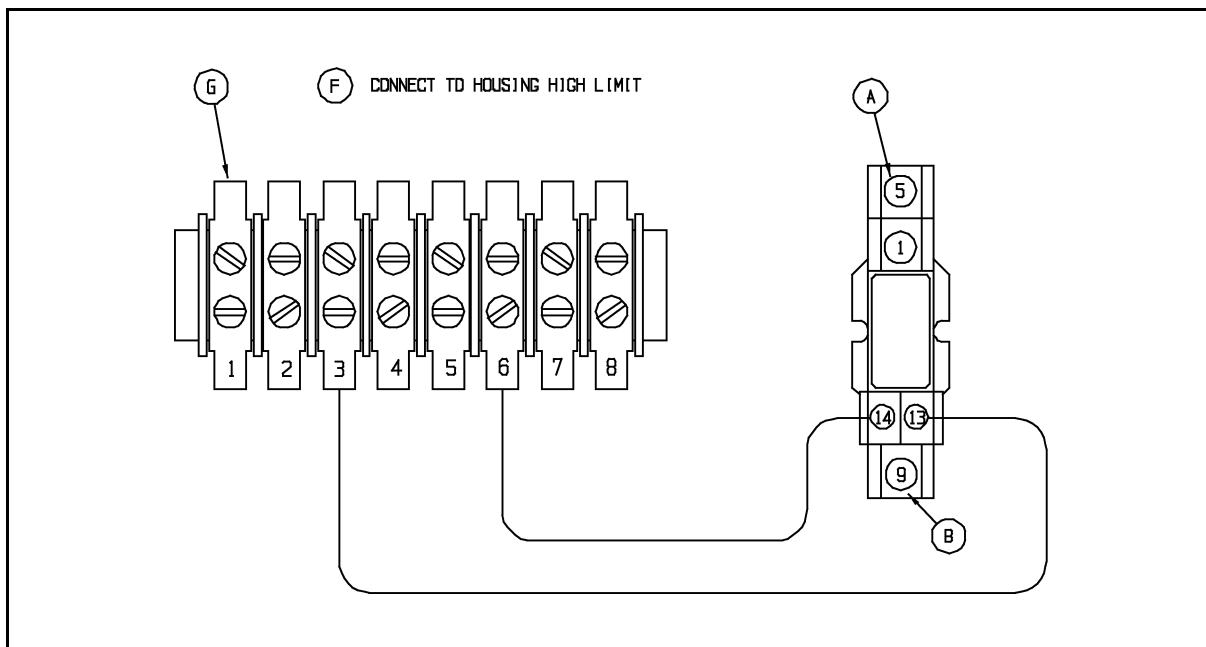


Figure 5C Second Heater Wiring

6. INSTALLATION & OPERATING

Bin Configuration

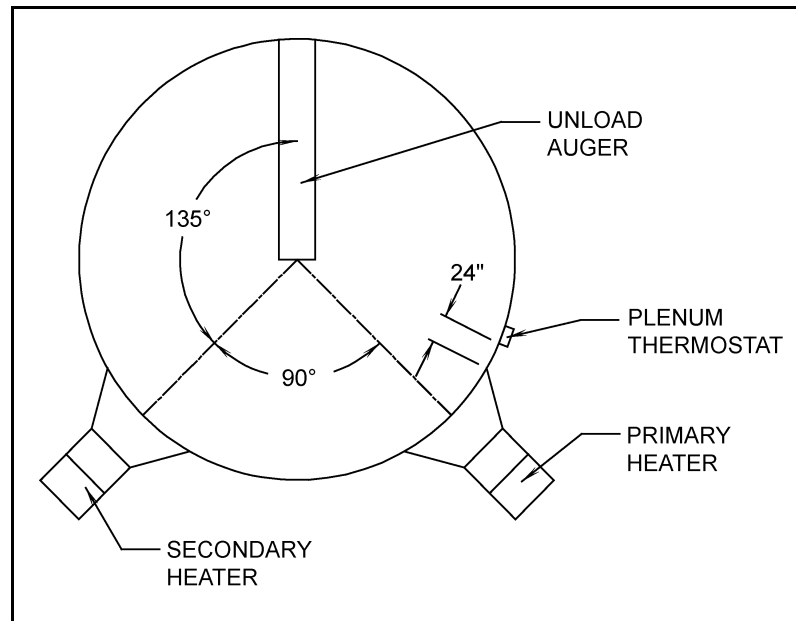


Figure 6A

Important: When mounting (2) heaters on a bin it is imperative that they be situated as in above drawing. Plenum thermostat must be to the right of primary heater and primary heater must be to the right of secondary heater.

Plenum Temperatures

Important: DO NOT EXCEED PLENUM TEMPERATURES LISTED IN TABLE

Operating Temperature Table

	LO-TEMP BATCH	HIGHTEMP BATCH DRY NO STIRRING	HIGHTEMP WITH STIRRING	CONTINUOUS FLOW (RECIRCULATING)
CORN	5-20° ABOVE AMBIENT TEMP	120°	140°	160°
RICE	5-10° ABOVE AMBIENT TEMP	100°	100°	NOT RECOMMENDED
BEANS & WHEAT	5-20° ABOVE AMBIENT TEMP	110°	120°	NOT RECOMMENDED

Note: THIS TABLE IS NOT INTENDED AS A DRYING GUIDE. IT SHOULD BE USED AS A REFERENCE FOR SETTING MAXIMUM PLENUM TEMPERATURE FOR SAFE OPERATION.

7. OPERATING INSTRUCTIONS

Heater Operation

1. Thermostat must be wired into heater control box for heater to operate.
2. Open all manual shut-off valves to heater unit.
3. Start fan. This will supply power to heater.
4. Turn thermostat dial to its highest setting.
5. Turn heater toggle switch to ON.
6. Heater should now be lit. If not, check to see that all gas is on and thermostat is wired in.
7. Watch thermometer on plenum and when it reaches desired temperature turn thermostat back slowly until heater cycles OFF.
8. Gas pressure should be adjusted so burner is on 75% of the time. (see charts on [Page 14](#))
9. Watch plenum temperature as burner goes through a few cycles to be sure it is operating properly.

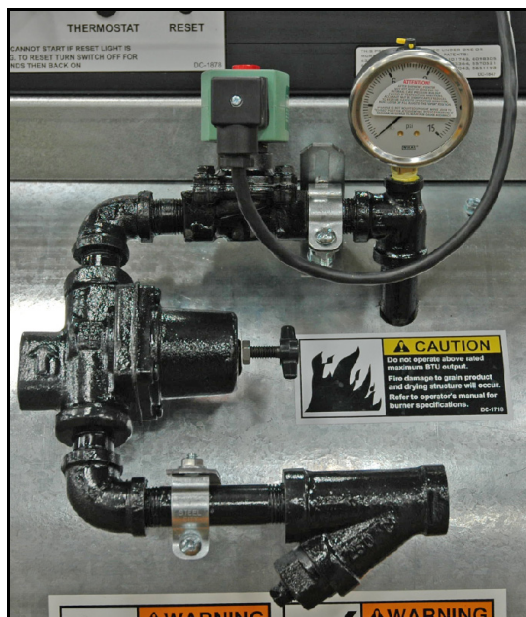


Figure 7A Propane Vapor Pipetrain

7. OPERATING INSTRUCTIONS

BTU's per Gauge Pressure (psi) - Propane Models Approximate

Operating Pressure (psi)									
1	2	3	4	5	6	7	8	9	10
294,339	416,382	509,709	588,678	658,075	720,293	777,725	832,764	880,624	930,877
12	14	15							
1,019,418	1,100,780	1,136,675							

Gauge Pressure (psi) Required to Maintain Temperatures (Approximate)

Fan Model	Static Pressure	Heat Rise Degrees F						
		20	30	40	50	60	70	80
10 HP	2	1	2	4	5	8	10	14
	3	1	2	3	5	7	9	12
	4	1	2	3	4	6	8	12
	5	1	2	3	4	5	7	9
15 HP	2	2	3	6	8	12	-	-
	3	2	3	5	8	12	14	-
	4	1	3	4	7	9	14	-
	5	1	2	4	6	8	10	14
20 HP	3	2	4	7	12	-	-	-
	4	2	4	7	10	15	-	-
	5	2	4	6	10	14	-	-
	6	2	3	6	9	12	-	-
25 HP	3	3	6	12	-	-	-	-
	4	3	6	10	-	-	-	-
	5	3	5	9	14	-	-	-
	6	2	5	8	14	-	-	-
30 HP	4	3	7	12	-	-	-	-
	6	3	6	10	-	-	-	-
	8	3	5	9	14	-	-	-
	10	2	4	6	9	14	-	-
40 HP	4	5	12	-	-	-	-	-
	6	4	9	-	-	-	-	-
	8	4	8	14	-	-	-	-
	10	3	6	10	15	-	-	-

7. OPERATING INSTRUCTIONS

BTU's per Gauge Pressure (psi) - Natural Gas Models Approximate

Operating Pressure (psi)							
1	2	3	4	5	6	7	8
397,280	562,640	688,480	793,520	888,160	973,440	1,051,440	1,126,320

Gauge Pressure (psi) Required to Maintain Temperatures (Approximate)

Fan Model	Static Pressure	Heat Rise Degrees F						
		20	30	40	50	60	70	80
10 HP	2	1	1	2	3	4	6	7
	3	1	1	2	3	4	5	7
	4	1	1	2	3	4	5	6
	5	1	1	2	2	3	4	5
15 HP	2	1	2	3	5	7	-	-
	3	1	2	3	4	5	8	-
	4	1	2	3	4	5	7	-
	5	1	2	2	3	5	6	8
20 HP	3	1	3	4	6	-	-	-
	4	1	2	4	6	8	-	-
	5	1	2	4	6	8	-	-
	6	1	2	3	5	7	-	-
25 HP	3	2	4	6	-	-	-	-
	4	2	3	6	-	-	-	-
	5	2	3	5	8	-	-	-
	6	2	3	5	7	-	-	-
30 HP	4	2	4	7	-	-	-	-
	6	2	4	6	-	-	-	-
	8	2	3	5	7	-	-	-
	10	1	2	4	5	7	-	-
40 HP	4	3	6	-	-	-	-	-
	6	3	5	-	-	-	-	-
	8	2	4	8	-	-	-	-
	10	2	3	5	8	-	-	-

8. HEATER SERVICE

All heaters are constructed of durable weather-resistant materials, so a minimum amount of service should be required. Before the unit is started for the first time each season there are a few items that need to be checked out. All damaged parts should be repaired or replaced.

1. Disconnect and lockout power to fan and heater. Open control box lid and inspect all components for moisture, vibration or rodent damage. Inspect and tighten all loose terminal connections. Replace any damaged wiring.
2. Remove burner orifice tube and inspect for dirt or foreign material. Clean out if necessary.
3. Inspect holes in burner ring for possible corrosion or plugging with dirt or rust. Clean if necessary.
4. Be sure primary air inlet screen is intact and clean for proper burn.
5. Check perforated ring on natural gas models to be sure it is clean and no holes are plugged.
6. Inspect flame probe and ignitor and adjust or replace if necessary.



ALWAYS DISCONNECT AND LOCK OUT POWER BEFORE WORKING ON OR AROUND HEATER

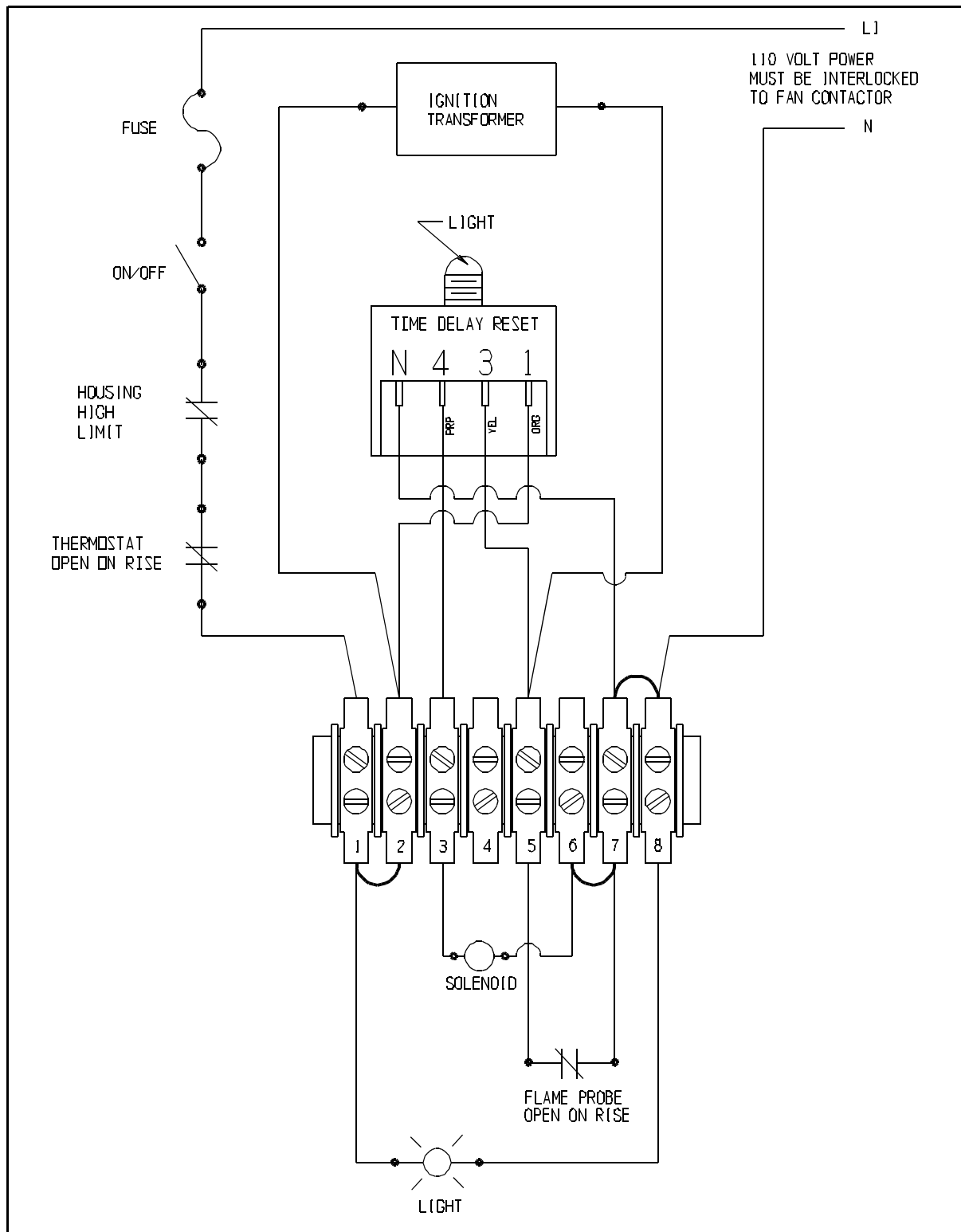


Figure 9A

Note: Move transformer wire from terminal 3 to 8 for continuous spark.

10. SCHEMATIC

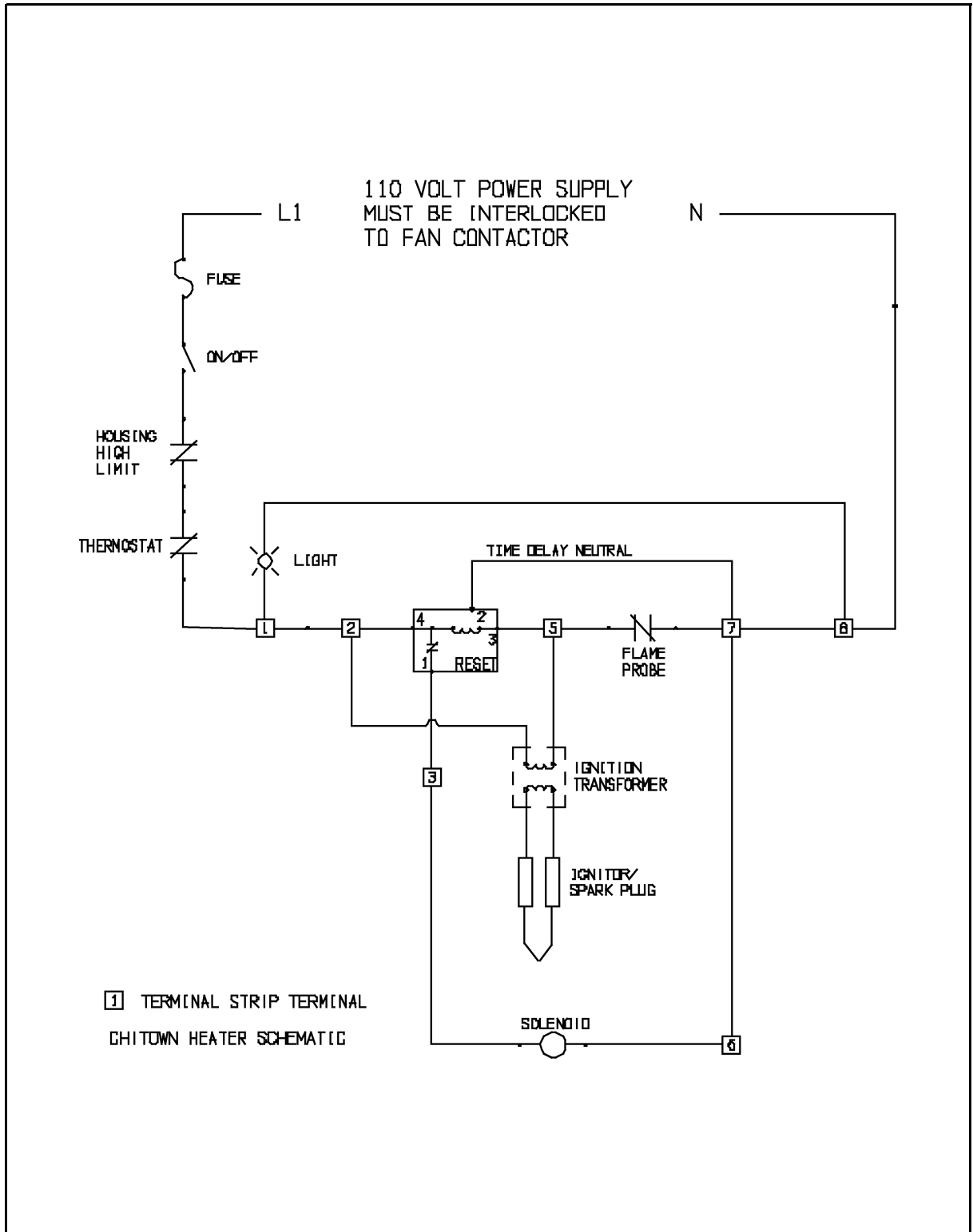


Figure 10A

Note: Move transformer wire from terminal 3 to 8 for continuous spark.

HH-1089E Time Delay Reset Operation

The Electronic Time Delay will indicate the operating condition of the heater through the LED light shown on the diagram to the right. This light should be on the exterior control panel of the heater when the unit is installed correctly. This light is very helpful in identifying the status of the flame probe (open or closed) and will indicate a lockout condition.

Startup

The light should be ON when the ON/OFF switch is set to ON. This indicates that the heater has power and the Flame Probe is closed. The gas solenoid should open and ignitor should spark. The light will remain on until the Flame Probe opens. The light should go OFF if flame is established within the 30 second trial for ignition.

If flame is not present or the probe does not open, then the light will blink continuously after the 30 second time period. It will blink continuously until the heater is reset.

Turn power off for 10 seconds to reset a lockout condition. The light will stop blinking after the 10 second time period. The heater cannot be restarted if the light is blinking continuously.

Thermostat Cycle

The heater thermostat will cycle the gas solenoid OFF when temperature is reached. The flame probe should cool to a closed condition when this occurs. The thermostat will also cool to a closed condition with a drop in plenum temperature. The thermostat closure is a call for heat and the normal startup for the Time Delay begins again.

A condition can occur where the thermostat can call for heat before the Flame Probe cools to a closed condition. The light on the Time Delay will flash once at thermostat closure and remain OFF until the Flame Probe closes again. The heater will not operate until this "closed" condition of both switches is achieved.

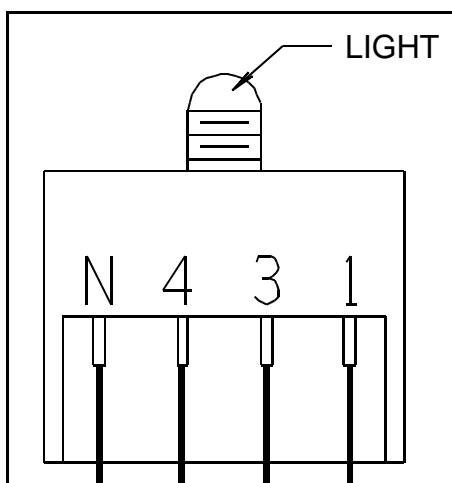


Figure 11A Flame Probe Light on Time Delay

Light Status	Indication
ON	Flame Probe is closed. Time Delay in 30 second trial for ignition period.
OFF	Normal Operation with flame present. Flame Probe open. Thermostat closed. Normal Operation with no flame present. Flame Probe open. Thermostat open.
BLINKING	Lockout: Flame Probe closed after 30 seconds. To Reset: Turn power off. Wait 10 seconds. Turn power ON.

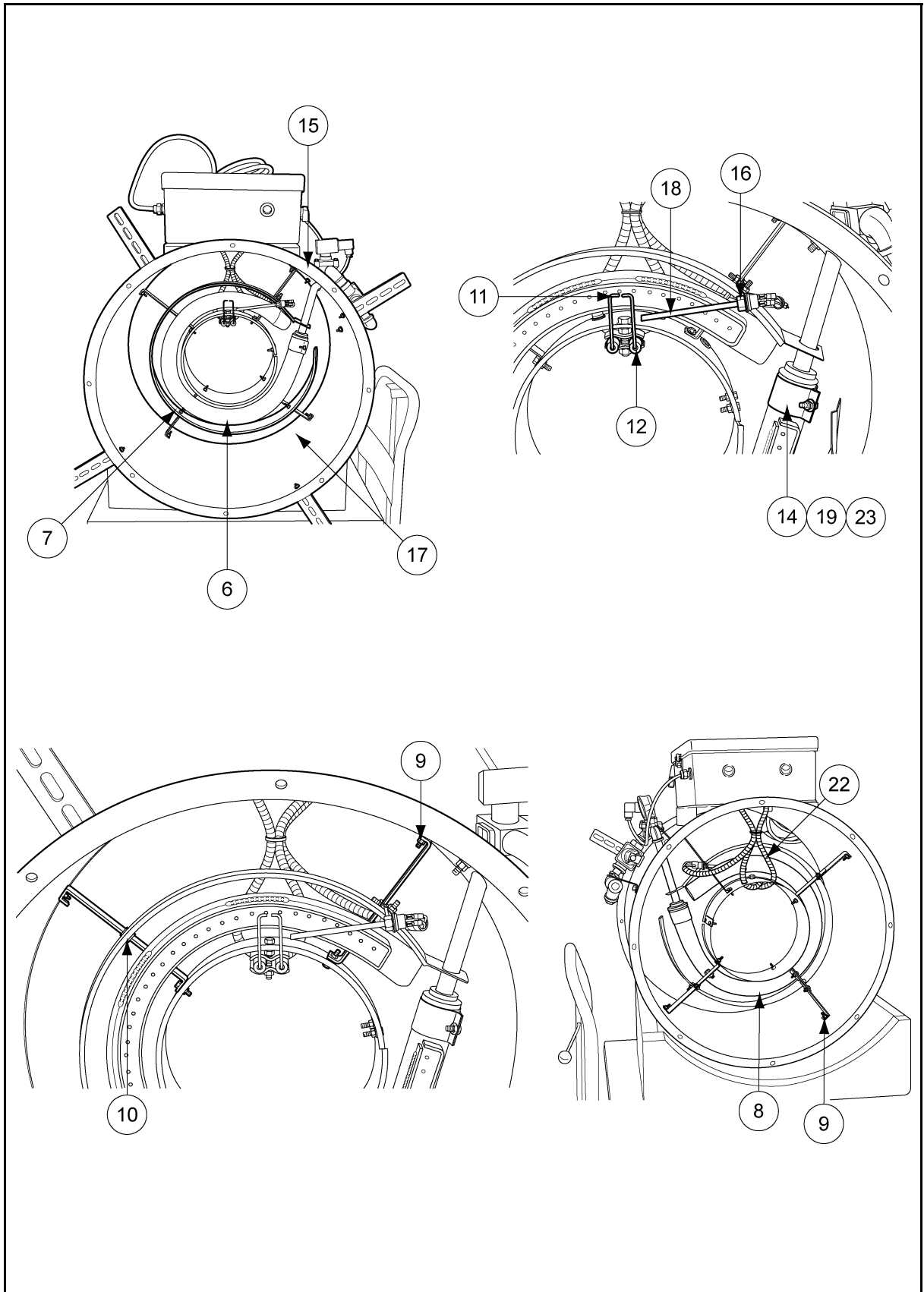
12. TROUBLESHOOTING GUIDE

Trouble	Probable Cause	Check-out Procedure
1. Burner will not fire. No gas pressure on gauge. No ignition spark	1. Heater not wired	1. Visually check fan control box to see if wires are connected.
	2. Fan not running	2. Fan contactor must be energized for heater to run
	3. Blown fuse.	3. Visually check fuse.
	4. Bad ON/OFF switch.	4. Check ON/OFF switch contact block for proper installation and continuity. Check for power on terminals 1 & 8.
	5. Housing High-Limit Switch	5. Reset Switch. Check for power on terminals 1 & 8
	6. Thermostat open	6. Plenum temperature above setpoint temperature or open circuit.
	7. Flame probe open	7. Remove wires from flame probe and check with ohm meter. Probe should be closed when cold.
2. Burner will not fire. No gas pressure on gauge. Constant ignition spark.	1. Electronic time delay	1. Time delay is in lockout or not receiving power.
	2. Gas supply	2. Make sure all valves are open to heater and gas tank is not empty.
3. Burner will not fire. Gas pressure on gauge. No ignition spark.	1. Loose wire.	1. Check for power on terminals 2 & 5. Look for loose wires or incorrect wiring.
	2. Ignitor / Spark plug	2. Turn gas OFF to heater. Check gap on ignitor. Check porcelain for any sign of cracks. Remove plug wire from spark plug/ignitor. Carefully holding wire by insulation. Try to get an arc between end of wire and heater housing (or other wire using 2 pole transformer).
	3. Ignition Transformer / Wire	3. Turn gas OFF to heater. If no spark present after checking ignitor, remove wire from ignition transformer. Check for spark at ignition transformer with an insulated screwdriver. Spark should jump a minimum 1/4" gap. Replace transformer if no spark is established, replace the ignition wires.
4. Burner will not fire or fires for 30 seconds and locks out. Gas pressure on gauge. Spark is on.	1. Plugged orifice	1. Check for gas at burner. If no gas, remove pipetrain and check orifice and burner ring for blockage.
	2. Flame Probe	2. Check to be sure flame probe is in good condition and is located in flame. Flame probe contacts should open when probe gets hot.
	3. Incorrect supply voltage	3. Voltage to heater must be 110 AC
	4. Regulator set too low.	4. See that flame burns continuous and is not intermittent. On ring burners be sure flame burns completely around ring.
	5. Moisture in fuel.	5. Have tank and lines checked by a qualified gas service man.

1. Gas Heater Parts
2. Control Box Parts
3. Pipe Train Parts

13. PARTS LIST

Gas Heater Parts



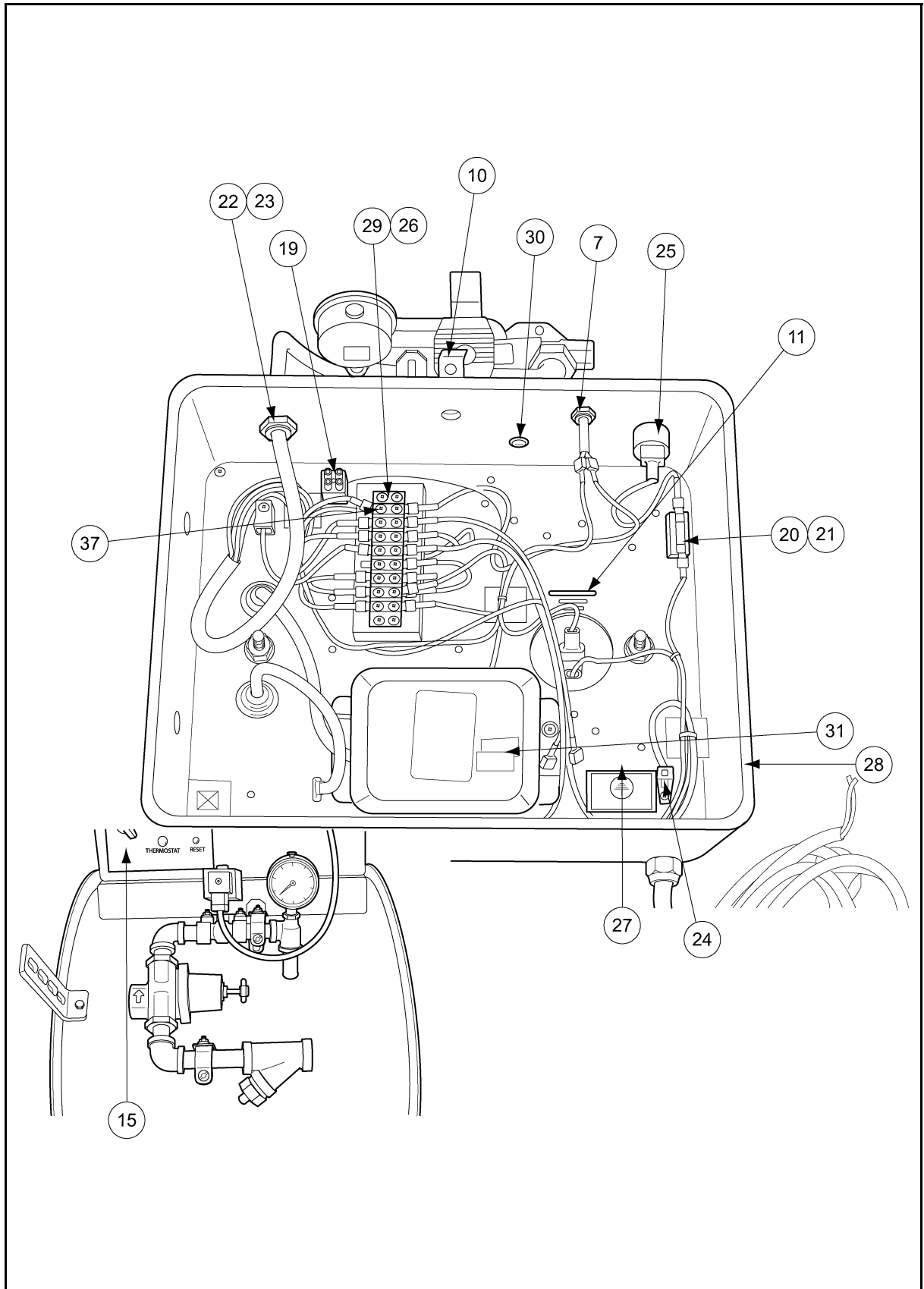
Gas Heater Parts

Ref #	Part #	Qty	Description
1	D02-0026 (N/S)	3	Bushing, 1/2" Plastic
2	D03-0247 (N/S)	15	Wire Tie 5" Panduit #PLT1.5M-M
3	DC-113 (N/S)	1	Decal, Air Flow
4	DC-1559 (N/S)	1	Decal, Warning:DC-1225/DC-1227
5	DC-1718 (N/S)	1	Decal, Warning Heater Fire
6	HF-7147	1	Chi-town Burner Weldment
7	HF-7157	1	Outer Air Deflector
8	HF-7158	1	Inner Air Deflector
9	HF-7159	4	Burner Mounting Bracket
10	HF-7160	4	Outer Air Deflector Bracket
11	HF-7373	1	Ignitor Pair: Chi-town RH & LH
12	HF-7375	2	Chi-Town Ignitor Bracket
13	HF-7377 (N/S)	2	Bushing Dravo 9/16" CHI-TOWN
14	HF-7636	1	Burner Pipe Band: Chitown
15	HF-7758	1	Adapter Plate GRP: 26" HTR
16	HF-8028	1	Flame Probe BRKT-Chitown W/GFS
17	HF-8080	1	Wrapper Chitown Heater
18	HH-3977	1	Flame Switch N/Closed 3/8-24
19	S-1101 (N/S)	1	Screw - 1/4"-20 x 1/2" Hex Head
20	S-3611 (N/S)	8	Nut Flanged Whiz 5/16-18 Grade
21	S-456 (N/S)	2	Hex Nut - 3/8-16 S.A.E. Grade
22	S-6606 (N/S)	8	Bolt Flng 5/16-18 x 3/4 ZN GR5
23	S-7215 (N/S)	17	Nut Flanged Whizz 1/4-20 ZINC
24	S-845 (N/S)	8	Flat Washer - 5/16" USS W.I. S
25	S-8680 (N/S)	16	Bolt Flng 1/4-20 x 3/4 ZN GR5 SER
26	S-9303 (N/S)	1	Bolt Flng 3/8-16 x 1.5 GR8 YEL
27	S-9345 (N/S)	1	Nut Hex 3/8-24 SS

N/S - Not Shown

13. PARTS LIST

Control Box Parts

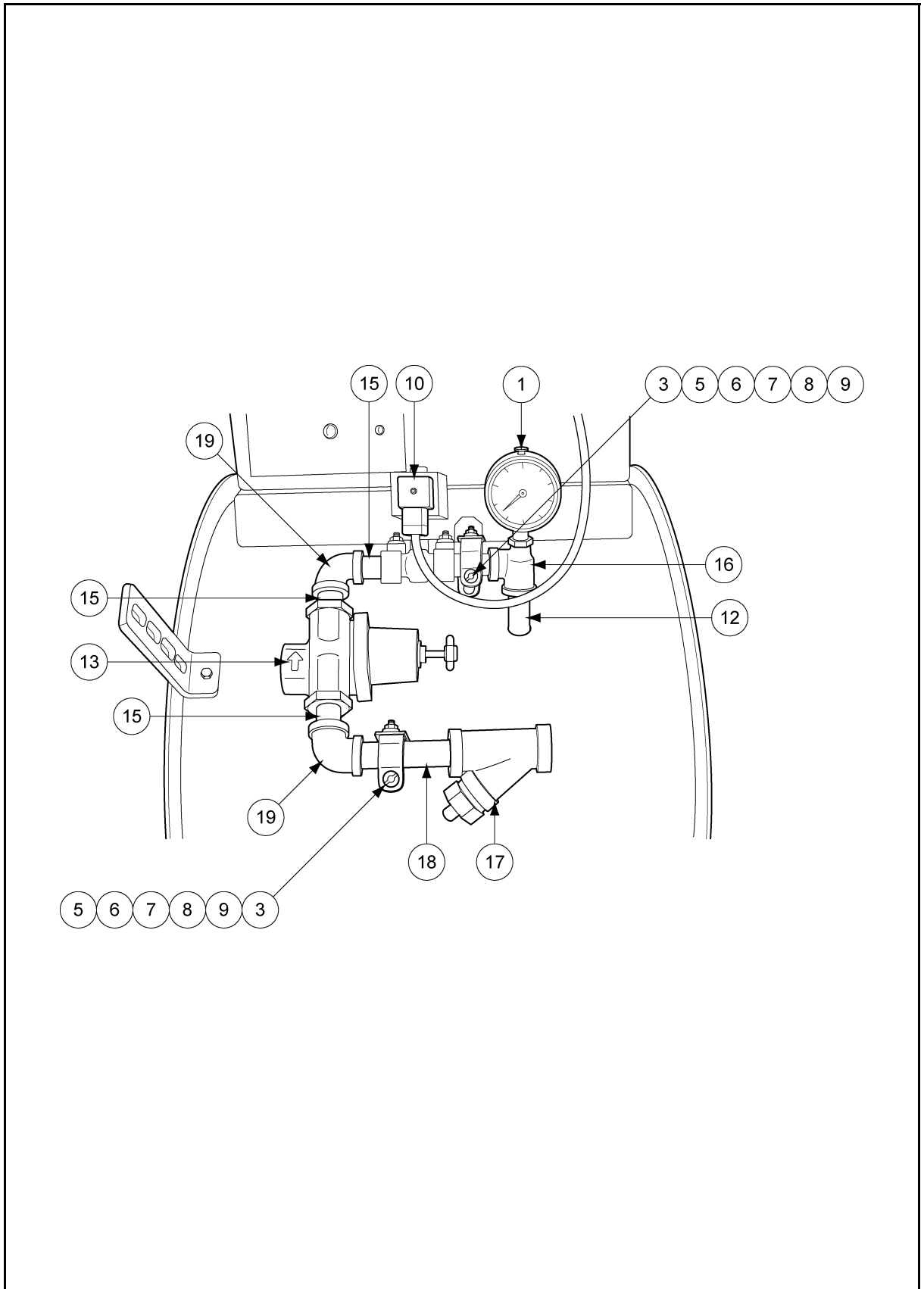


Control Box Parts

Ref #	Part #	Qty	Description
1	006-1363-8 (N/S)	1	Sealing Washer .85ID Black
2	069-1376-8 (N/S)	1	Control Box Lid-Poly Blank
3	090-1699-9 (N/S)	4	Pop Rivet 1/8 x .501- .625
4	090-1701-3 (N/S)	4	Phillips PHST #10-24 x 1/2 F
5	090-1705-4 (N/S)	4	Phillips PHSEMS #8-32 x 3/8
6	420-1422-5 (N/S)	1	Decal - 115 Volt 1-Phase
7	90-0009	1	Light Oil Tight 1/4" TAB 120V
8	D02-0039 (N/S)	6	Wire Tie Anchors
9	D03-0247 (N/S)	35	Wire Tie 5" Panduit #PLT1.5M-M
10	D03-0696	2	Farmfans Cntrl. Box Latch
11	DC-108	1	Decal, Hi-Limit Button
12	DC-1224 (N/S)	1	Decal, Danger Hi-Voltage (LG)
13	DC-1254 (N/S)	0.05	Decal, Ground Lug 24 Per Sheet
14	DC-1702 (N/S)	1	Decal: Caution Use TSTAT W/HTR
15	DC-1878	1	Decal: Heater Standard W/Reset
16	DC-1879 (N/S)	1	Decal - Standard Htr Wiring W/
17	DC-889 (N/S)	1	Decal Danger High Voltage
18	E105-1110 (N/S)	1	Wire Kit-Chitown In Black Box
19	E240-1107	0.16667	Connector, T.B., 12-POLE, 10A, 12GA
20	FH-1058	0.5	Fuse Block
21	FH-1059	2	5 AMP Fuse
22	FH-1309	2	Lock Nut, 1/2 INCH with Pipe T
23	FH-1310	2	Cord Connector, HEYCO #3231
24	FH-6634	2	ITT Blackburn GRD LUG ADR-6
25	HF-7696	1	Switch 2 Pos Selector: Lever
26	HF-7697	1	Bracket Standard Term Strip
27	HF-7698	1	Backing Plate - Heater Controls
28	HF-7718	1	Axial Heater Box - CNC OPS
29	HF-8077	1	Terminal Block 8 Pole W/Slides
30	HH-1089E	1	Switch Reset-Time Delay Electr
31	HH-1093-GRP	1	GRP-Transformer 2Pole Ignition
32	LABEL-STD (N/S)	1	Wire Labels Standard Heater CB
33	PNEG-297 (N/S)	1	Manual, Heater GSI Chi-Town
34	S-2786 (N/S)	3	#8-32 x 3/8 Phil Pan HD Type F
35	S-3674 (N/S)	2	Washer Flat #10 SAE ZN
36	S-7192 (N/S)	4	#8-32 x 5/8 Phil Pan HD Type F
37	TFC-0048	4	Disconnect .25 INSUL FEM CSA
38	DC-1891 (N/S)	1	Decal, Terminal Label - HH-108
39	PNEG-1530 (N/S)	1	HH-1089E Wiring Instructions
40	S-9111 (N/S)	1	Screw TCSF #6-32 x 3/4 PHP ZN
41	HH-2833 (N/S)	1	Plug 1/2" DIA Plastic Hole

13. PARTS LIST

Pipe Train Parts



Pipe Train Parts

Ref #	Part #	Qty	Description
1	D08-0022	1	Gauge Pressure 0-15#
2	DC-1461 (N/S)	1	Tag Attention Pressure Gauges
3	HF-1026	2	Pipetrain Bracket: VA Heaters
5	HH-1096	2	Clamp 1/2" Conduit
6	S-1101	2	Screw - 1/4"-20 x 1/2" Hex Head
7	S-3611	2	Nut Flanged Whiz 5/16-18 Grade
8	S-6606	2	Bolt Flngs 5/16-18 x 3/4 ZN GR5
9	S-7215	2	Nut Flanged Whizz 1/4-20 ZINC
10	056-2222-0	1	Valve:solenoid 1/2NPT 115V DIN
11	HF-7161	1	Chi-town Orifice Pipe: 9.00"
12	HF-7714	1	Orifice (1/2) Drilled 11/64"
13	HH-1077	1	Regulator 1/2" E-75
14	HH-1251	1	STRNR 1/2" Y 250# WOG SCH 80
15	HH-2029	3	1/2 x 1 1/2" NIPPLE SCH 40 BLK
16	S-3853	1	TEE 1/2 x 1/4 x 1/2 SCH 40 BLK
18	THH-4061	1	Nipple 1/2 x 3 1/2 SCH 40 BLK
19	THH-4071	2	Elbow 1/2" - 90 SCH 40 BLK
20	THH-4128 (N/S)	1	Nipple 1/2 x 2 SCH 40 BLK

NOTES

14. WARRANTY

THE GSI GROUP, INC. (GSI) WARRANTS ALL PRODUCTS WHICH IT MANUFACTURES TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF 12 MONTHS AFTER RETAIL SALE TO THE ORIGINAL END USER. THE PURCHASER'S SOLE REMEDY AND GSI'S ONLY OBLIGATION SHALL BE TO REPAIR OR REPLACE, AT GSI'S OPTION AND EXPENSE, PRODUCTS THAT, IN GSI'S SOLE JUDGMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP. ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM GSI'S FACTORY WILL BE PURCHASER'S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AN AUTHORIZED EMPLOYEE OF GSI SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

EXCEPT FOR THE LIMITED WARRANTY EXPRESSED ABOVE, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH (i) PRODUCT MANUFACTURED OR SOLD BY GSI OR (ii) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

GSI SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS. PURCHASER'S SOLE AND EXCLUSIVE REMEDY IS AS SET FORTH IN THE LIMITED WARRANTY EXPRESSED ABOVE, WHICH SHALL NOT EXCEED THE AMOUNT PAID FOR THE PRODUCT PURCHASED. THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER. GSI SHALL HAVE NO OBLIGATION OR RESPONSIBILITY FOR ANY REPRESENTATIONS OR WARRANTIES MADE BY OR ON BEHALF OF ANY DEALER, AGENT OR DISTRIBUTOR OF GSI.

GSI ASSUMES NO RESPONSIBILITY FOR CLAIMS RESULTING FROM ERECTION DEFECTS OR UNAUTHORIZED MODIFICATIONS TO PRODUCTS WHICH IT MANUFACTURED. MODIFICATIONS TO PRODUCTS NOT SPECIFICALLY DELINEATED IN THE MANUAL ACCOMPANYING THE EQUIPMENT AT INITIAL SALE WILL NULLIFY THE PRODUCT WARRANTY THAT MIGHT HAVE BEEN OTHERWISE AVAILABLE.

THE FOREGOING WARRANTY SHALL NOT EXTEND TO PRODUCTS OR PARTS WHICH HAVE BEEN DAMAGED BY NEGLIGENT USE, MISUSE, ALTERATION OR ACCIDENT. THIS WARRANTY EXTENDS SOLELY TO ONLY PRODUCTS MANUFACTURED BY GSI. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. GSI RESERVES THE RIGHT TO MAKE DESIGN OR SPECIFICATION CHANGES AT ANY TIME.

PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION OF PRODUCTS MANUFACTURED OR SOLD BY GSI.

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This Equipment Shall Be Installed In Accordance With The Current Installation Codes And Applicable Regulations Which Should Be Carefully Followed In All Cases. Authorities Having Jurisdiction Should Be Consulted Before Installation Occurs.

G S I G R O U P



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