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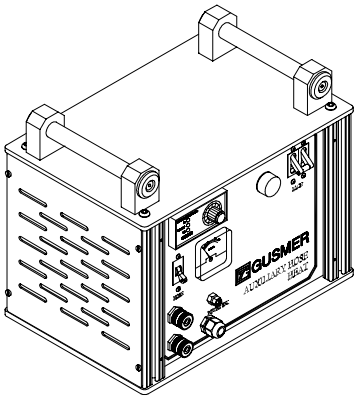
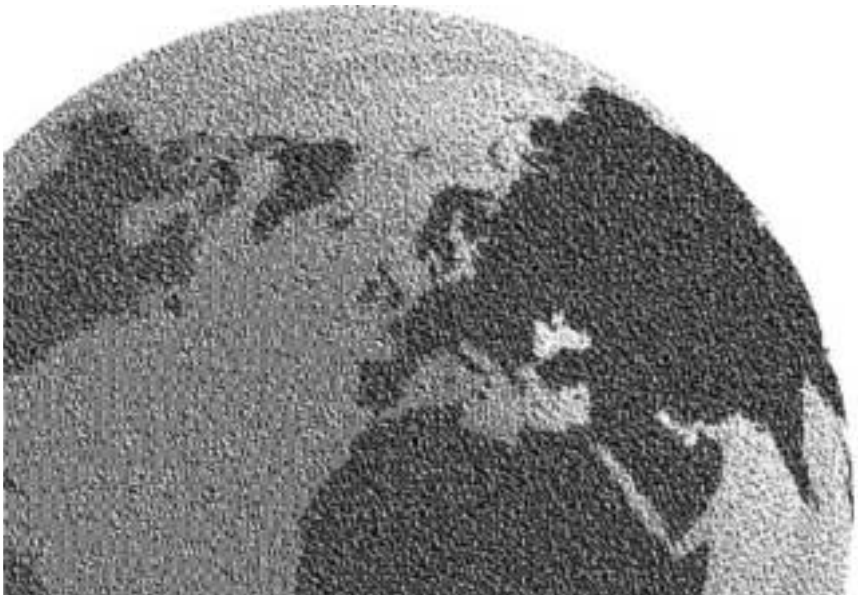


Auxiliary Hose Heat

Instructions and Parts Identification Manual OP15192-INST



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Issue 2

GUSMER CORPORATION ®

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NOTICE: *This manual contains important information for your GUSMER equipment. Read and retain for future reference.*

***NOTICE**: The equipment described in this technical manual must only be operated or serviced by properly trained individuals, thoroughly familiar with the operating instructions and limitations of the equipment. For technical service, call your local distributor. Call: 1-800-FOR-GSMR (1-800-367-4767) for the name and telephone number of your local distributor.*

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WARRANTY

Gusmer Corporation (Gusmer) provides a limited warranty to the original purchaser (Customer) of Gusmer manufactured parts and equipment (Product) against any defects in material or workmanship for a period of one year from the date of shipment from Gusmer facilities.

In the event Product is suspected to be defective in material or workmanship, it must be returned to Gusmer, freight prepaid. If Product is found to be defective in material or workmanship, as determined solely by Gusmer, Gusmer will issue full credit to Customer for the freight charges incurred in returning the defective Product, and either credit will be issued for the replacement cost of the Product or a replacement part will be forwarded no-charge, freight prepaid to Customer.

This warranty shall not apply to Product Gusmer finds to be defective resulting from: installation, use, maintenance, or procedures not accomplished in accordance with our instructions; normal wear; accident; negligence; alterations not authorized in writing by Gusmer; use of "look alike" parts not manufactured or supplied by Gusmer; or Product used in conjunction with any other manufacturer's pumping or proportioning equipment. Further, the terms and conditions of this warranty shall not apply to services or repairs made to Product by any third party not authorized in writing by Gusmer. For such Product, a written estimate will be submitted to Customer at a nominal service charge, itemizing the cost for repair. Disposition of Product will be done in accordance with the terms stated on the written estimate.

The warranty provisions applied to product that are not manufactured by Gusmer will be solely in accordance with the warranty provided by the original manufacturer of the product.

GUSMER MAKES NO WARRANTY WHATSOEVER AS TO THE MERCHANTABILITY OF, OR SUITABILITY FOR, ITS PRODUCT TO PERFORM ANY PARTICULAR PURPOSE. CREDIT FOR, OR REPLACEMENT OF, PRODUCT DEFECTIVE IN MATERIAL OR WORKMANSHIP SHALL CONSTITUTE COMPLETE FULFILLMENT OF GUSMER OBLIGATIONS TO CUSTOMER. NO OTHER WARRANTY, EXPRESSED OR IMPLIED ON ANY PRODUCT IT MANUFACTURES AND/OR SELLS, WILL BE RECOGNIZED BY GUSMER UNLESS SAID WARRANTY IS IN WRITING AND APPROVED BY AN OFFICER OF GUSMER.

Under no circumstances shall Gusmer be liable for loss of prospective or speculative profits, or special indirect, incidental or consequential damages. Further, Gusmer shall have no liability for any expenses including, but not limited to personal injury or property damage resulting from failure of performance of the product, use of the product, or application of the material dispensed through the product. Any information provided by Gusmer that is based on data received from a third source, or that pertains to product not manufactured by Gusmer, while believed to be accurate and reliable, is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Gusmer through the sale, lease, or rental of Product in no way expresses or implies a license for the use of, nor encourages the infringement of any patents or licenses.

To insure proper validation of your warranty, please complete the warranty card and return it to Gusmer within two weeks of receipt of equipment.

Revised 11/12/98

GENERAL SAFETY INFORMATION

It is necessary to understand and follow the instructions in this manual to insure proper and safe operation of the equipment.

As with most mechanical equipment, certain safety precautions must be taken when the equipment discussed in this manual is operated or serviced. Severe bodily injury or damage to equipment and property may result if the instructions and precautions listed throughout this manual are not followed.

Needless to say, sufficient guidelines cannot be developed to eliminate the need for good common sense in the use and servicing of this equipment, and in the use and application of the products, this equipment has been designed to process. Users of this equipment must therefore, make their own determination as to the suitability of the information contained in this manual to their specific operation and requirements. There should be no assumption made that the safety measures and instructions contained herein are all-inclusive, and that other safety measures may not be required for specific use or application.

The following safety guidelines are generally applicable to the safe and efficient use of the equipment.

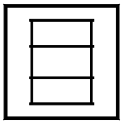
Acceptable Equipment Uses

The equipment is designed for the dispensing of polyurethane foams, two-component coating systems, and some two-component epoxy systems, specifically polyureas. Under no circumstances should any acid or corrosive chemicals be used in the unit. Consult GUSMER if there is any doubt about the compatibility of the chemical system to be used in this equipment.

Any use of this equipment other than as indicated above constitutes misuse unless express written approval is obtained from GUSMER.

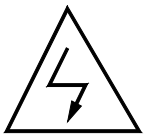
Operational Safety Procedures

This safety information will not be repeated in the text of this manual. The symbols pertaining to this information will appear where appropriate to alert the operator to potential hazards.



Solvents and Chemicals

WARNING: *THE SOVENTS AND CHEMICAL USED WITH THIS EQUIPMENT EXPOSE THE OPERATOR TO CERTAIN HAZARDS. ADEQUATE PERSONAL PROTECTIVE MEASURES MUST BETAKEN SO AS TO AVOID EXCEEDING THE THRESHOLD LIMIT VALUE (TLV) OF THE PRODUCTS BEING USED, AS ESTABLISHED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) OR OTHER QUALIFIED AGENCY. INFORMATION CONCERNING PERSONAL PROTECTION AND PROPER HANDLING FROM THE SUPPLIER OF SUCH CHEMICALS.*

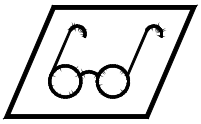


High Voltage

WARNING: *TO PREVENT SERIOUS BODILY INJURY FROM ELECTRICAL SHOCK, NEVER OPEN THE ELECTRIC CONSOLES OR OTHERWISE SERVICE THIS EQUIPMENT AND/OR EQUIPMENT USED WITH IT BEFORE SWITCHING OFF THE MAIN POWER DISCONNECT AND INTERRUPTING SUPPLY VOLTAGE AT THE SOURCE. THE ELECTRICAL SERVICE MUST BE INSTALLED AND MAINTAINED BY A QUALIFIED ELECTRICIAN.*

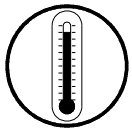
High Pressure

WARNING: *THIS EQUIPMENT HAS OR IS USED WITH EQUIPMENT THAT HAS HYDRAULIC COMPONENTS CAPABLE OF PRODUCING UP TO 3500 PSI. TO AVOID SERIOUS BODILY INJURY FROM HYDRAULIC INJECTION OF FLUID, NEVER OPEN ANY HYDRAULIC CONNECTIONS OR SERVICE HYDRAULIC COMPONENTS WITHOUT BLEEDING ALL PRESSURES TO ZERO.*



Personal Protective Equipment

WARNING: *TO AVOID SERIOUS BODILY INJURY, PROPER PROTECTIVE GEAR MUST BE WORN WHEN OPERATING, SERVICING, OR BEING PRESENT IN THE OPERATIONAL ZONE OF THIS EQUIPMENT. THIS INCLUDES, BUT IS NOT LIMITED TO, EYE AND FACE PROTECTION, GLOVES, SAFETY SHOES, AND RESPIRATORY EQUIPMENT AS REQUIRED.*



High Temperature

WARNING: *THIS EQUIPMENT HAS OR IS USED WITH EQUIPMENT THAT HAS HIGH TEMPERATURE COMPONENTS SUCH AS PRIMARY HEATERS AND HEATED HOSES. TO PREVENT SERIOUS BODILY INJURY FROM HOT FLUID OR HOT METAL, NEVER ATTEMPT TO SERVICE THE EQUIPMENT BEFORE ALLOWING IT TO COOL.*

Warning

WARNING*: FAILURE TO READ AND FOLLOW THIS SAFETY INFORMATION MAY RESULT IN PERSONAL INJURY AND/OR DAMAGE TO THE EQUIPMENT FROM ONE OR MORE OF THE ABOVE LISTED HAZARDS*

DESCRIPTION

General Description

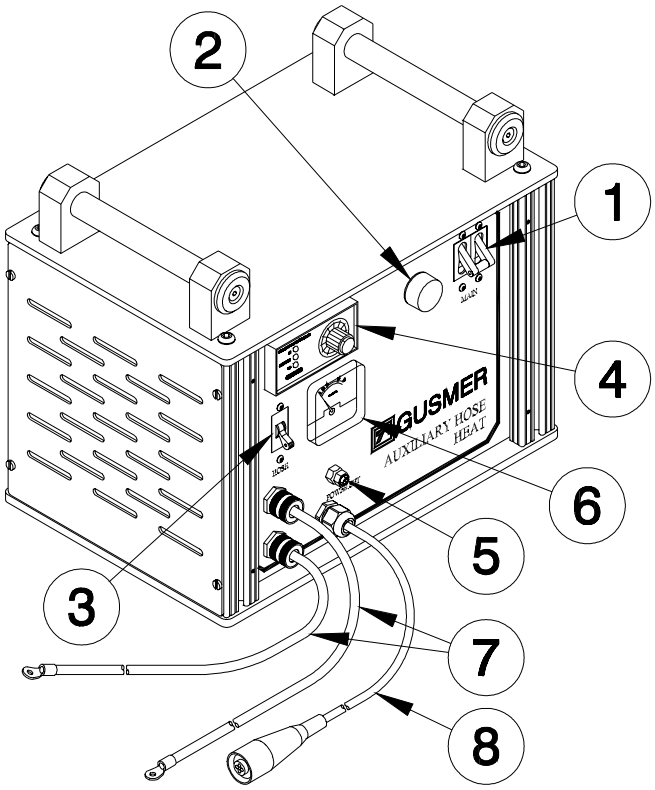


Figure 1 Main Components

1.	**MAIN CIRCUIT BREAKER**	Controls and protects power to all circuits; must be ON for any function of the system to operate.
2.	**PILOT LIGHT (Green)**	Indicates when the hose heater circuit breaker is on.
3.	**HOSE HEATER CIRCUIT BREAKER**	Protects hose heater circuit; must be ON for the hose heater to operate.
4.	**HOSE HEATER CONTROLLER**	Controls the temperature of the liquid maintained by the Hose Heater. Set control selector (dual scale) to the desired temperature. From this point, the temperature control is completely automatic.
	Green Controller Light	Indicates when lighted that the temperature of the hose heater is within +/- 5° F of dial set point.
	Amber Controller Light	Indicates when lighted that the temperature of the hose heater is more than +/- 5° F cooler than dial set point.
	Red Controller Light	Indicates when lighted that the temperature of the hose heater is more than 5°F warmer than dial set point.

5.	**POWER SET**	Controls the amount of power delivered to the hose heater.
6.	**HOSE HEATER AMMETER**	Indicates the amperage delivered to the hose heater.
7.	**HOSE HEAT POWER LEADS**	Provides Power to the hose heater.
8.	**TSU HARNESS**	Enables the Auxiliary Hose Heat Package to control the temperature of the hoses in conjunction with the Temperature Sensing Unit.

Specifications

ELECTRICAL:	220V, Single Phase, 50/60 Hz, 12 FLA
WEIGHT:	80 pounds (36 Kilograms)
DIMENSIONS:	Height: 13 Inches (33 Centimeters) Width: 16 Inches (41 Centimeters) Depth: 11 Inches (28 Centimeters)
MOBILITY:	Two (2) Handles

Equipment Supplied

1. Roll of Electrical Tape (1)

2. 9/16-18 Jic Electrical Fitting (1)

3. 1/2-20 Jic Electrical Fitting (1)

4. Air Hose (1)

5. Temperature Sensing Unit (1)

6. Electrical Isolator (1)

7. R - Isolation Hose (1)

8. A - Isolation Hose (1)

9. Isolation Wire Assembly (1)

10. Auxiliary Hose Heat Instructions and Parts ID (1)

INITIAL MACHINE SET-UP

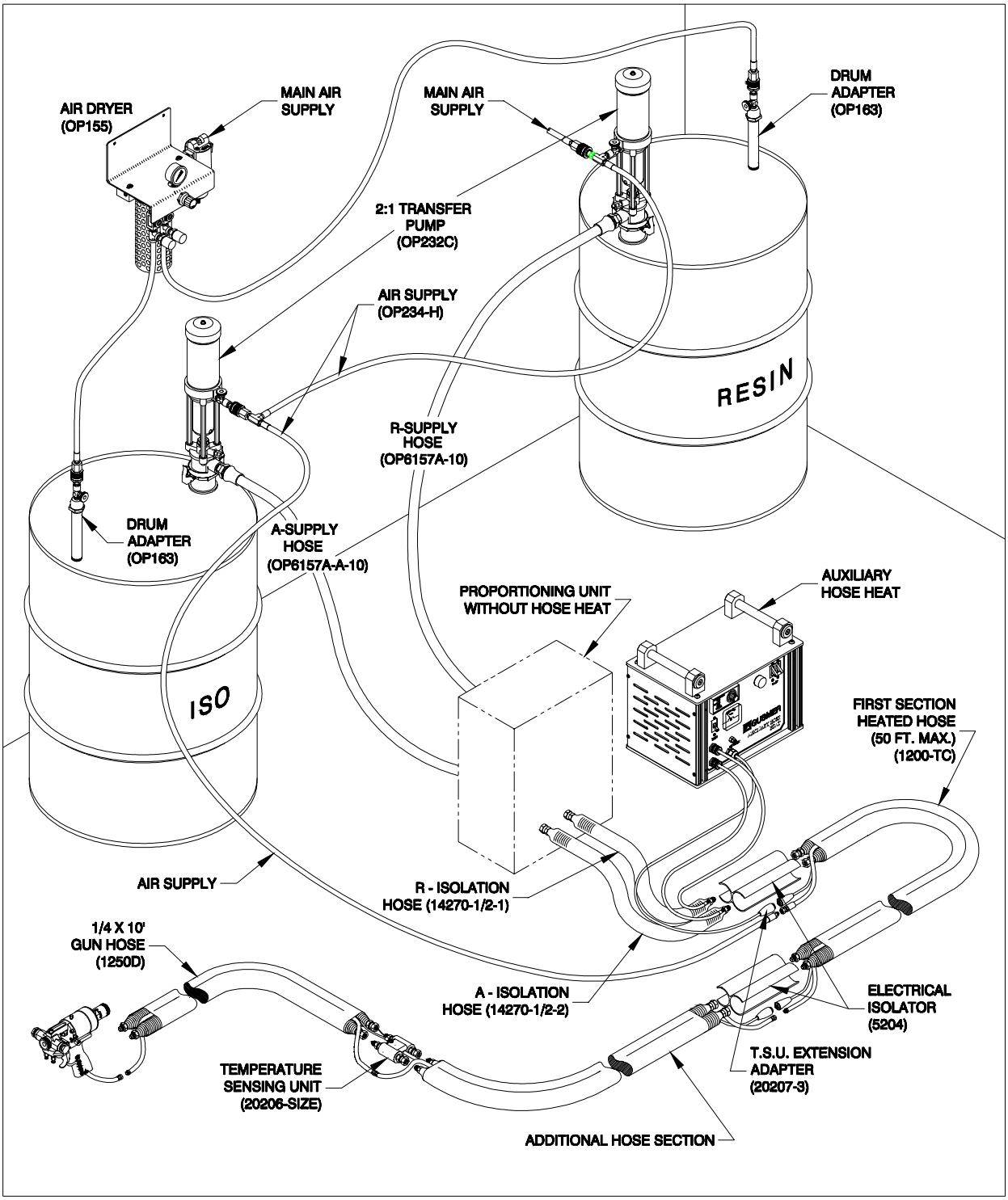


Figure 2 Typical Installation for Proportionimg Units Requiring Hose Heat

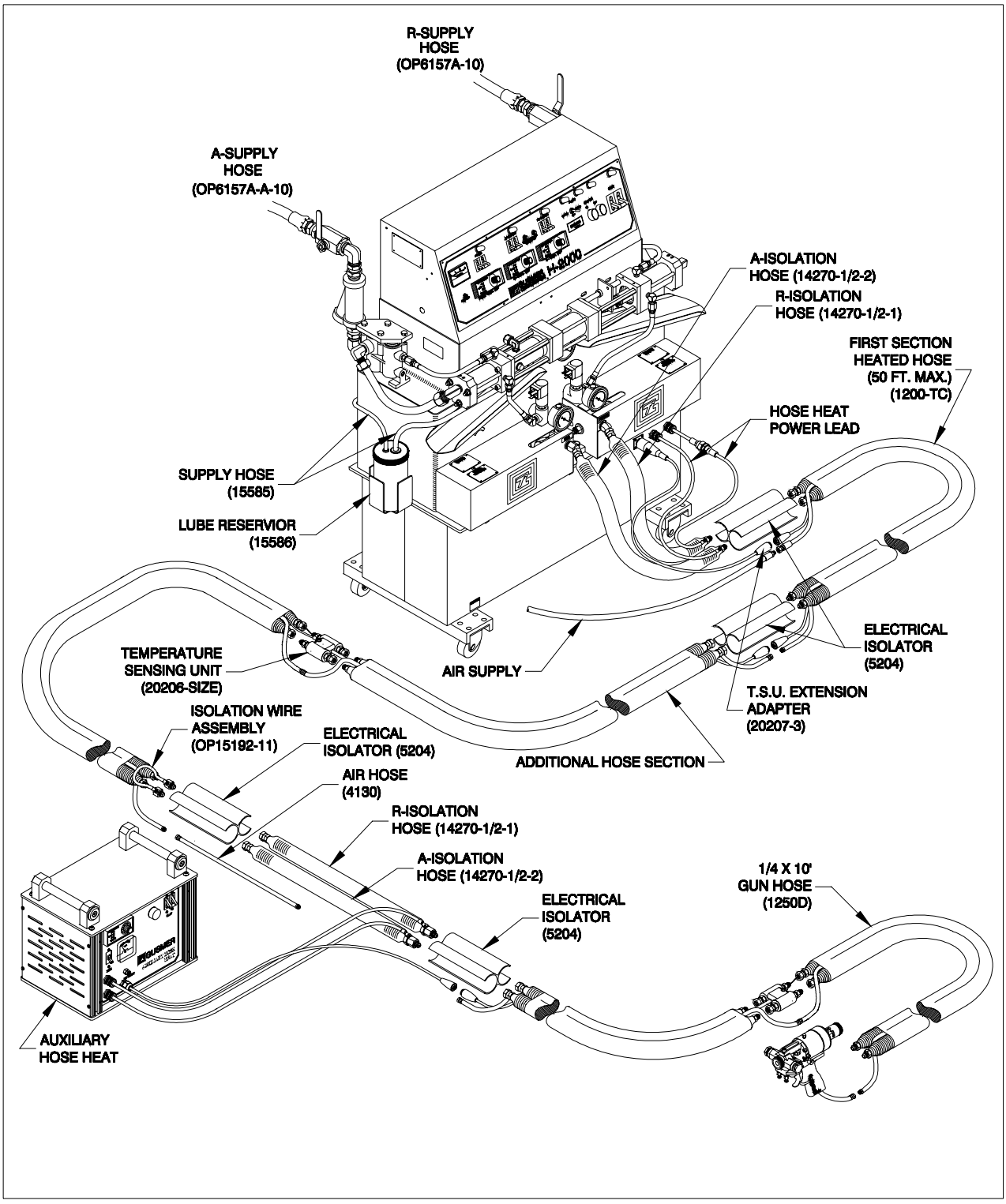


Figure 3 Typical Installation for Extending Heated Hose Length

WARNING: *PROPER PROTECTIVE GEAR MUST BE WORN WHEN SERVICING OR OPERATING THIS EQUIPMENT, WHICH INCLUDES BUT IS NOT LIMITED TO GLOVES, EYE PROTECTION, AND RESPIRATORY PROTECTION AS REQUIRED.*

Initial Setup Procedure for Non-Gusmer Heated Units Requiring Hose Heat

WARNING: *THE ELECTRIC SERVICE MUST BE DONE BY A QUALIFIED ELECTRICIAN.*

NOTE:
The power source must be capable of meeting the electrical requirements specified on the nameplate of the proportioning unit and an accessible quick disconnect provided.

1. Connect a main power cord and strain relief (not supplied) to the electric console. A 1 1/8-diameter hole for the strain relief is located on the rear panel. Open the electric control console. Feed the power cord through the strain relief.

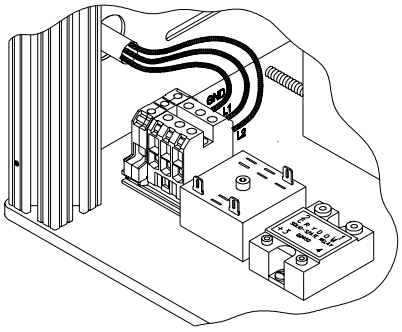


Figure 4. Power Cord Strain Relief

2. Connect the isolation hoses to their respective proportioning pumps.
(Refer to Figure 2)

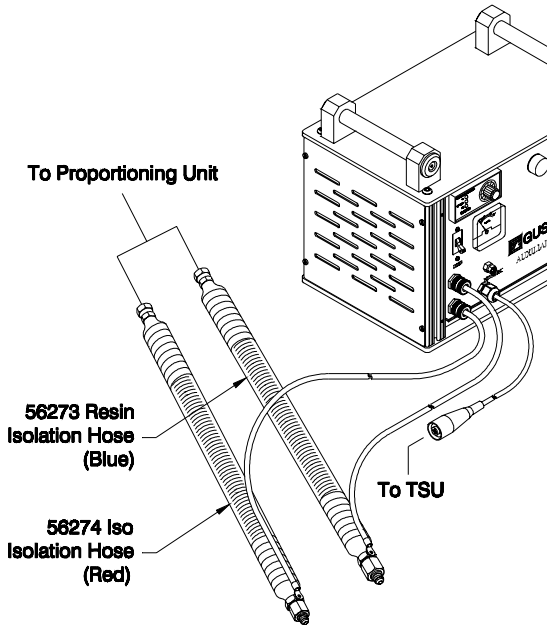


Figure 5. Isolation Hoses

Important: *Every precaution has been taken to prevent the inadvertent connection of a hose to the wrong chemical source. The Resin hoses are color-coded blue and the Isocyanate hoses are color coded red for easy identification. In addition, the Resin and Isocyanate hose fittings thread sizes are different, making it virtually impossible to improperly connect the hoses. The Resin thread is 9/16-18, whereas the Isocyanate thread is ½-20. Connect the hose heater wire leads to each isolation hose. Take care to make the connection tight. It is recommended that electrical tape be applied to the connection to prevent loosening from vibration*

NOTE:
The hoses are connected end to end during shipment to protect them from moisture intrusion. Do not separate the hoses until they are ready to couple to the proportioning unit.

3. Connect the heated hose assemblies.

Important: *The importance of making proper hose connections cannot be overly emphasized. The connection points are a potential source of chemical and air leaks and are the points, most exposed to damage from scuffing and snagging on abrasive surfaces. A liberal amount of duct tape can be used in this area to make the bundle as compact as possible. Gusmer strongly recommends installing the optional scuff jacket to protect the hose insulation and TSU extension from damage. A proper hose connection is shown in sequence on the following page*

The key areas of extra attention during installation are as follows:

a) DO NOT interchange the hoses: Resin hoses are color coded BLUE, Isocyanate hoses are color coded RED.

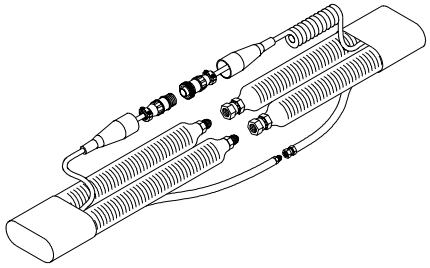


Figure 6. Hose Connection Step (a)

b) To assure a leak proof chemical connections, take care not to cross thread the fitting and DO NOT over-tighten.

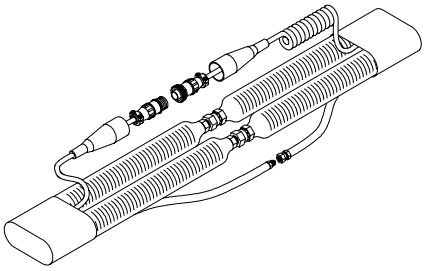


Figure 7. Hose Connection Step (b)

c) Tape the electrical isolator securely in place between the hydraulic fittings: failure to do so will cause a short circuit in the hose heating system.

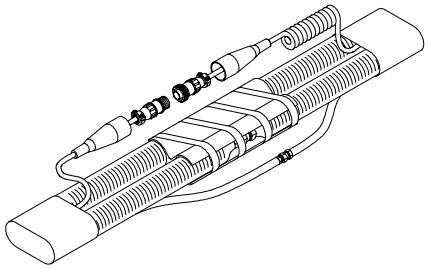


Figure 8. Hose Connection Step (c)

d) To assure a secure electrical connection: place the protective electrical isolator boot over each plug and tape together.

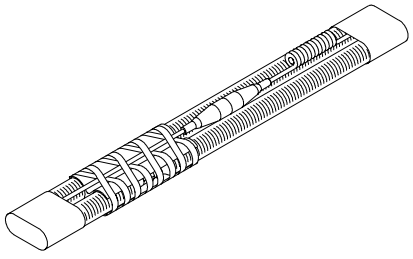


Figure 9. Hose Connection Step (d)

***** Repeat Step 7 for adding additional hoses. *****

4. Install the Temperature Sensing Unit (TSU) into the gun hose. Pull out and carefully straighten the LOOSE END of the temperature probe from the TSU. Insert the temperature probe into the Isocyanate hose. Connect the ground wire on the gun hose to the ground lug on the TSU. Attach the TSU connector to the hose connector.

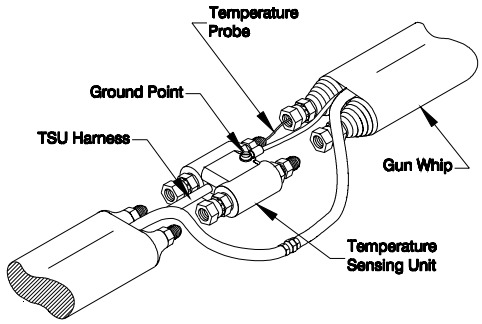


Figure 10. Temperature Sensing Unit

WARNING: *THE TEMPERATURE SENSOR EXTENDS APPROXIMATELY 8 INCHES INTO THE ISOCYANATE HOSE AND ALTHOUGH IT IS A RUGGEDLY BUILT ASSEMBLY, IT WILL NOT WITHSTAND REPEATED ABUSE. CARE MUST BE TAKEN NOT TO CRUSH THE HOSE OR SUBJECT IT TO SEVERE BENDING IN THE AREA WHERE THE SENSOR IS LOCATED. TAKE CARE NOT TO COIL THE HOSE TIGHTER THAN THE RECOMMENDED 3 FT. MINIMUM BEND RADIUS.*

5. Connect the TSU cable on the Auxiliary Hose Heat to the TSU Cable Harness on the Hoses.
6. Connect the main air source to the heated hose.

Important: *During the initial start-up, check all fittings for signs of hydraulic and chemical leakage. Tighten as required.*

7. Finish preparing the dispensing unit and purge air from the chemical hoses. (Refer to proportioning unit manual)
8. Properly ground all equipment.
9. Adjust transformer tap settings. (See Figure 11)

NOTE:
These procedures are not required on a daily basis but may need to be executed if the hose length changes.

The hose heater transformer tap settings must match the length of hose being controlled. Therefore, this procedure will have to be executed during the initial installation and when changing the hose length, according to Figure 11.

a) Remove power from the Auxiliary Hose Heat Unit.

b) Change transformer tap setting per the diagram shown in Figure 11, which is located on the transformer.

WARNING: CONNECT TO APROPRIATE POWER SOURCE.

c) Loosen the shaft lock on the hose heater power set control and adjust to zero (full counter-clockwise).

d) Switch ON both the main and hose heater circuit breakers. The white and amber pilot lights respectively should be on. The hose heater ammeter should be zero.

NOTE:
As the hose heater warms-up, the amperage will drop slightly and not need readjusting.

e) Adjust the hose temperature controller for 150°F. The amber pilot light, on the hose heater controller, should be on.

NOTE:
The default tap setting for the transformer is 10V

f) Adjust the power set control (clockwise) to less than 50 Amps. Tighten the shaft lock nut, as no further adjustments to this control will be required. Reset the temperature controller to the desired temperature setting.

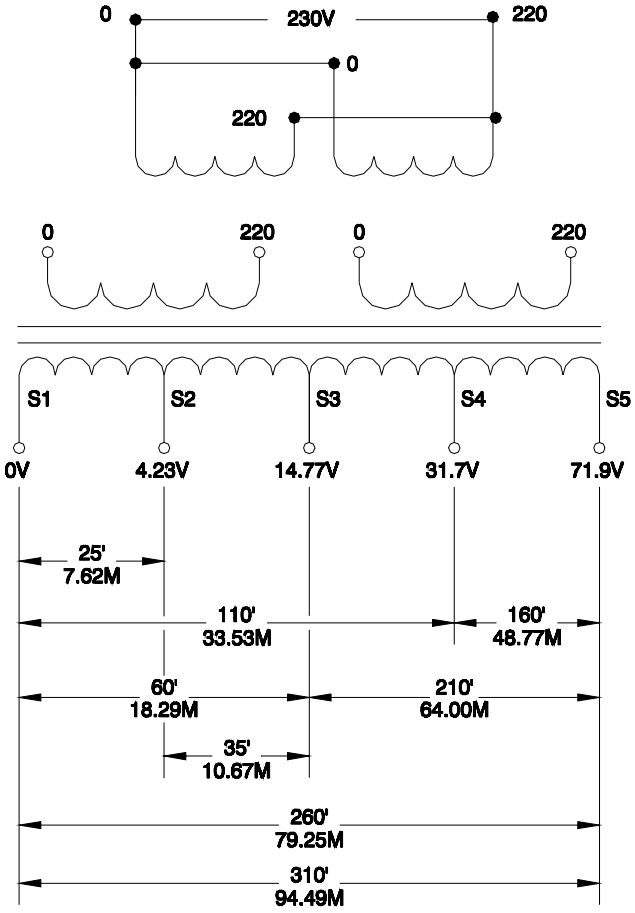


Figure 11. Transformer Tap Settings

TABLE 1. TRANSFORMER TAP SETTINGS

Hose Length (ft)	Setting	Voltage
-	S1-S2	4.23
35	S2-S3	10.54
60	S1-S3	14.77
-	S3-S4	16.93
-	S2-S4	27.47
110	S1-S4	31.7
160	S4-S5	40.2
210	S3-S5	57.13
-	S2-S5	67.67
260 & above	S1-S5	71.9

Initial Setup Procedure for Extending Heated Hose Lengths

1. Refer to step 1 on page 12.

2. Disconnect the Gun Hose and TSU. Place the TSU in the fifty (50) foot hose section prior to where the TSU was originally.

Note:
The TSU harness in the last hose assembly will not be connected to any other harness.

3. Attach appropriate electrical fittings and isolation hoses to the last heated hose section mentioned in step two (2).

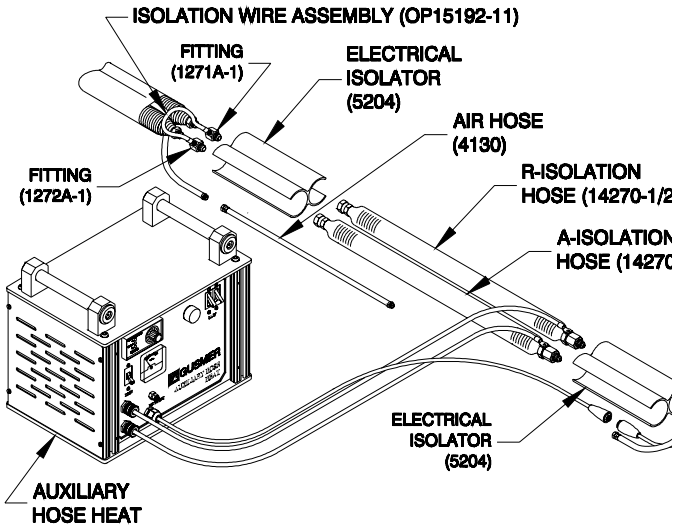


Figure 12 Extended Hose Installation

4. Refer to step 3 on page 13 to connect additional hoses and complete setup.

OPERATION

Daily Startup Procedures

NOTE:
The daily start-up procedures will describe normal operation and will assume that all calibrations have been properly executed and that the heating system is NOT up to required temperatures

1. Verify Proportioning Unit is in good operating condition.
2. Determine that the supply system is at the proper temperature as recommended by the system supplier, the individual chemicals are properly mixed within their drums, and the moisture protection system is properly set for operation.

NOTE:
To prevent excessive pressure buildup in the heated hose, always bring the hose up to temperature before the system is turned on. The green pilot light, on the hose heater controller, will indicate that the liquid in the hose is up to temperature

3. Switch ON Main Circuit Breaker, the Hose Heater Circuit Breaker and set the temperature controller as required.

   The green pilot light should be on as well as the amber controller light.

4. When the liquid in the hose reaches the temperature selected, the green controller light will light and the ammeter will begin to cycle.

NOTE:
Primary heating is virtually instantaneous therefore, do not turn on the primary heaters until required for operation. It is also a good practice to turn off the primary heaters during shutdowns exceeding one half hour

5. Switch on the Primary Heaters if utilized and set the temperature controllers as required.

   The amber pilot light should be on as well as the amber controller lights.

NOTE:
The pump switch must be in the RETRACT or NORMAL position to adjust the hydraulic pressure

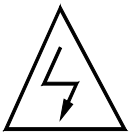
6. Switch on the Proportioning Unit.
7. Once the chemical pressures and temperature are at required values, the system is ready to dispense.

Daily Shutdown Procedures

1. Follow shutdown procedures in the appropriate proportioning unit manual.
2. Switch OFF the Hose Heater Breaker.
3. Switch OFF the main circuit breaker.
4. Close both Inlet Supply Valves.
5. SUPPLY - shut down the supply system as required.
6. GUN - shut down and service the gun as stated in the gun service manual.

TROUBLESHOOTING

Troubleshooting Procedures



WARNING: *BEFORE PERFORMING THESE TROUBLESHOOTING PROCEDURES, DETERMINE THAT ALL CIRCUIT BREAKERS ARE OFF AND THE MAIN POWER IS DISCONNECTED AT THE SOURCE TO AVOID SEVERE BODILY INJURY FROM ELECTRIC SHOCK. DO NOT ENTER THE ELECTRIC CONSOLE WITH POWER ON.*

Try the recommended solutions in the order given for each problem to avoid unnecessary repairs. Also, determine that all circuit breakers, switches, and controls are properly set before assuming there is a problem.

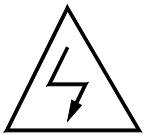
Problems	**Solutions**
Hose warms but does not reach temperature or takes too long to reach temperature.	1, 2, 9
Hose does not heat; amber light on the Hose Heater Controller is ON.	2, 3, 7, 5
Hose does not heat; red light on the Hose Heater Controller is ON.	6
Hose does not cycle automatically; red light on the Hose Heater Controller is ON.	4
Hose heat circuit breaker trips.	2
Hose temperature not maintained during flow.	2, 8, 9
Hose or hoses adjacent to the unit are warm-hoses downstream are cold.	10

SOLUTIONS

1. HOSE LENGTH - The Auxiliary Hose Heater operates with up to 310 feet of hose. At 310 feet, the hose temperature should rise approximately 120° F in 40 minutes. Hose lengths in excess of 310 feet will reduce this capability.

2. HOSE HEATER POWER SET - Adjust the power set to achieve amperage up to 50 Amps. If required, remove power from system, adjust transformer tap setting and readjust power set for up to 50 Amps.

3. HOSE HEAT FUSE – With power OFF, remove the inline fuse and check continuity. Replace fuse if needed.



WARNING: *THE ELECTRICAL SERVICE MUST BE INSTALLED AND MAINTAINED BY A QUALIFIED ELECTRICIAN.*

4. HOSE HEAT SOLID STATE RELAY (SSR)-**Important:** For the SSR to operate properly the heat generated must be passed off to the bottom panel. Always allow for as much air circulation as possible since the effectiveness of the heat sink is dependent upon unobstructed airflow. With power OFF, remove the lead from terminal #1 on the SSR. Check for continuity across terminals #1 and #2. If continuity is present, then the SSR is shorted closed and must be replaced

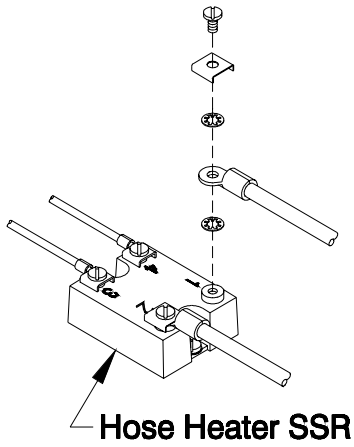


Figure 13. Solid State Relay

5. HOSE HEATING ELEMENT-first check to see that the screw terminals on the isolation hoses are secure. If these connections are secure, then, with the power OFF, check for continuity across terminals #1 and #2 on the hose heater SSR. If continuity is not present, make a systematic search for the failed hose or connection.

6. TEMPERATURE SENSOR-two conditions must be satisfied for proper operation: the sensor must be functional and the signal must travel uninterrupted from the sensor to the control unit. Unplug the TSU extension in the hose. Without undoing any hydraulic connections, transport the gun hose to the proportioning unit and plug the TSU directly into the 3-foot TSU extension harness at the hose connection. If control is not restored, change the TSU. If control is restored, make a systematic check of the TSU extension harness.

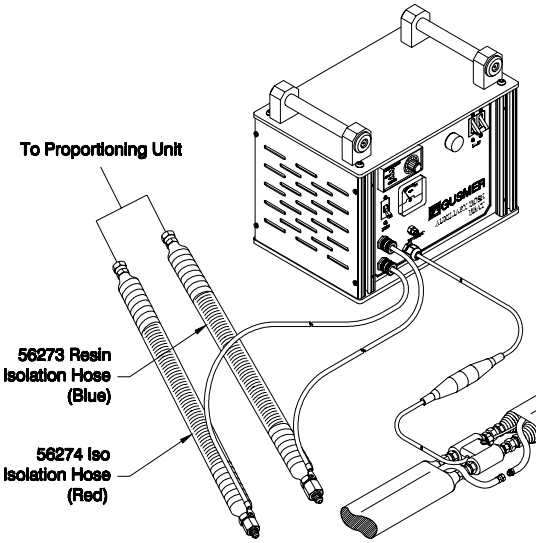


Figure 14. TSU Connection

WARNING: *THE TEMPERATURE MUST BE CLOSELY MONITORED DURING MANUAL CONTROL OF THE HOSE HEAT SYSTEM AS THE HOSE CAN OVERHEAT AND CAUSE SERIOUS DAMAGE TO PROPERTY AND PERSONEL.* ***HOSE TEMPERATURE, AS INDICATED BY A PROPOERLY INSTALLED HOSE THERMOMETER, CAN NOT EXCEED 170 ºF (76 ºC).***

7. MANUAL HOSE HEAT CONTROL: - The automatic hose heating system can be bypassed to allow manual control of the hose heater. This feature allows for continued operation of the hose heating system in case of signal or SSR failure. To convert to manual control, proceed as follows:

   a) With power OFF, remove the terminal jumper strip conveniently located on the Left side panel and install it across terminals #1 and #2 on the hose heat SSR.

   b) Maintaining hose temperature now requires manual adjustment of the hose heater power set. Adjust the control to maximum (clockwise) for initial warm up and then adjust as required to maintain the hose temperature.

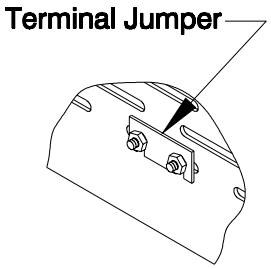


Figure 15. Terminal Jumper Strip

WARNING: *THE TERMINAL JUMPER MUST NEVER BE USED ON EITHER PRIMARY HEATER SSR. THIS WILL RESULT IN COMPLETE LOSS OF CONTROL AND CAUSE DAMAGE TO THE EQUIPMENT OR SERIOUS BODILY INJURY.*

8. The purpose of the hose heater is not to add heat but rather to maintain the temperature developed by the primary heater. If conditions indicate that the hose heater is not maintaining temperature during flow (Amber Hose Heat Controller light on the console stays lit continuously), check that the primary heater and hose heater controllers are set for the same temperature or reduce the output.
9. The hose heater transformer operates at 220 Volts. Low line voltage will significantly reduce power available and the heater will not perform to its full capability
10. When checking for improper electrical isolation, remember that the electrical connection of the low voltage hoses is in series, and that the hose fittings make the electrical connection between hoses. Thus, If the Resin fittings contact the Isocyanate fittings, all hoses from the point of contact out to the gun will be “cold” while those hoses back to the proportioning unit will be heated. This can occur if there was no electrical isolator installed between them, or if the isolator has slipped out of position. If this occurs, it is a matter of finding where the fittings are in contact and isolating them.

ASSEMBLIES

Auxiliary Hose Heat Assembly

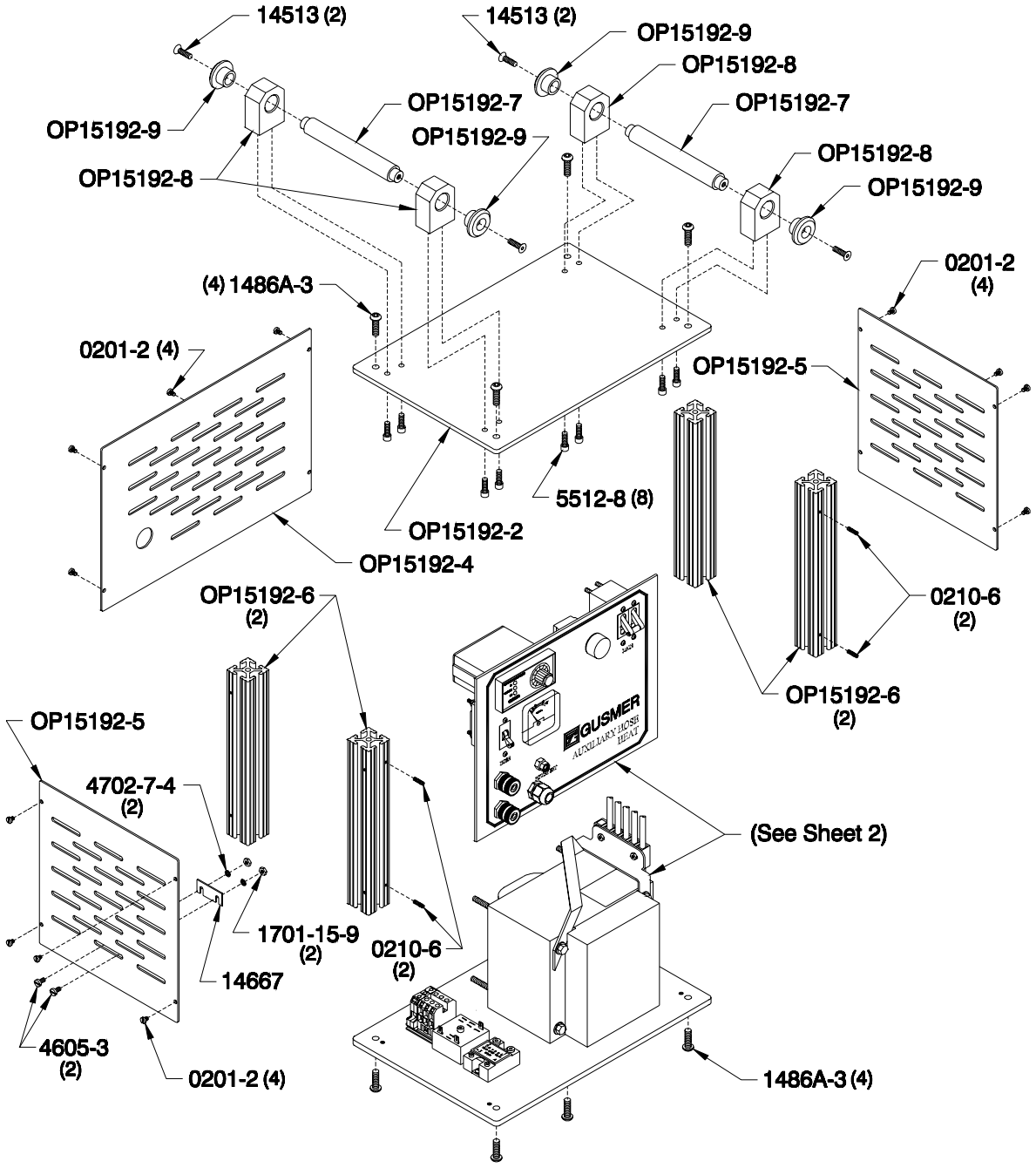


Figure 16. Auxiliary Hose Heat Assembly, (Part No. OP15192) Sht 1 of 2

TABLE 2. AUXILIARY HOSE HEAT ASSEMBLY, (PART NO. OP15192) SHT 1 OF 2, PARTS

Part Number	Description	Quantity
0201-2	Button Head Cap Screw	12
0210-6	Socket Head Set Screw	4
1486A-3	Button Head Cap Screw	8
1701-15-9	Hex Nut	2
1702-7-4	Internal Lockwasher	2
4605-3	Pan Head Machine Screw	2
5512-8	Socket Head Cap Screw	8
14513	Flat Head Cap Screw	4
14667	Terminal Jumper	1
OP15192-2	Top Panel	1
OP15192-4	Rear Panel	1
OP15192-5	Side Panel	2
OP15192-6	Structural Corner	4
OP15192-7	Handle	2
OP15192-8	Clevis	4
OP15192-9	Cap	4

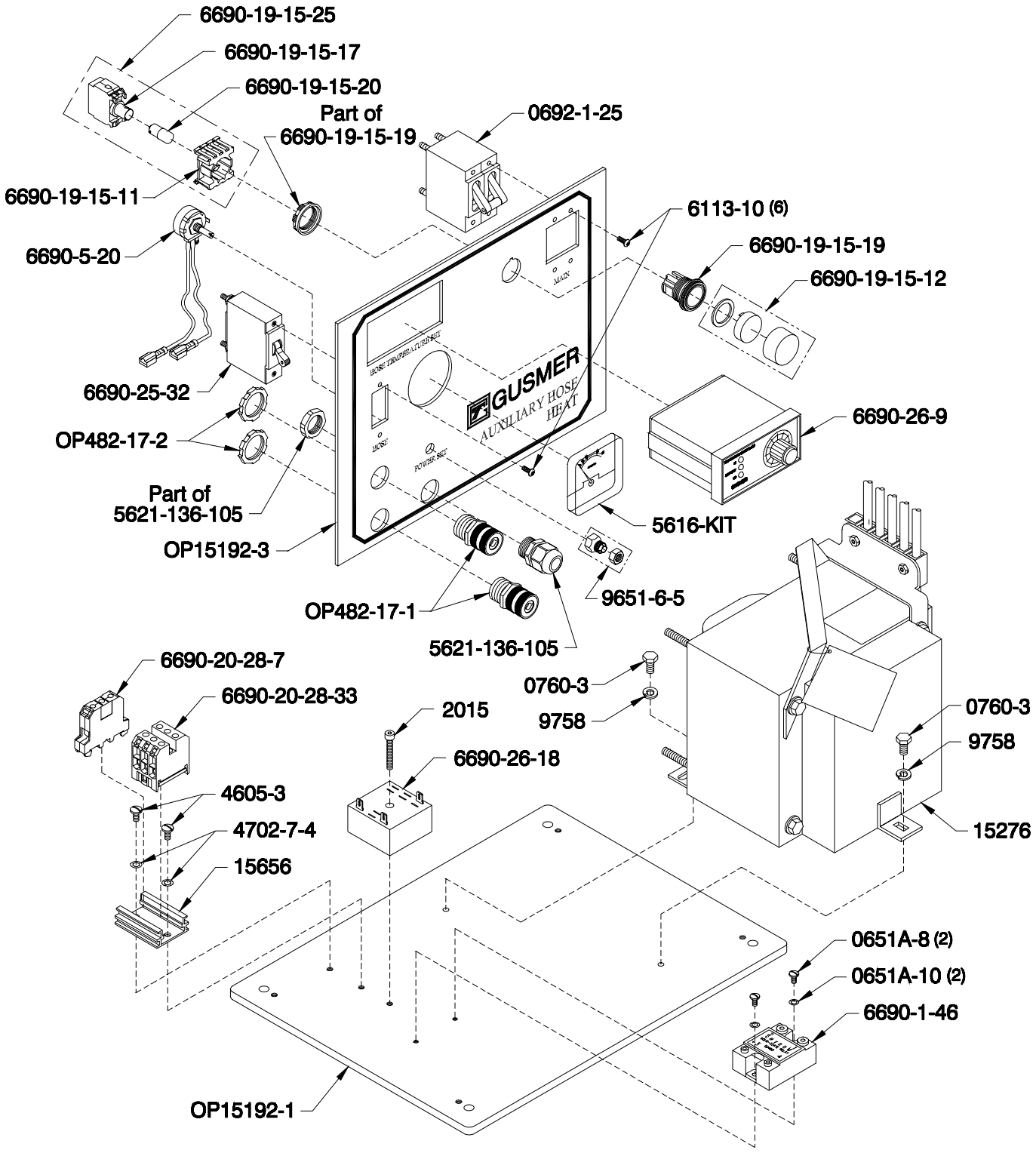


Figure 17. Auxiliary Hose Heat Assembly, (Part No. OP15192) Sht 2 of 2

TABLE 3. AUXILIARY HOSE HEAT ASSEMBLY, (PART NO. OP15192) SHT 2 OF 2, PARTS

Part Number	Description	Quantity
0651A-10	Lockwasher	2
0651A-8	Pan Head Machine Screw	2
0692-1-25	25 Amp Circuit Breaker	1
0760-3	Hex Head Cap Screw	2
2015	Socket Head Cap Screw	1
4605-3	Pan Head Machine Screw	2
4702-7-4	Internal Lockwasher	2
5616-KIT	5616 Replacement Kit	1
5621-136-105	Straight Connector	1
6113-10	Button Head Cap Screw	6
6690-1-46	Solid State Relay	1
6690-19-15-11	Mounting Latch	1
6690-19-15-12	Green Lens	1
6690-19-15-17	Light Base	1
6690-19-15-19	Pilot Light w/o Lens	1
6690-19-15-20	130V Incandescent Bulb	1
6690-19-15-25	240V Resistor Module (Includes -11, -17 & -20)	1
6690-20-28-33	Terminal Block	1
6690-20-28-7	Ground Block	1
6690-25-32	Circuit Breaker	1
6690-26-18	Phase Control	1
6690-26-9	Temperature Controller	1
6690-5-20	Potentiometer Assembly	1
9651-6-5	Shaft Lock	1
9758	Helical Lockwasher	2
15276	Transformer Assembly	1
15656	Mounting Track	1
OP15192-1	Bottom Plate	1
OP15192-3	Front Panel	1
OP482-17-1	Bushing	2
OP482-17-2	Locknut	2

ELECTRICAL SCHEMATICS

Electrical Schematic

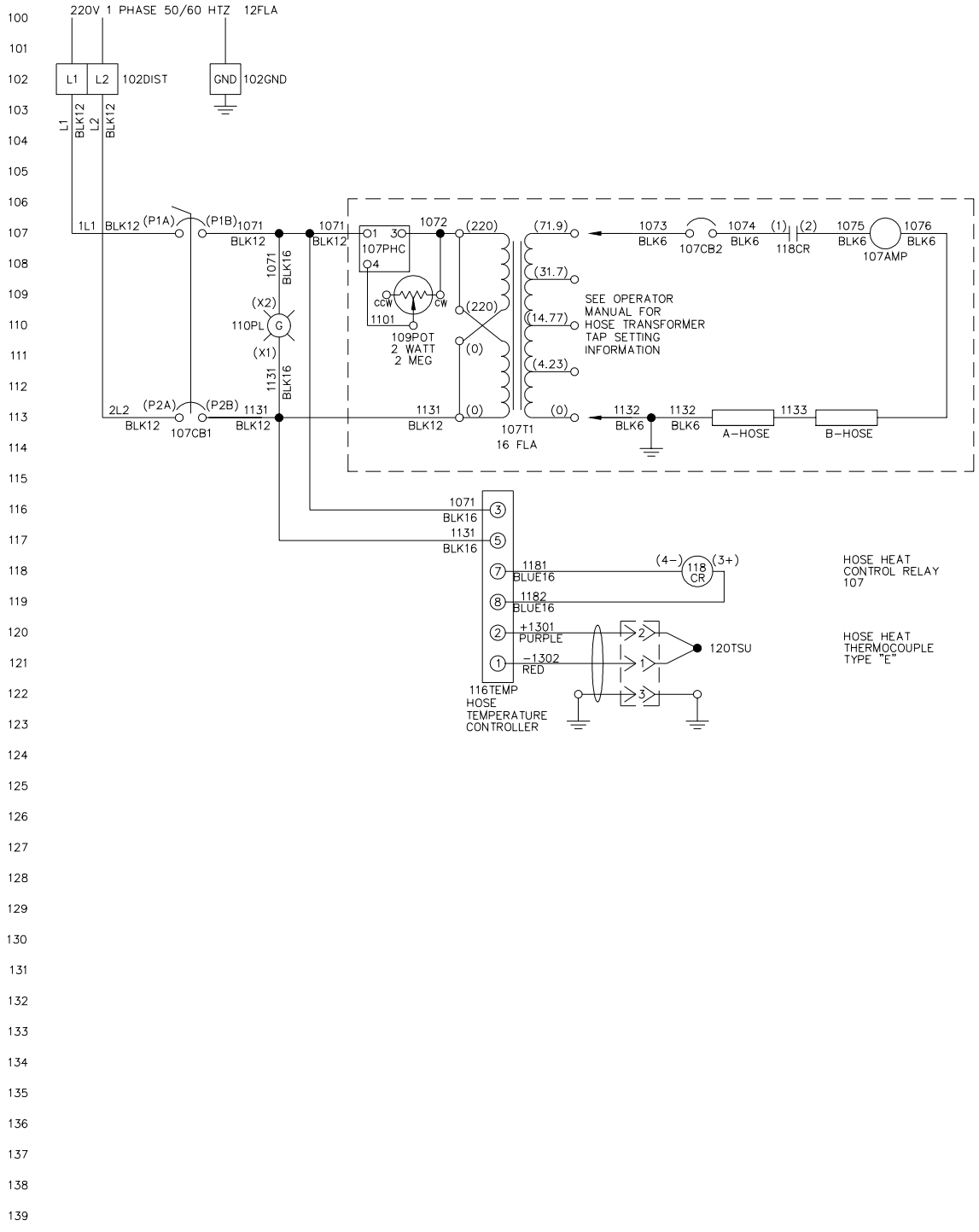


Figure 18. Auxiliary Hose Heat Electrical Schematic, (Part No. SDOP15192)

TABLE 4. AUXILIARY HOSE HEAT ELECTRICAL SCHEMATIC, (PART NO. SDOP15192), PARTS

Symbol	Part No.	Description	Quantity
102DIST	6690-20-28-33	Terminal Block	1
102GND	6690-20-28-7	Ground Block	1
107CB1	0692-1-25	25 Amp Circuit Breaker	1
107PHC	6690-26-18	Phase Control	1
107T1	15276	Transformer Assembly	1
107CB2	6690-25-32	Circuit Breaker	1
107AMP	5616-Kit	5616 Replacement Kit	1
109POT	6690-5-20	Potentiometer Assembly	1
110PL	6690-19-15-25	240V Resistor Module	1
	6690-19-15-19	Pilot Light w/o Lens	1
	6690-19-15-11	Mounting Latch	1
	6690-19-15-20	130V Incandescent Bulb	1
	6690-19-15-12	Green Lens	1
116TEMP	6690-26-9	Controller	1
118CR	6690-1-46	Solid State Relay	1
120TSU	18650-7	TSU Wire Assembly	1

:

NOTES

INSTRUCTION MANUAL DISCREPANCY REPORT

Field Number	Field Title	Description
1	**Date**	
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5	**Date of Issue**	
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