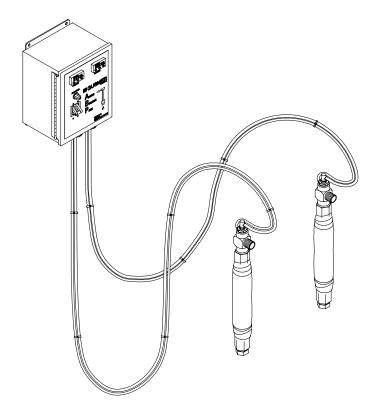
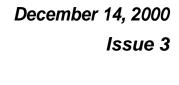


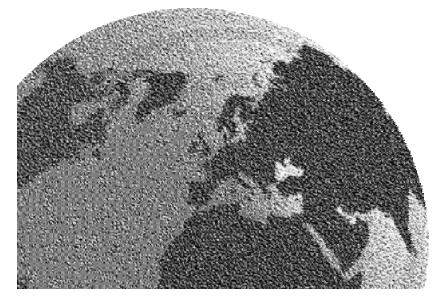
"Teamwork & Communication"



# Arctic Booster Pack

Installation Instructions and Parts Identification Manual OP19350-INST





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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, EXPRESS 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 heating 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 is not be repeated in the text of this manual. The symbols pertaining to this information 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.



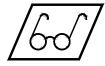
High Voltage

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 OF CONTROLS**

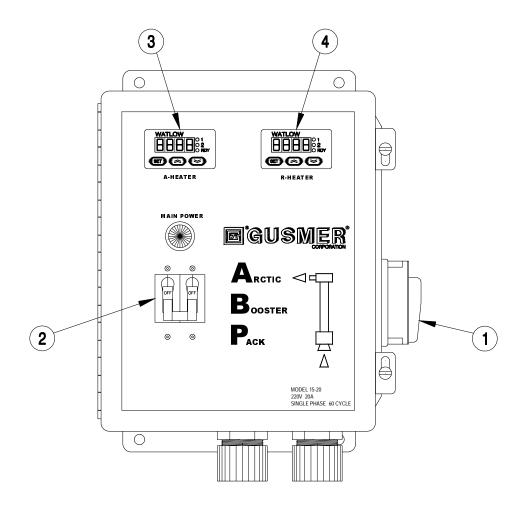


Figure 1. OP19350-220 Arctic Booter Pack

- 1. **POWER DISCONNECT-** Controls power to all circuits; must be ON for any function of the unit to operate.
  - A White pilot light indicates the Power Disconnect is ON.
- 2. **HEATER CONTROL BREAKER-** Controls power to A- and R-Inlet Heater. It must be ON for the unit to operate.
- 3. **A-INLET HEATER TEMPERATURE CONTROLLER-** Controls the temperature of the A-Inlet Heater. Adjust the setpoint to the desired temperature. From this point, the temperature control is automatic.
- 4. **R-INLET HEATER TEMPERATURE CONTROLLER-** Controls the temperature of the R-Inlet Heater. Adjust the setpoint to the desired temperature. From this point, the temperature control is automatic.





### INITIAL MACHINE SET-UP



WARNING: OPERATORS AND SERVICE TECHNICIANS MUST WEAR PROPER PROTECTIVE GEAR AS SPECIFIED BY THE CHEMICAL AND SOLVENT SUPPLIER WHEN USING OR SERVICING THIS EQUIPMENT. IT INCLUDES BUT IS NOT LIMITED TO GLOVES, EYE PROTECTION, AND RESPIRATORY PROTECTION. REFER TO THE GENERAL SAFETY INFORMATION SECTION OF THIS MANUAL.

**IMPORTANT**: Complete and return the Warranty Validation Card within 2 weeks of receipt of equipment.

#### Mounting of the Console

Mount the Console of the Arctic Booster Pack to a flat surface as close to the proportioning unit as possible. A 220V single-phase power source should be nearby.

*IMPORTANT:* Take caution to protect the electrical console from chemical contamination, heat, moisture, or physical damage.

#### Wiring of the Console



**WARNING:** The electric service must be installed by a qualified electrician according to the National Electrical Code and all applicable state and local codes.

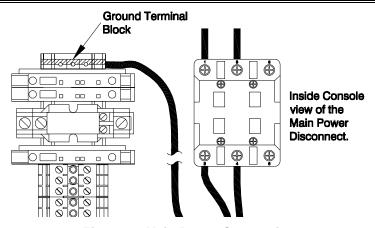


Figure 2. Main Power Connection

- 1. Connect the main power cord to the electrical console.
  - a) Feed the power cord through the strain relief in the bottom of the console and connect the power leads to the Main Power Disconnect as shown in Error! Reference source not found..
  - b) Connect the ground wire to the ground terminal block.



**WARNING:** DO NOT WIRE THE CONSOLE DIRECTLY INTO THE PROPORTIONING UNIT.

DOING SO MAY CAUSE DAMAGE TO THE EQUIPMENT AND VOID THE FACTORY WARRANTY

#### Installation of Inlet Heaters

Placement of the Arctic Booster Pack's Inlet Heaters will be the same regardless of what equipment is used. The Inlet Heaters will be installed between the supply hose(s) and inlet(s)of the proportioning equipment. (See Figure 3)

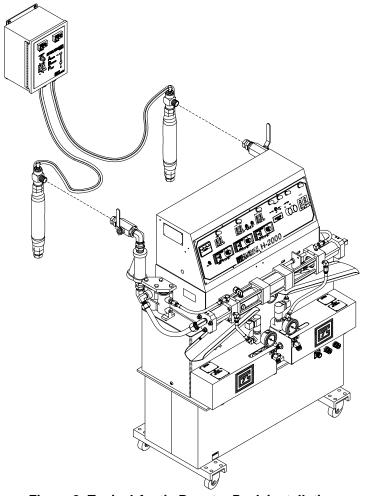


Figure 3 Typical Arctic Booster Pack installation

- 1. Attach the R-supply hose to the ¾" fitting on the bottom of the R-Inlet Heater. Repeat this step for the A-Inlet Heater.
- 2. Attach the R-Inlet Heater to the Proportioning Unit R-Inlet Swivel Fitting.
- 3. Remove the ½" Swivel Fitting from the A-Inlet and replace it with a ¾" Swivel Fitting. (Not supplied)
- 4. Attach the A-Inlet Heater to the Proportioning Unit A-Inlet Swivel Fitting.

IMPORTANT: The (R-) Resin Inlet Heater is color-coded blue and the (A-) Isocyanate Inlet Heater is color-coded red for easy identification. Never interchange the heaters after using them. A chemical reaction will occur which will damage the heater components beyond repair.





#### **OPERATION**

#### Initial Start-up

- 1. Check the Inlet Heaters are correctly mounted on their respective inlets.
- 2. Turn on the main air supply to the Transfer Pumps to supply chemical to the heaters and the proportioning unit.
- 3. Check for leaks and correct if necessary.
- 4. Plug in the power cord.
- 5. Turn "ON" the Main Disconnect. The white light should illuminate.
- 6. Turn "ON" the Heater Control Breaker. The Temperature Controllers should light up and begin to cycle toward their set point.

**IMPORTANT**: If either or both items fail to activate consult the Trouble Shooting section of this manual.

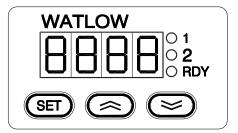
#### **Temperature Controllers**

The Temperature Controllers of the Arctic Booster Pack automatically control the temperature selected for both the A- and R-the Inlet Heaters.



**WARNING:** DO NOT TURN THE TEMPERATURE CONTROLLER ON UNTIL ALL PURGING PROCEDURES ARE COMPLETED AND THE HEATERS COMPLETELY FILLED WITH CHEMICAL. ADDITIONALLY DO NOT CHANGE ANY OF THE PREPROGRAMMED PARAMETERS.

NOTE: Normally digits show Set Point.



To change the setpoint, press and hold the "Set" Button down while pressing the or button to increase or decrease the value. After entering the setpoint release the "Set" Button and the Set Point will be displayed.

Figure 4 Temperature Controller



WARNING: THE CONROLLERS ARE FACTORY PROGRAMMED AND ARE NOT FIELD PROGRAMMABLE. IF YOU ENCOUNTER ANY PROBLEMS WITH EITHER CONTROLLER CONTACT GUSMER FOR A REPLACEMENT. DO NOT SUBSTITUTE A CONTROLLER FROM AN ALTERNATE SUPPLIER AS ITS USE MAY RESULT IN DAMAGE TO THE EQUIPMENT AND/OR BODILY INJURY.



#### TROUBLESHOOTING





**WARNING:** Before performing these troubleshooting procedures, determine that all circuit breakers are off and main power is disconnected at the source to avoid bodily injury from electrical shock. Do not enter the electrical console with power on.

THERE IS HIGH VOLTAGE INSIDE THE CONSOLE. DO NOT OPEN THE CONSOLE WITH POWER ON. NEVER OPERATE THE UNIT WITH CONSOLE OPEN.

COOL THE FLUID IN THE HEATER BY PUMPING UNHEATED FLUID THROUGH THE HEATER TO AVOID BODILY INJURY FROM HOT FLUID AND HOT METAL.

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

<u>Problems</u>	<u>Solutions</u>
Heater Control Breaker trips	1
No heat	2
Controller displays the code Er1.	3
Controller displays the code Er2, Er3.	4
Controller displays the code Er4.	5
Partial heat, red light stays on continuously	6

#### **SOLUTIONS**

- THERMAL LIMIT SWITCH- The Thermal Limit Switch provided consists of a
  bimetallic switch bonded to the end of the Inlet Heater. When the surface
  temperature of this section exceeds 190° F, the switch trips the Heater Control
  Breaker, and removes power from the heater. Once the heater has cooled down to
  within limits, the switch will reset automatically. When the switch trips you must
  determine the cause of the problem and correct it.
- 2. CHECK CONTROLLER SETPOINT- If the Set Point is incorrectly set below the ambient temperature the Inlet Heater will not cycle on and off.
- 3. REVERSED THERMOCOUPLE CONNECTION- Change the sensor leads on terminal numbers 1 and 2. Red wire must be on Terminal 1.
- 4. SENSOR TYPE MISMATCHED- The preprogrammed controller operates with a type "J" thermocouple only. Insure that only a Gusmer supplied Cartridge Heater with Internal Thermocouple is used.
- OPEN THERMOCOUPLE- Bad connection, broken wire or Inlet Heater Thermocouple is not connected. Check wiring, terminal connections and insure that Inlet Heater thermocouple is in the proper location on the back of the Temperature Controller.



- 6. HEATING RODS- If the Arctic Booster Pack has any of these symptoms listed below it is possible that one of the Heating Rods is not working.
  - Unit turns on, but takes excessively long to reach the temperature desired. (Normal warm-up is about 2 minutes)
  - Unit has abnormally long "ON" cycles.

The design of the Arctic Booster Pack allows it to maximize the heat transfer from the power available. However, under certain conditions, reducing the flow rate is necessary when the heater is not able to reach the required temperature.

Each Inlet Heater contains one 2000 Watt (29 ohms) Heating Rod. To check that the element is operational, proceed as follows:

a) With power OFF and the Heater Control Breaker OFF, read the resistance across the Heating Rod. The resistance should be between 27 and 32 ohms. Replace the rod if the resistance is not within this range.



# **PARTS IDENTIFCATION**

## Inlet Heater System

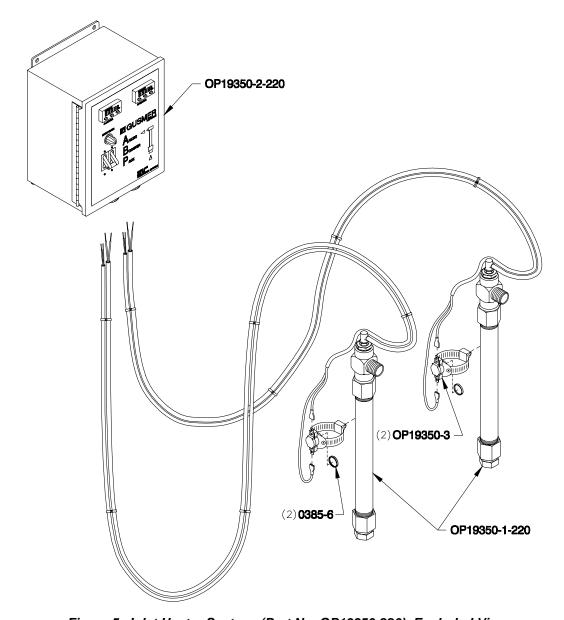


Figure 5. Inlet Heater System, (Part No. OP19350-220), Exploded View

TABLE 1. INLET HEATER SYSTEM, (PART No. OP19350-220), PARTS

Part Number	Description	Quantity
0385-6	Heat Transfer Plate	2
OP19350-1-220	Inlet Heater	2
OP19350-2-220	Electrical Console	1
OP19350-3	Thermostat	2



#### **Electrical Console**

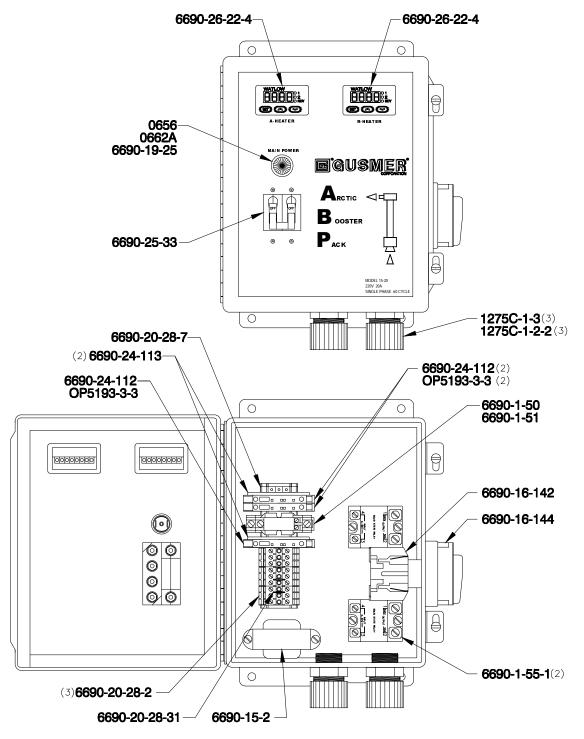


Figure 6. Electrical Console, (Part No. OP19350-2-220), Exploded View

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TABLE 2. ELECTRICAL CONSOLE, (PART No. OP19350-2-220), PARTS

Part Number	Description	Quantity
0656	White Lens	1
0662A	Incandescent Bulb	1
1275C-1-2-2	Locknut	3
1275C-1-3	Strain Relief	3
6690-1-50	Relay Base	1
6690-1-51	Relay	1
6690-1-55-1	Solid State Relay 480/50 Amp	2
6690-15-2	Transformer	1
6690-16-142	32 Amp Disconnect	1
6690-16-144	Operator Handle	1
6690-19-25	Light Base	1
6690-20-28-2	Terminal Block	3
6690-20-28-7	Terminal Block	1
6690-20-28-31	Terminal Block Isolator	1
6690-24-112	Fuse Holder	3
6690-24-113	Fuse Holder End Plate	2
6690-25-33	25 Amp Circuit Breaker	1
6690-26-22-4	Temperature Controller	2
6690-24-113	Fuse Holder End Plate	2
OP15193-3-3	1 Amp Fuse	3



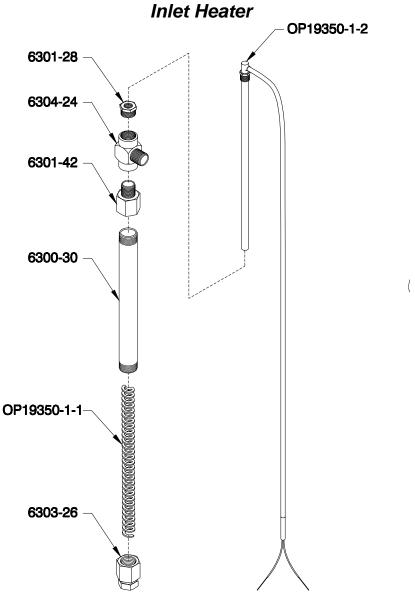


Figure 7. Inlet Heater, (Part No. OP19350-1-220), Exploded View

TABLE 3. INLET HEATER, (PART No. OP19350-1-220), PARTS

Part Number	Description	Quantity
6300-30	Pipe Nipple	1
6301-28	Bushing	1
6301-42	Adapter	1
6303-26	Swivel Fitting	1
6304-24	Branch Tee	1
OP19350-1-1	Spring	1
OP19350-1-2	Heating Element (2000W)	1

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## **ELECTRICAL SCHEMATICS**

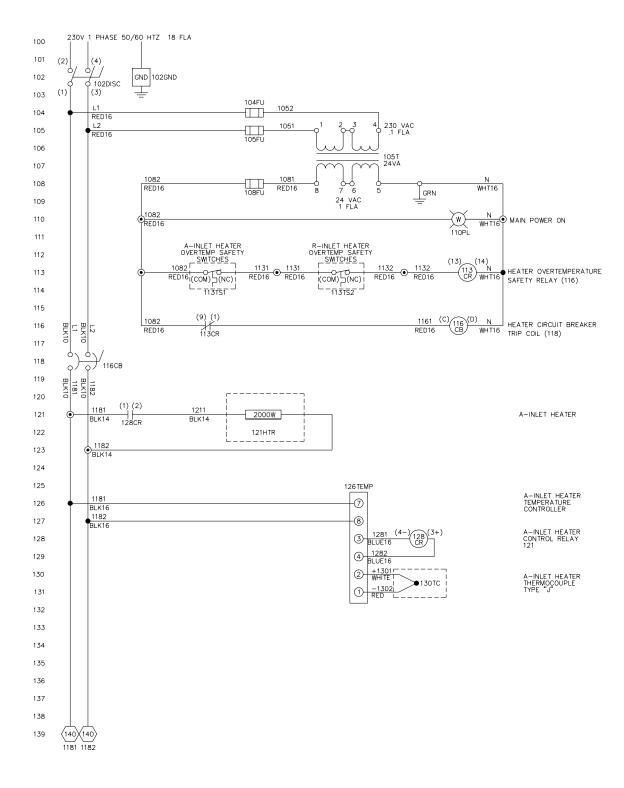


Figure 8. Electrical Schematic, (SDOP19350-220), Sheet 1 of 2



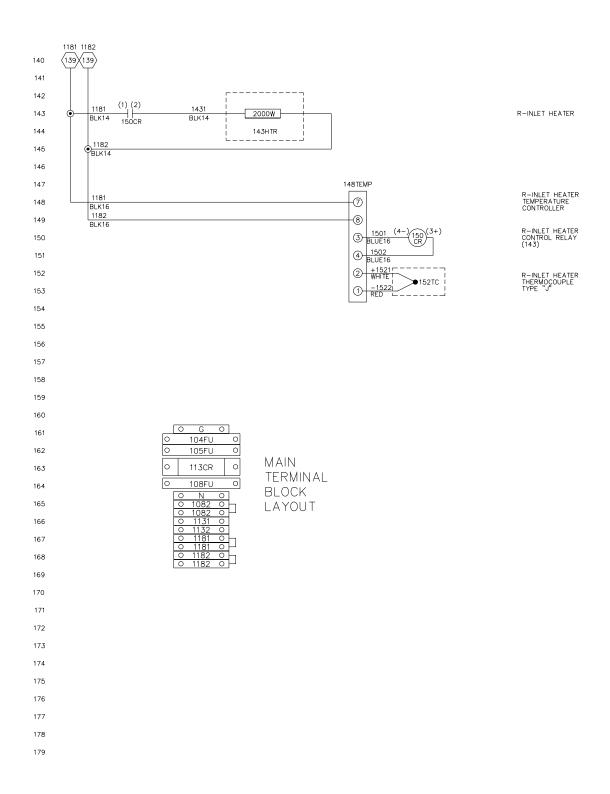


Figure 9. Electrical Schematic, (SDOP19350-220), Sheet 2 of 2

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TABLE 4. ELECTRICAL SCHEMATIC, (SDOP19350-220), PARTS

Reference Number.	Part Number	Description	Quantity
	OP19350-2-1	Electric Console	1
	OP19350-2-1-1	Subplate	1
	OP19350-2-2	Bezel	1
	20666	Mounting Track	1
	6690-20-28-2	Terminal Block	3
102DISC	6690-16-142	32A Disconnect	1
	6690-16-144	Operator Handle	1
102GND	6690-20-28-7	Terminal Block	1
104FU	6690-24-112	Fuse Holder	1
	OP5193-3-3	1 Amp Fuse	1
105FU	6690-24-112	Fuse Holder	1
	OP5193-3-3	1 Amp Fuse	1
105T	6690-15-2	Transformer	1
108FU	6690-24-112	Fuse Holder	1
	OP5193-3-3	1 Amp Fuse	1
110PL	0656	Indicator Cap-White	1
	6690-19-25	Light Base	1
	0662A	Bulb	1
113TS1	OP19350-3	Thermostat	REF (1)
113TS2	OP19350-3	Thermostat	REF (1)
113CR	6690-1-50	Relay Base	1
	6690-1-51	24 VAC Relay	1
116CB	6690-25-33	25A Circuit Breaker	1
121HTR	OP19350-1-2	Heating Element	REF (1)
126TEMP	6690-26-22-4	A- Heat Control	1
128CR	6690-1-55	Solid State Relay	1
130TC	Part of OP19350-1-2	Thermocouple	REF (1)
143HTR	OP19350-1-2	Heating Element	REF (1)
148TEMP	6690-26-22-4	R- Heat Control	1
150CR	6690-1-55	Solid State Relay	1
152TC	Part of OP19350-1-2	Thermocouple	REF (1)



NOTES	

## INSTRUCTION MANUAL DISCREPANCY REPORT

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3	IM Number	
4	Issue Number	
5	Date of Issue	
6	Page Number	
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