

**HEAT DESIGN  
EQUIPMENT  
INC.**

*The Infrared People*



**RECYCLED HOT MIX ANYWHERE, ANYTIME, ANY TEMPERATURE**

## **HDE PNEUMATIC TIRE HEATER**



Version August 2016

# **Heat Design Equipment Inc.**

## **Owners Manual**



**Heat Design Equipment Inc.**

1197 Union St., Unit 3

Kitchener, Ontario, Canada

N2H 6N6

**Telephone: 1-519-581-0676**

**1-888-897-7987**

**Fax: 519-578-0079**

**[www.asphaltheater.com](http://www.asphaltheater.com)**





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**ALWAYS READ AND UNDERSTAND THIS OPERATORS MANUAL BEFORE OPERATING THE HEATER OR SERVICING YOUR HEATER**

### ***WARNING: DO NOT***

**DO NOT** run hot box in an enclosed area. Exhaust gases contain carbon monoxide, an odourless and deadly poison.

**DO NOT** operate the heater while performing any maintenance.

**DO NOT** ignite entire machine at once.

**DO NOT** park machine on a steep grade or slope.

**DO NOT** smoke while operating the heater.

**DO NOT** operate the heater near an accumulation of grass, leaves or other combustible material.

**DO NOT** leave machine unattended while operating.

## **PRODUCT INFORMATION**

### **INSIGHT IN THE PNEUMATIC TIRE**

The HDE Rubber Tire Roller Heater was developed to prevent pick-up during rolling operations. The tires are heated with HDE patented infrared heaters. To eliminate overheating of the tires the system monitors the temperature of the front and rear tires using an infrared sensor that is displayed in the operator control console. The system is programmed to start up and shut down at a pre-set temperature. There is a secondary alarm that will notify the operator if the tires become too hot or cold. The ideal operating temperatures are between 95 degrees C and 115 degrees C. Each heater has its own ignition system with a safeguard that will automatically shut down the system in the event that the heater goes out or does not ignite. An optional third infrared sensor will measure the temperature of the asphalt mat and can provide feedback to the operator for effective compaction time and for documentation.

Each heater is ignited by spark ignition. The built in flame-out protection will automatically shut the heater off in the event of a heater failure. The in line excess flow valve will cut the flow of propane in case of a hose rupture.

### **INTELLIGENT CONTROL STATION**

*The HDE Intelligent Control Station* has the ability to measure the temperature of each heater and the temperature of the road surface using infrared thermocouplers. The digital display will notify the operator of any electrical failure or heater failure. The ambient temperature.

### **100% INFRARED HEAT**

*HDE'S* patented ceramic/stainless steel composite heating cartridge will provide intense heat to the tire without any open flame. The heat can be adjusted by the regulator depending on the ambient temperature.

### **PROPANE SAFETY**

Each heater is ignited by spark ignition. The built in flame out protection will shut the heater off in the event of a heater failure or when there is no heat present. The in line excess flow valve will cut the flow of propane in case of hose rupture.

### **FEATURES**

- INFRARED HEATER NOT CONVECTION TO HEAT THE TIRE
- MAINTAIN CONSISTENT TIRE TEMPERATURE
- ELIMINATE TIRE PICK UP
- REDUCE TIRE WARM UP TIME IN COLD WEATHER
- MONITOR MAT TEMPERATURE

# **OPERATIONAL INSTRUCTIONS**

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## **START UP PROCEDURE**

1. Visually inspect entire system for any *lose or damaged components* before running the heater system .
2. Open propane tank slowly until the valve is fully open.
3. Check for leaks using soapy water solution ( *any leaks must be repaired before using the heater system*)
4. Check the regulator gauges and verify they are set at *20-25 psi*.
5. Open the main panel and turn on "*Main Power*" the PLC should now start up.
6. Any settings may be viewed or changed by following the "*Rubber Tire Roller Heater Controller Screen*" instructions sheets.
7. If all settings are set to desired values turn on the heaters by pressing the front and rear heater buttons. The heaters will now attempt to fire. *(The heaters will automatically attempt fire three times if they do not light and stay lit. After the third attempt unit must be reset by turning off either the front or rear heater button based on which heater(s) do not light.)*
8. Once the unit is running it will regulate its heat based on the settings. There is also a sensor to detect if the roller stops for a period of time in order to turn heaters off and not burn the tires. The tires must make a full revolution in order for sensor to detect motion. The settings for the no motion timer and start-up timer can be found by pressing holding button 5 until the motion setup screen display.

## **HEATER SETTINGS**

Set Point is used to assign desired temperature (e.g 175 °F) while the upper and lower window are set so heater has a cushion between turning off and on (e.g upper window 25 °F and lower window 1.0 °F .) So the unit would heat unit 200°F then turn off then back on if it dropped below 174 F.

## **SHUT DOWN PROCEDURE**

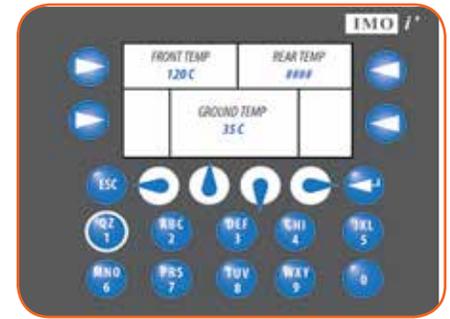
1. Close tank propane valve and allow propane to burn off until system is empty.
2. Turn off front and rear heater switches
3. Turn off "*Main Power*"

# BUTTON SEQUENCE UP TO 2015

BUTTON 1

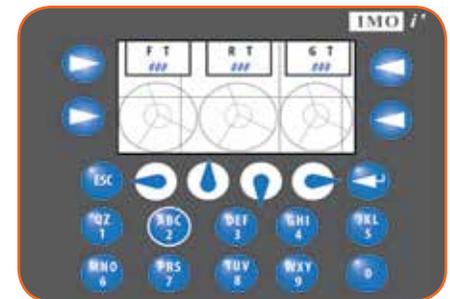
Press and release button 1 to show the temperature of the heaters.

FRONT TEMPERATURE: 120°C  
GROUND TEMPERATURE: 35°C



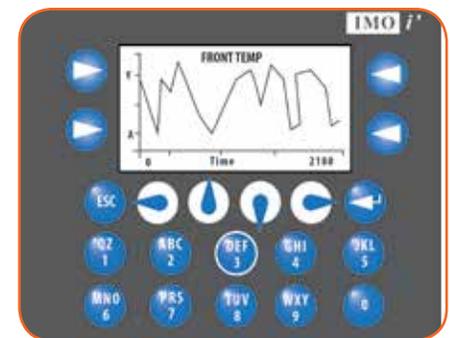
BUTTON 2

Press and release button 2 to show the temperature of the heaters.



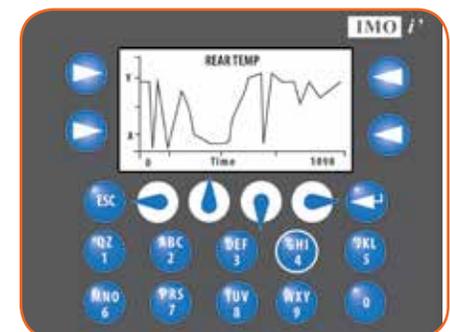
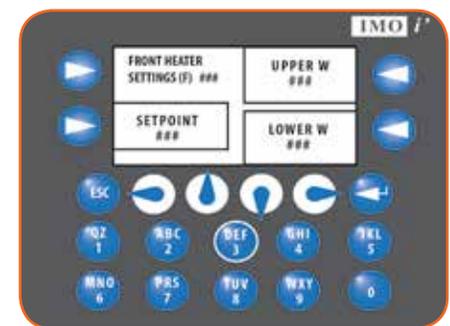
BUTTON 3

Press and release button 3 to show the FRONT temperature of the heaters.



BUTTON 4

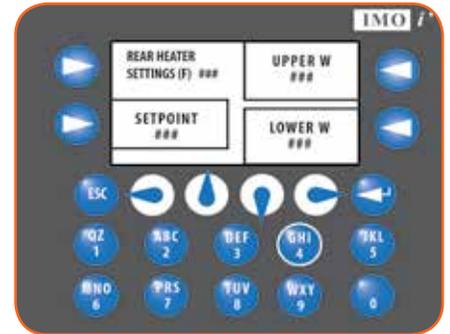
Press and release button 4 to show the REAR temperature of the heaters.



# BUTTON SEQUENCE UP TO 2015

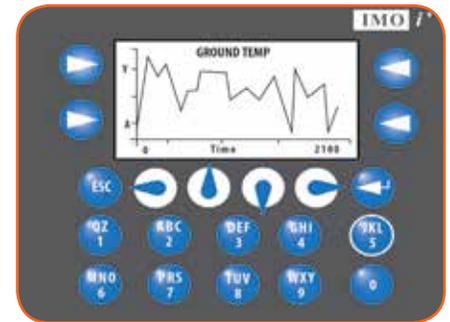
**BUTTON 4**

Press and hold button 4 to show the REAR heater setup.



**BUTTON 5**

Press and release button 5 to show the GROUND temperature of the heaters.

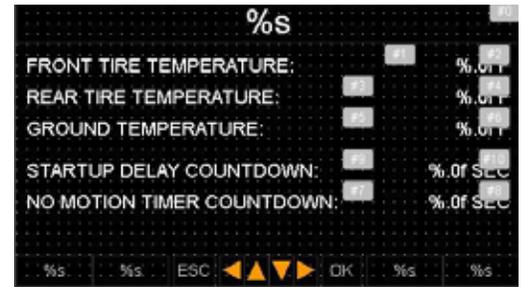


Press and hold button 5 to show the MOTION SETUP temperature of the heaters.



# BUTTON SEQUENCE FROM 2016

**MAIN SCREEN** - SHOWS CURRENT TEMPERATURES AND THE STATUS OF THE STARTUP DELAY AND NO MOTION TIMER COUNTDOWN. (BUTTONS: PREV SCREEN, NEXT SCREEN)



**TEMPERATURE SETPOINT SCREEN** - SHOWS THE TEMPERATURE SETTINGS FOR THE HEATERS AND THE COOLING WINDOW FOR BOTH HEATERS. (BUTTONS: PREV SCREEN, NEXT SCREEN, AND EDIT) SEE BELOW FOR EDIT BUTTON DETAILS



**TIMER SETPOINT SCREEN** - SHOWS STARTUP DELAY AND NO MOTION TIMERS (BUTTONS: PREV SCREEN, NEXT SCREEN, AND EDIT) SEE BELOW FOR EDIT BUTTON DETAILS ALSO FOR DESCRIPTION OF TIMER FUNCTIONS



**HOUR METER SCREEN** - SHOWS THE RUNTIME HOURS OF THE ENTIRE SYSTEM ON, FRONT HEATERS ON, AND REAR HEATERS ON (BUTTONS: PREV SCREEN, NEXT SCREEN)

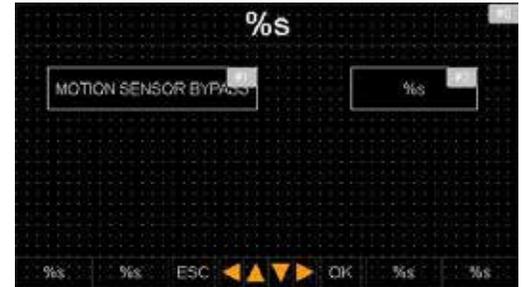


**VOLTAGE AND COMMUNICATION SCREEN** - SHOWS DIAGNOSTIC SCREEN FOR PROPER VOLTAGE ON PLC POWER AND STATUS OF COMMUNICATION BETWEEN HMI SCREEN AND PLC CONTROLLER (BUTTONS: PREV SCREEN, NEXT SCREEN)



## ***BUTTON SEQUENCE FROM 2016***

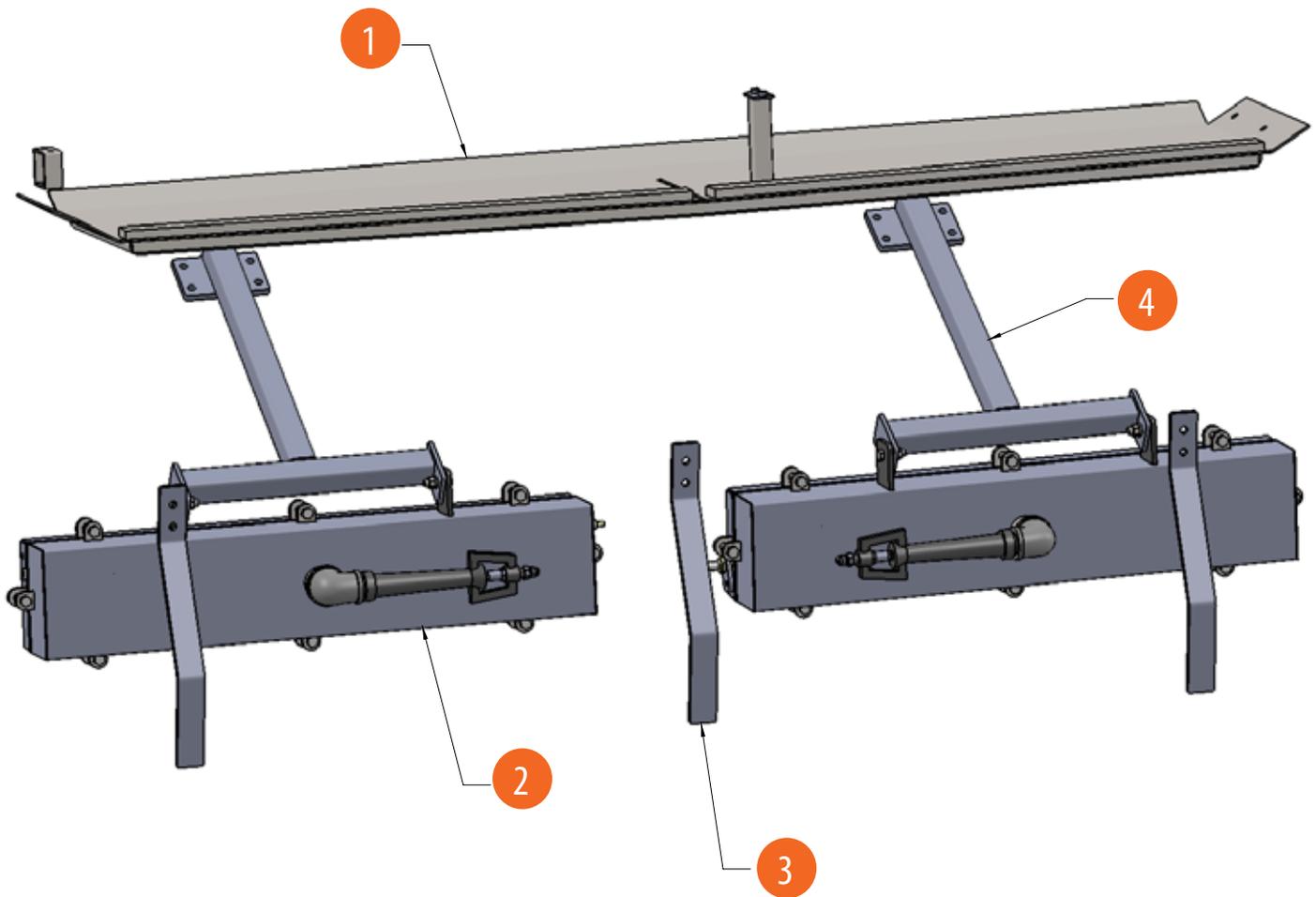
***MOTION PROXY BYPASS*** - SHOWS SCREEN THAT ALLOWS OPERATOR TO BYPASS MOTION SENSOR IN CASE OF FAILURE OF SENSOR. ONLY TO BE USED IN AN EMERGENCY AND AUTOMATICALLY RESETS WHEN UNIT TURNED OFF. (BUTTONS: PREV SCREEN, NEXT SCREEN) SEE BELOW TO ACTIVATE BYPASS



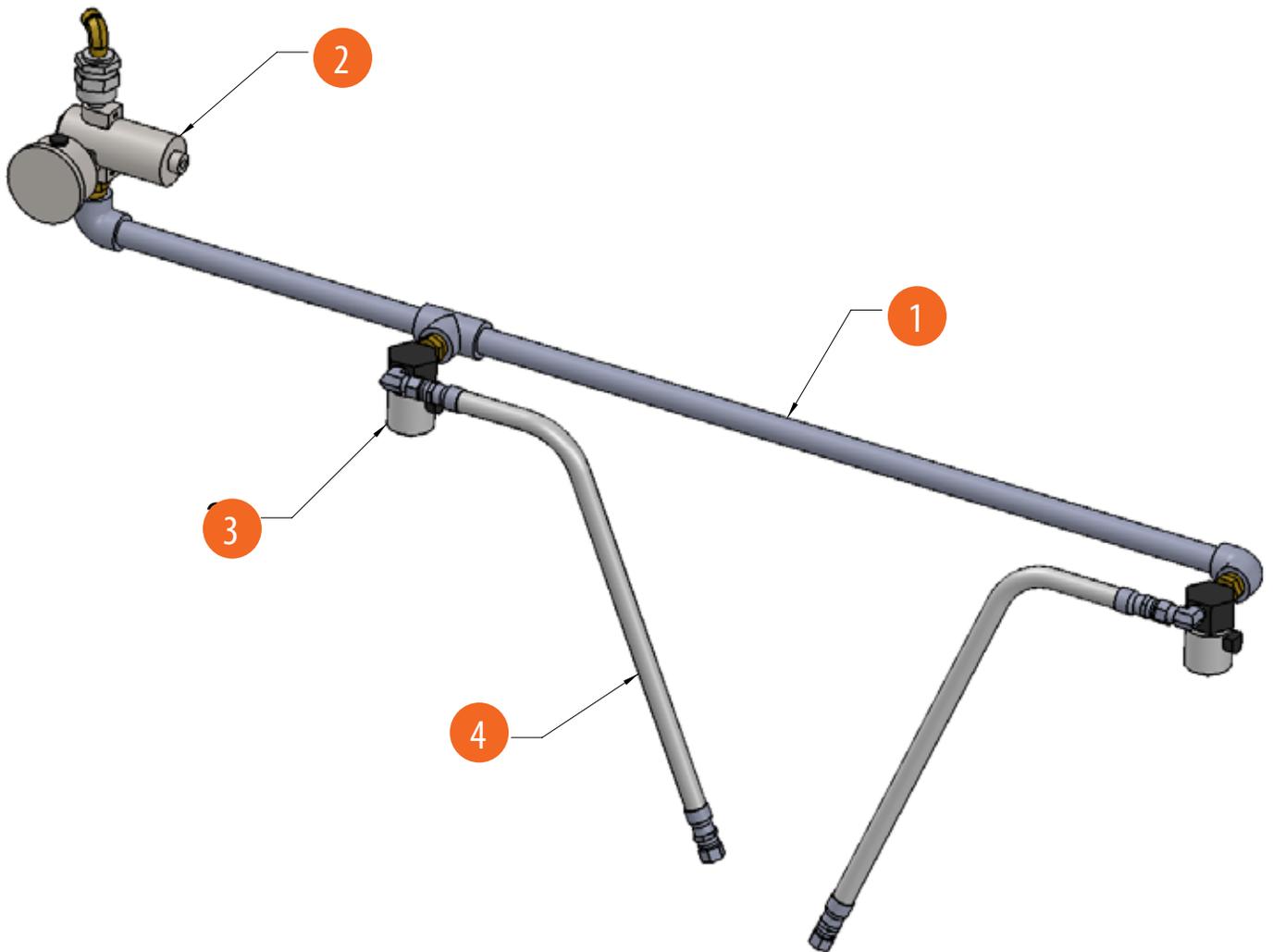
***EDIT BUTTON***: WHEN PRESSED ALLOWS OPERATOR TO SELECT SETTING THEY WISH TO CHANGE, ONCE SELECTED THE VALUE CAN BE INCREASED BY 1, 10, OR 100 INCREMENTS TILL PROPER SETTING IS SHOWN THEN HIT OK TO SET

***TIMER DESCRIPTION***: STARTUP DELAY: THIS WILL KEEP THE HEATERS RUNNING FOR SET AMOUNT OF TIME WHEN EITHER FRONT OR REAR HEATER BUTTON IS PRESSED EVEN IF THE ROLLER IS NOT MOVING TO GIVE OPERATOR TIME TO CHECK OVER RUNNING HEATERS. NO MOTION TIMER: WILL KEEP THE HEATERS RUNNING AS LONG AS THE PROXY SENSOR SEES THE UNIT IS MOVING, IT WILL SHUT OFF THE HEATERS IF IT DOESNT REGISTER THE ROLLER MOVING FOR A SET AMOUNT OF TIME AND WILL RESTART HEATERS ONCE IT REGISTERS MOTION AGAIN

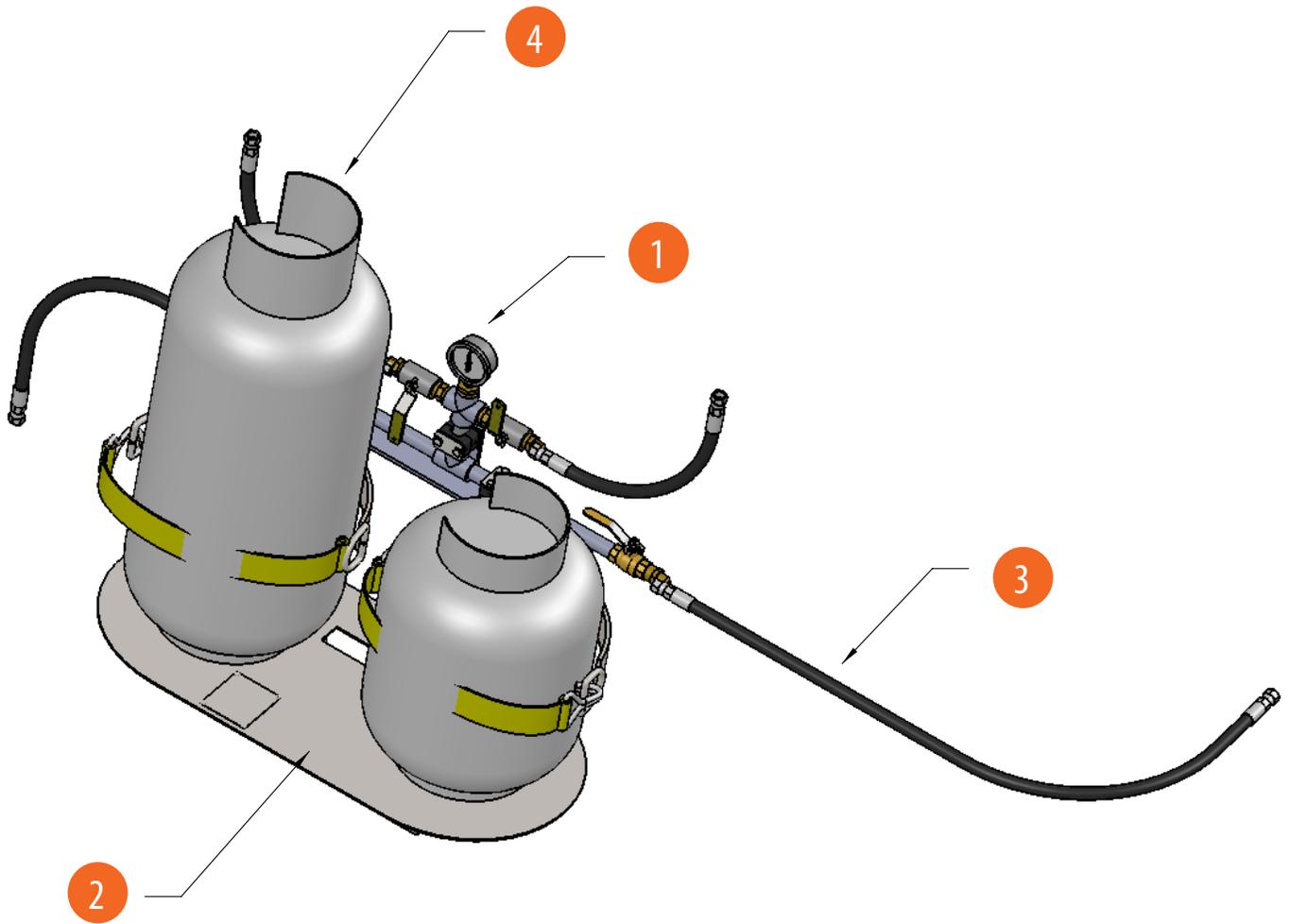
***MOTION SENSOR BYPASS***: TO ACTIVATE PRESS AND HOLD BOTH KEYS ON THE BOTTOM RIGHT SIDE OF THE SCREEN AND PRESS THE UP BUTTON AND TO DE-ACTIVATE PRESS AND HOLD BOTH KEYS ON THE BOTTOM RIGHT SIDE OF THE SCREEN AND PRESS THE DOWN BUTTON (WHEN ACTIVATED ALL SCREENS WILL SHOW PROX BYPASSED WARNING) NOTE: WHEN BYPASSED IT IS UP TO THE OPERATOR TO MANUAL TURN OFF AND ON HEATERS WHEN STOPPED, SO AS TO NOT BURN ONE SPOT ON TIRE.



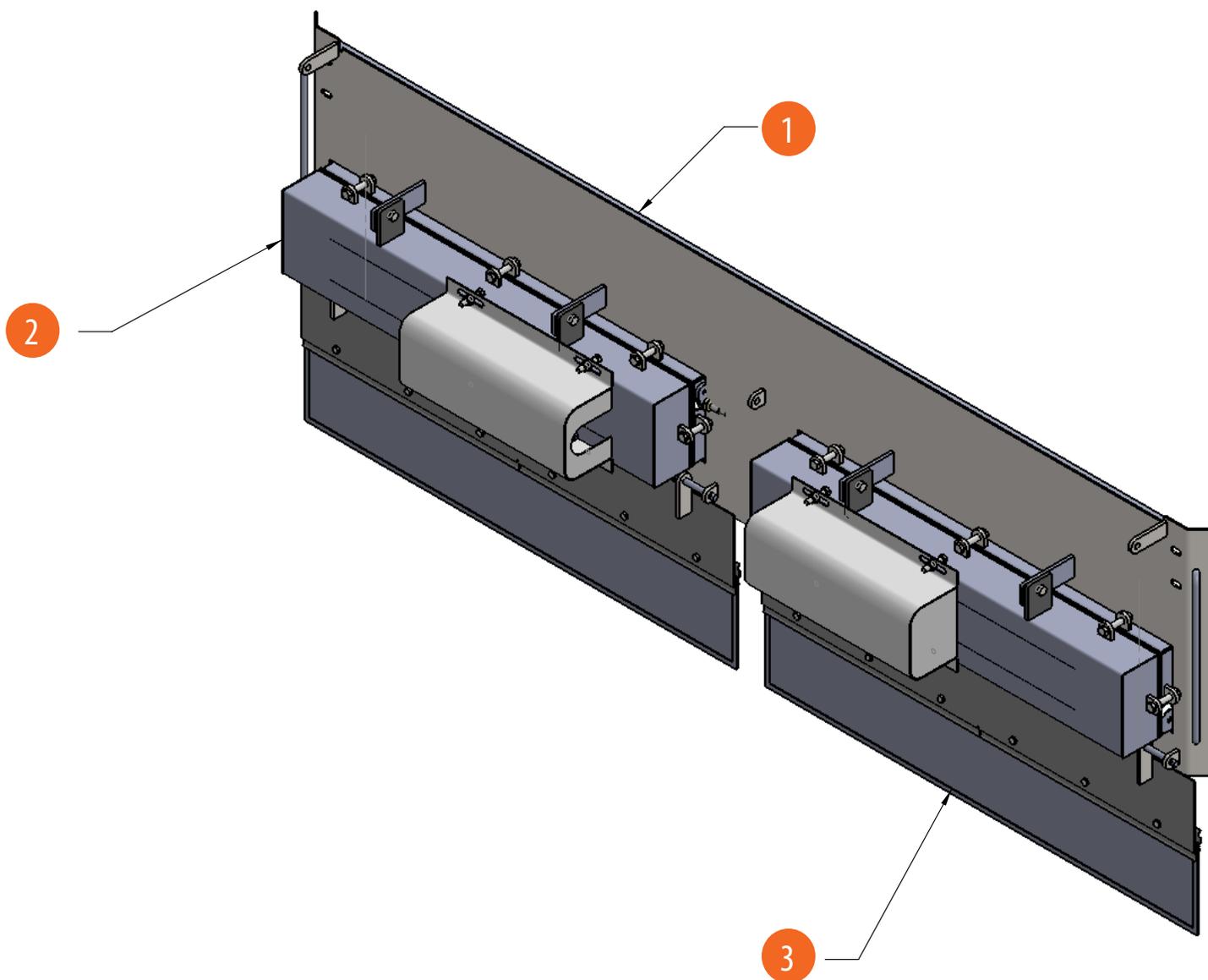
<b><i>ITEM</i></b>	<b><i>PART NUMBER</i></b>	<b><i>DESCRIPTION</i></b>
<b><i>1</i></b>	GRW-121	FRONT GUARD WELD ASSEMBLY
<b><i>2</i></b>	31" H	31 IN. HEATER ASSEMBLY
<b><i>3</i></b>	GRW-100-013	FRONT FABRIC SKIRT SUPPORT
<b><i>4</i></b>	GRW-119	FRONT HEATER SUPPORT ASSEMBLY



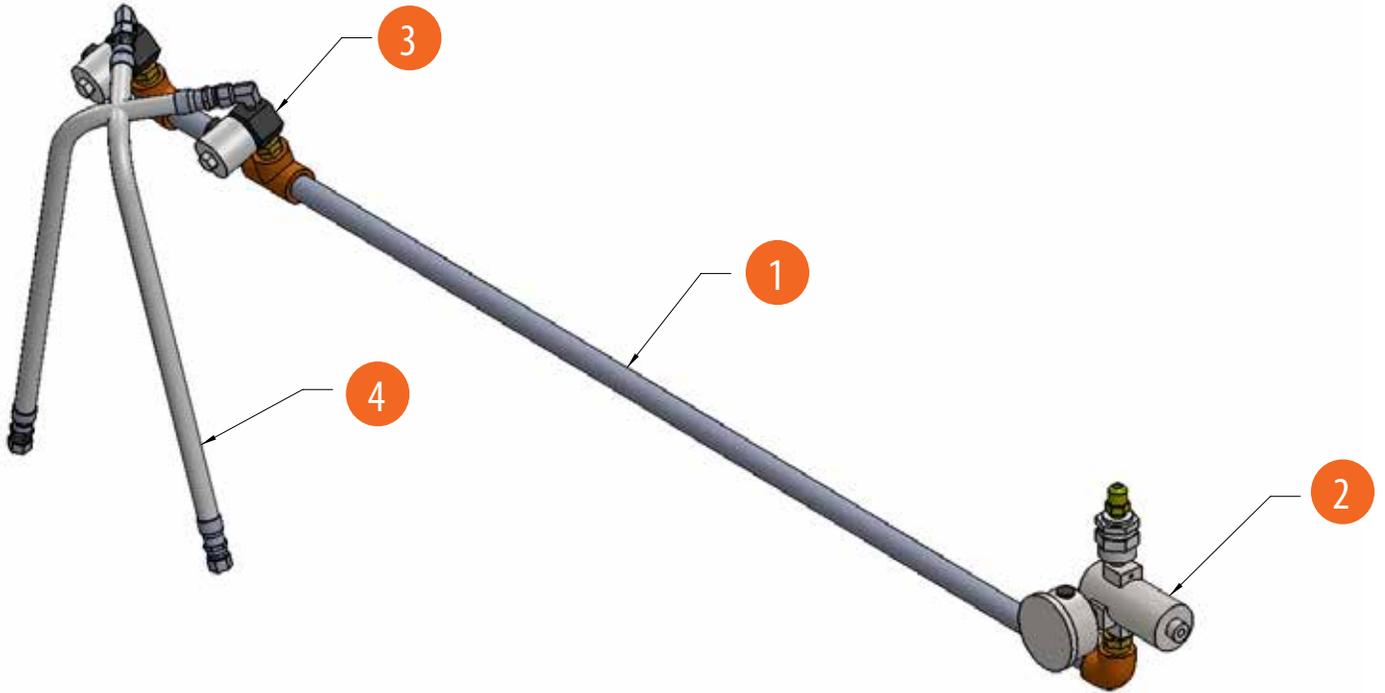
<b><i>ITEM</i></b>	<b><i>PART NUMBER</i></b>	<b><i>DESCRIPTION</i></b>
<b><i>1</i></b>	BW27-200	FRONT PROPANE PIPING ASSEMBLY
<b><i>2</i></b>	MEGR-6120-60	REGULATOR 1/4" NPT 0-60 PSI
<b><i>3</i></b>	A121CGA	SOLENOID VALVE 1/4" NPT 12 VOLT
<b><i>4</i></b>	CFPJ-06-XX-CS	FRONT PROPANE HOSE - XX REFERS TO S/N OF RUBBER TIRE ROLLER



<b><i>ITEM</i></b>	<b><i>PART NUMBER</i></b>	<b><i>DESCRIPTION</i></b>
<b><i>1</i></b>	BW27-202	PROPANE PIPE ASSEMBLY
<b><i>2</i></b>	BW27-100	PROPANE STAND ASSEMBLY
<b><i>3</i></b>	III6C24FS6FS6	PROPANE HOSE ASSEMBLY
<b><i>4</i></b>		PROPANE TANK



<i><b>ITEM</b></i>	<i><b>PART NUMBER</b></i>	<i><b>DESCRIPTION</b></i>
<i><b>1</b></i>	GRW-118	REAR GUARD WELD ASSEMBLY
<i><b>2</b></i>	31" H	31 IN. HEATER ASSEMBLY
<i><b>3</b></i>	P200-108	3FT. FABRIC SKIRT ASSEMBLY



<b><i>ITEM</i></b>	<b><i>PART NUMBER</i></b>	<b><i>DESCRIPTION</i></b>
<b><i>1</i></b>	BW27-201	REAR PROPANE PIPING ASSEMBLY
<b><i>2</i></b>	MEGR-6120-60	REGULATOR 1/4" NPT 0-60 PSI
<b><i>3</i></b>	A121CGA	SOLENOID VALVE 1/4" NPT 12 VOLT
<b><i>4</i></b>	CFPJ-06-40-CS	REAR PROPANE HOSE

# HEATER REPLACEMENT SAFETY

## Product Safety Information When Removing Old Cartridge Refractory Ceramic Fibre Product



WARNING: This product contains a substance which has been identified by the International Agency for Research of Cancer (IARC) as possible carcinogenic to humans.



### RISKS:

- Possible cancer hazard by inhalation.
- May cause temporary irritation to eyes, skin and respiratory tract.
- Potential for Fire, Smoke, and Asphyxiation Hazards. *To the Equipment Owner:*

*Please read and carefully follow all instructions provided in the manual regarding your responsibilities in caring for your heating equipment. Contact a professional, qualified service agency for installation, start-up or service work.*

### PRECAUTIONARY MEASURES:

- Minimize air born fibres with engineering controls.
- Wear NIOSH/MSHA approved respirator.
- Wear long sleeved, loose fitting clothing, eye protection and gloves.
- Wash work clothing separately and rinse washing machine after use.

### FIRST AID MEASURES:

- Eyes: Flush with water.
- Skin: Wash with soap.
- Ingestion: Do not induce vomiting. Get medical attention if gastrointestinal symptoms develop.
- Inhalation: Move to fresh clean air.

If any of the above irritations persist, seek medical attention immediately.

***FOR ADDITIONAL PRODUCT INFORMATION AND WORK PRACTICES REFER TO THE MATERIAL SAFETY DATA SHEET.***

*Burner Box should be inspected yearly and replaced if it shows signs of cracking and or breaking.*

*The above cautions should be taken when removing and installing the burner box.*

**READ THESE INSTRUCTIONS AND SAVE FOR REFERENCE.**

# RECLAIMER HEATER ASSEMBLY

TURN PROPANE VALVE OFF BEFORE  
SERVICING HEATER.



**WARNING:** To avoid personal injury,  
turn the heater off and allow to cool.

STEP 1

Remove all damaged heaters for the machine.

STEP 2

Turn the heater upside down and run water over top of the ceramic. This will eliminate the fibres from travelling through the air.



STEP 3

Remove the eight bolts that hold the heater together.



STEP 4

Remove the top portion of the heater (plenum).



STEP 5

Dispose of the damaged heater element.

# RECLAIMER HEATER ASSEMBLY

STEP 6

Place the heater skirt on a flat surface.

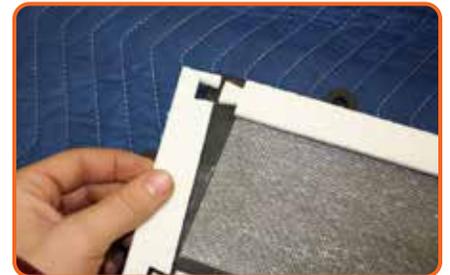
STEP 7

Place the heater cartridge with the ceramic facing down on top of the heater skirt.



STEP 8

Place the 1" ceramic gasket on the back of the heater cartridge ensuring the locking tabs are secure.



STEP 9

Place the heater body on top of the gasket and ensure the gasket does not move.



STEP 10

Place the supplied 3/8 bolts to secure and hand tighten.



STEP 11

Use a torch wrench to tighten the bolts to 85 lb/inch.



## **TROUBLESHOOTING**

<b><i>PROBLEM</i></b>	<b><i>POSSIBLE CAUSE</i></b>	<b><i>SOLUTION</i></b>
HEATER WILL NOT LIGHT	VENTURI ORIFICE IS PLUGGED	CLEAN ORIFICE
HEATER WILL NOT LIGHT	GAS PRESSURE IS TOO LOW.	ADJUST PRESSURE TO 20 PS
HEATER WILL NOT LIGHT	TANK SAFETY VALVE IS ON	SHUT OFF AND TURN ON SLOWLY
HEATER HAS LARGE ORANGE AND YELLOW FLAMES COMING UNDERNEATH	ORIFICE IS MISSING	CHECK AND REPLACE IF NEEDED
HEATERS ARE RUNNING AT DIFFERENT TEMPERATURES	ORIFICE IS PLUGGED OR CERAMIC CARTRIDGE IS WET	CLEAN ORIFICE OR RUN HEATER UNTIL IT IS DRY
FLAMES ARE COMING OUT BETWEEN THE UPPER PLENUM AND HEATER SKIRT	GASKET IS DAMAGED	REPLACE GASKET
REGULATOR SHOWS PRESSURE BUT THERE IS NO PROPANE AT THE HEATER	PROPANE HOSE MAY BE PLUGGED	REPLACE HOSES
HEATER MAKING POPPING NOISE	CARTRIDGE IS DAMAGED	REPLACE HEATER CARTRIDGE

**FOR PARTS GO TO [www.ASPHALTHEATER.com](http://www.ASPHALTHEATER.com)  
OR CALL 1-888-897-7987**



## ***SUPPORT- PROCEDURE***

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***Notify your dealer immediately of any malfunction or failure of Heat Design Equipment.***

Always give model, serial number, and approximate date of your equipment purchase. This information should be recorded and placed on file by the owner at the time of purchase.

Return damaged parts to dealer for inspection and warranty consideration if in warranty time frame. Order genuine HDE replacement or repair parts from your authorized HDE dealer. Use of another manufacturer's parts may void warranty consideration.

### **Resources Publications**

***Contact your HDE dealer for publications and videos covering safety, operation, service, and repair of your equipment.***

### **Heat Design Equipment Training**

***For information about on-site, individualized training, contact your HDE dealer.***

# WARRANTY

## Heat Design Equipment and Replacement Parts Limited Warranty Policy

Subject to the limitation and exclusions herein, free replacement parts will be provided at any Authorized HDE dealership for any HDE equipment or parts manufactured by Heat Design Equipment that fail due to a defect in material or workmanship within one (1) year of first commercial use. Free labour will be provided at any authorized HDE dealership for installation of parts under this warranty during the first year following “initial commercial” use of the serial-numbered HDE equipment on which it is installed. The customer is responsible for transporting their equipment to an authorized HDE dealership for all warranty work.

*HDE warrants its equipment against defects or workmanship on normal use or service for a period of one year. The warranty includes but is not limited to the following: Frame, Steel parts, Electrical Components, Heaters and Hoses.*

Warranty does not apply to defects caused by improper use or abuse. Any damage that has been caused by accidents, freight or improper maintenance or repair will not be covered under HDE’s warranty. The warranty period will begin on the date the unit was first placed into service. The warranty should be mailed into within 10 days of the day it was put into service.

*HDE excludes from its warranty items such as batteries and tires. These claims should be directed to their local authorized distributor/dealer.*

*HDE is responsible for the replacement and or repair of the defective parts. All replaced parts should be returned to HDE for inspection.*

***HDE will not be liable for downtime, overhead and performance penalties.***

***All Claims should be sent with the warranty card to the following:***

***Fax : 519 578 0079 Or Mail***

***Heat Design Equipment Inc.***

***1197 Union St., Unit 3***

***Kitchener, Ontario***

***N2H 6N6***

# WARRANTY & REGISTRATION

Record your Serial plate information from your machine and record the date and location of purchase.

Model

Serial No.

Purchase Date

Purchased From

## Product Registration Card

Please complete and return this card. Returning this card validates the product warranty as stated below

**Heat Design Equipment Inc.**

1197 Union St., Unit 3  
Kitchener, Ontario Canada  
N2H 6N6

Product Serial Number

Model

Heater Serial Number 1

HSN 2

First Name  Last Name

Title  Company Name

Street Address

City

Prov/State.  Postal Code

Country

Phone Number  -  -

Name of Wholesaler Where You Purchased This Product

Location

Remove this portion of card, apply postage and mail to the above address.

## ***Notes***

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