

# Glow Boy

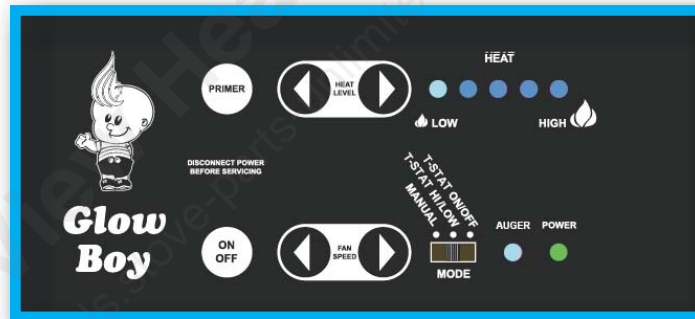
Wood Pellet & Biomass Home Heaters

Simply Better.



## DANSONS

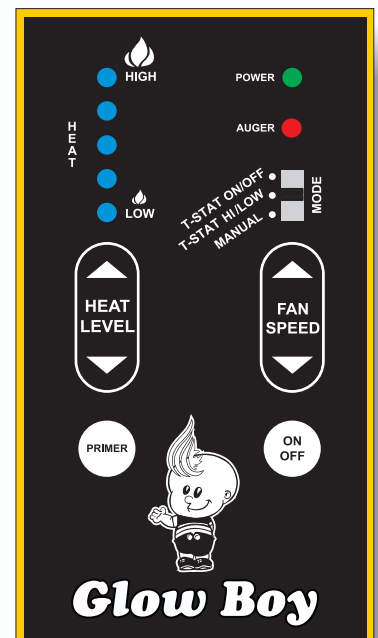
### Glow Boy DHC Soft Touch Control



Horizontal  
Stoves & Heaters

Vertical  
Inserts / Built-Ins

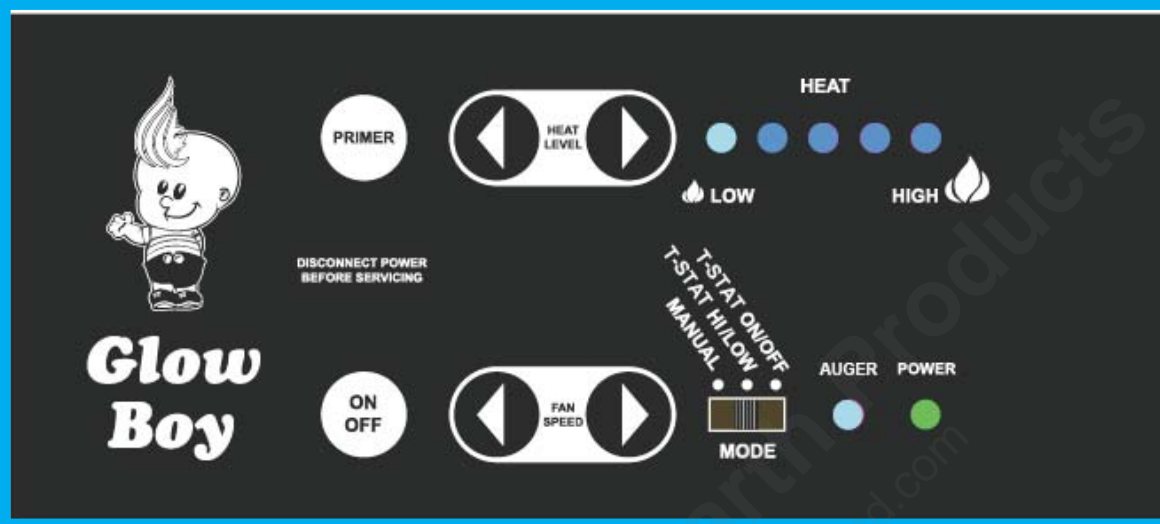
## Operational Manual



Developed with 7 years of  
Consumer, Dealer and Manufacture Input.

# Part Specifications

## Glow Boy DHC Soft Touch



### Location & Function -

Located on the top, rear, right hand side of the stove and heater models, or on the right hand-side of the shroud on the inserts.

The function of the Glow Boy DHC4110 Digital Control Board is to act as the main brain of the appliance. Through new innovative software this digital control sends and receives signals from the working component parts and the automatic safety switches. This control does offer many self-diagnostic features. Can be used with OPTIONAL wall thermostat package, digital or analog, both wired or wireless. The operation of the board will be covered in detail further in the manual.

Comes with one Molex 12 pin connection

Product Code	Mfg.	Part #	Name
KS-5040-1091	Applied	DHC4110	Glow Boy DHC4110 - Vertical or Horizontal



### Used on Models

Used in **ALL** Glow Boy Pellet & Multi-Fuel

### Production Life

Used from July 2009 to current

Can be used on any existing system that uses the Glow Boy DHC Main Wire Harness

### Date Codes

Starting with **0624**.

Service Manual  
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07/09  
Updates available at [www.dansons.com](http://www.dansons.com)

Glow Boy Control DHC4110

# Part Specifications

## Glow Boy DHC Soft Touch

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### Control Board Operation - Consumer

#### PRIMER

Used to prime feed system

#### HEAT ADJUSTMENT

Increases or decreases the Heat Output  
- Left to decrease  
- Right to increase

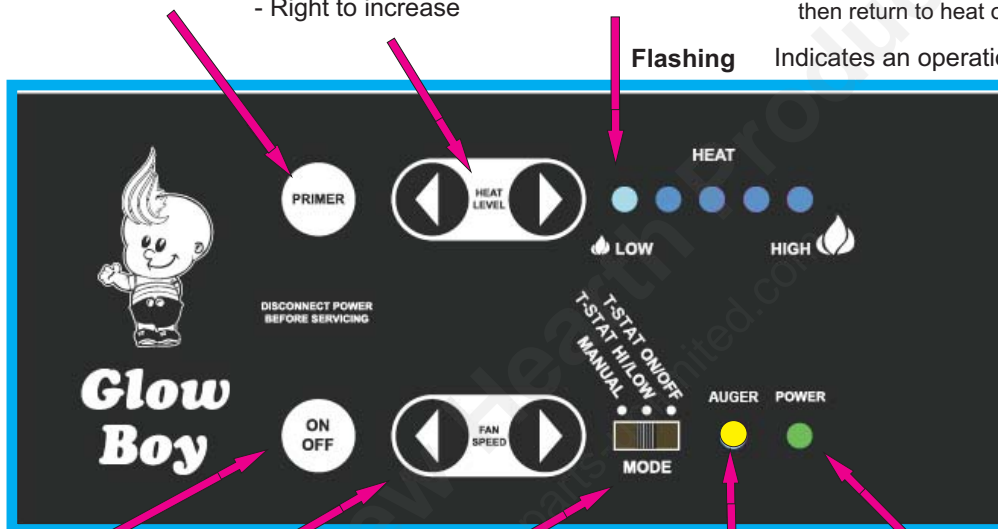
#### HEAT & FAN INDICATOR

##### Solid

Indicates 5 set Heat Outputs  
Indicates 5 set Heating Fan Speeds  
- low is OFF + 4 speeds  
- will indicate fan speed temporarily then return to heat output.

##### Flashing

Indicates an operation error



#### ON / OFF

Used to turn appliance on or off

#### FAN SPEED

Increase or decreases Room Heating Fan  
- Left to decrease  
- Right to increase

#### MODE OF OPERATION

3 MODES  
Slide Switch  
- Manual  
- Thermostat Hi/Low  
- Thermostat On/Off

#### AUGER

Yellow light  
- when "ON" the auger is turning

#### POWER LED

Yellow light  
- power, initial 30 sec start up  
Red light  
- start up mode  
Green light  
- operating mode

Glow Boy Control DHC4110

### Operation 101 - Consumer

#### ON / OFF Touch Pad

Used to turn the appliance ON and OFF.

This touch pad allows electricity to flow to the electrical components for 15 minutes. The exhaust fan will begin to operate and a yellow LED's will light up in the power indicator. After 30 seconds the blue LED's will light up, the power indicator will go RED, the igniter will begin to glow and the auger will feed fuel to the system for 2 minutes. If before 15 minutes the LOW LIMIT (F120) disk has tripped, the appliance will continue to operate. If for some reason the F120 disk has not been tripped in 15 minutes, the control board will shut off the electricity throughout the appliance.

#### Power Indicator Light

This light will be illuminated when the ON / OFF Touch Pad has been activated.

- A RED light indicates that the appliance is in the START UP mode.
- A GREEN light indicates has reached safe operating temperature and is running in normal operation, as determined by the MODE switch.
- NO light is used to indicate when the appliance is in the COOL DOWN or SHUT DOWN mode.

# Part Specifications

## Glow Boy DHC Soft Touch

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### Control Board Operation ... Con't

#### HEAT LEVEL & INDICATOR



The 5 different indicators are LED's only and pushing them will not increase the Heat or Fan rates.

The HEAT RATE is increased or decreased by pushing the HEAT LEVEL touch pads. The arrow to the left decreases the rate, while the arrow to the right increases the rate. Be patient while pushing the TOUCH PADS. As you increase the heat output the number of LED indicators will increase, once with each push. As you reduce the heat output, once with each push, the number of LED indicators will reduce.

If at anytime these LED indicators flash, this indicates an operational, or component error. See "Diagnostic Readouts" for further information.

#### FAN SPEED & INDICATOR



The room heating FAN SPEED will also use the HEAT LED INDICATOR. The FAN SPEED has 4 speed settings as well as being able to be turned "Off". The viewing of the LED's is only while you are using the FAN SPEED touch pad, then the indicator returns to indicate heat output. Each time the UP (right side) or DOWN (left side) touch pad is pushed the LED indicator will move up or down one position, then the HEAT rate will light up. To increase the fan speed push the Fan Speed touch pad, ONCE, let go, wait for the Heat rate indicator to come back, then push the Fan Speed touch pad again. Repeat process until the desired speed is reached.

The LOW setting turns the room heating fan off, only if the Fan Limit Switch F140 has not tripped.

The CONVECTION FAN is dual purpose; it is used to blow room air through the heat exchange system and back into the room; and to cool the electrical component compartment, the hopper, and the side, top and back panels of the appliance.

When the HEAT LEVEL is set at the higher levels (3,4 or 5) the fan speed should be set to medium speed (2 or 3). If for any reason the appliance reaches a temperature of 140°F the FAN LIMIT (F140) snap switch will automatically turn the fan to FULL speed. After the fan runs on high for a few moments it may cycle back to its lower setting and will continue to cycle between (HIGH) and the selected setting. This cycling from high to low is a normal condition, as well as a safety feature.

The Convection Fan speed will never effect the rate of burn in the burn pot. If at anytime it does, there is an air leakage concern, and this needs to be addressed.

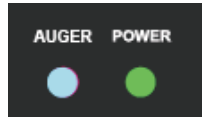
# Part Specifications

## Glow Boy DHC Soft Touch

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### Control Board Operation ... Con't

#### AUGER INDICATOR



The AUGER CYCLE LED indicates when an electrical signal is being sent to the AUGER MOTOR. It is NOT used to indicate the actual movement of the auger. When the signal is being sent for the auger to turn, the LED will be solid blue for 3 seconds. When the LED is off, no signal is being sent. By counting the off time of the auger, is how to confirm the actual feed rate setting or adjustments to the feed rates. The longer the LED is off, the lower the feed rate or heat output will be, and visa versa.

#### PRIMER BUTTON



Pressing and holding this button will turn the AUGER, speeding the feed of the pellets into the burn pot. This is convenient when using the heater for the first time or when you have completely emptied the hopper and need to restart the heater.

#### OPERATION MODES



##### MANUAL:

Sliding the switch to MANUAL will allow you to manually select the heat and fan settings. In manual mode the appliance will run at your desired heat and fan settings, until you manually turn the appliance off or the heater runs out of fuel.

##### T-STAT HI/LOW:

(requires purchasing the optional "Wall Thermostat Add-On Kit")

This mode of operation, when using a wall thermostat, is preferred over the On/Off Mode, during those long and chilly winter nights. The life of the 300 watt Igniter is greatly increased, and once the room has been brought up to temperature, it does not take as much energy to keep it at that temperature.

In the Hi/Low mode the remote thermostat will control the heat output by alternating between the lowest heat setting (Low) and the selected HIGH heat output level (2,3,4, or 5).When the desired room temperature is reached the stove will automatically go into the LOW (1) heat cycle.

This cycle will continue until the appliance runs out of fuel or the OFF touch pad is pushed.

# Part Specifications

## Glow Boy DHC Soft Touch

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### Control Board Operation ... Con't

#### OPERATION MODES, con't



#### T-STAT ON/OFF:

(requires purchasing the optional "Wall Thermostat Add-on Kit")

Sliding the switch to T-STAT ON/OFF will allow the appliance to run automatically. This mode of operation is recommended for the spring and fall seasons, as the heater is only required periodically. In this mode the life of the igniter is reduced and the power consumption will be higher, if used throughout the winter months.

In the On/Off mode the remote thermostat will control the heat output by initiating the Start Up procedure of the appliance, then running at the selected HIGH heat output level (2,3,4, or 5). When the desired room temperature is reached the stove will automatically go into the LOW (1) heat cycle for 1 hour (60 minutes). After 60 minutes if more heat is not required the control will initiate the Shut Down procedure to shut off the appliance completely. The unit will again restart automatically when the thermostat calls for heat..

This cycle will continue until the appliance runs out of fuel or the OFF touch pad is pushed.

### Control Board Adjustments

#### Feed Rate Trims



The PRIMER and HEAT LEVEL touch pads are used to aid in adjusting the rate of fuel feed to match the heating requirements of the appliance to the area needing the heat. Both the combustion fan speed and the feed rates have been factory set but may need to be adjusted (trimmed) on site. Due to different installation setups, length and size of venting, pellet fuel quality, size and layout of heating area, and construction type and materials, the factory setting may not always be correct. To help keep the flame from extinguishing on the minimum heat level (1) the feed rate or heat level can be trimmed when in normal operation (after start-up cycle).

To RAISE the FEED RATE press and hold the primer touch pad while you push the heat level up or down pads. This will slightly increase or decrease the amount of fuel being fed into the burn grate. When trimming the feed rate, the LED's will display the factory setting (#3 light) with the ability to increase up two levels (#4 and #5 lights) or decrease by two levels (#2 or #1 lights).

To assist in knowing what change has been made, simply note the amount of time the AUGER CYCLE LED stays OFF, before and after the changes. Lengthen the time this LED stays OFF lowers the the fuel feed while shortening the off-time increases the fuel feed.

# Part Specifications

## Glow Boy DHC Soft Touch

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### Control Board Adjustments ... Con't

#### Combustion Fan Trim



The PRIMER and FAN SPEED touch pads are used to aid in adjusting the rate of combustion fan to match the heating requirements of the appliance to the area needing the heat. Both the combustion fan speed and the feed rates have been factory set but may need to be adjusted (trimmed) on site. Due to different installation setups, length and size of venting, and pellet fuel quality, the factory setting may not always be correct. To help keep the proper amount of air flowing through the burn grate, to achieve maximum efficiency, it may be necessary to increase or decrease the combustion fan speed.

To keep the flame from extinguishing or the burn grate from over filling, on the minimum heat level (1) the combustion fan speed can be trimmed when in normal operation (after start-up cycle).

To TRIM the COMBUSTION FAN RATE:

1. Ensure the heat level is at the lowest (#1) setting.
2. Press and hold the primer touch pad while you push the fan speed level up or down pads. This will slightly increase or decrease the amount of air being fed through the burn grate. When trimming the fan speed, the LED's will display the factory setting (#3 light) with the ability to increase up two levels (#4 and #5 lights) or decrease by two levels (#2 or #1 lights).

To assist in knowing what changes are being made, simply turn down the Fan Speed (room heating fan) to the lowest setting. This will turn off the heating fan and allow for easy listening of the combustion fan. Also observe the movement of fuel in the burn grate. There should be a slight movement of pellets in the grate, without any large unburnt pellets being blown out of the burn grate.

#### REMEMBER:

Any adjustments to the board by using the Trims will NOT be lost in the event there is a power failure or if the unit is unplugged. The Control Board does have a memory function.

**REMEMBER TO MAKE A NOTE OF THE FINAL ADJUSTMENT TO THE CONTROL BOARD FOR FUTURE REFERENCE.** USE THE LABEL FOUND INSIDE THE HOPPER AREA TO DO SO

#### Electrical Protection:

Located on the rear panel of the Control you will find a replaceable fuse.

This fuse is a 250 Volt, 5 Amp Fuse, 5 mm X 20mm fast acting.



# Part Specifications



## Glow Boy DHC Soft Touch

### Control Board Diagnostic Features

#### HEAT & FAN INDICATOR ERROR STATUS - BLUE LIGHTS

- # 2 LED Vacuum Switch - loss of vacuum
- # 3 LED Low Limit Switch
- # 4 LED High Limit Switch - Over heat



#### ON / OFF

Used as  
Reset /  
Clear for any errors

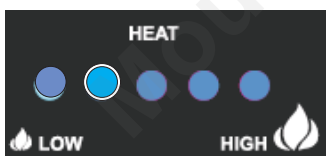
#### AUGER

Blue light  
- when "ON" the  
auger is turning

#### POWER LED

Yellow light  
- initial power mode  
Red light  
- start up mode  
Green light  
- operating mode

### Heat & Fan Indicator Alarm Status



The #2 LED light will FLASH if the control senses a **loss of vacuum**. The light will begin to flash after approximately 60 seconds once a loss of vacuum has been sensed.

The appliance will go into Shut Down mode.

After correcting the problem, the appliance must be re-started. The On/Off touch pad must be pressed twice. Once to clear the error and the second time to run the appliance.

### Loss of Vacuum can be a result of the following:

#### Operator Error or Neglect

- \* Leaving Main Door open too long
- \* Forgetting to close the Main Door
- \* Forgetting to close and seal the Ash Clean Out Door
- \* Allowing the venting to get plugged.
- \* Allowing the ash traps to get plugged.
- \* Forgetting routine or required maintenance.

#### Component Failure

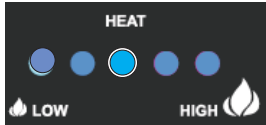
- \* Combustion Fan Failure or Blockage
- \* Vacuum Switch
- \* Vacuum Hose
- \* Gasketing or Seals
- \* Wiring Connections
- \* Control Board

# Part Specifications

## Glow Boy DHC Soft Touch

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### Control Board Diagnostic Features . . .con't



The #3 LED light will FLASH if the control senses a **lack of or loss of exhaust temperature**. The Low Limit Switch (F120) mounted on the exhaust fan housing measures the exhaust temperature.

The 2 main functions of the Low Limit F120 are:

1. Upon starting the appliance, the Control Board has an automatic 15 minute "Start-Up" mode. If the exhaust temperature does not reach 120°F within 15 minutes the control will initiate the "Shut Down" mode. You will see the following:
  - A. # 3 Heat Level LED will begin to blink
  - B. No other LED's will be lite.
  - C. Auger turns off.
  - D. Convection and Exhaust fans go to full speed.
  - E. After 35 minutes the complete appliance will shut down.
2. Should at anytime, during normal operation, should the exhaust temperature go below 120°F, the control will also initiate the "Shut Down" mode.

After correcting the problem, the appliance must be re-started. The On/Off touch pad must be pressed twice. Once to clear the error and the second time to run the appliance.

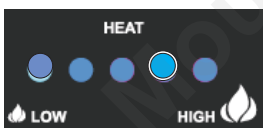
### Loss of Exhaust Temperature can be a result of the following:

#### Operator Error or Neglect

- \* Hopper is empty or ran out of fuel
- \* Dirty Burn Grate
- \* Forgetting to close and seal the Ash Clean Out Door or Front Door
- \* Allowing the venting to get plugged.
- \* Allowing the ash traps to get plugged.
- \* Forgetting routine or required maintenance.

#### Component Failure

- \* Combustion Fan Failure or Blockage
- \* F120 Disc
- \* Wiring Connections
- \* Control Board



The #4 LED light will FLASH if the control senses an **over heat situation**, temperatures over 250°F. The High Limit Switch (L250) mounted on the rear fire wall, above the F140 Fan Limit Switch.

If the temperature at the back of the firebox exceeds 250°F, the L250 High Limit switch that is normally closed, will open, and control board will initiate the "Shut Down" mode.

After correcting the problem, the appliance must be re-started. The On/Off touch pad must be pressed twice. Once to clear the error and the second time to run the appliance.

### An overheat situation can be a result of the following:

#### Operator Error or Neglect

- \* Improper Air Inlet Rod Setting
- \* Poor or Dirty Combustion
- \* Allowing the venting to get plugged.
- \* Allowing the burn grate & pot to get plugged.
- \* Forgetting routine or required maintenance.

#### Component Failure

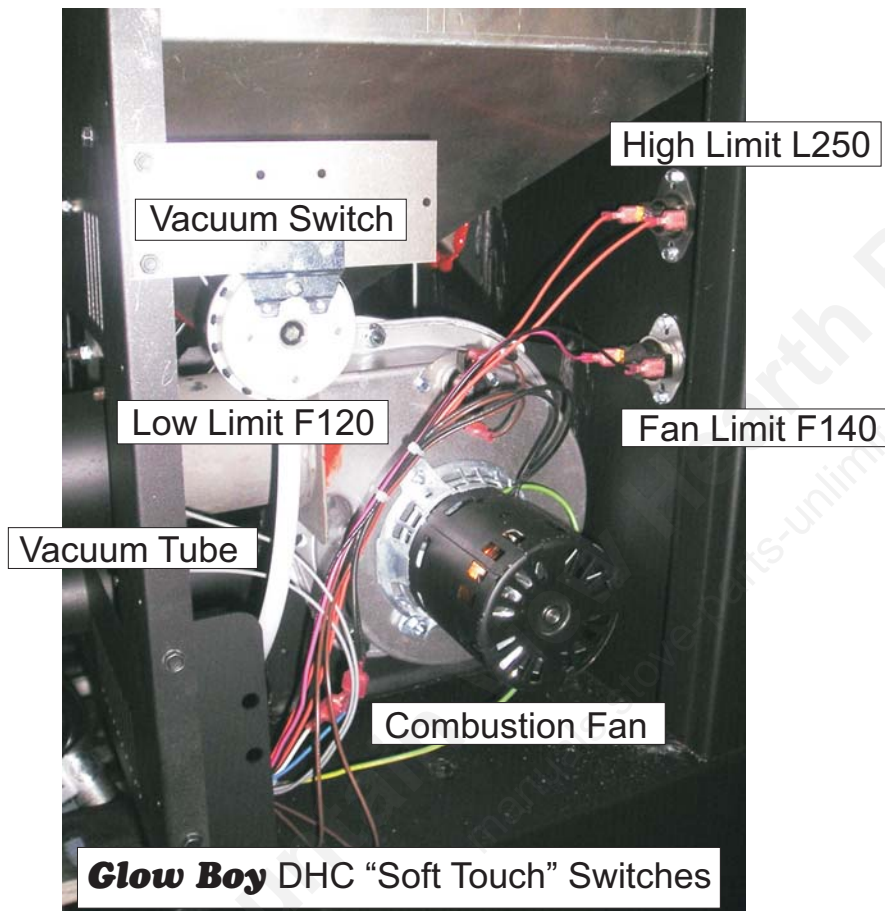
- \* Convection Fan Failure or Blockage
- \* F140 Fan Limit Disc
- \* Wiring Connections
- \* Control Board

# Part Specifications

## Glow Boy DHC Soft Touch

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### Control Board Switch Placements



**Glow Boy Control**  
DHC4110

# Part Specifications



## Glow Boy DHC Soft Touch

### Hopper Label

### Basic Lighting Procedure

1. Ensure Air Inlet Damper Rod is adjusted properly.
2. Fill Hopper with wood pellets or multi-fuel.
3. Close the Hopper Lid.
4. Plug appliance into a surge protected outlet
5. Switch control to Manual Mode.
6. Press the On / Off touch pad:
  - \* Combustion fan starts
  - \* Pellets begin to fall into the burn grate.
  - \* Igniter starts (power light is red)
7. Adjust Heat Level and Fan Speed.
  - \* after start-up cycle is complete. (power light is green)

**NOTE:**  
If the appliance shuts off, empty the fuel from the burn grate and repeat steps 5 and 6.

### Set-Up Procedure

1. Set the air inlet damper rod
2. Ensure safe & proper install
3. Seat the burn grate
4. Fill the hopper

### Fine Tuning

Air Inlet Damper Rod Setting

Distance from unit

Feed Rate Trim

Combustion Fan Trim

### Error Status

Flashing Blue Heat LEDs

- # 2 Vacuum
- # 3 Low Limit
- # 4 High Limit

### Refer to your Owner's Manual for complete instructions.

### Model & Serial Number

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### CAUTION!

BEFORE CLEANING OR SERVICING, DISCONNECT POWER SUPPLIES!

**ATTENTION!**  
DERRANCHER L'APPAREIL AVANT NETTOYAGE OU ENTRETIEN!

**CAUTION!** - HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.

### CAUTION!

TO PREVENT FINGERS, CLOTHING OR OTHER OBJECTS FROM COMING IN CONTACT WITH THE AUGER, YOUR APPLIANCE IS EQUIPPED WITH A SHUT-OFF SWITCH WHICH STOPS THE AUGER WHEN THE HOPPER LID IS OPEN. DO NOT OVERRIDE THE SWITCH. THE AUGER IS CAPABLE OF CAUSING SERIOUS INJURY AND THIS SWITCH MAY NOT BE DISCONNECTED.

**For your families protection, and peace of mind, Dansons recommends installing and maintaining both a smoke detector and CO2 detector.**

**DO NOT RETURN** this appliance to your retailer, without calling Dansons Customer Service. For technical support, contact your dealer or call toll free 877-303-3134 or 866-456-9256.

# Glow Boy Control DHC4110

# Part Specifications



## Glow Boy DHC Soft Touch

### Wiring Harness

## Glow Boy Control DHC4110

