

“Get Stoked”

Stoker Users Manual Ver 2.0 Software

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1. Precautions

The Stoker Blowers cannot provide more draft than if you left your draft door open. So using the Stoker is no more dangerous than using natural draft.

When you use the Stoker you are dealing with fire so you must take precautions. The Consumer Product Safety Commission reports that every year about 20 deaths and 400 injuries are treated resulting from carbon monoxide poisoning from charcoal grills. The following tips will help make your barbecue/ smoker experience a safe one.

- Due to the production of carbon monoxide when charcoal is burned, barbecue / smokers should not be used inside homes, vehicles, tents, or campers, even if ventilation is provided. Carbon monoxide is odorless and colorless. You will not be alerted to the danger until it is too late.
- Make sure the barbecue / smoker is at least 10 feet away from your house, garage, or trees.
- Keep children away from the barbecue / smoker.
- Have a fire extinguisher; a garden hose attached to a water supply, or at least 4 gallons water close by in case of a fire.
- Use long handled barbecue tools and/or flame resistant mitts.
- Keep alcoholic beverages away from the barbecue / smoker.
- Remove the charcoal ashes from the barbecue / smoker and place them into a metal container with a tight fitting metal lid. Add and mix in water with the ashes, and set aside for several days. Dispose of the mixture in accordance with the local sanitation guidelines.

2. Introduction

Thank you for purchasing the Stoker from *Rock's Bar-B-Que*. The Stoker is a power assisted draft control system for your barbecue / smoker. The Stoker will allow you to control your barbecue / smoker like you would control your oven.

Basic System

The Basic Stoker System consists of four components: The Stoker, Temperature Sensor, Blower, and Power Supply. The Stoker is a versatile electronic controller housed inside a rugged powder coated aluminum enclosure. The Temperature Sensor is a fast responding thermocouple housed inside a stainless steel tube. The Blower supplies the draft and comes in different sizes to fit different barbecue / smokers. The Power Supply is the “wall wart” type and powers all of the components.

How It Works

A Temperature Sensor is placed inside your barbecue / smoker at the location where you want your target temperature maintained. A blower is installed so it blows air directly into the firebox. The Stoker measures and compares the Temperature Sensor measurement to the target temperature setting. When the measured temperature is lower than the target temperature, the blower turns on. When the measured temperature goes above the target temperature the blower turns off. This cycle continues hundreds of times during your cook to maintain the target temperature.

Alarm Features

The Stoker has alarms that you can configure for each Temperature Sensor. You can choose a “Fire Alarm” that gives you both a high alarm to make sure your fire is not getting to hot, and a low alarm to make sure your fire is not going out.

Food Measurement Features

The Stoker can also monitor the temperature of the food you are cooking and alarm you when it is done.

Controls Several Barbecues / Smokers

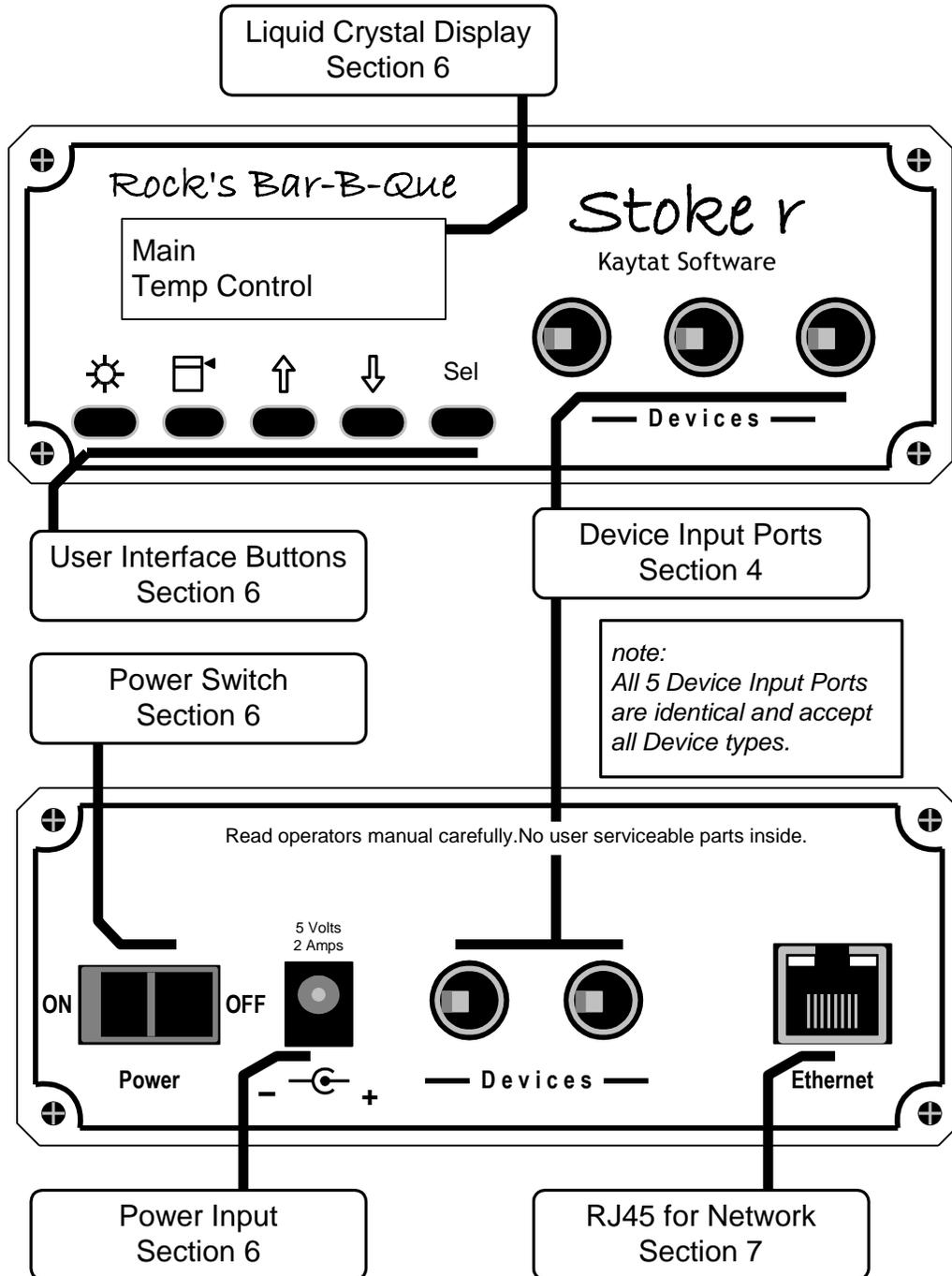
The Stoker is capable of controlling several barbecues / smokers all at once. The Stoker has 5 device ports but can easily be expanded with a “Device Port Expander”. You need 2 device ports for each barbecue / smoker you want to control, one port for a Temperature Sensor and one port for a Blower.

Built in Web Server

Connect the Stoker to an Ethernet network and you can control your Stoker from anywhere you have network access. No special software is required to use your web browser to monitor and control your Stoker. The web server is also available as a read-only page which allows you to share the information with the world without fear of someone altering your settings.

3. First Look

Stoker Front Panel



Stoker Rear Panel

4. Devices

One of the most versatile features of the Stoker is the way the Temperature Sensors and Blowers interface to the Stoker. There are five device ports on each Stoker. Three ports on the front and, 2 ports on the back. All of the Device ports are identical and accept any device available for the Stoker.

For convenience you can plug and unplug devices at any point during the cook. The Stoker needs to be turned off before inserting any new devices. Your settings and configurations will not be lost while the Stoker is off. This allows you to let the Stoker get your fire going while you are in the house prepping the meat and inserting the Food Temperature Sensors. Then you take your meat outside, turn off the Stoker, and plug the Temperature Sensors in. Turn the Stoker back on and your system will be ready to control your barbecue/smoker.

Caution: Plug only devices from *Rock's Bar-B-Que* into the Stoker

Temperature Sensors

Rock's Bar-B-Que offers a variety of Temperature Sensors; pointed Temperature Sensors for inserting into food, Fire Pit Temperature Sensors for measuring your fire temperature. The Standard Temperature Sensors are housed inside a stainless steel closed end tube. The lead wire is made from Teflon. The Teflon wire can be used for temperatures up to 450°F. The Temperature Sensors have a special high temperature silicone rubber strain relief where the lead wire comes out of the tube. Care should be taken when cleaning not to pull off or damage the strain relief. Do not submerge the plug end of the Temperature Sensors into water! The plug has electronics inside that can be damaged. All of the Temperature Sensors come standard four feet (4ft) long. (Custom lengths available by special order)

*** Please Note: Temperature sensors should not be used for cooks above 450°F

Fire Pit Temperature Sensors

When you measure the internal temperature of your barbecue / smoker you want to pay close attention to where you place your fire pit Temperature Sensor. The temperatures in your barbecue / smoker can vary greatly from one location to another. The most variance will occur in the vertical dimension.

Your Stoker came standard with a Temperature Sensor attachment clip. The clip has a high temperature silicone rubber sleeve that thermally isolates the tip of the Temperature Sensor from its mounting, so you get fast accurate measurements.

You want to place your fire pit Temperature Sensor at the same level of, and a couple inches away from the food you are cooking. Most of the time, the optimum place for your attachment clip is on the grill that your food is on. Be careful to place the Temperature Sensor in a place so it is not touching anything and juice from food you are cooking does not drip on it.

*** Please Note: Temperature sensors should not be used for cooks above 450°F

Food Temperature Sensors

To monitor the internal temperature of your food while you cook, you will need a Food Temperature Sensor. *Rock's Bar-B-Que's* Food Temperature Sensors are made from food grade 304 stainless steel. They have a moderate point for easy insertion into food.

Insert the Temperature Sensor into the food so the tip is in the thickest part of the food. You can set a Food Alarm so you are notified when your food is done.

*** Please Note: Temperature sensors should not be used for cooks above 450°F

Blowers

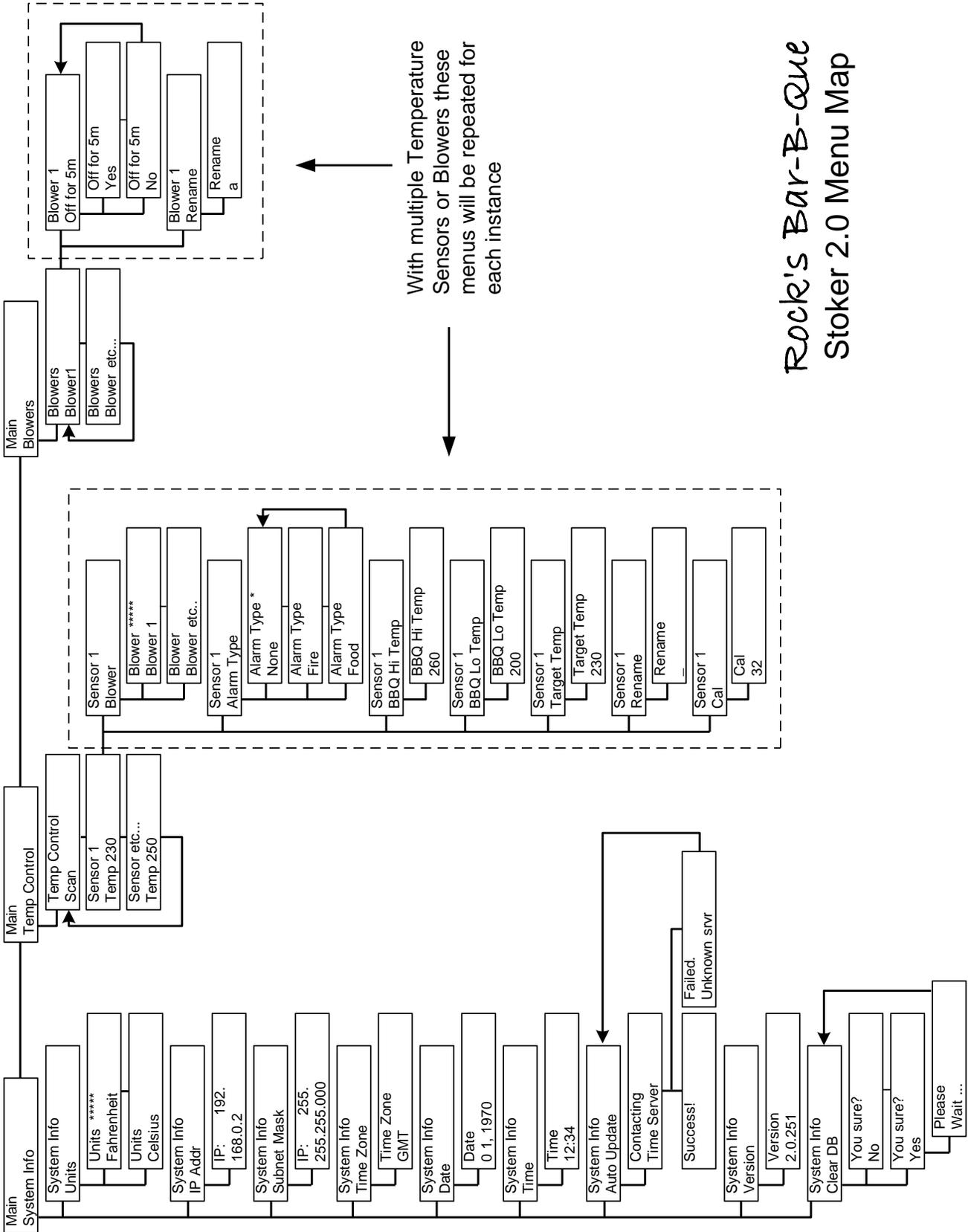
The Blower is what provides the draft to stoke your fire. You want to choose a blower that is the right size for your barbecue / smoker. If you choose a blower that is too big you will not have good fine control. The standard 5 Cubic feet / minute (CFM) Blower is a good choice for most backyard barbecue / smokers.

The 5-CFM Blower comes standard with a door that automatically opens and closes when the Blower cycles on and off. Since the Blower door automatically closes and seals off the natural draft you are able to maintain very low temperatures. The door has a special high temperature coating to help protect the Blower from the heat of the fire.

More Device Types to Come

Currently the devices we offer are limited to Temperature Sensors and Blowers. In the future we will possibly offer other devices like louder alarms, damper controls, and things we have not thought of yet!

5. Quick Reference Menu



Rock's Bar-B-Que
Stoker 2.0 Menu Map

6. Stoker User Interface

The first user interface required is plugging in the power. The power input is located in the rear of the Stoker. The power supply is 5 Volts and plugs into standard wall outlets. It is important to use only *Rock's Bar-B-Que* approved power supplies.

The next interaction is turning the power on. The power switch is located on the rear panel of the Stoker. The Stoker has many tasks to do on power up. It takes about 10 seconds for the Stoker to complete a self-test and check for attached devices. About three seconds after the power is turned on the LED back light lights. About 7 seconds later the Stoker LCD will show the opening menu and you are ready to go.

To control the Stoker you use the five buttons on the front panel. The user interface is similar to what is used on many consumer electronic devices, like fax machines and computer monitors. At first it may seem a bit slow, however once you get used to it, you will find it easy to use. We recommend you plug it in, and play with it on your kitchen table for a few minutes to get familiar with the controls.

Here is a brief description of the buttons.

LED back light. Turns LED back light on and off.

□ ◀ **Menu.** Takes you back to the previous menu

↑ **Up Arrow.** Increments numbers and characters

↓ **Down Arrow.** Decrements numbers and characters.

Sel **Select.** Selects the current menu item.

The Liquid Crystal Display (LCD) on the front of the Stoker gives the user visual feedback of the status of the Stoker. With the five buttons and the LCD you can control all of the functions of the Stoker.

Main Menu

Pressing the ↑ button cycles through the three Main menu options.

Main System Info
Main Temp Control
Main Blowers

General system information and user preferences

Temperature measurements setup and control.

Blower naming and 5 minute shut off.

Pressing the ↓ button cycles you back through the three Main menu options.

System Info Menu

The System Info menu is where you set the user preferences. Once you have set your preferences and stored them to memory you will seldom need to visit the System Info menu.

Main
System Info

From the Main menu press the Sel button to choose the System Info option

System Info
Units

Press the \uparrow \downarrow buttons to cycle through the System Info options. Press the Sel button to choose the option desired. Press the \square \blacklozenge button to return to the previous menu.

System Info
etc...

Units

System Info
Units

Press the Sel button to choose the Units menu. Press the \uparrow \downarrow buttons to choose either Fahrenheit or Celsius. Press the Sel

Units *****
Fahrenheit

button to select which unit to use. The ***** are displayed in the window of the selected unit. Press the \square \blacklozenge button to return to the previous menu.

Units
Celsius

IP Addr

System Info
IP Addr

Press the Sel button to display the IP address. The Stoker must be connected to a network for this function. Press the \uparrow \downarrow to change the first 3 numbers. Press the Sel button to move to the next set and repeat. When finished with the 4th set press the Sel button to save. See the “Network Connection” chapter for more information. Press the \square \blacklozenge button to return to the previous menu.

IP:
192.168.000.002

Subnet Mask

System Info
Subnet Mask

Press the Sel button to display the Subnet Mask. The Stoker must be connected to a network for this function. Press the \uparrow \downarrow to change the first 3 numbers. Press the Sel button to move to the next set and repeat. When finished with the 4th set press the Sel button to save. . See the “Network

IP:
255.255.255.000

Connection” chapter for more information. Press the \square \blacklozenge button to return to the previous menu

Time Zone

System Info
Time Zone

Press the Sel button to select the Time Zone option. Press the \uparrow \downarrow until the desired zone appears. Press the Sel button to select it. An * will appear on the time zone selected. Press the \square \blacklozenge button to return to the previous menu. *note requires your Stoker to be connected to a network with a timeserver.

Time Zone *
PST (-0800)#

Date

System Info
Date

Date
01/01/1970

Press the Sel button to select the Date option Press \uparrow \downarrow the buttons to change the month. Move to day by pressing the Sel button. Press \uparrow \downarrow the buttons to change the day Move to year by pressing the Sel button. Press \uparrow \downarrow the buttons to change the year. Press the \square \blacklozenge button to return to the previous menu.

Time

System Info
Time

Time
12:00:00

Press the Sel button to select the Time option Press \uparrow \downarrow the buttons to change the hour. Move to minutes by pressing the Sel button. Press \uparrow \downarrow the buttons to change the minutes Move to seconds by pressing the Sel button. Press \uparrow \downarrow the buttons to change the seconds. Press the \square \blacklozenge button to

return to the previous menu.

Auto Update

System Info
Auto Update

Contacting
time server

Success!

Failed
Unknown svr

Press the Sel button to select the Auto Update option. Press the Sel button to have the Stoker get the time off of a network timeserver. If you get the Success screen you are connected to a timeserver and your time has been set automatically. If the Stoker could not locate a timeserver you will get the Failed screen and you will have to set the time through the Time input screen.

Version

System Info
Version

Version
2.6.0.249

Press the Sel button to display the Software version that is currently installed and running on the Stoker. Press the \square \blacklozenge button to return to the previous menu.

Clear DB

System Info
Clear DB

You sure?
Yes

You sure?
No

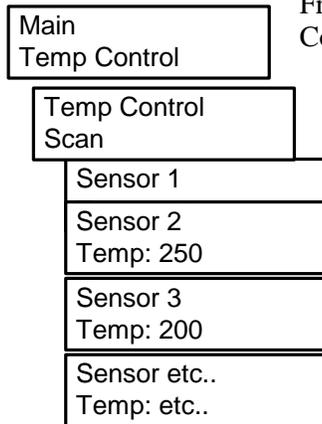
Please
Wait ...

Press the Sel button to clear the database. Be careful when using this function. Before clearing the Database make sure all off the Temperature Sensor calibration numbers have been recorded. The Temperature Sensors that came with your Stoker are recorded in Appendix A. If you have purchased new Temperature Sensors record them. Press the \downarrow to select "Yes" then press the Sel. button to clear the database. Press the \square \blacklozenge button to return to the previous menu.

Temp Control Menu

The Temperature Control menu is where you select a Temperature Sensor. You must have a Temperature Sensor plugged in to your Stoker or you will not get a Sensor Menu. After you select a Temperature Sensor you can select a Blower, set the Target Temperature and configure the Alarms.

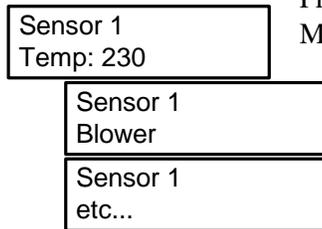
Temperature Sensor Selection Menu



From the Main Menu Press the Sel button to choose the Temp Control option. Press the Sel button again to Automatically scan through all of the Temperature Sensors connected. Press the \uparrow \downarrow buttons to scroll through the Sensors manually. Press the \square \blacklozenge button to return to the previous menu

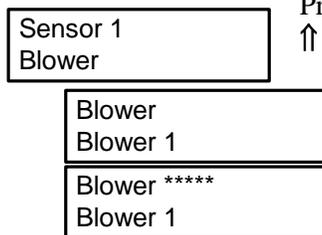
*note: Your Temperature Sensors were identified at the factory as "Sensor 1", "Sensor 2" etc.... This manual refers to your Temperature Sensors as "Sensor 1", "Sensor 2" etc... If you have renamed your Temperature Sensors the "New Name" would be displayed instead of "Sensor 1" etc...

Temperature Sensor Settings Menu



Press the Sel button to select the Temperature Sensor Settings Menu. Press the \uparrow \downarrow buttons to cycle through the Temperature Sensor options. Press the Sel button to select the option displayed. Press the \square \blacklozenge button to return to the previous menu

Blower



Press the Sel button to display the available Blowers. Press the \uparrow \downarrow buttons until the desired Blower is displayed. Press the Sel button to select the Blower. The * indicate the Blower is selected. Press the Sel button again to deselect the blower. Press the \square \blacklozenge button to return to the previous menu.

Alarm Type

Sensor 1 Alarm Type
Alarm Type * None
Alarm Type Fire
Alarm Type Food

Press the Sel button to display the available alarm types. Press the \uparrow \downarrow buttons until the desired alarm is displayed. Press the Sel button to select the displayed alarm type. The * indicates which alarm option is selected. Only one alarm type per sensor is allowed. The Fire alarm is a high and low alarm for monitoring the fire. The Food alarm is a high only alarm for monitoring food. Press the \square \blacklozenge button to return to the previous menu.

*note: press any button to silence alarms.

BBQ High Temp

Sensor 1 BBQ Hi Temp
BBQ Hi Temp 260

Press the Sel button to select the BBQ High Temp option. Press the \uparrow \downarrow buttons to set to the desired alarm temperature. This alarm helps indicate when your fire is too hot. Press the \square \blacklozenge button to return to the previous menu. *note: You only get this Menu if you have selected the Fire Alarm option.

BBQ Low Temp

Sensor 1 BBQ Lo Temp
BBQ Lo Temp 200

Press the Sel button to select the BBQ Lo Temp option. Press the \uparrow \downarrow buttons to set to the desired alarm temperature. This alarm helps indicate your fire is going out. Press the \square \blacklozenge button to return to the previous menu. *note: You only get this Menu if you have selected the Fire Alarm option.

Target Temp

Sensor 1 Target Temp
Target Temp 230

Press the Sel button to select the Target Temp option. Press the \uparrow \downarrow buttons to set to the desired target temperature. Press the \square \blacklozenge button to return to the previous menu.

Rename

Sensor 1 Rename
Rename _
Rename a

Press the Sel button to select the Rename option. Press \uparrow \downarrow the buttons to select a character. Move to the next character by pressing the Sel button. Move to the previous character by pressing the \square \blacklozenge button. When you have completed setting all 12 characters, press the Sel button to save changes. Press the \square \blacklozenge button to return to the previous menu.

Cal

Sensor 1
Cal

Cal
32

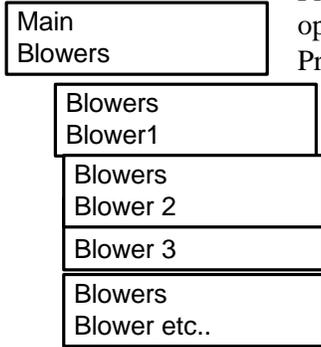
Press the Sel button to select the Cal option. Press the ↑ ↓ buttons to set to the desired Calibration number. Press the □ ← button to return to the previous menu. The Stoker

Temperature Sensors are calibrated at the factory. If you purchase another Sensor it will come calibrated from the factory. It is a good idea to record the new Sensor and calibration number in the back of this manual. You can contact the factory to get calibration numbers for all sensors manufactured.

Blowers Menu

The Blowers Menu is where you name and rename your blowers and store the names in memory.

Blower Select Menu

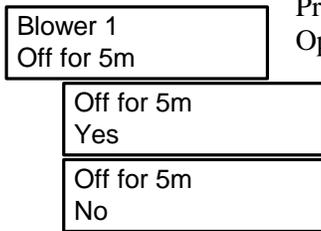


From the Main Menu Press the Sel button to select the Blowers option.

Press the \uparrow \downarrow buttons to cycle through the Blowers that are connected. Press the Sel button to select the Blower. Press the \square \blacklozenge button to return to the previous menu

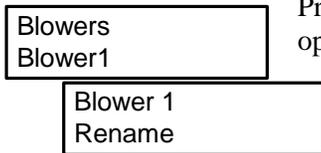
*note: Your Blowers were identified at the factory as "Blower 1", "Blower 2" etc... This manual refers to your Blowers as : "Blower 1", "Blower 2" etc... If you have renamed your Blowers the "New Name" would be displayed instead of "Blower 1" etc...

Blower Pause



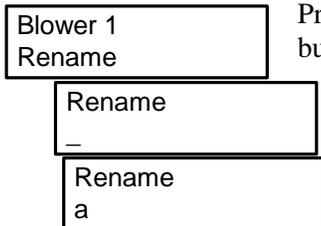
Press the \uparrow \downarrow buttons to cycle through the Blower Pause Options. Press the Sel button to select the option desired. Press the \square \blacklozenge button to return to the previous menu. The 5 minute pause is used when you want to open your cooker without turning the Blower on. The Blower will start in its normal control cycle after the 5-minute pause.

Blower Rename Menu



Press the \uparrow \downarrow buttons to cycle through the Blower Rename options. Press the Sel button to select the option desired. Press the \square \blacklozenge button to return to the previous menu.

Rename



Press the Sel button to select the Rename option. Press \uparrow \downarrow the buttons to select a character. Move to the next characters by pressing the Sel button. Move to the previous character by pressing the \square \blacklozenge button. When you have completed setting all 12 characters press the Sel button to save. Press the \square \blacklozenge button to return to the previous menu.

7. Network Connection

Your Stoker connects to your network the same place your PC connects. Some cable modems and DSL adapters have built in routers (several jacks). If there is only one RJ45 jack where your computer is plugged in you will need to add a router. A router will expand your ports so you can connect your Stoker. Connect the router according to the router manufacture's directions.

DHCP Installation.

You can connect your Stoker to a "DHCP Server" and monitor and control the Stoker with your PC and Web Browser. The DHCP server/client is the most common configuration for home networks. If you have a Broadband connection (Cable Modem or DSL) you probably have a DHCP server/client network.

The cable modem or DSL adapter acts as the DHCP Server. When your PC connects to your network it requests an IP Address from the DHCP server. This identifies your computer on the network. This is transparent to the user.

The Stoker connects to your network the same way your PC does. When the Stoker powers up it requests an IP Address from the DHCP server. The IP Address that was assigned to the Stoker can be found in the System Info Menu. on the Stoker

System Info
IP Addr

IP:
192.168.000.002

Press the Sel button to display the IP address that was assigned on power up. Press the * button to return to the previous menu.

To access your Stoker, launch your web browser and type the IP Address into URL Address field in this case <http://192.168.0.2> and the Stoker will serve a Web Page.

Static IP Installation

By default, DHCP is used. To use a custom IP address:

System Info
Subnet Mask

IP:
255.255.255.000

Press the Sel button to display the Subnet Mask. If it is not correct change it to the desired address If it is correct, make sure it is saved by pressing the Sel button 4 times. Press the * button to return to the previous menu

System Info
IP Addr

IP: 255.
255.255.000

Press the Sel button to display the IP address. If it is not correct change it to the desired address. If it is correct, make sure it is saved by pressing the Sel button 4 times. Press the * button to return to the previous menu.

Wait a few seconds for the network parameters to propagate through the system and to the network. From then on, every time the stoker is rebooted, this custom IP address will be used.

Re-Enabling DHCP

System Info
IP Addr

IP:
255.168.100.003

Press the Sel button to display the IP address. Enter 255 in the first set of digits in the address. Press the Sel button 3 more times if your custom IP address was 192.168.100.003 it will now look like the menu box to the left. Press the Sel button 1 more time to save. Press the ♦ button to return to the previous menu,

Wait a few seconds for the DHCP client to acquire a new IP address. From this point on, DHCP will be used.

8. Wireless Connection

You can turn your Stoker into a wireless 802.11x system by adding a Wireless Bridge. They are available from many companies from \$60 -\$80 or so. Follow the directions of the Wireless Bridge. Manufacture for installation.

9. Securing Built-in Web Server

The built in web server now has a security feature which allows you to make it a “read-only” page, allowing only those with the password to alter the settings on the Stoker. This feature will come in handy if you are at a BBQ contest or want to share your cooking experience with friends around the world.

In order to access this feature, the Stoker must be connected to a network. Refer to the Network Connection section for more information. Type the IP address of the Stoker into the URL of a web browser with “/ro.html” at the end of the IP address to access the setup page. Ex. 192.168.1.105/ro.html.

Enter the password information and click the “Read-Only” box to turn this feature on. Once you access the web server, the temperature settings will be locked and cannot be changed without the password. If you forget your password, reset the database and the default settings will be restored.

10. Twitter

Every Stoker is equipped with a built-in Twitter function that will send “tweets” from your Stoker to your Twitter account. This allows you to receive updates from your stoker on the condition of the Temperature Sensors without being next to your cooker. You will need to create a Twitter account. Accounts are free and can be created at www.twitter.com.

To enable the Twitter function, the Stoker must be connected to a network. Refer to the Network Connection section for more information. Type the IP address into the URL of the web browser with “/twitter.html” at the end of the IP address to access the setup page. Ex. 192.168.1.105/twitter.html.

Enter the account information and set the interval at which you wish to receive tweets. Make sure the “enable” box is checked to turn on this function. The time interval should be set to at least 15 minutes. Save the changes and your Stoker will begin tweeting you!

11. Data Collection

You can get the all of the raw data that the Stoker measures by Telneting into the Ethernet port. When you Telnet into the Stoker you can get control of the SW that is running on it. You stop the application and restart it and the Stoker will start to spit out all of the raw data that it is measuring. You will get a stream of data that you can capture and analyze.

This feature is not yet supported. It will be supported with a later date.

12. Maintenance and Care

Stoker Electronics

The Stoker control box is not waterproof and should be kept as dry a possible. You can clean it with a damp cloth. Avoid getting water into the connector holes.

Temperature Sensors

The plug end of the Temperature Sensors has electronics inside and should not get wet. If it gets wet or soiled wipe it off with a damp cloth and dry it thoroughly. The probe end can be cleaned with dish soap and warm water.

Blowers

The blowers are not waterproof and should be kept as dry as possible. Clean the blower with a damp cloth and dry thoroughly. The connector end of the Blower has electronics inside and should be kept dry.

13. Frequently Asked Questions

Q: How come there are no High and Lo alarm Menus?

A: You must select the “Fire” alarm in the Alarm Type menu first.

Q: My sensor is reading 32 degrees, is there something wrong?

A: The Stoker is still booting up. Return to the main menu and enter the Temp Sensor menu again.

Q: My sensors are only monitoring sensors, how do I make them control sensors?

A: Control sensors are those sensors that have had blowers assigned to them. Assign a blower to the sensor and it will become a control sensor.

Q: My temperature sensor is not at the target temperature and the blower is not on, what do I do?

A: Make sure the blower is assigned to that sensor.

Q: How do I calibrate the sensor?

A: Boil a pot of water and make sure it is boiling for 10 minutes. Place the Temperature Sensor probe end into the middle of the pot, making sure the probe end does not touch the sides or bottom of the pot. The sensor should read the correct boiling point for your altitude. If it is more than a few degrees off, adjust the calibration number until it reads the correct temperature.

14. Temperature Sensor Records

	Sensor Serial Number	Sensor Name	Cal #
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			