

# WOOD GRILL and SMOKER **OWNERS MANUAL**



## For Models:

RG1000, RG2000, RG3000, RG3000M  
RGPRO, RGTAILGATER, RG5000VS,  
RG7000VS

325 S Park Street  
Reedsburg, WI 53959  
608-768-8508  
[www.royallproducts.com](http://www.royallproducts.com)  
[info@royallproducts.com](mailto:info@royallproducts.com)

# Thank You!

for selecting Royall as your wood pellet grill. Your grill has been proudly made in the USA and is designed to provide you several years of grilling enjoyment.

We truly enjoy working with you and feel honored to be your chosen supplier. Your business is very much appreciated, and we will do our very best to continue to meet your needs.

Your continued patronage and suggestions are a vital part of our companies growth. And for that, we are most grateful.

Thank you again!

We look forward to serving you for many years to come!



Matthew Kouba, MBA  
President  
Ark Alloy, LLC



**Your new grill or smoker requires some assembly,  
Please follow these simple instructions and you'll  
be ready to enjoy some great BBQ in just minutes**

## SETUP INSTRUCTIONS

<b>Choose Your Model:</b>	<b>Pg</b>
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### NEED HELP?

**WE'RE HERE**

MON - FRI, 8am to 5pm CST

**608-768-8508 x210**

info@royallproducts.com



***"It's everything you could possibly want in a wood pellet grill or smoker..."***

- Extra Large Grilling Surfaces
- Large Smoke Chamber Profiles
- Side and Bottom Shelf Systems
- Strong and Durable Welded Construction
- Unique Smoke Baffle For Enhanced Circulation

## Easy Assembly Instructions For Your RG1000, RG2000, RG3000

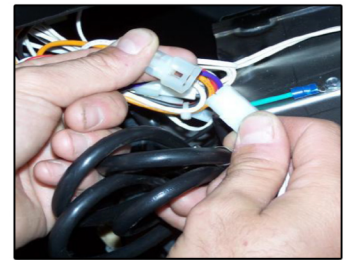
### TOOLS NEEDED TO COMPLETE THIS ASSEMBLY SECTION

#2 Phillips Screwdriver, 7/16" Wrench  
3/8" Wrench, or Hex Head Driver, Hammer



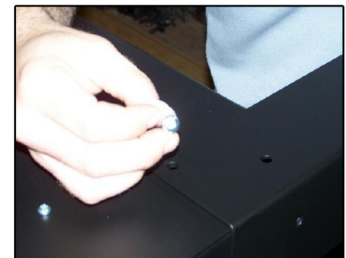
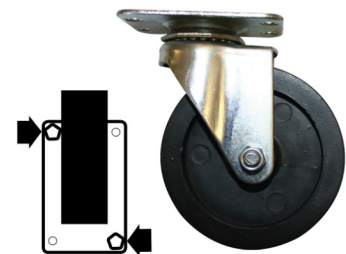
## STEP 1: Combustion Fan Assembly

- Gently lay the grill on its back, and unwrap the included combustion fan assembly
- Locate (4) mounting holes on the bottom side of the grill, attach the combustion fan assembly to the bottom of the grill using (4) 3/8" hex head 1/2" long screws while keeping the transformer oriented towards the pellet hopper side of the grill.
- Plug the combustion fan into the grill controller using the ORANGE/WHITE connector from the grill controller.

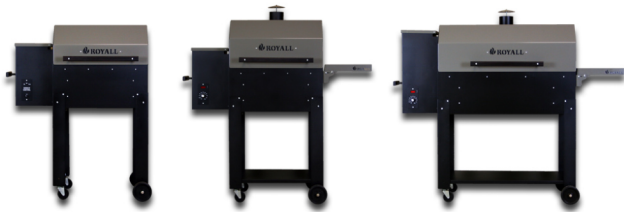


## STEP 2: Castors, Bottom Shelf, and Wheels

- Locate the (2) short legs included with your grill. Attach (1) swivel castor to the bottom of each of the short legs using (2) 1/4 - 20 bolts and flange nuts. Locate bolts so that they are in a diagonal pattern as shown here:
- Loosely attach the (2) short legs to the left side (hopper side) of the grill using (4) 1/4 -20 x 5/5" Phillips head bolts and (4) flange nuts per leg. Repeat the process with the remaining (2) long legs on the opposite end of the grill.



## Easy Assembly Instructions For Your RG1000, RG2000, RG3000



## ROYALL BBQ Flavor Starts Here!

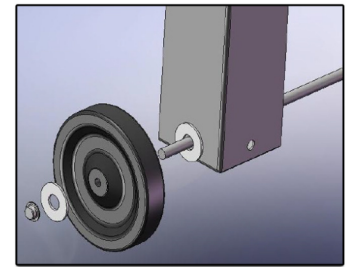


Rubs, Seasonings, and BBQ Sauce  
Available at [www.ShopRoyall.com](http://www.ShopRoyall.com)

## STEP 2: continued

### Castors, Bottom Shelf, and Wheels

- Attach Bottom Shelf (RG2000 and RG3000 only) using (4) 1/4" - 20 x 5/8" Phillips head bolts and (4) flange nuts to bottom of the (4) legs as shown.
- You can now tighten the leg bolts and shelf bolts (if applicable) securely.
- Locate and install (1) cap nut on **only** one end of the 3/8" axle rod by tapping it on with a hammer.
- Install (1) 3/8" washer, followed by (1) 5" Wheel, and another 3/8" washer. Install the 3/8" axle rod thru the (2) long legs. On the opposite side, install (1) 3/8" washer, followed by the remaining 5" wheel, and another 3/8" washer. Secure the remaining cap nut on the end of the 3/8" axle rod.



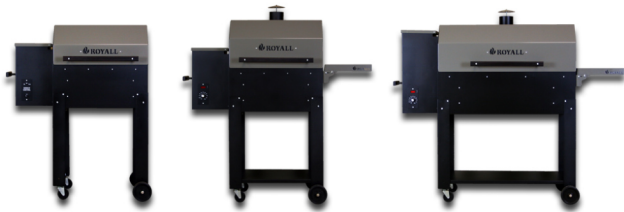
## STEP 3:

### Pull Handle and Grill Lid Handle

- Stand the grill back into an upright position
- Attach the smaller side pull handle to the pellet hopper using the 1-7/8" standoffs along with the 2-3/4" bolts and nuts included.
- Attach the grill lid handle to the grill lid using 1-7/8" standoffs along with the 2-3/4" bolts and nuts that are included.



## Easy Assembly Instructions For Your RG1000, RG2000, RG3000



### WOOD PELLETS

40# Bags

Purchase Online:  
ShopRoyall.com

**100%**  
**HARDWOOD**

APPLE  
BLEND  
CHERRY  
HICKORY  
MAPLE  
MESQUITE  
OAK  
PECAN

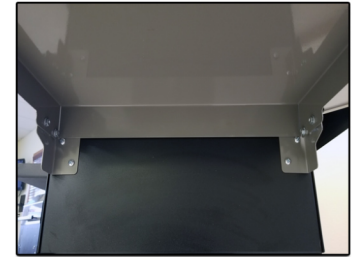


## STEP 4:

### Side Shelf Installation

- This option is only available for the RG2000, and RG3000 Models.

- Attach the side shelf assembly brackets to the end of the grill using (4) 1/4-20" x 5/8" Phillips head bolts and (4) Flange nuts.



## STEP 5:

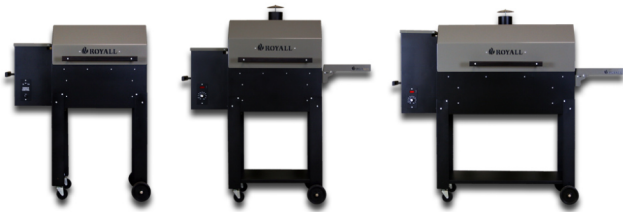
### Chimney Installation

- Attach the chimney to the roof by sliding it up through the grill lid from the inside and securing it with (2) 3/8" Phillips head screws and lock nuts, placing the lock nuts on the inside of the lid.

- Attach the rain cap to the chimney by placing the cap over the threaded rod and securing the cap with the acorn nut provide.



## Easy Assembly Instructions For Your RG1000, RG2000, RG3000



Looking For Replacement Parts?

**SR** **SHOP  
ROYALL**

[www.ShopRoyall.com](http://www.ShopRoyall.com)

### **STEP 6:** **Smoke Baffle Plate Installation**

- Attach the smoke baffle plate inside the grill below the chimney using (3) 3/8 Phillips head bolts and lock nuts.



## **ATTENTION** **FIRST TIME STARTUP INSTRUCTIONS**

- 1) Leave the Grill Lid Up
- 2) Make Sure The Auger Tube Is Full Of Pellets, and Pellets are Falling Into The Fire Pot (If the auger tube is NOT full, turn the grill controller ON and wait for the pellets to begin falling into the burn pot. Once they begin falling, turn the controller OFF and wait 5 seconds)
- 3) Digital Controller: Turn ON to 350 degrees, 3-Speed Controller: Slide Switch to HIGH and wait until you see smoke coming from below the grates.
- 4) Switch the 3-speed controller to MEDIUM, or 300 degrees on the digital controller, and wait for 30 Minutes. **(This wait period is for the first usage only)**
- 5) After 30 minutes, Start Grillin', and Enjoy!
- 6) When Finished, turn the controller to OFF. Digital controllers will begin a 10 minute shutdown sequence. The fan will continue to run, and the display will provide a countdown. After 10 minutes the grill will completely shut down.

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# Easy Assembly Instructions For Your RGPRO

## TOOLS NEEDED TO COMPLETE THIS ASSEMBLY SECTION

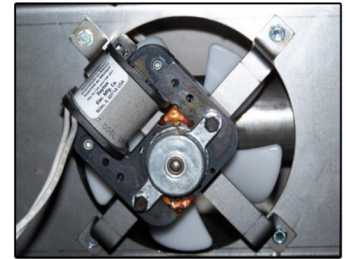
#2 Phillips Screwdriver  
3/8" Wrench, or Hex Head Driver



## STEP 1:

### Combustion Fan Assembly

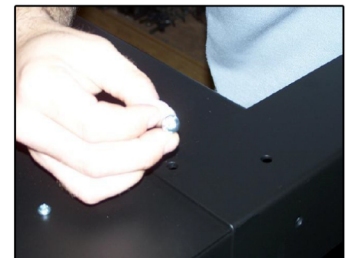
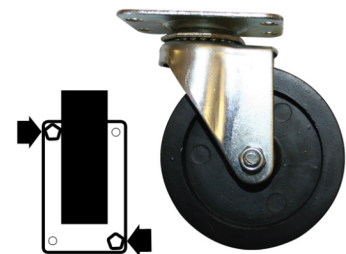
- Gently lay the grill on it's back, and unwrap the included combustion fan assembly
- Locate (4) mounting holes on the bottom side of the grill, attach the combustion fan assembly to the bottom of the grill using (4) 3/8" hex head 1/2" long screws while keeping the transformer oriented towards the pellet hopper side of the grill.
- Plug the combustion fan into the grill controller using the ORANGE/WHITE connector from the grill controller.



## STEP 2:

### Castors and Bottom Shelf

- Locate the (4) legs included with your grill. Attach a castor to the bottom of each of grill legs using (2) 1/4 - 20 bolts and flange nuts. Locate bolts so that they are in a diagonal pattern as shown here. The (2) locking castors are placed at the front of the grill.
- Loosely attach all the legs to the grill using (2) 1/4 -20 x 5/5" Phillips head bolts and (2) flange nuts per leg.



## Easy Assembly Instructions For Your RGPRO



### ROYALL BBQ Flavor Starts Here!



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## STEP 2: continued

### Castors and Bottom Shelf

- Attach the Bottom Shelf using (4) 1/4" - 20 x 5/8" Phillips head bolts and (4) flange nuts to bottom of the (4) legs as shown.
- You can now tighten the leg bolts and shelf bolts securely.



## STEP 3:

### Grill Lid Handle

- Stand the grill back into an upright position
- Attach the grill lid handle to the grill lid using 1-7/8" standoffs along with the 2-3/4" bolts and nuts that are included.



## STEP 4:

### Chimney Installation

- Attach the chimney to the roof by sliding it up through the grill lid from the inside and securing it with (2) 3/8" Phillips head screws and lock nuts, placing the lock nuts on the inside of the lid.
- Attach the rain cap to the chimney by placing the cap over the threaded rod and securing the cap with the acorn nut provide.





## STEP 5: Smoke Baffle Plate Installation

- Attach the smoke baffle plate inside the grill below the chimney using (3) 3/8 Phillips head bolts and lock nuts.



## ATTENTION

### FIRST TIME STARTUP INSTRUCTIONS

- 1) Leave the Grill Lid Up
- 2) Make Sure The Auger Tube Is Full Of Pellets, and Pellets are Falling Into The Fire Pot (If the auger tube is NOT full, turn the grill controller ON and wait for the pellets to begin falling into the burn pot. Once they begin falling, turn the controller OFF and wait 5 seconds)
- 3) Turn the Digital Controller ON to 350 degrees, and wait until you see smoke coming from below the grates.
- 4) Turn the digital controller to 300 degrees and wait for 30 Minutes.  
**(This wait period is for the first usage only)**
- 5) After 30 minutes, Start Grillin', and Enjoy!
- 6) When Finished, turn the controller to OFF. The digital controllers will begin a 10 minute shutdown sequence. The fan will continue to run, and the display will provide a countdown. After 10 minutes the grill will completely shut down.

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# Easy Assembly Instructions For Your RGTAILGATER

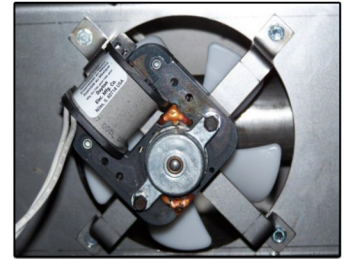
## TOOLS NEEDED TO COMPLETE THIS ASSEMBLY SECTION

#2 Phillips Screwdriver  
3/8" Wrench, or Hex Head Driver



## STEP 1: Combustion Fan Assembly

- Gently lay the grill on it's back, and unwrap the included combustion fan assembly
- Locate (4) mounting holes on the bottom side of the grill, attach the combustion fan assembly to the bottom of the grill using (4) 3/8" hex head 1/2" long screws while keeping the transformer oriented towards the pellet hopper side of the grill.
- Plug the combustion fan into the grill controller using the ORANGE/WHITE connector from the grill controller.



## STEP 2: Grill Leg Assembly

- Securely attach the (4) short legs to each corner of the grill using (2) 1/4 -20 x 5/5" Phillips head bolts and (2) flange nuts per leg.



## Easy Assembly Instructions For Your RGTAILGATER



### **ROYALL** BBQ Flavor Starts Here!



Rubs, Seasonings, and BBQ Sauce  
Available at [www.ShopRoyall.com](http://www.ShopRoyall.com)

## **ATTENTION** FIRST TIME STARTUP INSTRUCTIONS

- 1) Leave the Grill Lid Up
- 2) Make Sure The Auger Tube Is Full Of Pellets, and Pellets are Falling Into The Fire Pot (If the auger tube is NOT full, turn the grill controller ON and wait for the pellets to begin falling into the burn pot. Once they begin falling, turn the controller OFF and wait 5 seconds)
- 3) Digital Controller: Turn ON to 350 degrees, 3-Speed Controller: Slide Switch to HIGH and wait until you see smoke coming from below the grates.
- 4) Switch the 3-speed controller to MEDIUM, or 300 degrees on the digital controller, and wait for 30 Minutes. **(This wait period is for the first usage only)**
- 5) After 30 minutes, Start Grillin', and Enjoy!
- 6) When Finished, turn the controller to OFF. Digital controllers will begin a 10 minute shutdown sequence. The fan will continue to run, and the display will provide a countdown. After 10 minutes the grill will completely shut down.

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## Easy Assembly Instructions For Your RG5000VS, RG7000VS

TOOLS NEEDED TO COMPLETE  
THIS ASSEMBLY SECTION

NONE



**No Pre-Assembly Is Required For These Smokers**

## **ATTENTION** **FIRST TIME STARTUP INSTRUCTIONS**

- 1) Leave the smoker door closed
- 2) Make Sure The Auger Tube Is Full Of Pellets, and Pellets are Falling Into The Fire Pot (If the auger tube is NOT full, turn the grill controller ON and wait for the pellets to begin falling into the burn pot. Once they begin falling, turn the controller OFF and wait 5 seconds)
- 3) Digital Controller: Turn ON to 350 degrees, wait until you see smoke coming from below the heat shield.
- 4) Switch the digital controller to 300 and wait for 30 Minutes.  
**(This wait period is for the first usage only)**
- 5) After 30 minutes, Start Grillin', and Enjoy!
- 6) When Finished, turn the controller to OFF. Digital controllers will begin a 10 minute shutdown sequence. The fan will continue to run, and the display will provide a countdown. After 10 minutes the grill will completely shut down.

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## Easy Assembly Instructions For Your RG3000 M-SERIES



TOOLS NEEDED TO COMPLETE  
THIS ASSEMBLY SECTION

NONE

**No Pre-Assembly Is Required For This Grill**

## **ATTENTION** FIRST TIME STARTUP INSTRUCTIONS

- 1) Open the grill lid.
- 2) Make Sure The Auger Tube Is Full Of Pellets, and Pellets are Falling Into The Fire Pot  
(If the auger tube is NOT full, press and hold the AUGER button and wait for the pellets to begin falling into the burn pot. Once they begin falling, turn the controller OFF, wait 5 seconds, then turn the controller back on)
- 3) Turn ON by pressing the power button, ensure the grill is set to 350 degrees on the display. If the desired temperature needs to be changed, pressing the up or down arrow will allow you to set the desired temperature. Wait until you see smoke coming from below the cooking grates.
- 4) Change the grill temperature to 300 degrees by pressing the down arrow until the desired temperature is reached. Wait for 30 Minutes. **(This wait period is for the first usage only)**
- 5) After 30 minutes, Start Grillin', and Enjoy!
- 6) When Finished, turn the controller to OFF. Digital controllers will begin a 10 minute shutdown sequence. The fan will continue to run, and the display will provide a countdown. After 10 minutes the grill will completely shut down.

**continue to next page**

## Electrical Warning Instructions

### ALL MODEL GRILLS



**A Major Cause Of Fires Is The Failure To Maintain A Required Clearance To Combustible Materials.**

**It Is Of Utmost Importance That This Product Be Installed Only In Accordance With These Instructions**

### **DANGER**

Hazardous voltage is present which can shock, burn or cause death. Disconnect the power cord before servicing the grill unless otherwise noted in the Owner's Manual.

### **WARNING**

Never use or store flammable liquids near the Grill.

This grill is intended for OUTDOOR USE ONLY

When operating the grill, maintain a MINIMUM side and rear distance of 12" from the grill to combustibles, and an overhead MINIMUM of 40" from combustibles is required.

Do not utilize any extension cords when powering your grill, this may result in damage to your grills electrical system.

Assemble and operate this grill ONLY per the instructions available in this owners manual.

Use ONLY FOOD GRADE WOOD PELLETS in this grill. NEVER USE HEATING FUEL WOOD PELLETS due to potential hazardous contaminants and edditives that may be present.

### **CAUTION**

Always store wood pellets in a dry location, away from heat-producing appliances and other fuel containers.

Keep the grill clean, and remove excess ash from the firepot if required.

## Operating DO's and DONT's



### DO

#### PRIOR TO STARTING THE GRILL

Check the pellet hopper to ensure the wood pellets are dry and ready to use. Wet wood pellets can swell up and damage the auger assembly

Check and remove any excess drippings or buildup from the grill area to avoid flare ups or fire.

Keep your wood pellets dry, do not use your grill in the rain.

Only use your grill in a properly ventilated area.

Clean your grill when it has cooled down completely, and remember to unplug the unit prior to cleaning it or examining the electronics.

Make sure the electrical cord is secured and connected to a ground fault interrupter while your food is cooking to avoid damage to your grill.

All controls should be turned to the OFF position before plugging in or unplugging the cord.

### DONT

Use any type of extension cord to power your grill for any reason.

Allow any buildup of ash in the burn pot. Depending upon the quality of your wood pellets, this can buildup fast and reduce the airflow thru the burn pot. This can lead to premature failure of the igniter if left unchecked.

Allow your wood pellets exposure to moisture, the pellets will disintegrate. People that live in humid climates must take extra care to avoid moisture. We recommend storing pellets indoors in airtight containers.

## Basic Component TROUBLESHOOTING



### **HOW DO YOU USE A PELLET GRILL?**

Pellet grills are incredibly easy-to-use. Just load your favorite pellets into the hopper, program the desired temperature on the controller and put your food on. That's it. The pellet grill automatically maintains its temperature for as long as there are pellets to burn. Although wood pellet grills and smokers are prized for their ability to achieve a steady and precise temperature, be sure to check on your grill or smoker every once in awhile during use.

### **HOW LONG DOES A BAG OF PELLETS LAST?**

On average, a pound of pellets lasts between an hour and an hour-and-a-half when smoking at 250°F in ideal conditions (75°F, no wind). When you increase the cooking temperature, the pellets burn more quickly. In cold weather, you'll also burn pellets at a faster rate as the grill tries to maintain the desired temperature.

### **I'M HAVING DIFFICULTY GETTING MY PELLETS TO LIGHT**

The pellet igniter only runs for about 4 minutes when the pellet grill is first turned on. The igniter then stops and will not activate again unless the grill is turned off and then turned back on again. Repeated ignition cycles can adversely effect the overall lifecycle of the igniter. If your grill or smoker is new, the wood pellets have to have time to work their way thru the auger tube into the firepot. If your igniter stops before the pellets reach the firepot, no ignition will take place. Simply turn the grill off and back on again once the pellets begin to drop into the firepot and ignition should start. If your wood pellets have been stored in a damp area and have become damp or wet they will be very difficult to light. We recommend using only Royall wood pellets for best results.

### **MY GRILL HAS OUTLET TRIPS, OR BLOWS THE FUSE**

Occasionally a single component may cause an outlet to trip or a fuse to blow. If this occurs, you need to locate the offending component causing the issue. Begin by unplugging the auger motor, igniter, and fan from the controller. Turn on the controller and see if the problem still exists. If everything is fine, turn off the controller, and plug in only one of the grill components (fan, auger, or igniter) and then turn the unit on again. Continue to try each component individually with the controller until you locate the bad component. Once you have an idea what part needs to be replaced call us at 608-768-8508 x210 or visit [www.shoproyall.com](http://www.shoproyall.com) for replacement parts.

### **THE FAN CONTINUES TO RUN AFTER I'VE TURNED OFF MY GRILL**

The digital controller utilizes a 10 minutes cool down cycle once the controller has been turned off. The fan will shut off automatically after 10 minutes.

### **ERROR CODES ARE SHOWING ON THE DIGITAL CONTROLLER**

Please refer to the specific controller error section later in this manual

### **WHERE DO I FIND REPLACEMENT PARTS FOR MY GRILL?**

All of our wood pellet grill replacement parts are available online at [www.ShopRoyall.com](http://www.ShopRoyall.com), or call us at 608-768-8508 x210 Monday thru Friday, 8am - 5pm CST for immediate assistance.

# User Manual

## DIGITAL CONTROLLER

### LED READOUT

Displays grill temperature, smoke settings, igniter status, low temperature status, and error messages.

### SMOKE CONTROL KNOB

Select one of 16 smoke fuel feed rates.

### MICROPROCESSOR CONTROLLED

The temperature of the grill is constantly monitored by a microprocessor that operates the fan and auger fuel feed rate to maintain a constant grill temperature. A 10 minute cool down cycle is also controlled by the microprocessor.



## UNDERSTANDING THE DISPLAY

### TEMPERATURE DISPLAY

In all cooking modes, the grill temperature is displayed in 5 degree (Fahrenheit) increments.

### FLASHING DOTS IN LOWER PORTION OF THE DISPLAY

The 3 flashing dots indicate that the igniter is currently powered ON

### FLASHING TEMPERATURE IN THE DISPLAY

In cook mode, the the displayed temperature flashes if the grill temperature is below 150 degrees  
In smoke mode, the the displayed temperature flashes if the grill temperature is below 110 degrees

### FLASHING "ErH" IN THE DISPLAY

The controller has detected grill temperatures in excess of 615 degrees.

### FLASHING "ErP" IN THE DISPLAY

The controller was not switched to the OFF position when the grill was connected to AC power.

## COOKING WITH YOUR DIGITAL CONTROLLER

Simply set the cook control to the desired temperature, the digital display will display the current temperature inside the grill or smoker.

Once the ignition sequence is completed, the igniter will turn off. The auger will continue to feed wood pellets into the fire pot to maintain the temperature.

If the cook control is set to HIGH, the grill will attempt to operate at 450 degrees. If the grill is unable to attain 450 degrees due to ambient temperature and/or humidity, fuel type and quality, or thermal characteristics of the grill or smoker, the auger will continue to feed wood pellets continuously in order to allow the grill or smoker to operate at it's maximum temperature.

## **HOW IT WORKS**

### **COOK MODE**

In Cook Mode, the temperature of the grill is constantly monitored and a microprocessor operates the draft fan and fuel feed auger to maintain a constant grill temperature.

### **SMOKE MODE**

Smoke Mode In Smoke Mode, the fuel feed rate is set manually by the operator. The grill operates at low temperature to provide maximum smoke

## **IGNITING THE GRILL OR SMOKER**

To ignite the grill, set the cook control switch to between 250 - 350 degrees. Wait for the unit to reach temperature. Do not attempt to start the grill on SMOKE, you can dial down once the grill starts producing smoke.

### **IGNITION SEQUENCE**

- The draft fan turns on
- The igniter turns on
- The fuel feed auger turns on and delivers fuel continuously for two minutes
- The grill temperature is displayed along with three flashing dots signifying that the igniter is currently on

### **THE IGNITER WILL TURN OFF WHEN ONE OF THE FOLLOWING CONDITIONS ARE MET**

- The igniter has been on for (4) minutes and the grill temperature has increased by 30 degrees
- The igniter has been on for (4) minutes and the grill temperature is greater than 150 degrees
- The igniter has been on for (5) minutes.

## **REPLACING THE CONTROLLER**

### **UNPLUG THE GRILL OR SMOKER**

Remove the hopper access cover (located on the side of the hopper) by removing the (2) screws in order to gain access to the wiring.

Disconnect the (4) plastic wire connectors from the controller.

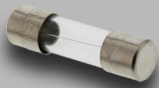
Remove the (2) screws from the controller faceplate. Carefully, pull the controller out of the hopper taking care not to put undo stress on the temperature probe connection while removing.

Disconnect the (2) temperature probe wires from the back of the controller.

Reassemble the replacement controller in the reverse order of removal.

# DIGITAL CONTROLLER WIRING DIAGRAM

Fuse is located on the back of the controller

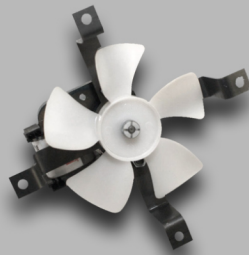
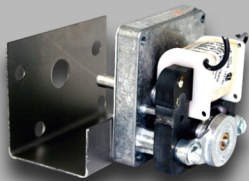
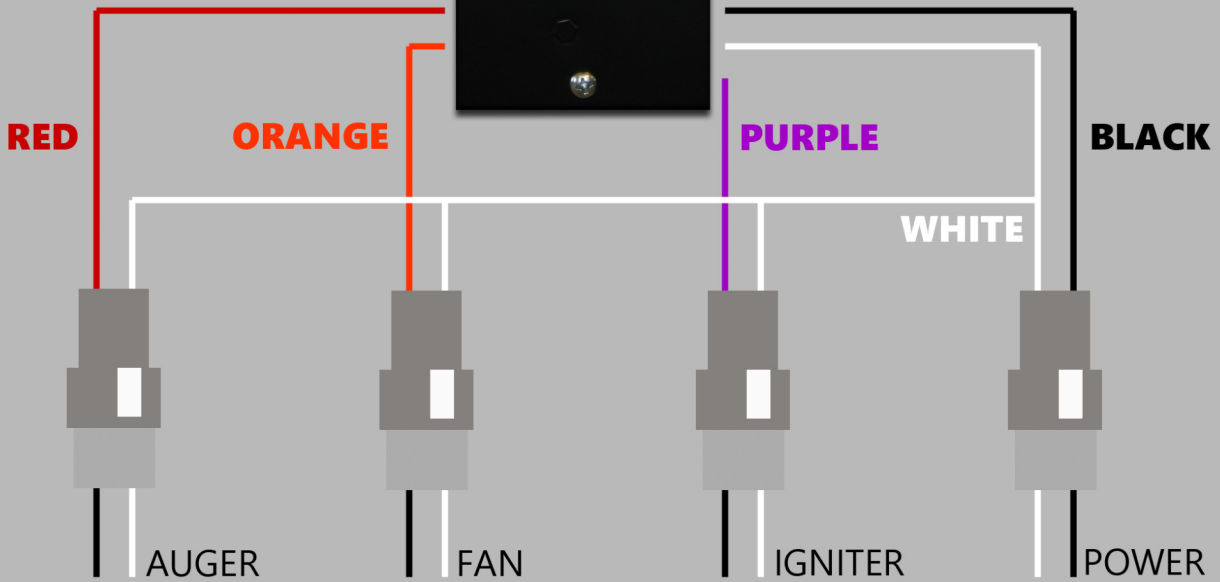
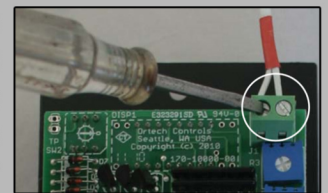


TEMP PROBE



WHITE

Temp Probe connection is located on the back of the controller



## FUEL FEED RATES and "P" SETTINGS

### FUEL FEED RATE WHILE ON

This is the rate at which the auger delivers fuel while the grill or smoker is under the set temperature. In cook mode, the feed rate is designed to drive the temperature up towards the set temperature while limiting temperature overshoot. The fuel feed rates are preprogrammed into the controller and are not adjustable.

#### Temperature Feed Rates

Setting	Auger ON	Auger OFF
180	15 Seconds	15 Seconds
225	always ON	0 Seconds
250	always ON	0 Seconds
275	always ON	0 Seconds
300	always ON	0 Seconds
325	always ON	0 Seconds
350	always ON	0 Seconds
375	always ON	0 Seconds
HIGH	always ON	0 Seconds

### IDLE FEED RATE AND "P" SETTINGS

The idle feed rate at which the auger delivers fuel while the grill is idling at or above the set temperature. In cook mode you can manually adjust the idle fuel feed rate using the smoke control knob.

The fuel feed rate setting is displayed momentarily when the controller is switched to the SMOKE position. The feed rate is also displayed whenever the smoke control knob is adjusted. The setting is designated with the letter "P" and a number. The greater the "P" setting, the greater the auger off is. You must use care when changing "P" settings, if the setpoint is set too high pellet starvation can result.

The selected "P" setting effects both the SMOKE mode fuel feed rate, and the cook mode idle fuel feed rate. We recommend a default setting of "P2" as a baseline while in cook mode.

For the experienced user, the auger idle fuel feed rate can be adjusted to improve the grills performance. To optimize temperature stability at a high temperature setting, select "P1" or "P0" to increase the auger idle fuel rate by reducing the time between auger delivery cycles. If due to ambient conditions, the grill or smoker is unable to cool down enough to reach a low temperature setting such as 180 degrees, select "P3" or "P4", or higher to increase the time between auger delivery cycles allowing the grill or smoker to cool down.

#### P-setting Feed Rates

Setting	Auger ON	Auger OFF
P0	15 Seconds	45 Seconds
P1	15 Seconds	55 Seconds
P2	15 Seconds	65 Seconds
P3	15 Seconds	75 Seconds
P4	15 Seconds	85 Seconds
P5	15 Seconds	95 Seconds
P6	15 Seconds	105 Seconds
P7	15 Seconds	115 Seconds
P8	15 Seconds	125 Seconds
P9	15 Seconds	135 Seconds
P10	15 Seconds	140 Seconds
P11	15 Seconds	145 Seconds
P12	15 Seconds	150 Seconds
P13	15 Seconds	155 Seconds
P14	15 Seconds	160 Seconds
P15	15 Seconds	165 Seconds

## 3-SPEED CONTROLLER

### 3-SPEED SWITCH

Provides High, Medium, and Smoke settings.

3-Speed Switch



Power Switch

## COOKING WITH YOUR 3-SPEED CONTROLLER

Simply set the 3-speed switch to the desired setting.

Once the ignition sequence is completed, the igniter will turn off. The auger will continue to feed wood pellets into the fire pot to maintain the temperature.

If the 3-speed switch is set to HIGH, the grill will attempt to operate at 450 degrees. If the grill is unable to attain 450 degrees due to ambient temperature and/or humidity, fuel type and quality, or thermal characteristics of the grill or smoker, the auger will continue to feed wood pellets continuously in order to allow the grill or smoker to operate at its maximum temperature.

## IGNITING THE GRILL

To ignite the grill, set the 3-speed switch to HIGH. Wait for the unit to reach operating temperature. Do not attempt to start the grill on SMOKE, you can dial down once the grill starts producing smoke.

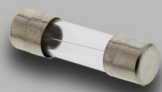
### IGNITION SEQUENCE

- The draft fan turns on
- The igniter turns on
- The fuel feed auger turns on and delivers fuel continuously for two minutes

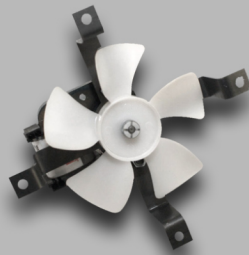
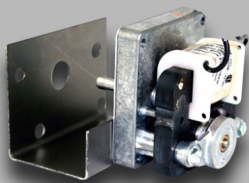
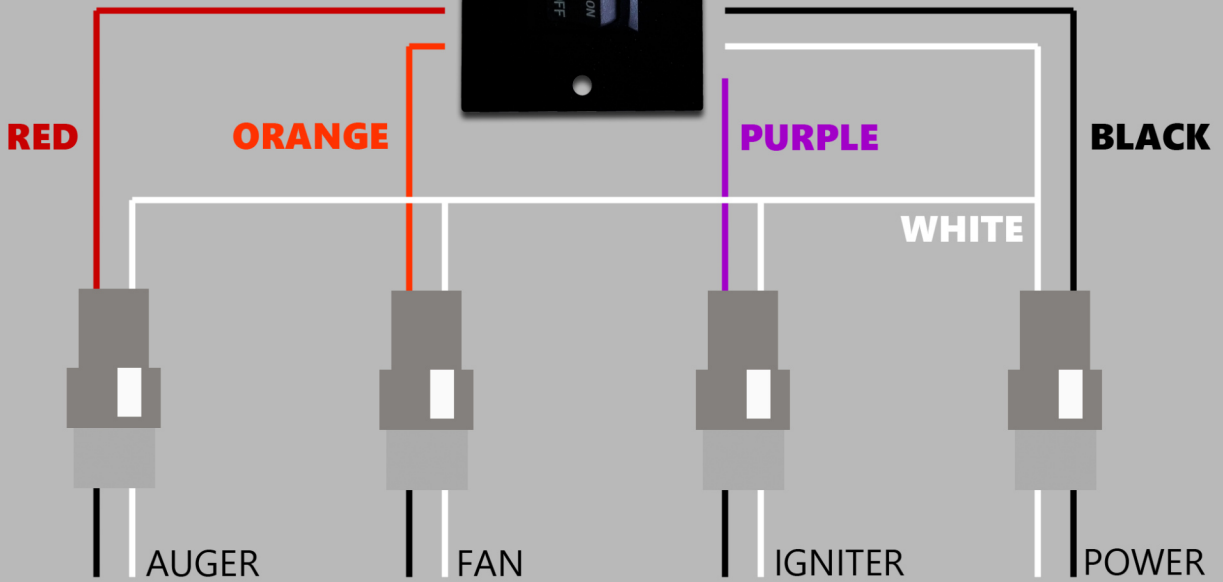
### THE IGNITER WILL TURN OFF WHEN ONE OF THE FOLLOWING CONDITIONS ARE MET

- The igniter has been on for (4) minutes and the grill temperature has increased by 30 degrees
- The igniter has been on for (4) minutes and the grill temperature is greater than 150 degrees
- The igniter has been on for (5) minutes.

### 3-SPEED CONTROLLER WIRING DIAGRAM



Fuse is located on the back of the controller



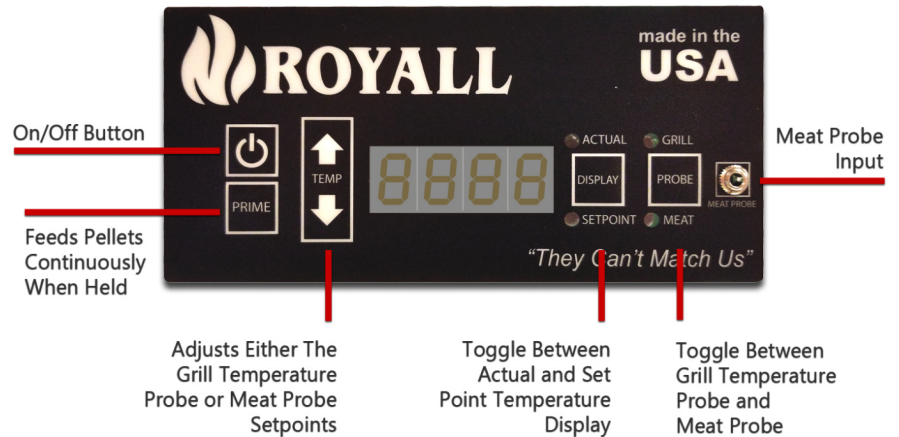
# User Manual

## M-SERIES CONTROLLER

### POWER UP MODE

When power is applied by plugging into an AC outlet, the grill controller will display the following software information:

**ROYALL** Identifies (3) Seconds  
**1120** Model (3) Seconds  
**U1.01** Version (3) Seconds



### USING THE M-SERIES CONTROLLER

On startup, the system will attempt to light the grill for a maximum of 30 minutes. During the time, the auger will run (ON for 1 second, OFF for 6.7 seconds). If after 30 minutes the grill temperature probe has not exceeded 160 degrees, the system will display the error code for failure to start (Er-2). When the grill temperature probe exceeds 160 degrees the igniter will turn off, and the controller begins to control the temperature to the setpoint target.



The grill temperature probe setpoint can be adjusted with the UP and DOWN buttons. The grill temperature setpoint defaults to 350 degrees, but can be adjusted between 180 and 500 degrees in 5 degree increments.

Press the Temp Display button to toggle the actual measured temperature of the grill on the display, and setpoint

If the meat probe is detected, pressing the PROBE display button will change the display to the meat probe and the target temperature for the meat probe is displayed. The Temp UP and DOWN buttons can be used to adjust the meat probe setpoint between 80 and 180 degrees in single degree increments.

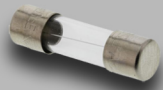
Press the Temp display button to change back to the actual display state.

### SHUTDOWN MODE

It is strongly suggested that the controller shutdown procedure be used instead of simply unplugging it when done. To initiate shutdown, press the ON/OFF button. Over a period of time, the amount of fuel provided will gradually reduce to nothing. The fan will turn on continuously to reduce the temperature. If the temperature is found to be less than 130 degrees at the end of the shutdown cycle, the fan will turn OFF. The shutdown procedure will not be attempted if the system has not reached the initial 160 degree startup temperature.

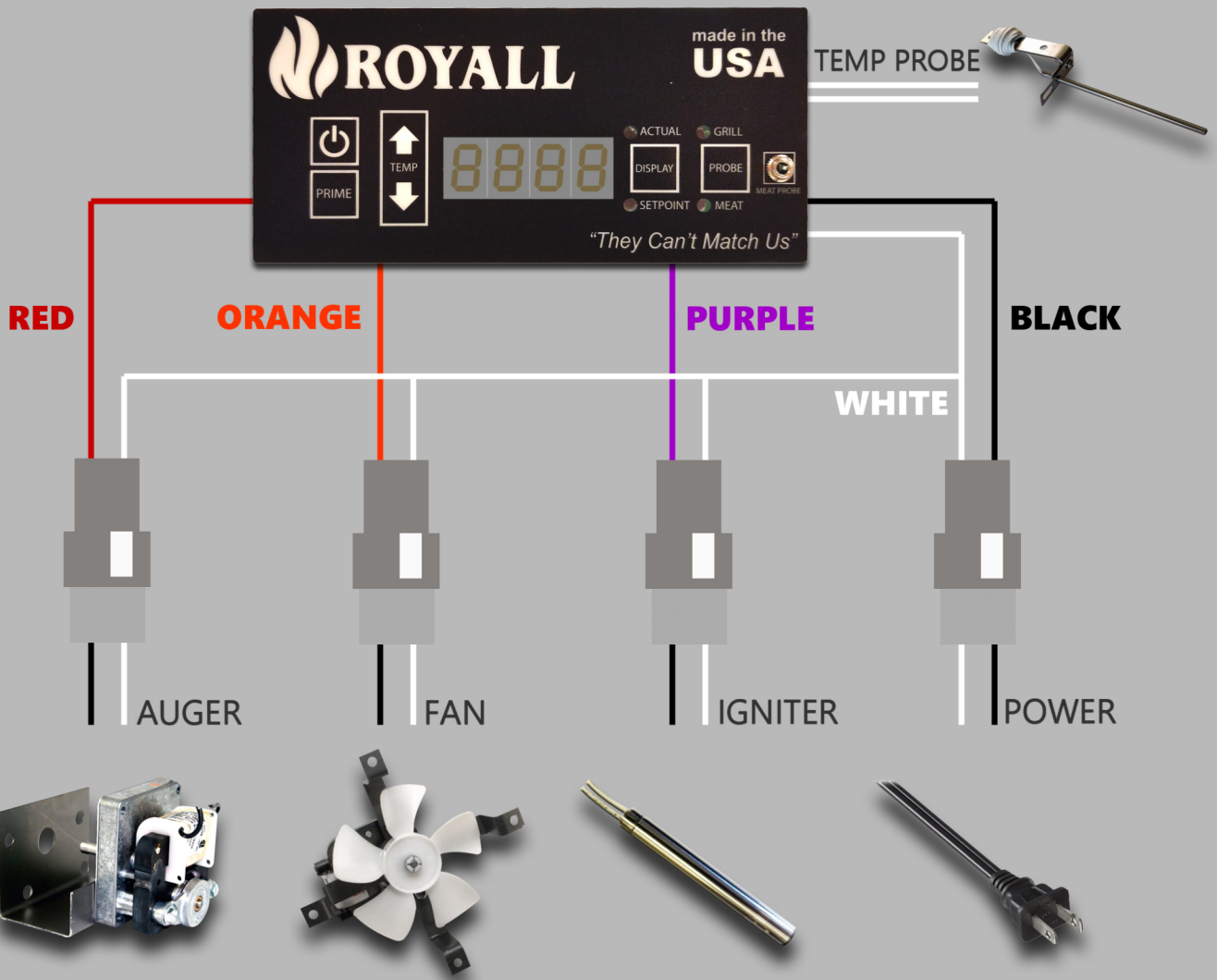
User Manual  
M-SERIES CONTROLLER

# M-SERIES CONTROLLER WIRING DIAGRAM



Fuse is located on the back of the controller

Component Connections are literally marked on the backside of the M-Series Controller



# User Manual

## M-SERIES CONTROLLER

### **M-SERIES CONTROLLER ERROR MESSAGES**

If an error condition is detected, the system will perform the normal shutdown procedure regardless of the error condition. If an error has been detected, it can be cleared by pressing the ON/OFF button to enter the normal run mode. If the error is still present, the system will enter into the error mode again.

#### **ER-1**

Over temperature error, the grill temperature probe has detected a temperature exceeding 700 degrees. This error can also happen due to an open connection between the controller and temperature probe.

#### **ER-2**

Failure to start error, this occurs when the ignition procedure fails to increase the grill temperature above 160 degrees within the 30 minute startup window.

#### **ER-3**

Power failure error, this occurs when the power is lost during normal operation.

#### **ER-4**

Grill temperature probe short circuit, this occurs when the system detects a shorted temperature probe connection that cannot be reliably used to measure temperature,

# User Manual

## IGNITER REPLACEMENT

UNPLUG THE UNIT and remove the grate(s), drip pan, and heat deflector from inside of the grill.

Remove the (4) 1/4" screws holding the Fire Pot in the Auger Supply Box.

Slightly lift the Fire Pot off of the Auger Supply Box, then lift at an angle towards the supply to lift clear.

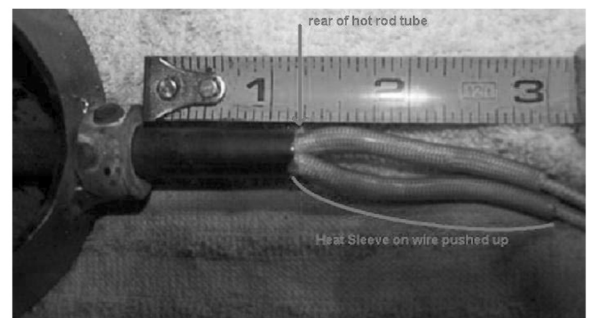
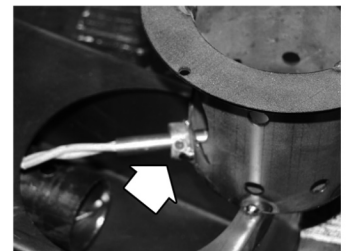
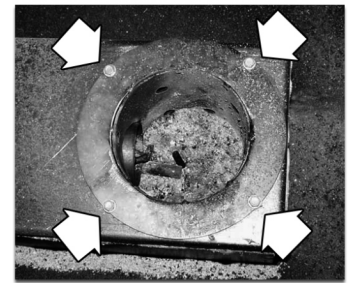
Use a 1/8" allen wrench to loosen the set screw collar a few turns. You can also use WD40 or a similar lubricant on the collar and igniter to assist with removal. Use pliers on the back of the Igniter to gently rotate it back and forth until it can be removed from the Fire Pot.

Set the Igniter Down in place, and remove the Igniter wiring by first unplugging it from the controller, carefully remove the plug at the end of the Igniter wire by cutting it off. Carefully work the the Igniter wire back thru the unit and remove the entire Igniter from the grill.

Re-install the new Igniter by running the wire back from the the Auger Supply Box to the controller. Once the wire has been run to the controller, install the plastic connector to the end of the wire by pushing it firmly until it seats on the wire ends.

Locate the Igniter back into the collar leaving 1 3/8" extending out the back.

Tighten the set screw, replace the Fire Pot back into the Auger Supply box, and Install with (4) 1/4" Screws.



**PUSHING THE IGNITER TOO FAR IN CAN CAUSE GFI TRIPPING AND DAMAGE TO THE IGNITER**

# Royall Grills

## REPLACEMENT PARTS

Looking For Replacement Parts?

**SR SHOP ROYALL**

[www.ShopRoyall.com](http://www.ShopRoyall.com)

PART NUMBER	DESCRIPTION
GRI71287	3-Speed Grill Controller
GRI80123	Auger - RG1000, RG2000
GRI80122	Auger - RG3000, RG7000
GRI80124	Auger - RGTAILGATER
GRI51236	Bottom Shelf - RG2000
GRI51260	Bottom Shelf - RG3000
GRI51261	Bottom Shelf - RGPRO
GRI71170	Chimney Rain Cap - Stainless Steel
GRI51185	Cooking Grate - RGTAILGATER
GRI51188	Cooking Grate - Stainless Steel - RG1000, RG2000, RG3000, RGPRO
GRI51190	Cooking Grate - Stainless Steel - RG5000
GRI51192	Cooking Grate - Stainless Steel - RG7000
GRI51187	Cooking Grate - Steel - RG1000, RG2000, RG3000, RGPRO
GRI51189	Cooking Grate - Steel - RG5000
GRI51191	Cooking Grate - Steel - RG7000
GRI70533	Digital Grill Controller
GRI51180	Drip Bucket - RGPRO
GRI51181	Drip Pan - RG1000, RG2000, RG5000, RGPRO
GRI51182	Drip Pan - RG3000, RG7000
GRI51183	Firepot - Stainless Steel
GRI51184	Firepot - Steel
GRI71288	Grill Auger Motor with Bracket
GRI70543	Grill Controller Fuse 3A 250V
GRI71291	Grill Cover - RG1000
GRI71292	Grill Cover - RG2000
GRI71293	Grill Cover - RG3000
GRI71294	Grill Cover - RG5000
GRI71295	Grill Cover - RG7000
GRI71296	Grill Cover - RGPRO
GRI71297	Grill Cover - RGTAILGATER
GRI70534	Grill Fan Motor
GRI71298	Grill Fan Motor Blade
GRI71304	Grill Igniter
GRI51246	Heat Shield - RG1000, RG2000, RGPRO
GRI70550	M-Series Grill Controller
GRI51194	Optional - 2 Layer Grate Kit - Steel - RG2000, RGPRO
GRI51193	Optional - 2 Layer Grate Kit - Steel - RG3000
GRI70537	Power Cord
GRI51262	Side Shelf - RG2000, RG3000
GRI70538	Temperature Probe
GRI71018	Wheel - 3" Swivel
GRI71307	Wheel - 3" Swivel with Lock
GRI71308	Wheel - 5" Straight
GRI71309	Wheel - 5" Swivel
GRI71310	Wheel - 5" Swivel with Lock
GRI71311	Wheel - 6" Straight
GRI71312	Wheel - 6" Swivel
GRI71302	Wood handle - Long
GRI71303	Wood Handle - Short
GRI71286	Wood Handle - Spacer

**STILL NEED HELP?**

**WE'RE HERE**

MON - FRI, 8am to 5pm CST

**608-768-8508 x210**

[info@royallproducts.com](mailto:info@royallproducts.com)



<https://www.royallgrills.com>



<https://twitter.com/royallgrills>

<https://www.facebook.com/RoyallGrills>

Made In The USA  
**ROYALL**

## GRILL WARRANTY

Grills used for residential purposes are warranted by **Royall Grills** against factory defects in materials and workmanship for a period of (1) year from the date of purchase to the original owner. Effective maintenance and proper storage of the grill is required for warranty compliance.

Original components found to be defective are shipped to the factory in Reedsburg, WI and back to the customer at the customer's expense. This warranty does not cover any owner expense related to diagnosing a repair requirement, removal or installation of defective parts.

Warranty exclusions consist of: normal corrosion, paint fading or flaking due to normal usage, grill warping, damage caused by using improper fuels, damage to personal property or personal injury through the use of this product.

Electrical Components are warranted for a period of (1) year from the date of purchase by the manufacturer. Warranty replacement requires the return of the non functioning part for inspection to our Reedsburg, WI sales office.

**Royall Grills** obligation for any breach of these warranties is limited to the repair or replacement of it's parts as described in this warranty and in no circumstances exceeds the cost of the unit. Some states do not allow exclusions or limits so this may not apply to you.

**Royall Grills** requires proof of purchase to validate the (1) year terms of the warranty. Therefore your proof of purchase must be retained. The registration card may be submitted for file but does not validate the purchase date. Please retain your original sales receipt with the sales order number in order to validate your purchase.

