



IQ110

SETUP AND OPERATING INSTRUCTIONS



visit our website at www.pitmasterIQ.com



**Read this material before using this product. Failure to do so can result in property damage, injury, or even death.
SAVE THIS MANUAL!**

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SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, and maintenance. Write For technical support, contact www.pitmasterIQ.com.

the product's serial number if provided in the back of the manual (or month and year of purchase if product has no number). Keep this manual and the proof of purchase in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to personal injury.

IQ110 SAFETY WARNINGS



WARNING: Cooking with fire is inherently dangerous. Read all safety warning and instructions. It is not possible to warn you of

every possible misuse and failure. Apply common sense and use extreme caution!

Failure to follow the warnings and instructions may result in electric shock, fire, serious injury and/or death. Save all warnings and instructions for future reference!

1. READ ALL INSTRUCTIONS AND MATERIALS

- a.** Read all and obey all safety information that came with your cooker. This manual cannot replace the safety information that came with your cooker.
- b.** Read and understand this manual thoroughly.

2. FIRE HAZARD

- a.** Keep pit and fire at least 10' away from all flammable materials, liquids, and gas.
- b.** Do not cook on a flammable surface such as a wood deck.
- c.** Keep your cooker clean. Accumulated grease can catch fire. Never extinguish a grease fire with water. Close all vents to starve it of oxygen.
- d.** Build fire so burning embers can't fall into the IQ110's flexible tube. Burning embers can burn through and catch fire to surrounding area.
- e.** Do not cook in high winds. Winds can blow cooker over or blow sparks causing surrounding area to catch fire.

3. CARBON MONOXIDE HAZARD

- a.** Do not cook indoors. Toxic fumes and carbon monoxide will accumulate.

4. DO NOT USE ON PROPANE GRILL

- a. This product is intended for charcoal cookers only. You must not try to regulate the temperature of a propane grill by controlling airflow.

5. KEEP CHILDREN AWAY

- a. Keep small fingers out of air intake.

6. BURN HAZARD

- a. Do not touch hot cookers or accessories.

7. ELECTRIC SHOCK HAZARD

- a. Use only provided AC power adapter or low voltage DC source.
- b. Do not use in wet location.
- c. Never touch wet adapter or wet power cord.
- d. Use only UL approved extension cords.
- e. Observe all local electrical codes.

IQ110 SAFETY FEATURES

The IQ110 has numerous safety features built in. It has a power-on self test to verify proper operation of the blower before attempting to control the pit. It has an internal temperature sensor that will cease blower operation if the enclosure is over temperature. Finally, temperature probes must be in their valid range for the blower to operate.

STATUS LED CODES

LED	Meaning
	Flashing Green - Actual temp 10°F or more below temperature set point
	Solid Green - Actual temp within 10°F of set temp
	Alternating Red/Green - Multiple meanings: 1) lid off delay in effect - normal, just close lid & wait 2) enclosure overheated - move IQ away from pit 3) temperature probe failure
	Solid Red - Actual temp 10°F or more over set temp
	Flashing Red - Actual temp 50°F or more over Temperature set point

INSTALLATION

Watch the installation videos appropriate for your cooker at pitmasterIQ.com. It is impractical to cover all pit types and adapters in this manual. The adapter you ordered came with an Installation Note specific to your pit style; please refer to this. This instruction manual is intended to supplement the videos, not replace them.

IQ110 Placement

Attach the IQ110's blower tube to the cooker adapter. A finger operated clamp is included with some adapters to secure the tube to the adapter.



The IQ110 must be kept at least 2" from your cooker. Failure to follow this warning can lead to fire causing property damage, personal injury or even death!

The IQ110 can be hung by the included rope handle from a hook or handle on the cooker only if the IQ110 does not come closer than 2" from the body of the cooker. Failure to maintain this air gap can cause the IQ110's enclosure to be damaged and / or can result in fire, possibly resulting in property damage, personal injury, or even death.

It is recommended to hang the IQ110 from a table, chair, or another object away from the cooker. Alternately, it can be laid on its back on any **cool** horizontal surface.

Probe Routing



The IQ110 probes are very accurate platinum RTD sensors and are delicate. Handle them with care! Do not yank on them, keep them at least 24" from flames, do not pinch the cable, roll up neatly for storage, and do not run through dishwasher. Failure to follow this notice may result in probe damage.

Probes should be routed into the cooker attaching the alligator clip to the cooking grate at least 2" away from where food will be placed. They can be routed in through a damper or stack in the lid, underneath a soft gasket, or through a silicone grommet. They should never be pinched between metal surfaces.

A convenient method of placing the probe near the food without touching it is to place a wooden skewer into the food and clip the temperature probe about 3" away.

Probe Care

Probes wear with use and may fail. Here are a few frequent causes of premature probe failure:

- ***Pulling on the cable to release the alligator clip*** - Never pull on the cable. Pinch the alligator clip to release. If the cable is bound, do not pull on it. Instead, unbind it by straightening it out.
- ***Allowing cable to exceed 500°F*** - The cable is Teflon insulated and rated to 500°F. This temperature is easily exceeded when the lid is left off. It is easy to be focused on removing your cooked meat and getting it inside, and forgetting to close the lid. Doing so will likely ruin your probe. Do not route your probe within 12" of a smoldering fire, or 24" of flames.
- ***Pinching it under a cooker's lid*** - Sharp edges are very hard on the delicate wires inside the metal sheath. Route your probe into the cooker in a manner that does not pinch the wire with a metal edge. If you must route in under a lid without a gasket, cut a 1/8" wide by 1/4" long slit into the body's lip to pass the cable through, preventing the pinching action of the lid.
- ***Running it through the dishwasher*** - The probe is water resistant but must not be submerged. Clean your probe with a damp paper towel taking care not to pull on the cable.
- ***Knotting it up and throwing in a box with heavy items*** - When done using your IQ110, allow the probe

to cool and then gently remove it, coil it up, and store in a quart-size Ziploc bag. Store in a safe place.

Temperature cycling and especially handling may eventually cause your probe to fail. Competition cooks are encouraged to keep a spare. Their cost is about the same as a 20-lb bag of quality lump charcoal.

Power Connection

The IQ110's power input jack requires 12 VDC @ 0.5 A. The mating plug is 5.5mm OD, 2.1mm ID, center positive. A suitable Radio Shack *plug* is p/n 274-1569. The IQ110 can be powered from a cigarette lighter socket power cord and pitmasterIQ.com has these available. If making your own cable, it is essential to use a 1A fuse in series with the positive battery terminal as close to the terminal as possible. The IQ110 will run from the 12 VDC provided by common rechargeable car "jumper boxes" for many hours, depending on the condition and capacity of the storage battery.

The IQ110 comes with a 100-240 VAC 50/60 Hz switching power adapter to provide the required 12 VDC. Replacement power supplies are available at pitmasterIQ.com, however they are also available at Radio Shack: Enercell Adapter p/n: 273-358. Requires Adaptaplug "M", p/n: 273-344.

WARNING *Household AC wall voltage is lethal! Touching the adapters metal prongs while plugged in or anything metal connected to the power receptacle will result in electrical shock which may cause property damage, injury or even death! Do not use in a wet location. Do not touch a wet power adapter or electrical cord. Do not allow the power*

adapter to lie on the ground. Failure to observe these warnings will result in electrical shock which may cause property damage, injury or even death!

OPERATING INSTRUCTIONS: FIRE MANAGEMENT

Building The Fire

It may seem odd that this is addressed here, but properly building your fire is crucial to your success. Most importantly is learning to build your fire smaller than you normally would. We don't mean including less fuel, we just mean starting your pit with fewer hot coals. This is important to remember because the IQ110 can *actively* increase temperature, but only *passively* decrease it. Starting your pit too hot will lead to a large temperature overshoot, possibly followed by a near fire-extinguishing off period. On some pits this hot/cold cycle condition can last indefinitely.

For best results, watch our videos for your cooker type and others too. The few minutes spent will be informative. We can't teach you how to build a fire for every pit, for every possible cooking temperature, in every ambient condition, with every possible meat load, that's just not practical. But, think about how much lit charcoal you would normally start up with *without* use of the IQ, and use 1/2 that much instead. Keep a log of your cooks, damper setting, cooking temperatures, amount of charcoal, etc. Then next time, try starting up with a few more coals and observe the behavior. Within a few cooks, you'll have the hang of it.

Adjustable Intake Damper

The adjustable intake damper allows the user to "tune" the airflow to their pit. The hot air inside the cooker has a tendency to rise and exit through the exhaust stack/damper in the lid. As it does, replacement air will be sucked into the pit through its leaks, and through the IQ110, feeding the fire even when the IQ110's blower is not spinning. This is called convection drafting. The hotter and taller the cooker, the more this effect is noticed. This effect can be combated by restricting the convection drafting airflow at either the intake, exhaust or both. Only with experience will you know where to set your cooker's and IQ's dampers.

Position	Function
4	100% Airflow
3	75% Airflow
2	50% Airflow
1	25% Airflow
0	Closed

The determination of the proper damper position is left to the user as each pit behaves differently. The thing to remember is HEAT + FUEL + AIR = MORE HEAT. If you're running hot, try cutting back on airflow. The IQ can blow air, but it can't keep air from feeding the fire through cooker leaks and the natural "blower off" path through the IQ.

In general, it's best to error on the side of too much restriction. The IQ110 can always blow more to overcome the restriction, but if there's not enough restriction, then it is helpless to the convection draft feeding the fire causing temperatures to increase beyond the setpoint.

OPERATING INSTRUCTIONS: NORMAL MODE

IQ110 Power-on Self Test

When power is first applied to the IQ110, it displays the software version by blinking the status LED. The version number is displayed by red blinks red followed by green blinks. By example, version 1.7 would blink red once and green seven times. After version display, it performs a Power-on Self Test to make sure that the blower operates properly. The IQ110 has numerous safety mechanisms in place to make sure the blower can be controlled properly. These include measurement of PCB temperature, measurement of blower RPM, and validation of operating range of the temperature probe. If any of these things are not functioning properly at power-on, the IQ110 status LED flashes the error code.

MAX-BLOW FEATURE

Some pits, gravity feeds like Rebels and Stumps for example, need maximum air delivery to the firebox to speed recovery from the door being opened. IQ110 software versions 1.7 and later (since March 2012) have a feature called Max Blow that the user can enable or disable. Once enabled, the Lid Off Detection feature is disabled, and the blower runs at maximum speed, in effect disabling the variable speed blower software feature.

To enable/disable Max Blow, apply power to the IQ110 and quickly rotate the knob all the way counterclockwise, then clockwise, and repeat. There is a video on our website that demonstrates how to do this. Basically, just turn the knob

back and forth twice. The status LED will begin flashing rapidly, either RED for Max Blow mode, or GREEN for Variable Speed mode. If you have achieved the desired mode, you're done. The IQ110 will automatically reboot and go through its normal power-on sequence. If not, then repeat the procedure until you see your desired mode of operation (rapid red flashing for Max Blow or rapid green flashing for Variable Speed operation).

LIMITED WARRANTY

pitmasterIQ.com makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 180 days from the date of purchase[†]. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. This warranty is expressly in lieu of all other warranties, express or implied, including the warranties of merchantability and fitness.

[†]Temperature probes are not covered by warranty once used. They are warranted to work upon receipt, and should be tested by connecting them to the controller and powering it up *before* using them in a cooker.

To take advantage of this warranty, the product in whole must be returned to us with transportation charges prepaid. An RMA number from our website (pitmasterIQ.com/RMA.html), proof of purchase date and an explanation of the complaint must accompany the product. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must pay the cost of returning the product.

NOTES

NOTES

SPECIFICATIONS

- Blower speed control range: 5 FCM to 15 CFM
- Temperature regulation range: 175°F to 375°F
- Input power 12VDC at 500mA
- Input power jack 2.1mm ID, 5.5 OD, center positive
- Operating temperature range: 0°F to 140°F
- Operating humidity range: 0% to 95% RH, non-condensing
- Standard manifold dimensions: 5-3/8" inside diameter, 6-1/2" outside diameter, 2-1/2" height (without hose barb)
- Air tube interface: 1" hose barb w/ 1" NPT threads



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