

# Motion Raceworks ICON 92/102mm Throttle Body

## Instructions

*Patent Pending*

Thank you for purchasing the Motion ICON (Interchangeable Connection) Throttle Body. This throttle body is the result of years of wanting something better, months and months of engineering and refinement. We think you will find this to be the Last Throttle Body You will ever buy!

### **Attachments**

This throttle body was designed purposely to be modular or interchangeable by nature. Bolting/Assembling the front attachment is easy and utilizes (4) 10-32 stainless socket head cap screws with a 5/32" hex. Each attachment comes with new screws. When assembling lubricate the radial seal on the attachment lightly with grease or WD-40 style lubricant. We suggest torquing these to 32 in/lb on assembly.

92 and 102mm Throttle Body Attachment compatibility. While we do our best to make all external attachments compatible and transferrable, certain attachments may not transfer between 92 and 102mm ICON throttle bodies. Please verify with Motion Customer Service/Sales staff if you have questions on compatibility of your attachments.

### **Torque Specs of Throttle Body to Intake**

Because of a wide variety of bolt types and sizes, sealing types, intake materials and more we suggest consulting intake manufacturer on torque specs

### **Throttle Cable Connection**

This throttle body is designed to use a standard GM or Lokar style press in throttle cable connection. The ICON throttle body was designed with a factory style cam progressive throttle attachment. This type of throttle is perfect for race or non race applications allowing for smooth throttle transitions.

### **Return Spring**

Many sanctioning bodies require a dual throttle return spring to be legal. This throttle body contains two separate wound springs that are specifically engineered and custom made to offer safety, reliability, and proper spring tension. We have thoroughly tested spring packages with and without boost.

### **Idle Adjustment Screw**

This 10-32 adjustment screw with spring dampener can be used to adjust the throttle blade open at rest position to increase airflow for idle tuning.

### **Replacment V-Band Clamps/Quick Seal Clamps**

Our throttle bodies and attachments are designed to utilize Motion Raceworks brand clamps only. While others may potentially fit, we cannot guarantee any fitment or compatibility outside of our flanges/clamps. We did this to insure we can control current and future availability and lead times of components.

### **Replacement Vband Flanges**

Our throttle bodies and attachments are designed to utilize Motion Raceworks brand Vbands only. While others may potentially fit, we cannot guarantee any fitment or compatibility outside of our flanges. We did this to insure we can control current and future availability and lead times of components as they are all 100% Made at Motion Raceworks.

### **Throttle Shaft Screws**

These screws are engineered to work with our throttle shaft design in a way that adds strength and are spec'd to avoid any chance of screw loosening. Upon assembly we red Loctite and torque these screws for your confidence and safety. We do not recommend attempting to remove these screws as it may result in stripping the screws and an inability to reassemble. Contact Motion Raceworks for any concerns relating to this.

### **TPS (Throttle Position Sensor)**

Our TPS design is designed to use a factory GM LS style TPS sensor as commonly found on 99-02 Chevrolet Camaro with LS engines. This electrical plug is the most common used and replacements are easily sourced at anytime. Our engineering team took care to insure that our TPS sensor clocking and format can be used with factory GM style ECU and tuning software as well as aftermarket ECU.

### **IAC (Idle Air Controller)**

This throttle body is designed to be used with a standard GM LS style IAC in assistance with controlling idle speed on all horsepower applications and types. This IAC was chosen due to popularity and availability of replacement parts as well as use with popular and common EFI systems as well as factory GM ECU.

### **Orientation of Throttle Body**

With some builds space constraints of throttle cable routing and/or hood clearance we designed this throttle body to be "flippable" and can run right side up or upside down. Please note when running in right side up configuration we profiled the IAC port to reduce overall height of throttle body in critical top surface area.

### **Care and Maintenance of Finish**

We use a high quality anodized finish to prepare the black colored finish of this throttle body. We suggest using approved chemicals to clean this throttle body. In the event that you would

like to bring back the shine or finish of your throttle body, anodizing can be brought back to life and shine by using common automotive fine compound scratch/swirl remover and then follow up with a coat of your preferred wax. Care and maintenance can be done at your convenience with a spray detailer as well.

## **FAQ**

### ***Q: Will my throttle body come assembled?***

A: Yes, kind of. We ship throttle bodies fully assembled in exception of the attachment. Due to the wide variety of attachments we send the interchangeable connection attachment separate so that you can assemble and become familiar with the attachment design as well as to improve shipping times to you.

### ***Q: What should I use to seal my throttle body to my intake?***

A: Some intakes come with a machined in O-ring, some do not. This is why we did not incorporate an O-ring into the intake sealing surface of our throttle body. It is appropriate and durable to use a gasket if available as well as gray or black gasket maker such as RTV. We have successfully and repeatedly used RTV gasket maker for the sealing surface in applications in excess of 50 psi without issue. Care must be taken to not get gasket material in the throttle bore or IAC port. Because of squish, please check throttle body / intake bore after tightening throttle body to be sure passage is clear.

### ***Q: My IAC Oring does not seem like it will seal or is not sealing?***

A: Due to the design of the very common and preferred GM style IAC being a stamped piece of metal, sometimes the very small / thin oring used for sealing may not be adequate. We have found a wide variety of fitment of these in terms of ORing bore. While all of these varieties will bolt up and function properly, if you find the IAC to be causing a leak upon a smoke test, you can use a small amount of rtv on the iac before assembling to the throttle body to improve seal. Please be sure to not get any RTV on operating "Plunger" equipment.

### ***Q: What size are the TPS Screws?***

A: The throttle body is shipped with these screws, however, if in need of replacement they are 8-32x10mm

### ***Q: What size are the IAC Screws?***

A: The throttle body is shipped with these screws, however, if in need of replacement they are 8-32x10mm

### ***Q: Should I use sealer on the attachment when connecting to the throttle body?***

A: There is no need to add additional sealant with our interchangeable connections. The radial seal design of our throttle body will consistently and continuously seal against large amounts of

pressure. In the event you have damaged an o-ring and need a replacement, please contact customer service for replacement or visit the Throttle Body Product listing for a replacement.

***Q: My throttle seems to be sticking, what should I do?***

A: We spent a significant amount of time refining and making perfect the return spring package for this throttle body. We have an ideal spring rate for N/A or BOOST engines. What we discovered in designing this throttle body is that most throttle sticking issues were due to a bind in a cable, linkage, pedal, or combination there of. That means they followed the same issue across multiple styles and brands of throttle bodies and were not limited to the Motion one if there was an issue.

**Other questions or concerns? We are here to help!**

Email: [Sales@motionraceworks.com](mailto:Sales@motionraceworks.com)

Phone During Business Hours (800) 878-9274

Text Anytime: (563) 202-6015

