Velocity Devices Inc.

The fire in your ATV

VDI IAT Relocation Kit Instructions

Revision 1.3

Parts Included,
VDI IAT Relocation Kit:

- IAT Sensor (1)
- ¼" x 3" heat shrink (2)
- Cable tie

Telephone: (403) 668-7470
Facsimile: (403) 668-7471
Webpage: www.velocitydevices.com
Email: tech@velocitydevices.com

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Time Required:

- Less than an hour for actual installation, more time is required on the KQ700 since the air box needs to be removed.

Difficulty:

- 1/10

Tools Required:

- Small flat screwdriver
- Drill with ½" drill bit
- Electrical tape
- Leather hole punch or sharp awl
- Needle nose pliers

Supported Machines:

- 2005+ Suzuki King Quad 700 EFI
- 2006+ Arctic Cat 700 EFI
- 2008-2018 Suzuki King Quad 750 EFI

Introduction:

The IAT relocation kit replaces the stock IAT (Intake Air Temperature) sensor from the edge of the factory air box to the throttle body. This ensures the ECU gets an accurate ready of the actual air charge temperature. The stock sensor typically reads approximately 5 degrees Celsius hotter that the actual temperature during normal operation (upwards of 15 degrees Celsius once a hot engine is stopped for several minutes). This robs the engine of up to 5% of the power, and gives it a lean miss when the engine is hot.

Several of the key features are:

- Easily plugs into the stock connector
- Sensor perfectly matches the stock IAT sensor profile for use with the stock ECU.
- Ensures the engine has consistent power output, with horsepower gains up to 5%
- Ensures crisp throttle response, regardless of engine temperature.

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Installation:

Step 1:
Remove the seat and disconnect the negative battery cable.

Step 2:
Remove the necessary panels to gain access to the air filter. Remove the filter.

Step 3 (Suzuki King Quad 700 / 750 Only):
Remove the air box from the machine.

Step 4:
Remove the factory IAT sensor. Sensor is located on the bottom of the air box (front left for the Arctic Cat, back right for the Suzuki). The sensor is easiest removed if you press firmly on the top of the sensor (from the inside of the air box), and push from the inside out. Pull gently on the wires to help pull the sensor out. See Figure 1 for a picture of the stock sensor. Depress the clip on the grey connector, and pull on the IAT to unplug it. Once the IAT is removed, wrap the connector end with electrical tape to seal the pins, and re-install the sensor in the air box. See Figure 2.

Figure 1:

Figure 2:

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Step 5:

Arctic Cat 700:
Seal the throttle body hole with a piece of paper towel to prevent plastic fragments from entering the throttle body. Carefully drill a ½" diameter hole centered between the throttle body and the air filter cage. Ensure that no wires are hoses are below the drill location. Clean up the plastic fragments. See Figure 3.

Suzuki King Quad 700/750:
Remove the rubber throttle body grommet. It pulls out from the bottom of the air box. Drill a ½" diameter hole from the bottom of the air box, centered between the throttle body opening and the edge of the crankcase vent floor. Drill the hole on the side with the factory IAT sensor.
NOTE: You only want to drill through the bottom floor! Vigorously shake the box to ensure all plastic fragments are out of the crank case vent box. See Figure 4.

Figure 3:

Figure 4:

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Step 6:

Install the IAT sensor from the bottom of the air box. For the Suzuki, make a 90-degree bend at the end of the sensor before installation, and feed through the gab between the throttle body opening and the crankcase vent floor. Ensure the grommet is fully sealed onto the air box floor. See Figure 5 for the Arctic Cat and Figure 6 for the Suzuki.

Figure 5:

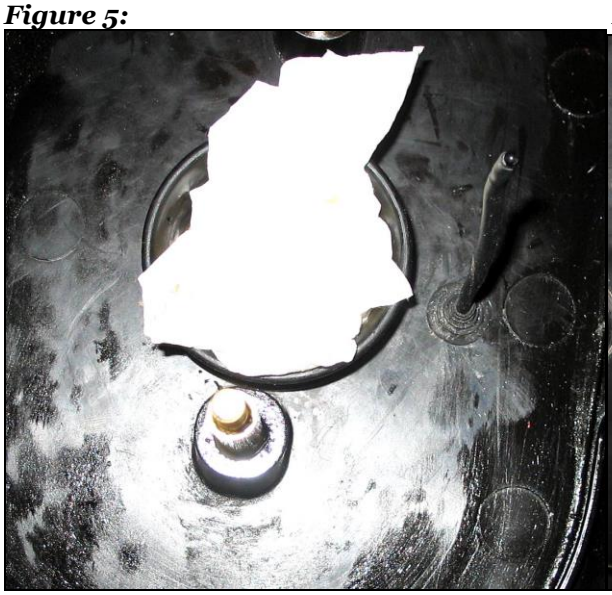

Figure 6:

Step 7:

Using a sharp awl, poke a hole through the throttle body grommet. See Figure 7. Alternatively, use a leather punch (used to punch holes in belts) to generate a cleaner installation. See Figure 8.

Suzuki King Quad 700/750: Reinstall the rubber throttle body grommet into the bottom of the air box. Orientate the hole so that it will line up with the IAT sensor.

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Figure 7:

Figure 8:

Step 8:

Using a pair of needle nose pliers, feed the IAT sensor through the throttle body grommet so it protrudes ¼" to 3/8" into the opening. See Figure 9 for the finished Arctic Cat installation, and Figure 10 for the finished Suzuki installation. Reinstall the air box, if necessary.

Figure 9:

Figure 10:

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Step 9:

Using a small screwdriver, gently pry out the center retainer from the wiring harness connector. See Figure 11. Once the retainer is removed, gently pry the terminal retaining tab to the outside of the shell. When the tab is held out, gently pull the wire from the back of the shell to remove it. Repeat for the second terminal. See Figure 12. Save the shell and retainer in a safe place in case you wish to re-install the factory IAT at a later date.

Figure 11:

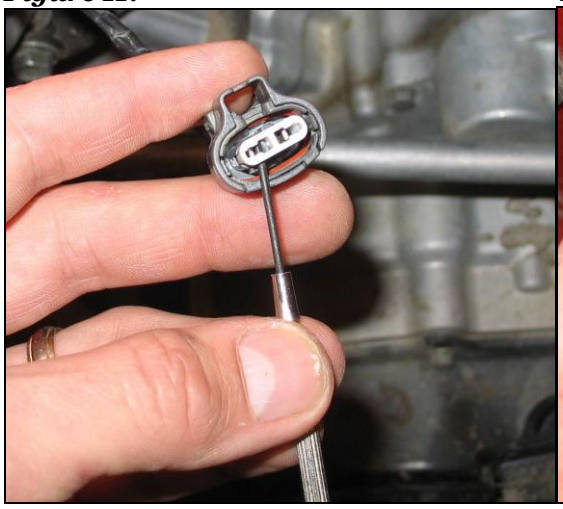

Figure 12:

Step 10:

Route the IAT sensor wires away from heat sources. Slide one piece of heat shrink tubing over each wire from the new IAT, and plug each terminal from the IAT into the terminals in the stock harness. It doesn't matter which terminal gets connected to which wire. See Figure 13. *Note: Sensor was removed for clarity.*

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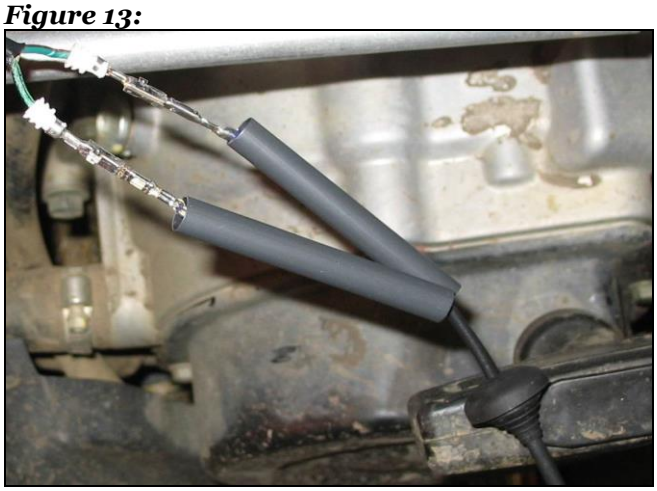
Figure 13:



Step 11:

Slide the heat shrink up so it covers the rubber seals on the factory terminals and the IAT relocation terminals. See Figure 14. Using a heat source, carefully shrink the heat shrink until all the seals are securely sealed inside the heat shrink. See Figure 15. *Note: Sensor was removed for clarity.*

Figure 14:

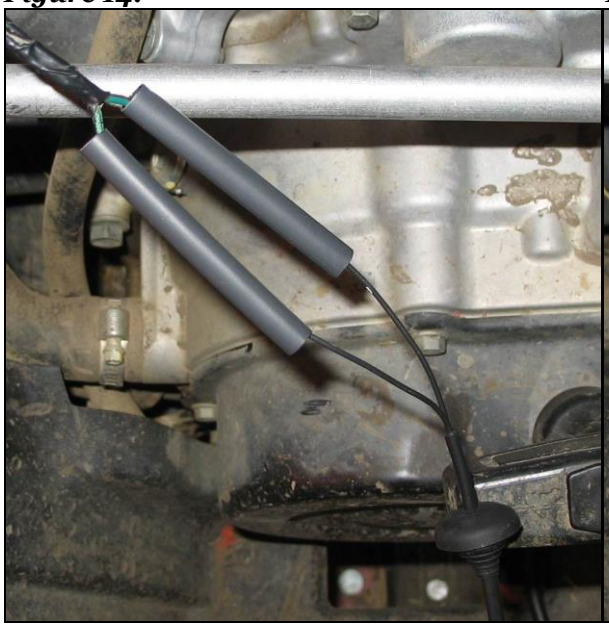


Figure 15:

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Step 12:
Reinstall all other removed parts. Re-connect the negative battery cable, and re-install the seat.

Step 13:
Go riding!

Troubleshooting:

Should the ECU log an IAT error after installation, ensure that the wires are not shorted and are fully connected. If you continue to have a problem, please contact our technical support staff for replacement.

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Every unit is assembled, tested and packaged locally by one of our trained technicians, or approved ISO9001 registered manufacturing firms.

Should have any questions or concerns with this product, contact us immediately, and one of our courteous representatives will deal with your concerns in a prompt fashion.

We appreciate your business, and hope you enjoy your purchase.

Email: *tech@velocitydevices.com*

Telephone: *1.403.668.7470*

Or regular mail:
Velocity Devices Inc.
Attn: Concerns Dept.
P.O. Box 47052
RPO Creekside
Calgary, AB
T3P 0B9