

PERFECT **HI VELOCITY**

PERFECT HI-VELOCITY 68MM THROTTLE BODY



Installation Instructions

**Part # 65301 – 1991-1998 Jeep 4.0L Engines w/PERFECT
Engine Management System P/N 65140, 65141**

OR

**All Jeep 4.0L Engines in Cherokee, Grand Cherokee and
Wrangler 1991-2005**

Perfect Performance Products, LLC

**Painless Performance Products Division
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We have provided you with as accurate instructions as possible, and are always concerned about corrections or improvements that can be made.

If you have found any errors, omissions, or if you simply have comments or suggestions concerning these instructions, please write us at the address on the cover and let us know about them. Or, better yet, send us a fax at (817) 244-4024.

For Technical Questions

E-mail address: tech@painlessperformance.com

Tech Line: (800) 423-9696



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1.0 INTRODUCTION

Please read all instructions prior to install. Use these instructions as a guide to install the PERFECT HI VELOCITY THROTTLE BODY onto your Jeep engine. **NOTE: THIS THROTTLE BODY MAY BE USED ON SOME STOCK APPLICATIONS WITH LIMITED PERFORMANCE INCREASES. IT IS BEST UTILIZED ON A PERFECT HI-TORQUE JEEP 4.0L OR MILD OR WILD JEEP 4.7L STROKER.**

2.0 TOOLS AND PARTS NEEDED FOR INSTALLATION

You will at least need the following tools:

- Allen wrenches or allen sockets: 4mm, 5mm and 3/16”(depends on intake manifold style “early” or “late”)
- Flat screwdriver
- T-25 Torx Driver
- Ratchet, 6” extension
- Tool for scraping off the old gasket.
- Can of Carburetor cleaner
- **Painless Part # 60117 Vehicle Speed Sensor (If not used, check engine light will illuminate) (Not required for stock harness and ECM applications)**

3.0 INSTALLATION GUIDELINES

- 3.1 Remove intake tube and air filter. NOTE: The picture shown is not the stock intake tube or air filter. See Figure 3-1.



Figure 3-1 Air Filter and Intake Tube Removal

VERY IMPORTANT NOTICE

*****NOTE: THE THROTTLE BODY SHOWN IN THESE INSTRUCTIONS IS THE 62MM DESIGN. THIS KIT HAS THE 68MM THROTTLE BODY IN IT AND REQUIRES THE OPENING OF THE INTAKE MANIFOLD TO AT LEAST 67MM.**

- 3.2 Carefully pry off the ball-type throttle cable linkage with a small flat screwdriver and disconnect the round nail head pin cruise control/kick down cable by sliding it in the opposite direction of the normal cable pull until it “snaps” off the nail head. See Figure 3-2.



Figure 3-2 Throttle/Kickdown/Cruise Control Cable removal

- 3.3 Disconnect the throttle body electrical connections at the IAC motor, TPS and MAP sensor if attached to the throttle body. See Figure 3-3.**



Figure 3-3 Disconnecting the IAC Motor and Throttle Position Sensor (TPS)

- 3.4** Using a 10mm socket on a 6” extension, remove the four(4) throttle body mounting bolts and remove the throttle body from the intake manifold. See Figure 3-4.



Figure 3-4 Removal of the Throttle Body and bolts.

- 3.5** Remove the IAC motor and TPS from the Throttle Body using a T25 Torx wrench or socket. **CAUTION:** Do not twist or pull the IAC motor poppet during removal. Pull the IAC straight out of the Throttle Body and set aside for cleaning later. See Figure 3-5.



Figure 3.5 TPS and IAC motor removal

- 3.6** The PERFECT System uses a GM style MAP sensor; therefore it is not necessary to remove it from the stock throttle body. (If installing onto a stock Jeep without the PERFECT System; install the MAP sensor in the same location it was removed.) HI-Velocity Throttle Bodies are designed to allow for the installation of the stock MAP Sensor.
- 3.7** Place a rag in the intake manifold and if needed scrape off the old throttle body gasket. Be mindful to catch all of the scrapings and not let them fall into the intake manifold.
- 3.8** Clean the IAC motor poppet by spraying carburetor cleaner on it and gently wiping it clean. **DO NOT ROTATE OR PULL ON THE POPPET!** See Figure 3.6.



Figure 3.6 Cleaning the poppet on the Idle Air Control (IAC) Motor

- 3.9** Install the IAC and TPS onto the new throttle body using the provided new fasteners. **DO NOT USE THE ORIGINAL STOCK HARDWARE TO REMOUNT THE IAC OR TPS!** See Figures 3.7 and 3.8.



Figure 3.7 Installing the Idle Air Control (IAC) Motor



Figure 3.8 Installing the Throttle Position Sensor (TPS)

- 3.10 Using the new throttle body gasket and stainless fasteners provided; install the throttle body onto the intake manifold. Install one screw at a time loosely tightening them by hand. See Figures 3.9 and 4.0.**

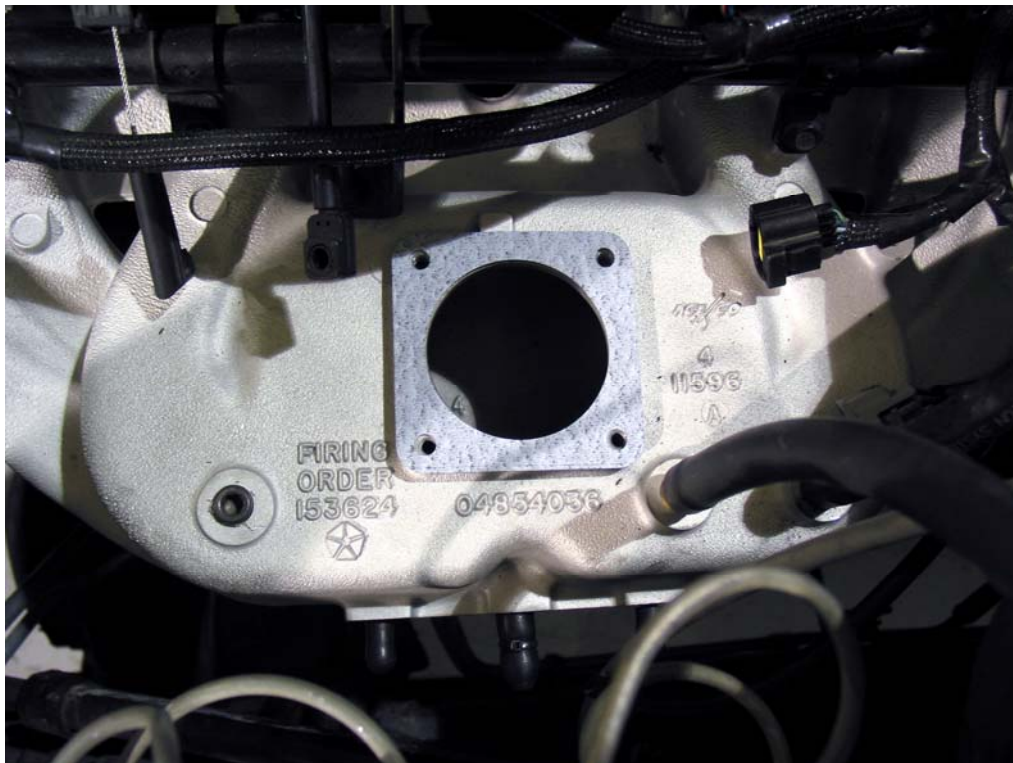


Figure 3.9 Positioning the New Throttle Body Gasket.

3.11 Using a cross pattern torque the mounting screws to 10in/lbs.



Figure 4.0 Installing and Torque the new fasteners for Throttle Body to 10in/lbs.

3.12 Reattach Throttle, Kickdown, and Cruise Control Cables as equipped. See Figure 4.1.



Figure 4.1 Throttle and Kickdown Cables

3.13 Plug in the TPS and IAC harness connectors. See Figures 4.2 and 4.3.



Figure 4.2 Connecting Throttle Position Sensor (TPS)

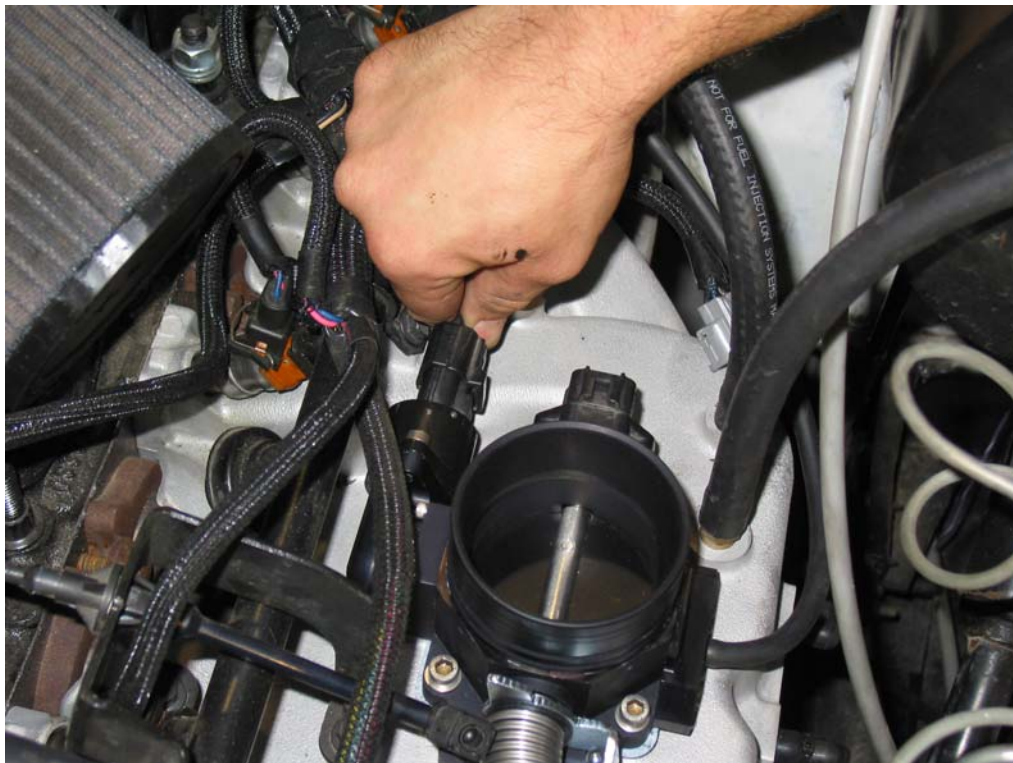


Figure 4.3 Connecting the Idle Air Control Motor (IAC)

- 3.14 Connect the PERFECT System MAP sensor vacuum hose to the nipple on the side of the new throttle body. See Figure 4.4.



Figure 4.4 PERFECT MAP sensor vacuum hose connection

Important Items to Consider and Understand

1. If you do not own the PERFECT Ingenius software which allows the idle calibrations to be properly setup, then it will be necessary to either send in your ECM or to purchase the software separately - P/N 65245. Call Painless directly at 1-800-423-9696 and request a RMA # and then ship the ECM back to Painless for the most updated calibration.
2. Some modifications will be needed to reconnect the stock intake duct work to the new throttle body.
3. It's always a good idea to make sure your engine is in peak operating condition. In this case, plugs, plug wires, cap, rotor and fuel filter play a large role in the performance of your vehicle. In some circumstances it may be necessary to clean the fuel injectors.

Painless Performance Limited Warranty and Return Policy

Chassis harnesses, fuel injection harnesses and Striker are covered under a lifetime warranty.

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