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2006 - Present Model Years (Excluding 2008/ 2009 Touring Models)

Installation Instructions:

- Ignition switch must be in the off position before starting removal procedure

Required Tools - Lubricants - Sealers:

Assorted hand tools, assorted torx drivers, assorted allen wrenches, silicon spray, loc-tite Blue

Removal Procedure:

1. Air Cleaner Assembly

- Remove allen head bolt located in the center of the air cleaner outer cover
- Remove the 3 torx screws and cover bracket from the air filter element
- Remove rubber tubes from the back side of the filter element, pull filter element and gasket from back plate
- Remove rubber tubes from the breather bolts on the back plate
- Remove breather bolts
- Pull back plate from the throttle body face (back plate gasket and breather bolt seal to be set aside)

2. Horn Assembly

- Remove center bolt and washer from horn bracket
- Disconnect both wires from back side of horn assembly

3. Throttle Body and Intake Manifold Assembly

- Disconnect wires from the throttle position sensor (left side front of the throttle body)
Incoming Air Temperature Sensor (left side rear of the throttle body)
IAC Module Wiring (top front of the throttle body)
MAP Sensor (top rear of the throttle body)
Fuel Injectors (top of intake manifold)
 - Move these parts out of the work area
- Loosen both throttle cable adjustments up at the handle bars, screw both adjusters in to give as much free play as possible, remove both cable ends from the cable wheel and remove them from the throttle cable bracket, the front cable has a small spring wound around the cable inside the bracket and will need a small screwdriver to pick it up out of the cable pocket.
 - Move cables out of the work area
- Loosen and remove both **right** side side bolts holding the intake manifold to the cylinder heads
- Loosen both left side bolts holding the intake manifold to the cylinder heads, only loosen these until there is approximately 3/16" gap between the intake flange and the bottom of the bolt head
- Disconnect the fuel line from the gas tank, it is located on the left side bottom of the gas tank... to do this- push up on the chrome ring on the bottom of the tank- this will allow the fuel line to be pulled down out of the tank. " Note: a small amount of fuel will be purged from the connection-special care around any flammable fluid should be taken.
- Lightly wiggle the throttle body up and down until the seals break free then remove assembly from in between cylinders (pay close attention to fuel line routing at this time)
- While not working on the engine during change over of electronics, cover both the intake openings in the cylinder heads to keep foreign material out of the intake runners

Removal of Fuel Rail And Injectors:

- a. Remove the screw and clamp holding the fuel supply tube into the fuel rail
- b. Slide the clip holding the fuel injectors into the fuel rail off of the fuel rail
- c. Remove the bolt holding the the fuel rail to the intake manifold
- d. Pull the fuel rail off of the injectors
- e. Pull the fuel injectors out of the intake manifold

Removal of Electronics and Throttle Cable Bracket:

1. **Throttle Cable Bracket**
 - a. Remove spring end from slot in bracket, the top mounting bolt is installed with an adhesive- usually an open end wrench instead of the torx driver is needed for removal, now remove the torx head bolt on the side of the throttle body, factory unit not re-installed whith HPI unit. **Use supplied HPI throttle cable bracket**
2. **Map Sensor**
 - a. Gently pull Map Sensor up while turning side to side
3. **IAC Module**
 - a. After removing both attachment screws, gently pull IAC Module up while turning side to side
4. **Incoming Air Temperature Sensor**
 - a. After removing both attachiment screws, pull up (be carefull not to tear gasket) this gasket will need to be re-used
5. **Throttle Position Sensor**
 - a. After removing both attachments, pull up and the sensor will come off the throttle shaft

Installation of Electronics and Throttle Cable Bracket:

1.Throttle Position Sensor

- a. With the throttle plate in the closed position, hold it in that position by inserting a finger into the venturi, place throttle position sensor onto the throttle shaft with the electrical connection at the bottom, tighten both bolts at this time using **Blue Loc-Tite**

2. Incoming Air Temperature Sensor

- a. Place gasket over opening and install sensor thru opening with the electrical connection facing towards the intake manifold, tighten both bolts at this time using **Blue Loc-Tite**

3. IAC Module

- a. Apply a light coating of silicone spray onto the O-ring then place module into the throttle body with the electrical connection facing the intake manifold, be sure the module is seated correctly, tighten both bolts using **Blue Loc-Tite**

4. Map Sensor

- a. Apply a light coating of silicone spray onto the rubber area of the sensor, gently push it into the opening in the intake manifold

5.Throttle Cable Bracket

- a. Throttle cable bracket is pre-installed at factory, if removed re-install using **Blue Loc-Tite**, re route cables in factory positions. Check throttle cable pull, making sure there is no binding, and throttle blade reaches wide open and returns to shut position

Installation of Fuel Rail and Injectors:

- a. Apply a thin coat of silicone spray to the O- ring on the injectors
- b. Place injectors into the intake manifold (turning the slightly will allow them to seat easier)
- c. Place the fuel rail over the injectors and push down to seat injectors into the fuel rail
- d. Install fuel rail mounting screws
- e. If the fuel supply tube was removed, install it now and install the clamp and mounting bolt

Installation of Throttle Body and Intake Manifold:

- a. When the throttle body and intake manifold are positioned onto the head mounting screws, be sure that the flanges and seals are correctly installed, 2006 and later cylinder heads use symmetrical style flanges, use of earlier style heads are possible using HPI part# HPI-IF-1, which contain a front and rear flange, making this a direct and easy bolt on
- b. Place throttle body assembly in place and tighten screws finger tight
- c. Install the throttle cables and adjust for **full throttle** and **complete return** positions, throttle body must operate freely
- d. Inspect that the return spring is seated into the spring slot
- e. Connect **fuel injectors, IAC module, incoming air temperature sensor**, throttle position wiring at this time
- f. Install air cleaner back plate and gasket along with breather bolt seals with the breather bolts. Tighten manifold mounting screws

Install Horn Assembly:

- a. Attach both wiring leads to horn assembly
- b. Place horn over bolt on bracket, install washer and nut (use **Blue Loc-Tite**)

Install Air Cleaner Assembly:

- a. With the back plate and breather bolts already installed, insert the two breather tube onto the breather bolts
- b. Place breather tubes onto the filter element, place gasket between back plate and filter element, align mounting holes and install the three mounting bolts with the air cleaner cover bracket on the element face
- c. Install the air cleaner cover using the allen had bolts
(NOTE: Some Screaming Eagle and Aftermarket A/C assemblies use Locating dowels on Back Plate)
(if equipped, these must be removed by grinding or milling, prior to installation.)
(Failure to do so could lead to possible air leaks or misalignment of T/B and A/C)

Testing Procedure:

After completion of assembling the Throttle Body and Intake Assembly, Horn Assembly and Air Cleaner Assembly... attention must be noted to make sure that the throttle body is in working order, having a smooth opening and returning action, and that there are no air leaks present. To do the air leak test- with the bike in **neutral** > Start the Engine and allow it to idle, Spray silicone on the areas where the Intake Manifold meets both the front of the rear Cylinders, if the engine **Tone** or **RPM DROPS** after being sprayed an air leak is present and will cause **DAMAGE** to the engine if not corrected.

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