Ford Racing Laser Etched Valve Covers (05-10 GT, GT500)

Applicable Part Numbers:

- M-6582-FR3VBL (Blue)
- M-6582-FR3VBLK (Black)
- M-6582-C543V (Chrome)

List of Tools:

- 1/4" ratchet
- 3/8" ratchet
- 8mm socket
- 10mm socket
- 7mm socket
- 1/4" & 3/8" extensions
- Plastic gasket scraper
- Ford Factory Service Manual (FSM) specifies:
 - Motorcraft Metal Surface Prep (ZC-31)
 - Motorcraft Silicone Gasket Remover (ZC-30)
 - o Motorcraft Silicone Gasket and Sealant (TA-30)
 - o Motorcraft Silicone Brake Caliper Grease and Dielectric Compound (XG-3-A)
- Rags and shop towels
- The FSM is useful, but is not required.
- An extra set of hands helps!

Installation Instructions:



Figure 1- Before Picture

Preliminary steps

- Disconnect the battery
- Remover the strut tower brace (if installed)

Driver's Side (LH)

<u>*NOTE*</u> Many of the pictures show the right hand side because they came out better. The Parts are identical Right to Left

- Remove the factory air intake or Cold Air Intake (CAI) C&L Racer Intake pictured
 - Disconnect the MAF sensor. (Figure 2)
 - Disconnect the passenger side PCV hose.
 - o Disconnect air intake from throttle body.
 - o Disconnect air filter box (or CAI heat shield).
 - o Remove air intake.



Figure 2 - Removing the Cold Air Intake (or stock air intake) and MAF

- Remove the driver's side PCV hose
- Remove the coil plugs twist and pull
 - Remove the screws attaching the coil plugs to the valve cover using the 7mm socket (Figure 3, and Figure 4)
 - We completely disconnected them, labeled them, and set them aside (in order)



Figure 3 - Coil on Plug Bolts (Red), Electrical Connector (Yellow) and Fuel Injector Electrical Connector (Green)



Figure 4 - Remove the coil-on-plugs (RH side shown)



Figure 5 – Fuel Injector Electrical Connection

- Disconnect the Fuel Injector Electrical Connectors (Figure 3 and Figure 5)
- Remove the evaporative emissions (EVAP) line from the intake manifold

• Disconnect the LH variable camshaft timing (VCT) sensor (Figure 6)



Figure 6 - Remove the VCT Solenoid electrical connection

- Remove wiring harness retaining pins (2) from the covers (Figure 7)
- Remove the wiring harness retainers (2) from the studs (Figure 8)



Figure 7 - Retaining Clips, Pin Type



Figure 8 - Retaining Clip, Stud Style

- Remove the valve covers.
 - It helped to loosen the oil dipstick tube, but it's not necessary.
 - Be careful to lift straight off until you clear the VCT solenoid.

- The bots (8mm socket) are captive in the grommets so you will not need to remove them from the valve covers.
- We used a few different length extensions and a u-joint to get to all of the bolts.
- Clean the gasket sealing surface.
 - The Ford Factory Service Manual (FSM) specifies:
 - Motorcraft Metal Surface Prep (ZC-31)
 - Motorcreft Silicone Gasket Remover (ZC-30)
 - We used a plastic scraper and some parts cleaner to remover the old RTV sealant and clean the sealing surface.
 - Be careful not to scratch or gouge the surface.
 - Be careful not to get the RTV material in the cylinder head. We used a rag and were careful to prevent material from falling into the cylinder head.
- Apply a bead silicone gasket and sealant (Motorcraft TA-30) in the two locations (Figure 9 and Figure 10) where the front cover and cylinder head meet.
 - $\circ\quad$ We did a trial fitment check before putting the silicone down.



Figure 9 - Silicone Gasket and Sealant Location, Lower. (image from removal step before scraping old gasket clean)



Figure 10 - Silicone Gasket and Sealant Location, Upper

- Position the valve cover (shown in Figure 11) making sure that the wiring harness is clear and out of the way.
 - Having an extra pair of hands helps here; after positioning the valve cover one person can lift while the other person applies the silicone. Otherwise apply the silicone and then carefully move the valve cover into position.
 - Make sure you have the right extensions handy.
- Install the valve cover and tighten the bolts to 10 Nm (89 lb-in).
 - o With the wiring bundles pulled out of the way slide the valve cover into position.
 - You will not be able to get a torque wrench on many of the bolts. Make sure you get a good feel for what 10Nm feels like one of the easily accessible bolts. (It's not much).
 - Tighten in the sequence show in Figure 12.
 - There are only 9 and 8 bolts on the left and right, respectively.
 - Use the same sequence specified by the FSM by skipping the missing bolts.



Figure 11 - Installing the valve cover



- Attach the wiring harness retaining pins.
- Connect the VCT solenoid connector.
- Install the PCV tube.
- Install the EVAP tube.
- Install the coil-on-plugs.
- Apply Silicone Brake Caliper Grease and Dielectric Compound (Motorcraft XG-3-A).
- Install the coil-on-plug and tighten the bolt to 5 Nm.

RH Side Valve Cover Installation:

- The RH side is very similar to the LH Side.
- You will need to remove the oil fill tube and install it on the new cover. We did this before installing the cover, but I think you can do it after the install.

Finish the install:

- Reinstall Air intake box or CAI.
- Reinstall the strut tower brace (if applicable).
- Reconnect the battery.
- Take pictures and enjoy!



Figure 13 - The Final Result

Installation instructions provided by American Muscle customer Michael Iacchei 5.10.12