Vortech® Charge Air Cooler Installation Instructions



2015 Ford Mustang 2.3L EcoBoost*

P/N: 8N310-040, -041, -042

* Legal in California only for racing vehicles which may never be used or registered or licensed for use upon a highway.



1650 Pacific Avenue, Channel Islands, CA 93033-9901 • Phone 805 247-0226 Fax: 805 247-0669 • www.vortechsuperchargers.com • M-F 7:00 AM - 3:30 PM (PST)

FOREWORD

This manual provides information on the installation, maintenance and service of the Vortech Intercooler kit expressly designed for this vehicle. All information, illustrations and specifications contained herein are based on the latest product information available at the time of this publication. Changes to the manual may be made at any time without notice. Contact Vortech Engineering for any additional information regarding this kit and any of these modifications at (805) 247-0226 7:00am-3:30pm PST.



Take note of the following before proceeding:

1. Proper installation of this intercooler kit requires general automotive mechanic knowledge and experience. Please browse through each step of this instruction manual prior to beginning the installation to determine if you should refer the job to a professional installer/technician. Please contact your dealer or Vortech Engineering for possible installers in your area.

- 2. This product was designed for use on stock (un-modified, OEM) vehicles. The PCM (computer), engine, transmission, drive axle ratios and tire O.D. must be stock. If the vehicle or engine has been modified in any way, check with Vortech prior to installation and use of this product.
- **3.** Use only premium grade fuel with a minimum of 91 octane (R+M/2).
- **4.** Always listen for any sign of detonation (*knocking/pinging*) and discontinue hard use (*no boost*) until problem is resolved.
- 5. Vortech is not responsible for any clutch, transmission, drive-line or engine damage.

Exclusions from Vortech warranty coverage considerations include, but not limited to:

- 1. Neglect, abuse, lack of maintenance, abnormal operation or improper installation.
- 2. Continued operation with an impaired vehicle or sub-system.
- 3. The combined use of Vortech components with other modifications such as, but not limited to, exhaust headers, aftermarket camshafts, nitrous oxide, third party PCM programming or other such changes.

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FORD MUSTANG ECOBOOST CHARGE AIR COOLER INSTALLATION INSTRUCTIONS

Congratulations on selecting the best performing and most

effective charge air cooler today... the Vortech Charge Air Cooler!

Before beginning this installation, please read through this entire instruction booklet

The Vortech Charge Air Cooler upgrade was designed as a street/strip oriented charge air cooler, specifically for use on the Ford Mustang EcoBoost.

As with any power enhancing product, this system is intended for use on healthy, well-maintained engines. Vortech Engineering is not responsible for engine damage. Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

For best performance and continued durability, please take a note of the following key points:

- 1. Use only premium grade fuel 91 octane or higher (R+M/2).
- 2. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.

TOOL & SUPPLY REQUIREMENTS:

- Torx 25 Screwdriver
- Flat #2 Screwdriver
- 5mm Wrench
- 5.5mm Wrench
- 7mm Wrench
- 8mm Wrench
- 10mm Wrench
- 3/16" Allen Wrench
- Pliers
- Cutters



PART NO.	DESCRIPTION	QTY.
8N310-040	COOLER UPGRADE, '15 2.3L MST	'G 1
7A250-101	1/4-20 HHCS zINC PLTD	1
7C060-022	M6 x 1.0 x 22MM SHCS LYSH SC	1
7F008-021	NUT, M8 x 1.25, SERRATED FLG	4
7F250-040	1/4-20 NUT PLATE	1
7J006-093	6MM WASHER, PLATED	1
7J312-875	5/16" WASHER, 7/8" OD, CUSTOM	4
7PS200-300	SLEEVE, 2.0"D X 3.0"L STRAIGHT	1
7PS251-300	SLEEVE, 2.5"D X 3"L BUMP	1
7PS275-301	BUMP SLÉEVE. 2.75"D X 3.0"L	3
7PS300-275	REDUCER, BLK 3.0-2.75	1
7R002-032	#32 SAE TYPE É SS HOSE CLAMP	2
7R002-036	#36 SAE TYPE F SS HOSE CLAMP	2
7R002-044	#44 SAE TYPE F SS HOSE CLAMP	7
7R002-048	#48 SAE TYPE F SS HOSE CLAMP	3
7S300-004	RUBBER ELBOW 3" MODIFIED	1
8N010-470	PANEL, RAD. 2.3 ECOBOOST MUST	1
8N012-110	DISCH TUBE A. 2.3 ECOBOOST MUST	1
8N012-130	DISCH TUBE C. 2.3 ECOBOOST MUST	1
8N012-150	DISCH TUBE E. 2.3 ECOBOOST MUST	1
8N020-190	INSTR. MAN. 2015 ECOBOOST MUST	1
8N112-140 A	ASY, DISCH TUBE D. 2.3 ECOBOOST MU	STI
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8PN101-054	WELDED CORE ASSY. 05 MUST GT. BL	<u>(</u> 1



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RUBBER ELBOW 3" MODIFIED

ASY, BILLET RACE BOV, BLACK

ASY, RESISTOR/VAC, 2.3L ECOBOOST PANEL, RAD, 2.3 ECOBOOST MUST DISCH TUBE A, 2.3 ECOBOOST MUST DISCH TUBE C, 2.3 ECOBOOST MUST DISCH TUBE E, 2.3 ECOBOOST MUST

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7R002-036 7R002-044 7R002-048

7S300-004

8D204-111

8N004-041

8N010-470 8N012-110 8N012-130 8N012-150 8N020-190



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8N010-470

8N012-110

8N012-130

8N012-150

8N020-190

1. FRONT BUMPER COVER REMOVAL

NOTE: Make note of all screw locations for future reassembly.

- Remove the (8) plastic fasteners securing the black plastic cover above the grille and radiator.
 Pop the center section of each fastener upward and then the larger part of the fastener will loosen.
 Remove the cover and set aside for later re-installation. (See Fig. 1-a)
- B. Remove the (6) 8mm-headed fasteners securing the front bumper cover to the upper radiator support. Set aside for later re-installation. (See Fig. 1-b)
- C. There are (2) 5.5mm-headed fasteners (one on each side) hidden underneath the weather stripping on the top of the bumper cover near the headlights. Remove these fasteners & set aside for later re-installation. (See Fig. 1-c)
- Remove the (3) plastic fasteners securing the fender liners to the fenders & front undertray. Do this for both sides. (See Fig. 1-d)



Fig. 1-a: Remove Plastic Cover



Fig. 1-b: Remove Bumper Fasteners



Fig. 1-d: Remove Plastic Fasteners



Fig. 1-c: Remove 5.5mm-Headed Fasteners

1. FRONT BUMPER COVER REMOVAL, cont'd

- E. Remove the 7mm-headed fasteners & plastic fasteners securing the front undertray to the bumper cover & K-member. (See Fig. 1-e)
- F. There are (2) 7mm-headed fasteners (one per side) securing the corners of the front bumper cover to the fender. You will need to pull back the fender liner to access these fasteners & remove. (See Fig. 1-f)
- G. With the front undertray removed, reach up behind the front bumper cover & unplug the fog light connectors. Do this for both sides.
 (See Fig. 1-g)
- H. Pull the corners of the front bumper cover away from the fender. Carefully remove the front bumper cover from the vehicle, exposing the bumper support. (See Fig. 1-h)



Fig. 1-e: Remove Front Undertray



Fig. 1-f: Bumper Corner Fastener (Bumper Removed)



Fig. 1-h: Front Bumper Cover Removed



Fig. 1-g: Fog Light Connectors

2. ELECTRIC LOUVER & RADIATOR SHROUD REMOVAL

- A. Unplug the electrical connector from the ambient air temp sensor, then release the harness from the bumper support. Also, remove the sensor & set aside for later re-installation. (See Fig. 2-a)
- B. Remove the (2) 8mm-headed fasteners securing the middle section of the electric louver shroud to the front bumper support. Remove the (2) 8mmheaded fasteners securing the bottom of the electric louver shroud.(See Fig. 2-b)
- C. Remove the (2) plastic fasteners securing the top of the electric louver shroud to the upper radiator support. (See Fig. 2-c)
- D. In order to remove the electric louver shroud, you will need to remove the arm connecting both louvers together from the back side. Remove the 5mm fastener securing the arm to the lower louvers, then press the retaining tabs inward to release the arm. Once released, pull the shroud forward. From behind, you will see an electric plug attached to the upper louver control motor. Disconnect this plug & remove the louver assembly from the vehicle. (See Fig. 2-d)



Fig. 2-a: Remove Ambient Air Temp Sensor



Fig. 2-b: Remove 8mm-Headed Fasteners (3 pictured)



Fig. 2-d: Remove 5mm Fastener & Louver Arm



Fig. 2-c: Remove Plastic Fasteners

2. ELECTRIC LOUVER & RADIATOR SHROUD REMOVAL, cont'd

- E. You will notice a wire harness running along the back side of the bumper support secured by (3) gray clips. Free the harness from the bumper support. (See Fig. 2-e)
- F. Release the gray clips from the wire harness & set aside. These will not be reused. (See Fig. 2-f)
- G. Remove both radiator shrouds. These will be trimmed in a later step. NOTE: If your vehicle is equipped with the optional front braces, they will need to be removed by removing the (2) 13mmheaded screws near the top of the brace & (2) 13mm-headed nuts near the bottom of the brace (See Fig. 2-g)
- H. There are (2) shrouds attached to the A/C condenser. Remove the drivers side shroud by simply unclipping it, then discard as it will not be reused. Remove the passenger side shroud by detaching the plastic fasteners from the condenser. Set this shroud aside as it will be trimmed in a later step. (See Fig. 2-h)



Fig. 2-e: Wire Harness



Fig. 2-f: Gray Clip Removal



Fig. 2-h: Passenger Side A/C Condenser Shroud



Fig. 2-g: Radiator Shrouds

2. ELECTRIC LOUVER & RADIATOR SHROUD REMOVAL, cont'd

- Prior to installing the cooler, the radiator shrouds & passenger side A/C condenser shroud will need to be modified. Modify the radiator shrouds as shown.(See Fig. 2-i)
- J. Modify the passenger side A/C condenser shroud by simply trimming off the large "square" near the bottom of the shroud. (See Fig. 2-j)
- K. Re-install both radiator shrouds & passenger side A/C condenser shroud. If your vehicle came equipped with the optional front braces, loosely attach them to the vehicle using only the top mounting points & 13mm-headed screws. Leave the (4) 13mm-headed nuts off at this time. Route the wire harness along the top of the front bumper support. (See Fig. 2-k)



Fig. 2-i: Modified Radiator Shrouds



Fig. 2-j: Modified Passenger Side A/C Condenser Shroud



Fig. 2-k: Wire Harness Routing

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3. OEM DISCHARGE DUCT & COOLER REMOVAL

- A. Unplug the electrical connector from the factory airbox lid. Detach the inlet tube from the airbox lid, then remove the 10mm-headed screw that retains the airbox. Remove the airbox from the vehicle & set aside. (See Fig. 3-a)
- B. Detach the discharge duct from the throttle body by loosening the hose clamp. (See Fig. 3-b)
- C. Detach the bypass valve recirculation hose from the inlet tube. Use a pair of pliers to remove the spring clamp from the hose. Disconnect the electrical connector from the bypass valve at this time. (See Fig. 3-c)
- D. Loosen the hose clamp at the turbo outlet, then remove the discharge duct from the silicone sleeve. (See Fig. 3-d)



Fig. 3-a: Airbox Removal



Fig. 3-b: Detach Discharge Duct



Fig. 3-d: Remove Discharge Duct From Turbo



Fig. 3-c: Detach Bypass Valve Recirculation Hose

3. OEM DISCHARGE DUCT & COOLER REMOVAL cont'd

- E. Loosen the hose clamp on the drivers side of the cooler. Once loosened, you may remove drivers side discharge duct from the top of the vehicle. Repeat this step for the passenger side, making sure not to damage the bypass valve attached to the discharge duct during removal. (See Fig. 3-e)
- F. Remove the 10mm-headed screw on the end tank of the passenger side of the cooler. (See Fig. 3-f)
- G. Unplug the electrical connector from the TMAP sensor on the drivers side end tank of the cooler. (See Fig. 3-g)
- H. There is a locking tab on the drivers side of the cooler, near the bottom. On both sides of the cooler at the top, you will see mounting slots on each side of the cooler (as seen in Fig. 3-g). To remove the cooler, you will need to pull down on the lower locking tab, then pull the bottom side of the cooler forward, releasing it from its mount. (See Fig. 3-h)



Fig. 3-e: Drivers Side Discharge Duct



Fig. 3-f: Remove 10mm-Headed Screw



Fig. 3-h: Lower Locking Tab - Drivers Side



Fig. 3-g: Disconnect TMAP Sensor

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3. OEM DISCHARGE DUCT & COOLER REMOVAL, cont'd

- With the lower locking tab disengaged & the bottom of the cooler pulled forward, push the cooler upwards to release it from the upper mounting slots. You may need to slide the cooler left or right for the mounts to release. Be careful not to damage the A/C condenser or radiator. (See Fig. 3-i)
- J. With the cooler out of the vehicle, remove the TMAP sensor from the OEM cooler & set aside for later re-installation. (See Fig. 3-j)
- K. Remove the (4) 8mm-headed fasteners securing the lower cross brace to the vehicle, then remove the lower cross brace to allow for more room for installation of the Vortech cooler. (See Fig. 3-k)



Fig. 3-i: Cooler Removal



Fig. 3-j: Remove TMAP Sensor



Fig. 3-k: Remove Lower Cross Brace

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4. VORTECH COOLER & DISCHARGE DUCT INSTALLATION

- A. With the OEM cooler removed, the lower part of the radiator & A/C condenser needs to be sealed off. To keep proper air flow, we have provided a block-off panel. (See Fig. 4-a)
- B. To brace the drivers side of the block-off panel, you will need to drill a mounting hole into the OEM cooler mount. (See Fig. 4-b)
- C. Locate the block-off panel & place it on the lower radiator support. (See Fig. 4-c)
- D. Using a center punch, mark the center of the slotted hole of the drivers side of the panel. Once marked, remove the block-off plate. Using an appropriate drill bit, drill through the OEM cooler mount. Slide on the provided 1/4-20 nut plate. (See Fig. 4-d)



Fig. 4-a: Radiator & A/C Condenser Cavity



Fig. 4-b: Drivers Side OEM Cooler Mount



Fig. 4-d: Drill Through OEM Cooler Mount



Fig. 4-c: Temporarily Install Block-Off Plate

4. VORTECH COOLER & DISCHARGE DUCT INSTALLATION

- E. Place the block-off panel back onto the lower radiator supports. Loosely attach the OEM screw that secures the OEM cooler on the passenger side. (See Fig. 4-e)
- F. Loosely attach the provided 1/4-20 screw & 6mm washer to the drivers side of the block-off plate. (See Fig. 4-f)
- G. With the hardware loosely attached, slide the block-off plate upwards until it lightly presses against the sealing foam on the bottom of the radiator & A/C condenser. Secure the hardware. (See Fig. 4-g)



Fig. 4-e: Passenger Side OEM Mount



Fig. 4-f: Drivers Side OEM Mount - Modified



Fig. 4-g: Secure Block-Off Plate

4. VORTECH COOLER & DISCHARGE DUCT INSTALLATION

NOTE: Leave all hose clamps loose until the final step. Tube readjustment will be necessary for proper clearance.

- H. Back out the (4) inner-most screws of the bumper support, leaving about 1/2" of the screw protruding from the back side. Vehicles equipped with the optional front brace will need to remove the (4) nuts securing the brace to the back side of the bumper support prior to backing out the screws. Raise the cooler into position, making sure to align the cooler brackets to the (4) screws previously backed out. Once aligned, begin to thread the screws through the cooler brackets. Route the wire harness along the top side of the bumper support. (See Fig. 4-h)
- If your vehicle is not equipped with the optional front braces, use the supplied 5/16 washers & M8 x 1.25 flanged nuts to secure.
- J. Vehicles equipped with the optional front braces, reuse the factory hardware, making sure the optional front brace is sandwiched between the cooler mounts & the front bumper support. Secure the hardware. (See Fig. 4-j)



Fig. 4-h: CAC Installation



Fig. 4-j: CAC Installation - Vehicles w/ Front Braces

4. VORTECH COOLER & DISCHARGE DUCT INSTALLATION, cont'd

K. Remove the OEM silicone sleeve & hose clamps from the turbo outlet & replace them with the supplied 2" silicone sleeve & #32 hose clamps. Install Tube A into the turbo outlet sleeve. (See Fig. 4-d)

NOTE: Cooler systems equipped with the optional vacuum-actuated bypass valve upgrade skip to **Section 6**.

- L. Remove the OEM bypass valve & hardware, then install it onto Tube B. Re-use the OEM hardware. Transfer over the rubber recirculation tube & OEM hose clamps. (See Fig. 4-I)
- M. Install a 3"-2.75" reducer sleeve & appropriate hose clamps onto the passenger side of the cooler. Install Tube C into the reducer sleeve, then route the tube into the engine compartment. You will need to slightly bend a tab on the bumper support for clearance. (See Fig. 4-m)
- N. With Tube A & Tube C loosely installed, place Tube B in between both tubes & use the appropriate bump sleeves & hose clamps to attach the tubes. Install the opposite end of the bypass valve recirculation hose back onto the OEM inlet tube & secure it with the OEM hose clamps. Reconnect the bypass valve electrical connector at this time. (See Fig. 4-n)



Fig. 4-k: Tube A Installation



Fig. 4-I: Bypass Valve Installation



Fig. 4-n: Tube B Installation

Fig. 4-m: Tube C Installation

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4. VORTECH COOLER & DISCHARGE DUCT INSTALLATION, cont'd

- O. Locate the previously removed TMAP sensor & install it onto the boss on Tube D, making sure not to damage the o-ring on the sensor. Use the supplied M6 x 1.0 x 22mm screw to secure the sensor to the tube. (See Fig. 4-o)
- P. Loosely attach the short end of the supplied 3" rubber elbow & #48 hose clamps to the drivers side of the Vortech cooler. Route Tube D into the engine compartment, leaving the end of the tube with the TMAP sensor closest to the 3" rubber elbow. Once routed, slide Tube D into the previously installed 3" rubber elbow. (See Fig. 4-p)
- Q. Loosely install the appropriate end of Tube E onto the throttle body with the supplied 2.75" silicone sleeve & #44 hose clamps. (See Fig. 4-q)
- R. From underneath the vehicle, use the supplied 2.75" bump sleeve & #44 hose clamps to attach Tube D & Tube E. Clock the tubes as necessary to avoid making contact with the radiator fan shroud. (See Fig. 4-r)
- S. Once all the tubes are properly clocked & free of any obstructions, you may begin to tighten all of the hose clamps. Verify that all silicone sleeves & electrical connectors are properly installed before operating the vehicle.



Fig. 4-o: TMAP Sensor Installation



Fig. 4-p: Rubber Elbow & Tube D Installation



Fig. 4-r: Tube D & Tube E Attachment



Fig. 4-q: Tube E Installation

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5. ELECTRIC LOUVER SHROUD MODIFICATION

- A. Remove the louver connecting arm & discard. It will not be reused. (See Fig. 5-a)
- B. Using an appropriate cutting tool, cut off the lower section of the louver shroud & louvers. They will not be reused. (See Fig. 5-b)
- C. Due to the increased size of the Vortech cooler, the bottom rear of the louver shroud will need to be trimmed. If you look closely, you will see a molded line running across the back side of the louver shroud. Trim off all material above this line on both the driver & passenger side of the louver shroud. (See Fig. 5-c)



Fig. 5-a: Remove Louver Connecting Arm



Fig. 5-b: Cut Off Lower Louver Shroud



Fig. 5-c: Trim Bottom Rear of Louver Shroud

5. ELECTRIC LOUVER SHROUD MODIFICATION, cont'd

- D. Due to the increased size of the Vortech cooler, you will need to remove the individual louvers from the upper louver shroud. To do this, you will need to push the mounting tabs on the center support inward, releasing the individual lovuers. Once released, simply unclip the louver from the rest of the assembly & set aside. Do this for all individual louvers. These will not be reused. (See Fig. 5-d)
- E. With all of the individual louvers removed, you should be left with just the shroud & the electric motor. (See Fig. 5-e)
- F. Since the harness now runs along the top of the bumper support, you will need to modify the louver shroud to allow space for the harness to clear. Using a drum sander, cut a scallop into the passenger side of the lovuer shroud. The lower louver mounting tabs will be removed during this process. (See Fig. 5-f)
- G. Using a drum sander, cut a scallop into the lower section of the center support of the louver shroud. The lower louver mounting tabs will be removed during this process. (See Fig 5-g)



Fig. 5-d: Individual Louver Removal



Fig. 5-e: Louver Shroud



Fig. 5-g: Center Support Modification



Fig. 5-f: Passenger Side Modification

5. ELECTRIC LOUVER SHROUD MODIFICATION, cont'd

- H. Using a drum sander, cut a scallop into the driver side of the louver shroud. The lower louver mounting tabs will be removed during this process. (See Fig 5-h)
- Once you have properly modified the louver shroud, proceed to re-install it to the vehicle. Place the shroud onto the vehicle, then slide the harness into the relief cuts you just made on the shroud, then reconnect the electric motor & ambient air temperature sensor connectors. Secure the shroud with the previously removed 8mm-headed fasteners & plastic fasteners. Reinstall the previously removed cross bar & 8mm-headed fasteners. You may need to readjust the cooler in order for it to clear the cross bar. (See Fig. 5-i through 5-I)



Fig. 5-h: Driver Side Modification



Fig. 5-I: Reinstall Cross Bar



Fig. 5-i: Louver Shroud Reinstallation



Fig. 5-k: Louver Shroud Reinstallation



Fig. 5-j: Louver Shroud Reinstallation

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6. VACUUM-ACTUATED BYPASS VALVE UPGRADE INSTALLATION

NOTE: This section applies to cooler systems equipped with the optional vacuum-actuated bypass valve upgrade. All others proceed to Section 7.

- A. Located on the drivers side rear of the engine is a hard plastic vacuum line assembly with the 3 white quick disconnect fittings. Disconnect all 3 fittings by pressing down on the locking tab, then removing the line. (See Fig. 6-a)
- B. Using a razor blade, carefully cut the hard plastic line between the quick disconnect for the intake manifold and the OEM check valve. Discard the section of hard plastic line. (See Fig. 6-b)
- C. Cut the provided length of rubber hose in half, then proceed to arrange the hose, stepless clamps, vacuum tee and OEM quick disconnect fitting as necessary. (See Fig. 6-c)
- With the stepless clamps securing the vacuum tee, proceed to reinstall the vacuum line assembly, making sure to reconnect the quick disconnect fittings to their original locations. (See Fig. 6-d)



Fig. 6-a: Remove Vacuum Line Assembly



Fig. 6-b: Cut Hard Plastic Line



Fig. 6-c: Vacuum Tee Arrangement



Fig. 6-d: Reinstall Vacuum Line Assembly

6. VACUUM-ACTUATED BYPASS VALVE UPGRADE INSTALLATION, cont'd

- E. Install the bypass valve onto Tube B using the provided hardware & gasket, then install Tube B between Tube A and Tube C. Secure using the provided silicone couplers and hose clamps. (See Fig. 6-e)
- F. Attach one end of the provided length of vacuum hose to the previously installed vacuum tee, then route the remaining length of hose along the top of the engine, then down towards the bypass valve installed on Tube B. Secure with the provided zip ties. (See Fig. 6-f)
- G. Attach the other end of the vacuum hose to the boost signal fitting on top of the bypass valve. Trim the vacuum hose as necessary, making sure it is free & clear of any obstructions. (See Fig. 6-g)
- H. Use the provided rubber cap & hose clamp to cap off the recirculation port on the OEM intake tube. (See Fig. 6-h)
- I. Locate the OEM bypass valve connector & peel back some of the protective wrap. Using the provided wire taps, insert one of the signal wires into the wire tap, then insert one of the resistor wires & close the wire tap. You will hear a click once the wire tap is secure. Repeat this step for the remaining wires. Once completed, secure the resistor and connector to the main harness using the provided tie wraps.. The resistor is not polarity sensitive, so any one of the wires can be used on either signal wire. (See Fig. 6-i)



Fig. 6-e: Tube B Installation



Fig. 6-f: Vaccum Line Routing





Fig. 6-i: Resistor Installation

Fig. 6-g: Bypass Valve Signal Attachment



Fig. 6-h: Rubber Cap

7. REFLASH COMPUTER

- NOTE: This section applies to kits purchased with the Livernois Tuning Device. All others proceed to **Section 8**.
- NOTE: The software provided to load the tune to the handheld device is only compatible with Windows Based computers. The handheld device is sent out without a tune, so you will need to provide a tune request via email to Livernois Motorsports. **See Page 24**.
- A. Before reflashing:

1. Turn off all accessories & unplug any electronic devices from any power ports or USB (A/C, radio, auto lights, etc.)

2. During the reflash process, be sure not to open the doors, turn on the radio, etc.

- B. Put the vehicle into accessory mode (ACC) by pressing the "START" button once without applying the brake.
- C. Plug in the handheld device to the OBD-II port. Immediately after plugging in the handheld device, press and hold both the "UP" & "N" buttons. Once the screen reads "ENGINEERING MODE", release the keys.
- D. Once in "ENGINEERING MODE", scroll down to "ECU CAL / STRATEGY CODE" and press the "Y" button. Follow the prompts on the display.
- E. Write down the "ECU CAL / STRATEGY CODE". Do the same for "ECU SW PART ID" and email it along with the information requested on Page 24.
- F. After you have sent the required information to Livernois Motorsports & they have provided you with a tune to load onto the handheld device, plug in the handheld device to the OBD-II port. Ensure the cable is securely connected. DO NOT turn off the ignition until the reflash process is complete.
- G. Follow the on-screen prompts to enter "VEHICLE TUNING MODE". Once in "VEHICLE TUNING MODE", you will select the tune of choice by using the up & down keys. Once you select the correct octane fuel file, press "Y" to confirm.
- H. After the tune loads, you will be prompted to turn the ignition off, press "Y" to confirm, turn the ignition back on & press "Y" to verify the vehicle was successfully programmed. Once complete, you will be prompted to disconnect the device.



Fig. 7-a: OBD-II Port



Fig. 7-b: Handheld Device

7. REFLASH COMPUTER

- I. When sending in your tune request via email, please include the required information below:
 - 1. First Name
 - 2. Last Name
 - 3. Street Address
 - 4. City
 - 5. zIP / Postal Code
 - 6. Phone Number
 - 7. Email Address
 - 8. Serial Number From Device
 - 9. Vehicle Year
 - 10. Vehicle Make
 - 11. Vehicle Model
 - 12. Engine (If more than one option)
 - 13. Octane of Fuel
 - 14. Tune Requested
 - 15. Strategy Code
 - 16. SW ID Number
 - 17. Modifications / Performance Parts (If any)

Email all tune requests to: tuning@livernoismotorsports.com

Livernois Motorsports business hours - 9:00am - 6:00pm EST Please allow 24-48 business hours to create the tune.

8. FINAL CHECK

WARNING: Do not attempt to operate the vehicle until all components are installed and all operations are completed including the final check.

- A. Check all fittings, hose and clamps for tightness and leaks. Make sure all wires and lines are properly secured with clamps or tie-wraps.
- **B.** Make sure all wires and hoses are routed away from hot, moving or sharp objects.
- C. Reinstall front bumper cover, splash guards, under trays & reconnect all accessories.
- **C.** Test drive the vehicle.
- D. Always listen carefully for engine detonation. Discontinue heavy throttle usage if detonation is heard.





ENGINEERING, INC

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