SUPERCHARGERS

Picture for reference only. Additional equipment not included.

Edelbrock Supercharger

Universal Supercharger for 2011-2019 Ford Coyote 5.0L Engines
Part #: 15885

Edelbrock®

SUPERCHARGERS

WARNING!

The supercharger bypass valve is factory installed and adjusted intended to be vacuum operated only. DO NOT move the solenoid actuator lever by hand or adjust the stop point. Moving the lever manually will damage the solenoid and the system will not function properly. Damage to the bypass assembly from manual movement will not be covered under manufacture warranty.

INTRODUCTION

Thank you for purchasing the Edelbrock Supercharger System for the 2011-2019 Coyote 5.0L. This Edelbrock Supercharger System utilizes Eaton's Gen VI 2650 TVS Supercharger rotors, featuring 4 x 4 lobe design with 160° of twist for maximum flow, minimum temperature rise, quiet operation, and superior reliability. The supercharger is inverted, expelling the air upward. Boost pressure then builds in the plenum before being pushed through the intercooler that is oriented horizontally above the supercharger outlet. After passing through the intercooler core twice, the air travels through the long runners which route straight down into the cylinder head ports. This configuration allows for a compact package that can more easily fit under the hood and cowl of vehicles without sacrificing runner length or intercooler area. The supercharger features a uniquely styled plenum and includes matching side covers so it looks as good as it performs.

Installation time: Will vary depending on vehicle application.

TOOLS REQUIRED

- Jack and Jack Stands **OR** Service Lift
- Ratchet and Socket Set including 7mm, 8mm (deep), 10mm, 10mm (deep), 12mm, 13mm, 15mm
- 5mm & 6mm Allen Sockets
- 19mm Wrench
- 3/8" Breaker Bar
- Screwdrivers
- 90° Power Drill
- Pliers **OR** Hose Clamp Pliers
- Blue Thread Lock Fluid
- O-ring Lube
- Masking Tape
- Torque Wrench
- Shop Vac
- Side cutters
- Dremel tool or equivalent
- Motocraft Antifreeze/Coolant (quantity depends on radiator used)
- VC-3DIL-B Orange Pre-Diluted (quantity depends on low temp radiator used)

This universal supercharger requires a front-mount, Low Temperature Radiator (LTR) also known as a heat exchanger that is not included with this kit. Edelbrock offers a variety of heat exchanger sizes to fit your custom application. See the Universal Heat Exchanger section of our catalog or visit www.edelbrock.com for details.

IMPORTANT WARNINGS

WARNING: *Installation of this supercharger will result in a significant change to the performance characteristics of your vehicle. It is highly recommended that you take some time to familiarize yourself with the added power, and how it is delivered, in a controlled environment. Take extra care on wet and slippery roads, as the rear tires will be more likely to lose traction, with the added power. It is never recommended to turn off your vehicles traction control system.*

Proper installation is the responsibility of the installer. Improper installation will void all manufacture's standard warranties and may result in poor performance and engine or vehicle damage.

Inspect all components for damage that may have occurred in transit before beginning installation. If any parts are missing or damaged, contact Edelbrock Technical Support, not your parts distributor.

Due to the complexity of the Edelbrock Supercharging system, it is recommended that this system only be installed by a qualified professional with access to a service lift, pneumatic tools, and a strong familiarity with automotive service procedures. Please contact the Edelbrock Technical Support department if you have any questions regarding this system.

This supercharger kit requires a custom ECM calibration. Failure to use an appropriate ECM calibration will result in engine failure.

91 octane or higher gasoline is required at all times. If your vehicle has been filled with anything less, it must be run until almost dry and refilled with 91 or higher octane gasoline twice prior to installation.

Any failures associated with not using premium 91 octane gasoline or higher, will be ineligible for warranty repairs.

It is recommended that you check the Edelbrock Tech Center Website for any updates to this installation manual. Please refer to the lower right hand corner to verify that you have the latest revision of this installation manual before beginning the installation.

Tech Center: http://www.edelbrock.com/automotive_new/misc/tech_center/install/index.php

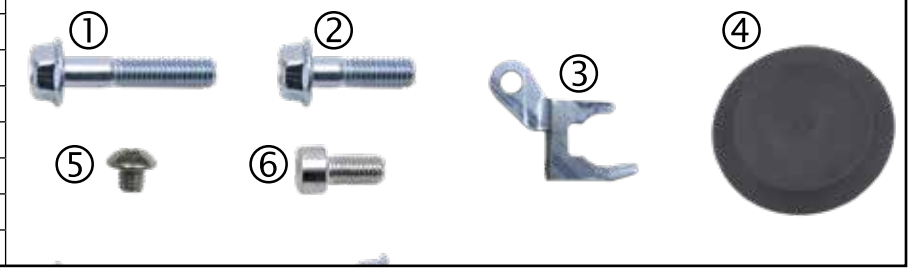
Edelbrock Authorized Installer Disclaimer

Authorized installers of Edelbrock products are independent companies over which Edelbrock has no right of control. Edelbrock LLC makes no claims regarding the abilities, expertise or competency of individual employees of any authorized installer. Each authorized installer is an independent company and makes its own independent judgments. Edelbrock LLC specifically disclaims any responsibility to any party including third parties for the actions, or the failure to act, of individuals, agents or a company authorized in the installation of Edelbrock LLC products.

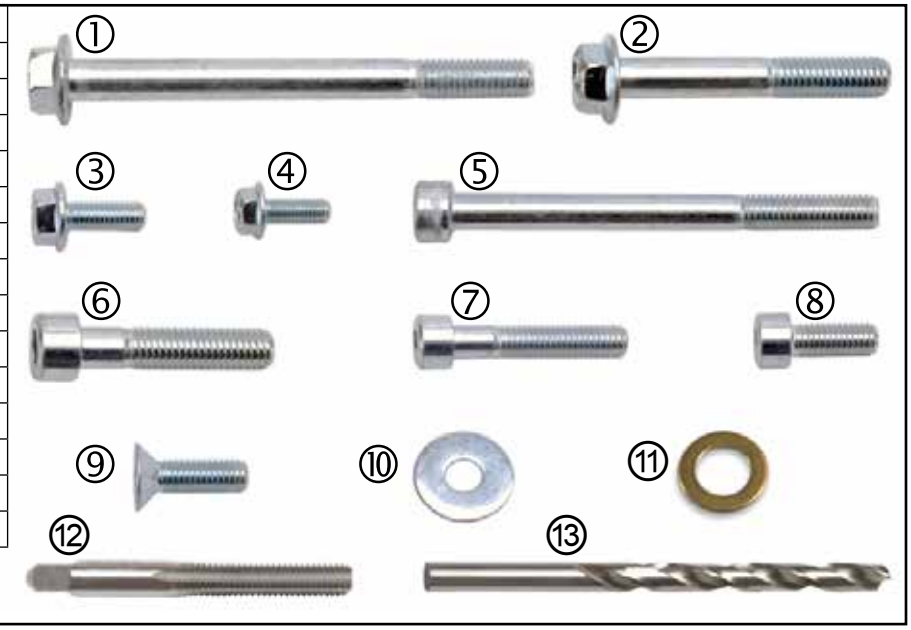
INSTALLATION HARDWARE IDENTIFICATION GUIDE

(Parts Are Not To Scale)

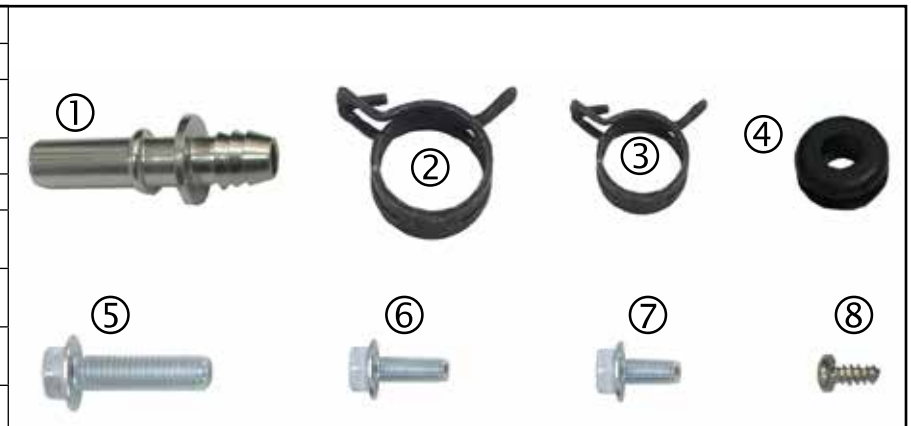
BAG #1 - MANIFOLD HARDWARE				
Item	P/N	QTY.	Description	Torque Spec
1	36-1508	10	Bolt, Hex Flange, M6 x 30mm	8 ft/lbs
2	36-1575	2	Bolt, Hex Flange, M6 x 25mm	N/A
3	38-0186	8	Bracket, Injector	N/A
4	51-7092	1	Rubber Plug	N/A
5	68-0095	16	Bolt, BHCS, M4 x 4mm	N/A
6	36-1528	4	Bolt, SHCS, M6 x 16mm	N/A



BAG #2 - FEAD HARDWARE				
Item	P/N	QTY.	Description	Torque Spec
1	36-4056	1	Bolt, Hex Flange, M10 x 110mm	22 ft-lbs
2	36-4012	1	Bolt, Hex Flange, M10 x 65mm	32 ft-lbs
3	36-4018	3	Bolt, Hex Flange, M8 x 20mm	N/A
4	36-1507	1	Bolt, Hex Flange, M6 x 16mm	N/A
5	36-3812	3	Bolt, SHCS, M8 x 90mm	22 ft-lbs
6	36-4013	1	Bolt, SHCS, M10 x 45mm	22 ft-lbs
7	36-4041	1	Bolt, SHCS, M8 x 40mm	22 ft-lbs
8	36-4057	1	Bolt, SHCS, M8 x 20mm	22 ft-lbs
9	36-4014	1	Bolt, Countersunk, M8 x 25mm	22 ft-lbs
10	82-0120	3	M8 Washer	N/A
11	36-4060	1	Brass Shim	N/A
12	51-7058	1	Tap, 8 x 1.25, D5 Pitch Dia	N/A
13	51-7059	1	Size H Drill Bit	N/A

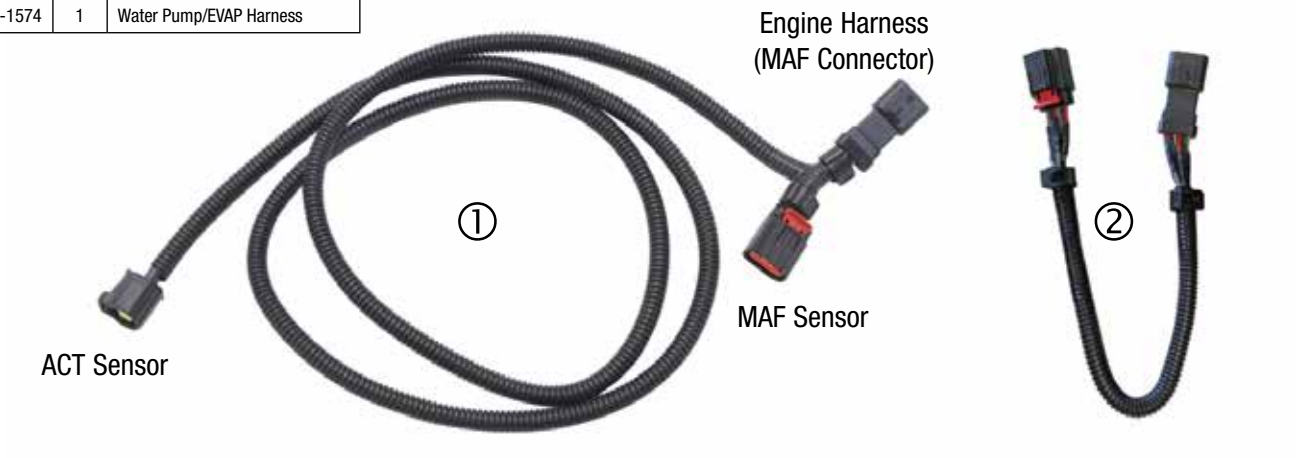


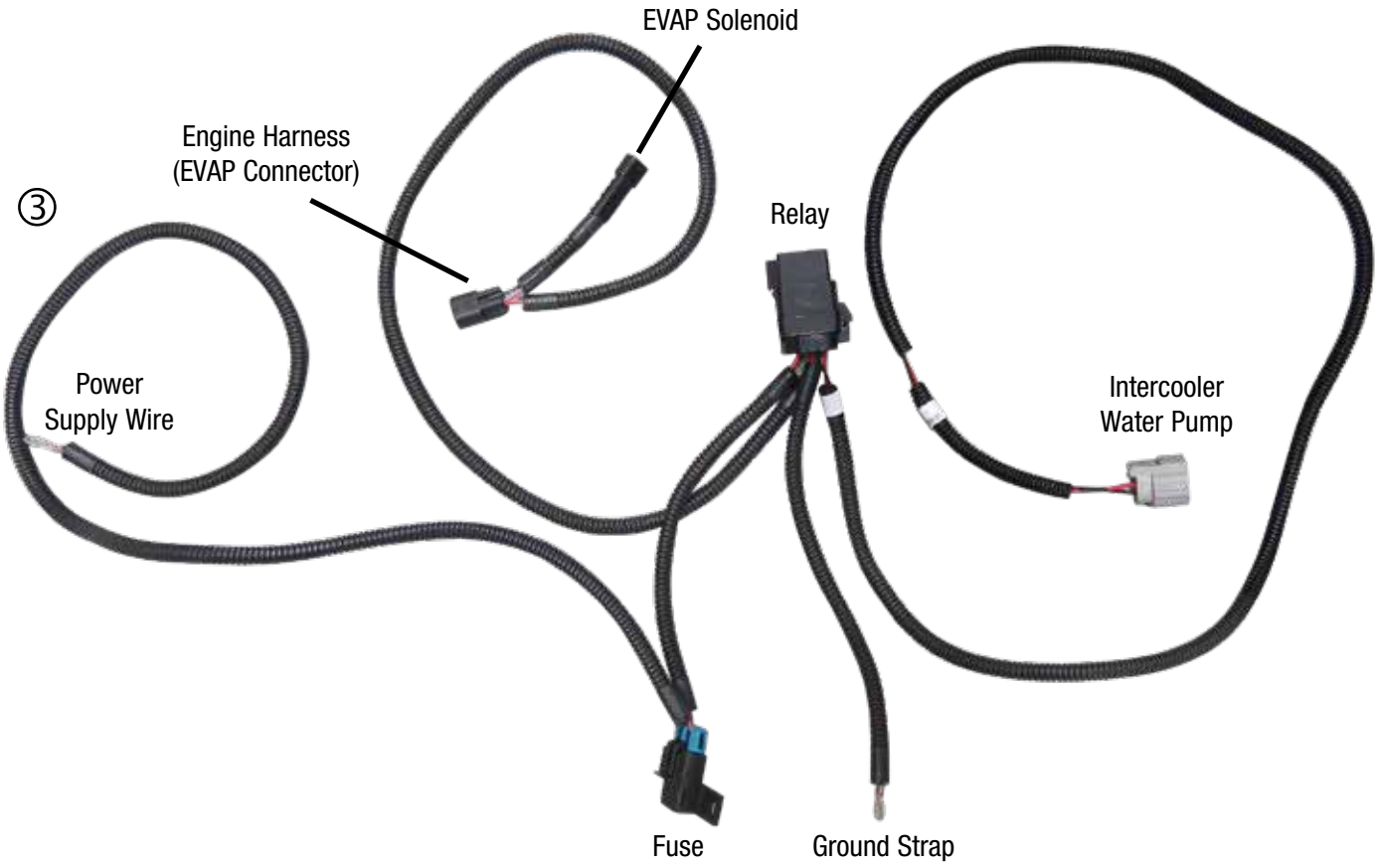
BAG #3 - INTERCOOLER HARDWARE				
Item	P/N	QTY.	Description	Torque Spec
1	51-7056	1	10mm Quick Disconnect to Barb Fitting	N/A
2	46-2155	8	3/4" Hose Clamp	N/A
3	51-7045	2	1/2" Hose Clamp	N/A
4	51-4141	1	3/8" ID X 7/8" OD Rubber Grommet	N/A
5	36-1518	1	M8 x 1.25 x 30mm Hex Flange Bolt	N/A
6	36-1507	4	M6 x 1 x 16mm Hex Flange Bolt	N/A
7	36-1545	3	M6 x 1 x 12mm Hex Flange Bolt	N/A
8	36-1546	2	#8-16 X 3/8" Thread Forming Screw	N/A



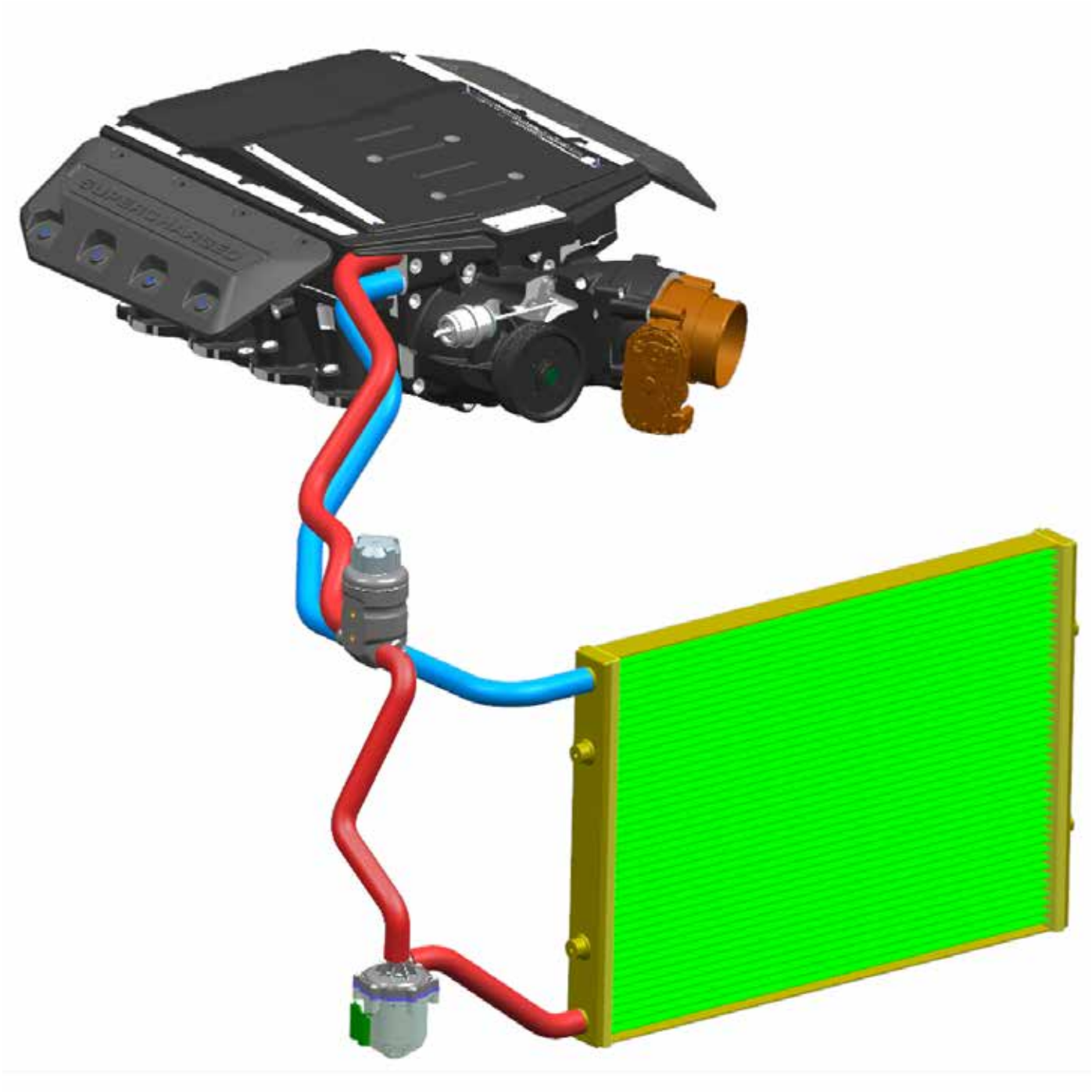
WIRE HARNESS GUIDE

WIRE HARNESSES			
Item	P/N	QTY.	Description
1	37-6627	1	ACT/MAF Sensor Harness
2	37-6626	1	ETC Extension Harness
3	37-1574	1	Water Pump/EVAP Harness





INTERCOOLER HOSE ROUTING GUIDE



Hose routing will differ from the diagram above depending on the application. Use the above diagram as a guide for bulk hose routing that is supplied with this kit.

SUPERCHARGER INSTALLATION

NOTE: These installation instructions are meant to be a general guideline that covers installation of Edelbrock supplied components. Some of the following steps may not apply to your specific application. Additional materials and procedures may be required to complete this installation.

1. Disconnect the negative battery terminal and place it away from the battery. Cover the post to avoid accidental contact during the installation.

2. Drain the coolant by loosening the petcock located on the radiator.

3. If applicable, remove the brake aspirator hose from the air inlet tube.

4. If applicable, remove the driver side PCV hose from the air inlet tube.

5. If applicable, remove the additional brake aspirator hose from the air inlet tube.

6. If applicable, disconnect the brake aspirator hose from the manifold PCV hose.

7. If applicable, use a flathead screwdriver to loosen the two (2) worm clamps securing the air inlet tube and remove.

8. Disconnect the connector and hose from the EVAP solenoid.

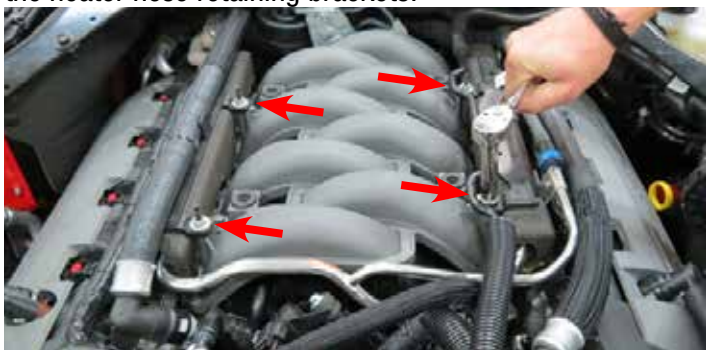
9. If applicable, use a hose clamp tool and pliers to remove the brake aspirator hose from the intake manifold.

10. If applicable, remove the brake aspirator hose assembly from the brake booster and set aside as it will be reused later.

11. Remove the passenger side PCV hose from the valve cover and the intake manifold.

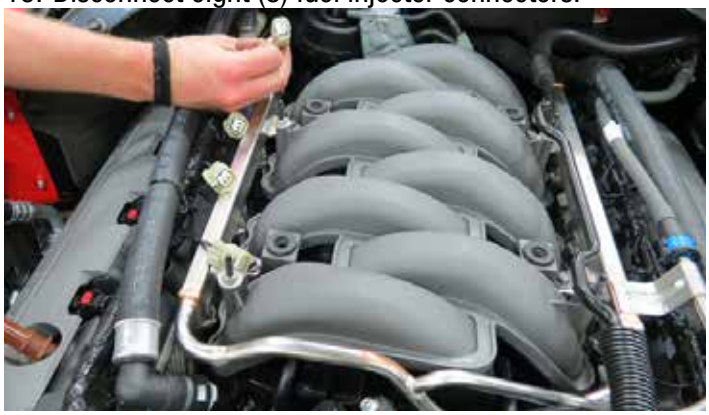
12. Disconnect the throttle body connector.

13. Using an 10mm socket, remove four (4) bolts securing the heater hose retaining brackets.



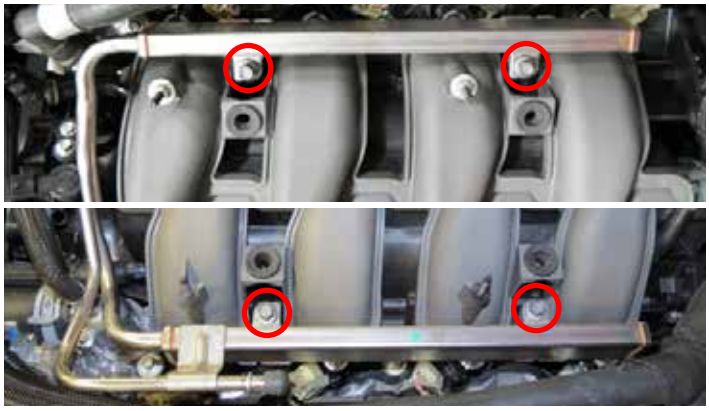
14. Remove the retaining brackets and the foam insulators from the fuel rails.

15. Disconnect eight (8) fuel injector connectors.



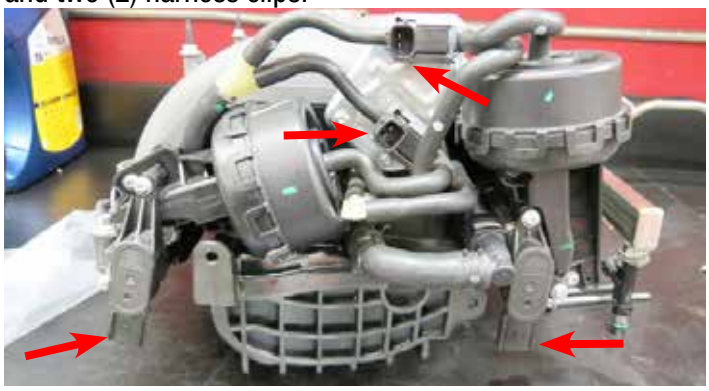
16. Place a rag underneath the fuel input line. Lift up the blue locking tab and disconnect the fuel line from the rail.

17. Using a 10mm socket, remove four (4) bolts securing the fuel rail and manifold. ***TIP:*** *It's not required to fully remove the fuel rails.*



18. Using an 8mm socket, remove six (6) manifold bolts.

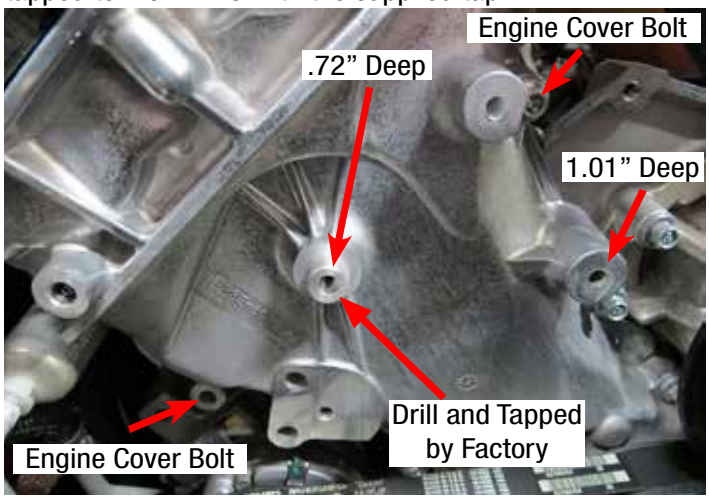
19. With the manifold bolts removed, carefully position the manifold forward and remove four (4) sensor connectors and two (2) harness clips.



20. Clean the cylinder head flanges as needed and tape up the ports to prevent debris from falling into the ports.

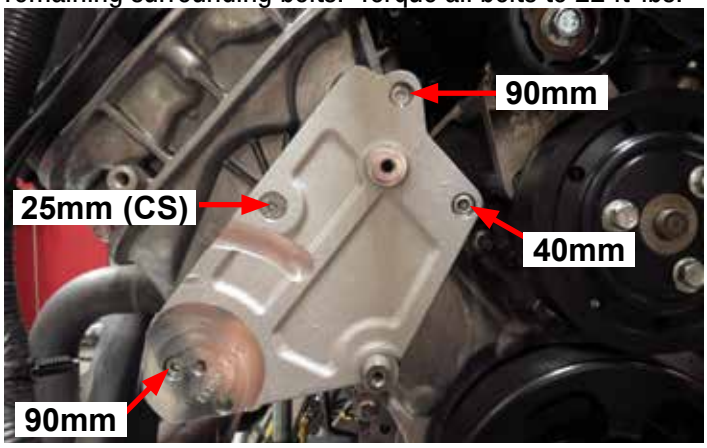
21. Rotate the belt tensioner counterclockwise using a 15mm breaker bar and remove the drive belt.

22. Remove the two (2) indicated engine cover bolts on the using a 10mm socket. Using a 90˚ drill and the supplied drill bit, drill out the indicated hole on the front engine cover 1.01" deep. ***(NOTE: The center hole on some vehicles will already be drilled and tapped by the factory. Please inspect your front cover and avoid drilling this hole if already tapped.)*** If not already tapped, the hole in the center should be drilled .72" deep. All holes should be tapped to M8 x 1.25 with the supplied tap.



23. Secure the new tensioner bracket to the bosses that were just drilled and tapped with bolts supplied in Bag # 2. ***(NOTE: When installing the countersunk bolt, place the .045" thick brass spacer between the bracket and the front engine cover if the hole was drilled and tapped by the factory.)***

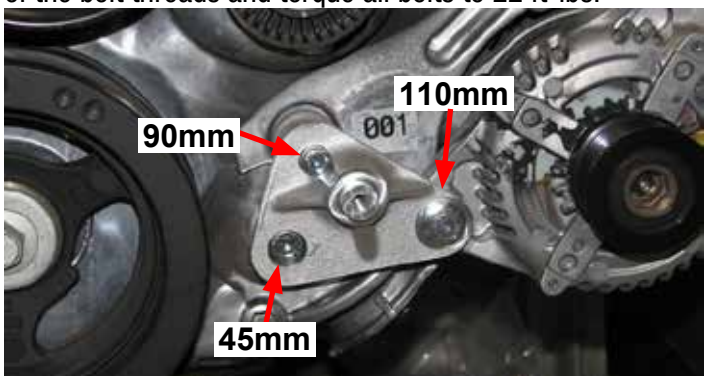
24. Apply blue thread lock fluid to threads and loosely install the following four (4) bolts from Bag # 2, starting with the M8 x 25mm countersunk bolt into the countersunk feature of the bracket located on the left side of the bracket. Install the M8 x 90mm bolt through the engine cover hole at the top, then install the M8 x 40mm bolt through the hole below and to the right. Use an M8 x 90mm bolt in the counter bore feature at the lower left section of the bracket. Proceed by tightening the countersunk bolt first and then tightening the remaining surrounding bolts. Torque all bolts to 22 ft-lbs.



25. Using a 13mm socket, remove the factory tensioner adjacent to the alternator and balancer.

26. Remove both the engine cover bolt using a 10mm socket and the bolt through the ear of the alternator using a 15mm socket.

27. Secure the idler bracket by installing bolts from Bag # 2. The M10 x 110mm bolt through the ear of the alternator, the M8 x 90mm bolt into the top front cover hole, and the M8 x 45mm bolt through the lower hole that was used to secure the stock tensioner. Use blue thread lock fluid on all of the bolt threads and torque all bolts to 22 ft-lbs.



28. Install and secure the 76mm idler pulley onto the center of the idler bracket by using the M8 Washer and the M8 x 20mm bolt supplied in Bag # 3 using a 12mm socket. Use blue thread lock fluid on the bolt threads and torque to 18 ft-lbs.

29. Verify that the tensioner is clocked correctly by sliding the index through the hole on the bracket. Install the supplied belt around the tensioner pulley and torque the 65mm bolt supplied in Bag # 3 with a 15mm socket to 32 ft-lbs.

30. Using the M8 x 20mm bolts and M8 washers supplied in Bag # 2, install two idler pulleys to the tensioner bracket. The top idler pulley is 65mm and the lower idler is 76mm. Add a small amount of blue thread lock fluid to the threads ONLY, do not allow excess thread lock fluid to drip onto the pulley's bearings. Torque the bolts to 18 ft-lbs.

31. Remove the OEM coil covers on each valve cover to access the ignition coils and spark plugs. Unclip each connector and use an 8mm socket to unbolt each coil pack. Label and remove each coil pack so that they are re-installed in the correct cylinder. Remove the spark plugs with a 5/8" spark plug socket and replace them with the supplied spark plugs. ***NOTE: Gap the supplied spark plugs to .035***. Reinstall the plugs and torque them to 9 ft-lbs., then reinstall the OEM coils and coil covers.

32. **Gen I & II Only:** Trim off the square coil harness retaining tabs located on the top of both valve covers. File down any rough edges. Also, trim off the top of the rear round edge of the passenger side valve cover. Carefully remove all debris with a shop vac.

33. Place a rag under the passenger side heater hose and remove the heater hose from the fitting located on the cylinder head. Repeat for the driver side heater hose.

34. Remove the passenger side heater hose fitting with an 8mm socket. Repeat for the driver side heater hose fitting. Temporarily plug the holes with a rag.

35. Remove the O-ring manifold gaskets from the factory manifold and install them onto the supercharger runners. Apply a small amount of O-ring lubricant to the exposed area of the gaskets. This will help prevent tears during installation of the supercharger.

36. If using side covers (not included) Apply blue thread lock fluid onto the threads of the eight (8) M6 x 12mm SHCS bolts from the side cover kit and loosely screw on the side cover brackets to the underside of the supercharger lid.

37. For proper bracket alignment, test fit the side covers onto the brackets using eight (8) M6 X 25mm bolts from the side cover kit. While pushing the side covers forward, fully tighten the bracket bolts. Once all brackets are aligned and tightened, remove the side covers.

38. Using O-ring lube, install the fuel caps onto the fuel rails. Attach the supplied fuel crossover to the rear of both rails. Insert the straight fittings into the fuel rails as shown. **NOTE: For cars without Direct Injection. you must block off all ports on the fuel rails except for the driver side barb. Use the supplied -6AN plugs provided in this kit.**

39. Apply O-ring lube to both ends of the fuel injectors (not included), then install them into the supplied fuel rails, oriented so the electrical connectors will face away from the supercharger.

Steps 40 and 41 are for 5.2L and Gen III Coyote Engines.

40. Remove the factory fuel pressure sensor from the driver side factory fuel rail.

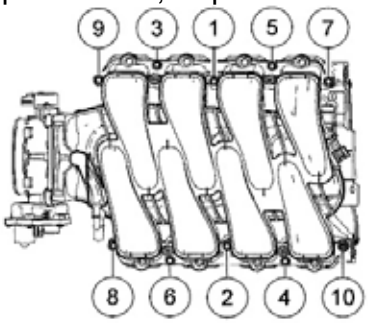
41. Apply fuel resistant thread sealer to the threads of the fuel pressure sensor adapter. Thread the adapter into the supercharger fuel rail until snug. **Ensure not to overtighten and strip threads.** Apply the same thread sealer to the fuel pressure sensor and thread it into the adapter. Prevent the adapter from twisting in further with a second wrench. Optionally continue to twist the sensor once snug until it aligns with fuel rail.

42. Temporally install the fuel rail assembly onto the supercharger manifold.

43. Be sure that the engine bay is clean and free of debris, then remove the masking tape used to protect the intake ports from contamination. **NOTE: Gen I Coyote Engines will require the water neck to be clearanced on the left side of the engine for supercharger runner clearance.**

44. With the help of an assistant, carefully lower the supercharger manifold onto the cylinder heads. Be especially careful not to pinch any wires between the supercharger and the cylinder heads. **(RHD vehicles may require additional trimming for supercharger lid clearance).**

45. Dismount the fuel rails and move them away from the supercharger to access the supercharger manifold bolts. Secure the supercharger manifold to the cylinder heads using a 10mm swivel socket to install ten (10) M6 x 30mm intake manifold bolts supplied in hardware Bag # 1. Using the torque sequence below, torque the bolts to 8 ft-lbs.



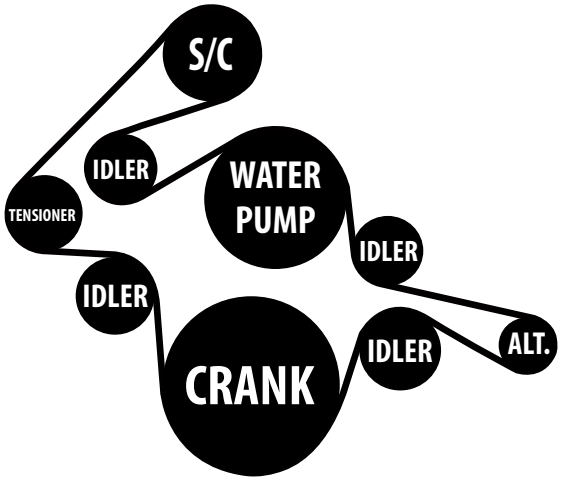
46. Install the fuel rails and secure using four (4) M6 x 16mm bolts from Bag # 1. Bolt holes are located beneath the fuel rail. **Start fuel rail bolts BY HAND first and make sure thread engagement is smooth before tightening with tool.**

47. Reconnect the injector connectors to the appropriate fuel injectors. ***WARNING: Never attempt to rotate the injectors***.

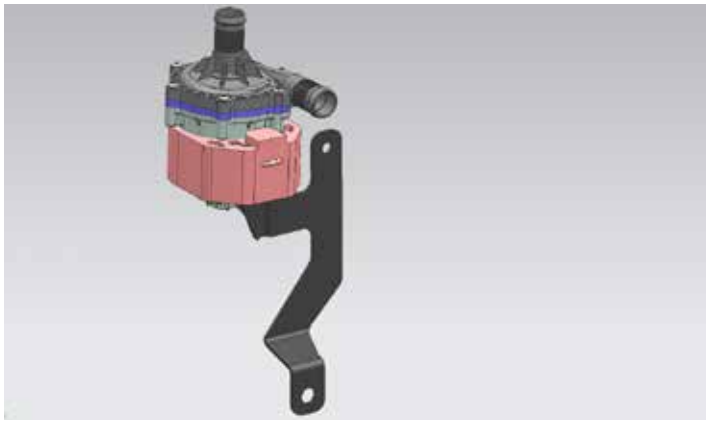
48. Install the passenger side heater hose fitting.

49. Connect the passenger side heater hose.

50. Use a 3/8" breaker bar to rotate the tensioner clockwise, finish installing the supplied belt according to the routing diagram shown below.



51. Attach the water pump to the water pump bracket by sliding the rubber isolator over the pump motor then onto the bracket. **NOTE: Bracket shown not actual.**



52. Mount the water pump/bracket assembly in a coinvent location as close to the LTR as possible.

53. Mount the low temperature radiator (LTR) in the front of the vehicle so that it is not restricted from airflow.
NOTE: LTR NOT Included.

54. Attach the surge tank bracket to the surge tank using two (2) M6 x 12mm bolts from Hardware Bag # 3 and mount the tank/bracket assembly in an appropriate location.

55. Using an appropriate length of bulk hose, connect the intercooler reservoir to the water pump inlet and secure both ends with a 3/4" hose clamp from Bag #3. **Image for representation only.**

56. Using an appropriate length of bulk hose, connect the water pump outlet to the LTR inlet and secure each end with a 3/4" hose clamp from Bag #3. **Image for representation only.**

57. Using an appropriate length of bulk hose, connect the manifold outlet (passenger side top fitting) to the reservoir and secure each end with a 3/4" hose clamp from Bag #3. **Image for representation only.**

58. Using an appropriate length of bulk hose, connect the LTR to manifold inlet (passenger side bottom fitting) and secure each end with a 3/4" hose clamp from Bag #3. **Image for representation only.**

59. Using a razor blade, or equivalent, remove the 90° quick connect fitting on the factory passenger side PCV hose.

60. Attach the 90° fitting onto the supplied 1/2" Cadbar hose. Connect the quick connect fitting to the passenger side valve cover and the other end of the hose to the barb on the supercharger nose.

61. Mount the water pump/EVAP harness in an appropriate location.

62. Route the Power (+) wire on the water pump harness to positive battery power. Attach the Ground (-) wire on the water pump harness to an appropriate location on the body of the vehicle. **Images for representation only.**

63. Connect the factory EVAP connector onto the "Engine Harness" end of the "Water Pump/EVAP Harness" and the "EVAP Solenoid" end onto the EVAP solenoid.

64. Route the water pump harness to the electric water pump and instert the connector.

65. Secure all water pump harness wires away from any moving parts or sharp objects.

66. Using a 8mm socket, Install the adapter and throttle body of your choice. Two adapters have been provided to cover most throttle body configurations.

67. Reconnect the throttle body using the provided extension harness.

68. Plug the MAF/ Temp wiring harness into the Temp sensor located at the back of the manifold on the passenger side. Route the harness from the passenger side to the driver side behind the manifold. Then route the remaining length along the driver side heater hose.

69. Connect the 90° fitting on the supplied driver side PCV hose to the driver side valve cover. Connect the other end to the fitting (supplied in bag #3) to your choice of air intake piping. The grommet in bag #3 is for use with the 10mm fitting. **Image for representation only.**

70. Install the factory MAF sensor into the supplied MAF housing using the included pan head screws in Bag #3.

71. Using the provided worm clamps, attach the MAF housing to your choice of intake piping and secure the provided air filter.

72. Connect the engine harness to the connector on the MAF/Temp harness then attach the MAF/Temp harness to the MAF Sensor.

73. If applicable, reinstall any brake booster/aspirator and EVAP hoses to an appropriate location.

NOTE: The following installation steps are for the optional coil covers, part# 41149. They can be purchased separately through www.edelbrock.com, or your local distributor.

74. Using the eight (8) M6 x 25mm bolts from the side cover kit, secure the side covers to the side cover brackets previously installed (See steps 35 & 36). Note that the passenger side cover will have a clearance notch.

75. Install four (4) M6 x 8mm bolts from the side cover kit to both side covers as shown.

76. Verify that the coolant petcock is closed, then refill the coolant system.

77. Fill the supercharger surge tank with a 50/50 coolant and water mixture. ***NOTE: Please see "How to Prime the Edelbrock Intercooler Systems" at the end of these instructions for detailed instructions.***

78. Turn the ignition on but do not start the engine. Check for any fuel or coolant leaks. If leaks are present, shut the ignition off immediately and repair leaks before continuing. Verify that water is flowing briskly through the recovery tank.

79. After a proper engine calibration is loaded, start the engine and let the it come up to operating temperature, then shut it off and recheck all fluid levels. Top fluids off if necessary.

Congratulations on the installation of your new Edelbrock Supercharger System. If you have any questions, please call our Technical Support hotline and one of our technicians will be happy to assist you.

How to Prime the Edelbrock Intercooler Systems.

The electric water pump used on this Edelbrock Supercharger System has a built-in micro-processor that will vary pump cycle speed when air bubbles are present in the system. If a significant amount of air is trapped in the system, the pump may cycle at a slower speed and pulsations are likely to occur resulting in poor cooling performance.

For the best result, it is highly recommended to use a Radiator Cooling System Vacuum Purge and Refill Kit to properly evacuate the air from the intercooler system before filling with a 50/50 mixture of coolant and distilled water. If one is not available, the following procedure will be adequate.

1. Using the Lisle 24680 Spill-Free Funnel, or equivalent, secure the appropriate filler neck adapter to the surge tank.
2. Attach the funnel and fill with a 50/50 mixture of coolant and distilled water until the funnel is half full.
3. Turn the ignition to the ON position and listen for the pump's electric motor to cycle. Air bubbles will begin to purge from the system as the coolant level drops. Add coolant to the funnel as necessary. *NOTE: Do NOT let the coolant level in the funnel run empty as this may introduce air into the system.*
4. To build more pressure in the intercooler system, try squeezing the intercooler hoses while the pump is cycling. Building pressure in the system will help purge the trapped air from the intercooler system.
5. Cycle the ignition OFF and wait a few seconds for the pump to come to a stop.
6. Cycle the ignition ON again and repeat until the sound of the electric pump is continuous without any pulsation. *NOTE: During water pump start-up, it is normal for a slight pulsation to occur. Once the pump has reached its maximum cycle speed, no pulsations should be present.*
7. Periodically inspect the water pump flow after a few drive cycles and re-fill the intercooler system as necessary.
8. Several drive cycles may be required to completely purge the air from the intercooler system. During a drive cycle, the intercooler system will build up pressure as the supercharger temperature increases. Any residual air trapped in the system will gradually bleed out of the surge tank as the system reaches a pressure above 5psi.

WARNING: Always avoid removing the surge tank cap when the engine is hot. The hot coolant is under pressure and may spray out causing burns.