



**EDELBROCK LT416 CRATE ENGINE
LONG BLOCK ONLY / SUPERCHARGED
Part #46755, 46756, 46757
GENERAL INSTALLATION INSTRUCTIONS**

PLEASE study these instructions carefully before beginning this installation. If you have any questions, please call our **Technical Hotline at: 1-800-416-8628**, 7:00 AM - 5:00 PM Pacific Standard Time, Monday through Friday.

Proper installation is the responsibility of the installer. Improper installation will void the manufacturer's warranty and may result in poor performance and engine or vehicle damage.

IMPORTANT NOTE: This instruction sheet provides general installation guidelines which can affect your warranty. Read it carefully. It is not our intent to cover each detail of installation here as the procedures are vehicle specific. We want to caution you that installing an engine is a complicated procedure that requires a good general knowledge of automotive mechanics. It is a good idea to refer to the factory service manual for your vehicle. If you are not confident that you can complete the engine installation successfully, we suggest you consider having it installed by an experienced mechanic.

CAUTION: This engine is NOT INTENDED for marine use. Not legal for use in pollution controlled vehicles.

DESCRIPTION: This crate engine is built using a GM aluminum LT1 block with a forged and balanced Manley crankshaft, forged Manley H-Beam connecting rods and Manley forged aluminum pistons which are then combined with Edelbrock's R2650 TVS Supercharger to create a 416ci LT1 stroker with 4.065" Bore and 4" Stroke that will produce 851 horsepower and 779 ft-lbs. of torque on 93 octane pump gas. Its compact design allows for a seamless swap into most platforms; eliminating the need for modifications to your engine bay or hood.

AVAILABLE VARIANTS:

- P/N 46755 - LT416 Long Block Only
- P/N 46756 - Supercharged LT416 Crate Engine, W/ Accessories
- P/N 46757 - Supercharged LT416 Crate Engine, W/ Accessories & Calibrated Electronics

PRODUCT SPECIFICATIONS:

- Displacement: 416 c.i.d. (4.065" bore x 4.000" stroke)
- Horsepower: 851 (46757)
- Torque: 779 (46757)
- Compression: 10.6:1
- Block: New GM, LT1 Aluminum
- Crankshaft: Forged 4340
- Pistons: Forged Aluminum - 20cc
- Camshaft: 243°/254° , .660/.651, 114 LSA
- Rocker Arms: Stock LT1
- Cylinder Heads: Edelbrock Performer RPM #77119
- Fuel Injectors: LT4 High Pressure DI (12684130)
- Fuel Pump: LT1 High Pressure (12625817)
- Supercharger: Edelbrock E-Force R2650 TVS
- Supercharger Belt: Gates K080842RPM 84.23"
- Finish: Black Powder Coated (Supercharger)
- Warranty: 2 Year/Unlimited Mileage
- Fuel Type: **Requires 91 Octane At All Times**

ANCILLARY PARTS REQUIRED FOR INSTALLATION

- Low Temperature Radiator (LTR)
- LTR/Intercooler Plumbing
- Fuel Pump - A minimum fuel flow of 100gph @ 60psi differential pressure is required. *It is the responsibility of the customer to ensure that adequate fuel flow is achieved at the operating voltage of the fuel pump. Engine damage can occur if fuel flow is insufficient.*
- Spark Plugs - NGK - 6510 or equivalent are highly recommended for this application.

ENGINE OIL: Your engine is supplied with Edelbrock Break-In Oil in the crate. The engine oil must be changed no more than 300 miles after break-in. A CAT safe SAE 5W30 synthetic oil is highly recommended after break-in.

OIL PAN CLEARANCE: A GM Oil Pan (PN 12639931) is used on the LT416 crate engines. Make sure you have adequate subframe and ground clearance before installing the engine.

INTERCOOLER SYSTEM: A 50/50 coolant and water mixture is required.

AIR INTAKE SYSTEM: PN 46757 MUST use the provided 95mm MAF housing and air filter for calibration compatibility. The air filter should be located away from and/or shielded from direct airflow from cooling fans or air entering the grille. **Failure to use the provided MAF housing and proper air filter location will result in poor performance and can lead to engine damage.**

GENERAL HARNESS INSTALLATION

- Determine the ideal mounting location for the relay and fuse holder on the water pump harness. Connect the POSITIVE (+) lead to a CONSTANT +12V power source. Connect the GROUND (-) lead to a chassis ground. Connect the water pump connector to the electric water pump. Connect the factory female EVAP connector to the male EVAP connector on the water pump harness. Then plug the female end of the water pump harness onto the EVAP solenoid.

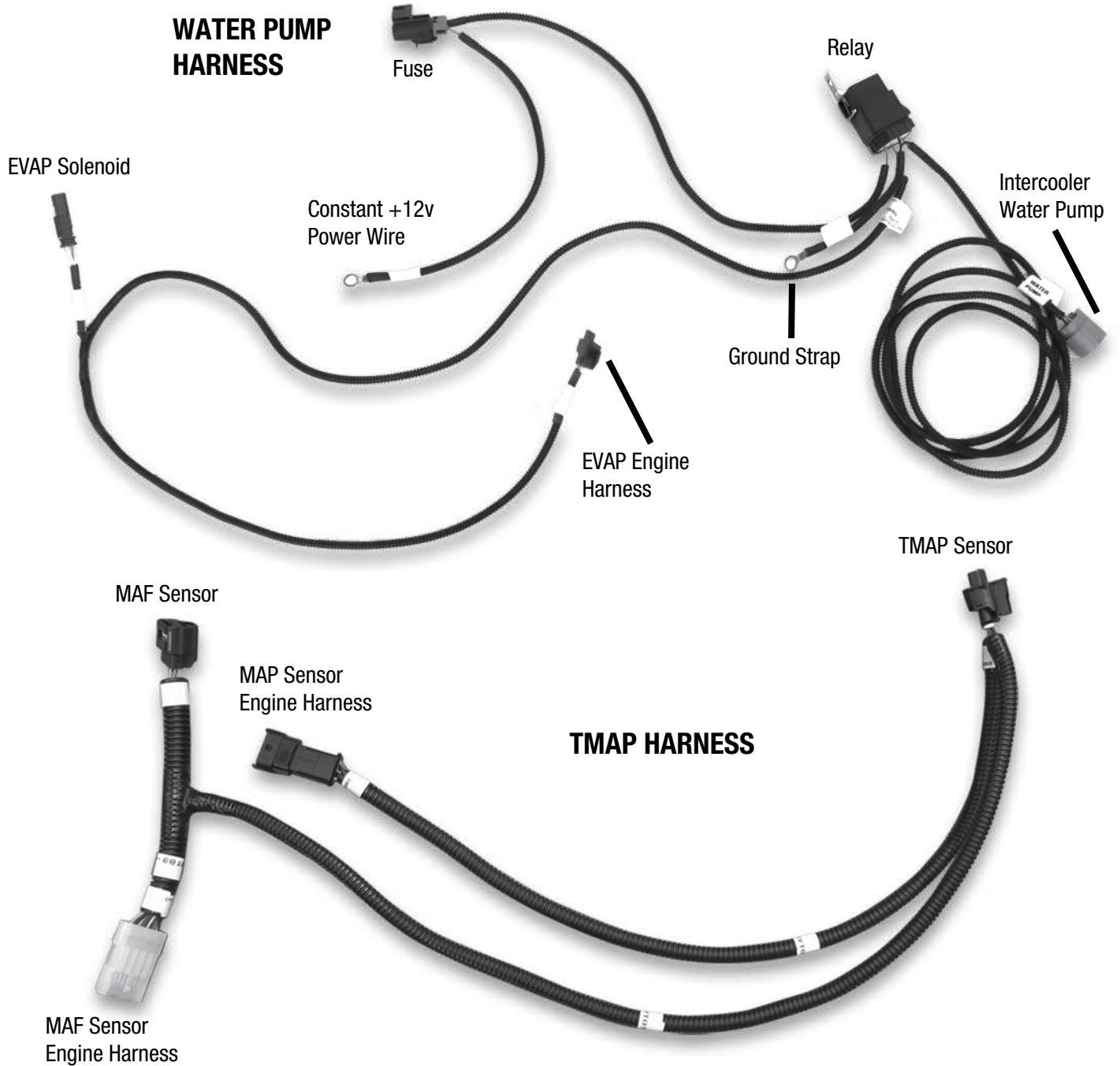
- Install the T-MAP Harness to the T-MAP sensor on the rear of the supercharger manifold. The female MAF adaptor connects to the factory male MAF connector. The male MAF connector connects to the factory MAF sensor.

- If using the GM Performance Crate Engine Controller (19303137), please refer to the installation instructions included with the controller kit for installation guidelines.

START-UP: The engine should be primed with oil prior to starting. Install an oil pressure gauge to the existing oil pressure sensor. Remove the spark plugs and disconnect the engine control unit as well as the injector wires. **NOTE: Make sure ignition and fuel are not provided to the engine.** Once fuel and spark have been disabled, crank the engine using the starter for 10 seconds, checking the oil gauge for oil pressure. If no pressure is indicated, wait 30 seconds and crank again for 10 seconds. Repeat this process until oil pressure is indicated on the gauge. Reconnect the engine control unit, injector wires and reinstall spark plugs. Start the engine and listen for any uncommon sounds. If uncommon sounds are not present, run the engine at idle until it reaches operational temperatures.

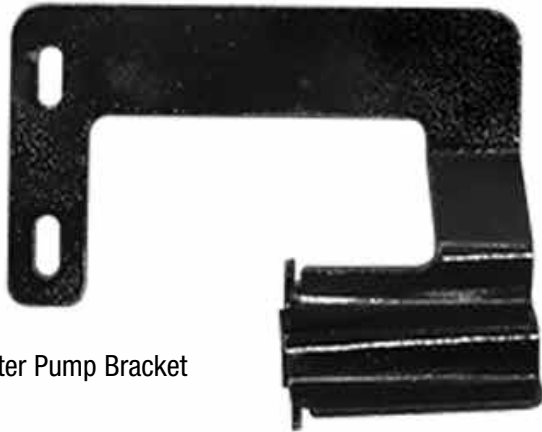
WIRE HARNESS IDENTIFICATION GUIDE

(Included with #46756 & 46757)



INTERCOOLER KIT IDENTIFICATION GUIDE

(Included with #46756 & 46757)



Water Pump Bracket



Water Pump Isolator



Surge Tank Bracket

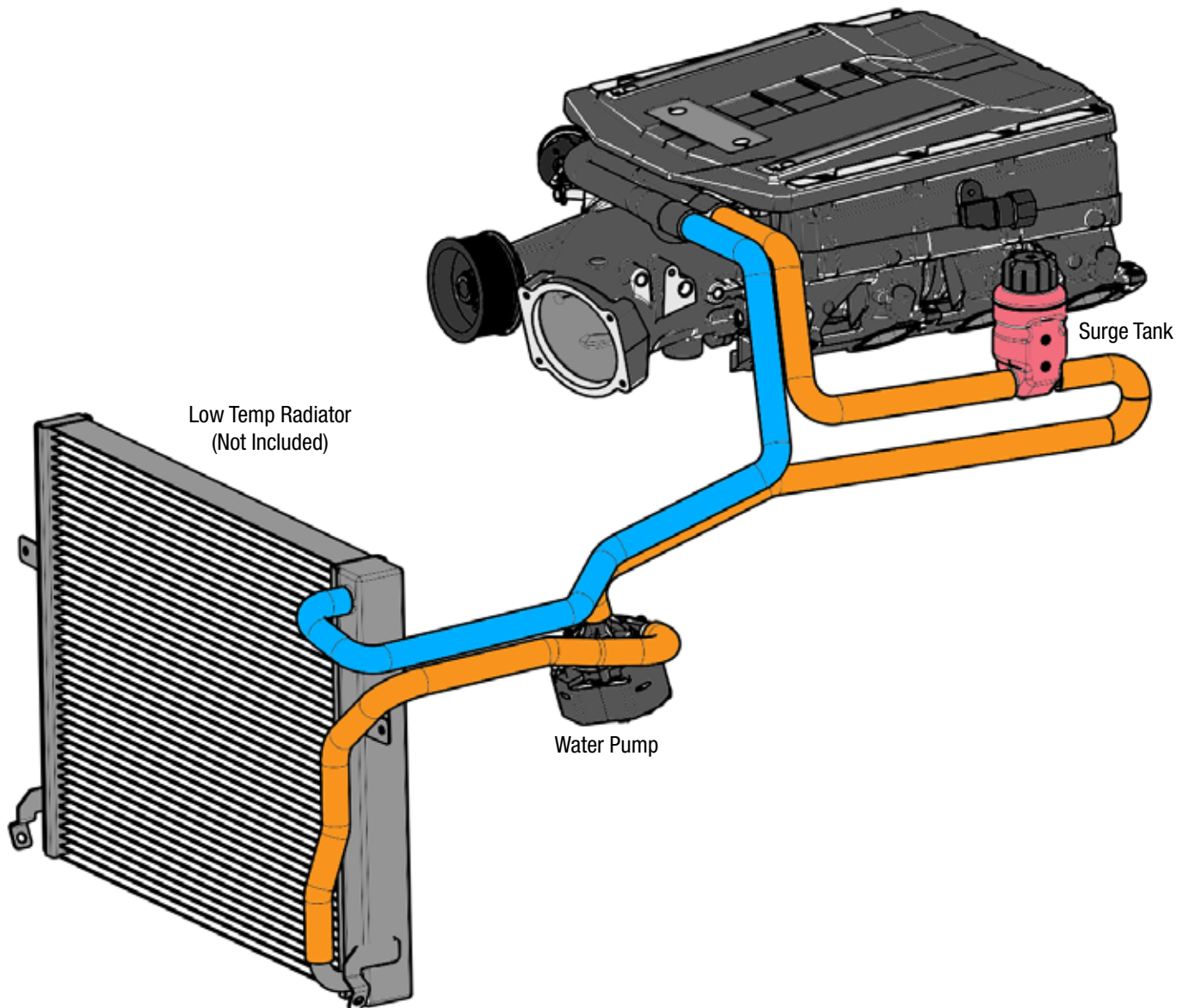


Surge Tank and Cap



Bulk 3/4" Intercooler Hose

Supercharger Intercooler Routing Diagram



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.



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