



THE AUTHORITY IN CRATE ENGINES.

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# **LS compatible Magnuson 2650**

## **INSTRUCTION MANUAL**

### **LEGAL STATEMENT**

If you are unsure of how to properly perform the repair, BluePrint Engines strongly advises that you seek professional assistance or consult a qualified technician. Attempting repairs without the necessary knowledge or expertise may result in damage to the product, personal injury, or the voiding of warranties. BluePrint Engines disclaims any liability for damages, losses, or injuries resulting from improper repairs performed by you or any third party.

## **1. General Information**

This document is for your BluePrint LS compatible Magnuson Supercharged Engine and only pertains to this engine. Please review this documentation in full before proceeding with the installation of your engine. This manual outlines the external connections and setup required to install the engine into your vehicle and prepare it for operation.

### **Safety Notes**

- Only qualified mechanics should perform installation.
- Disconnect battery before making electrical connections.
- Use correct fluids and torque specifications.
- Verify clearance and alignment before running engine.

## **2. Customer Installation Checklist:**

### **Fuel System:**

- Connect fuel feed line to rail
- Confirm correct fuel pump, filter, and regulator are installed
- Use 91+ octane premium fuel

### **Air Intake:**

- Connect intake tubing/air filter
- Verify couplers and clamps

### **Cooling System:**

- Connect radiator hoses.
- Connect heater hoses (if used).
- Connect intercooler coolant lines.
- Fill with coolant and bleed system.



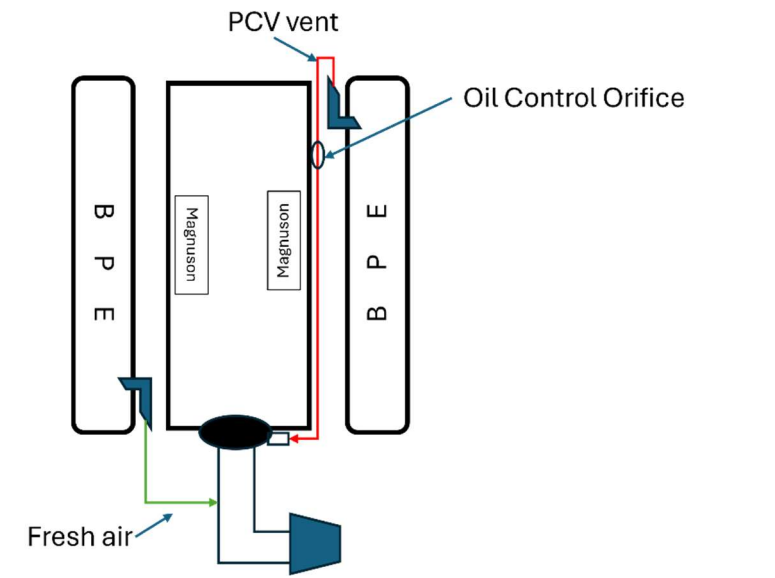
The black hoses indicated the supercharger water inlet  
The red hoses indicated the supercharger water outlet  
Please connect your heat exchanger lines accordingly.

### **Electrical:**

- Connect grounds, alternator, starter, battery.
- Follow the provided "Holley Terminator X Installation Guide" for correct wiring harness connections for the ECU.

### **PCV Connection:**

- Reference the picture below for correct PCV connections on your engine



### **Fluids:**

- Engine oil (10w-30)
- Coolant (mix for your desired temperature range)
- Supercharger oil (pre-filled with oil)
- Power steering fluid (reference the Holley instructions provided for the accessory drive)

## **3. Heat Exchanger Information:**

The Magnuson 2650 supercharger requires a heat exchanger for proper operation. Magnuson recommends using the part numbers listed below for your supercharger cooling system.

| Size   | Dimensions                 | Part #       |
|--------|----------------------------|--------------|
| Small  | 23.5" W x 7.5" H x 1.5" D  | 31-99-07-005 |
| Medium | 22.5" W x 15.75" H x 1" D  | 31-99-07-007 |
| Large  | 27.25" W x 15.25" H x 2" D | 31-99-07-009 |

However, you are also free to use your own specified parts, provided they meet the required specifications for cooling. Please size the heat exchanger accordingly to ensure optimal performance from your supercharged engine package.

#### **4. Wiring Connections for the Engine:**

Please refer to the Holley Terminator X Instruction manual provided with the engine. This will inform you of the wiring connections needed for the engine to run. The harness should be pre-installed on the engine. All of the sensor connections are labeled for re-installation. If you do remove the harness, please pay attention to where the sensors do go on the engine. The instructions below are from the Holley Performance manual here to help clarify the installation.

**Main Power/Battery Connection:** The TERMINATOR X™ ECU has a main battery power and ground connector on the right side of the ECU. The right position, Terminal "A" is the ground (black wire). The black wire should go to the negative post DIRECTLY on the battery. The left position, Terminal "B" is the positive terminal (red wire). The red wire should go to the positive post DIRECTLY on the battery. If you have a "dual post" battery, it is a great idea to purchase separate posts/studs to connect the ECU power and ground to the non-used terminals. Always use the fused power cable (Item 3) with the proper connectors supplied by Holley only. Don't connect to the ECU until after ALL wiring and installation is performed.

**Required] 12V Switched – Color = Red/White** – Should be connected to a clean +12V power source. Power source should only be active when the ignition is on. Make sure source has power when engine is cranking as well (check with voltmeter). Not all sources apply power when the ignition switch is in "cranking" position. This wire is located approximately 7" from the ECU connectors. DO NOT connect to a "DIRTY" source like an ignition coil!

**Required] 12V Battery – Color = Red** – Should be connected directly to the battery. This powers the fuel pump and fuel injectors. This wire is protected by a fuse in a sealed fuse holder. The fuse holder is located about 18" from the ECU connector. A fuse is pre-installed (20A).

**Required] Chassis Ground – Color = Black** – Connect to a chassis ground point that has excellent connectivity with both the engine and battery. There must be good continuity between the connection point and the battery when checked with a digital volt ohm meter (DVOM). This ground should not be connected at the same location as other grounds.