

# Instruction Manual



## AEM Fuel Pump 400 LPH\* High Flow

**P/N 50-1009**



### STOP!

**THIS PRODUCT HAS LEGAL RESTRICTIONS.**  
**READ THIS BEFORE INSTALLING/USING!**

**WARNING!** THIS IS A RACE ONLY PRODUCT MANUFACTURED AND SOLD FOR INSTALLATION ON VEHICLES DESIGNED TO BE USED SOLELY FOR COMPETITION PURPOSES. ONCE THIS PART IS INSTALLED, THE VEHICLE MAY NEVER BE USED, OR REGISTERED OR LICENSED FOR USE, ON A PUBLIC ROAD OR HIGHWAY. IF YOU INSTALL THIS PART ON YOUR VEHICLE AND USE THE VEHICLE ON A PUBLIC ROAD OR HIGHWAY, YOU WILL VIOLATE THE CLEAN AIR ACT AND MAY BE SUBJECT TO PERSONAL CIVIL OR CRIMINAL LIABILITY, INCLUDING FINES OF UP TO \$4,819 PER DAY.

IT IS THE RESPONSIBILITY OF THE INSTALLER AND/OR USER OF THIS PRODUCT TO ENSURE THAT IT IS USED IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IF THIS PRODUCT WAS PURCHASED IN ERROR, DO NOT INSTALL AND/OR USE IT. THE PURCHASER MUST ARRANGE TO RETURN THE PRODUCT FOR A FULL REFUND.

THIS POLICY ONLY APPLIES TO INSTALLERS AND/OR USERS WHO ARE LOCATED IN THE UNITED STATES; HOWEVER CUSTOMERS WHO RESIDE IN OTHER COUNTRIES SHOULD ACT IN ACCORDANCE WITH THEIR LOCAL LAWS AND REGULATIONS.

### **WARNING!**

Improper installation and/or adjustment of this product can result in major engine/vehicle damage. For technical assistance visit our dealer locator to find a professional installer/tuner near you.

Note: AEM holds no responsibility for any engine damage or personal injury that results from the misuse of this product, including but not limited to injury or death.

*\*Tested at 40 psi with AEM fuel pressure regulator (PN: 25-302) and .250" orifice installed @ 13.5 VDC.*

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Instruction Part Number: 10-1009  
Document Build 7/21/2021

## CAUTION!

Installation of the AEM Fuel Pump requires the installer to handle gasoline. It is imperative that all work is carried out in a well-ventilated area and a fire extinguisher rated for gasoline fires is within easy reach of all personnel working on the fuel system. Extinguish all open flames, prohibit smoking, and eliminate all sources of static electricity or any other source of ignition **BEFORE** proceeding with installation.

Wear protective clothing, goggles, and gloves rated for gasoline. Contact with gasoline is hazardous to your health; ensure that you are well protected from contact with gasoline.

The AEM Fuel pump is **ONLY** compatible with gasoline. The AEM 400 LPH High Flow Fuel Pump is designed to be externally mounted. Ensure that the wiring to the pump is rated for at least 30 amps and the insulation is rated for automotive use. Use a fused circuit for the pump with a fuse rated at 30 amps.

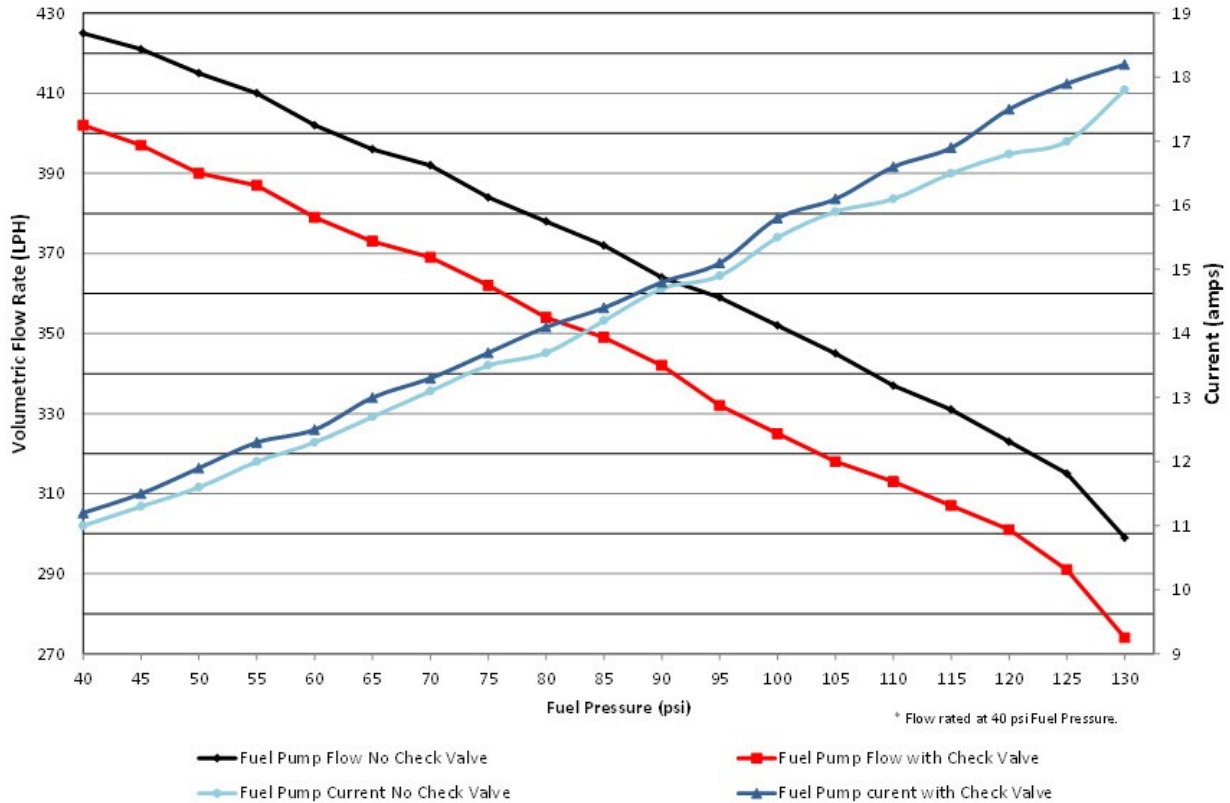
## Kit Contents

Quantity	Description
1	400 LPH High Flow Fuel Pump
2	Electrical Ring Terminals
2	Terminal post nuts and lock washers
2	Terminal post boots
1	Instructions

## Flow and Test Information

Every AEM fuel pump is flow tested before it leaves the factory to ensure that it flows nominal 400 LPH @ 40 PSI.\* The flow chart presented below is the result of flow testing 20 fuel pumps, eliminating the highest and lowest flowing samples and averaging the balance of the flow data. The data presented is flow in pounds per hour (LPH) at various fuel pressure levels. This test data is generated using the Enter value Fuel Pump, AEM Universal High Volume Fuel Filter and an AEM Universal Fuel Pressure Regulator with the optional Enter value return orifice. The pump voltage is Enter value and the current is Enter value for this test. Note that actual flow will be different at the engine because of losses through the balance of the fuel delivery system.

## AEM 400 LPH\* Inline High Flow Fuel Pump Volumetric Flow and Current vs. Pressure



### Hose and Routing Installation

IMPROPER FUEL HOSE ROUTING AND INSTALLATION DRAMATICALLY INCREASES THE RISK OF FIRE. BE SURE TO FOLLOW THE FOLLOWING GUIDELINES:

- It is important to ensure that the hoses or lines for the fuel delivery system are clean, not kinked, do not pass hot exhaust components and are terminated correctly. Inadequate fuel delivery often is the cause of calibration errors that may be detrimental to engine life.
- NEVER route fuel hoses through the interior of a car.
- Whenever possible, use a delivery tube to make the connection from the pump discharge to the filter in the front of the car.
- The lines should be rated to withstand at least twice the maximum pressure of the EFI system.
- When routing fuel lines, it is imperative that they are protected from road hazards and the exhaust system heat. The fuel line should NEVER be routed near battery cables. Use clamps to secure AN hose every 15 inches, or 24 inches if a rigid tube is used.
- Use the following table will help you determine which hose size is correct for your application. These sizes are based on a nominal fuel pressure of 43 psi.

#### Fuel Delivery Hose Sizes Gasoline Powered Engines

Up to 499 HP .344" hose -6AN  
 500 - 799 HP .437" hose -8 AN  
 900 – 1100 HP .562" hose -10 AN

Note that this table should be used for typical passenger car applications. For custom applications the hose run length and complexity of the hose routing will affect fuel delivery. To determine the capability of the fuel delivery system, measure the

output of the system by activating the pump with the vehicle operating voltage and measure the volume of fuel delivered in 15 seconds. Multiply the delivered value by 4 then by 60 to get volume/hr.

## Electrical Requirements

The supply voltage will affect the fuel delivery of the AEM Fuel Pump. The typical electrical system on modern cars is between 13.2 – 14.2 volts. Although the AEM fuel pump will run at lower voltages the flow will be lower. **Ensure the voltage is 13.5V at the pump.** The current requirement is minimum Enter value amps. The correct wire size will be determined by the length of wire, the wire type and the resistance of any terminals, splices or solder joints in the electrical or ground supply. The ground is equally important and the preferred ground is to route the ground wire to a star ground source that is directly attached to the battery negative post. The **minimum wire gauge** is 12ga. TXL wire. Twelve feet (12') of TOTAL CIRCUIT length (power & ground) 12 ga. is required and Twenty feet (20') 10 ga. is required.

Before wiring the pump to the electrical system make sure the polarity is correct. Connecting the pump with reverse polarity will damage the pump and will void the warranty.

**Before wiring the pump to the electrical system make sure the polarity is correct. Connecting the pump with reverse polarity will damage the pump and is not covered under warranty.**

## Installation

### Post Installation Inspection

BEFORE starting the engine, ensure there are no leaks at any point in the fuel system. This pump is capable of generating up to 125 PSI fuel pressure so excellent fuel system integrity is required. Check every connection point visually and mechanically. While the system is powered up, move fuel hoses to ensure all fittings are seated correctly.

## Warranty

AEM Performance Electronics warrants to the consumer that all AEM ELECTRONICS products will be free from defects in material and workmanship for a period of twelve months from date of the original purchase. Products that fail within this 12-month warranty period will be repaired or replaced when determined by AEM that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement, at AEM's discretion, of the AEM Electronics part. In no event shall this warranty exceed the original purchase price of the AEM ELECTRONICS part nor shall AEM ELECTRONICS be responsible for special, incidental or consequential damages or cost incurred due to the failure of this product.

Warranty claims to AEM ELECTRONICS must be transportation prepaid and accompanied by dated proof of purchase. This warranty applies only to the original purchaser of product and is non-transferable. All implied warranties shall be limited in duration to the said 12-month warranty period. Improper use or installation, accident, abuse, unauthorized repairs or alterations voids this warranty.

AEM ELECTRONICS disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by AEM ELECTRONICS.

Warranty returns will only be accepted by AEM ELECTRONICS when accompanied by a valid Return Merchandise Authorization (RMA) number. Product must be received by AEM ELECTRONICS within 30 days of the date the RMA is issued.

Please note that before AEM ELECTRONICS can issue an RMA for any electronic product, it is first necessary for the installer or end user to contact the tech line at 1-800-423-0046 to discuss the problem. Most issues can be resolved over the phone. Under no circumstances should a system be returned, or an RMA requested before the above process transpires. AEM ELECTRONICS will not be responsible for products that are installed incorrectly, installed in a non-approved application, misused, or tampered with.

Fuel Pumps installed with incorrect polarity (+&- wires crossed) will not be warranted. Proper fuel filtration before and after the fuel pump are essential to fuel pump life. Any pump returned with contamination will not be warranted.

Any AEM ELECTRONICS product, excluding discontinued products, can be returned for repair if it is out of the warranty period. There is a minimum charge for inspection and diagnosis of AEM ELECTRONICS parts which are out of warranty. Parts used in the repair of AEM ELECTRONICS electronic components will be extra. AEM ELECTRONICS will provide an estimate of repairs and must receive written or electronic authorization before repairs are made to the product.

Need additional help?

Contact the AEM Performance Electronics tech department at 1-800-423-0046 or email us at [tech@aemelectronics.com](mailto:tech@aemelectronics.com).