

MMX MAX EFFORT FUEL SYSTEM

INSTALLATION INSTRUCTIONS



MMX Max Effort Fuel System

Professional Installation Guide

Challenger / Charger • Dual Pump System

IMPORTANT — READ BEFORE INSTALLATION

It is highly recommended that you read and fully understand these instructions before beginning installation of the fuel system.

- Keep fuel level at $\frac{1}{4}$ tank or less (the less fuel, the better).
- Disconnect and remove the battery prior to installation.

Professional installation is recommended. MMX is not responsible for damage caused by improper installation.

Table of Contents

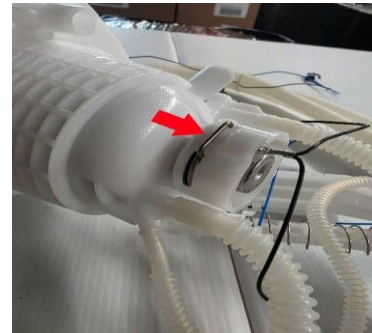
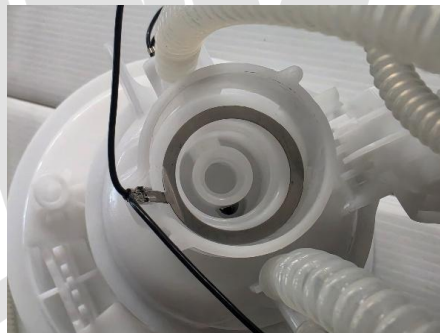
1. Accessing and Removing Your Old Pump
2. Preparing and Installing Your New Pump
3. Routing Fuel Lines
4. Sensor Installation
5. Mounting Electrical Boards
6. Routing the Wiring Harness
7. Software Adjustment

1. Accessing and Removing Your Old Pump

1. Remove the rear seat cushion of the vehicle by firmly grasping under the seat at the middle of the rear driver and passenger seats and pulling upward.
2. Expose the top of the tank by pulling up the covers on both the driver and passenger sides.
3. Unplug the OEM fuel system wiring connector and route the wiring out of the way.
4. On the passenger side of the tank, remove the tank cover. Unhook the OEM fuel line.

⚠ Fuel will come out of the line once it is disconnected.

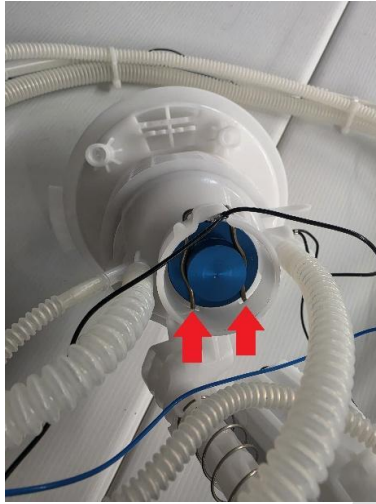
5. Using tool OES-24398 (or an equivalent fuel pump lock-ring tool), remove the lock ring holding the passenger-side transfer pump. Lift the pump slightly to create working space.



6. Remove the clip holding the OEM fuel regulator and pull the regulator out. Confirm that both O-rings came out with the regulator.

7. Apply a small amount of O-ring lubricant to the supplied regulator block-off and install it in place of the OEM regulator. Ensure the grounding wire remains in place.

Note: You may need to apply slight pressure on the unconnected side to fully seat the O-rings in their grooves.



8. Reinstall the transfer pump and lock ring, confirming the green tank O-ring is properly seated. Use the supplied fuel-line block-off to cap the OEM fuel feed port.

9. Move to the driver's side and remove the lock ring.

10. Raise the pump slightly out of the tank to create working room.

11. Unplug the level sending unit from the underside of the pump hat. (On some years/models the level-sending wires may need to be cut.) Remove the factory nylon crossover line by pinching the sides of the connector and pulling it free. Pull the other two lines out of their holder.

12. Remove the fuel pump from the tank. Use caution not to bend the level sending unit — it will be reused on the new pump.

2. Preparing and Installing Your New Pump

1. On a clean workspace, place the new pump and old pump side by side. Remove the level sending unit from the old pump by applying slight pressure to the tab and lifting upward.
2. Secure the level sending unit in the custom bracket by pushing the sending unit from the top down, until it is fully seated. Use caution to not bend or pinch the wires.

Sending Unit Connector Installation

The male connector is already installed on the pump module. Install the supplied female connector onto the two wires from the factory sending unit.

Included Parts

- 1 × female connector housing
- 3 × female terminals

Tools Required

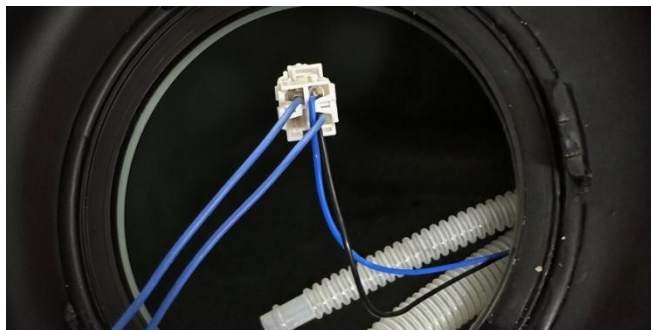
- Wire stripper suitable for 18–20 AWG
- Small pick or needle-nose pliers
- Open-barrel terminal crimp tool (die position ≈ 1.7 mm)
- Multimeter (recommended for final verification)

⚠ Use a crimp tool designed for small open-barrel automotive terminals. Do NOT use a standard red/blue/yellow insulated-terminal crimper. The correct tool folds the smaller wings around the conductor and the larger rear wings around the insulation, forming a compact B-style crimp. Use the 1.7 mm die position.

Installation Steps

1. Prepare the wires — Strip approximately 3–4 mm ($\frac{1}{8}$ in) of insulation from each sending-unit wire. Do not cut or damage the copper strands.
2. Crimp the terminals — Place one terminal on each wire. Using the 1.7 mm position: crimp the front wings securely around the bare conductor, then the rear wings around the insulation. Ensure no loose strands extend outside the crimp. Lightly pull to verify security.
3. Install terminals into the housing — Insert each crimped terminal into the rear of the female connector housing until it clicks and locks. Lightly pull each wire to confirm retention. Either wire may go into either cavity.

The upper cavities are for the signal wires from the sending unit. It does not matter which wire goes where. The lower cavity is for the ground; the ground wires should be tied together and crimped into a single terminal for the connector.

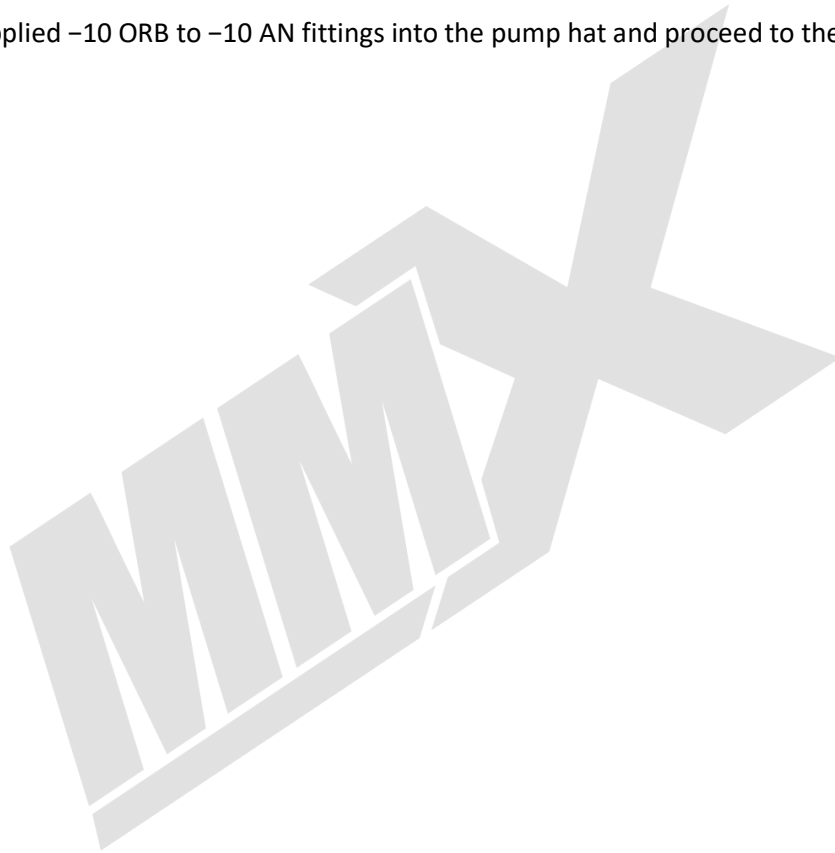


4. Close the pin lock — Press the secondary pin/terminal lock into the closed position until it clicks fully into place. If it will not close easily, do not force it — recheck that both terminals are fully seated.
5. Connect to the pump module — Plug the completed female connector into the male connector on the pump module until the latch clicks.

Note: Do not force a terminal into the housing. Verify orientation if a terminal will not seat. Ensure the pin lock is fully closed before connecting. Three terminals are supplied; use two and keep one as a spare.

Once the connectors are complete, install the pump into the fuel tank. The two hoses from the passenger side will clip into their respective locations on top of the MMX Fuel pump assembly. Reconnect the quick-connect fitting to its respective location. Ensure the sending-unit arm is free and does not contact any wires (this will cause inaccurate fuel readings). Reinstall the fuel lock ring while confirming the green tank seal is in place. The level sending arm should face toward the front of the vehicle.

Install one of the supplied -10 ORB to -10 AN fittings into the pump hat and proceed to the next section.



3. Routing Fuel Lines

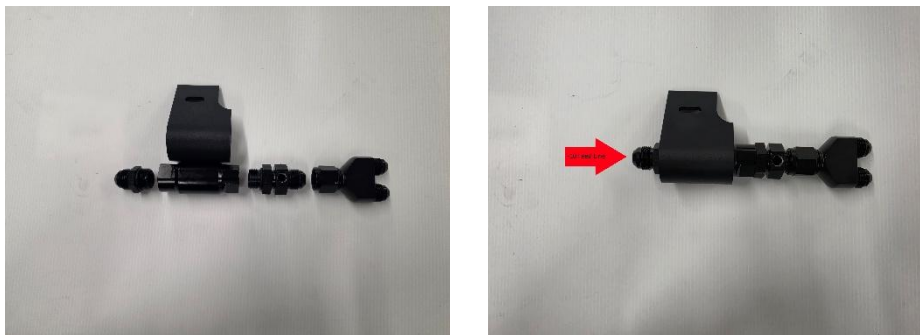
1. With the pump installed, set the parking brake and safely raise the vehicle to provide adequate working space underneath.
2. Remove the plastic cover on the bottom of the fuel tank (10 mm nuts and push pins).



3. Using a 13 mm socket, remove the strap holding the driver side of the fuel tank.
4. Route the supplied -10 AN line to the top of the tank and screw it onto the fitting on the fuel pump hat.
 - Challenger: Route along the rear of the tank and down the side, following the parking brake cable.
 - Charger: Route down the front side of the fuel tank and along the parking brake cable.
5. Using the supplied $\frac{3}{4}$ " spacer and 8 mm bolt, reinstall the fuel tank bracket. Ensure the line is not pinched.
6. Remove the parking brake clips (10 mm socket). Using the supplied Adel clamps, route the -10 feed line to the front of the vehicle, continuing to follow the parking brake cable.
7. Remove the triangular panel (5 push pins).
8. Route the -10 feed line through the hole in the fender. It will exit underneath the brake booster.



9. Insert the supplied barrel union into the bracket. Install a -10 AN adapter and tighten the fittings.
10. Install the supplied -10 AN adapter with the $\frac{1}{8}$ " NPT port. Ensure the O-ring sits inside the barrel union and is not against the face.



11. Install the -10 AN to -8 AN Y-block. Route the supplied -8 AN lines to the fuel rails (longer line goes to the rear of the passenger-side rail). Adapters may be required depending on your setup.
12. Mount the bracket surrounding the barrel union to the cowl panel reinforcement bar using the OEM 13 mm bolt.

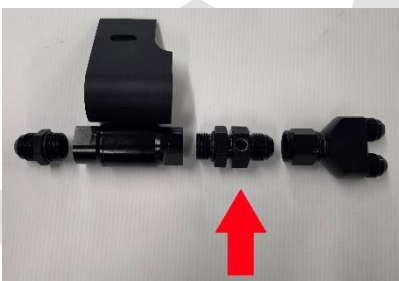


4. Sensor Installation

1. Locate the vacuum line running from the rear of the intake to the brake booster. Cut the line and insert the supplied barbed union with $\frac{1}{8}$ " NPT port.

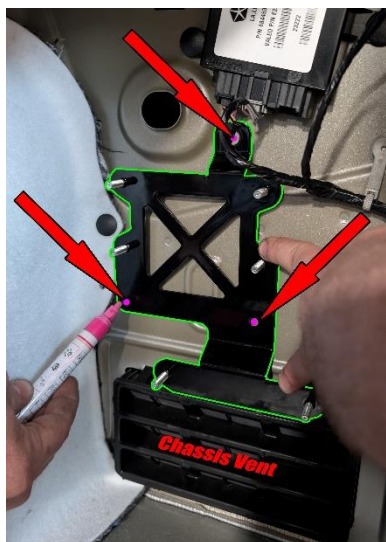


2. Install the supplied MAP sensor using PTFE tape or liquid pipe dope. If using tape, ensure none overlaps the sensor orifice.
3. Install the supplied fuel pressure sensor into the -10 AN adapter from the previous section.



5. Mounting Electrical Boards

1. In the trunk, remove the hard carpet panel and the seal plate around the trunk latch (pull up from the bottom). Remove the passenger-side wheel-well carpet. Remove any foam inserts, spare tire, or speakers for better access.
2. Position the supplied bracket against the rear wheel-well wall, just above the vent. For Charger vehicles, use the bracket as a template, mark the holes, and drill three ¼" holes. Mount with the supplied push pins.



3. Mount the supplied OEM fuel pump control modules (FPCM) using the top two sets of studs and supplied hardware. Pump 1 connector faces up; Pump 2 connector faces down. Once this is done, lay the harness out to make it easier to work with.



4. Behind the battery, lift the wire bundle off the studs. Place the supplied red template on top of the pinch weld with the arrow facing you (tape helps hold it). Mark and drill $\frac{1}{4}$ " holes. Mount the plate with the supplied hardware. Mount the relays and fuses on the two sets of studs closest to the battery tray.



5. Mount the MMX Fuel Pump Controller to the same bracket. Route the 12 V battery wire to the fuse panel behind the battery box and the ground wire to the stud.



6. Routing the Wiring Harness

1. Route the supplied harness along the fender well to the back of the rear seats, then under the sound-deadening material to the driver-side fuel pump access panel. Plug in the two fuel pump connectors (one to the fuel hat 8-pin, one to the OEM harness 5-pin).



2. Tuck the harness under the plastic along the driver-side floor pan up to the knee bolster area.
3. Remove the knee bolster for better access to the body grommet behind the emergency brake pedal. Using a utility knife, carefully cut a small incision in the side of the grommet.

⚠ DO NOT CUT THE OEM WIRES PASSING THROUGH THE GROMMET.

Slide the MAP sensor and fuel pressure sensor wires through, then reseal the grommet. Ensure the harness does not interfere with the parking brake or brake pedal. Secure the wire with zip ties.

4. Plug both sensors into their respective locations.

Final Check

With the fuel lines routed, sensors installed, and all electrical connections complete, test the system.

The system follows the OEM priming strategy: when the key is turned on, the pump runs briefly to prime, then shuts off.

1. Press the start button without holding the brake. You should hear the pump run for a few seconds and then shut off.
2. With the rear seat and fuel tank cover still removed, visually inspect the top of the fuel tank for leaks. Check ALL aftermarket connections by hand for drips.
3. Once priming is confirmed leak-free, start the vehicle and re-check all connections at idle fuel pressure.

7. Software Adjustment

WARNING — SOFTWARE MODIFICATIONS CARRY SIGNIFICANT RISK

All modules come ready to go from MMX. Adjustment is completely voluntary and is not needed unless you desire to do so.

Modifying, tuning, or overriding fuel pressure control logic, maps, PID parameters, or related software without a thorough understanding of the system can lead to:

- Unsafe fuel pressure targets or response
- Engine damage (lean/rich conditions, detonation, over-fueling, etc.)
- Unintended behavior under load, boost, or transient conditions
- Compromised safety systems or limp-mode failures

Do not alter any fuel pressure control software, calibration, or module parameters unless you fully understand the control strategy, the physical limits of the hardware, the implications of every change, and how to properly validate the results. **Modern Muscle Extreme is not responsible for any damage from modifying fuel trims.**

To download the software, please visit: [\[https://www.modernmusclextreme.com/software/MMX-FPCM-Console-1.0.0.msi\]](https://www.modernmusclextreme.com/software/MMX-FPCM-Console-1.0.0.msi)



Locate the question mark in the top right hand corner for more information, and tips.

Once downloaded, open the software and connect your module via the USB-C port on the side of the box. Select the correct COM port. If the port does not appear, click the refresh button next to the port selection.

Once connected, you will see multiple live data items and adjustable parameters that allow you to fine-tune fuel pressure.

Modern Muscle Extreme
Professional Performance Fuel System
Thank you for choosing MMX.