AEROMOTIVE
Part # 17252
Generic Fuel System Kit
INSTALLATION INSTRUCTIONS

CAUTION:
Installation of this product requires detailed knowledge of automotive systems and repair procedures. We recommend that this installation be carried out by a qualified automotive technician.

Installation of this product requires handling of gasoline. Ensure you are working in a well ventilated area with an approved fire extinguisher nearby. Extinguish all open flames, prohibit smoking and eliminate all sources of ignition in the area of the vehicle before proceeding with the installation.

When installing this product, wear eye goggles and other safety apparel as needed to protect yourself from debris and sprayed gasoline.

WARNING!
The fuel system is under pressure. Do not open the fuel system until the pressure has been relieved. Refer to the appropriate vehicle service manual for the procedure and precautions for relieving the fuel system pressure.

Aeromotive system components are not legal for sale or use on emission controlled motor vehicles.

This kit contains the following parts:

1 ea fuel pump wiring kit
  1 ea 3ft length of 10 ga. Black wire
  1 ea 25ft length of 10 ga. Red wire
  1 ea 30 amp circuit breaker
  1 ea 30 amp automotive relay
  2 ea blue female blade connector
  2 ea yellow female blade connector
  5 ea yellow #10 stud ring connector
  1 ea yellow 3/8” stud ring connector
  6 ea tie-wraps
20 ft AN-10 stainless steel braided line
5 ft AN-06 stainless steel braided line
20 ft AN-08 stainless steel braided line
2 ea AN-10 90-degree hose end
2 ea AN-10 straight hose end
2 ea AN-08 90-degree hose end
2 ea AN-08 straight hose end
2 ea AN-06 90-degree hose end
2 ea AN-06 straight hose end
1 ea p/n 18651 Stealth Sump Kit
1 ea p/n 12335 Filter 40 Micron SS
1 ea p/n 12305 Filter Bracket
1 ea p/n 13204 Fuel Pressure Regulator
2 ea AN-06 o-ring
1 ea AN-08 o-ring
5 ea AN-10 o-ring
2 ea p/n 15606 AN-06 cutoff union
1 ea p/n 15607 AN-08 cutoff union
4 ea p/n 15608 AN-10 cutoff union
2 ea p/n 15201 Holley Dual feed bowl to AN-06
12 ea tie-wraps
12 ea Clamps
1 ea 15610 AN-08/AN-10 Adapter
2 ea 1/4” Flat Washer
2 ea 1/4-20 Socket Head Screws
2 ea 1/4-20 Nyloc Nuts
1 ea Fuel Pressure Gauge
12 ea Self-drilling Screws

Warning – The included Aeromotive fuel pump is not compatible with alcohol based fuels or fuel additives!
The following steps are typical of most installations:

Section 1 - Sump Installation
Section 2 – Fuel Regulator and Filter Installation
Section 3 – Fuel Line Hose End Installation
Section 4 – Electrical Installation
Section 5 – Final Checks and System Start-up
Section 6 - Filter Maintenance

Typical hose end to fitting connection:

Do not connect hose end to cutoff side of union!

Connect hose end to 37-degree flare side of union.

Hose End

Typical o-ring sealed port connection:

O-ring sealed AN style port

O-ring
(Install on union fitting between back of threads and face of hex nut.)

Typically the cutoff side of the union is used as the o-ring sealed side, leaving the 37-degree flare side for your hose end connection.
Section 1 - Sump Installation:

The following steps are typical of most installations:

1-1. Once the engine has been allowed to cool, disconnect the negative battery cable and relieve the fuel system pressure.

1-2. Raise the vehicle and support it with jack stands.

1-3. Referring to the appropriate vehicle service manual for instructions, drain, disconnect any electrical and fuel component connections and remove the OEM fuel tank. The removal of the vehicles exhaust system may be necessary for fuel tank removal.

1-4. Once the OEM fuel tank has been removed, have it professionally cleaned to remove all traces of fuel and fuel vapors. This can typically be done at your local radiator shop.

1-5. With the fuel tank upside-down find a suitable mounting location for the sump. For optimal results the sump should be located toward the rear of the tank and centered from side to side. Keep in mind that the components inside of the sump must be kept clear of the existing fuel level sender, in order for the fuel level sender to work properly. If this is not possible, you may need to purchase and install an aftermarket fuel level sender elsewhere in the fuel tank.

1-6. Set the sump, upside down, over the intended mounting location and trace the outside edges of the sump onto the fuel tank using a black marker.

1-7. Using an appropriate saw, cut the bottom of the fuel tank to accept the sump. It is usually best to cut the hole a little small to start with. Then gradually enlarge the hole until the sump edges just fit inside of the hole.

1-8. By measuring and observing the fuel tank interior and exterior, determine how deep the sump will sit in the tank. Typically the top of the sump will be approx. 1/4" from the top of the tank and the bottom of the sump will be level to 2" below the lowest part of the fuel tank. Trim the sump sidewalls down if necessary to avoid hanging the bottom of the fuel tank sump too close to the ground. Typically, the bottom of the sump will need to be 1" - 3" higher than the bottom of the differential, to protect the sump from being struck by obstacles in the road.

1-9. The sides of the sump have a slight taper to ease installation. Gradually enlarge the hole in the fuel tank until the sump sits at the proper depth in the hole.
1-10. With the sump properly positioned in the tank, using a permanent marker, mark the location of the bottom of the tank on each side of the sump.

1-11. Remove the sump from the fuel tank, using the line marked on the side of the sump as a reference drill a 3/8” hole in each side of the sump, 1/8” above the bottom of the tank line, as shown below.

1-12. Place the sump baffle into position inside of the sump as shown below. If the top edges of the sump were trimmed to fit inside of the fuel tank, it may be necessary to trim certain edges of the baffle as well. Trim the baffle as necessary to fit within the envelope of the sump box.

1-13. Tack weld the sump baffle into position inside of the sump box. Weld in 3 or more locations to securely fasten the baffle into place.

1-14. Insure that the sump box and fuel tank surfaces that will be welded are clean and free from dirt, oil and debris. Sand or grind any tank galvanizing away from the weld area to prevent weld contamination.

**Note:** We recommend purging the inside of the fuel tank with argon or CO2 to minimize the risk of explosion!

1-15. Place the sump into position in the fuel tank and tack weld the four corners of the sump. Then go back and tack weld each side every couple of inches.
1-16. Finish welding around the sump, alternating sides to minimize warpage.

If you have a means for plugging all of the openings in the sump and tank and checking for leaks around the
welds, it is recommended that you do so now. If not, then you may have to disassemble the unit to repair any
weld leaks later.

1-17. Remove the 8 bolts and washers located on the front side of the sump. Locate the gasket that fits the bolt pattern
and hole size on the right side of the sump. Working from the outside of the sump, slip the gasket in between the
aluminum housing located inside of the sump and the inner wall of the sump. Do the same with the left side gasket.

1-18. Install the filter cover with the tab slots facing outward and the stop pin located in the upper left corner, with 4 of
the bolts and washers removed earlier. Make sure that the gasket holes align properly with the bolts during
installation. Do not tighten the 4 bolts yet.

1-19. Reinstall 2 of the bolts in the pump housing, but do not tighten them.

1-20. Open the lubricant packet and apply a generous amount of o-ring lubricant to all 3 o-rings on the pump assembly.
Center the pump assembly in the sump opening and slide the pump assembly into the pump housing, being careful
to not nick or cut the o-rings.
1-21. Slide the pump assembly out far enough to remove the 2 bolts previously installed. Remove the 2 bolts, then slide the pump assembly in far enough to reinstall the bolts and washers. Thread 4 bolts and washers through the pump outlet endcap and into the pump housing, being sure that the gasket holes are properly aligned. Now tighten all 8 bolts on the front of the sump.

1-22. Apply a small amount of o-ring lubricant to the o-ring on the inside edge of the fuel filter element. Install the element by sliding it into the filter housing until you feel it snap into position.

1-23. Apply a generous amount of o-ring lubricant to the o-ring on the outside of the filter endcap. Align the tabs on the endcap with those in the filter cover and slide the endcap into place.

1-24. Using a wrench, rotate the filter endcap clockwise until you feel it stop. Then insert and tighten the 8-32 screw and lock washer to lock the endcap in place.
1-25. Properly cap and seal any stock fuel pickup and return holes that exist in the tank, as they are no longer needed.

1-26. Reinstall the fuel level sender, making sure that its operation is not impeded by the sump assembly.

1-27. Reinstall the fuel tank, reconnecting the fuel filler and vent lines as necessary.

1-28. Complete your fuel system installation using appropriate lines, fittings and wiring. The fuel pump outlet and sump return port require AN-10 ORB fittings and o-rings, while the fuel pump terminals require a 12V feed capable of a minimum of 30 amps. The sump return port is used on return style fuel systems only; returnless systems require that this port be plugged with an AN-10 port plug and o-ring.

1-29. Lower the vehicle to the ground, fill the fuel tank with fuel and observe the fuel tank for any leaks. If no leaks are found, continue with the rest of the kit installation. If any leaks are found at any time, shut the vehicle off, clean up any spilled fuel and fix the leaks before continuing.
2-1. In the vehicle’s engine compartment, find a suitable location to mount the supplied fuel pressure regulator. Using the supplied mounting bracket as a template, mark the bracket mounting holes and drill to accept a #10 screw.

2-2. With the bracket attached to the regulator, mount the bracket and regulator to the vehicle using two #10 screws, nuts and lock washers (not provided).

2-3. Install two of the supplied AN-06 o-rings on the cutoff side of two AN-06 cutoff union fittings, if not already installed, and install in each of the AN-06 ports located on the sides of the supplied fuel pressure regulator.

2-4. Install the supplied AN-08 o-ring on the cutoff side of the AN-08 cutoff union fitting, if not already installed, and install in the AN-08 port located on the bottom of the supplied fuel pressure regulator.

2-5. Install one of the supplied AN-10 o-rings on the cutoff side of the AN-10 cutoff union fitting, if not already installed, and install in the AN-10 port located on the front of the supplied fuel pressure regulator.

2-6. Place the crush rings on the dual feed carburetor to AN-06 adapter fittings. Thread each of the two fittings into each of the carburetor float bowls and tighten. If you are using a carburetor other than a dual feed style, you will have to make alternate accommodations for an AN-06 fuel supply line.

2-7. Starting from each of the carburetor float bowls, plan a route to run an AN-06 supply line from each float bowl to each side of the fuel pressure regulator. Cut the two supply lines to the determined length and install the AN-06 hose ends, as detailed in Section 3.

**Note:** Be sure to route all fuel lines clear of any moving suspension or drivetrain components and any exhaust components! Protect fuel lines from abrasion and road obstructions or debris.

2-8. Find a suitable location to mount the 12335 filter included in this kit. The filter must be located in the fuel supply line between the pump outlet and the pressure regulator. Use the included bracket, screws nuts and washers to mount the filter.

2-9. Starting from the outlet of the fuel pump, plan a route to run an AN-10 supply line from the fuel pump outlet to the 12335 filter. Cut the supply line to the determined length and install AN-10 hose ends, as detailed in Section 3.

2-10. Starting from the outlet of the fuel filter, plan a route to run an AN-10 supply line from the fuel filter outlet to the AN-10 port on the front of the fuel pressure regulator. Cut the supply line to the determined length and install AN-10 hose ends, as detailed in Section 3.

2-11. Starting from the AN-8 port on the bottom of the fuel pressure regulator, run an AN-8 return line from the regulator return port to the AN-10 return port on the sump. Run this line along the same route as the AN-10 supply line installed earlier. Cut the supply line to the determined length and install the AN-10 hose ends, as detailed in Section 3.

**Note:** Be sure to route all fuel lines clear of any moving suspension or drivetrain components and any exhaust components! Protect fuel lines from abrasion and road obstructions or debris.

2-12. Install one of the AN-10 o-rings on the AN-10 side of the supplied AN-8/AN-10 adapter. Install and tighten the adapter in the AN-10 return port on the sump.

2-13. Keeping both the supply line and return lines together, secure all lines to the vehicle using the supplied clamps, screws and tie-wraps. Once all lines are secure, connect and securely tighten all fittings.

**Note:** Be sure to route all fuel lines clear of any moving suspension or drivetrain components and any exhaust components! Protect fuel lines from abrasion and road obstructions or debris.

2-14. Attach the supplied fuel pressure gauge to the 1/8 NPT port on the fuel pressure regulator, using teflon sealant tape on the threads.
Section 3 - Fuel Line Hose End Installation:

CAUTION:
When assembling this product, wear eye goggles and other safety apparel as needed to protect yourself from debris and sharp edges.

3-1. Wrap hose with masking tape at desired cutoff length. Cut hose through masking tape squarely to desired length using a cut-off machine or a fine tooth hacksaw. Remove the masking tape.

3-2. Unthread the hose socket from the rest of the hose end fitting.

3-3. Insert hose in the socket with a twisting and pushing motion until the hose is fully seated in the socket.

3-4. Using a grease pencil, marker or tape, mark the location of the hose in relation to the hose socket that you just installed.

3-5. Using a light oil, lubricate the inside of the hose and hose end mating parts.

3-6. Carefully thread the hose end onto the hose socket, making sure that the hose does not push out of socket, by observing the mark you placed on the hose in step 3-4.
3-7. Using a properly sized wrench, complete threading the two components together (The maximum allowable gap between the two fitting components is .030 inches).

3-8. Inspect the hose for push out by comparing the mark you made on the hose in step 3-4 to the hose end socket location.

3-9. Clean all debris from exterior and interior of hose.

3-10. All lines should be tested to twice their operation pressure prior to use.
Section 4 - Electrical Installation:

4-1. Find a suitable place to mount the supplied relay, the relay is typically mounted by the OEM fuel pump wiring connector (Never mount the relay inside of the fuel tank or next to fuel tank vents!). Ensure the relay and any associated parts are clear of the exhaust, any moving suspension or drivetrain components and any possible road obstructions or debris.

4-2. Attach the OEM fuel pump wires (These typically are the red and black wires from the OEM wiring harness going to the fuel tank) to relay terminals 85 and 86 using two of the supplied blue female blade connectors (See Figure 4-1 Below).

Note: Be sure to route all electrical wires clear of any moving suspension or drivetrain components, and any exhaust components! Protect wires from abrasion and road obstructions or debris.

4-3. Find a suitable location for mounting the supplied circuit breaker. For optimal circuit protection, the circuit breaker needs to be mounted as close to the battery as possible.

4-4. Connect terminal number 30 on the relay to the circuit breaker by using the supplied red 10 ga. wire, one of the yellow female blade connectors on the relay end of the wire and one of the yellow #10 ring connectors on the circuit breaker side of the wire.

Note: Be sure to route all electrical wires clear of any moving suspension or drivetrain components and any exhaust components! Protect wires from abrasion and road obstructions or debris.

4-5. Connect terminal number 87 on the relay to the positive terminal on the fuel pump. This is accomplished by using the supplied red 10 ga wire, one of the yellow female blade connectors on the relay side of the wire and one of the yellow #10 ring connectors on the fuel pump side of the wire.

4-6. Connect the negative terminal on the fuel pump to a clean chassis ground using the supplied black 10 ga wire and two yellow #10 ring connectors.

4-7. Connect 12VDC to the circuit breaker using the supplied red wire and one of the yellow #10 ring connectors and the supplied yellow 3/8" ring connector.

4-8. Ensure that electrical components and wires are connected properly (See Figure 4-1) and are clear of any moving suspension or drivetrain components and any exhaust components! Protect wires from abrasion and road obstructions or debris.

Figure 4-1
Section 5 – Final Checks and System Start-up

5-1. Ensure that any spilled gasoline and any gasoline soaked shop towels are cleaned up and removed from the vicinity of the vehicle!

5-2. Carefully lower the car onto the ground.

5-3. Fill the fuel tank with gasoline and check for any leaks in the system, if any leaks are found repair immediately.

CAUTION: While performing the following steps, if any fuel leaks are detected, immediately turn the ignition OFF, remove any spilled fuel and repair the leak(s) before proceeding!

5-4. Reconnect the battery and turn the ignition to the ON position WITHOUT starting the car. After several seconds, check the fuel pressure. If there is no fuel pressure, turn the ignition key to the OFF position, wait one minute, return the ignition to the ON position, and recheck the fuel pressure. Repeat this ignition OFF and ON procedure until the fuel pressure gauge registers fuel pressure.

5-5. With the fuel pressure gauge registering fuel system pressure, check for fuel leaks throughout the entire fuel system! If any fuel leaks are found, turn the ignition key to the OFF position, remove any spilled fuel and repair the leak before proceeding!

5-6. Once the fuel pressure gauge registers fuel system pressure and there are no fuel leaks, start the engine and adjust the regulator to the desired fuel pressure. Turning the adjustment screw clockwise will increase fuel pressure. Typical regulators are set at approximately 5-6 psi. The fuel pressure adjustment range for this regulator is 3-15 psi.

5-7. Once the desired fuel pressure is achieved, tighten the regulator adjustment jam nut and attach the vacuum line.

5-8. Test drive the car to ensure proper operation and re-check the fuel system for leaks. If any leaks are found, immediately discontinue use of the vehicle and repair the leak(s)!
Section 6 – Filter Maintenance

Follow this procedure to check and clean the filter element contained in the fuel sump. Filter should be cleaned for the first time as soon as possible after the first 500 miles of use. Filter cleaning should be performed at regular intervals thereafter.

6-1. Raise the vehicle and support it with jack stands. Disconnect the battery ground cable.

**CAUTION:** While performing the following steps, a small amount of fuel will leak from the sump filter assembly. Extinguish all sources of ignition and prohibit smoking in the area before continuing. Make sure there is an approved fire extinguisher nearby.

6-2. Place a small drain pan underneath the sump. Remove the 8-32 screw and lock washer locking the filter endcap in place.

6-3. Turn the filter endcap counter clockwise until the tabs on the endcap line up with the slots in the filter cover. Pull the endcap out of the filter housing and set aside.

6-4. Grasp the end of the fuel filter element, contained inside of the filter housing, and pull it out. Clean or replace the element as needed.

6-5. Apply a small amount of grease to the o-ring on the inside edge of the filter element. Slide the element into the filter housing until you feel it snap into place.

6-6. Apply a small amount of grease to the o-ring on the filter endcap. Position the endcap over the filter cover, aligning the tabs and slots. Push the endcap into the housing, being careful not to nick or cut the o-ring.

6-7. Rotate the endcap clockwise until it stops. Insert and tighten the 8-32 screw and lock washer that were previously removed.

6-8. Check the sump for any leakage from the filter housing area.