



EMPI CARBURETOR CONVERSION KIT INSTALLATION INSTRUCTIONS

PART # 47-1551 (EPC 32/36E) and 47-1559 (EPC 38E)

(Legal in California only on off-road vehicles)



THIS KIT IS FOR THE FOLLOWING APPLICATIONS:

***Jeep models originally equipped with the Carter
BBD Carburetor 1976-1990**

EMPI's (EPC) Performance Carburetors conversion kits will enhance the performance of your engine while maintaining reliability and fuel efficiency. The installation instructions cover old carburetor removal, carburetor installation, and new carburetor adjustments. Before installation please read this guide thoroughly.

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The list of tools that will be needed to install this conversion kit are as follows:

- Socket and Wrench Set
- Allen Key Set 3/16" and 5 mm
- Screwdrivers
- Pliers (needle nose)
- Gasket Scraper
- Wire Brush

The list of supplies that are needed to install this conversion kit are as follows:

- Carburetor Cleaner
- Clean Rags
- Engine Cleaner
- Aluminum Foil
- Tags (these are needed to label hoses etc.)
- Loctite for manifold and base adapter bolts and studs.

The list of optional items that are very helpful in installing this conversion kit are as follows:

- Vacuum Gauge/ Tester
- Fuel Pressure Gauge/ Tester
- Flashlight
- Magnet
- Vehicle Shop Manual

PLEASE FOLLOW THE SUGGESTED SAFETY PRECAUTIONS BELOW:

- ALWAYS WEAR EYE PROTECTION.
- USE CLAMPS ON ALL FUEL HOSES. DO NOT ALLOW FUEL TO SPILL.
- DO NOT USE GASKET SEALERS, USE GASKETS PROVIDED.
- WHEN REMOVING OLD CARBURETOR LABEL ALL HOSES AND WIRES.
- USE LOCTITE ON HARDWARE INSIDE AIR CLEANER AND INTAKE MANIFOLD STUDS.
- IF REWIRING IS NEEDED ALWAYS USE AN INSULATED CONNECTOR OR TAP.
- NEVER ALLOW DIRT IN THE CARBURETOR.
- DO NOT OVERTIGHTEN JETS OR THROTTLE LINKAGE.
- NEVER OPERATE THE ENGINE WITHOUT A FUEL FILTER.
- BE CAREFUL NOT TO CUT OR DENT THE ALUMINUM GASKET SURFACES OF THE INTAKE MANIFOLD OR CARBURETOR.

PLEASE PERFORM THE FOLLOWING STEPS BEFORE INSTALLING YOUR EMPI CONVERSION KIT:

- Replace or clean the fuel filter.
- Verify that the vehicle does not have any mechanical problems.
- EMPI carburetors require 3.5 p.s.i. of fuel pressure. If your fuel pressure is more than 3.5 p.s.i, obtain a fuel pressure regulator from your EMPI dealer.
- EMPI carburetors are preset at the factory. Only make adjustments to the carburetor after the installation, and running the vehicle for the first time. After the carburetor is installed record the factory settings if needed in the future.

REMOVAL OF OLD CARBURETOR

- Remove the gas cap.
- Take off the original Air Cleaner Assembly.
- Remove the Battery's negative cable.
- Remove the Fuel Supply hose that is attached to the carburetor. Label it and temporarily plug it to prevent fuel leaks.
- Remove the Fuel Return hose (if equipped) and plug it.
- Remove the Float bowl Vent hose and label it.
- Remove and label the vacuum hoses connected to the carburetor.
- Remove and label all of the electrical connectors attached to the carburetor. Identify the electric choke wire.
- Remove and label all electrical and vacuum connections to the vacuum switching valves and remove them along with the vacuum manifold.
- Remove the throttle linkage from the carburetor.
- Remove carburetor and all spacers and gaskets from the intake manifold. Place a clean rag in the intake opening to keep dirt and tools etc. out. **PLEASE MAKE SURE THE RAG IS REMOVED BEFORE INSTALLING THE EMPI CARBURETOR**
- Remove the manifold studs from the intake manifold. Double nut each stud to remove. **DOUBLE NUTTING MAY RUIN THE NUTS BUT WILL NOT DAMAGE THE STUDS**
- Remove any excess gasket material from intake manifold. You can use a gasket scraper, wire brush and carburetor cleaner.

EMPI CARBURETOR INSTALLATION

- Remove the adapter plates, gaskets and hardware from the packaging. Please see photo #'s 3 and 4 for order of installation.
- Mount the first adapter and gasket to the intake manifold making sure that the allen head bolts are flush. Mount the top adapter and gasket to the bottom adapter plate. Thread the PCV (brass) fitting into the top adapter. The PCV port on the adapter faces the front of the vehicle. Use the 3/8 " hose provided in the kit and connect the hose to the original PCV source. Clamp the hose to the fitting on the adapter with the clamp provided. On some models this is not needed so thread the pipe plug in the adapter kit into the threaded hole. Look at photo #'s 3 and 4 for additional details.
- Install the EMPI carburetor on the four mounting studs which you have threaded into the top adapter plate. Attach linkage bracket on the studs of the carburetor that face the left fender.(Photo 6). Using a criss-cross pattern tighten evenly. Fuel Inlet faces front of vehicle. **DO NOT OVERTIGHTEN.**
- At this time check that the linkage is not binding. Hold the choke plates open to make sure that the throttle opens and closes freely.
- Attach the long threaded rod to the vehicles bell crank linkage. Adjust to achieve full throttle.
- Adjust adjustable linkage rod between bell crank and throttle lever. (Photo 7)
- Attach the original throttle return spring to the lower lever on the EMPI carburetor. If this is not possible on your vehicle use the alternative throttle return spring and bracket provided in the kit. See photo # 9 for more details.
- Locate the fuel inlet pipe (photo # 5) on the carburetor and connect the supply line to it.
- Locate the original fuel bowl vent hose and attach it to the fitting on the EMPI carb. See photo # 5 for more details.
- Locate the vacuum advance hose and connect it to the vacuum advance port on the carburetor. (see photo 1B and 2B). For 32/36 EPC see photo 1A and 1B.
- Locate any open vacuum ports and hoses and plug them. (check local laws)
- Locate the wire for the electric choke and connect it to the electric choke.
- At this point make sure that all hose clamps are tightened and that all of the electrical connectors are connected and insulated.
- Reconnect the Battery's negative cable.
- If you have a 77-78 model you have to remove the vacuum lines that attach to the EGR valve, and the CTO switch. The EGR Valve will not be used.
- On 79-88 models remove the vacuum line that attached to the EGR and the TVC switch (in air cleaner). Plug any open vacuum lines with the plugs supplied in this kit.
- On 77-82 models connect the vacuum advance line to the vacuum source on the EMPI carb. See photo 1B and 2B for more details. It is not necessary to install a vacuum advance line to the carburetor on models after 1982. This is controlled by manifold vacuum. Plug the vacuum advance port on the EMPI with the plug supplied in the kit.
- Crank Engine without starting and check for fuel leaks.
- The air injection system on the 77-82 uses an air pump and is not affected by the installation of the EMPI carb.
- 83 and later models use a pulse air injection system. To use this with the EMPI carb you will have to drill two holes in the air filter top and place the two white plastic fittings in the air filter top. The system must receive filtered air. With the hoses and connectors supplied connect the air injection system to the fittings.
- Remove Air cleaner from packaging. Connect plastic breather tube to air filter base and bolt air filter base to carburetor using the four screws provided.
- Attach the breather hose from the valve cover to the air cleaner.
- Put the air filter element on the air filter base and attach the air cleaner top with the clips provided.
- Make sure to check the clearance between the hood and air filter.

CARBURETOR ADJUSTMENTS (see pictures for identification of components)

- Only make the adjustments discussed here if necessary.
- To adjust the idle speed make sure that the engine is warm, set the speed to the vehicle manufacturer's setting. To raise the speed turn the idle screw (clockwise) in, and to lower the speed turn the speed screw (counter clockwise) out.
- To adjust the idle mixture turn the idle mixture screw in slowly (clockwise) counting the amount of turns you make until the idle speed drops off. Turn the screw out (counter clockwise) counting the turns until the idle drops off again. Turn the screw back in half the distance that you turned it out. Now the mixture is set.
- To adjust the fast idle make sure that the engine is cold. Press the accelerator pedal to the floor and let go. Start the engine (do not touch the accelerator pedal) once you touch the accelerator after the engine is running the fast idle cam is disengaged. The engine should be running between 2000 and 2500 Rpm's. Turn off the engine. To adjust the fast idle speed turn the fast idle screw in (clockwise) to increase engine RPM, to decrease engine RPM turn the fast idle screw out (counterclockwise) Do not touch the accelerator and restart engine to check RPM.
- The electric choke is pre-set. To adjust the electric choke make sure that the engine is cool (below 68F) Turn the throttle linkage all the way open to set the choke. The plates should be closed. Make a mark on the plastic choke cap and the carburetor where the two surfaces meet. Loosen the three screws one turn. Hold the throttle about one third open and start twisting the thermostat cap (counter clockwise) until the choke plates fully close, then slowly turn the cap 1/8" (you should feel the spring tension in the choke tightening). Retighten the three screws (do not over tighten). You may now have to go back and check the fast idle speed and adjust if necessary.

TROUBLE SHOOTING GUIDE (If there is a problem starting the vehicle, please perform the following:)

If the vehicle will not start please check the following:

- Check that the fuel pump is functioning properly. Check with pressure gauge.
- Make sure that the ignition system is functioning properly.

If the engine idles too high or too low, or stalls please check the following:

- Make sure that you have no vacuum leaks. You should check all engine vacuum line connections and at the carburetor base (including the adapter plates).
- Check all Carburetor adjustments. Idle mixture, idle speed, and fast idle. In this order.

If the engine acts as if it is running out of fuel when driving please check the following:

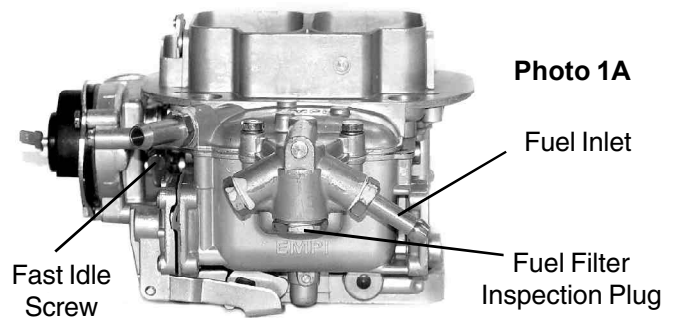
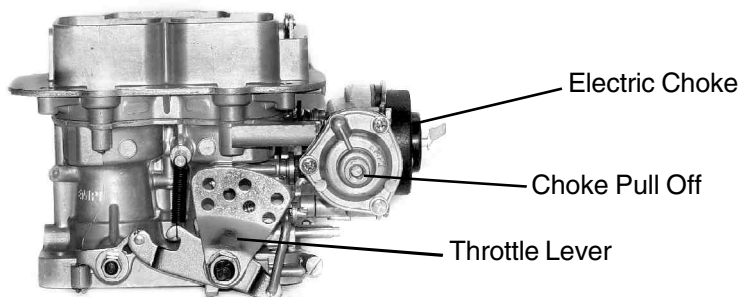
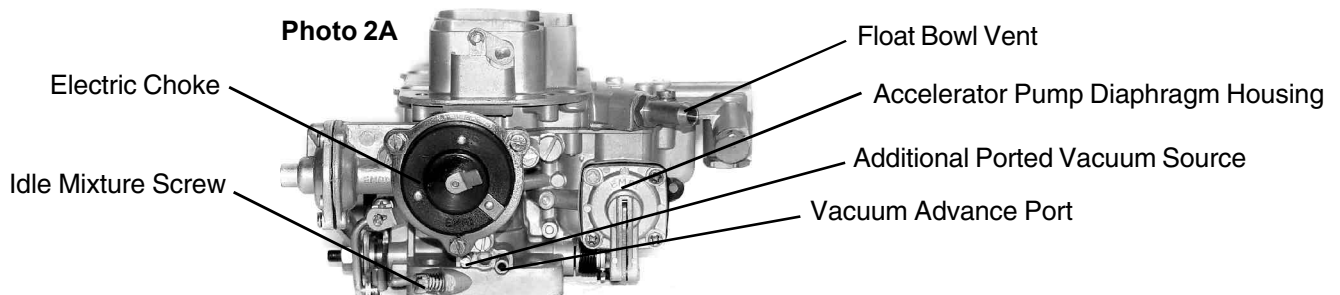
- If new fuel filter was not installed install one now. The old fuel filter may be clogged.
- Check that the fuel pump is functioning properly. Check with pressure gauge.
- Check all fuel lines. Make sure that the lines are not pinched or kinked.
- Check that the vehicle has not run out of gas.
- Check the fuel tank venting system. (Refer to vehicle shop manual)

If the engine runs rough like it is missing at idle please check the following:

- Make sure that you have no vacuum leaks. You should check all engine vacuum line connections and at the carburetor base (including the adapter plates).
- Check the idle mixture adjustment.

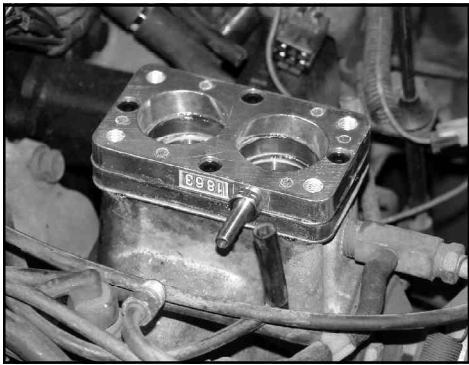
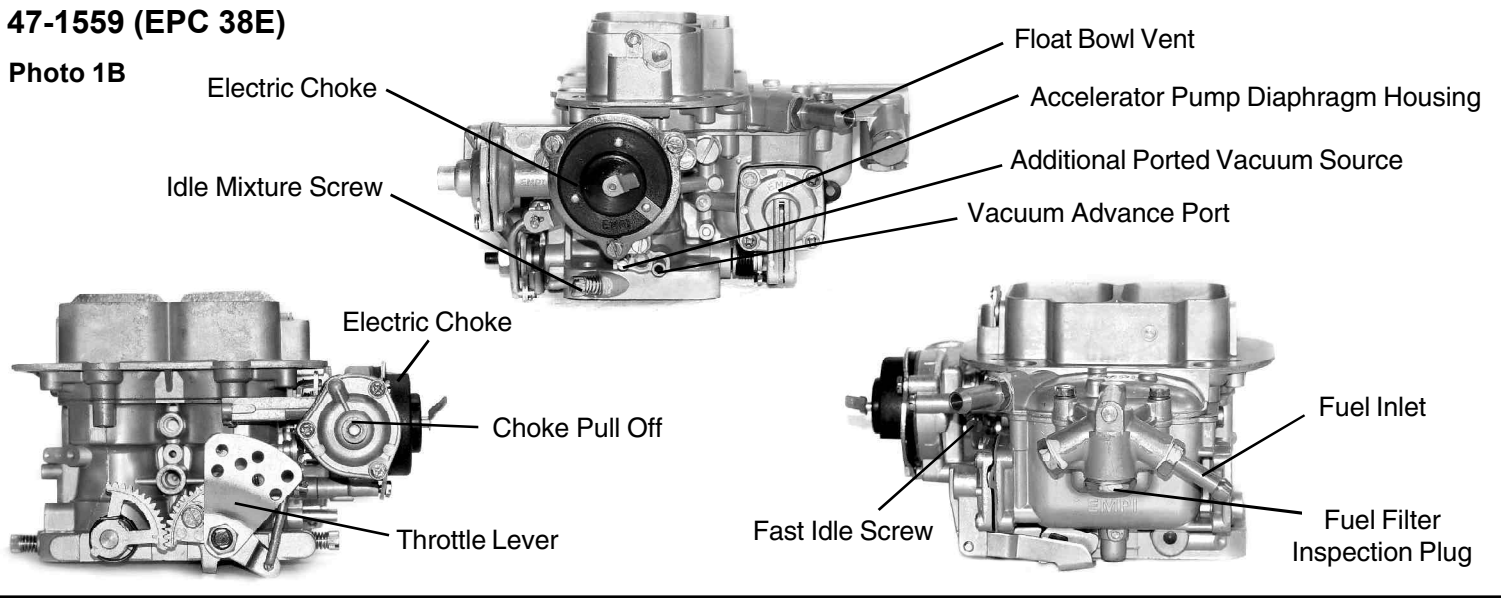
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Photo 2A

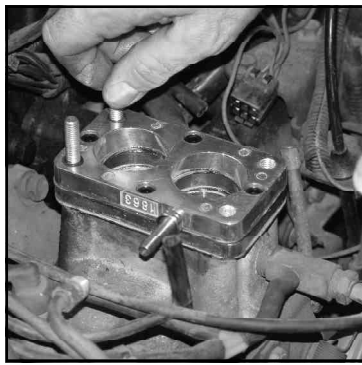


47-1559 (EPC 38E)

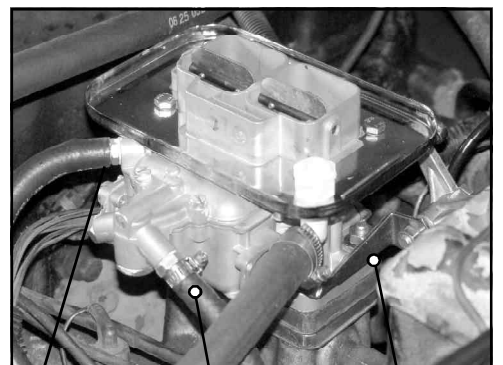
Photo 1B



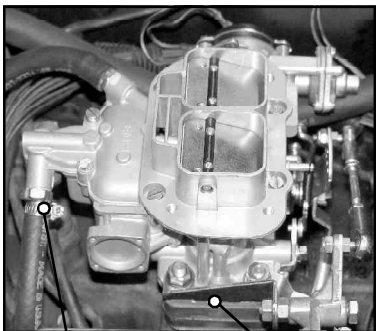
Adapter View 1 (Photo 3)



Adapter View 2 (Photo 4)



Float Bowl Vent Fuel Line Linkage Bracket
Carburetor Mounted on Adapter (Photo 5)



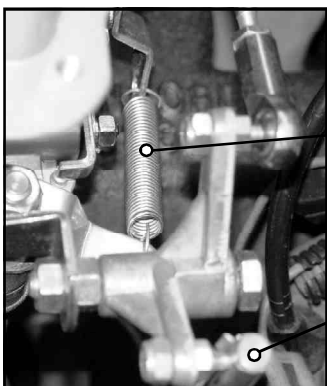
Fuel Inlet Linkage Bracket
Linkage View 1 (Photo 6)



Linkage View 2 (Photo 7)



Electric Choke and Idle Adjustment
(Photo 8)



Alternative Return Spring (Photo 9)



Carburetor Mounted with Air Cleaner (Photo 10)