



# EMPI CARBURETOR CONVERSION KIT INSTALLATION INSTRUCTIONS

PART # 47-1491 (EPC 32/36E), 47-1490 (EPC 38E)

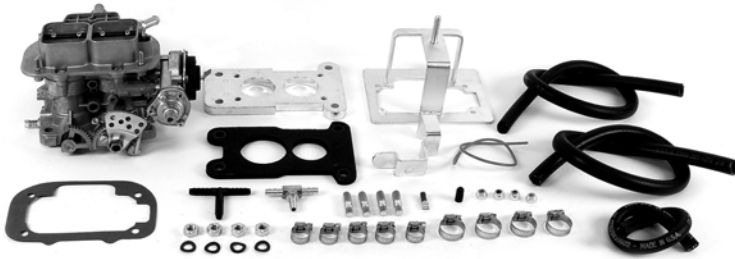
(Legal in California only on off-road vehicles)

**THIS KIT IS FOR THE FOLLOWING APPLICATION:**

**VARIOUS JEEP AND G.M. MODELS**

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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(47-1490 shown)

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

- Socket and Wrench Set
- Allen Key Sets SAE & Metric
- 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
- Tags (these are needed to label hoses etc.)
- Thread sealer for manifold and base adapter bolts and studs
- Electrical Tape

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 THREAD SEALERS ON HARDWARE INSIDE AIR CLEANER AND INTAKE MANIFOLD STUDS.
- IF REWIRING IS NEEDED ALWAYS USE INSULATED CONNECTORS.
- 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.
- Remove the battery's negative cable.
- Take off the original air cleaner assembly. It will be reused on the 47-1490.
- Remove the fuel supply hose that is attached to the carburetor. Label it and temporarily plug it to prevent fuel leaks. Use two wrenches to remove and be careful not to damage the fuel fitting.
- Remove and label the vacuum and vent hoses from the carburetor. They are as follows:

1. Fuel Bowl Vent	3/8"	Front of Carburetor (Top)
2. PCV	3/8"	Rear of Carburetor (47-1490 Only)
3. Remove Choke Pull Off	5/32"	Rear of Carburetor
4. Vacuum Hose	5/32"	Rear of Carburetor (Base)
5. Vacuum Hose	1/4"	Front of Carburetor
6. Vacuum Hose	1/4"	Rear of Carburetor (Base)

- Disconnect the throttle linkage from the cable(s). Save all clips and springs. They will be reused.
- Disconnect all electrical connections from the carburetor. Label and identify the wire for the electric choke. This wire will be reused. The TPS, solenoids and other connectors will not be used with the EMPI conversion.
- Make sure you do not have any wires in contact with any grounds. Tape off any exposed wires or connectors with electrical tape.
- 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 any excess gasket material from intake manifold. You can use a gasket scraper, wire brush and carburetor cleaner.
- On the intake manifold locate the 1/4" vacuum hose fitting to the rear of the carburetor base flange. Remove the hose from the fitting. Locate the 1/4" plastic tee from the hardware bag. Install one of the 1 1/4" hoses on the manifold fitting. Take the plastic tee and install one of the double branch fittings on this line. One branch of the tee will point towards the left fender and the other branch vertical. Install the other 1 1/4" hose on the vertical branch of the tee, on the branch that faces the left fender install hose #6 (this is the 1/4" hose that was removed from the rear of the carburetor base. Locate the 1/4" x 5/32" x 1/4" plastic tee).
- Install the tee fitting to the 1 1/4" hose to the tee so the 5/32" leg faces the left fender. Install the 1/4" hose that you removed from the manifold fitting and install it on the vertical branch of the tee fitting. Install the 5/32" hose (vacuum hose #4 removed from rear of carburetor base) to the 5/32" branch.
- Take the vacuum hose that was attached to the choke pull off (hose #3) and plug with the vacuum cap supplied.
- Locate the small 3/8" hose. Remove the PCV hose (hose #2) from plastic Y fitting. Replace this hose with the 3/8" hose supplied. (47-1490 only).

## EMPI CARBURETOR INSTALLATION

- Locate the 5/16" fuel line supplied. Cut into two pieces and install the fuel filter between clamp off with the clamps supplied.
- Locate and remove the float bowl vent line (hose #1). Replace with the 3/8" hose supplied.
- Remove the rags in the intake and install the base gasket on the intake manifold.
- Install the EMPI carburetor on the four mounting studs. Using a criss-cross pattern tighten evenly. The linkage will face the right side fender. Do not overtighten.
- Locate the original fuel bowl vent hose and attach it to the fitting on the EMPI carb. (See photos on page 4).
- Locate the vacuum advance hose (hose #5) and connect it to the vacuum advance port on the carburetor. (See photos on page 4).
- 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. Use the supplied extension wire if needed.
- Connect all throttle cables and springs to the throttle linkage using the original hardware.
- Locate the 5/16" fuel line and connect it to the fuel inlet and clamp it off with clamp supplied. Route hose on the outside of the oil fill pipe.
- Please make sure all hose clamps are tightened and all of the electrical connectors are connected and insulated.
- Reinstall gas cap.
- Reconnect the battery's negative cable.
- Crank engine without starting and check for fuel leaks. Do not go any further without inspecting and fixing.
- Place original air cleaner assembly on EMPI carburetor. (47-1490 only).
- 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. (47-1491 only).
- Attach the breather hose from the valve cover to the air cleaner. (47-1491 only).
- Put the air filter element on the air filter base and attach the air cleaner top with the clips provided. (47-1491 only).

## CARBURETOR ADJUSTMENTS (Refer to photos for identification of components)

- If necessary, make the following adjustments:
- 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 68°F) 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:**

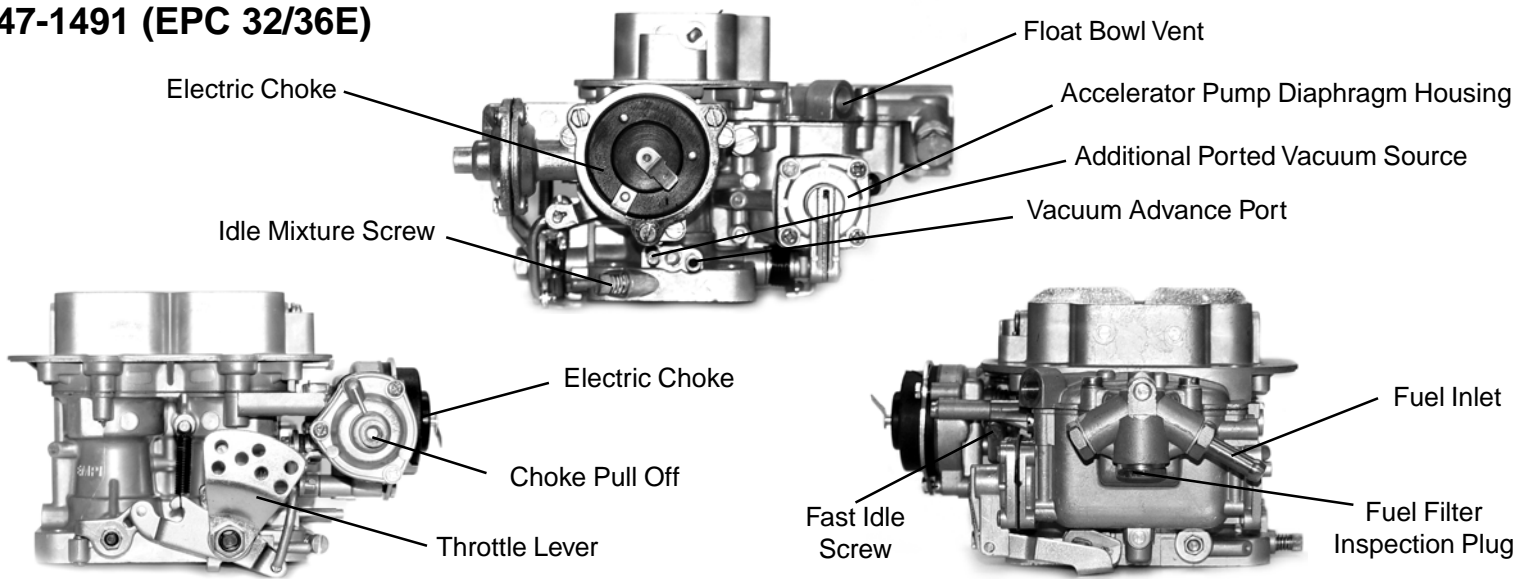
- Make sure that you have no vacuum leaks. You should check all engine vacuum line connections and at the carburetor base (including the adapter plates).
- Check the idle mixture adjustment.
- Please remember that any additional engine modification may require that the carburetor be recalibrated.

## **Throttle Lever Installation**

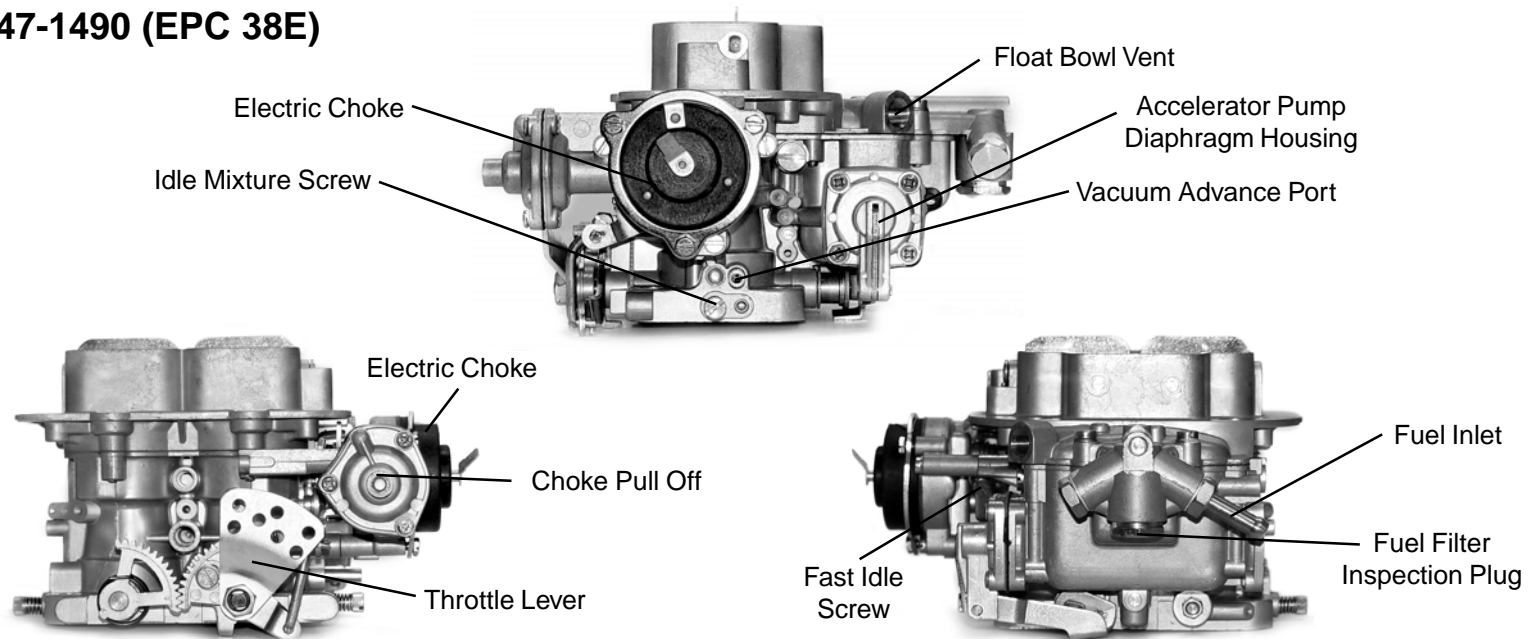
1. Connect the throttle cable to the lever. NOTE: check throttle operation for free movement. If there is any indication of sticking or binding, correct as necessary BEFORE proceeding.



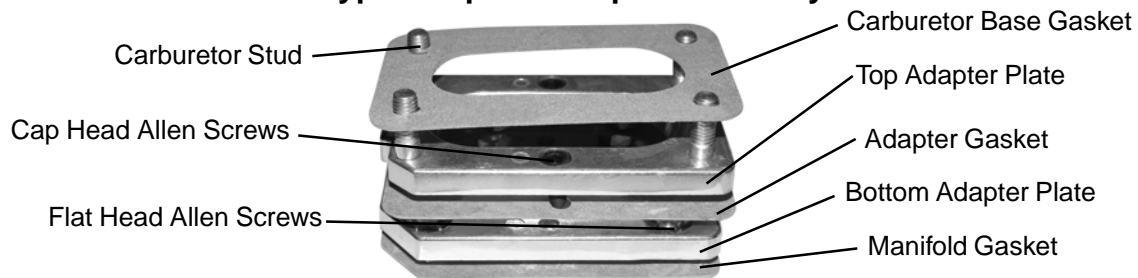
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### Typical 2 piece adapter assembly



### Carburetor top with choke plates open

