



## PERFORMANCE CARBURETOR INSTALLATION AND ADJUSTMENT INSTRUCTIONS

**Read instructions thoroughly before, during, and after installation.**

**NOTE: This carburetor is for use on Motor Vehicle Applications Only!**

**Universal Double Pumper (600, 650, 700, 750, and 800 CFM)**

Holley Performance Products cannot and will not be responsible for any alleged or actual engine or other damage, or other conditions resulting from misapplication of the products described herein. However, it is our intent to provide the best possible products for our customer; products that perform properly and satisfy your expectations. Should you need information or parts assistance, please contact our Technical Service Department at 1-270-781-9741, Monday through Friday, 7 a.m. to 5 p.m. CST. Please have the part number of the product you purchased on hand when you call.

This carburetor has been specifically calibrated for peak performance at the racetrack. NOTE: This carburetor is not a street oriented calibration and does not have the capability of meeting Federal or California exhaust emissions standards. In addition, this calibration will provide less than optimum driveability and fuel economy if it misapplied and used on late model street engines, which operate at high temperatures.

Many people mistakenly believe that they will realize performance and economy gains by using a "non-emissions" carburetor on an emissions oriented engine. This is simply untrue. The requirements for reduced exhaust emissions on all late model vehicles have stimulated increased carburetor development. Research and development efforts have resulted in carburetors, which feature the same "full power" fuel calibration as carburetors of the muscle car era and yet deliver improvements in fuel economy and reduction of exhaust emissions levels. Late model "emissions" carburetors do not contain "secret emissions controls". They simply provide the various timing mechanisms, which can trigger other emissions control devices. Regardless of the condition of your emissions control systems, best fuel economy gains will probably be realized by using the Holley Emissions Design/Street Performance carburetor recommended for your vehicle.

**WARNING: If you are using this carburetor with a GM overdrive transmission TH700R4 or a TH200R4, you must use a transmission kickdown cable bracket (Holley® P/N 20-95) and stud and kickdown throttle bracket (Holley® P/N 20-121). Otherwise, SEVERE transmission damage WILL result. This carburetor is not designed to work with ANY other automatic overdrive transmissions.**

**NOTE:** Due to the absence of a transmission kickdown lever, this carburetor should not be used on Ford applications equipped with an automatic transmission.

### INSTALLATION INSTRUCTIONS

Since this carburetor is intended for racing applications, and since such applications often differ greatly, these instructions are very generalized. It is assumed that the person making the carburetor installation has basic automotive skills and experience.

This carburetor is not a "direct, bolt-on" (i.e. custom linkage pieces may be required on "off-road" engine packages).

1. Remove the air cleaner.
2. Disconnect the throttle linkage and throttle return spring.
3. Disconnect the vacuum advance hose (to distributor), PCV hose, and fuel line.
4. Remove the carburetor from the intake manifold.
5. Remove the existing carburetor flange gasket on the intake manifold. Use a gasket scraper to assure that no small particles of the old gasket remain. Make sure that no pieces of the old gasket material fall into the manifold. NOTE: Cover the manifold opening while cleaning the carburetor flange.
6. If a different manifold is to be installed, the following should be considered:
  - A. Run a cleanup tap into each manifold bolt hole in the cylinder heads. This will remove any foreign deposits and enable even torquing of the manifold bolts. Chances of manifold vacuum leaks resulting from manifold warpage will be minimized by this extra attention.
  - B. Coat each side of the intake manifold gaskets with a good silicone based sealant.
  - C. If cylinder heads are being milled to increase compression, remember to mill the manifold head surface to assure proper port matching and sealing.

7. Install the throttle ball in the appropriate position on the throttle lever (Fig. 1). Some Chrysler applications may require a Chrysler throttle lever extension (Holley P/N 20-7) and Chrysler throttle linkage stud (20-67). These are installed in Fig. 2.
8. If the vehicle requires other linkage hardware, such as automatic kickdown linkage stud, remove the stud from the original carburetor and install it in the appropriate place on the throttle lever.
9. Install the carburetor flange gasket on the intake manifold.

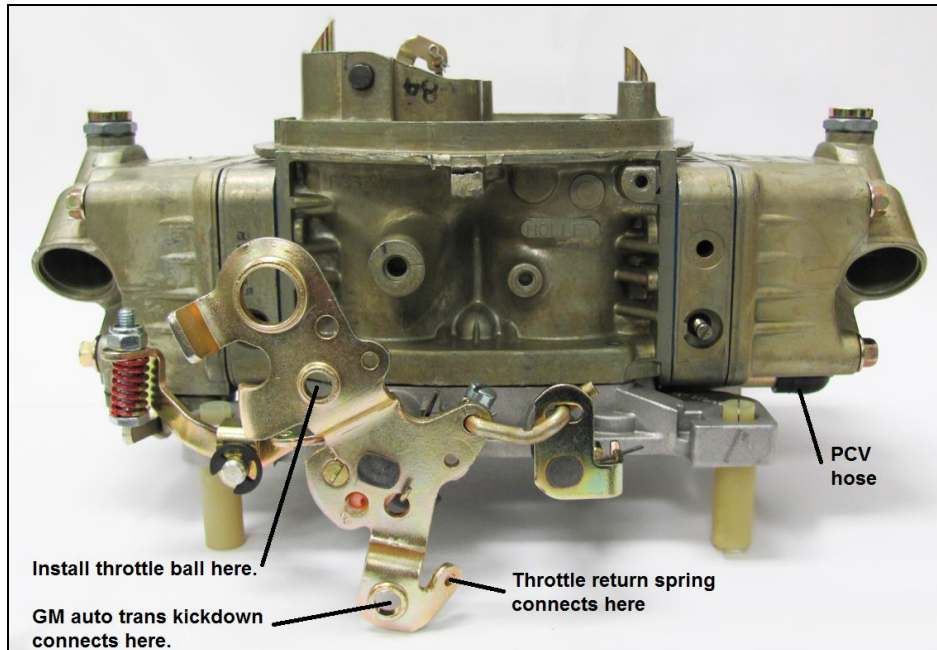


Figure 1

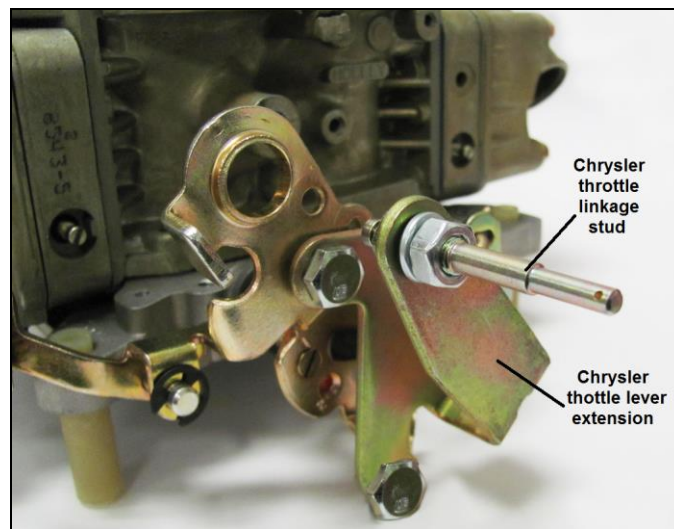


Figure 2

10. Place the carburetor on the manifold. Open the throttle and check to assure that the throttle plates do not interfere in any way with the manifold. A lip resulting from manifold bores, which are smaller than the carburetor bores will disturb cylinder-to-cylinder distribution, restrict airflow, and result in compromised performance. If necessary, have the manifold bores machined to the same diameter as the carburetor throttle bores.
11. Install the carburetor holddown nuts and snug nuts progressively in a "criss-cross pattern" (Fig. 3). Tighten each nut twice. **WARNING:** Over-tightening may result in warped or cracked throttle bodies and/or binding throttle action resulting in an unstable return-to-idle.
12. Reconnect the throttle and transmission kickdown linkage or throttle return spring. Operate the linkage from inside the vehicle or have someone check to assure complete opening of the carburetor throttle plates.

**WARNING:** Check the assembled linkage for sticking and/or binding throttle action. Any sticking, binding, or other interference in the throttle linkage could result in uncontrolled engine speed.

**NOTE:** If this carburetor is being installed along with an intake manifold on a vehicle, which was originally equipped with a 2BBL induction system, it will probably be necessary to purchase a throttle cable mounting bracket. This should come from a 4BBL engine of the same engine family in order to provide proper mounting and operation of the throttle cable and other linkage.

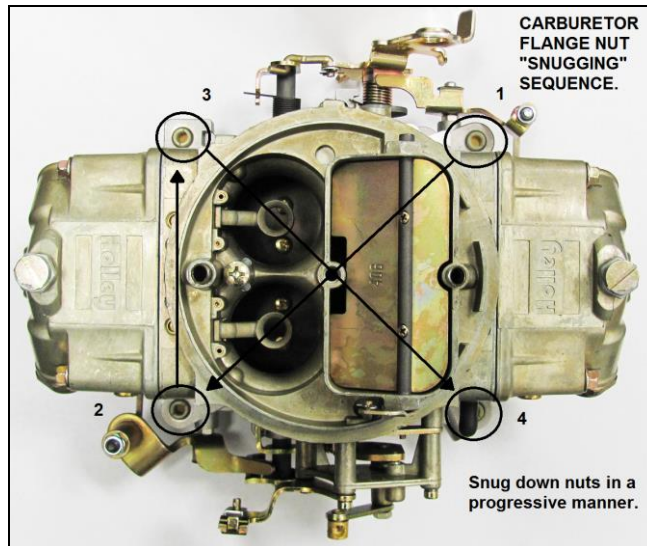


Figure 3

13. Reconnect the appropriate vacuum hoses noting the correct fitting from Figures 1, 3, and 4.
  - A. Plug any vacuum source not used.
  - B. The "timed spark" fitting does not provide vacuum for distributor advance at idle. Vacuum for advance is available as soon as the throttle is opened from idle and the engine is placed under a load, such as acceleration or cruise. If in doubt as to the operation of this vacuum source, connect a vacuum gauge to the fitting and drive the vehicle noting the various vacuum readings.

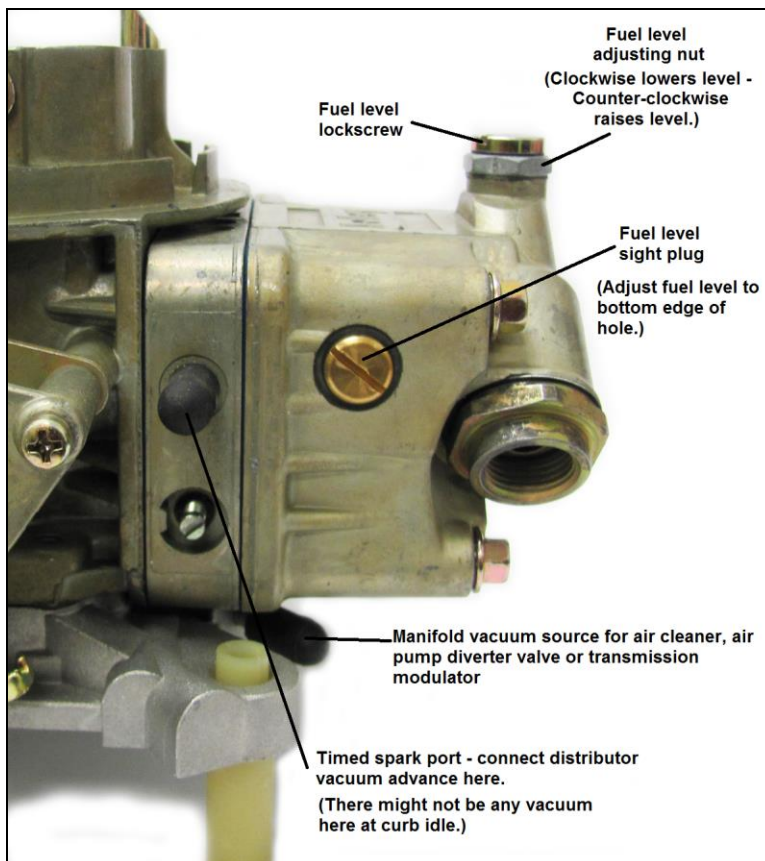


Figure 4

14. The fuel line will have to be cut and connected to the carburetor using a "dual-feed" fuel line, such as Holley P/N 34-150. See Figure 5. When cutting the fuel line, use a tube cutter to provide a clean cut.

**WARNING:** In all cases where the fuel line has been cut, it is essential that it be clean to insure that no metal particles enter the fuel bowl after the new carburetor installation. This is performed by disconnecting the fuel line at the pump and blowing the line clean with compressed air. Holley DOES NOT recommend the procedure where the coil wire is disconnected, the engine is cranked for a few revolutions, and the fuel is collected in a container. This procedure is unsafe, because sparking can occur either at the coil, or at the distributor end of the coil wire, and then ignite any fuel spilled in the engine compartment.

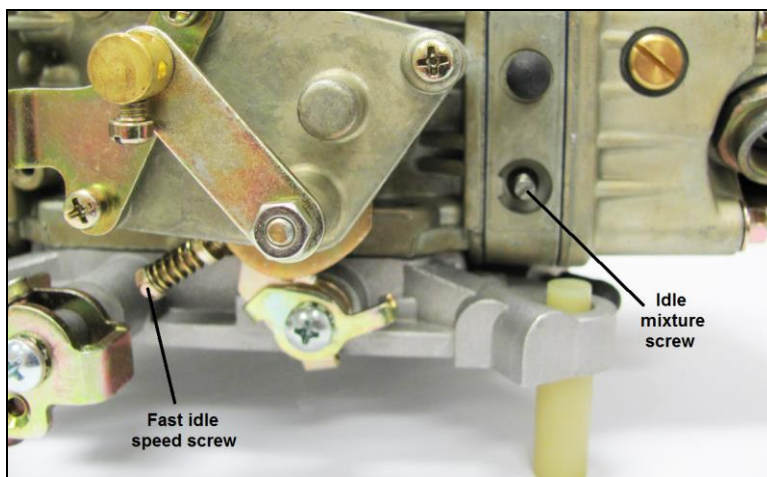
**NOTE:** It is essential that a quality inline fuel filter be installed between the fuel pump and the carburetor.



**Figure 5**

15. Install a suitable manual choke cable, such as Holley P/N 45-228 and choke mounting bracket P/N 45-229. Check to make sure that the choke fully opens with the cable.
16. Start the engine and check the fuel line and inlet fittings for possible leaks. At this time, recheck to assure all existing vacuum hoses are attached properly. Plug any fittings that are not used.
17. Adjust the idle using the idle mixture screws (clockwise adjustments lean the mixture, counterclockwise richens the mixture). As a starting point, set the needles 1 1/2 turns out from the full lean position, and then adjust for best idle.
18. Install the air cleaner stud from unassembled parts. Place the air cleaner gasket on the carburetor air cleaner sealing flange. Install the air cleaner.

**WARNING:** Inadequate clearance between the air cleaner and the throttle lever could result in uncontrolled engine speed. Check the clearance between the choke, manual choke lever, and the air cleaner for proper operation.



**Figure 6**

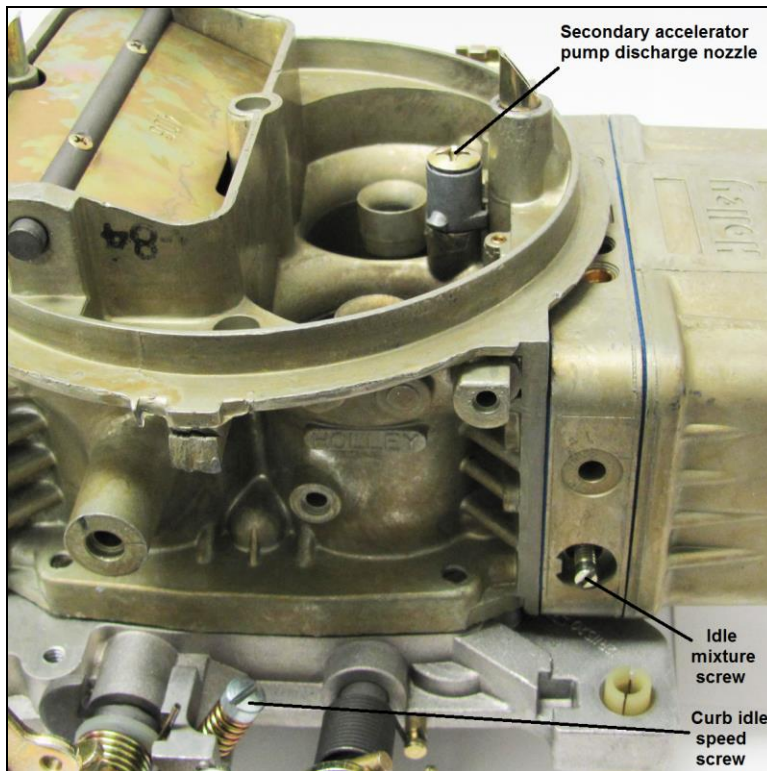


Figure 7

## GENERAL INFORMATION:

- A. **FUEL PRESSURE:** This carburetor has been designed to work best at fuel pressures between 5 and 7 psi. Holley recommends 7 psi at idle, and a minimum 4 psi at engine redline. Three 8" fuel lines can result in adequate (indicated) fuel pressures, but restricted fuel flow. Use of a Holley electric fuel pump at the rear of the vehicle next to the fuel tank assures adequate fuel pressure under even the most severe operating conditions.
- B. **ADJUSTMENTS:**
1. **Fuel Level:** On level ground with the engine running, remove the primary and secondary fuel level sight plugs. Loosen the lock screw and turn the adjusting nut clockwise to lower the fuel level and counterclockwise to raise the level. Fuel level will be properly adjusted when the fuel begins to trickle out of the sight hole. Tighten the lockscrew and replace the fuel level sight plugs. See Figure 4.
  2. **Accelerator Pumps:** The "trick" to extracting peak performance from a "double pumper" is to get the pump shot delivered at the exact rate that is required by the engine. This rate is affected by the pump discharge nozzle size and the pump cam profiles. This carburetor has been calibrated for the most "typical" applications. Added performance can be obtained through "on the vehicle" testing. Necessary parts and tuning instructions are available in Holley TRICK kit P/N 37-933. In all cases, it is necessary that the slightest movement of the throttle lever results in movement of the pump operating lever. This is adjusted by compressing or relaxing the pump override spring as shown in Figure 8.
  3. **Choke:** If the fast idle speed provided during the choke operation needs adjustment, turn the engine off. Close the choke exposing the fast idle adjusting screw. Use a small open end wrench for ease of adjustment. See Figure 6.

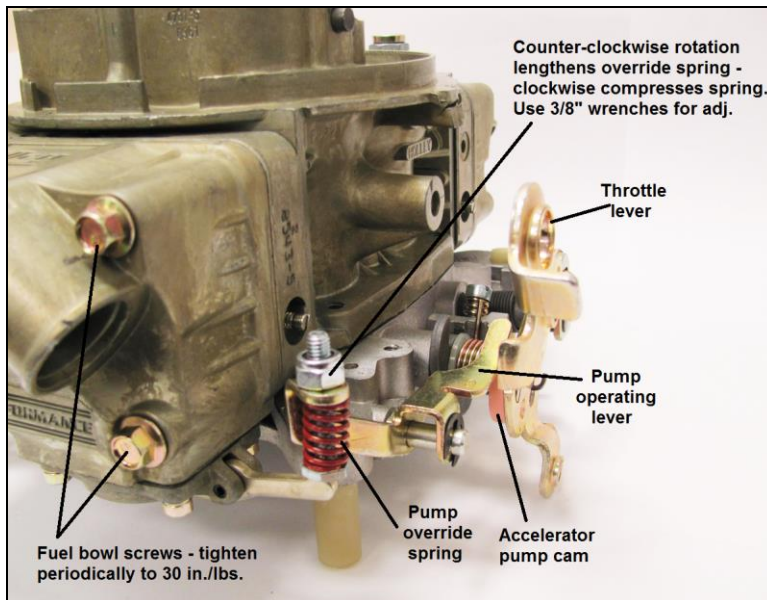


Figure 8

C. MAINTENANCE:

**WARNING:** Fuel systems components, which are required to operate under severe conditions, such as high underhood temperatures should be periodically inspected to assure no fuel leakage and the soundness of hoses. High temperatures promote faster aging of non-metallic materials.

Hoses that exhibit surface cracks when bent 180°, should be replaced. The presence of liquid fuel demands retightening of loose fittings, hose replacement (when needed), and a retorquing of fuel system component flange nuts (where applicable). Tightening of the carburetor fuel bowl screws should provide 25-30 in/lbs of torque in a clockwise direction. Periodically recheck bowl screw torque to assure proper fuel metering. Inadequate bowl screw torque is often characterized by a condition similar to a defective power valve (i.e., black smoke from the exhaust at idle and cruise).

- D. AIR CLEANER CONFIGURATION: Unrestricted air cleaners featuring paper elements of the largest possible diameter and height are recommended for peak performance. It is mandatory that there is a 3/4" minimum clearance between the top of the carburetor vent tubes and the inside of the air cleaner. Any clearance less than this can result in improper fuel metering and unsatisfactory performance.
- E. JETTING: Out of the box jetting will be extremely close for most single four-barrel applications. Large plenum manifolds will require larger jetting (3 to 4 numbers larger). Tunnel ram manifolds (dual-quad applications) might require jets as much as five sizes larger than stock. When in doubt, jet larger to start. It is cheaper to foul a set of spark plugs than to burn a piston.

**GENERAL:** Besides your replacement carburetor, the correct engine timing, spark plug gap, and heat range, sound primary and secondary wiring, correct valve lifter adjustment, operational PCV, EGR, and heat riser systems are all important in order to obtain optimum efficiency and performance from your engine.

No automotive system can perform to its maximum potential without proper maintenance and adjustment of all its components.

For additional information, consult HOLLEY CARBURETORS and MANIFOLDS (M.P. Books, Holley P/N 36-73).

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