



# **CARBURETOR**

**P/N 0-80787-1 & 0-80583-1**

## **INSTALLATION, TUNING, AND ADJUSTMENT MANUAL**

**199R10169-2**

**NOTE:** These instructions must be read and fully understood before beginning installation. If this manual is not fully understood, installation should not be attempted. Failure to follow these instructions, including the pictures may result in subsequent system failure.

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## INTRODUCTION:

**CONGRATULATIONS** on your purchase of a Holley carburetor! We feel that you have purchased the finest performance carburetor manufactured today. 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.

In Holley's quest for maximum performance and tuneability, this carburetor (0-80787-1) has been updated with a new metering block with changeable emulsion bleeds. This allows you to tune your fuel curve to match your engine's performance.

**NOTE:** The 0-80787-1 and 0-80583-1 are designed as universal-type, 2-barrel racing carburetors.

**To preserve the warranty, these instructions must be read and followed thoroughly before and during installation.**

**NOTE:** These carburetors are not designed to meet any emission requirements for 1968 and later applications. Therefore, they should be used only for competition/off road vehicles or vehicles that are not required to comply with late model exhaust emission standards.

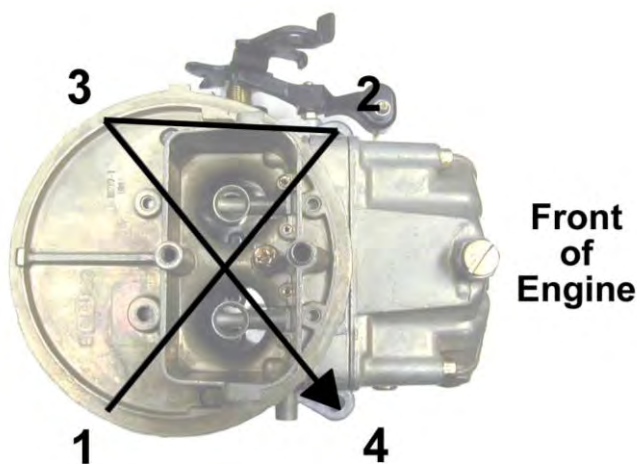
## REMOVAL:

1. Remove the air cleaner.
2. Carefully disconnect the fuel line.
3. Remove the carburetor.

**WARNING:** Carefully protect the open end of the fuel lines, so that no foreign particles can enter. Wrap the end of the fuel line with a clean lint-free cloth.

## INSTALLATION:

1. Install the carburetor-mounting studs (not provided) in the proper location on the intake manifold carburetor flange.
2. Place the new carburetor flange gasket, provided with the carburetor, in the proper position on the intake manifold.
3. Place the carburetor on top of the flange gasket on the manifold. Install the hold down nuts and snug down progressively in a "crisscross" pattern (60-80 in./lbs.), as shown in Figure 1.



**Figure 1—Carburetor torque sequence (all Holley carburetors)**

**WARNING:** Overtightening may result in a warped or cracked carburetor throttle body.

4. Before connecting the linkage, operate the throttle lever to assure the correct travel (no sticking or binding), by opening to wide-open throttle and back to closed throttle several times. Correct any sticking or binding conditions before proceeding.

**WARNING:** Any sticking, binding, or other interference in the throttle linkage could result in uncontrolled engine speed. This could result in engine damage or personal injury.

**NOTE:** With the engine turned off, have an assistant slowly press the accelerator pedal to the floor, while you watch the throttle for any sticking or binding. Correct any sticking or binding conditions before proceeding. Also ensure that you are reaching full throttle. Many performance problems are traced to partial throttle openings from improperly adjusted linkage.

**WARNING:** During the fuel line installation, DO NOT allow any foreign particles to enter the fuel lines, which could then cause flooding and may result in a fire.

If the installation requires cutting the metal fuel line, cut the fuel line with a good tube cutter. This will minimize the chance of producing metal chip particles. If a hacksaw must be used, then the metal chips must be removed.

**WARNING:** In all cases where the fuel line has been cut, it is essential that it be clean to ensure that no metal particles enter the fuel bowl after the new carburetor installation. Remove the fuel line at the pump and blow the line clean with compressed air. DO NOT use the procedure where the coil wire is disconnected, the engine cranked for a few revolutions, and the fuel 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 ignite any fuel spilled in the engine compartment.

**CAUTION:** The use of a quality in line fuel filter, such as Holley P/N 162-523 is mandatory as a safeguard against possible flooding, which could result from unfiltered particles becoming lodged between the fuel inlet needle and its seat. This can result in a fire, if a spark is present or a backfire occurs in the engine compartment. Air cleaner filter elements should be blown clean with compressed air at 6,000 miles and replaced at 12,000 miles to assure maximum protection. Now would be the perfect time to upgrade to a Holley Powershot air filter (Holley P/N 120-146).

5. Start the engine and check the fuel lines and inlet fitting for possible leaks.

**NOTE:** The recommended fuel pressure is 5-7 psi. Fuel pressure should never be higher than 9 psi.

6. With the engine at operating temperature, set the idle speed to the manufacturer's specifications (see page 5 for idle adjustment).

7. Place the air cleaner gasket (supplied) on the sealing flange, and install the air cleaner.

8. With some air cleaner configurations, it may be necessary to use an air cleaner spacer to provide adequate clearance between the carburetor and the air cleaner. Holley offers such a spacer (Holley P/N 17-13). Depending on the overall height, obtain the proper length 1/4 x 20 stud and install in the carburetor airhorn. Close the hood slowly to ensure adequate clearance between the air cleaner stud and the hood.

**WARNING:** Inadequate clearance between the air cleaner and the throttle lever could result in the throttle sticking and uncontrolled engine speed. Check the clearance between the throttle lever and air cleaner for proper operation. Check the clearance between the air cleaner and the hood before closing the hood completely.

**MAINTENANCE WARNING:** Fuel system components, including fuel lines and the carburetor, should be inspected periodically to assure no fuel leakage and to ensure the soundness of the hoses. High temperatures promote faster aging of non-metallic materials.

The presence of liquid fuel demands tightening of fittings, hose replacement, and retorquing of the fuel system component flange nuts. Periodically check the torque on the fuel bowl screws to 35-40 in./lbs. to assure proper fuel metering.

**GENERAL:** Some very important factors to optimize efficiency and performance include: Correct engine timing, correct spark plug gap and heat range, and ignition components in good working order.

## IDLE MIXTURE NEEDLES:

Idle mixture needles control the air/fuel mixture at idle. These have been preset at the factory and should not need any adjustments. However, if you feel that adjustment is necessary, you can use the following procedure to do so. When tuning the idle mixture, you're actually tuning for the best manifold vacuum. Idle mixture needles are found on the primary metering blocks. If you change one idle mixture needle, you must change the other idle mixture needle by the same amount. Here are the proper steps for setting the idle mixture needles.

1. Adjust each idle mixture screw (Figures 3 & 4) 1/8 turn at a time, alternating between each screw. Turn them equally, until you achieve the highest possible vacuum reading without adjusting the curb idle speed screw. Turn screws in to lean the mixture. Turn them out to richen the mixture.



Figure 2

2. Now that the idle mixture is set, it may be necessary to go back and reset the idle speed using the curb idle speed screw, as shown in Figure 2.
3. If a vacuum gauge is not available, use a tachometer to obtain the highest RPM.

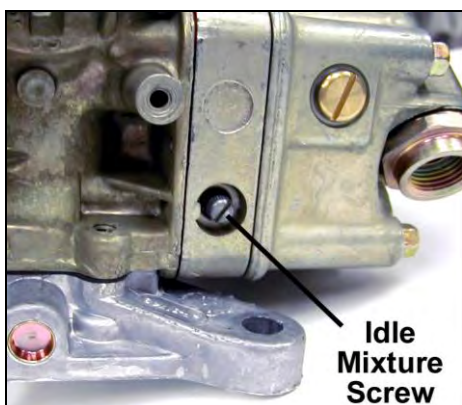


Figure 3



Figure 4

**ROUGH IDLE AND VACUUM LEAKS:** If a rough idle persists after the engine has been started and the mixture screws adjusted, check for manifold vacuum leaks. These could result from unplugged vacuum fittings or a carburetor flange gasket that was torn during installation. Recheck for proper attachment of all vacuum lines and check the lines for cracks. If the manifold was changed, a manifold vacuum leak could occur at the cylinder head/manifold surface due to damaged gaskets or improper torquing. Frequently, manifold vacuum leaks occur from the valley side of the manifold. These are very difficult to detect, unless a discernible whistle can be heard.

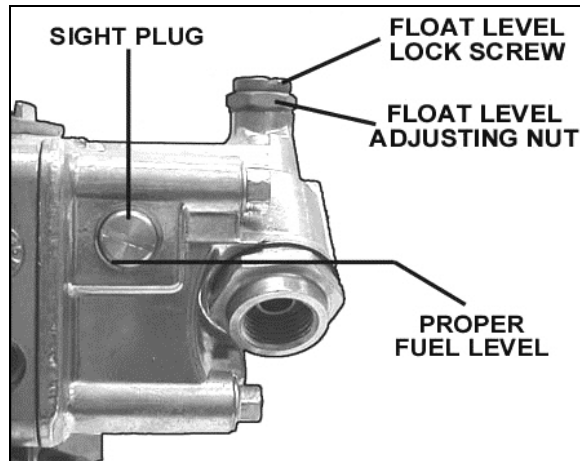
**NOTE:** In most cases, when rough idle occurs after a carburetor/manifold change, they result from manifold vacuum leaks similar to those described above. Assuring a proper manifold installation, rather than assuming the carburetor is not functioning properly, will ultimately save time.

## FLOAT LEVEL CHECK AND ADJUSTMENT:

Float adjustments are set at the factory, but variations in fuel pressure could cause a change in these settings. The following procedure shows how to make these adjustments:

1. Start the vehicle.
2. Remove the float level sight plug.
3. Observe the sight plug hole for the fuel level. If none is seen, the level is too low. Fuel should be even with the bottom of the sight plug hole. If fuel comes pouring out of the sight plug hole, the float is set too high.

**NOTE:** A properly set float level will have the fuel level located at the bottom edge of the sight plug hole, as shown by the line in Figure 5.

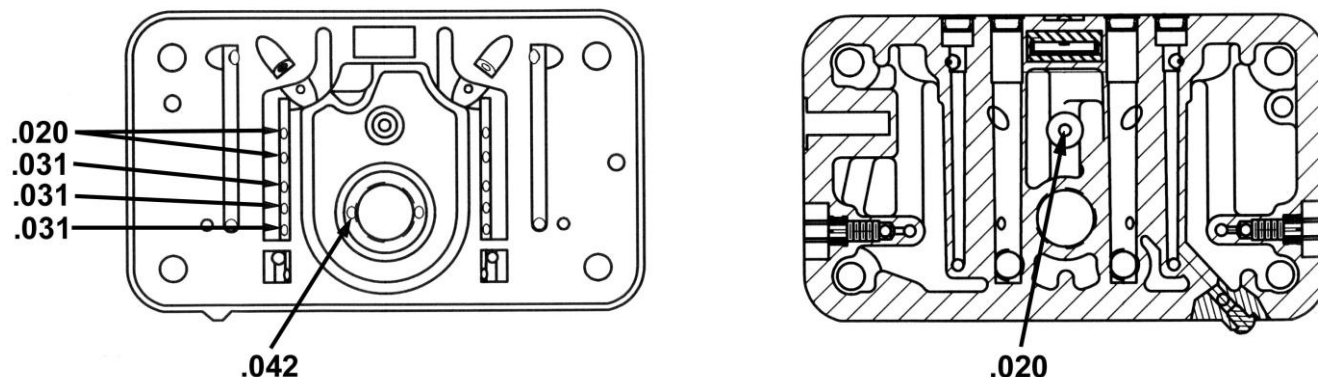


**Figure 5**

4. To adjust, shut down the engine.
5. Loosen the lock screw on top of the fuel bowl just enough to allow you to turn the adjusting nut. Hold the screw in position with the screwdriver.
6. Using a 5/8" wrench, turn the adjusting nut in the appropriate direction: Clockwise to lower the float and counterclockwise to raise the float.
7. Turn the adjusting nut in increments of 1/4 of a rotation.
8. Retighten the lock screw.
9. Restart the vehicle and observe the sight plug hole.
10. Repeat steps 1 through 9, as necessary.

## JETTING (EMULSION JETS): (For 0-80787-1 only)

Standard Holley jetting is as shown below:



Emulsion jets are available separately as P/Ns shown below or as a kit as P/N 36-322, which includes the following bleed sizes (10 each) in it: Blank, .020", .031", .040", .046", & .052". A replacement metering block is available under P/N 134-276.

| P/N    | HOLE SIZE | P/N    | HOLE SIZE | P/N    | HOLE SIZE |
|--------|-----------|--------|-----------|--------|-----------|
| 142-00 | .000"     | 142-33 | .033"     | 142-52 | .052"     |
| 142-20 | .020"     | 142-35 | .035"     | 142-55 | .055"     |
| 142-21 | .021"     | 142-36 | .036"     | 142-59 | .0595"    |
| 142-22 | .0225"    | 142-37 | .037"     | 142-62 | .0625"    |
| 142-24 | .024"     | 142-38 | .038"     | 142-64 | .0635"    |
| 142-25 | .025"     | 142-39 | .039"     | 142-67 | .067"     |
| 142-26 | .026"     | 142-40 | .040"     | 142-70 | .070"     |
| 142-28 | .028"     | 142-41 | .041"     | 142-73 | .073"     |
| 142-29 | .0292"    | 142-42 | .042"     | 142-76 | .076"     |
| 142-31 | .031"     | 142-43 | .043"     | 142-78 | .078"     |
| 142-32 | .032"     | 142-46 | .0465"    |        |           |

## JETTING (MAIN JETS):

Due to varied applications that a universal performance carburetor will work with, a few tips on jetting are provided to help you understand their purpose.

1. Out of the box jetting should be close for most applications.
2. Carburetors are calibrated at 70° at sea level. Decrease the jet size, one number for every 2000 ft. increase in altitude.
3. Holley jets are broached, flowed, and stamped according to flow rate. **NEVER** drill jets, as this seriously alters flow characteristics. Stamped numbers are reference numbers and **DO NOT** indicate drill size.
4. Spark plugs provide the best indication of proper jetting. Consult an ignition manual for proper reading of spark plugs.

## POWER VALVES:

The number stamped on a power valve, such as 65, indicates the manifold vacuum below which the power valve is operational. In this case, all manifold vacuums below 6.5" Hg, the power valve is operating. Generally a 65 power valve is sufficient for most high performance applications that have a manifold vacuum of 12" Hg or higher. However, some problems can result with radically-cammed machines equipped with automatic transmissions. These vehicles often "idle" at 2000 rpm, approx. 6.0" Hg. At this point the main nozzles are starting to feed and richen the mixture (supplied by the power valve) and the engine will probably "load up". To correct this problem, install a 45 or 35 power valve. If the engine has a manifold vacuum of 12" Hg or less, a good way to determine power valve size is take the manifold vacuum at idle and divide that number by two. The answer is the power valve size. This will provide idling and proper fuel flow under wide-open throttle conditions when manifold vacuums seldom rise above 1" Hg.

**CARBURETOR SPECIFICATIONS:**

| <b>CARBURETOR<br/>#</b> | <b>PRIMARY<br/>METERING JET</b> | <b>PUMP DISCHARGE<br/>NOZZLE</b> | <b>POWER<br/>VALVE</b> |
|-------------------------|---------------------------------|----------------------------------|------------------------|
| 0-80787-1               | 77                              | 0.021                            | 45                     |
| 0-80583-1               | 73                              | 0.028                            | 35                     |

**Holley Performance Products, Inc.  
1801 Russellville Road  
Bowling Green, KY 42101**

**Technical Service: 1-270-781-9741**

**Fax: 1-270-781-9772**

**For online help, please refer to the Tech  
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