



INSTRUCTIONS

91731-85A

REV. 4-87

HIGH FLOW CARBURETOR AND AIR CLEANER

This kit is designed for use on:

1971 and later FL, FLH, FLH-80, FLHC and FLHS.
1982 and Later FXR, FXRS and FXRT.
1972 and later XL, XLH, XLCR, XLCH, XLS, XLX and XLHA.
1980 and later FLT, FLHT, FLTC and FLHTC.
1971 and later FX, FXE, FXS, FXEF, FXS-80, FXEF-80,
FXB, FXWG, FXE-80, FXSB, FXDG and FXST vehicles.

NOTE

A high flow intake manifold part no. 29033-86 is available from your local Harley-Davidson dealer and is recommended for use on 1340cc Evolution engines with this carburetor kit.

For shovelheads, a Highflow Manifold, part no. 29044-87 is available. This manifold is designed for use with this carburetor and air cleaner kit on 1981 and later shovelhead equipped vehicles.

This kit contains the following parts:

QTY.	DESCRIPTION
1	Screw, cover
1	Carburetor
1	Adapter, manifold and clamp
1	Element, air cleaner & clamp
1	Cover
2	Bolt, hex head
2	Washer, flat
2	Nut, self locking
1	Fitting
1	Main jet, 140
1	Main jet, 150

CAUTION

Do not use fuel with alcohol additive. Alcohol will cause the rubber mounting flange to deteriorate.

NOTE

Federal and/or state emission laws may restrict the use of the high flow carburetor and air cleaner for street use. Use of this part in an on-road application may be illegal on late 1978 and later vehicles and could adversely affect limited warranty coverage.

Removal (Refer to Service Manual)

1. Remove air cleaner and air cleaner backing plate.

WARNING

Gasoline is extremely flammable and highly explosive under certain conditions. Do not smoke or allow open flame or sparks anywhere in the area when refueling or servicing the fuel system.

2. Turn fuel valve to off position. Disconnect the fuel line at carburetor and drain into container. Disconnect V.O.E.S. hose (if so equipped) throttle cables and choke cable at carburetor. Remove carburetor.
3. See Figure (3). Remove intake Y-manifold (10).

Rework Y-Manifold

NOTE

If the high flow intake manifold, part no. 29033-86 or 29044-87 is being used, disregard the following steps and go to the last step in this section.

Because the high flow carburetor has a larger diameter Venturi the intake manifold will require some rework to accommodate the increased air/fuel flow from the carburetor.

1. See Figure 3. Place the manifold adapter (3) on top of the intake manifold (10) with the two mounting flanges facing each other. Center the large center holes then trace a line around the inside diameter of manifold adapter as shown in Figure 1.
2. See Figure 1. With the manifold adapter still centered, mark on the intake manifold the area where the adapter flange mounting holes extend beyond the intake manifold mounting holes.
3. With a file elongate the intake manifold mounting holes as marked on the flange surface.

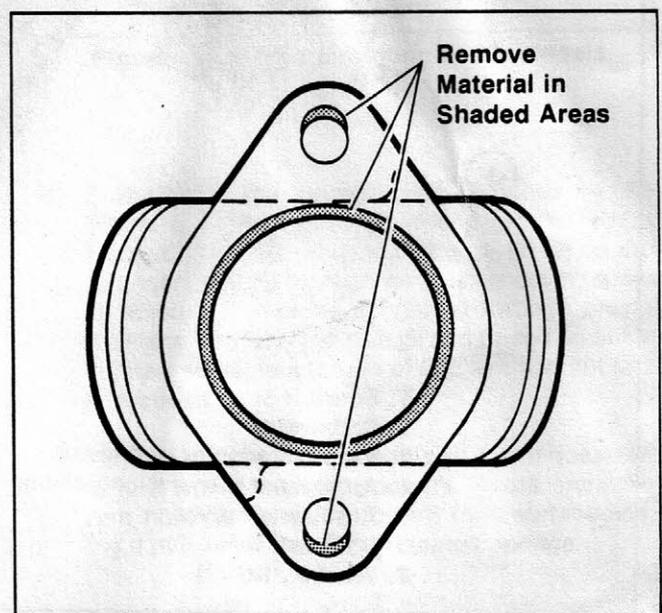


Figure 1. Manifold Rework

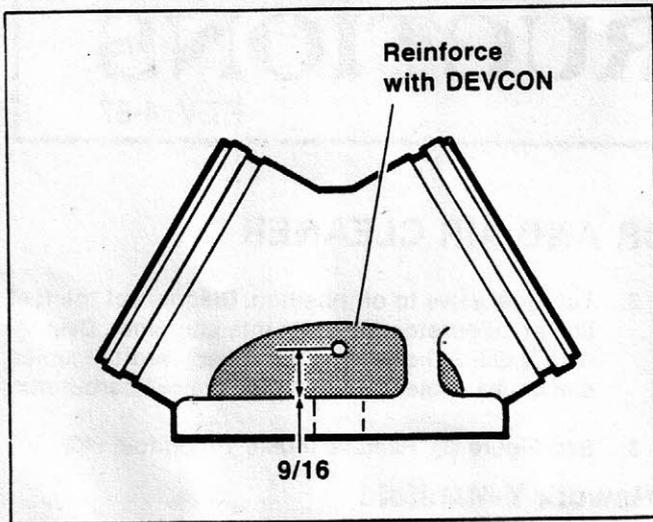


Figure 2. V.O.E.S. Fitting Location

4. Using a hand grinder enlarge the bore, through the mounting flange; to the diameter marked on the flange surface. Be sure to contour the enlarged bore to join smoothly with the existing surfaces. There must be a smooth transition with no sharp corners or rough surfaces throughout the manifold interior.

If extensive porting is done and substantial material is removed, refer to Step 5.

5. See Figure 2. Using DEVCON, aluminum pigmented epoxy filler, or equivalent, build up the wall thickness in the area shown to approximately 3/32 in. to compensate for the material removed when enlarging the bore. After the material has hardened, file or sand smooth.

6. See Figure 2. If your engine has electronic ignition with a vacuum operated electric switch, (V.O.E.S.) drill and tap a hole for a 1/4-28 UNF thread approximately 9/16 in. from the mounting flange at top of manifold.

7. See Figure 3. Apply Loctite Pipe Sealant with Teflon to threads and thread fitting (9) into the tapped hole in the intake manifold (10).

8. If the high flow intake manifold is being used on an electronic ignition equipped engine with a vacuum operated electric switch (V.O.E.S.) drill through bottom of tapped hole in top of manifold with a 1/8 in. drill. Do not damage threads. Obtain fitting from carb kit and apply Loctite PIPE SEALANT WITH TEFLON to threads. Install fitting on manifold.

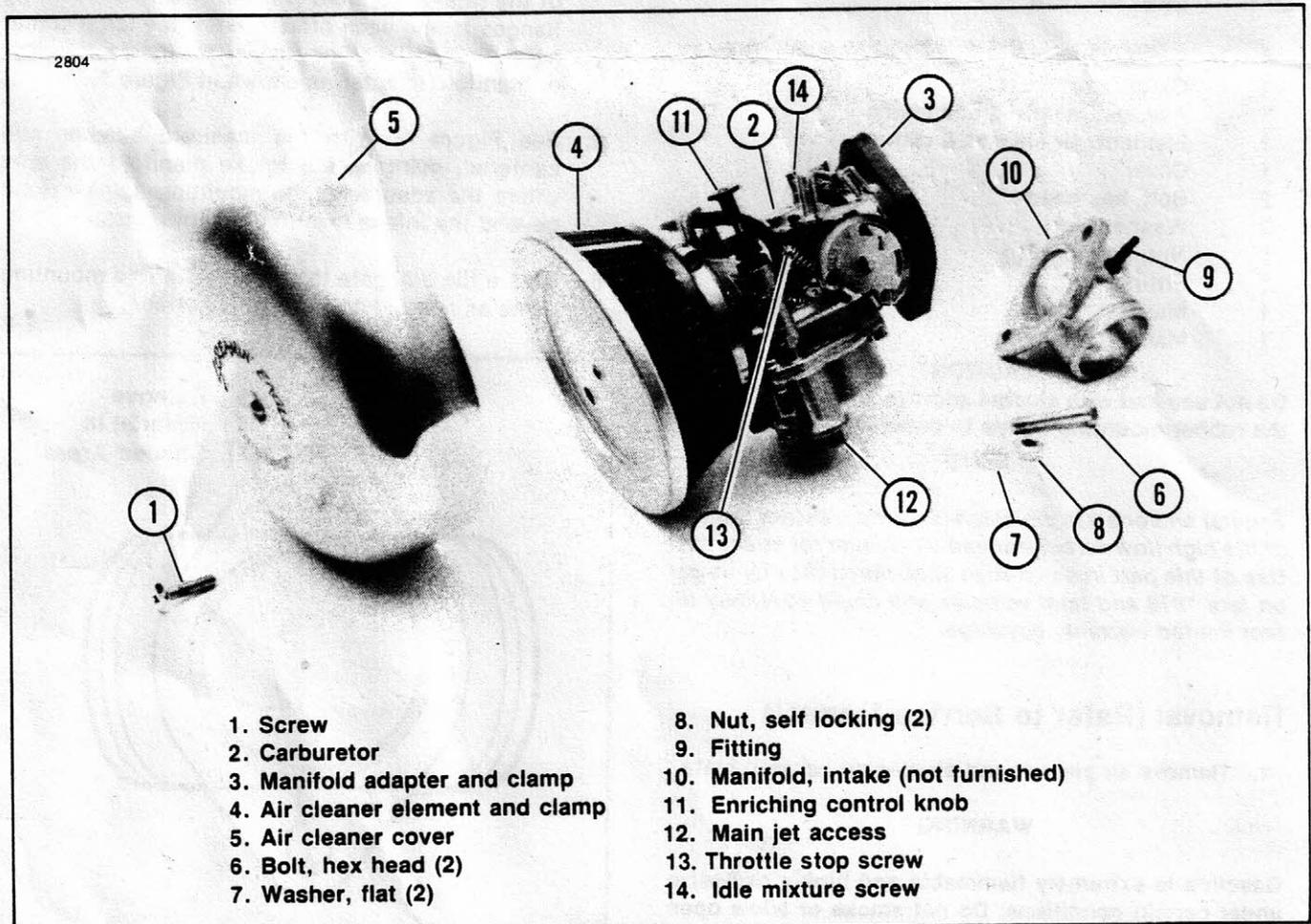


Figure 3. High Flow Carburetor and Air Cleaner Assembly

Installation

1. See Figure 3. Install the intake manifold (10) with fitting (9) for the V.O.E.S. hose connection at the top.
2. Install rubber manifold adapter (3) around carburetor throat ring groove. Be sure carburetor is fully seated in the adapter manifold. Tighten clamp securely without cutting rubber surface.
3. Attach the manifold adapter and carburetor assembly to manifold (10) using bolts (6), washers (7) and nuts (8). Tighten nuts (8) to 10-14 ft. lbs. torque.
4. Connect the fuel line, the V.O.E.S. hose (if used) and the carburetor cables. Adjust the carburetor cables as instructed in the appropriate SERVICE MANUAL.

NOTE

If vehicle is V.O.E.S. equipped and V.O.E.S. is not being used on the high flow carburetion kit expect deteriorated mid-range performance and reduced fuel economy.

NOTE

1980 and earlier vehicles equipped with single wire throttle should be converted to dual wire throttle upon installation of this kit.

CAUTION

Be sure throttle butterfly valve returns to full idle position (idle adjusting screw against stop) when handle grip is released.

5. The air cleaner element is pre-oiled and requires no service upon installation. For service internal and procedure, see SERVICING AIR CLEANER.

CAUTION

File sharp edge off of carburetor mouth to prevent damage to rubber piece on air filter element.

6. Install air cleaner element (4) on carburetor (2) and secure with clamp. Be sure the worm drive clamp is secure but not cutting into the rubber sleeve.
7. Attach the air cleaner cover (5) to air cleaner element (4) with screw (1). Be sure support bracket hole in cover is at bottom. Tighten screw (1) securely.

CAUTION

The air cleaner must have the factory authorized support bracket, properly installed, to prevent movement and subsequent leaks at the manifold/head joint. Full information for ordering the correct bracket to fit your particular motorcycle as well as installation instructions is given in this instruction.

8. There are two different air cleaner support brackets which are designed to fit different engines. The bracket for XL vehicles can be ordered by specifying H.D. Part No. 29053-85. The bracket for Shovelhead[®] and Evolution[™] engines can be ordered by specifying Part No. 29043-85. The brackets are installed as follows:

- A. XL Vehicles-See Figure 4. Remove nut (5) and bolt (4) at the tappet guide blocks. Place bracket (1) over stud (6) and align holes at adjacent tappet guide block. Thread nut (5) on stud (6). Insert bolt (4) through bracket (1), through tappet guide block mounting hole and thread into tapped hole in crankcase. Insert bolt (2) through air cleaner cover; and through bracket (1). Place washer (7) on bolt (2) and thread on nut (3). Tighten bolt (4), and nut (5) to a torque of 8-10 ft. lbs. Tighten nut (3) to a torque of 6 ft. lbs.

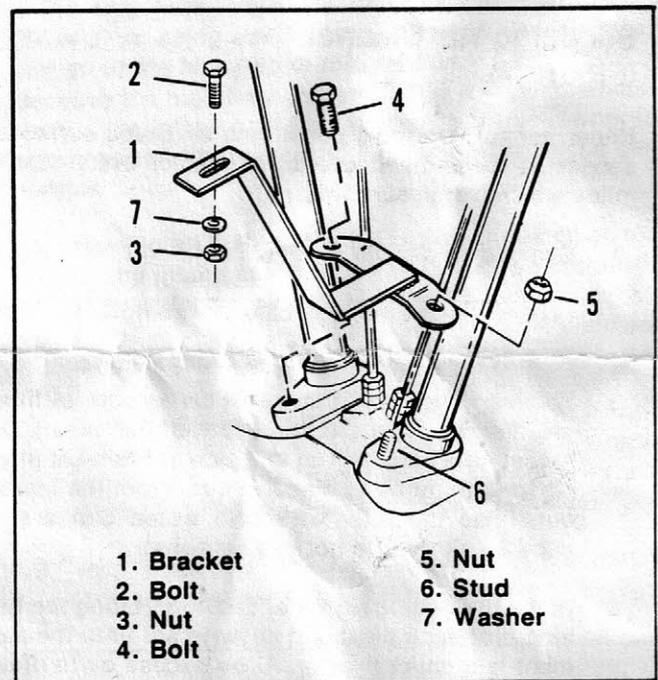


Figure 4. Bracket Mounting — XL Models

- B. Evolution[™] and Shovelhead[®] Engines — See Figure 5. Remove nut (2). Place slotted end of bracket (1) over stud (4) and thread nut (2) on stud (4). Insert bolt (5) through air cleaner cover, spacer (6) (Evolution engines only), and through bracket (1). Place washer (7) on bolt (5) and thread on nut (8). Tighten nut (8) to a torque of 6 ft. lbs. and nut (2) to a torque of 12-15 ft. lbs.
9. Remove or cut off choke cable so that it doesn't interfere with other components. Route crankcase vent hose safely down toward road surface keeping it away from moving or heated surface.

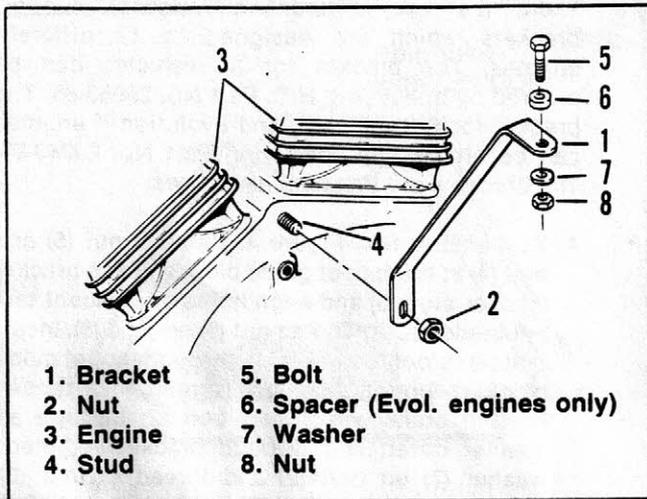


Figure 5. Bracket Mounting — Shovelhead & Evolution™

Servicing Air Cleaner (Figure 3)

Under normal operating conditions on paved surfaces, service is recommended once a year or every 15,000 miles whichever occurs first.

1. Remove air cleaner cover (5).
2. Loosen the clamp and carefully remove air filter element (4).
3. To clean filter, roll it in a shallow amount of filter cleaner/degreaser (3/4 the depth of one pleat). Do not let dirty solution run to inside of filter. Let filter sit for 5 minutes to dissolve dirt. From the inside out, rinse the filter with cold water. Shake and allow to air dry. Do not use air hose!
4. Re-oil filter using Air Filter Oil. Apply along the full length of each pleat and allow to set until the element is a uniform color. Allow excess oil to drain off. Reinstall element.

Operation and Adjustment (Figure 3)

Choke — The carburetor enriching knob (11) should be in the upward position for initial or cold starting. The knob is pushed downward as soon as practical after the engine is started. In some instances the enriching knob may have to be alternately moved to the enriching and off position to keep engine running until warmed up. Vehicle may be driven with knob in upward position for first few blocks if necessary.

Idle Mixture — The idle mixture screw (14) is initially set at 5/8 turn outward from the full in position. Do not set idle speed or smoothness with this screw, it must be set within 1/8 turn of the 5/8 position. This screw adjustment has a great effect on the entire fuel curve.

Idle Speed — Idle speed is set with the throttle stop screw (13). Normal setting is 1000 RPM. Set idle speed only when engine is at normal operating temperature.

Main Jets There are two alternate main jets furnished with each kit, a 140 and a 150 main jet. The 1000cc Sportsters or the 1200cc big twins may require a leaner main jet to slightly lean the fuel/air mixture for best performance. Vehicles that have undergone high performance modifications such as porting of the heads or the installation of big bore or stroker kits may require a richer jet for best performance. The jets are replaced by removing main jet access plug (12).

Below is a list of additional carburetor jets available. See your local Harley-Davidson dealer."

MAIN JETS	
PART #	SIZE
27108-87	160
27107-85	135
27106-85	130
27149-85	140
27151-85	145
27150-85	150

SLOW JETS	
PART #	SIZE
27318-85	60
27310-85	58
27283-85	62
27284-85	55
27302-84	50
27329-83	52
27897-78	72
27896-79	65
27895-78	70
27894-78	68

POWER JETS	
PART #	SIZE
27110-87	80
27111-87	100
27112-87	120
27113-87	Blank