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Go To Technical Menu

Below is a list of documents in the Sportsterpedia for SE Butterfly carbs in PDF form.

REFERENCE CAPBURETOR, INTAKE MANIFOLD & EXHAUST -

Sub-Roll the Parts and Accessories Bulletins page;

- P&A-259: List of common service parts
- P&A-271: Recommended settings for float level, acclerator pump, idle mix screw and jetting
- ∘ P&A-333: SE Carb and A/C Kit (91731-85), air filter mounting tips, adjustment tips and jetting

Basic Keihin BD (Screaming Eagle or

PAB-426: Installation of new Screamin Eagle high flow carb and air cleaner kit (91731-88)

- Flowmaster) Butterfly Carb Information
 - M-961: SE 40mm carb kit (91731-85A) may have the wrong accelerator pump rod length
 - Click Here for the Tech Tips page;

HD Disclain Fire for Scheanaich Eagling pareseratore puravirus herostote vice sequipation in site 1731-85, Screamin' Eaglical Host performance parts may not be used on public roads. And in some cases must be restlated to the sectorule to the se

JX-91731-85A: SE hi-flo carb and air cleaner kit (91731-85A)

It's shown ֈĐ0Đ5,0v6Enti-Do tante dnalgairadirag enikitu(29081-ԹՓC) are winning with Screamin Eagle carburetor (2005): SE hi-flo carb and air cleaner kit (29151-90A)

- Additional information:
 - Click Here to view Andrews instructions on the Flowmaster Carb line (.jpg)
 - Click Here to view the advertisement sheet for SE Carb and Air Cleaner Kit (91731-88) (.jpg)
 - Click Here to view a pic of the 1989 Summer Edition Enthusiast, pgs 16-17 on flow characteristics of the SE 40mm butterfly carb.

Carburetors

General

Snowmobile applications: As a side note, a version of these (Keihin butterfly) type spigot mount carbs was also used on 1980s Yamaha snowmobiles (1980 Yamaha SS440 had a 34mm flowmaster type butterfly spigot mount carb). The SS440 carbs were Keihin BD38-34 from 1980-1982 and Keihin BD38-44 from 1983-1985 ²⁾ along with several other model sleds. The snowmobile carbs are basically the same type carb with some parts moved around or changed from the flowmaster motorcycle version. The bowl on some was moved off center, most did not have an accelerator pump and the butterfly plates have a hole drilled thru them (motorcycle versions do not have the plate drilled). And most have dual bowl vent lines (left and right sides) where the motorcycle versions only have the right side bowl vent. So for practical purposes, a snowmobile carb is not a motorcycle carb although the body (base mold) is the same. One could also say these resemble Mikuni butterfly carbs of the era as well. HD (under AMF) made snowmobiles from 1971-1975 but used Tillotson HD carbs on them.

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Motorcycle applications: These type carbs are made by Keihin and were sold under either Andrews or Harley Davidson. The first was Andrews (famous maker of cams today). The flange mount carb was called a Flow Master and it beared the names cast into the side of the mounting flange of Andrews on one side and Flow Master on the other side. The Andrews Flowmaster carbs (per Andrews) were basically all the same carbs but the fuel inlet fitting for Sportsters is pointing straight up for easier fuel line routing. Andrews carbs supplied after 9/1986 have brass fuel fittings. In 1985 (first available for parts order on 4-1-1985), HD started selling the Flowmaster type motorcycle carb under the Screamin Eagle brand. ³⁾ The first couple HD versions were spigot mount carbs and then later the 2 bolt flange was added back. All of them bear the name cast into the body on the front side above the float bowl as Keihin Japan. The flanged model Screamin Eagle carbs have Harley Davidson cast into one side of the mounting flange and Screamin Eagle cast into the other side. The spigot mount carbs do not have name branding other than Keihin Japan cast into the front side above the float bowl.

1989 Improvements: 4)

This is an exerpt from an article in the 1989 summer edition Enthusiast magazine. Dick "Doctor Speed" Parisey (HD Project Engineer) devoted an exhaustive testing program to the completely redesigned and improved fuel deliver system in the new flange mounted SE butterfly carb including both bench and dyno tests. As a result, he believed the new 40mm unit outflowed other similar carbs on the market. For example, with the Screamin Eagle air cleaner installed, the new unit flowed 180.6 cubic feet per minute (CFM) compared to 158.0 CFM measured on a well known aftermarket manufacturer's similar setup. In fact, at 10" of water (a basis for flow testing), the bare SE carb flowed 185 CFM while another aftermarket manufacturer's comparable setup flowed 183 CFM. This is a 10% improvement over the standard 1340 carb which flows 168 CFM. It's equal to or better than any carb that we tested in terms of overall high volume flow characteristics. But this new carb really has a tremendous advantage over others by providing the professional rider or tuner with the ability to fine tune it's midrange. See the whole article in the documents section above.

The carb that came in kit (91731-88) was 40mm flange mount version and advertised to have an improved fuel delivery system including a redesigned slow speed transfer port network, new main and slow jets, new "intermediate" jet amd new intermediate fuel port (plastic/brass fuel inlet changed to a different plastic/brass fuel inlet). One piece die cast aluminum carb body, with integral mounting flange, bolts directly to the manifold eliminating the need for a rubber adapter for easier installation. The addition of the intermediate fuel circuit (adjustable by changing jets) eliminates a potential lean condition (or surging) at 2500-3500 cruise RPM with a partial throttle.

See the documents section above to view the advertisement sheet (.jpg) for SE Carb and Air Cleaner Kit (91731-88).

Features:

- Large radius inlet and 40mm venturi for high air flow and increased HP throughout the RPM range.
- Dual throttle cable linkage.
- Accelerator pump.
- Improved fuel delivery system.
- Redesigned slow speed transfer port system through five precisely drilled holes in the roof of the
 carb's venturi area located just upstream of the butterfly throttle plate. As the throttle plate begins
 initial off-idle movement, these holes are exposed to more airstream. The holes appear to be
 located in an almost random fashion. However, according to Dick "Doctor Speed" Parisey (HD
 Project Engineer), their location is the result of an extensive R&D program. As little as .010"

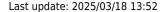
variation in the port network can affect carburetion. They are very precisely located for proper calibration.

- Features a slow jet, main jet and 'new' intermediate jet.
- Intermediate fuel port to elimate part throttle leanness, especially in cruising mode.
- Enrichenor circuit for cold starts.
- High flow (low restriction) reusable paper air filter element by K&N, designed by Harley Davidson Reduces turbulence and offers excellent filtration.

Typical spigot mount carb.



Typical flange mount carb.





Identifying Numbers

These carbs have a model and serial number stamped into a pad on the left side above the float bowl. Currently, the date each carb was made is unknown. There are no calender dates stamped on them. The Screamin Eagle butterfly line of carbs is a "product series line" as is shown in most of the documentation found as they are simply referred to as the 40mm or 44mm HI Flow carb irregardless of what year it was made. The word (Keihin) with the "K" logo in the middle is cast into the right side of the carb (throttle cable side) just above the float bowl. The word (Japan) is cast under that. Model numbers and "serial numbers" are stamped on the number pad on the left side of the carb (fuel inlet side) just above the float bowl. The charts below show stamped numbers as well but are not the only stamped numbers for these carbs but rather a comparison of the stamped numbers found on them with the goal of discovering the coding system used for them.

Part Numbers: There were no official part numbers written on the carbs. Tech Tips #17, August 1989,

refers to 40mm SE carbs as their carb & kit#s (91731-85, 91731-85A and 91731-88). Sportster kit (29081-90C) instructions show the part number of the carb in that kit as (27001-88) while Evo 1340 kit (29151-90A) instructions show the part number of the carb in that kit as (27001-88A).

Serial Numbers: The serial numbers are actually date codes.

| Compa | Comparing stamped numbers found on various Hi-Flow butterfly carbs | | | |
|--------------------------|--|----------------|---------------|---|
| Andrews Flowmast | er with integra | l flange mount | | - |
| Model# | Date Code | Size | Bowl casting# | Notes |
| AS40D | AF24 | | | |
| AS40F | AF24 | | | |
| AR40E | AG23 | | | |
| AR40F | BE13 | | | |
| AS40F | BF15 | | | |
| AR40G | CG26 | 46mm | | |
| HD Screamin Eagle | with spigot me | ount | | |
| Model# | Date Code | Size | Bowl casting# | Notes |
| PA40A | AG09 | | | |
| PA40B | BK21 | 44mm | | |
| PA40C | CE16 | | | |
| PA40C | CF12 | | | |
| PA40C | CG20 | | | |
| PA40A | YI09 | | 2 | |
| HD Screamin Eagle | with integral f | lange mount | | |
| Model# | Date Code | Size | Bowl casting# | Notes |
| 27FA | DA31 | 40mm | 1 | No bowl overflow tube |
| 27FA | DD24 | 40mm | 1 | |
| 27FA | DF20 | | | |
| 27FA | EB21 | | | |
| 27FA | EC19 | 40mm | 1 | |
| 27FA | ED18 | 40mm | 1 | |
| 27FA | FG18 | | 1 | |
| 27FB | HC20 | | 1 | No bowl overflow tube Accel pump 4-2 |
| 27FB | HD23 | | | |
| 27FB | HF30 | | 1 | |
| 27FC | KG30 | 46mm | | Has bowl overflow tube |
| 27FC | L112 | | | |

Rebuild kits

There are no known rebuild kits just for this carb. A lot of the parts are the same part numbers as in 1976-E1978 Keihin butterfly carbs. Kit numbers below will have some parts that you don't need but will

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have some that you do need as well (you'll have parts left over that don't go in this carb). Some kits below are also obsoleted but can be found on the internet from time to time.

HD (27006-76) has the float needle and clip, accelerator pump diaphragm and spring and O-rings and pump rod boot needed.

HD (27006-92T) same part as above.

Drag Specialties (27006-76A-PBLB1) has the same parts as the HD kit.

Dixie Distributing Company (27006-76) has the same parts as the HD kit.

James Gasket (27006-76) has the same parts as the HD kit plus flange gaskets.

Some parts in these kits will fit SE butterfly carbs, some will not.

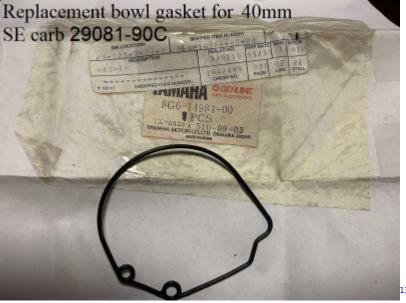


The float bowl is cast inside with a number ¹¹⁾.

The float bowl gasket is HD part# (27013-85), is obsoleted and very hard to find.

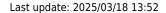
An alternate replacement can be found searching for Yamaha part# (8G6-14948-00).





The float (27394-85) is also obolete but a Yamaha 8G6-14985-01 fits.

FLOAT LEVEL: 14mm-16mm measured from the carb body to the bottom of the float. Check with the





throttle bore vertical, as with the stock carb.

Consider replacing the plastic fuel inlet with a full brass one (if the plastic isn't cracked or broke already). The OEM inlet is half plastic molded over a brass nipple. The plastic is known to crack and leak or break off entirely.

Click Here to go to the Keihin Carb Upgrades section of the Sportsterpedia on how to replace the inlet elbow to a full brass one.



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Individual Carb Parts

From Parts and Accessories Bulletin (pab# 271 dated 12-13-1985; Parts and Accessories has received several calls from dealers inquiring as to jetting recommendations for the Keihin BD44/40 carburetor used in this kit. Below are some initial adjustment settings and tuning tips which may prove valuable in dialing-in the carburetor. In the majority of cases, the device will perform flawlessly as delivered. The chart below is not a full list but contains parts which are most likely to be required due to normal wear and tear.

| | General Carburetor Parts | | | |
|----------|--|--------------------------|--|--|
| Part# | Description | Part# | Description | |
| 27131-85 | Idle Mix Screw | 27361-76 | Accelerator Pump Diaphram | |
| 27319-76 | Idle Mix Screw Spring | 27362-76 | Accelerator Pump Diaphram Spring | |
| 27133-85 | Idle Stop Screw W/Spring | 27390-85 | Enriching Valve (Choke) Assembly | |
| 27332-85 | Dual Throttle Cable Bracket | 27371-76 | Fuel Inlet 90° Fitting | |
| 27011-85 | Accelerator Pump Lever W/Spring & Screw | 27013-85 8g6-14984-00 | 0-Ring, Float Bowl Yamaha Replacement | |
| 27311-76 | Accelerator Pump Rod Boot | 27334-85 | Bowl Drain Plug With 0- Ring | |

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|--------------|------|--------|-------|
| | | | |

| 27364-76 | Accelerator Pump Housing | 27394-85 8G6-14985-01 | Float W/Pin & Screw Yamaha Replacement |
|----------|--------------------------------|--------------------------|---|
| 27360-76 | Accelertor Pump Housing 0-Ring | 27886-78 | Fuel Inlet Needle W/Clip |

Factory Supplied Jets

Per Andrews on the Flomaster, <u>as a starting point for tuning</u>, jets sizes for Shovelheads and Panheads were 1.30 main and 0.58 slow jet and jet sizes for Sportsters were 1.20 main and 0.55 slow. The original 1985 HD Screamin Eagle carb was factory issued with 1.45mm main jet and a 0.62 slow jet. ¹⁹⁾ By February of 1987, another bulletin (P&A #333) was issued to address a possible lean condition with SE carbs. The MoCo strongly recommended changing to a 1.60 main jet, 0.65 slow jet and a 0.55 power fuel jet to improve all around drive-ability while supplying the proper amount of fuel throughout the entire R.P.M. range. This change was implemented in the (91731-85A) carb and a/c kit. The carb was factory issued with a redesigned fuel nozzle, 1.60 main jet, 0.65 slow jet, 0.60 intermediate (power fuel) jet and a blank air bleed jet. Then the factory jets were changed again for later kits to be, 1.60 main jet, 0.68 slow jet, 0.60 intermediate jet and a blank air bleed jet. The air bleed jets are the same as the intermediate jets and are removable for fine tuning. The factory issued jets are recomendations only (by HD's own words) and further tuning may be needed.

Here are pics of the jets used in SE butterfly carbs. Note that these are Keihin jets but NOT ALL are the standard type jets used in production model Harleys. The main jet in SE carbs is longer than ones in production model Keihin butterflys. And production model Keihins do not have provisions for an intermediate jet. The slow jet is the same however. Per JetRUS.com, the main jets (used for Kiein SE butterfly carbs) should have an overall length of 16.5mm with a thread diameter of 4.9mm. ²⁰⁾ The slow jets have an overall length of 15mm and a thread diameter of 4.5mm ²¹⁾





Below are part numbers for the jets available for use on these carbs.

| 25) | | | | | |
|---|-------------|-----------------|---------------|--------------------------------|-----------|
| Harley Jet Chart (all true Keihin jets) 25) | | | | | |
| Main Jet | Size (mm) | Slow Jet | Size (mm) | Intermediate Air / Fuel Jet | Size (mm) |
| 27106-85 | 1.30 | 27383-88 | 42 | 27113-87 | Blank |
| 27107-85 | 1.35 | 27302-84 | 50 | 27109-87 | 55 |
| 27149-85 | 1.40 | 27329-83 | 52 | 27172-89 | 60 |
| 27151-85 | 1.45 | 27284-85 | 55 | 27110-87 | 80 |
| 27150-85 | 1.50 | 27310-85 | 58 | 27111-87 | 1.00 |
| 27108-87 | 1.60 | 27318-85 | 60 | 27112-87 | 1.20 |
| 27119-88 | 1.65 | 27283-85 | 62 | 27173-89 | 1.70 |
| 27134-89 | 1.70 | 27896-79 | 65 | | |
| | | 27894-78 | 68 | | |
| | | 27895-87 | 70 | | |
| | | 27897-78 | 72 | | |
| Yamaha jets fo | or possible | cross reference | (all true Kei | hin jets) fit needs verifing | |
| 8A6-14516-20 | 1.20 | | | | |
| 8A6-14516-30 | 1.30 | | | | |
| 8A6-14516-35 | 1.35 | | | | |
| 8A6-14516-40 | 1.40 | | | | |
| 8A6-14516-40 | 1.45 | | | | |
| 8A6-14516-50 | 1.50 | | | | |
| 8A6-14516-50 | 1.55 | | | | |
| 8A6-14516-60 | 1.60 | | | | |
| 8A6-14516-65 | 1.65 | | | | |
| 8A6-14516-76 | 1.70 | | | | |
| 8A6-14516-75 | 1.75 | | | | |

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Adjustments and Tuning



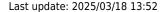
• Explanation of the Functions and Circuits:

• **Enrichenor Valve**: The carburetor choke knob is not actually a choke. It's a (gas) enrichenor circuit and should be pulled up for initial or cold starting. This circuit allows for a richer fuel mixture, adding extra gas to the carb throat behind the throttle plate (engine side). Push the knob down as soon as the engine is warm enough to run without stumbling (which shuts off the additional gas). You can ride with the knob up for the first few blocks. The enrichenor circuit has a fixed air bleed in the mouth of the carb. When the valve on the right side of the carb is pulled up, air is pulled into the channel on the right side of the carb above the enrichenor jet (or tube) protruding into the bowl. Gas is then sucked into the channel's air stream by vacuum and exits behind the throttle plate and into the intake tract. Enriching Valve (27390–85) is shown in the pics below.





• IDLE MIXTURE SCREW: The Idle Mixture Screw (IMS) is basically a mixing valve for the output of the slow jet. Turning the screw clockwise (in) results in less gas/more air into the engine and turning the screw counterclockwise (out) results in more gas/less air into the engine. Per HD, 5/8 turn out from a light seat is the factory set postion and you can fine tune that to 1/2 to 3/4 turn out from a light seat position. In most cases, this will be "lean best idle" or perhaps slightly more lean; the common approach of adjusting for "best idle" may result in the low end being overly rich. The IMS is extremely sensitive, and will affect mixture throughout most of the rpm range. This setting should NEVER exceed 3/4 of a turn out. The "general setting" of the IMS on most other carbs is 1-1/2 turns out from the fully closed position. This general setting is not correct for our H-D Screamin' Eagle carb.
CAUTION: Do not attempt to smooth the idle by adjusting the IMS! Keihin HD IMS (27131-85) and Spring (27319-76)





- ACCELERATOR PUMP: The carb has an adjustable accelerator pump stroke. The screw on
 the upper left side should be set to allow about 1/2 of the possible travel of the pump arm. If
 your engine has an off-idle hesitation, you may have to adjust the accelerator pump stroke.
 Do this by adjusting the accelerator pump screw after all other adjustments have been made.
 Off-idle hesitation can be caused by either a too lean or too rich pump stroke. So you will
 have to determine which way to turn the screw by experimenting. Turn the screw 1/4 turn at
 a time.
 - Note regarding accelerator pump rod length: Check that the accelerator pump rod is the correct length (see pic below). See document section above. Service Bulletin M-961, dated 4/18/88, advises dealers that a number of SE carbs, packaged during March, 1988 from kit 91731-85A contain an accelerator pump rod that is too short and to check the rod length and replace it if it does measure too short. Tech Tip #17, dated August 1989, extended checking accelerator pump rod length to include carbs in kits 91731-85, 91731-85A and 91731-88. So basically it's a good idea to check length on all of them (especially since these carbs are now obsoleted, it's possible the kits with the short accel rod have been circulated by now). The incorrect pump rods were only 2.35" long, end to end, completely disabled the accelerator pump and caused the engine to stumble upon fast acceleration (when the throttle is opened quickly). The correct overall rod (27374-88) length is 2.540" to 2.550" according to the later tech tip.



 ENGINE IDLE SPEED: Idle speed is set with the throttle stop screw. Adjust accordingly to get the desired RPMs at idle speed (1000 - 1150 RPM with engine at normal operating temperature).



JETTING RECOMMENDATIONS: These carbs have 3 operational circuits (main, slow and an additional intermediate circuit). There have been several changes to the "factory supplied" jet sizes that do not make for a solid recommendation on a starting point for jetting. It's also unclear if internal port sizes were changed along the way on some of these carbs to accomodate the newer recommendations that were issued for jetting without proper documentation from the MoCo. These carbs are meant to be "tuned" for each individual motor setup including displacement, what cams you are running, riding conditions, pipes you are running, street or racing application as well as current altitude. See "Factory Supplied Jets" above including the jet chart with part#s. But for practical starting points for jet sizes, the different setups are listed below.

32)

You decide the rest.

These are starting points only for initial run jetting from both Andrews and HD.
 Suggestions from Andrews on Flowmasters for Sporters

Sept 1986: 1.20 main jet, 0.55 slow jet

Suggestions from HD on SE high flow carbs.. over time... without specfying engine..

1985: 1.45 main jet, 0.62 slow jet

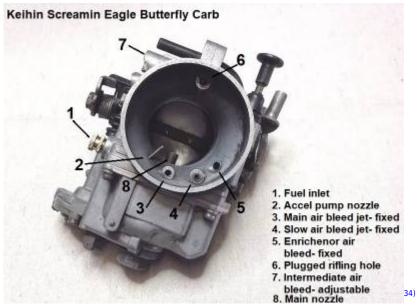
Feb 1987: 1.60 main jet, 0.65 slow jet, 0.55 power jet

April 1987: 1.60 main jet, 0.65 slow jet, 0.60 power jet, blank air bleed jet By 1992: 1.60 main jet, 0.68 slow jet, 0.60 power jet, blank air bleed jet

The carb has a bowl drain plug (27334-85) with an included O-ring and cross drilled holes thru the threads to allow you to loosen the plug with a rag under it to catch the remaining gas in the bowl. Then by removing the plug, you can make main jet changes without removing the carb from the motor. The long main jet supplied with these carbs sinks down into this plug pulling gas from a lower point than the float bowl floor.



• AIR BLEED FUNCTION: The air bleed jets allow for the regulation of air entering the carburetor (based on hole size), which is essential for achieving the correct fuel-air mixture per circuit. The main, slow and enrichenor circuits have fixed air jets in the mouth of the carb. The intermediate circuit has an adjustable (replaceable) external air bleed jet in the upper horn on the left side of the carb. The blank air bleed jet blocks added air from entering the intermediate system, creating the maximum amount of gas flow to the carb from the power jet. The engine provides suction (vacuum) on each exit port from the jets in the main body of the carb. If it were not for air bleeds (inbetween the exit ports and the jets), full vacuum available would be pulled on each jet which means the jets would be subject to adding more fuel to the carb. So the fuel jets are regulated by their air bleed counterparts to provide a controlled amount of gas to the carb per circuit. Each air bleed brings in atmospheric air pressure over the top of the jet from one side which lowers the engine suction pressure on the other side of the jet, lowering the amount of gas pulled from the jet into the carb. The fixed air bleeds for the main and slow fuel jets can not be adjusted and changing those circuit outputs means changing the fuel jet size. But the output of the power jet can be adjusted externally by changing the air bleed jet size. If the circuit air bleed is too large, it will equalize pressure on both sides of the jet (lowering engine vacuum in that circuit) and no fuel would come from the jet.



o **INTERMEDIATE JETS***: This from Andrews on the power jets for Flomaster carbs: For applications which involve competition at high engine RPM, it is possible to tune the Flowmaster power jet system. There is a power fuel jet and a power air jet on each carburetor which can be sized for richer or leaner operation at wide open throttle conditions. Power air jets can be enlarged (replaced) for a leaner running and power fuel jets can be enlarged (replaced) for richer running (this quote is for racing applications only due to legalities on street applications). The power fuel and air jets have been labeled under several names from HD alone. From intermediate jet to power jet to speed jet, they are all the same jets just placed in different places. The power fuel jet (hereafter referred to as the Power Jet) is installed in the float bowl chamber in the flange area behind the fuel inlet fitting. The intermediate or power air jet (hereafter referred to as the air bleed jet) is on the left side in the well, under the "hood" extension, above the fuel inlet. ³⁵⁾ The power jet is only accessable by removing the float bowl while the air bleed jet is accessable from the outside.

• **CIRCUITS PER THROTTLE POSITION** (per Andrews):

- IMS: From idle to 1/8 throttle opening, fuel mixture can be set with the idle mixture screw on the top of the carb body.
- Slow Jet: From 1/8 to just past 1/4 throttle opening, fuel mixture is controlled by the size of the slow jet. Flat spots which occur just above idle speed can usually be corrected with a richer slow jet. Uneven or rough running at cruise (1/4 throttle or less) is an indication of a lean mixture in the slow jet circuit.
- Main Jet: From just past 1/4 to 3/4 throttle position, the main jet controls the mixture. RPM break-up in this range indicates an over rich mixture while coughing or cutting out would mean a lean mixture of the main circuit.
- Power Jet: From 3/4 to full throttle, the intermediate circuit can be used to tune the fuel mixture. Enlarging the air bleed jet leans out full throttle mixture while enlarging the power jet will richen full throttle mixture.

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Air Cleaners and Kits

The air cleaner assemblies were sold as a kit along with the carb. Most older instruction sheets do not list a part number for the carb or the air cleaner assembly parts. You can search for individual parts online that have the instructions that refer to a certain carb and air cleaner kit (kind of a backdoor strategy). That has been done below to extent possible on this page.

The 40mm SE butterfly carb/air cleaner kits for BTs share some of the same parts that are in Sportster kits. Some a/c parts for 44mm carbs will fit the 40mm one. Others like the type of brace, backing plate etc. used are speficic to a certain model. So not all SE air cleaners (as a kit) will fit Sportsters. 40mm kits use the same a/c adapter that bolts to the front of the carb so the back plate of either will physically fit onto the carb. However, the size of the air filter element, cover and brace may or may not be an issue.

Sportster Air Cleaner Upgrade Kits (only)

SE Oval Element Upgrade Kit for XLH (29082-90)

This kit is for the 2 bolt carb to manifold flange version 40mm carb and allows the use of a stock oval (ham can) type cover (cover not included).

For instruction sheet, Click Here to go to the Instructions page in the Sportsterpedia. Click on the "Y" next to sheet# J01821 for the air cleaner kit to download and view it. This is an upgrade to the 29081-90C carb and a/c kit appearing just to change the plastic venturi that bolts to the outer side of the backing plate.

High Flow Air Cleaner Kit (29041-88B)

This kit is designed for installation on 1988-1993 Sportsters with stock Keihin CV carbs and SE 42mm or 44mm CV carbs.

It uses the stock oval (ham can) cover with an added Screamin Eagle trim plate for the cover.

Kit also includes an anodized oval aluminum backing plate, high flow K&N oval filter, plastic venturi ring, spacers, gaskets and hardware.

For instruction sheet, Click Here to go to the Instructions page in the Sportsterpedia.

Click on the "Y" next to sheet# J00049 for the air cleaner kit to download and view it.

High Flow Air Cleaner Kit (29054-87A)

This kit is designed for installation on 1986-1987 Sportsters with stock Keihin butterfly carbs. It includes an oval aluminum backing plate, and high flow K&N oval filter, plastic venturi ring, mounting brackets, spacers and hardware.

Cast iron sportster air cleaner bracket kit (29122-85) has 2 "Z" brackets needed to use this kit on 1974-1985 Sportsters.

SE Carb and Air Cleaner Kits

SE High Flow Carb and Air Cleaner Kits (91731-85) and (91731-85A)

The 91731-85 kit first appeared in the 1984 Fashions and Accessories catalog and sold for Shovelhead and V2 Evo engines.

It was sold for 1972-later 1000s and 1986-1987 XLs from the 1985 Fashions and Accessories catalog as well as the 1987 Genuine Accessories catalog.

The carb in these kits is a spigot mount version using the Mikuni flange adapter to install carb to manifold.

There was apparently little information published about the carb itself although there were a few bulletins issued to help dealers maintain the carb.

This kit uses a 7" round air cleaner cover with SE logo (bottom hole to mount the support bracket) and a 6" tapered K&N filter.

The filter wraps around the carb mouth with a band clamp (no need for the aluminum air cleaner adapter).

The 91731-85A kit was sold through the 1988 Genuine Accessories catalog.

The main reason for the -85A kit was to include new jets in the carb and add a new fuel fitting.

But the a/c components should be the same for each of these kits.

For instruction sheet, Click Here to go to the Instructions page in the Sportsterpedia.

Click on the "Y" next to sheet# JX-91731-85A to download and view it.

Requires Carb Adapter Kit (29258-86) for use on 1986-1990 XLs (lower support bracket included).

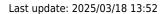
Note: 1988-1990 XLs will need to use the 1986-1987 flanged manifold.

Requires lower support bracket (29053-85) for use on 1972-1985 XLs.

Requires lower support bracket (29043-85) for use on 1200 and 1340 BTs.

| | | | (1) 0.1.72.1 0.7.36) |
|-------------------------------------|--|-------------------|--|
| Comm | on Parts List for SE High Flow Carb | and Air Cleaner k | (it 91731-85 ³⁰ |
| Air Cleaner Parts | | | |
| Part# | Description | Part# | Description |
| 27020-85 | Manifold Adapter W/Clamp (Mikune VM 40/200) | 29190-85 | Nylon Hose Fitting For Vacuum Switch (1/4"-28 threads) |
| 29258-86 purchased separately | Carburetor Adapter Kit for 1986-1987 883/1100 Includes 7/8" plastic tapered carb spacer (29266-86) Inlcudes a/c cover brace and hardware | | |
| 29189-85 | 6" Tapered K&N Air Cleaner Element W/Clamp | 29191-85 | 7" SE Air Cleaner Cover |

The pics below are from the 1985 Parts and Accesories Catalog showing the 91731-85 Kit.





| 3 | large radiused inlet and 40mm venturi. Kit inc cleaner, carburetor, manifold adapter, jets and he Requires support bracket for proper installation. 91731-85 Carb Kit | ludes air ardware. |
|---|---|-----------------------|
| | SUPPORT BRACKETS | *104.00 |
| | 29043-85 1200 & 1340cc | . \$3.95 |
| | 29053-85 1000cc XL | . \$6.95 |
| | 29258-86 Adapter Kit | |
| | fits 883 and 1100cc Evolution XI | e12 05 |

The pic below is from the 1988 Parts and Accesories Catalog showing the 91731-85A Kit.

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SE High Flow Carb and Air Cleaner Kit (91731-88)

This kit was sold for 1986-later Sportsters from the 1989 Genuine Accessory catalog . It uses the flange mounted carb with a chrome round center hole air cleaner cover (with SE logo and bottom hole for a support bracket).

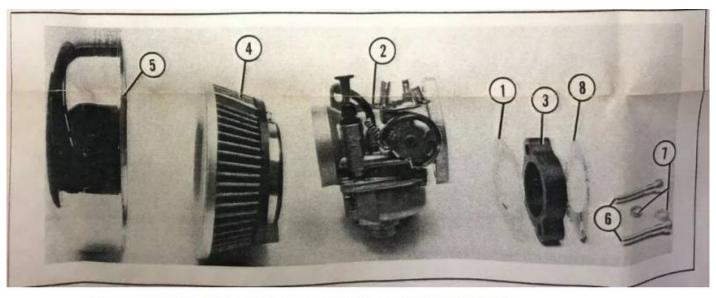
For instruction sheet on the 1986-1990 brace, Click Here to go to the Instructions page in the Sportsterpedia.

Click on the "Y" next to sheet# JX-29221-88 to download and view it.

On 1988 and later models, you must replace the intake manifold with the 1986-1987 aluminum manifold or equivalent.

- * Requires a new lower support bracket adapter kit (29221-88) for installation on 1986-1990 XLs. This kit includes the lower bracket, tapered spacer adapter and throttle / idle cables. ³⁷⁾
 - Requires lower support bracket kit (29297-85) for installation on 1976-1985 XLs (bracket part# 29053-85).
 - Requires lower support bracket kit (29022-88) for installation on 1200/1340 Big Twins (bracket part# 29043-85).

| | Danta List for CE High Flour Could are | d Air Claana | - Kit 01721 00 | |
|----------|--|--------------|----------------|--|
| | Parts List for SE High Flow Carb and | a Air Cleane | r Kit 91/31-88 | |
| Part# | Description | Part# | Description | |
| 29221-88 | Lower Support Bracket Kit for 1986-1990 XLs Includes 7/8" plastic tapered carb spacer, Lower support bracket and hardware And includes special throttle and idle cables | | | |



Screamin Eagle Butterfly Carb and Air Cleaner Kit (91731-88)

SE EVO XLH Hi-Flo Carb and Air Cleaner Kit (29081-90A) and (29081-90B)

Both kits use the flange mounted carb and is designed for 1986-1995 Evo Sportsters. Kit 29081-90A was sold in the 1992-1995 Genuine Accessories catalogs and kit 29081-90B was sold in the 1995 Screamiin Eagle catalog.

It comes with an oval air filter and backing plate using the stock ham can cover.

1988-up models will need to use the 1986-1987 flanged intake or equivelant to mount the carb. Kit also includes a K&N high flow air filter, anodized aluminum backplate that mounts to the 2-piece injection molded aluminum carb adapter, a radiused plastic "venture", a plastic carb to manifold spacer, (2) throttle cables, air cleaner spacers, (2) hollow head breather bolts (for 1991-up engines), mounting hardware and a Screamin Eagle air cleaner cover insert.

The The pic below is from the 1992 Parts and Accesories Catalog showing the 29081-90A Kit.



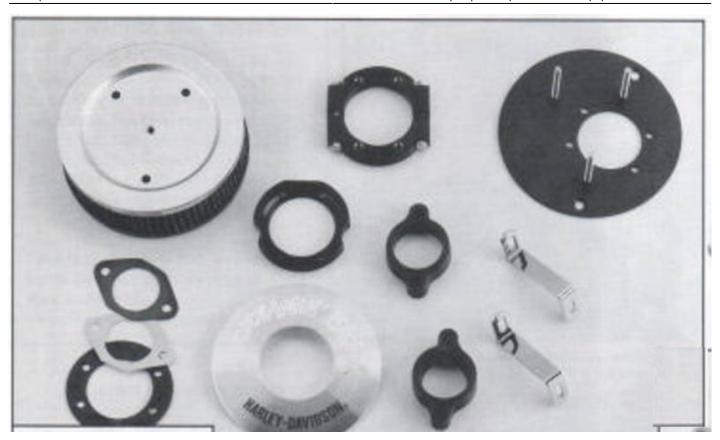
SE EVO XLH Hi-Flo Carb and Air Cleaner Kit (29151-90) and (29151-90A)

This kit uses the flange mounted carb and is designed for 1984-1992 Evo 1340 models (fits 1984-1995 1200/1340 Shovelheads).

1990-1992 1340 models require performance manifold (29046-88A) and 1989 style throttle cables for proper cable free length compatablity with carb linkage. 1992 models also require purchase of thread cylinder head inserts (29304-92). 1993 models also require purchase of Breather manifold Kit (29308-93).

Kit also includes a round aluminum backing plate (with mounting holes for the 2-piece injection molded aluminum carb adapter) and a round K&N high flow air filter using the stock 8" round air cleaner cover (1200/1340 Shovelheads require carb support bracket 29152-84 with additional purchase of an 8" rond air cleaner cover). It has 2 carb adapter (spacers) for stock or performance manifolds. 1 spacer is tapered and the other is straight bored for stock or performance manifolds, a radiused plastic "venture", round Screamin Eagle air filter cover insert.

The pic below is from the 1992 Genuine Accesories Catalog showing the 29151-90 Kit (minus the included carb).



SE EVO XLH Hi-Flo Carb and Air Cleaner Kit (29081-90C)

The carb part# is (27001-88) which is not present on the carb itself. The carb is stamped (27FA). This kit is designed for 1988-later Sportsters and comes with an oval air cleaner and backing plate. Incorporated a special intake manifold to carb spacer that had to be drilled and tapped ($1/4 \times 28$) in the side for included Voes connection adapter.

Required a 1986-1987 (flanged) replacement style intake manifold for 1988 and up models.

Click Here to go to the Instructions page of the Sportsterpedia.

Click on the "Y" next sheet J00050.

On 1988 and later models, you must replace the intake manifold with the 1986-1987 aluminum manifold.

| Parts List for SE | E High Flow Carb and Air Cle | eaner Kit 29081-90C | (all part#s HD unless specified) |
|-------------------|------------------------------|---------------------|----------------------------------|
| Air Cleaner Parts | | | |
| Part# | Description | Part# | Description |
| 29190-85 | VOES Fitting 29190-85 | 3427 | Hex Head Bolt |
| 27022-88 | Gasket | 3587A | Allen Head Bolt |
| 29275-88 | Manifold Spacer | 6333 | Washer |
| 27001-88 | Carburetor Assembly | 6738 | Washer |
| 3485A | Allen Head Bolts | 27077-78 | Gasket |
| 6702 | Washer | 7068 | Lockwasher |
| 7041 | Lockwasher | 31523-88 | Air Cleaner Cover Spacer |

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| 27041-90 | Air Cleaner Adapter | 3795 | Counter-sunk Allen Head Screw |
|----------|-------------------------------|-----------|----------------------------------|
| 885A | Allen Head Bolt | 29034-85 | Crankcase Breather Hose Fitting |
| 7686 | Nut 7686 | 11110 | O-ring |
| 6228W | Washer | 9946 | Hose Clamp |
| 27044-90 | Carburetor Gasket | 29148-90 | Venturi |
| 29075-91 | Oval Backplate (black, metal) | 29025-88B | Air Cleaner Element |
| 927A | Button Head Screw | 26553-94 | Vacuum Hose Kit |
| 6786 | Support Spacer (small I.D.) | 29024-88 | Air Cleaner Trim |
| 6785 | Support Spacer (large I.D | .) | |

Individual Air Cleaner Parts and Pics

| | Hunting down parts for use on Sportsters | | | | |
|--|--|---|--|--|--|
| Part# Description Parts included that can be used for Sportsters | | | | | |
| 29022-88 | Support Bracket Adapter Kit for 1971-later BTs | Carb flange gaskets, tapered plastic spacer, nylon VOES fitting | | | |
| 29067-90 | BT Air Cleaner Kit for use with 40mm Carburetor (J01104) | | | | |

Below are pics of the various individual parts for SE 40mm butterfly carb a/c parts found to date. Click on any pic to enlarge.

The kits were originally sold as a unit with all the parts needed in them. Later on, the individual parts appeared for parts order. Below is a list with pics of the different parts used. These can be found online from time to time and below will show what the parts looked like along with part numbers. The SE carb and a/c kits are listed as backword compatable to 1000 Sportsters (specifically 1974-1985). That basically consists of a different brace to hold the assembly on Ironheads than what was supplied in the kits.

Carb Braces for Ironheads:

Using a round air cleaner and a 7" single center mounting hole, a single brace (29053-85) was used. That same brace appears in the upgrade kit (29297-85) along with the 7/8" plastic carb spacer and gasket. The brace attaches to 2 tappet blocks on the bottom and a hole underneath the air cleaner cover.

1972-1985 Sportster 1000cc Air Cleaner Bracket (29053-85) 1976-1985 Sportster 1000cc Air Cleaner Bracket (29297-85)





Using an aluminum oval backplate from the kits, 2 "Z" brackets (29122-85) were used on Ironheads. Brackets attach to the heads and then to 2 holes in the backing plate.



1986-1990 Sportster Air Cleaner Support Bracket (29258-86) 41)

1986-1990 Sportster Air Cleaner Support Bracket (29193-86) 42)





Injection molded air cleaner adapter (27041-90) used on XLs & BTs.

Fits on the mouth of the carb to attach the backing plate.



Air Cleaner Gasket 27044-90 43)

Air Cleaner Gasket (27044-90)
used between carb adapter/backing plate on Screamin Eagle carb and air cleaner kits

squared holes for 40mm and 44mm butterfly carb adapter





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HD calls this a "venturi" but that is a misnomer. Harley terminolgy is often confusing. 1984-1988 high flow air cleaners in these kits did not have a "venturi" since the K&N air filter was tapered to allow air flow to gather at the carb's mouth. The exception would have been the original 1984 fiter that was not tapered. 1989-up air cleaners use the "venturi" against the air cleaner side of the backing plate and the backing plate was redesigned to use an oval type non tapered K&N filter. The 1992 Genuine catalog and 1995 SE catalog calls it a radioused venturi that increases air flow and minimizes turbulence. The 1999 SE catalog calls this a radioused inlet ring. But throughout all, HD claims these systems have been bench tested and dyno'd and they never gave up on the idea of the "venturi or radioused inlet ring". In fact, later backing plates for hi flow CV carbs included a backing plate with a built in "venturi".

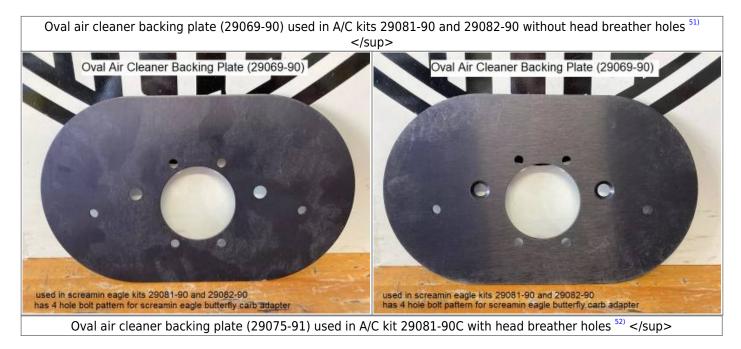


Intake manifolds:

The stock 1986-1987 Sportster intake manifold is suggested by HD if using the SE butterfly carb on 1988-later XLs. It is flanged at each head connection and also at the carb mount to accept the flanged SE carb using a tapered plastic spacer and flange gaskets or the Mikuni flange to spigot adapter. An after market manifold, Ram Jett, was available also (now obsolete).

The Ram Jett , CAS part#(DS289215) manifolds are also flanged on all three sides and have an "S" stamped into a boss on the top center for use on Sportsters. The boss can be drilled and tapped for the VOES fitting (however doing so got rid of the designation letters). The "S" versions are considerably narrower than big twin intakes. One-piece, heat-treated aluminum manifolds accommodate expansion, contraction and cylinder vibration. For stock XL 883, 1100, 1200 XL Evolution, flange-type mount (must use 36-38mm spigot adapter flange (MVM36-200), 5/8" shorter to compensate for spigot adapter when using OEM CV carb on 88-00 models; carb opening in manifold 1-5/8" (40mm) which matches the 40mm SE butterfly carbs. ⁴⁷⁾ These intakes came with 12 point mounting bolts instead of the stock allen head bolts. Used Ram Jetts usually lack the bolts but you can take Allen head bolts and reduce their OD slightly (chuck in drill then hold against a grinder, or use a lathe) to clear the casting. ⁴⁸⁾ James Gaskets sells a gasket kit (JGI-27002-89-R) with the 2 head flange paper gaskets but it has a spigot mount rubber for the carb mount. Or, the gaskets are easy to cut from Fel-Pro gray paper (from any auto store). ⁴⁹⁾





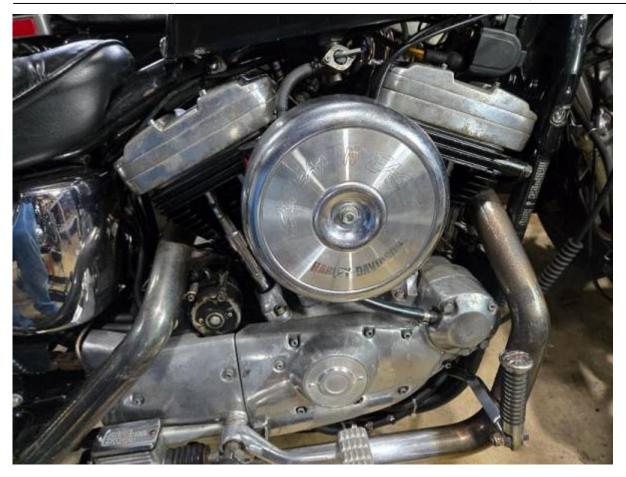


Air Cleaner Alternatives

Since the carbs were sold as kits with the matching air cleaner and the kits are no longer being produced, finding alternatives for an air cleaner can be difficult due to the way it fits up to the carb, the type of brace needed to match up to the air cleaner you choose, spacing issues, and availability of individual NOS parts. If you can't find a NOS kit somewhere, you'll have to piece parts together. Below are some a/c combinations that work on Sportsters using the SE 40mm butterfly carb.

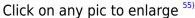
SE 40mm Carb w BT Air Cleaner

This setup was put together on a 1990 XL1200 by XLForum member, t0mmy91, with an 8" cover 54)

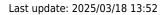


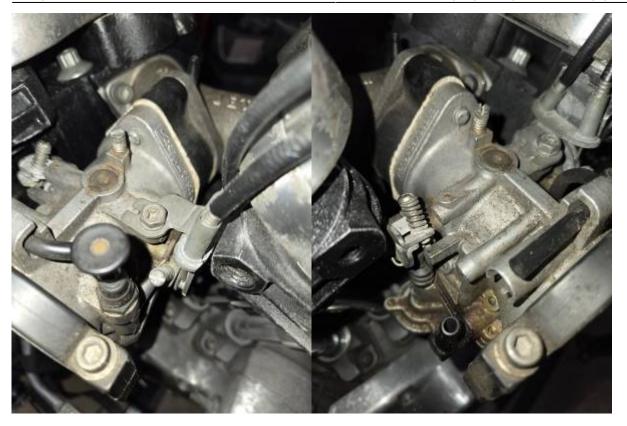
• Parts list.

- Ram Jett flanged intake maifold
- Plastic tapered carb spacer (29271-88)
- Carb adapter (29056-90) (2 pieces to make the assembly)
- Air Cleaner Spacer Gasket (27044-90) between the adapter and backplate
- o Backplate (29056-90) for 1340 BT 40mm carb assembly
- ∘ 3 hole air filter (Milwaukee Twins 880-622)
- $\circ~8\mbox{\ensuremath{\text{#}}}$ round single center hole air cleaner cover for 1340 BT





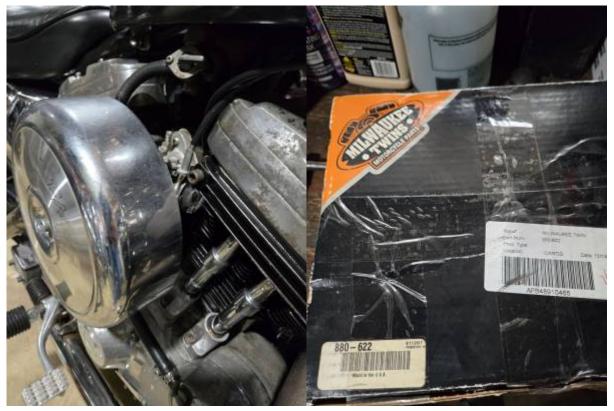






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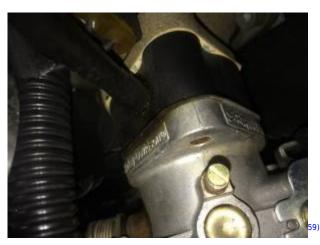


Flanged model

Markings on the one below include: Keihin, 27F8, HG13, Harley Davidson and Screaming Eagle. 56)









Spigot model 44mm:

Markings on this one include: PA40C and CE16. $^{61)}$





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1)

HD Dealer News, August 1989

Stratoman of Snowmobole.com

https://www.snowmobileforum.com/threads/keihin-carb-parts-and-info.50158/

P&A bulletin #244

4)

Enthusiast Magazine Summer Edition pgs 16-17

5) 6

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photo courtesy of Ebay seller, cyclewarehouse. Link to Items for Sale $^{9)}$, $^{24)}$, $^{31)}$

photo courtesy of Ebay seller, SHOP ALL OF YOUR MOTORCYCLE PARTS SHOP ALL OF YOUR MOTORCYCLE PARTS, Link to Ebay Store https://www.ebay.com/str/shopallofyourmotorcyceparts

photo courtesy of CyclePartsPlus2013, Link to Ebay Store
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photo courtesy of Timber racer&co, Link to Ebay Store https://www.ebay.com/str/timberracerco
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pecific/ironhead-sportster-motorcycle-talk-1957-1985/43694-keihin-carb-diagram-and-settings?t=132922
26) 27) 29) 34)
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photos courtesy of Coopers Salvage, Link to Ebay Store
Racepres https://www.v-twinforum.com/threads/jetting-on-new-build.549548/
PARTS & ACCESSORIES BULLETIN P & A #259 dated September 6, 1985
PAB#426 dated 6-27-1989
photo courtesy of Ebay seller, D's Cycle Connection Link to Store
41) 42) 44)
photo courtesy of Ebay seller, animalhouse2010, Link to Ebay store:
photo courtesy of Ebay seller, 57harleyrider. Link to Ebay Store
http://cas4.com/Carburetors-Intakes/carbs-intakes-manifolds-kits-seals-hardware.html
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48)

Farmall from Harley Tech Forum https://harleytechtalk.com/htt/index.php?topic=108599.0

farmall of the XLFORUM

https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/frame-mount-evo-sportster-talk-1986-2003-models/201038-1991-manifold-bolt-trivia

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 $https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/183763-carburetor-identification?t=1976237 \tiny 571, 581, 591, 601$

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Goozgaz of the XLFORUM

 $https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/159520-keihin-id?t=1710327 \\ ^{62)}, ^{63)}, ^{64)}, ^{65)}$

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