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REF: Carburetor, Intake Manifold & Exhaust

FACTORY CARBURETORS Installed on Sportsters 1957 - 2006

Carbs Used on Iron Head Sportsters from 1957-1985 by Serial / Model Number

| Carburetor Serial# or Carb Model# | Year Model Sportster |
|--|---|
| Linkert DC (27155-57) was the first Sportster carburetor then replaced with (27155-57A) both introduced for 1957-1959 Sportsters ¹⁾ | |
| DC-1 | 1957-1958 Sportster Early Style ²⁾ |
| DC-1L | 1959-1960 Sportster ³⁾ |
| DC-1M | 1959-1960 Military XLA Sportster ⁴⁾ |
| DC-2 | 1959-65 Servicar (smaller venturi, opposite float bowl) ⁵⁾ |
| DC-6 | 1961 Sportster XLH and XLCH ⁶⁾ |
| DC-7 | 1966 Big-Twin FL and FLH (larger venturi) ⁷⁾ |
| DC-10 | 1962 and mid-63 Sportster XLH and XLCH ⁸⁾ |
| DC-12 | 1966 Big-Twin FL and FLH mid-1963 1964 1965 Sportster XLH and XLCH ⁹⁾ |
| Tillotson HD (1966-1971) | |
| Mod HD-1A | Pre 1966 XLCH |
| Mod HD-1B | 1966 and later XLCH |
| 27162-66B ¹⁰⁾ HD - 1BC HD - 1C | Late '68 Sportsters (new check ball valve added to the accel pump passage) ¹¹⁾ |
| 27155-66RA | (XLR) (27823-66R) |
| 27155-70R | (XR) (27823-66R) |
| Bendix / Zenith I6P12 (1972-Early 1976) | |
| 27155-72 ¹²⁾ | 1972- |
| 27155-72A ¹³⁾ | 1972-Early 1975 |

| Carburetor Serial# or Carb Model# | Year Model Sportster |
|--|---|
| 27155-72B ¹⁴⁾ | 1975-Early 1976 |
| Mikuni (XR-750 Racing Engines Only) | |
| VM-36-1 VM-36-4 VM36/39 | 1972-1980 XR-750 / 36 mm with a round slide ¹⁵⁾¹⁶⁾ |
| TM38-85 (47mm spigot dia.) TM38-86 (43mm spigot dia.) TM38-85 (47mm spigot dia.) TM38-86 (43mm spigot dia.) | 1989-2003 XR-750 / 38 mm with a flat slide ¹⁷⁾ |
| Keihin butterfly (non-CV)(Late 1976-1987) | |
| 27153-76 ¹⁸⁾ | Late 1976 XLH, XLCH |
| 27153-77 ¹⁹⁾ | 1977-1978 XLH, XLCH |
| 27469-78A B83A ²⁰⁾ | 1979 XL, XLCH, XLS |
| 27469-80A B83D ²¹⁾ | 1980 XL, XLS |
| 27469-81A B83F ²²⁾ | 1981-Early 1982 XL, XLS |
| 27469-82 B83G ²³⁾ | Late 1982 XL, XLS |
| 27469-83C B83K ²⁴⁾ | 1983-1985 XL, XLS, XLX |
| 27148-77 B75A ²⁵⁾ | 1977-1978 XLCR 1000 |

Keihin Carbs Used on Evo Sportsters from 1986-2006 by Serial Number

- All data compiled from HD Sportster Parts Catalogs unless otherwise noted
- All CV models come equipped with accelerator pump unless noted.
- The Serial Number on CV carbs is labeled on the adjacent side to the accelerator pump linkage

| Keihin non-CV 1986 - 1987 | | | |
|-------------------------------------|--|--|--|
| Carburetor Serial Number | Installed On All Models | | |
| 27501-86A (B83H) | (86-87) - XLH 883 All Models Domestic and California | | |
| 27502-86B (B83H) | (86-87) - XLH 1100 All Models Domestic and California | | |
| Keihin CV 1988 - 2006 | | | |
| Carburetor Serial Number | Installed On Domestic models Year - Model | Installed On California models Year - Model | Installed On Export models Year - Model |

| | | | |
|-----------|--|----------------------|--|
| 27031-95 | | | (95) - HDI 883 Deluxe (95-97) - HDI 883, 883 Hug (99-2000) - HDI 883, 883 Hug, 883C (01) - Aust 883, 883 Hug, 883C |
| 27031-95A | | | (98) - HDI 883, 883 Hug (02-03) - Aust 883, 883 Hug, 883C, 883R |
| 27076-95 | | | (95-97)- HDI 1200 (96-97) - HDI 1200C, 1200S (99-01) - HDI 1200, 1200C (01) - Aust, Eng, Japan 1200, 1200C |
| 27076-95A | | | (02-03) - HDI, Aust, Eng, Japan 1200, 1200C |
| 27465-01 | | | (01) - HDI, Eng, Japan 883, 883 Hug, 883C |
| 27465-01A | | | (02-03) - HDI, Eng, Japan 883, 883 Hug, 883C, 883R |
| 27465-04 | | | (04-06) - HDI 883, 883C (05-06) - 883L, 883R |
| 27076-95A | | | (98) - HDI 1200, 1200C |
| 27480-97 | (97) - 1200, 1200C, 1200S (99-01) - 1200, 1200C | | |
| 27480-97A | (98) - 1200, 1200C (02-03) - 1200, 1200C | | |
| 27486-92 | | (92-Early 93) - 1200 | |
| 27486-92A | | (93-94) - 1200 | |
| 27486-92B | | (95) - 1200 | |
| 27487-92 | (92-94) - 1200 | | |
| 27487-92A | (95) - 1200 | | |
| 27488-92 | | (92-Early 93) - 883 | |
| 27488-92A | | (Late 93-94) - 883 | |
| 27488-92B | | (95) - 883 | |
| 27489-92 | (92-94) - 883 All Models | | |
| 27489-92A | (95) 883 All Models | | |
| 27490-96 | (96-97) - 883, 883 Hug (99-01) - 883, 883 Hug, 883C | | |
| 27490-96A | (98) - 883, 883 Hug (Late 98) - 883C (02-03) - 883, 883 Hug, 883C, 883R | | |
| 27490-04 | (04-06) - 883, 883C (05-06) - 883L, 883R | | |

| | | | |
|---------------------------|---|--|------------------------------------|
| 27491-89 No Accel Pump | | | (89-90) - Swiss 1200 |
| 27491-96 | (96) - 1200, 1200C, 1200S | | |
| 27492-89 No Accel Pump | | | 89-90) - Swiss 883 All Models |
| 27495-96 | | (96-97)- 883, 883 Hug (99-01) - 883, 883 Hug, 883C | |
| 27495-96A | | (98) - 883, 883 Hug (Late 98) - 883C (02-03) - 883, 883 Hug, 883C, 883R | |
| 27495-04 | | (04-05) - 883, 883C (05) - 883L, 883R | |
| 27498-96 | | (96-97) - 1200, 1200C, 1200S (99-01) - 1200, 1200C | |
| 27498-96A | | (98) - 1200, 1200C (02-03) - 1200, 1200C | |
| 27501-88 No Accel Pump | (88-90) - 883 All Models | | (89-90) - HDI 883 All Models |
| 27501-89 | (89-90) - 883 All Models (90) - 1200 | | |
| 27501-89A | (91) - All Models | | |
| 27502-88 No Accel Pump | (88-90) - 1200 | | (89-90) - HDI 1200 |
| 27502-89 | (89) - 1200 | | |
| 27503-88 No Accel Pump | | (88) - 1200 | |
| 27503-88A | | (89-90) - 1200 | |
| 27503-88B | | (91) - All Models | (91) - Swiss All Models |
| 27503-92 | | | (92) - HDI & Swiss All Models |
| 27503-92A | | | (93-94) - HDI & Swiss - All Models |
| 27503-92B | | | (95)- Swiss All Models |
| 27504-88 No Accel Pump | | (88) - 883 All Models | |
| 27504-88A | | (89-90) - 1200 | |
| 27731-98 | (99-01) - 1200S | | |
| 27731-98A) | (98) - 1200S (02-03) - 1200S | | |
| 27731-04 | (04-06) - 1200C, 1200R | | |
| 27732-98 | | (99-01) - 1200S | |
| 27732-98A | | (98) - 1200S \ (02-03) - 1200S | |
| 27732-04 | | (04-06) - 1200C, 1200R | |

| | | | |
|-----------|--|--|---------------------------------------|
| 27733-98 | | | (98) - Swiss 1200S |
| 27734-98 | | | (98-2000) - HDI 1200S |
| 27749-01 | | | (01) - HDI, Aust, Eng, Japan 1200S |
| 27749-01A | | | (02-03) - HDI, Aust, Eng, Japan 1200S |
| 27749-04 | | | (04-06) - HDI 1200C,1200R |

PERFORMANCE OPTIONS

Keihin BD (Screaming Eagle 40mm Kit)

Sub Documents

- Lectron Carburetor Kit (27154-78), 74-E78,
- [Basic Keihin BD \(Screaming Eagle\) Information](#)

Aftermarket Carburetors

Mikuni Aftermarket Carbs and Upgrades

Sub Documents

HSR Series:

- [Basic Mikuni HSR Information](#)
- [Rebuilding a Mikuni HSR42](#)
- [Mikuni HSR Function and Tuning](#)
- [Choke Relocation on a Mikuni HSR](#)

VM Series:

- [Basic Mikuni VM Information](#)
- [Rebuilding a Mikuni VM-38](#)
- [Mikuni VM-38-9 Function and Tuning](#)

- [Mounting a Mikuni VM-38](#)

HS-40:

- [Basic Mikuni HS-40 Information](#)

Solex:

- [Mikuni Solex Pics](#)
-

Other than exact replacement OEM carburetors, all Mikuni aftermarket carburetors and tuning components are sold "As Is" for off road / racing use only. ²⁶⁾

They are not intended or approved for use on vehicles operated on public roads or in locations where applicable engine tampering and anti-pollution laws apply.

There are plenty of Mikuni and Keihin carburetors in the market that are not authentic. ²⁷⁾

They're not safe to use and will cause many problems to your bike.

If you're not sure if it's a genuine carburetor, the Sudco International site has a web page with pics of genuine and fake carbs.

Follow [this link](#) or you can call them directly to verify a seller. ²⁸⁾

Mikuni Manuals and Other Helpful Links

- [Mikuni website \(HSR page\)](#)
- [HSR Installation Guide](#)
- [Performance Guide](#) includes:
 - [Air Cleaner Basics](#), [Exhaust System Basics](#), [Cam Basics](#) and [Ignition Basics](#)
- [Sportster / Buell Installation Instructions PDF](#)
- [HSR42/45/48 Tuning Manual PDF](#)
- [HSR Choke Cable Installation Tips](#)
- [HS40 Tuning Manual & Parts List PDF](#)
- [HS40 Tuning Manual PDF](#)
- [Mikuni website \(VM page\)](#)
- [VM "Round Slide" Tuning Manual](#)
- [Rebuild Kit VM26-606 PDF](#)
- [PAT Upgrade Kit Installation Instructions PDF](#)
- [Genuine Mikuni jets for HSR series carbs](#)

Video:

- [IronMick's VM-38 Startup Video](#)

S&S Aftermarket Carbs and Upgrades

Sub Documents

- [Testing an S&S Intake Manifold Spacer](#)
- [Installing a ThunderJet® on a Super E](#)

S&S Super B Series



29)



30)

Throttle shaft leak repair.

Counter-bore each side a few thousandths less than the O-ring thickness so it sits a little proud. ³¹⁾
These are 1/4" x 3/8" O-rings from a HF&T kit.

Then use a couple 1/4" ID SS washers with a good synthetic grease like Super-Lube.

The return spring is on one side and you position the throttle lever on the other side.

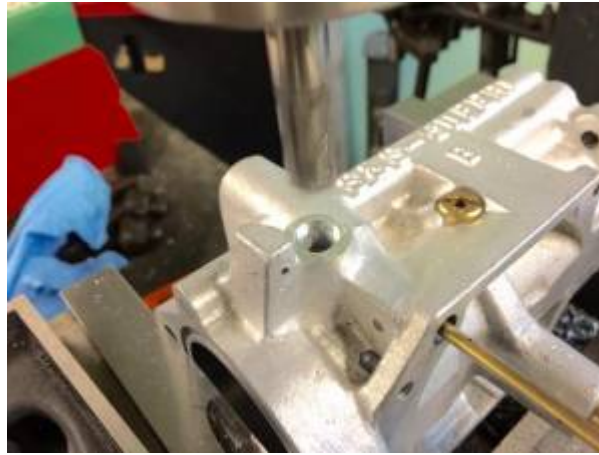
So the washers just pinch the O-rings but still allow proper throttle movement. It should solve a shaft leak problem and can be easily maintained.

This was done on a milling machine with a mold ejection pin that fit perfectly.

To keep center, the pin was put in the spindle collet with an indicator as a confirmation of position after having moved the Z axis.



32)



33)



34)

S&S Super E Series

Accelerator Pump

There are 4 screws to take out to remove the float bowl.

Three obvious ones and the fourth one is one of the accelerator pump screws as in below.

Removing the accelerator pump.

The spring inside holds the diaphragm up until the rod pushes it down like a bellows.



35)



36)

Kmotor Super E (copy?)

This is some of the wording of the advertisement on Ebay. ³⁷⁾

This carb is billed as “New 11-0420 Carburetor Super E Shorty Carburetor Big Twin or Sportster Carb”. US \$64.97/ea. “1 year warranty. This is a brand new, high quality direct fit OE style replacement part”. The Super E are butterfly type carbs with fully adjustable idle mixture screws and changeable intermediate and main jets.

The idle mixture screw is positioned and angled for easy accessibility. Even with 5 gallon gas tanks, adjustments are not a problem.

The Super E has a 1-7/8in. (47.6mm) throat at the butterfly and is identified by an E cast into the throttle linkage side of the carb body.

All Super series carburetors use a special enrichment device instead of a choke for starting. This leaves the bore of the carburetor unobstructed for greater air flow.

The Super E enrichment device is activated by a variable position lever attached to the air cleaner backplate.

By simply adjusting the lever, starting and warm-ups are made easy and foolproof.

It's actually made by “Kmotor” out of China if you read the fine print on the bottom of the add. But the wording in the add makes it sound like the S&S Super E. There is no data suggesting that this isn't a good carburetor.

It may actually be a cheaper alternative.

However, it is something to take into account if your intention is indeed to buy an S&S model.

Here is the carburetor:

| | |
|---|--------------------------------|
| Kmotor Super E next to a Keihin butterfly ³⁸⁾ | No S&S markings ³⁹⁾ |
|---|--------------------------------|



S&S G, F and L Series

Sub Documents

- [S&S G, F and L Series General Information and Pics](#)

1970s Era- Lake Injector

Sub Documents

- * [How to adjust the Lake Injector for all throttle positions](#)

- Originally made for airplanes, the Lake injector was a popular fuel delivery system in the 70s era. It was designed for the ultimate in performance with a minimum of tuning effort. Don't confuse the word "injector" with fuel injection, as these series of carburetors are not a fuel injector or a fuel injector body⁴⁰⁾. The body design, plus the velocity stack in unison with the throttle slide, forms a venture which enables the injector to achieve a good fuel/ air mixture. ⁴¹⁾
 - The manufacturer claimed a 15% - 25% or more increase in horsepower, unequalled acceleration, immediate starts and instant tuning.
 - Installation was a simple bolt on design with no modifications needed.
 - Suitable for 883s as well as 1000 model Sportsters although could be installed on Shovels, Pans, Triumphs and Hondas.

- Body options for an extra price include, show chrome, bright anodized and 24K Gold.
- A true low head, nil pressure injector as does not depend on venturi suction like a carb but just pure air mass flow, so it self corrects for great altitude manifold pressure changes.⁴²⁾
- You wont fine tune this nail in a tube, they run rich when the tanks full, and get lean as the fuel drops.⁴³⁾
- Many people have to plumb air supply to the tank with a 'pop off' to keep pressure head constant below 1 PSI.⁴⁴⁾
- The unit is gravity feed instead of having a fuel pump for delivery and it was prone to leaking if you left the petcock open.⁴⁵⁾
- Posa and Star are all very similar and found their way from small aircraft and onto bikes.⁴⁶⁾
- POSA, Lake Injector, Revflow and Aero Carb are all float-less, diaphragm-less carburetors.
- These carbs do not operate well on more than .5 lbs of fuel pressure yes that is less than half a pound of fuel pressure. These carbs do not vent any fuel vapor that may form in the body to the venturi as there is not float bowl well or diaphragm vent.⁴⁷⁾

Bendix Stromberg Carburetor Identification

- Bendix Stromberg used a unique identification scheme where a series of letters and numbers were assembled to identify and describe how a carburetor was constructed. The first two letters described the carburetor design, followed by a number that identified the size, and numbers and letters to identify specific design details and modifications.
- The first (two) letter(s) comprise a Basic Design Code that places the Bendix Stromberg carburetor in a design category, where:
 - A – Pressure Injection Carburetors
 - E – Pressure Injection Carburetors
 - NA – Float-Type Carburetors
 - P – Pressure Injection Carburetors
 - Q – Pressure Injection Carburetors
 - R – Fuel Injection Systems
 - S – Speed Density Metering Systems
- Example: NA-R9G
- Prefix- “NA” – for float-type carburetors followed by a “-“(dash)
- The next letter indicates type, where
 - S – Single venturi updraft designed for two, three and four cylinder engines in the 25~95 hp class. NOT fitted with economizer, acceleration pump or mixture controls.
 - R – Single venturi updraft, designed for engines of all types in the 50-400 hp class. All are similar in design and incorporate needle valve type mixture control, accelerator pump and economizer. Some bodies are interchangeable in this series and deferent design economizers are used.
 - D – Double updraft venturi, with the float chamber to the rear, was considered obsolete c.1930
 - U – Double updraft venturi, with the float chamber between barrels. See specific models for details.
 - Y – Double vertical venturi (updraft), with two float chambers fore/aft of barrels. See specific models for details.
 - L – Inverted, down draft venturi.

- T - Triple venturi, double float chamber fore/aft of barrels. The NA-T4 series is the only known model. Designed for use on Wright J-5 and other 9-cylinder radials, where each venturi feeds three cylinders. It has float similar to Y series, but with back suction mixture control. No economizer or accelerator pump.
- F - Four-venturi with two separate float chambers. The last letter and numbers indicate a specific model.

Dellorto



48)



49)



50)



51)

[Buy Dellorto carbs and parts](#)

Weber

The Weber is a very tunable carb for different motors with a nearly infinite set of jets, emulsion tubes, chokes, etc. ⁵²⁾

The angled manifold that swings the carb towards the front of the bike, giving you leg room to tuck in behind the manifold / carb.



53)



54)



55)



56)



57)



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1952-1959 HD Spare Parts Catalog pg 16

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<http://www.classic-motorcycle-build.com/linkert-dc-carb.html>

10) 11)

Shop Dope Vol 4 Service Bulletin No 571 May 21, 1968

12) 13)

<http://xlforum.net/forums/showthread.php?t=1981918>

14)

HD Sportster Parts Catalog (99451-78B)

15)

<http://xlforum.net/forums/showthread.php?t=2006195&page=3>

16) 17)

1972-2003 HD XR-750 Service Manual pg 39

18) 19)

HD Sportster Parts Catalog XLH/XLCH 99451-78B

20)

1979 Harley Davidson Sportster Parts Catalog

21)

1979-1985 HD XL Parts Catalog pg 23

22) 23)

1979-1985 HD XL Parts Catalog pg 25

24)

1979-1985 HD XL Parts Catalog pg 27

25)

1977 HD XLCR Parts Catalog pg 57

26)

<http://www.mikunipower.com/VM01.htm>

27)

http://www.sudco.com/genuine_vs_fake_carburetors.html

28)

Sudco International Corp. 2410 S. Sequoia Drive Compton, CA 90220 Tel.(310) 637-8330 • Fax (310) 637-8331

29)
photo by Robicycle of the XLFORUM <http://xlforum.net/forums/showthread.php?t=1786621&page=4>
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<http://elcorramotors.blogspot.com/2012/06/lake-posa-fuel-injectors.html>
42) 43) 44)
<http://www.accessnorton.com/lake-injector-fine-tuning-t19614.html>
45) 46)
<http://www.jockeyjournal.com/forum/showthread.php?t=16479>
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