

Table of Contents

REF: Carburetor, Intake Manifold & Exhaust - Sub-01A	1
Basic Mikuni HSR Information	1
<i>Mikuni HSR 42/45/48 Carburetor</i>	1

[Go To Technical Menu](#)

REF: Carburetor, Intake Manifold & Exhaust - Sub-01A

Basic Mikuni HSR Information

Mikuni HSR 42/45/48 Carburetor

Mikuni Carb site <http://www.mikuni.com/fs-carburetor.html>

Model	Rebuild Kit - Mikuni Part #	Std. Main Jet Size	Std. Jet Needle size	Optional Jet Needles	Std. Accel Pump Nozzle	Std. Accel Pump Nozzle	Optional Lean Accel Pump Nozzle
42	KHS-016	160	97	95, 96, 98	70	60	50
45	KHS-016	175	97	all models	all <u>Carb</u>	for <u>Sportster</u>	
48	KHS-031	190	97	(95 rich - 98 lean)	Models	Models	

(from the Mikuni HSR 42-45-48 exploded view diagram

<http://www.mikuni.com/pdf/tm42xview121801.pdf>)

- When tuning, it's best to go by the Mikuni manual. Take your time, follow the Mikuni tuning guide carefully (including the throttle position tape) and you will get her close. If she is not as smooth at cruise, you may need to drop the needle back down and then switch it out for a different needle maybe. All needles are the same length and have the same taper, just different diameter of the straight portion. 96 is one richer than a 97. They only make a 95, 96, 97 and 98 needle. 165 main is probably close. But do the wide open throttle test in the manual to verify. ¹⁾
- HSR 42/ 45/ 48 Tuning Manual http://xlforum.net/misc/hsr_tuningmanual_021003.pdf



2)

Notes from Hammer Performance:

In our experience, we've found the CV40 to really start becoming a restriction at about 90 horsepower.³⁾ And they tend to put a cap on the power.

By comparison, a Mikuni HSR42 will easily support 110hp, an HSR45 will easily support 130hp, and we've made over 150hp using an HSR48.

A properly jetted Mikuni HSR carburetor also delivers excellent fuel mileage. The HSR carbs are generally tuned pretty darn close right out of the box.⁴⁾

But there are a lot of adjustments if you want to tweak on it.

One good thing about tuning a Mikuni is that the main jet can be accessed and changed without removing the float bowl. This saves time when dyno tuning a bike.

Many fans of the CV carburetors talk of it's altitude compensating capabilities. In our opinion, this is overrated.⁵⁾

We've taken both Mikuni and CV40 carburetors to the top of Mt Evans in Colorado, for example, which is over 14,000 feet.

Both ran equally poorly, but both ran. We don't see any real or measurable advantage in the CV in the way of altitude compensation.

The altitude compensation method of the CV, which is to put the bowl vent into the intake stream, also causes all kinds of issues with certain air cleaners that don't provide the proper aerodynamics for it.

So it can be troublesome to tune depending on the specific combination. We never have such difficulties tuning Mikuni carburetors.

Notes on Mikuni Carburetors:⁶⁾

- The HSR42 will fit and work fine in a stock CV40 intake manifold. The HSR45 or HSR48 require a larger intake manifold.
- The latest HSR series carbs are designed to work with stock big twin throttle cables. When put on a Sportster or Buell, it is sometimes necessary to bend the cable bracket back a little bit to achieve proper throttle cable adjustment.
- The HSR42 requires the re-use of your stock choke cable. A new choke cable is included with the HSR45 and HSR48.
- The HSR48 comes with a rubber boot to adapt it to a two-bolt style manifold.
- This works but places the carb farther out than stock. To mount the HSR48 in the stock location, use the large carb slip-fit manifold.

- To use a CV type air cleaner with these carbs, you need a CV air cleaner adapter.

Fake vs Genuine Mikuni HSR:

The top cover has a different design compared to the genuine.

Also you can locate the size of the carburetor and the "Mikuni" logo on the genuine while the fake carburetor doesn't show it at all.

The fake carb is also missing the "Assembled in Mexico" decal.

Go To Technical Menu

1)

Shu from the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/9123-mikunihsr-real-world-tuning-tips-for-beginners/page3?t=14060&page=3>

2)

photo by aswracing of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-motor-top-end/146724-2000-883-motor-manifold-and-carb-question?t=1594074>

3) 4) 5) 6)

<http://www.hammerperf.com/xlfuelsystems.shtml#mikunis>

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