650 V-Star Installation Guide

Congratulations on your purchase of
The KJS System

Revised: June; 2015

Please read carefully before you start the installation of this new composite system. These tip's are proven through years and hours of R&D and were designed for self-installation with no prior mechanical background knowledge. It is mentioned in the trouble shooting section, about vacuum leaks on installing the manifold, please remember, you can't do the final checks of the carb's performance, if is not sealing properly,

The carb supplied for your system is a TM40-6 formally known as a HS40, and comes all set up for your application so don't mess with it. Here is a link to mikuni for more details on its functions. http://www.mikuni.com/pdf/hs40_manual.pdf Note: Please visit the FAQ from the web site for how the system works and exhaust system clarifications. The installation of the manifold video on the web site is not for this system, since this one mounts to easy like a Chevy center head, it just plop's on facing the right side.

NOTE: whichever air filter you choose, the one on the web site is a K&N, part # RC 1950, dementions are posted on the K&N web site, if needed., no brackets required, but custom filters, depending on how heavy they are like those hyper things may need brackets to the frame to support any Extra weight and that some other air filters may require. This save's ware & tear on the rubber boot NOTE: you also can, once the system is installed can adapt your factory (round outer chrome cover only) once it's torn apart from the rest of the junk, we don't sell air filters there just too many kinds!

MANIFOLD INSTALLATION

A: The most important thing to remember is the old theory, practice make's perfect. Use **BLACK SILICONE ADHESIVE SEALANT** ULTRA BLACK RTV SILICONE GASKET MAKER, this is for installing and sealing the manifold correctly & takes 24 HR.S, too cure, read package for use

B: NOTE… The installation of the manifold video on the web site is not for this system, since this one mounts to easy like a Chevy center head, it just plop's on facing the right side like a Harley **: Note, with the composite manifold never over tighten it, There tough! So be sure you understand this, it works! Never over tighten, again, let the silicone do its job. If you have a 3rd party do the install for you, remember, most mechanics know everything, and they don't get paid to read these instructions, so if they brake it, as they say, they have to buy you a new one. This is called installation abuse! Please use common sense, thank you.**

C: With the old dual carb system, it's a fact that on older models or abused ones, that one cylinder may have run richer than the other. Over a period of time, this gums up the cylinders & intake/exhaust valves the valve stems and piston rings with the spark plugs & old duels removed you can spray down into the cylinders & the valve stems with WD 40, turning the engine over from time to time. Do this over a period of a day or two, to loosen up all the old crap, so when you fire up the new system, it clears it out and you'll be able to enjoy the KJS system to it's fullest potential. If you choose to perform this step, be aware that you'll see lots of really nasty smoke on your first engine start up. . If the engine pops, then the valves are carboned up and it will clear in a 100 mile. This holds true for older abused models that used duel carb's that been bad for years

D: Old dual carb removal: A Yamaha service manual is a valuable guide if you're not sure.
NOTE: There is a lower factory air filter bracket with 2 bolts attached to the rear of the front cylinder and is removed permanently now and no longer required

E: With the gaskets supplied, after cleaning the cylinder heads, apply a amount of silicone on the gasket, only on the circle part, and stick it to the head, pad it down, and the excess can be wiped out and applied to the face, this will help when installing the manifold to bond with each other

F: Apply silicone to the manifold, only again in a circle about 3/16 of an inch wide, and 1/16 Th of an inch high, not to wiggle it, and install with the bolts & washers supplied. Remember. It, s going to ooze out a little when bolted up, so you'll have to determine what's fair

G: Finger tighten only in a figure 8 pattern, while positioning the manifold, feeling the seating motion - You'll feel it match up. These bolts are tiny, so don't go crazy you're only going to use 75 % of the specified torque. That's barely finger tight, once this is done, let cure for a couple of hours, (Patience is important) and then do the other 25% let cure there for up to 24 hr.s then check it again and do the final torque. The torque is ((1.8 ft lbs)), or ((23 INCH lbs.)) Or gently the tip of your baby finger on the end of a 10mm box end wrench. Remember that this isn't a head bolt on a Chevy. After warm up, and cool down, check them again for the last time. They should be about up to half of a turn loose if installed correctly. Note!!! Let the silicone do its job, never over tighten, that would be installation abuse!!!!! Now the manifold installation is all done. SEE trouble shooting for seal check

TPS REMOVAL & NEW INSTALLATION

The TPS (*Throttle Positioning Sensor*) tells the computer the position of the throttle shaft, in relation to the engines RPM range. This is to tell the ignition to advance the engine timing in degrees. From the **factory there are 3 wires. Blue is 5 volts. Black is ground and the yellow is the reference point.**

For this conversion the 3 wires going to the TPS have to be extended 18 inches long with wire supplied with the kit, to reach its new location on the carb so instead of removing the wire and plug from the TPS itself, simply peel back the wire harness insulating tape 4 inches back up under the gas tank at the main harness and cut the 3 wires separately in the middle leaving enough room to soldier and shrink wrap the new 18 inch extension of wire and when complete wrap it up with a good brand electrical tape for neatness.

When removing the TPS from the dual carbs, they have two tamper proof screws' that can be taken out with small vise grips and all you'll need is just the TPS switch alone. There are new nut and bolts supplied on the bracket, which has been pre installed to the carb and ready to except your TPS to it.

The TPS is internally spring loaded so by placing it on the pivot shaft at say around 3 to 4 o'clock swing it back down to the 6 o'clock position and line it up with the two holes in the bracket with the wire plug end facing down insert the bolts with the nuts to the inside and tighten easy until final settings are done and also checking for the north, east, west & south rotation so it doesn't bind

Specifications: Use a DIGATAL OHM meter only! Set at 20 K scale from the meter use the red led on the blue TPS wire. And black led from ohmmeter to the yellow TPS wire, in the closed throttle position. Set the TPS so it reads between 0.65 – 0.75 K Ohms. Turn the throttle full open, it should read between 3.01- 4.15 K Ohms. Check for binding and tighten it up. NOTE: this operation has to be done while unplugged from the TPS or before you wire the extension wire of course, knowing which color wire is which.

California models 04 & newer and ALL 06 & newer are equipped with fuel cut off solenoids on the float bowls and are designed for the duel carb's on de acceleration to stop fuel from passing the main jet and are not used now, the ignition box needs to think there still there, otherwise the yellow engine light will appear, so with a pair of 1 Watt, 10 ohm resistors supplied with the kit, each wired to the 2 plastic plugs and soldered and both grounded to complete the circuit. This will trick the computer box to thinking there still there. Barons I believe sells a complete wire harness if you're not good with doing it your self

CARB INSTALLATION

A**:** The new rubber intake adapter is pre installed for you, done!

B**:** Now the carb is ready to install: insert carb into the rubber intake boot (use oil to promote) rotate to feel it seal and clamp it up easy. There is a vacuum port rubber plug on the side if needed. There are 2 slide body vent hose's, never block them, and one float bowl over flow hose the 3 can be placed in between the cylinders facing towards the rear of the engine and cut off neatly then the heat from the engine will make them conform to shape of the engine galley towards the left rear side of the bike in case they ever have to over flow away from the exhaust. Again, make sure there not obstructed or blocked off, don't use twist tie's, they may squish the hose's and cause the carb not to function, everything has been pre adjusted, and ready to go, again, important check for vacuum leak on the manifold, DON'T even try to adjust the carb, re install the manifold. It can be removed by using a 1 inch putty knife shaved to an edge, and gently tapped with a 6 oz hammer going from front to rear

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C: Dual throttle cables: Depending on what bars your using the throttle cable will have to be re-routed to give enough slack, so when turning the handlebars, it won't pull the gas on by mistake, and rev up the engine & reroute them on the outside of the forks and triple trees so the hang free and slip them through the right side plastic tank extension just above the ignition key.

The pull cable the one with the adjusting coupler on the twist grip spin back the big nut up the metal shaft and place it in the cable holder on the bottom hole of the carb and spin the retaining nut on and place the ball of the cable in the 3rd hole will be marked as such and adjust to get the desired pull tension and slack. Then place the return cable in the top carb holder and place the ball in the 4th hole also make sure the cable and handle bar twist grip is greased and oiled for smooth operation.

D: (AIS) With the dual system you have front & rear ½ inch chrome tubes from the exhaust pipes can now be removed and plugged, (a 10MM fine thread will tap itself nicely) or just simply cut them back one inch a squish then in a vise and re install. This is the (AIS) air induction system and is no longer needed and can be eliminated. This will make a difference in performance and also will clean up the engines appearance's dramatically

E**:** You will need a new fuel line 24 inches long by 5/16 hose and two small hose clamps to fit the carb and the fuel pump outlet and route the line through the frame. With the fuel tap turned on the Electric fuel pump has to be primed turn the ignition on and off a few times until you do not hear any more click, click, click (the sound of the fuel pump pressurizing the system). There is a built in filter just off the fuel petcock line going to the pump from the factory

F**:** SPARK PLUGS: gap at .038 (new). This system was designed to use NGK. DPR5EA-9 NGK stock # (2887) Yes 5's NOT 7s!!!!!

G: Your engine has a crank case breathing system, on the rear cylinder head cam shaft cover and did hook up into the old air filter box which as now been removed permanatly. You will need to attach a ½ inch joiner and direct it upwards and attach a small breather filter and clamp them. There are many kinds, the simpler, and the better. Also your bike came equipped with carb heaters and are no longer required & when removing the old carb simply UN plug the wire harness

START UP TIPS

A**:** When cold, turn the idle screw up 2 ½ Turns, pull choke button if needed for cold starts, out just as the engine turns over, then release it as soon as possible within 5 to 20 seconds, not to fowl the plugs let the idle warm it up, then re adjust the idle when hot after a few miles at a stop light
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B**:** This new system is more mechanical than automatic; attention to warm up is important. When starting the bike for the first time, **DO NOT REV IT UP**, let it idle for 20 minutes, the engine heat will help cure the silicone, and check for Vacuum leaks if necessary before riding. See troubleshooting attachment

C: Vacuum leaks are the cause of most problems; check the seal with Ether (quick start). It comes in a spray can, ETHER, no other product will do, with engine running, at no more than 1100 RPM spray it liberally 2 inch's all around the manifold sealing points, top and bottom, so it run's down the cylinder, it will evaporate within 2 seconds when the engine is hot If there is a leak through the silicone, the engine will change pitch, will probably smother the engine. Do take care in this operation. This is one way to tell if it's not sealing. You'll notice the difference right away! If you experience a leak, you will need to reinstall the manifold: It can be removed again by using a 1 inch putty knife shaved to an edge, and gently tapped with a 6 oz hammer going from front to rear Do not polish the inside of the manifold; it's balanced just the way it is!

D**:** KJS customers have mentioned that this system performs better after a few miles. This makes sense, considering that the dual carbs have in most cases on older models have gummed up the rings and valves. Now that your bike as a new heart, it has to clear out all the old crud

E: The brass airscrew (PMS) is the only adjustment and only functions for the first parts of the carb system. PMS airscrew is pre set and marked on the carb body and can never go past 3 turns out. It is marked were it has been pre set by me If this section is rich, then turn the airscrew in 1/4-turn increments to find the sweet spot. Again, if you have a vacuum leak, this action will be futile!

F: NOTE: When cleaning the plugs, never use a brass brush, it will coat the plugs with brass and make the spark erratic, always use steel wire brush or sand blast. REMEMBER, if a plug is badly fouled up inside, the carbon deposits, will make the plug run erratically, and will miss led you, replace them with new ones!!!!

G**:** It should be noted that the new carb system does supply a good atomized charge, so the plugs under good condition will have a light color to them, the outside rim of the plugs will show darker, and half way up the electrode hook, or tip. This is normal. To compare: like a WW2 fighter, the cylinder heads should be 180 degrees before you go, 160 min, the manifold itself will run around 85 degrees, making the fuel charge cold & excellent for performance, it is cold blooded !

H**: This system is guaranteed to work, let the silicone do its job of sealing, over tightening the manifold's specific tourge may result in Failure this is considered installation abuse, and there is no warranty. Please use common sense, thank you**

CONCLUSION: I know it may be hard to control your excitement with this new system, but you'll have plenty of time to give it the works. Revving it up, will only loads the cylinders up with unburned gases, and thus you will not be able to judge the coloration of the plugs, which tell the tale. You know so-called trade secrets. It's my firm belief, you will be a carb expert, and should be proud of your accomplishment and enjoy the new throttle response & outstanding performance that this system delivers. Relearning to shift and throttle twisting will be a whole new experience. Some say they stopped looking for a 6 Th gear?

Yours truly. Ken