

400/500/535 Virago 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 tips'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 Also, visit the FAQ from the web site for further explanations, on how the system works and exhaust system clarifications

NOTE: whichever air filter you choose!! The one on the web site is a K&N, part # RC 1950 No brackets required, but custom filters, depending on how heavy they are, may need brackets to the frame to support any extra weight that some air filters may require. This save's ware & tear on the rubber boot .we don't sell air filters there is to 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 & can take up to 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. 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, that one cylinder may have run richer than the other. Over a period of time, this gums up the intake valves and piston rings. With the spark plugs removed and the duel carbs you can spray down into the cylinders & intake/exhaust valves 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.

With models with the upper real tank, simply remove the hold down bolts, and suspend it on a 45 degree angle, with a bungee cord from the bars, so you don't have to remove the fuel lines, and this

will give you access to the air filter box and final removal of the old carbs on 500 models with fuel pet cocks, simply remove, Models with a false tank, again, remove for air filter access

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 5/16 of an inch wide, and 1/16th 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 whats 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: 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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CARB INSTALLATION

A: The new rubber intake adapter has been pre installed 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 of the carb 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, every thing as 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

C: Throttle for the single cable (400/500/535's) there is a cable adapter on the carb bracket, simply slip the cable through, and adjust accordingly, with help from the upper adjustment, on the twist grip and place the ball in the 3 rd hole on the throttle plate it will be marked as such, and oil and grease the cable, and twist grip and inside the handle bar slide.

Some later model (535's) may have the factory pull cable the one with the adjusting coupler on the twist grip and place the ball in the 3rd hole will be marked as such and adjust to get the desired pull tension and slack and place the return cable in the 4th hole as marked with the slotted nut provided and also be sure the cable and handle bar twist grip is greased and oiled for smooth operation.

D: Depending on what bars your using the throttle cable should be re-routed on the outside of the forks and triple trees to give enough slack, so when turning the handlebars, it won't pull the gas on by mistake, and rev up the engine. The choke cable is not used any more and eliminated all together, since there is a manual choke cable/ button for cold start up's only

E: Early 400/500's have a reed valve under the left side pod it now can be removed completely for the single system some 535 models' have chrome tubes from the exhaust pipes (and can be plugged with a 10MM fine thread bolt or simply cut then back one inch and squish them in a vice and re install. (AIS) air induction system under the left side pod and is no longer needed and can be eliminated. Under the right side chrome cover, (535) is all the ignition stuff, you can relocate it through the frame, where the air filters was, to get rid of it, cleans up the bikes appearances

F: Replace all FUEL lines (they are most likely rotten inside and the bit's can jam the needle & seat) 5/16 fuel hose to fit the carb, on 500 model bikes use only wire screen type filters for gravity feed system's, not paper or brass and turn the pet cock to prime the float bowl and connect the smaller hose from the pet cock to the vacuum port on the carb, so it will open the fuel pet cock diaphragm when in the on running position, gently tap on the float bowl, so the needle and seat doesn't stick while filling up

On 535 model's Electric fuel pump also has to be primed with the fuel tap on 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 should be a built in filter down below of the main tank from the factory

G SPARK PLUGS: gap at .038 (new). This system was designed to use NGK. BP(R) 5ES YES 5's!!!!!!!

H: Your engine has a crank case breathing system, Ether on the front cylinder head cam shaft cover and go's into the frame where the air filters use to be which is good so just leave it alone, it's fine there and others need to attach a ½ inch hose, and direct it upwards, under the tank is good, and attach a small breather filter, there are many kinds, the simpler, the better again, if needed.

START UP TIPS

A: When engine is cold, turn the idle screw up 2 ½ turns from the last time the engine was hot, and has you push the star button, pull choke button at the same time out just as the engine turns over, then release the choke as soon as possible within 5 to 20 seconds not to fowl the plugs & let the idle and warm it up, then re adjust the idle back down when hot.

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 leaks before riding, NOTE: see trouble shooting or you just may fail?

C: If your bike runs like crap after any miles, you may have this problem? Vacuum leaks are 99% of 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 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 cracking the flange, 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 don't look for a 6 th gear anymore?
Yours truly. Ken