Cv carb diagram

H-D has sold almost two million CV equipped bikes since then and its only the fact that all new Harley models have fuel injection that they've stopped being produced. In stock form they are a decent carburettor, sporting a 40mm throttle bore and a 39mm venturi. In standard trim it was only the early California models that had any problems, with an off-idle hesitation caused by a lean slow-speed jet to beat emission requirements. The problem was easily cured however by changing the slow jet to a The engine was a stock 88" Twin Cam with a set of Branch 4 heads installed, while everything else on the bike was stock. The results clearly show that a properly tuned CV carburetor makes excellent power on mildly modified engines. A Twin Cam with a stock CV carburetor develops 60 to 63 hp. With a free-flowing air filter, performance mufflers and a larger main jet the Twin Cam motor will easily produce 70 to 75 hp. On a hot-rodded Evo or a Twin-Cam motor higher compression pistons, performance cam, aftermarket ignition, high flow air filter and mufflers , the standard CV carburetor will become the limiting factor in the engine builders horsepower quest. There is more power lurking inside the CV however and there are several ways to improve its potential; buy a pre-modified carburettor, have yours modified by a reputable performance shop or get down and dirty and modify it yourself. The shops who work a lot with the CV carburetor are boring out the throttle body to 42 mm, installing a larger butterfly, contouring the slide and drilling bleed holes in the butterfly. These carburetors have the highest potential output but most of these operations are beyond the abilities of most blokes out in their garage. The amount of power between a professionally modified carburetor and a re-jetted stock CV carburetor can be as much as Slide Spring 2. Slide Diaphragm 3. Vacuum Slide 4. Vacuum Port 5. Needle Jet 6. Main Air Jet 7. Main Jet 8. Slow Jet 9. Idle Mixture Adjustment Screw They've bored out the throat to 42 mm and blended the venturi for a high velocity flow. A new, larger throttle butterfly will be installed before they're finished, as will a new fuel inlet that has a larger capacity and the ability to rotate through degrees. The Dakota Kid USA bores the carburetor's throat to 42mm, recontoures the slide and polishes every part that encounters the airflow. Their CV also features a larger fuel inlet and a custom needle jet. Wood Performance Products who also make awesome camshafts installed a spacer between the carburetor body and the float bowl to increase its volume. They bored the body to 42 mm, recontoured the slide and installed a custom fuel inlet with a larger high flow needle and seat. All three modified carburettors had a bleed hole shown here on the Wood model drilled in the throttle butterfly. This hole allows the CV to be run on motors that have high-performance camshafts with more valve overlap. These cams require more air past the butterfly at idle than stock cams and tend to stall if they dont get it. If the butterfly is cracked open slightly with the adjustment screw instead of drilling a small hole, the the off-idle transfer ports will be uncovered causing an aggravating idle drama and off idle hesitation problems. Ok dude, those pro carbs are awesome but I'm not that rich.. I'm glad you asked They both included jets main and slow ,needle jet, emulsion tube, drill bits and complete instructions. Modifying a CV carburetor requires a steady hand and a lot of patience as installing the kit parts is just the beginning. You must then fine-tune the CV to match your bike's motor and your individual riding style. The modified carburetor will not only add more outright power but will make the motor perform better in low to middle rpm ranges where most people ride most of the time. This is the CV carburettor tuner kit from DynoJet and it has all of the parts needed to recalibrate a CV carburetor for performance riding. No special tools are needed, and the instructions have comprehensive tuning tips. I have this kit fitted to my Twin Cam Softail and throttle response is excellent right through the rev range from idle to redline. Air Slide Spring 2. Needle Jet note the circlip on the end 3. Main Jets 4. Slow jets 5. Emulsion Tube 6. Drill Bit 7. Instruction Sheet The Yost Power Tube kit features a special dual chamber emulsion tube that atomises the fuel and air mix coming out of the main jet and air bleed into an extremely fine mist. The smaller droplets of fuel make for an air-fuel mixture that burns more completely, doesn't drop out of suspension in the intake manifold causing a power drop and has the net result of delivering more power from the same amount of fuel. Main Jets 2. Needle Jets note the circlip on the end 3. Drill Bits 6. Slow Jets The installation instructions for both kits are extremely similar and here's how to fit them After removing the carb from the bike and cleaning it, flip the carb over and remove the float bowl 4 screws. The emulsion tube A is threaded into the bottom of the carburetor body. The main jet B is screwed into the end of the emulsion tube. The slow jet is screwed into the carburetor body in the bottom of a hollow well next to the main jet well. Remove the carb top 4 screws and carefully remove the Airslide, taking care not to damage the thin rubber diaphragm. The slide moves up into the carburetor body as vacuum is applied to a hole "A" at the bottom rear of the slide. Enlarging this hole causes the slide to move up faster because vacuum is applied faster to the diaphragm that is attatched to the top of the air slide. Both of the tuning kits included drill bits for this operation. The needle jet is pushed through the hole marked "B" from the underside and is held in place by the air slide spring. The Dynojet kit supplies a

replacement air slide spring for faster airslide movement resulting in a crisper throttle response and the needle jet is mixture tunable by moving the circlip to one of the different notches it contains. To tune your kitted CV you need to know a little about motorcycle carbs: Smaller Jet sizes will lean out your mixture, bigger Jet sizes will richen your mixture. Lowering the needle circlip placement will lean out your midrange while raising it will richen your midrange. Try your bike out at one throttle opening at a time to see if it needs adjustment. Popping and farting mean a lean condition, doughy throttle response and slight black smoke on acceleration mean a rich condition. Wide Open Throttle. Fitting one of these kits is a rewarding experience and lets loose several more horses in the middle and top paddock. Its well worth the effort. C All rights reserved. Ebay is the Answer Enjoy this article? The site? Would you buy me a beer for my efforts? More Harleys use the Keihin CV constant velocity carburetor than any other type. Harley-Davidson introduced this carburetor on '89 Sportsters and '90 Big Twins; they have sold almost 2 million -- with a capital M -- CV-equipped bikes since then. In stock form, it is a decent carburetor; it has a 40mm throttle bore and a 39mm venturi. Early California models had an off-idle hesitation; this was caused by a lean, slow-speed jet, but the problem was cured with the introduction of a 45 slow jet. An '02 Twin Cam bike with a stock CV carburetor develops 60 to 63 hp. With a free-flowing air filter, performance mufflers, and installing a larger main jet in the carburetor, the Twin Cam motor will produce 70 to 75 hp. However, there are more ponies inside the CV carburetor. On a hopped-up Evo or a Twin-Cam motor high compression, performance camshaft, ignition, air filter, and mufflers , a stock CV carburetor becomes the limiting factor in the motor's output. There are several ways to improve the potential of the CV carburetor: buy a custom-modified carburetor, have yours modified by one of the carburetor shops, or modify it yourself. The difference between having the work done and doing it yourself is in the amount of modification that can be accomplished. To find out the latest trends in hot CV carburetors, we picked up some samples of re-worked carburetors and a couple of CV carburetor hop-up kits. The carburetors all showed a high level of workmanship, and the kits were well thought out. The shops who work a lot with the CV carburetor are boring out the throttle body to 42 mm, installing a larger butterfly, recontouring the slide, and drilling bleed holes in the butterfly. These carburetors have the highest potential output; most of these operations are beyond the abilities of most bikers. The amount of power between a professionally modified carburetor and a re-jetted stock CV carburetor can be as much as 20 hp. Da Vinci does this by removing the slide assembly, installing a machined plug, boring out the throat to 42 mm, enlarging the venturi to 41 mm, and then fitting a booster venturi into the carburetor's throat. That is the simple explanation; the actual work is very extensive. The reasoning behind all of this work is that without the jet needle sitting perpendicular to the butterfly, there will be less turbulence in the air-fuel mixture as it enters the intake tract. We can attest that this carburetor produced Modifying a CV carburetor requires a bit of skill and a lot of patience; installing the parts is just the beginning. You must then fine-tune the carburetor to match the bike's motor and your riding style. The modified carburetor will not only add more power to the motor, but will make the motor perform better in low to middle rpm ranges. A carburetor body that has been reworked by Trock Cycle. The shop bored out the throat to 42 mm and blended the venturi. A new, larger throttle butterfly will be installed. They installed a new fuel inlet that has a larger capacity and rotates. It takes high-precision machines to do this work. The Dakota Kid bores the carburetor's throat to 42mm, recontoured the slide, and polished every part that encounters the airflow. It also features a larger fuel inlet and a custom jet needle. To increase its fuel capacity, Wood Performance Products installed a spacer arrow between the carburetor body and the float bowl. They bore it out to 42 mm, recontoured the slide, and installed a custom fuel inlet with a larger needle and seat. All of the three carburetors had a bleed hole arrow in the throttle butterfly. This hole allows the carburetor to be run on motors that have high-performance camshafts with more valve overlap. These cams require more air past the butterfly at idle than stock cams. If the butterfly is opened for this extra air with the adjustment screw, then the off-idle transfer ports will be uncovered, which will cause idle and hesitation problems. This CV carburetor tuner kit from DynoJet has all of the parts needed to recalibrate a CV carburetor for performance riding. No special tools are needed, and the instructions have comprehensive tuning tips. The Yost Power Tube kit features a special dual chamber emulsion tube that refines the fuel and air coming out of the main jet. The smaller droplets of fuel make for an air-fuel mixture that burns more completely, delivering more power out of the same amount of gas. The emulsion tube A is threaded into the bottom of the carburetor body. The main jet B is screwed into the end of the emulsion tube. The slow jet is screwed into the carburetor body in the bottom of a hollow well arrow. The slide moves up into the carburetor body as vacuum is applied to a hole arrow at the bottom rear of the slide. Enlarging this hole causes the slide to move up faster. Both of the tuning kits included drill bits

for this operation. The jet needle fits inside of the slide. It is inserted from the top and retained by the plastic spring seat arrow. Both of the kits included custom adjustable needles. This is where the patience comes in; if the needle has to be adjusted, then the carburetor must be removed to do it. After about the third time, it becomes easy. The Da Vinci carburetor resembles a CV from the outside. However, it is a straight butterfly carburetor that has been made out of the CV body. A machined aluminum plug has been installed in place of the slide assembly. The plug fits all the way into the grooves that the slide moved in. This booster venturi is installed into the carburetor. It is secured with a special emulsion tube. The fuel flows up the emulsion tube into the booster venturi and out through the small holes in the center into the air entering the carburetor. The carburetor's throat is very smooth and has been contoured for maximum efficiency. The designs used in this carburetor were worked out in the special carburetors that Da Vinci builds for automotive circle-track racing. Skip to main content. Follow us facebook instagram twitter pinterest youTube rss. Professionally Reworked Carburetors The shops who work a lot with the CV carburetor are boring out the throttle body to 42 mm, installing a larger butterfly, recontouring the slide, and drilling bleed holes in the butterfly. More Stories. The CVK40 is technically a bleed type carb, with a variable venturi that's controlled by constant velocity CV. It's also known as Constant Depression or Constant Vacuum. The 40 in the name represents a 40 mm venturi exit diameter. Wonder why 'K'awasaki added the K? Most carbs have a one piece needle jet. On the CVK40 it consists of a collar and what Kawasaki calls a holder. Most 4-strokes have pin holes along the length of this brass jet. These pin holes allow air from the air jet to premix with fuel from the fuel jet to start the mixture emulsification process before it enters the venturi. Primary type carbs use a solid jet, no pin holes. A venturi is a tube with a convex taper, one end wider than the other. As air enters the wider end it's squeezed into the narrower section of the tube, lowering the air's pressure. The area of lowest pressure is just past the narrowest point and is called the depression. This has always seemed counterintuitive, but Bernoulli's Principle outlines the fluid dynamics involved in this effect. This lowered pressure, or comparative vacuum, is separate from the engine vacuum. A variable venturi varies the venturi diameter at the depression by raising or lowering an obstruction. This obstruction is called a slide. On a CV the slide is called a piston or diaphragm valve. Both the CV and conventional slide carbs are classified as variable venturi carbs. The slide on a conventional carb is directly connected to the throttle cable. Twist the throttle grip and the slide is raised in the venturi. On a CV carb the throttle cable is connected to a butterfly valve that varies the volume through the venturi. It's not the throttle, it's the pressure difference from the venturi to the outside atmosphere that moves the slide. So which type is better? That depends on what you want to do. The manufacturers will tell you the CV is the next best thing to electronic fuel injection. It does feed a precise amount of mixture to smooth out throttle response, reduce pollution, and stretch your fuel budget and gas tank range. This is great for tarmac cruising and feeling warm and fuzzy about doing your part to reduce global warming while pocketing some spare change. It sure makes it easier for the manufacturers to get the EPA approval stamp on the bike. But what if you feel that no matter how much you hop up your little beast, you're never going to match the belching of that cager in the gas guzzling V? What if you don't mind spending more for gas, and when you go off-road you want a burst of power to blip over obstacles or steer through a wash without fanning your clutch while waiting for the vacuum to build in the venturi? If you can discipline yourself to control the throttle so that you don't bog your engine, then you want a conventional slide carb. With the same engine and carb design, a 38mm diameter venturi will more accurately meter the mixture on the low end, while a 41mm diameter will do a better job of supplying mixture at higher engine speeds. It's another factor to consider if you replace your carb. It all starts in your engine. Think of your thumper as a big pump, happily sucking and blowing down the road. During the intake stroke the engine's piston descends in the cylinder. This creates a void that sucks in whatever is on the other side of the open engine intake valves. Unless the engine intake valves are open, the carb is not being sucked on by the engine. This vacuum action powers the carb. Each time the piston goes up and down, two of the four strokes , one revolution has occurred. It takes two revolutions to complete the four strokes, or one-half of a revolution to complete one of the four strokes. At redline, your engine is sucking on the carb at a rate of over 60 times per second. At idle it's around 11 times a second. The math below shows that with a cc displacement, a theoretical maximum of between 7 and 40 liters of mixture are sucked in each second. So these numbers are only to illustrate the relative difference in volume from idle to redline. Remember Bernoulli's effect in the venturi? Sitting below the venturi is the fuel float chamber which is vented to the outside of the carb to match atmospheric air pressure. The fuel in the float bowl is also 'vented' to the low pressure of the venturi through the starter, pilot and main fuel jets. So you can think of the float chamber as being pressurized in comparison to the partial vacuum of the venturi.

The fuel naturally tries to fill in the low pressure of the venturi's depression by injecting itself through one, or a combination of the three fuel jets. Too rich and you're wasting fuel, spewing more pollutants, diluting your oil, fouling engine parts, and performance suffers. Too lean and you run the risk of detonation, engine operating at higher temperatures, and performance suffers. An air-cooled engine needs to run richer more fuel to aid in engine cooling. This is another plus of our water-cooled system, to balance out its disadvantages. For images of Ninja carbs, see Carburetor photos. Supplementing the factory manuals, the following text and photos should make it easier to understand how the carb works. The parts are broken into the following groups:. The float system acts as a fuel reservoir to meet engine demand. The float is hinged on a pin in the float boss. It rises and falls with the fuel level in the float bowl. The small metal tang integrated in the plastic float supports the float valve, aka float needle. As the fuel in the float bowl rises, the float valve is pushed into the valve seat, until it's high enough to shut off the fuel flow to the bowl. The level in the bowl drops lowering the float which pulls the float valve from its seat, and fills again. This system is referred to as the choke. But that's a misnomer. When you apply the choke lever, what you're doing is retracting a plunger that opens a tube connected to the starter jet, allowing additional fuel to enter the venturi just below the vacuum hose nipple. It supplements the pilot system at start up. When you set the idle with that big screw on the right side of the carb, what you're doing is covering or uncovering one or more of the four small holes that are drilled into the venturi, leading to the pilot jet just under the butterfly valve, and letting more or less air pass the butterfly. When you adjust the pilot screw that's under the carb, you are varying the amount of air premixing with the gas before it enters the venturi. As you advance the throttle cable that's connected to the butterfly valve, the butterfly opens to allow more air through the venturi. This increases the vacuum effect that is transferred up through the vacuum drilling the hole you bored out for the Dynojet kit , on the diaphragm valve slide , that leads to the TOP diaphragm chamber. Note: Drilling your slides is not recommended for the Ninja The bottom chamber is open to atmospheric pressure from the airbox by the crescent shaped casting on the top of the venturi. When the vacuum in the top chamber rises sufficiently, the constant ambient pressure of the lower chamber helps the diaphragm valve overcome the downward force of the diaphragm spring, and it rises from the venturi. As the diaphragm valve is raised from the venturi depression lowest pressure area , the needle is pulled further out of the needle jet, exposing a thinner portion of the needle taper, which allows even more fuel to rise into the venturi to meet the increased engine demand. You're blasting down the road and you see a hairpin coming up, so you close the throttle. This closes the butterfly valve. You and your lb. Now it can't get the mixture it's trying to suck in because the butterfly valve is closed, blocking the air flow. To compensate for this there's an air jet in the lower diaphragm chamber that transfers ambient pressure to one side of the coasting enricher's spring-loaded cut off valve. The excess vacuum in front of the butterfly valve is transferred to a drilling that leads to the other side of the cut off valve. This sucks it open, allowing the pilot jet to feed more fuel to the engine, preventing an overly lean condition. DO NOT tamper with your carb. Unless it's time to clean or overhaul it, you've changed the exhaust or airfilter, you need to troubleshoot it, or the Kid in you just has to know, "how does it go? When troubleshooting the carb, remember its job is to mix fuel and air to a specific ratio for the engine's consumption. There are many things that can cause an imbalance in your mixture besides the carb itself. Things like a leaking or pinched hose, valve clearance, a dirty air cleaner, removing the airbox lid, even running out of fuel. Anything that affects your big pump as it sucks and blows affects your mixture. Before blaming the carb, eliminate as many other variables as you can. How a carburetor works; Carbs explained From NinjaWiki. Jump to: navigation , search. Category : Intake. Personal tools Log in. Also remember that the Ninja has two carbs; the bike this article was written for only has one. Look at the 4-cycles of our 4-stroke thumperpumper. Intake valves open, exhaust closed. Intake and exhaust valves closed. Exhaust valves open, intake closed. The 'mixture', a mixture of fuel and air, your engine's 'food' , is theoretically ideal at around 15 parts of air to one part of gasoline by weight, not volume. The outer limits are and Please see the rest of the FAQ for more information on working on your carbs. The Mikuni CV carburetor can be tuned via 3 methods, the main jet that controls fuel flow during full acceleration, the needle clip position that controls fuel flow during cruising and roll on throttle, and the mixture screws that regulate fuel flow during idle conditions. The carburator should be tuned first by testing the motorcycle, and noting the characteristics of the idle, roll on and full acceleration. After testing you should start with the main jet, followed by the needle clip position and mixture screws. Start the bike and note the idle characteristics. Does it idle smooth or rough? If it runs rough, the mixture screws will need to be adjusted. Test the roll on throttle to full acceleration to see if the motorcycle pulls hard at high RPMs. If the bike doesn't pull well under acceleration, this indicates that the main jet is too big and will need to be swapped for a

smaller jet. If, during roll on acceleration, the bike pulls equally well whether warm or cold, this indicates the needle clip is set properly. If it pulls well while cold, the needle clip will need to be lowered, while the opposite is true for better warm pulling. Loosen the hose clamp that attaches the carburetor to the air box. Loosen the hose clamp where the intake manifold meets the carburetor. Pull the carburetor loose and close the petcock valve on the bottom of the fuel tank. Remove the fuel inlet line from the carburetor by hand and pull the carburetor from the bike. Unscrew the top of the carburetor, and allow the throttle, slide, spring and needle jet slip out of the top of the carburetor. This will allow you to adjust the clip position of the needle jet, but first you must remove the fuel bowl to access and adjust the main jet. Unscrew the fuel bowl bolts with a screwdriver and pull the fuel bowl away from the main body of the carburetor, ensuring to preserve the bowl gasket. Unscrew the main jet with a screwdriver and swap it for a smaller or larger size depending on the characteristics of your test. Screw in and tighten the new main jet and reinstall the fuel bowl, ensuring to place the bowl gasket between the bowl and main body to create a proper seal. Spin the clip on the needle up for better roll on acceleration while the engine is cold or lower for better acceleration when the bike is fully warmed up. To start, adjust the clip one turn. You can always reopen the needle area of the carburetor to make additional clip adjustments. Slide the needle, slide, spring and throttle cable back into the top of the carburetor in one piece as it came out. Tighten the cap screws to secure the top of the carburetor to the main body. Slide the carburetor back into position within the bike, and slide the carburetor into the air box hose and intake manifold mount. Tighten the hose clamps on both sides to ensure the carburetor is secured to the intake system once again. Start the bike and verify the adjustments have helped improve the performance of the bike. Repeat the steps above if performance is not improved, doing so until you achieve the results you want. Finally, adjust the mixture screw,

2005 f 150 rocker panel
seo accy fuse
2006 ford explorer repair manual

found on the side of the carburetor body with a screwdriver to improve the idle conditions. Start with half turn increments while the bike idles until a smooth idle with adequate RPM to keep the bike running is achieved. Kelvin Hayes has been writing professionally since as a freelance copywriter. He runs his own online business, writing ebooks, reports and information products. Completely self-taught, Hayes prides himself on creatively completing writing projects by pulling from his wide range of life experiences. Step 1 Start the bike and note the idle characteristics. Step 2 Loosen the hose clamp that attaches the carburetor to the air box. Step 3 Unscrew the top of the carburetor, and allow the throttle, slide, spring and needle jet slip out of the top of the carburetor. Step 4 Spin the clip on the needle up for better roll on acceleration while the engine is cold or lower for better acceleration when the bike is fully warmed up. Screwdriver Box wrench set Carburator cleaner spray.