

77celica (stranger) Fri Feb 18 2005 03:09 PM	 Weber 32/36DGV verses the Weber 38DGES Hello all! I was wondering if anyone here has any opinion on the weber 32/36(progressive) versus a 38/38(synchronous). I have the 32/36 street legal carb on a 20r already and I LOVE it! I now am going to install a set of LC Engineering pro headers on the car with a 2.25" exhaust and a mild cam is in the future. Will the 32/36 perform well with these upgrades or will I need a 38? What have been peoples experiences with these carbs with upgrades? Also, has anyone ever switched from a 32/36 to a 38/38? If so, did you notice that much of a difference? Sorry for all the questions. I visit here regularly and I love the site and trust your opinions. Thanks in advance, Ron 
tomklipp (carpal tunnel) Fri Feb 18 2005 09:24 PM	 Re: Weber 32/36DGV verses the Weber 38DGES with the amount of mods you have I don't think you'd benefit from the 38 carb. it is pretty hard to beat the 32/36 for performance and economy. the 38 is really for havily modified engines. that doesn't mean it wont work on your engine, it just wouldn't give you much of an increase if any.
77celica (stranger) Sat Feb 19 2005 12:19 AM	 Re: Weber 32/36DGV verses the Weber 38DGES That's what I thought also. I was just worried that the cam and headers would be too much for the 32/36. I heard the 32/36 gives better low end throttle response and idle than the 38. The only reason I was considering changing is that the weber carb I have is street legal and my headers are not. I live now where the car doesn't have to get smogged. I thought about switching to a different carb setup. Does anyone know if I have to do anything to run a smog legal carb without the smog equipment? Do I just plug up the vacuum lines or will this hurt performance of the carb?
Sarge (carpal tunnel) Wed Feb 23 2005 02:40 PM	 Re: Weber 32/36DGV verses the Weber 38DGES The difference in performance and throttle response between the 38DGAS and a 32/36DGV is huge . The DGAS has a more aggressive main circuit that slams in earlier and gives a huge improvement in torque . I regularly build them for my customers and you would have to pry a DGAS out of their cold dead fingers , not one would go back to a 32/36 progressive . With the cam and header package you will probably end up driving it at the limit of the primary throat all the time , with the 38 you can cruise at 1/4 throttle in most cases and usually get the same fuel mileage . I've ran DGAS carbs on engines as small as 1300cc's with no real problems , your 2L will respond even better with the correct jetting . The carb can also be set up with all the necessary vacuum outlets for your smog equipment since the basic body design is the same , just swap out the parts off the 32/36.... BTW, if any of the folks here have Weber problems don't hesitate to ask . Best way to contact is to shoot me an email- morepowr@theramp.net Sarge
dok33 (addict) Wed Feb 23 2005 05:54 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Wow, this post came at a perfect time. I found a '77 Celica GT coupe for sale and I was thnking of getting it and eventually building a 20r/22r hybrid, possibly with dual sidedraft carbs. I've got alot of experience with the 22re, but haven't messed with a carbie version. In reading through old posts this seems like a good way to go, any input?
foxracing706 (enthusiast) Wed Feb 23 2005 08:46 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I know there for sure is a big difference over the 32/38. But i was wondering if anyone running the 38 have problems with it idling. Mine idles like crap. sometimes will go from 1,000-2,500. I have replaced the gaskets and the plates now and it still idles bad. any input? Brad
82TOYO (stranger) Wed Feb 23 2005 09:57 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I have the 38 on my 82 22R and have had no problems with idle or anything. My friend had the 32/36 on his toy and has switched to the 38 because he was not happy with it. As long as you keep your foot out of it you can actually get better mileage because you don't have to work it as hard. If you are going to get a new carb I would go with the 38 because it will work better with the mods you have and will handle anything you do to it latter also. Just my 2 cents.
Sarge	 Re: Weber 32/36DGV verses the Weber 38DGES

(carpal tunnel)
Thu Feb 24 2005
01:12 AM

Two things cause idle problems with Webers . Ok, maybe three or four but here they are:
Fuel pressure-excessive fuel pressure at idle or a high pulsation from a fuel pump can cause the carb to idle high and irratically. 3psi is the rule, 2.5 works about the best.

Vacuum leaks- #1 cause of high idle problems . No offense, but the Redline adapter plates are known to be a problem. I've made a business out of modifying the stock intakes and adapters for the Suzuki engines . The base of the plenum on the intake needs to be ground flat first. The bottom of the base plate also needs to be ground flat to match and a 1/16" gasket used instead of the 1/8" supplied gaskets. After that plate is installed and torqued, the top of it needs to be milled flat again as well as the bottom of the carb adapter if it uses the 2 piece design. Then, lastly the top of the carb plate should be milled. I've had to repair a bunch of DGV series carbs that were brand new and bent at their bases due to the plates being warped from excessive torque used to seal them. The gaskets are way too thick and cause a problem with the plates bending . Once the whole stack is built, an accumulative error builds up and bends the carb as well . \$100 later it can be fixed...

Throttle shaft seals-some of the newer Spanish built DGV DGAS series I've had here have had a problem with the throttle shaft seals being installed backwards. They are nylon and are broken off a "casting tree" much like model car parts . That little bump if installed into the sealing bore results in a pretty good vacuum leak and will raise the idle speed .

Throttle plate synchronization- the 38DGAS series has a synchro adjustment on the primary throttle shaft gear. That screw allows the gears to be meshed and fine tuned to close both throttle valves at the same time. Over time the gears wear a bit and cause the secondary throttle valve to be left open a bit raising the idle. It's just an air leak and air leaks are just like vacuum leaks . Some of the problem units I've had through here were not set up properly new . This timing procedure must be done with the carb off and is a real pita but not impossible .

Another problem of note with the 38DGAS is idle jet sizes . Both idle jets have to be the same size , not drilled or different brands. Genuine Weber idle jets are flow metered then stamped for sizing. Everyone else just stamps their sizes according to the hole drilled. Jet sizes with Webers are very consistent , you can swap out jets that are 20yrs old and the engine don't even change note as long as the numbers are the same. Also, lean best idle settings and calibration are very critical to the DGAS and a bit different too .

With the carb warmed up and the choke verified to be off drop the idle as low as possible, preferably down around 400revs or less. To properly calibrate idle jet size the lean best idle must be set with the throttle valves shut so you are adjusting only the idle circuit without getting into the transition circuit . The idle jets in these carbs meter the amount of fuel in volume that is available to the transition , very important for driveability. 32/36's usually respond their best with around 1-1.5 turns out on the mix screw. Any more turns than that and you need a larger jet . 38DGAS models usually run their best at .75-1 turns out on the mix screws . Both should be as equally balanced as possible . Excessive number of turns on either model should indicate a need for a larger idle jet . All the DGV series (32/36 & 38/38) place the transition circuit at the outer edge of the bores. On some manifold designs this is not optimal due to the flow pattern of the plenum. Don't be surprised if you have to run a seemingly large idle jet to get good driveability. Some of the Suzuki's 1.3L engines run 65-75 idle jets due to this problem. No real effect on fuel mileage but the driveability goes way up. A great way to guage the idle jet size is to very slowly increase the idle speed screw up into the transition stage and see if there are any flat spots. A flat spot will indicate a lack of fuel in the transition or bad spot in the timing curve . Not sure how you guys handle the dual vacuum advance system of the 20/22r , would like to hear some info on that as well . Hope all this makes sense....
Sarge

[dok33](#)
(addict)
Thu Feb 24 2005
02:12 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

bah... carbs are too complicated, I think if I get the celica I'll just throw a 7mgte in there 😊

[yodta](#)
(pooh bah)
Thu Feb 24 2005
06:09 PM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

Sarge, good writeup, and I agree with most of what you said, though I have to disagree slightly with a few things.

I absolutely agree that vacuum leaks are the #1 cause of inconsistent and poor idling. your plan for milling the plates flat is a must if you decide to keep the adapter plates as your mounting solution. best route to take, however, is to go with a one-piece adapter if you can find one, or the offy intake; do away with the adapter plates altogether. these adapter plates are cast and not machined flat prior to distribution, so the mating surfaces are crap. milling them removes the irregularities in the mating surfaces.

right about the gaskets, too. I learned that one way early on. you DO NOT want a layered paper gasket here. the intake produces a fair amount of vacuum and all concentrated at that little carb throat. layered paper gaskets here are just another point of failure, so you need either a single layer, thin gasket, or forget the gaskets altogether. I understand gas-ga-cinch is the way to go.

one other common mistake is over-tightening the adapter plates. once you get the lower one installed, it's best to thread in those four studs to where you want them, just short of contacting the lower plate, mark 'em, then pull them out and crimp the crap outta the threads above that mark for about 1/4" or so. this will help prevent the studs from screwing further into the lower adapter plate as you tighten the four carburetor mounting nuts. if they go in too far, the upper plate will start to lift off of the lower one, and it'll leak. use loctite here, too, then threaded the studs in and snugg them down. the other thing to consider is to make sure you don't over-tighten the carb mounting nuts because one of two things can happen -- 1.) you can cause the upper adapter plate to lift up slightly, introducing a vacuum leak, or 2.)force the studs to thread in further, and if they go through the upper plate and start to contact the lower plate, the upper plate will lift, not to mention if you crimp the threads, you can toast your upper plate.

excellent information on making sure the throttle plates are closed completely at the time you are adjusting idle circuit. they're not very clear about this in the basic tuning instructions, are they? there's no "why" to anything they tell you in the instructions. you

want ONLY the idle circuit active here. if the throttle plates are open, it exposes the transition holes to vacuum drawing in more A/F mix and it will throw off your idle circuit adjustment. and fyi, in case you are wondering, the transition holes are just that -- they aid in the transition from the idle circuit to the main circuit so you don't get a flat spot as the vacuum falls off of the idle circuit when the throttle plates open up.

now, one of the things I have to disagree on is the assumption that drivers will always be driving at the limit of the primary with the 32/36 with a header and cam installed. I installed both last summer, and my truck cruises very nicely under light pedal, certainly well below the limit of the primary. this is because I finally figured out how to properly setup the ignition system on the 22R with a Weber setup.

there are those who will say you only need one of the vacuum hoses connected to the distributor. that's fine if you don't want maximum fuel economy, a responsive pedal coming off of a cruise condition, or a smooth idle. if you don't care about any of this stuff, then stop reading here. if you do, then you need to make sure you have the advance mechanism properly setup on your distributor for best performance.

basically, you need the idle advance (rear port on the distributor) to work for the smooth idle (duh) and to advance the timing under low to no load engine conditions. you need the normal advance (front port on the distributor) to advance your timing as the throttle opens up, aiding the distributor's mechanical advance.

the secret here is understanding what type of vacuum is active and when. basically, when you're idling or under low load conditions like steady cruising on the highway, the manifold vacuum comes up. ported vacuum is above the throttle plates, manifold vacuum is below the throttle plates and increases as the throttle plates close or when there's no load on the engine. when you're getting on the gas, the throttle plates open up, and manifold vacuum drops off -- there's nothing for it to suck against until the load stabilizes, and even then it's just the air filter.

connect the normal advance port on the distributor to the port on the base of the carb and connect the idle advance distributor to any port on the manifold and everything should work fine.

one other thing to understand is the point at which your engine can move an increased volume of air, because a big carburetor on an engine that's not moving a lot of air isn't gonna do anything except sound loud and probably get boggy. if you floor it right off idle even with the stock carb or a 32/36, it's not going to get responsive until the engine winds up.

I did a write up on weber jetting & timing some time ago with lots of pictures that you can find [here](#).

[yodta](#)
(pooh bah)
Thu Feb 24 2005
06:26 PM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

heheh, yeah josh, carbs can be a pain to get the hang of, but what's to break once you get it all setup? 😊

[foxracing706](#)
(enthusiast)
Thu Feb 24 2005
08:27 PM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

To bad you guys dont live in az. I am in desparet need of your help.

Brad

[yodta](#)
(pooh bah)
Thu Feb 24 2005
10:57 PM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

follow the links in those posts & start with the basics, man. it's not that hard if you can read & follow directions 😊

come back on with questions...
I'm sure Sarge & I could help you get it worked out.

[Sarge](#)
(carpal tunnel)
Fri Feb 25 2005
02:01 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

Great tech writeup, Yodta . I have never had much of a chance to tune out any of the Toy engines with Webers on them, just never seem to have the time . Most of the ones I have been able to look at do not use both vacuum advance lines , I will certainly pass that useful info along. The reason I mentioned modified engines not running well with the 32/36 in comparison is due to cam designs . Most of the 262 "torque" range cams have too wide an overlap to work well with a small primary throat . Some engines will respond well while others are very flat in their throttle response. This is the case with the Suzuki's I tune every day , hence them running against the wall in the primary. Add that problem to an already underpowered truck that is 50% heavier than stock and you'll see my point about using the 38DGAS instead . I would like to see a pic of that Offy intake , anyone got a link to it ? I do totally agree about going with an intake that eliminates the adapter plates altogether , but with one exception . Low plenum intake manifolds have one bad drawback when using a Weber, it tries to draw the a/f mixture out of the carb at an angle and creates a turbulence under the carb . Some of the engines I've ran into needed at least a 1/2" thick spacer to stop this . Works the same with the air filters. Use the short filter and you will notice quite a difference in how the carb breathes and responds. The 2 5/8" filter or better still using the Ramflo is the only way to go . These carbs are designed to breathe straight in, not up and over the choke housing .

The adapter plates and install kits , wow. I've been on Worldpac for years about improving those things with no luck at all. The techs at Redline hate them as much as we do but their complaints fall on deaf ears. It's a real shame since those plates and overall quality issues are giving them a bad name and costing them sales in the long run . Lately most of the new air filters I've bought just suck, the rubber is too thick and won't allow the filter clips to hold the unit together properly without some modifications . That's another thing , sell me a carb for that high price and give me \$.50 worth of stupid clips to hold the filter on it ?? Yeah, right . I think they really could do better. Speaking of filters, anyone tried to buy a Ramflo lately? I've tried to contact

	Lynx directly but no luck , might start a dealership here if I can get them to answer. The K&N's are ok, but the straight-in style of the Ramflo works so much better. Another note about the 38DDGAS. For those that run into a bogging problem in the upper end , you can use F6 emulsion tubes and slightly smaller idle jets to redirect the curve to stop this problem. The E tubes will bring the main fuel curve down a bit lower and allow the engine to use it when vacuum is at a decent level. The upper end will lean out just a bit but if needed smaller air jets will fix that . I'd like to hear some examples of idle jet sizing on Toys. I'm curious to see if the plenum design of the stock intake as well as the Offy bring the idle jet size problem into play or not . The Sami's generally use 60-65 jets, some clear up to 75's depending upon the cam used. Sounds weird when the mains are only 135-140 , but that's the price paid with the plenum's design. I have a 40DCNF that is about to get mounted on a hybrid 1.6L engine, we'll see how that works as far as total flow and driveability. The only reason for using that huge carb is the DCN series drops their throttle valves 90* to the plenum, opposite of the DGV's . This should really help with the idle jet size issue since the transition would be better placed into the air stream of the intake. They did produce these down to 36mm sizes, I just bought a rare 38DCNF12 a week ago, still waiting for it to arrive. Glad to find someone who likes to play with these things , maybe we can come up with some better solutions for everyone. Sarge
77celica (stranger) Mon Feb 28 2005 01:05 AM	 Re: Weber 32/36DGV verses the Weber 38DGES There is some awesome information in this thread. I will bookmark it for myself. I am asking questions because I already have a 32/36 and am VERY happy with it. I am planning on installing header and exhaust soon and later a mild (like stage 1) cam. As far as the carb running at the limit of the primary or secondary, I have no problems with that so far. I can cruise easily on the highway at 70 with plenty of pedal left. I don't know if it is because of the way celicas are geared or what. My speedometer goes to 120 and I have no doubt that I can hit the limit (on fairly level ground). It does a lot better now with the electronic distributor (from an 80 truck) and coil. The electronic ignition increased my upper rpm power big time. (My car came stock with points). 32/36 vs. 38/38 ----- Has anyone had the experience of running one and switching to the other? Which will give me better throttle response and better midrange power? I know the 38 will outflow the 32/36 up top.
Benjamin (addict) Mon Feb 28 2005 01:40 AM	 Re: Weber 32/36DGV verses the Weber 38DGES You will feel the difference! I've done this mod to a couple of 22r's and this is a big change in low~midrange power. But the 38/38 is not as nice a carb as the 40/40. whether you go 38 or 40, be aware that these carbs are much harder to tune right and do not idle as well as a 32/36, but there idle is ok(not bad). Jetting cost a lot more to do and is really picky. If you get a 40/40 jetted and tuned, you can smoke a 22RE with little effort. I had a 40/40 on my current rig and it dynoed 133 hp. when I change it out for smog and go to stock, I get 106 from the same dyno. I have not tried the 32/36 on this motor, i would think its closer to a stock carb than a 38 or 40.
yodta	 Re: Weber 32/36DGV verses the Weber 38DGES Hey Sarge, I've been meaning to get back to this post, but the last part of the week was hectic! I can take some pictures of the offy intake if you like. my setup does have a half inch spacer between the carb & intake, just like you were saying. I actually have the dual plane manifold which separates the flow from the two carb barrels. I'm not really an expert on any of this by any means, so I'm not sure whether it really makes a difference or not. apparently you're supposed to get better low end torque with a dual plane setup, though. Interesting information on airflow and engine response. makes perfect sense. so a taller filter is better then? I don't really have the room under my hood. I am curious, however, about one of these Ramflo filters you're talking about. what's the deal with them? and what do you think about those foam filters? I haven't seen any sorta filter that would allow for a straight in airflow, though. you got a line on anything like this (without switching to sidedrafts? 😊) I would certainly like to try the 38 in my truck. I had a 40/40 on it before with a head from DOA. I could never get it to run properly, but that was before I figured out that most of my trouble was related to timing and not jetting. maybe I'll give it a shot again one day. I don't think it'd work with the dual plane offy I have, though, so I'd need to go back to my stock manifold. heheh, yeah, I remember when I got my first Weber carb with those stupid little clips and that cheesy filter. I thought to myself, man, what a rip!!! I thought for sure I'd be getting some kinda nice round filter. personally I've found the K&N to be a pain in the ass. gets dirty too quickly, and I didn't really notice anything in the way of gain, so lately, I've just been using a tossable purolator. speaking of emulsion tubes... man, you're a true jetting freak when you know what the different emulsion tubes do! I bought manual from pierce manifolds a couple of years ago. it was great for helping me learn how everything works. they had some information in there about tubes and how the different orifices patterns up the tubes make for behavioral differences. it's crazy how that works when you think about it, because the changes seem so minute when you're sitting there looking at two different tubes.

(pooh bah) Mon Feb 28 2005 06:59 AM	
cmo (member) Mon Feb 28 2005 01:09 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I've used both carbs, and while I can't quantify anything, I feel that the 38 gave much more power and throttle response over all rpm ranges. The engine I was using it on was stock except for headers. I was getting about 18-19mpg which I thought sucked coming from the stock carb. When I finally blew the head gasket I swapped in a DOA 150hp engine and switched to a 32/36 because of emissions compliance and problems with the 38mm flooding offroad. This setup was a dissappointment compared to the 38mm. You really have to push the accelerator hard, and even then it just doesn't seem to have as much as the stock engine and the 38mm. Oh, and my mileage has been around 16mpg. The only reasons I don't swap the carb back are the perceived flooding issues with the 38 (not a problem for you, though) and the fact that I already sold it. Now that I'm working again and have some money to spend I'm going to get rid of the carbs altogether and get a SDS system to convert to EFI. That ought to really make the expense of the DOA engine worth it after all. Funny thing is I was looking at a 77 Celica in Texas on Ebay. Probably the same one mentioned in this post by someone else. If I ever got an early Celica that I didn't have to have smog tested, there's no doubt I'd go with another 38. Oh, I forgot to mention that the 38mm was a little cold blooded in the winter--and that's when I was living in Phoenix. The 32/36 seems to handle cold mornings better, even now that I moved from Phoenix to Bosie.
yodta (pooh bah) Mon Feb 28 2005 06:00 PM	 Re: Weber 32/36DGV verses the Weber 38DGES what's this SDS EFI conversion? I'd like to read some on this...
dok33 (addict) Mon Feb 28 2005 07:46 PM	 Re: Weber 32/36DGV verses the Weber 38DGES It's a standalone management system, but it's alot cheaper than a Haltech or similar and is supposed to be pretty easy to program. It's also been proven to work very well on the 20/22r series motors. here's a link: www.sdsefi.com
yodta (pooh bah) Tue Mar 01 2005 12:14 AM	 Re: Weber 32/36DGV verses the Weber 38DGES oh jeez... and I thought that might be easier than swapping in an EFI harness and stuff. I theenk I'll just stick with my weber 😊
Sarge (carpal tunnel) Tue Mar 01 2005 03:13 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, had the flu/cold/sinus infection thing lately so my mind is a bit fuzzy, but here goes A lot of folks never see the potential in ANY carb due to several factors. Low compression, poor exhaust flow/size, inadequate valve timing, weight vs engine size, ect..... Ever see a guy that tosses one of those huge 1100cfm Dominators from Holley on a stock small block Chevy? Ok, looks awesome, granted , but runs like crap . Off the line it should scare you but as soon as the revs try to come up the engine cannot handle what he's feeding it . Same deal with these carbs , a good solid 1200-2500 cc engine will do great with a 32/36 . If the same engine has GREAT compression at or very near new specs then a 38DGAS is going to make a HUGE difference . Put a 38DGAS on a worn out engine that has low compression and it may actually run worse than with the stock setup . I run into this every day with my customers . Complaints of "I thought it would have more power" are usually from a worn out engine being overcarbureted . Even worse is when someone builds a real screamer with all the right parts and then puts the plain 32/36 jetted for high fuel mileage and cannot figure out why it won't get out of it's own way . Things need to really be built as a package . The Toyota crowd is no different from the Suzuki, Chevy or whatever brand crowds, they all have "proven performance" packages . Certain head/cam combos , exhaust and such when combined in proper order can make some pretty impressive numbers considering what the base is . Our Suzuki engines start out at less than 60hp total , on a good day . Nothing to build a basically stock engine to 100hp with just bolt on parts . Add a few internals and another 30hp is available pretty easily . 1hp/cu.in isn't hard to achieve, it's the 2hp/cuin that's hard . The 2.0L series Toyota is a great motor to start with , internally tough as nails and will outlast God if taken proper care of . Anyway, back to carbs.... Here's a link to the Ramflo filters . If anyone has any luck getting one , let me know as I haven't had any decent reports back as these guys are slow as gear oil. http://www.racetep.com/ramflolynx.html I'd like to become a dealer, but cannot get Lynx to even respond . Too bad, great filter setup and breathes like no tomorrow . Here's a pic of my current 38DGAS setup with the 1000cfm Ramflo.... <img src= http://tellico.off-road.com/wwwthreads_uploads/1371127-enginebaydrivers.jpg> As far as problems with 38's flooding offroad, that can be cured for \$60 , I do them all day long here . The carb's all have the same inherit problem, an open vent area behind the air corrector jets. When tipped at high angles fuel can spill out of the bowl and fill up the air jets. This in turn fouls out the main circuit completely making it very hard to restart the engine until the angle is

corrected. Float heights and max drop settings help a lot but the real fix is to fill in the vent area and install a breather tube with divertor. The divertor just allows any spilled fuel to be dropped into the throat where it can be used. The only time it's a real issue on mine is when the truck is literally standing on it's front bumper, it just runs a bit rich and maybe sputters a bit is all. I run an electric pump so at that point the pump is shut off to stop any additional fuel flow until it's needed. The carb runs fine even when the truck is laying on it's side with the vent mod. I like injection systems, don't get me wrong but the carb's simplicity and tunability is what I'm more interested in here . Nothing like having an issue with EFI on the trail

Jetting. Man, that can be fun . Most Weber owners will never know their carb's full potential because they do not take the time to properly jet it. The guy with the Celica evidently did , running up to that level on the primary is an indicator of a properly tuned carb. On the Suzuki's , the engine just lacks physical size to run easily on the primary, the 38DGAS actually works better for highway cruising since it only has to run with very small throttle input . That alone is the biggest difference here , throttle input vs needed cfm at a given range. The smaller engines sometimes benefit from greater cfm input due to cam design. They are meant to rev much higher, but when a torque type cam is installed the cfm rates are changed from stock . A small carb or progressive carb will produce a lack of throttle response because the cam's timing needs more cfm at lower rpm's . Proper cam and carb selection goes hand in hand , too big either way is a bad thing . Cam timing is so critical it's amazing. Here's a good example:

1.6L Suzuki hybrid engine

Z-330 Isky custom cam- .414" lift, 270 dur. 101* cent.

Oversized valves (.060")

38DGAS

With the cam timing straight up and this carb, the engine is basically dead until 4500rpms. Cam retarded 8* the whole powerband from 2500-6500 is very smooth and almost flat. Advance the cam 3* or more the initial torque is high but response is very dead all the way up to 5000 when it takes off again . Just a matter of getting things to work together is all. For those familiar with Weber jetting, here's some real interesting notes about the above setup.

Idle jets:65

Main jets:142

Air jets:185

E-tubes:F6

Accelerator pump nozzle:60

While the main jetting is fairly normal, it is a bit high for an engine this size. Plugs run very clean if not a bit on the lean side. The idle jets is the real surprise, the lack of vacuum off idle due to the cam's timing is the culprit here . Huge idle jets are common on these engines due to the flow of the intake and some of the cams used. Because the cam has been retarded and a performance curve built into the distributor the E tubes had to be changed as well . Some real good basic rules to observe and help a lot with jetting are these....

Idle jets/mix screw settings . Best overall throttle response is important , the idle jets take care of much more than just off-idle response. The main jets really only set the cruise mix, idle jets are responsible for any real acceleration up to almost 3000revs. Any mixture screw setting over 1.5 turns out indicates the need for a larger jet . I've set some up with as few as .5 turns out to get the throttle response where it should be. Float settings and fuel height in the bowl also affects the mains and the E-tubes and how they work in timing with the transition circuit . Too low a fuel level will result in the mains reacting slowly. Idle jets can compensate this a bit and lower fuel settings can be used for offroad applications . Progressive carbs use the secondary idle jet to blend in the second throat , any blip or hesitation needs the jet size changed. A well tuned Weber will literally howl at high revs when the secondary opens much like the older Quadrajets. The 38DGAS makes the same sound when tuned right in the midrange, it should sound like it's gonna suck the asphalt out from under it. Lack of throttle response is not acceptable to me, I expect an expensive carb to respond and spend the time to tune it accordingly. Main jetting on a 38DGAS can be set for some surprisingly high fuel mileage since the engine only requires light throttle input to hold highway speeds. Mains that are too rich or lean will only increase throttle input and waste fuel. The air jets in Webers act as a brake of sorts, the higher the velocity in the throat the more fuel the mains can pull . The blend of air into the main circuit becomes more important at high revs and the air jets allow this part of the range to be adjusted. The biggest reason for jetting is to allow the carb to work properly with the engine, no two are alike.

What model is this 40/40? 40DFAV maybe? The 38DCNF I bought finally arrived this week, looks like new and will be rebuilt and tuned later this month if time allows. Can't wait to try it since the transition works a lot differently in those series. All the DGV DFW series dumps their transition to the outside of their barrels, the DCN series has a single throttle shaft and the transitions dump 90* to the intake , much better for overall flow .
Sarge

[77celica](#)
(stranger)
Tue Mar 01 2005
05:03 AM

Re: Weber 32/36DGV verses the Weber 38DGES

Quote:

...The 2.0L series Toyota is a great motor to start with , internally tough as nails and will outlast God if taken proper care of . Anyway, back to carbs....

I agree wholeheartedly. The 20r/22r are awesome engines. If you understand what they are good for and like the characteristics of them. They also respond very well to mods and are practically bullet-proof. They don't like air cleaner screws being sucked into the intake, but beyond that I love them. (Happened to my celica--stupid mistake!)

Just for clarification, the 20r engine is 2.2 liters and the 22r is 2.4 liters.

[yodta](#)

Re: Weber 32/36DGV verses the Weber 38DGES

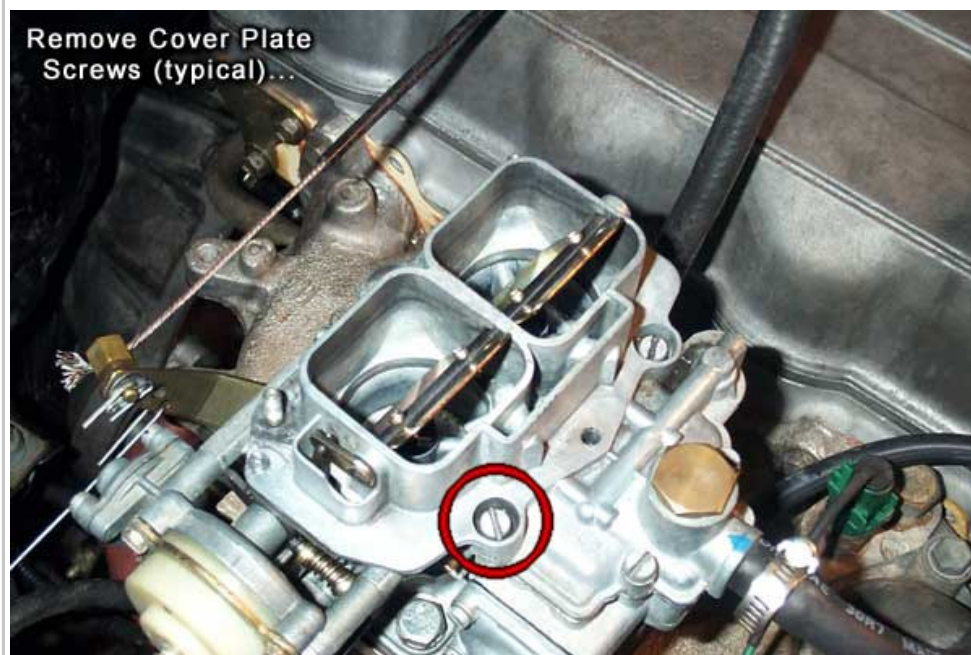
(pooh bah)
Tue Mar 01 2005
12:44 PM
[Attachment](#)

man, sarge, more great information.
I think I wanna start messin' with mine again.

yeah, the 40/40 is DFAV. I think it's built just like the 38/38, only with a bigger throat & venturis. here are some pics of mine, which is now wrapped and stored while I'm running the 32/36. I'm seriously considering pulling it back out, though, but my main goal is driveability & economy while still getting the most response & performance I can. I'm really curious to know if this 40/40 will run well now knowing that my distributor was screwy when I had it installed last...

I wonder if I can get a ramflo filter for it? one of the things I hated about that carb was the silly little air filter it had on it from downey.

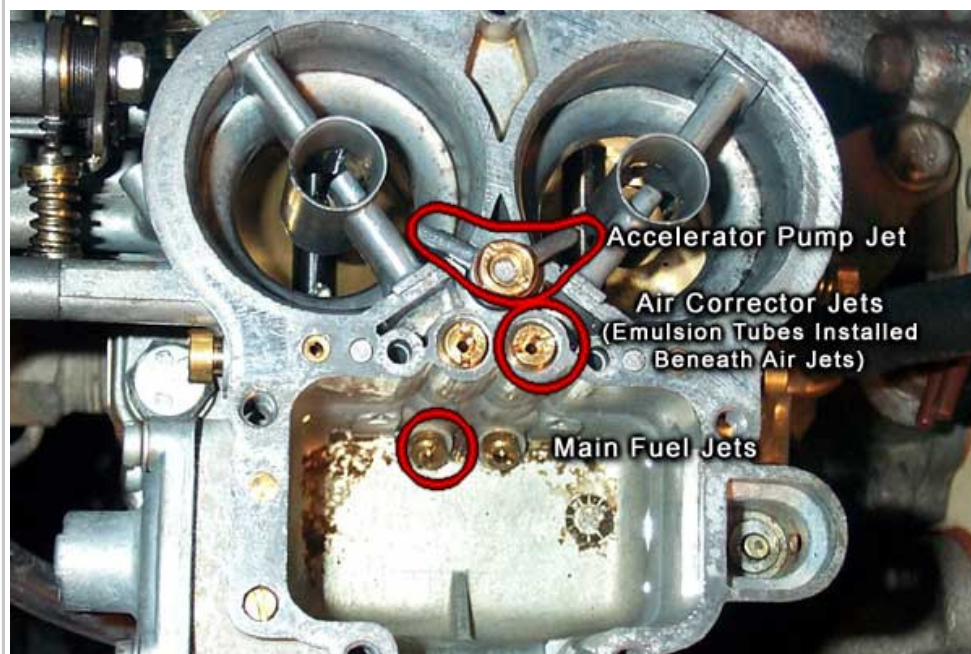
just a general shot of the top, without the air cleaner.



[yodta](#)
(pooh bah)
Tue Mar 01 2005
12:44 PM
[Attachment](#)

📁 Re: Weber 32/36DGV verses the Weber 38DGES

here's one with the top cover removed with a cruddy bowl...
not sure exactly how all that got in there.



[yodta](#)
(pooh bah)
Tue Mar 01 2005
12:46 PM
[Attachment](#)

📁 Re: Weber 32/36DGV verses the Weber 38DGES

and here it is installed with that crappy air cleaner.
these photos were taken a couple of years ago and this was my first write-up at trying to explain how easy it was to access jets to

get the carbs better tuned.

you might notice the high rise spacer between the manifold and the base of the carb.



[yodta](#)
(pooh bah)
Tue Mar 01 2005
12:52 PM

Re: Weber 32/36DGV verses the Weber 38DGES

I can get some better, more specific photos sometime if you like.

[Sarge](#)
(carpal tunnel)
Tue Mar 01 2005
02:34 PM

Re: Weber 32/36DGV verses the Weber 38DGES

I've rebuilt a few of the 40's before, just wasn't sure which model you were using . Actually, there are quite a few but they are all pretty old and rare. If you find no use for it , let me know as I buy used carbs quite a bit. I can never for some reason remember the displacement of the Toy engines, must be old age or something. The Zuk crowd would love to use the Toy motor since we have some interesting adapters available to bolt the Suzuki transfer case up in twin style and make for some really stupid low gearing . Most won't do the swap since the Toy block is so darn heavy. For those that ask, I tell them a simple quip about what I heard a guy mention at my local machinist's shop recently. He had a 22R in for a rebuild and some head mods when a customer saw the block laying on the floor, disassembled and upside down with no crank. The customer asked "what kind of diesel is that anyway?" !! Pretty good observation since the Toy's bottom end is reinforced much like many industrial diesels. No wonder they weigh nearly as much as a SBC .

Just by some off-breed chance , I always ask when going to a "new" board for the following parts I've been searching for. At one time in the past someone made an adapter to allow DGV carbs to be mated to the DCOE bolt pattern. These were cast aluminum and had the DGV's pattern on top with a nice sweep down to the split DCOE pattern at the end. Nice 90° adapters, would love to find a pair of them for some "project" I have in mind . Also, looking for an air filter setup (open screen top) for a 38DCNF and 40DCNF(2) . Of course also in the market for rare models such as the famed 50DCO, yet to actually see one of those, lol .

BTW, if you do some searching through the K&N filter books, there should be a taller filter element for that air cleaner on the 40DFAV , I'm positive K&N made those for Downey . I tried again to contact Lynx about those filters, we'll see if they actually respond this time ...

Sarge

[yodta](#)
(pooh bah)
Tue Mar 01 2005
09:02 PM

Re: Weber 32/36DGV verses the Weber 38DGES

yeah, it's 2.4L for the 22R engines.

you might want to try pierce manifolds for that adapter you're talking about. sounds like a neat idea. I like the idea of side draft carbs. it's about as close as you can get to fuel injection without actually switching to fuel injection.

[Sarge](#)
(carpal tunnel)
Wed Mar 02 2005
01:03 AM

Re: Weber 32/36DGV verses the Weber 38DGES

Actually, I'm not after sidedrafts . I do have a rare intake here for twin 42mm DCOE's sitting on the bench to fit my engine. Sidedrafts are sweet but lack fuel economy and are a bit too low in the engine bay for wheeling . Not really enough room to build a sufficient air box to keep water out and still flow air properly so that setup is out even with a snorkel. I'm actually looking into using that sidedraft manifold with two of the mentioned adapters to use twin DGV's instead . Run it on two 32mm primary throats and have two 36mm secondaries available. Best of both worlds, so to speak . It would suit fuel mileage a bit better than the 38DGAS and still provide the nice torque curve but outflow it on the upper end where I need it . Besides, the whole flow properties would work better anyway.

	Sarge
yodta (pooh bah) Wed Mar 02 2005 03:08 AM	 Re: Weber 32/36DGV verses the Weber 38DGES man, I just can't understand how you can run two carbs on a little engine... how would you go about setting that up? what exactly is over-carburetion, anyway? I suppose it really doesn't matter. the only way a carb couldn't keep up is if the engine's asking it for more air & fuel and it can't provide it fast enough, but what sort of symptoms do you see on the opposite end of that issue, i.e., too big of a carb? I was gonna ask about a pulsing kind of effect. I assume sidedrafts are designed for it, but how would a DGV run with only momentary draw, albeit most likely negligible at run speed?
Gnarly4X (carpal tunnel) Wed Mar 02 2005 10:11 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Wow, very interesting discussion. I would love to get specs on a 22R with intake specs (cfm, etc, etc) and dimensions to plug into my database. I would like to run some mock pulls with different cams to see what my software says about these carbs. I have to agree that when building an engine you have to build it as a "package" if you want to get the performance. Swapping parts on one of the best automotive engineered engines in the world without understanding the results can get you nothing by disappointment and a waste of time and money. As I've said before, many aftermarket suppliers (not all!!) make parts to make money, they ship you "marketing hype" along with the part... and may NOT necessarily ship a swappable part that has been actually tested and engineered like the Toyota engineers in Japan have done in their \$Billion auto shop!! That's just my worthless opinion. Gnarl's.
yodta (pooh bah) Wed Mar 02 2005 12:55 PM	 Re: Weber 32/36DGV verses the Weber 38DGES well, I'm gonna fine tune my 32/36 a bit, I think, and then I'm going to see about swapping on the 40/40 just to see how it goes now that I've got that timing thing situated. Gnarl's, that 40/40 flows 405cfm compared to the 326 or so of the 32/36. crap. I can't remember for sure what the flow rate is for the 32/36. I read it someplace before... how do you think that would do with the Comp Cams 252S? remember, it's all about driveability and economy while getting the best performance for me -- in that order.
77celica (stranger) Wed Mar 02 2005 01:18 PM	Re: Weber 32/36DGV verses the Weber 38DGES This is my favorite thread ever. You guys rock! By the way, I don't know how correct these numbers are, but they seem to match every other place I've seen and they are all together here: http://www.barneymc.com/toy_root/techtalk/engine/specs.htm Keep it coming!
Gnarly4X (carpal tunnel) Wed Mar 02 2005 04:14 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: This is my favorite thread ever. You guys rock! By the way, I don't know how correct these numbers are, but they seem to match every other place I've seen and they are all together here: http://www.barneymc.com/toy_root/techtalk/engine/specs.htm Keep it coming! Thanks Yodta.. Great question, and I'm very curious as well. As Sarge has reminded us the cam profile is very critical in the 22s. At that is why I'd like to run some numbers and see what the CC252S, and others do when we change the intake and carb as we are discussing. Flow is almost everything, but RPM plays a role here when it comes to the cam's lift, duration, centerline, and lobe separation and optimum performance. Remember, economy and driveability and high output aren't necessarily bed partners! I will collect some data then run some numbers and post them for you. Like you Yodta, I've been busier than a 1-legged tap dancer!!... so I'll do my best to get on it. Gnarl's.
yodta (pooh bah) Wed Mar 02 2005 06:12 PM	 Re: Weber 32/36DGV verses the Weber 38DGES that's a good link there that 77C just posted... check that site out Gnarl's. it has the carb flow rate numbers in it. see what happens with all else being stock... as far as the intake goes.
77celica	 Re: Weber 32/36DGV verses the Weber 38DGES

(stranger) Wed Mar 02 2005 08:21 PM	Can you, if at all possible, run the rpm numbers up to 6000 rpm or so? I know this is a little high for you truck guys, but my car may see that high every so often. With the weber 32/36 and the electronic ignition my car pulls good up to past 5000 rpm (very rarely done).
Gnarly4X (carpal tunnel) Thu Mar 03 2005 02:15 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: Can you, if at all possible, run the rpm numbers up to 6000 rpm or so? I know this is a little high for you truck guys, but my car may see that high every so often. With the weber 32/36 and the electronic ignition my car pulls good up to past 5000 rpm (very rarely done). Yes I can. Gnarl's.
Sarge (carpal tunnel) Thu Mar 03 2005 02:17 AM	 Re: Weber 32/36DGV verses the Weber 38DGES 6,000 rpm's is high ? Wow, that's just getting started with our sewing machines . The later model 1600cc engines really wind out good to over 6500, sometimes higher if balanced right . I finally blew a cast piston in half at over 9k on the last 1.3L I built . Missed a shift with the 38DGAS, no limit to those dual valve springs, either. Ok, a few points. Overcarburetion . Yep, it can be done. Mostly, any carbureted engine is overdone if you can step down on the carb with no real engine response. The Weber's design is basically a demand type, as in the way the air velocity moves through them is the amount of volume in fuel drawn. 32/36's on average pull 300cfm. 38DGAS's run around 380-400 for a good smooth one. The 40DFAV should be rated at 425cfm or so if the casting is nice. I shot for the middle, the 38DCNF is rated at 400cfm, right at what the head was flowed for. Here's the trick, though. Intakes have reversions, no way around it. Pulses from the intake valves opening and closing in a way are bad , but in another way they are good. Here is where technical dyno info is worthless. At higher rpm's , velocities take over. The a/f mix coming in is traveling at some pretty good speed. My reason for using a fairly small bore intake is just that , keeping the velocity high and flow rates where they need to be for even larger engines. Same near theory to using sidedraft carbs, hence the reason they usually are so big. The incoming charge since it's speed is high allows the extra volume to be rammed into the cylinder. This is why intake bowl port work is so important on high performance motors. Take a look at any newer model engine, foreign or domestic. The builders finally took the time to make proper use of the castings and did the work so many hotrodders have been doing for years. Biggest reason they are downsizing engines now, just better efficiency. This ram effect is very evident at low revs when there is a lack of throttle response. Hence using larger idle jets on small engines like our Suzuki's. The big carbs are just that, a 38DGAS on a 1324cc engine is huge and in some areas will show no response in throttle changes. It really does not overfuel the engine since the velocity in the venturi's will not allow the increased fuel draw. Sort of takes care of itself. But, at high revs where these little engines can really breathe and surprise the heck out of you, the bigger carb really comes into play and will work right to it's demand limits. Very hard to do with an EFI system unless it's fully mapped , much like OEM late model units. Look at newer model cars and their plenum systems, huge and very efficient in air flow , way more than they used to be . Think about this . Years ago, back in the 60's Ferrari figured out that 4 44mm downdraft carbs would feed their V8's more efficiently and produced some huge horsepower numbers from very small displacements. The V12's they built with 6 sidedrafts did even better. I'm just aiming to make more use of what this engine is capable of flowing if forced to do so . Also looking into a supercharger, as soon as they get re-released, lol . All I'm wanting to do is set up two 32/36 DGV's onto this twin sidedraft manifold. This will allow better cruise blends with the two 32mm primaries since they are metered for economy . This would provide a better torque curve over a single 32/36 but not as radical metering as the 38DGAS. Then, there is the added bonus of the 36mm secondaries. The fun part would be setting up the linkage, although not much of a challenge since I've done much worse things on engines lately. Just getting the two primaries balanced and having to adjust the secondaries to open exactly the same to keep all four cylinders balanced would be the hardest. The pulse delay you speak of would be taken care of since the small plenum area below the DGV in that adapter will cover that aspect. Sarge
Gnarly4X (carpal tunnel) Thu Mar 03 2005 08:18 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: 6,000 rpm's is high ? Wow, that's just getting started with our sewing machines . The later model 1600cc engines really wind out good to over 6500, sometimes higher if balanced right ... RPMs yes, getting useful powerful at high RPMs is the issue. Quote: The Weber's design is basically a demand type, as in the way the air velocity moves through them is the amount of volume in fuel drawn. ...all carbs are "demand" type. Quote:

Pulses from the intake valves opening and closing in a way are bad , but in another way they are good. Here is where technical dyno info is worthless. At higher rpm's , velocities take over.

...Yeah, the engine is an air "pump", so it's going to "pulse". Dyno data is just a tool, like an A/F meter or flow bench.

Quote:

Biggest reason they are downsizing engines now, just better efficiency.

... nope, it's cost, perhaps efficiency is the second biggest reason.

Quote:

Very hard to do with an EFI system unless it's fully mapped

... everything is a trade-off.

Quote:

Think about this . Years ago, back in the 60's Ferrari figured out that 4 44mm downdraft carbs would feed their V8's more efficiently and produced some huge horsepower numbers from very small displacements. The V12's they built with 6 sidedrafts did even better.

... Yes, and you had to sync the carbs every other day to make them run right!

Quote:

I'm just aiming to make more use of what this engine is capable of flowing if forced to do so . Also looking into a supercharger, as soon as they get re-released, lol .

Yep.. it's only money.

Quote:

All I'm wanting to do is set up two 32/36 DGV's onto this twin sidedraft manifold. This will allow better cruise blends with the two 32mm primaries since they are metered for economy . This would provide a better torque curve over a single 32/36 but not as radical metering as the 38DGAS. Then, there is the added bonus of the 36mm secondaries. The fun part would be setting up the linkage, although not much of a challenge since I've done much worse things on engines lately. Just getting the two primaries balanced and having to adjust the secondaries to open exactly the same to keep all four cylinders balanced would be the hardest. The pulse delay you speak of would be taken care of since the small plenum area below the DGV in that adapter will cover that aspect.

Yep, "torque" is what I'd be looking for. So, what are you waiting for?
Gnarls.

[Gnarly4X](#)

(carpal tunnel)

Thu Mar 03 2005

10:19 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

Here ya go...

1,000 foot elevation, 80d F ambient intake, 91 octane fuel, RH=29.76, Dew Point 37d F.

20R, Weber 32/36, 2.25" exhaust, Header, Stock Toy cam

2000 RPM - 108 brake tq, 40.9 brake HP

2450 RPM - 120, 55.9

2900 RPM - 128, 70.6

3350 RPM - 136, 86.6

3800 RPM - 130, 94.4

4250 RPM - 126, 102

4700 RPM - 122, 110

5150 RPM - 112, 110

5600 RPM - 99.3, 106

6050 RPM - 86.9, 100

20R, Stock

2000 RPM - 107 brake tq, 40.7 brake HP

2450 RPM - 118, 54.9

2900 RPM - 122, 67.2

3350 RPM - 122, 78.0

3800 RPM - 121, 87.5

4250 RPM - 117, 94.6

4700 RPM - 111, 99.2

5150 RPM - 97.8, 95.9

	5600 RPM - 82.4, 87.9 6050 RPM - 65.8, 75.8 20R with mods?.Pk Tq=136, Avg Tq=117, Pk HP=110, Avg HP=87.6 20R Stock ??? Pk Tq=122, Avg Tq=106, Pk HP=99.2, Avg HP=78.2 With a Weber 40 carb the numbers went down 1 lb. for torque and up 1 HP Peak. Switching to a CompCam252S gained 1 HP at Peak, and no change for torque from Toyota stock cam profile. These numbers will probably be close to real engine dyno, but other factors can change results. Gnarls.
Sarge (carpal tunnel) Thu Mar 03 2005 01:12 PM	 Re: Weber 32/36DGV verses the Weber 38DGES What am I waiting for ?? Can't find the adapters and really don't want to spend the cash to have some made. Experiments are more fun when they don't cost you the price of a house. The 40DFAV while it flows more air does not provide the ram effect the 38DGAS does, that one has been proven. Wish I could get the cfm flow values from Weber but that info is highly guarded. Intake volumes vs engine displacement and port volume is another huge difference in motors , some just allow better total flow than others. Anyone tried actual flow rate comparisions between stock 22R heads and aftermarkets? Sarge
77celica (stranger) Fri Mar 04 2005 03:15 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Thanks for the desktop dyno or whatever you used. Is 2 1/4" exhaust too big? Have you ever run the numbers for a 2" exhaust? Gnarls, what setup do you have on your truck? I've heard mention of a "stepped" exhaust. I am asking because I have an LC Engineering Pro Header and it has a 2 1/2" collector. I don't plan on running near that big of an exhaust. I hope I am not hijacking this post. If it turns into a big discussion, I will start another post.
yodta (pooh bah) Fri Mar 04 2005 04:01 PM	 Re: Weber 32/36DGV verses the Weber 38DGES hijacking this post?!? it's your post we hijacked, dude 😊
Gnarly4X (carpal tunnel) Sat Mar 05 2005 01:04 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: Is 2 1/4" exhaust too big? It's probably arguable. I would think 2" is plenty big for a basically stock 20R with a header. [quote] Have you ever run the numbers for a 2" exhaust? No, but I can. Quote: Gnarls, what setup do you have on your truck? If you are referring to the exhaust, I had a DT header, 2.5" back to where the cat would be, then stepped it down to 2.25" at the muffler. The muffler was an Autozone CherryBomb Turbo OEM style. The engine was stock. Quote: I've heard mention of a "stepped" exhaust. I've read that stepped headers are not a good design. However, for our engines (except all out race built) it probably isn't critical. Quote: I am asking because I have an LC Engineering Pro Header and it has a 2 1/2" collector. I don't plan on running near that big of an exhaust. I'd just couple whatever you want to run from the header collector flange back. Quote: I hope I am not hijacking this post. If it turns into a big discussion, I will start another post. HIJACKING IS IN!!

	Gnarls.
yodta (pooh bah) Sun Mar 06 2005 07:16 AM	 Re: Weber 32/36DGV verses the Weber 38DGES hey Sarge, I just got 'round to reading the post you left for me about overcarburetion. makes sense -- boggy, no throttle response... wellt. I'm not so sure the 40/40 I have lying around would really suit my driving needs at this point. mostly just a daily driver, and it rarely sees anything past 4000-4500rpm, and my cam is ground for low end torque. it really is a nice setup for day to day trips. I am still curious, though. if I really can't overcarburete by putting on the 40/40 seeing how I could control the low end with jetting, the thing would probably run pretty well at the higher engine speeds as long as my cam can flow the air. basically I'm just looking for the absolute best throttle response. if I'm cruising at 2500rpm at any speed and open it up, I want it to wind up quickly. right now it runs okay and pulls nicely, though it's a little flat sometimes, especially at highway speeds. seems to pull better on lighter pedal, meaning upto and just teasing the secondary, than it does if I really open it up unless I'm at 3500rpm or higher and really have my foot in it. what do you make of that? I just recently reverted to the factory stock jetting with the exception of fatter idle jets. I'm haven't decided yet if it was better in the secondary with the 155 as opposed to the stock 150 I have back in it now. currently my jetting is: primary/secondary idles: 70/65 mains: 130/150 airs: 170/180 mixture screw: 1-1/2 turns out from seated. nice off the line and up through about 40-50mph. a little boggy in the secondary, and sluggish at highway speeds in the secondary at around 2800rpm. as I said, it climbs better if I'm just upto the secondary and just into. the secondary transition seems okay as long as I ease into it with engine speed climbing.
Sarge (carpal tunnel) Sun Mar 06 2005 03:21 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Try cranking the air corrector up in the secondary, or even going down with the main jet on that side. A good tune will produce a pretty loud howl when the secondary is cracked open . Also, watch the air filter, if you have a short K&N style it will restrict it pretty badly at high flow rates. At 1.5 turns out, you are pretty close to limit on the primary idle , how is the response off-idle? Also, a 130 main in the primary coupled with the 170 air jet is pretty lean at full open in the primary, might want to back that down to a 160 air jet . Sarge
yodta (pooh bah) Thu Mar 10 2005 06:58 AM	 Re: Weber 32/36DGV verses the Weber 38DGES alright Sarge, I've been thinkin' a bit about my setup after what you've suggested, and I've made a couple of changes: primary/secondary (previous) idles: 75/70 (70/65) mains: 135/150 (130/150) airs: 170/180 (unchanged) you were right about the primary idle being too lean. the screw was out more like 2-1/4, just under 2-1/2. for the 32/36 redline says 2.5-3 turns is the max before bumping up the jet. I've changed the primary idle to a 75 and got the screw down to two turns. idles much smoother now and pulls a bit nicer off idle. feels more solid and responsive. so, I drove it like that for a while, and it was feeling a little flat on mid throttle up around 2200-2800rpm or so, kinda at that transition spot. I bumped up the primary main from 130 to the 135 and it's a bit more responsive. it fell down a little momentarily when getting into the secondary, so I changed the secondary idle jet from a 65 to a 70, and it cleaned up a bit. so, now it's still feeling just a tad flat at just past mid throttle in the primary circuit like where the vacuum would start pulling in the main circuit. my question to you is should I change the primary air down to the 160 at this point, or go up again on the primary main to a 140? my understanding is that going down 3 sizes in the air jet is equivalent to going up 1 size in the main jet, so this can allow you to fine tune? although, I've also been told that the air jets really only come into play above 3000-3500rpm, so... and you're saying to lean out the secondary main circuit? what makes you think it's too fat? it seems a little boggy, but I can't tell if it's lean or rich at this point with the changes I've just made. I need to get my A/F meter reconnected... I read a couple of years ago that one of the "seat of the pants" ways to tell whether lean or rich is to get on it, and if it feels like something's holding you back like you're dragging something, and you let off the throttle slightly and it accelerates

slightly, that means it's lean. I haven't driven it enough with this latest setup yet to be able to tell. gonna give this some time and maybe play a little with the primary some more...

now what's your take on the huge boost you get on full, full throttle -- something to do with the power valve?

[Sarge](#)
(carpal tunnel)
Fri Mar 11 2005
12:35 AM

 Re: Weber 32/36DGV verses the Weber 38DGES

Ok , maybe a few of my own rules about jetting might help. One, on progressive carbs you must remember how velocity affects fuel draw. Secondaries do not necessarily need to run larger fuel jets , most of the carbs I set up actually use the same size on both sides. Here's typical 4 cyl. Sami jetting:

Primary: Secondary:

Idle: 65 Idle: 55

Main: 135 Main:135

Air: 170 Air:160

Yes, both mains are the same size but due to higher velocities when the secondary opens the fuel draw is higher. Most DGV progressives use 3.5 auxiliary chokes, some rare instances the secondary side uses a 4.5 instead. If it has a larger auxiliary in the secondary I bump the jet size 10% down . The large air jet in the primary keeps that "bogging" from happening just at the upper limit of the primary in the "demand" area of the cruise range. This is one of the problems you are exhibiting . You can swap out for a power valve from a 38DGAS , but then you'd lose the fuel mileage since the valve would dump too much fuel even with low vacuum .

Also, if you are up to a 75 idle in the primary, try jumping the main jet up to a 140 and see if some of the response comes back . You should be able to drop the idle back to a 70 if vacuum draw is good enough off idle. That's another issue, watch out for parasitic draws like the pcv system. Unless they work perfectly, the pcv system can become a vacuum leak instead of being beneficial to the crankcase as it is intended. On my setups, I actually install a power brake check valve (Help! #80190) inline between the pcv tee and the air cleaner . This keeps all available vacuum in the system and will still bleed off any excess crankcase pressure. Makes a difference in off-idle response, especially on these less-than-perfect plenum designs. If you do jump the main up more, I'd increase the air jet in the primary a fair bit , maybe up to a 175 .

Your secondary I'd bet is just too rich, hence the lack of response. One telltale sign of a Weber not in tune at full throttle is a lack of noise. It should be deafening, sometimes actually louder than the exhaust. I get a lot of complaints about the carb being so loud , some folks hate it but after a few weird looks from other drivers the "grin factor" solves that problem. Your last sentence says it all, at full punch you get a huge boost , it should be more like a good and steady surge for the most actual power. Here's my recommendations based on your descriptions:

Idle: 70 (dependent upon main reactivity)

Main: 140

Air:175

Idle:60-65

Main: 140

Air: 180

This setting should put you on the lean edge, watch out for pinging or detonation closely. Most power comes just before meltdown but you should be more than safe here. A close look at your settings makes me wonder about vacuum leak issues and overall flow. What air filter do you have on this thing , anyway? Are you absolutely sure the adapter plates or base gasket is sealed?

Sarge

BTW, I now stock and sell Ramflo air filters . For now stock is limited to the DGV series 658 filters, 600cfm ovals with red elements . Most of the initial order is sold but I'll more in a week or so...

[yodta](#)
(pooh bah)
Fri Mar 11 2005
01:15 AM

 Re: Weber 32/36DGV verses the Weber 38DGES

so there's more vacuum at the point where the secondary opens so you don't need as big of a main jet? interesting point. I'll give that a shot.

I've always thought that the the secondary should be jetted fatter than the primary since it's got a larger venturi. I hadn't really considered the condition under which it operates, though, so what you say makes sense.

Quote:

Most DGV progressives use 3.5 auxiliary chokes, some rare instances the secondary side uses a 4.5 instead. If it has a larger auxiliary in the secondary I bump the jet size 10% down . The large air jet in the primary keeps that "bogging" from happening just at the upper limit of the primary in the "demand" area of the cruise range. This is one of the problems you are exhibiting.

I'm not quite clear on what you mean here. which jet 10% down? the secondary main? and 10% down from what? stock or 10% down from what the primary main is? and by large air jet in the primary, you're just talking about a 170 or so? and you're saying that the larger air jet in the primary plays a factor at the upper end of the primary range because it leans out the mix like a larger secondary aux. does when you lean the secondary main jet, correct?

I have a 75 idle in, and it's feeling pretty good except for that one spot I mentioned. I'll go ahead and take the primary main to 140 and maybe take the idle back down.

	I'm not running a PCV system. I have two valve cover breathers in place. alright, from what you were saying, I was thinking just the same range that you recommend. I'm gonna go make the changes and I'll let you know how it goes. I have the offy dual plane manifold installed, so I don't have any adapter plate issues to be concerned with. everytime I clean the carb, I spray around the base to check for leaks. it's still guttentight, though I do notice a bit of a drop in idle speed when I spray around the linkage. I'm betting it's a leak around the throttle shaft, but it seems minimal. you're saying that the secondary jetting you've specced is on the lean side? I've got a 2" purolator filter on right now. send me a couple of shots of the ramflo you've got for the 32/36.
Sarge (carpal tunnel) Fri Mar 11 2005 02:18 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Here's some pics of the Ramflo filters..... http://www.racetep.com/ramflolynx.html The 10% reference is the overall mix in the secondary. You have to remember that at wide open throttle the primary will run a bit rich even if the air jet is set to lean it out overall . Hence the 170-ish range of the primary air jet . Take a look in the throats at your carb , see if the numbers cast on the outside of the auxiliary venturi's are both the same, should be 3.5's . If the secondary has a 4.5 this is when you bump the secondary main jet smaller than the primary side . Note that this is only a generalized rule and your cam timing can change this quite a bit. Don't read that as just aftermarket cams, stock cams that gain at higher revs will change the upper jetting requirements as well . The thing you have to work with is the overall flow velocity, the higher it is the less jetting required. If the Offy intake offers up higher volume gains to the point of losing the velocity, jetting has to go up. The intakes I build can exhibit this to a pretty far extent, if I overcut the bores in the runners the jetting required is higher in mix due to a loss in overall velocity at high revs. I'm trying not to ramble on here but want to give the reasons for what I recommend . Some folks are into the fine tuning, others just want it to run.....:) Sarge
yodta (pooh bah) Fri Mar 11 2005 03:38 AM	 Re: Weber 32/36DGV verses the Weber 38DGES yeah, I'm one of the fine tuning folks... okay, so the aux venturies in mine are both 3.5s. I went 75/70 140/140 175/180 too lean on the secondary, so I went back to: 75/70 135/145 175/180 the 135 main was doing well, so I went back to that and left the 175 air (was 170). 140 was too lean in the sec. main, so I went back 145, so it'll still be a little leaner than it was. gotta drive it around like this a bit. I'll report back. I like the ramflo design -- which one is recommended for the 32/36, and does it come with the mounting kit?
yodta (pooh bah) Fri Mar 11 2005 03:15 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I backed down my timing a little bit, too, last night, as the secondary was still feeling a little lean. it felt better afterwards. I'm liking this configuration so far. Sarge, tell me what going to the slightly larger primary air jet does again...
Sarge (carpal tunnel) Sat Mar 12 2005 02:11 AM	 Re: Weber 32/36DGV verses the Weber 38DGES The Ramflo comes with all the base mount,ect . Basically just bolt it on and go . Not sure if they changed the pcv vent line hookup or not but it just had a push in tube, not my favorite but still way better than the Redline/K&N styles . You can use the Redline type 90* adapter for the pcv vent or I keep them in stock here . Overall, a very sweet and proper flowing air filter design , much better than anything else available to the US . The air jet needs to be fairly lean in the primary to do it's job as a "brake" of sorts . That small primary at full throttle with just that throat open creates a lot of velocity with most head/cam setups. Velocity is a good thing but with that comes a lot of fuel draw from the main jet , too much in fact . So, to counterract this you need to lean out the air jet to keep the response up, otherwise at primary wot the mix goes too rich . This creates the classic "let up a bit and it's better" symptom . The secondary can do just the opposite since both barrels are open and feeding a lot of air but velocity actually drops when both are at wot . Running nearly the same size main jet allows the upper ends of each throat to be tuned for response . Try going just a bit smaller on the secondary main jet and quite a few sizes down from the current secondary air jet . That will stop the secondary from leaning out when the overall velocity drops . It's all about playing the volume passing through the carb at the right timing , miss it and driveability and

	response goes away . When these things are dead-on, it's like efi... Sarge
yodta (pooh bah) Sat Mar 12 2005 01:35 PM	 Re: Weber 32/36DGV verses the Weber 38DGES by lean air jet you mean larger in size, correct? my sec. still felt lean at 75/70 135/145 175/180 so I went to 75/70 140/150 175/180 the prim. feels kinda heavy at 2800 unless I put my foot in it and take it up to the limit of the primary. the secondary feels a little sloppy, too. do you think going to 180/185 on the airs, possibly backing the prim. main back to 135? on the ramflo -- are you supposed to oil the foam? also, at which point do you really need increased airflow that a standard filter cannot provide? is it really that much more beneficial to have the air flowing directly downward as opposed to in and around a 90° like with conventional stack filters? about the "let up a bit & it's better" -- I read that that's due to a <i>lean</i> condition, not rich. the opposite of what you're saying.
Sarge (carpal tunnel) Sun Mar 13 2005 01:40 AM	 Re: Weber 32/36DGV verses the Weber 38DGES The "let up and it's better" can apply either way, just depends upon throttle position, rpm and velocity. I was referring to wot in the primary, hence recommending it be leaner on it's air jet (larger #). "The primary feels heavy at 2800 unless I put my foot in it" That statement says a lot , at that rpm the velocity is not that high and the air jet is not affecting the circuit all that much. Dropping the main would help that response a bit , but in turn the air jet may have to come down a bit with it since you describe "take it to the limit of the primary" as helping it out . That also says the air jet in the primary is very close to correct with the current ratio. So, I would take the primary to this step since you are very close: Idle:75 Main:135 Air: 170 If this change exhibits a sluggish or flat spot at 1/3 throttle then the main cannot be dropped any farther. The trick here is to make a happy enough medium between the idle/transition stage and main cruise. Since your idle is already at 75, I doubt it will accept the change but it's worth a try. Also note that at this point float settings wil greatly alter the way the main circuit works when jetting is this close. Too low a float and you push the main circuit's timing up higher since it doesn't have the fuel available to mix into the emulsion tubes. You could run it a tad on the lean side and use an F6 tube to bring the curve down lower and richer, but then the upper end has be adjusted to match it . Some F6 combo's run best with a 155 air jet since the upper range is not mixed with air the same way. Amazing how little difference in those drilled holes make , you wouldn't believe it . Same diff with engines that pull too hard/rich in the mains, switching out to F15's will take care of the problem. The secondary "feels a little sloppy", I assume this means a lack of response unless you hit wot in that throat. Again, since the velocity at the point of cracking the secondary open is so high you may just try backing the secondary idle jet down just a bit . Try to stay one notch above the "flat spotting" that shows up with too small a jet. One notch past that point keeps the mix more managable to make the transition. Remember, as that second barrel is opened the overall velocity drops more until the point of the engine at full song. Most motors will not make full velocity speeds in the carb's throat unless they breathe an exponential amount of air . Most cams are not timed this way, they bridge the gap between gaining power and air velocity with rpm's and low end torque. Most of the Jap cams actuall do breathe better with rpm's right almost up to redline, these are the types that benefit the most from flat jetting curves. The one you have does not, so you must jet according to velocity values instead. Therefore, secondary jetting really needs to lean out a lot at wot in the second throat . Bigger air jets and basically small mains should work . Try this , and carefully note throttle position and it's effect at different rpm's... Idle:65 Main:150 Air:185 I hope you are keeping notes on jetting changes, it can get confusing and is easy to get lost . Careful notes about changes with notes added to driving response helps a lot , it's almost like homework all over again. Too bad we all can't afford a dyno and sniffer, it would make this so easy. Ramflo The filters really do not need to be oiled like the K&N's. The whole idea of these filters is to allow the carb to breathe straight into the throats as the carb was designed to work. If you want any clue as to any difference, run without a filter once in a clean area free of dust. Most Webers run awesome without a filter, in fact a lot of the SCCA guys used to do just that as well as remove the choke blades. Some even went as far as to cut the choke housing's casting off and taper the top of the carb , much like modern day Dominators. The K&N's design of having to go "up and over" that choke housing kills the carb's efficiency pretty fast. The biggest effect is wot , but some driveability issues also show up as well as overall economy. Some guys have done comparison tests with the K&N and Ramflo side-by-side on twin sidedraft carbs. The Ramflo's two cylinders ran much cleaner on the plugs

and had much less "backwash" show up in the carb. Those carbs are seriously affected by air flow direction, they must breathe straight in to work properly.

Floats:

I mentioned how float setting affect the main circuits. Maybe a few more notes would help here. I set mine fairly in the middle, most at just over parallel to the top cover. Plastic ones are set to 35mm or so . This is fairly high but I also close off the vent area and install a diverter tube to keep spilled fuel out of the air jets. At extreme angles this helps a lot . Part of the reason for using a fairly high float setting is to offset the use of a regulator and electric pump. Most of the low pressure pumps cannot provide a steady high-volume flow rate. Holley's red series pump does a nice job but puts out 5-7psi average. With a regulator such as their 12-804 low pressure unit that combo needs a bit lower float setting otherwise some guys run into a problem when stepping on the brakes hard. The float level allows too much fuel to rush ahead and effectively "jam" into the emulsion tubes and flood the engine , killing it at idle. Merely dropping the float a bit stops this but also requires the main jets to be increased slightly to compensate. It can get to be a real game to balance between offroad capability and overall driveability. You would not believe the hours I've spent trying to find this balance and be able to apply it to almost any engine combo. To add to this, not all models of the Weber react the same way. There are 3 basic versions of the progressive DGV , each one reacts to jetting and float differently. There are two versions of the 38DGAS and they are even more fussy about it but once dialed in are very responsive and provide huge power and torque. Driveability is nothing more than the willingness to spend the time to attain it

Sarge

[yodta](#)

(pooh bah)

Sun Mar 13 2005

01:00 PM

 Re: Weber 32/36DGV verses the Weber 38DGES

I guess I should mention the "feel" I'm striving for. one of the things I noticed in all my reading is that no one really mentions anything about that. I think what it is I'm trying to do is get the absolute BEST throttle response, as in, when I press the gas I want it to react quickly and forcefully, whether just slight pedal pressure or taking it wot, power valve not included.

this means that timing has to be dead on optimal which I really don't know for sure where it's supposed to be. I know it's between 0* - 5*, but that makes a big difference when it comes to jetting.

the jetting you prescribe is very very close to what I was running before I started messing with it again.

primary/secondary (previous)

idles: 75/70 (70/65)

mains: 135/150 (130/150)

airs: 170/180 (unchanged)

I do keep notes about the changes I make, and the response. it's really easy to forget what you've got in there when you're making config. changes all the time.

I'm probably going to stick with the emulsion tubes that are in there. there are enough variables already, heheh, and that's just adding another one to the mix. this carb came setup pretty close to what I need. I have to believe that the Weber guys know better than I could ever learn what this carb needs to run well in a 22R -- start messing with the emulsion tubes and you change the driveability range, right? I mean, either way more low end, or way more top end? I think it's got f50s in it right now, which I imagine are designed for broad range driveability.

now, about the float... what is the right level? can you speak a little bit about how to measure? do you do it & measure holding the float below the top cover, or do you flip the top cover over, float up top, and make your changes? again, probably okay with the float, but I guess I need to get a number for where it's supposed to be for this vehicle. I'll email pierce manifolds...

I think I'd like to try the ramflo filter. do I need any more than the 400cfm rated filter? I mean, this carb's only rated for 326, I think.

I'm gonna go play a little, check my timing again, and drop in those jets you're proposing. I can say that it seems to like the 75 idle better as well as the 70 sec. idle. that 135 main is better, too. I'm going to try the sec. main back at 150, and the airs at 175/185. I'll check the response when opening the secondary, and possible drop the 70 back to a 65 if it's boggy. I have a feeling my secondary is too rich.

[Sarge](#)

(carpal tunnel)

Sun Mar 13 2005

02:08 PM

 Re: Weber 32/36DGV verses the Weber 38DGES

Here is a link to Pierce's site and a nice drawing of how to level Weber floats . The float must dangle from it's pin to keep from compressing the internal damper spring. LOL, for those that claim Weber's have "float bounce" , they are full of crap . You are very correct about tuning for feel, driveability and power is what it's all about .

Emulsion tubes included with your carb are a really generic setup. Weber does not typically use F50's in their tuning, but a more specific tube designed to perform correctly with a given engine . The F50's are added here , not when they are built. This is part of the "kit" process and not necessarily the correct choice either. With your manifold design, I'd say an F6 in the primary would work better. I'm going to look in my inventory and see if I have an extra one, if so I'll send it to you for some testing.

The float is a bit of a trick. If it's brass, all is good. The plastic ones have undergone a few changes over the years and their actual measurement can vary . Basically all of them are designed to be run parallel to the top cover, plus or minus 1/4" or so. The real issue is actual travel from that setting. By keeping the total travel of the internal valve (not including the internal damper spring) limited to about 2mm you help avoid flooding at high angles. The rear tab on the float frame hits the body of the float valve, this is where max drop is limited and adjusted. Like I said, it really does affect the main circuit since fuel level also sets the timing of the mains and fuel available in height to the emulsion tubes. One note about this, watch out for carbs that have loose fitting auxillary venturi's. If they are loose this will create a problem with the draw response in the emulsion tubes.

When I talked to the supplier about the filters he usually recommends using the 600cfm unit on all DGV's. Just a better and larger given area to supply air from, the cfm rating is not a total rule to go by, but the actual area above the air horn is what you are after. Looks like the initial order is almost sold out but I'll keep you in mind when they arrive. Lately UPS has been slow as

	molasses. DHL hasn't been much better,had an overnite Sat. delivery that finally showed up yesterday at 3pm, way too late to get a shipment out on time as promised. That's going to result in a very nasty phone call tomorrow, making me look bad with a customer is not acceptable and paying for overnite before 10am was for a reason. On top of that, the bozo left it outside by the door.... Sarge
yodta (pooh bah) Mon Mar 14 2005 03:27 AM	 Re: Weber 32/36DGV verses the Weber 38DGES link? what link?!? 😊 (I'm always doing that) okay, so if I've learned anything during this last little bout with Weber tuning, it's that air corrector jets are not in there just for show, or to plug holes 😊 I made several changes today, the best results being from air corrector jet changes. never would have thought it, but WOW. I really can't get over the difference they can make. I got the best results today with: idles: 70/65 (or 60, haven't decided which is best yet) mains: 135/150 airs: 180/185 if you recall, before I started all this jetting stuff again I was at: idles: 70/65 mains: 130/150 airs: 170/180 after going up a few steps at a time, noting the performance each time, finding a workable idle and main set, bumping up the airs a little at a time, finally getting to a point where I was lean in the main circuits -- evidenced in that "towing an invisible anchor" lag feeling where it gets all loud like it's trying to move but not really doing anything -- I went back to the "last known good" of sorts of the configuration you see just above. as you can see, my current jetting is only a slight departure from the stock jetting in the mains & airs, my changes being a slightly larger primary main, two sizes up on the primary air, and one size up on the secondary air. it is MUCH more responsive now. getting closer to what I'm striving for -- a nice responsive pedal at all conditions; kind of a "thick" feeling; smooth, full throttle response. still not breakneck or anything, but better than it's been. I've got a little slop to work out which I think may be timing related, but with the minor changes from the stock config, my truck's really come alive. I can't get over how much more responsive it is just by bumping up those airs. the sluggishness I described before was from the main circuits being too rich -- you nailed it Sarge -- bump up the airs to "brake" the main circuit a bit; both delay when it comes in and lean it out a bit. I guess the main was overlapping with the idle circuit too much, which would explain why it cleaned up when I opened the throttle more & the vacuum fell off of the idle circuit a bit. I was in the right ballpark with the other jets it seems, with the air correctors being the fine tuning I needed. I'll have to drive it around a bit more like this to get a better feel for it, but so far I'm quite pleased. oh, and about the timing -- I've got an adjustable craftsman timing light, but the knob has a good bit of play in it, so I'm not sure where exactly my timing is. you can turn the knob all the way down and it ends up below zero. then when you start to turn it, you can get to like 2 or 3 degrees before you can feel the knob resist. I'm not sure how to read this thing at this point. I was out looking around today for a cheap standard timing light to compare it with, but there aren't any to be had for less than \$35. do you have an adjustable light like this and if so, do you have a similar problem?
Sarge (carpal tunnel) Mon Mar 14 2005 12:43 PM	 Re: Weber 32/36DGV verses the Weber 38DGES A friend of mine had one of those lights, and the same problem with it . We tried several times to re-calibrate by using my light and seeing if his returned to the same point . It did not, every time he brought it back down it would land on a different spot,the light was junk. I've been told that some of the auto parts stores like Advanced Auto have a nice digital similar to Snap-On's for around \$100 or so, cheap compared to theirs. You will find that timing lights vary a lot, no two seem to read the same these days. So much for modern manufacturing . One nice thing about dial back lights is the ability to check total advance, that's how we dial a buddy's dirt race care. Initial is not a concern, just set it to 36* at 4k and let the initial fall where it may. This insures the car's total timing is set properly and it won't detonate under a load. Keep an eye on your plugs while you drive this test . There are times that good "response" feel comes from running pretty lean . There is a point where power can be pretty high just before melting a piston or burning valves. You will also find that if the float is a bit low, raising it will bring in the mains harder and sometimes also increase throttle response. One thing I see with your jetting , the way the idles and mains are up to a fairly high point in the secondary. I'd bet the cam timing is off a bit . You wouldn't belive how much difference 1-2* can make in a motor . Got any specs on it , or is it stock ? Sarge
77celica	 Re: Weber 32/36DGV verses the Weber 38DGES

(stranger) Tue Mar 15 2005 02:03 AM	Yodta, What all have you done to your car? Mods? Is the carb the only one?
Sarge (carpal tunnel) Tue Mar 15 2005 02:05 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I guess I forgot to post that link to Pierce's site with that float drawing . Too many projects lately.... http://www.piercemanifolds.com/Float_Level_1.htm Sarge
yodta (pooh bah) Tue Mar 15 2005 02:43 AM	 Re: Weber 32/36DGV verses the Weber 38DGES hey 77c -- I was just wondering what happened to you since we hijacked your thread 😊 I hope you've been following along and picking up some information -- as you can see, tuning/fine tuning a Weber takes some patience and a strong desire to perfect it. as Sarge said, some people just want it to run, other people want it to run well. my engine is stock except for a few small bolt on modifications -- I have a Jasper Motors remanufactured engine with a Comp Cams C252S, Thorley Header from Summit Racing, 2-1/4" exhaust from the cat back with a Flowmaster 50 Series Delta Flow muffler, the Offenhauser dual plane intake with the Weber, of course, feeding it all. I pulled the EGR stuff and installed block off plates where applicable. did I just say a few <i>small</i> mods? heheh I should mention that one of the more important "mods" wasn't actually a mod at all, but more just a very, very important replacement part -- it's the distributor I have -- a remanufactured unit with a <i>working</i> vacuum advance. all these mods hinge on proper timing. bad timing = poor performance. I went berserk on mods a couple of years ago, impatiently replacing part after part without a full understanding of timing, and wasted a lot of money in search of performance. I didn't find it until I started looking closely at the basics. never having driven a strong, working 22R stock setup since both the trucks I've had have been molested by dummy previous owners, I wasn't sure what I've been comparing against, working blindly in a way. if you're planning on building up your celica in a similar manner, I highly suggest doing so one modification at a time, built on a well tuned carb mod first, that way you can really gauge what kind of response you get from each modification.
Sarge (carpal tunnel) Tue Mar 15 2005 03:32 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I agree with that completely , a lot of carb complaints are actually timing related since the two have to work together. Sami's have the same inherit problem with their distributors of blowing the vacuum advance . Surprising since most of the stock rubber parts last forever. I'm also curious to see how the guy in AZ made out with his 38DGES that wouldn't idle down as well . Nice to get some feedback, if nothing else some comments on whether all this typing is worth doing or just wearing out my tired joints . Sarge
yodta (pooh bah) Tue Mar 15 2005 03:51 AM	 Re: Weber 32/36DGV verses the Weber 38DGES oh yeah, definitely worth the typing. it's always good bouncing some ideas off and getting input from other Weber guys. I'm still tinkering, teasing that area between juuuust right and too lean. right now I'm at 70/65 (the 65 is a recent change from a 60, so I can't comment yet) 135/150 180/190 throttle response is much, much better since the increase in the airs. I really just can't get over it. it feels so much better, but there's still some slop to tune out. I've been wondering if there would be much difference in going with a 130/175 combo in the primary and a 145/185 combo in the secondary. it would be a little leaner, right? I think I'm gonna have to bite the bullet and buy a regular, plain timing light to see what's going on there. I've been kicking myself all week, because I gave my old one to the kid who lives next door to my parents about a year or so ago, thinking I'd never need it again after I bought my NICE Craftsman adjustable one. I'm such a pack rat -- I keep EVERYTHING, and on the off chance that I do throw something away, THAT'S the thing I need!! let me know when you get one of those 600CFM Ramflo filters back in, though I do like the triangular look of the 1000CFM ones. PM me and let me know how much each of these is, please, and whether they can both be mounted on my 32/36 AND on my 40/40 should I ever decide to put that back on, and whether they both come with the elbow for the valve cover vent. is there such a thing as too big an air filter? Gnarl's, if you've been following along, feel free to jump in here...
2ndGenToyotaFan	 Re: Weber 32/36DGV verses the Weber 38DGES Anybody else's brain hurt? 😊

(addict) Tue Mar 15 2005 04:09 AM	
Sarge (carpal tunnel) Tue Mar 15 2005 04:20 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I know that 1000cfm unit is cool, but almost a bit too big and cumbersome . I did try a 600cfm unit at first and saw no real change when I switched to the bigger one. I'm almost sure that either one would fit as long as you have plenty of room either next to or above the valve cover . The filters (as of 3 months ago) only include a push in fitting for the vent line, I have the 90° adapters here in stock and plan to include them for all applications. The fittings I have here are for either 3/8" or 1/2" vacuum line and are high quality nylon with the caps, basically identical to the ones supplied with the Redline filters. Racetep's site lists the 600cfm/1000cfm units will fit the 40/40mm carb as well as all DGV series. Here is a link to the dimension chart: http://www.racetep.com/ramflodim.html As far as a filter being "too big" , I'd say that's almost not possible. The more air volume available that doesn't have to be forced through any material translates to throttle response . The more area available also reduces the amount of force required to draw the air through. Prices on the 600cfm unit will be \$60 plus shipping and weight is very low , should be under two pounds. I should be able to ship one anywhere in the US for less than \$7 . It's a plus to be in the center of the continent for sure. BTW, your jetting bothers me in one way. Being set up that rich I really wonder just what that 40DFAV would really do. With the numbers you show I would really be curious to see if the 40 would run better since you seem to need quite a bit of fuel delivery with that motor. While fuel mileage may suffer just a bit , I'd bet the torque would go through the roof as well as throttle response. Sarge
Sarge (carpal tunnel) Tue Mar 15 2005 04:29 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Brain is fine, a bit fuzzy but my fingers are really sore. BTW, just another thing to bounce off cyberspace while I'm at it.... The air filters all have one bad drawback on DGV's , they mount below the choke horn on the top cover. I am sending some old top covers to a friend who is going to CNC some spacer plates to move the filter up 1" so it's flush with the very top of the choke well. This will allow the whole filter to work better but may limit some applications due to hood clearance issues. Will either do them in phenolic or solid aluminum, whichever is cheaper . The plates if cost works out will include longer screws or studs to attach the plate and filter and use two gaskets . I would appreciate some measurements off the 40DFAV to find out any additional clearance needed to adapt these to that model. The 40 has a couple of casting knobs that stick out into the filter area on the float bowl side, just need to know how far they come out... Sarge
yodta (pooh bah) Tue Mar 15 2005 05:39 AM	 Re: Weber 32/36DGV verses the Weber 38DGES haha, Jerod! you said it man, this stuff can get confusing real quick unless you're actually the one working on it and keeping performance notes. Sarge, I'll have a closer look at the dimensions on that link you posted and see what I can get away with. the elliptical filter mounts lengthwise on the carb, right? as in on top of the carb with the barrels side by side the longer dimension is left to right, shorter dimension top to bottom? the 40/40 has like a two inch riser throat adapter on it, so I'm pretty much topped out with that downey air filter setup as small as it is, in fact, the top cover of it rubs on my hood! the ramflo might not be such a good idea for that application unless I cut in a hood scoop! that might be kinda neat though, if I can do it properly and get a nice fiber one to blend it -- nice cold air intake. how would I go about preventing that from becoming a water ram on rainy days? wouldn't want to soak the carb. I've been thinking about putting on some regular old rubber motor mounts again instead of the polyurethane ones I bought from NWOR about 4 years ago -- they're pretty tall and lift my engine up substantially, I think -- at least an inch. as far as the filters go, I'm sure that since it's top feeding, it'll still be better than the stock setup with the air coming in from the side, but I'm curious though about that spacer you're thinking about -- that's a neat idea, and should certainly smooth the flow substantially. once I get this 32/36 tuned to my liking, I might still experiment with the 40/40 this spring/summer just for fun.
Sarge	 Re: Weber 32/36DGV verses the Weber 38DGES That is correct about how the filters are oriented . Most of these are fairly short so you should still clear the hood as they are about the same height as the Downey . Guys with hood clearance issues benefit the most from this filter since it's low profile helps along with better breathing . Running a cold induction would require a water tray or a plug to run during rainy days . I cut a reverse draw slot at the rear of my hood recently to allow more air flow under the hood and engine bay . Not only did it cool better but the carb ran cooler as well, nice side benefit... Sarge

(carpal tunnel)
Tue Mar 15 2005
02:03 PM

[yodta](#)
(pooh bah)
Tue Mar 15 2005
03:17 PM

 Re: Weber 32/36DGV verses the Weber 38DGES

how can it breathe if the hood's right on top of it? I do see, though, how it can breathe better than if all you can fit is a short filter element in there -- you can take advantage of the filter media orientation; low profile, but same or better opening.

can you post a picture of that reverse draw slot?

I definitely believe in cold air induction. without having an intake hose going to the front of the vehicle to draw in cooler air, my carb is sucking in all that hot engine air which gets really bad in the summertime, so bad that my jetting should actually change.

[Sarge](#)
(carpal tunnel)
Tue Mar 15 2005
11:58 PM

 Re: Weber 32/36DGV verses the Weber 38DGES

Don't have any current pics . If you know the shape of a Sami's hood it's just a slot cut 4" from the back edge of the hood with the sheetmetal at the front of the cut turned up. I took some time one day and taped over 30 6" long ribbon strips to the hood then went for a ride. I was having problems with it running hot with speed, faster I went the worse it got . I had suspected the lift and shape of the nose had taken the air flow away from the radiator , sure enough the tape strips showed it plain as day. Since the lift is fairly high and the winch bumper is in the way the air just goes over the hood and under the truck instead of through the radiator . There is a huge vacuum draw about 14" in front of the windshield so that's where the hood got cut . Like I said, it did help quite a bit to cool the motor at highway speeds but a nice side benefit is the much cooler air coming into the carb . Seemed to help a lot in traffic during the summer , Weber's are famous for not liking hot air for sure . Here's that huge triangle Ramflo, please excuse the green, ugh...



Sarge

[77celica](#)
(stranger)
Wed Mar 16 2005
03:45 AM

 Re: Weber 32/36DGV verses the Weber 38DGES

I'm still hanging around. I have been checking this forum at least every other day or so for months. Recently, I have been checking it daily--anticipating this thread's replies. You guys rock. It is rare to find folks with this much knowledge about webers. Most people don't take the time.

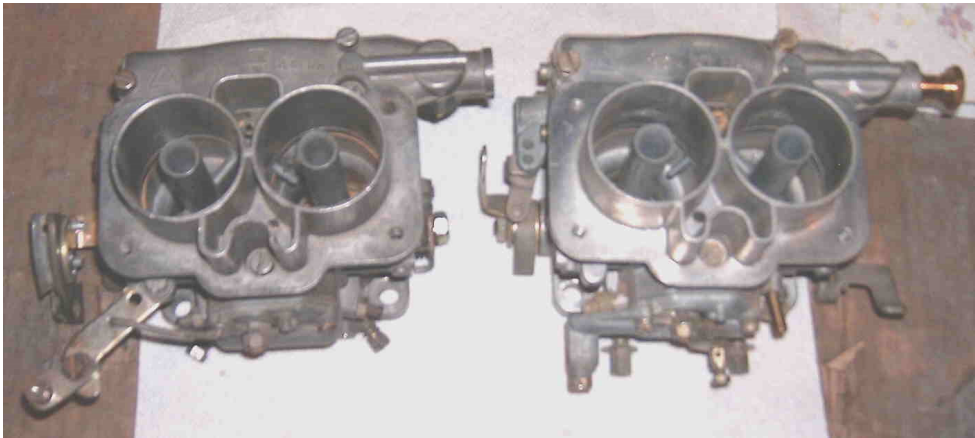
I just feel bad because I don't have much to contribute. I've never tried rejetting my carb. I was so happy with it straight out of the box I left the jets alone. Plus I used to live where I had to smog the car. Now, sky's the limit (well that and money and time...)

As far as the engine being in good state of tune and having supporting mods, I agree. I don't see how people say they didn't like the weber and want to switch back to their stock carbs. I would push an old lady down the steps if she tried to take my weber from me.

What do you know about the 40/40. Someone mentioned that they may be able to get me one at a good price. I am kind of afraid to switch carbs since I like my 32/36 so much. It idles perfectly and has good power. The only reason I am considering is

	because I will be installing the headers I have soon and hopefully a cam as well. How do you like your cam? Sorry for so many questions.
77celica (stranger) Wed Mar 16 2005 03:49 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Off topic: Sarge, Where are you located in Illinois? I was just up there this last friday.
JEFFB (addict) Wed Mar 16 2005 10:48 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Hey Yod, I know you mentioned you had a Air/Fuel ratio meter, now that your getting close to your final jetting has the A/F meter made any since to it all ?
Sarge (carpal tunnel) Wed Mar 16 2005 01:04 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I'm 10 miles north of Interstate 80 in Ohio , little burg just north of Princeton . For the guys that complain about idling problems with the dual throats, the 38DGAS is a bit of a pain to balance but shouldn't be that much of a problem. I've seen several lately that had issues with the valve timing on the secondary , the gear drive has to be synch'd to make the idle work right . What kind of price on the 40DFAV?? Sarge
77celica (stranger) Wed Mar 16 2005 03:33 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I didn't get a price nailed down because I wasn't really interested. A guy bought one and changed his mind or something like that. From what I remember it is new in the box. He is a friend of a guy that I talk to.
yodta (pooh bah) Wed Mar 16 2005 08:57 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Sarge, yeah man, that filter looks pretty cool. what colors do they come in. I think I'd prefer red. and you just clean 'em with soap & water? I'm gonna do some reading on making hood scoops. I'd like to find a nice, low profile, smooth curved fiber one that I could cut into my hood. Ron, no sweat man, as long as you're learning something... this is how most of us learned what we know -- we'd come on here, do some reading on what other people are doing, and then feel inspired to start doing stuff to our own trucks, come back on with questions, etc. before you know it, you're offering advice to other people. man, if you're happy with the way your engine is running now, just make a note of what your current settings are for timing, carb setup & jetting, and play around some. that way, you can always go back if you want to. I had to laugh outloud at your comment about pushing an old lady down the steps, heheh. as far as the 40/40 goes, I know that I had trouble running mine, but I'm almost POSITIVE that was because my ignition timing was so screwed up. again, you can make notes of how you're setup right now, switch to the 40 and play with it, and then switch back if you don't like it. if you're going to buy new, I'd say go with the 38, but if you can get a good deal on the 40, you could try it out. and if you don't want it, turn Sarge onto the guy so he can add another Weber to his collection. Hey Jeff, what's up? yeah man, I've got that A/F meter, but when I changed to the Thorley header, I never got around to hooking it back up. maybe I'll do that tonight... 😊 I've been curious, myself.
Sarge (carpal tunnel) Wed Mar 16 2005 11:41 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I think the filters come in red,yellow, blue, green and black . Most of the stock order I put in for are red , I'll add one of the 1000cfm units to that order for next week . If you don't want it I'm sure someone will grab it . Speaking of collections, I just got an email the 36DCNV I bought in England has shipped. Hope it gets here soon, just dying to play with it and see how the circuits are laid out. I'm also going to order one of new one-off designs that is destined to replace the 32/36 Weber . These are made somewhere in the Eastern block , possibly the Ukraine. Sarge
JEFFB	 Re: Weber 32/36DGV verses the Weber 38DGES

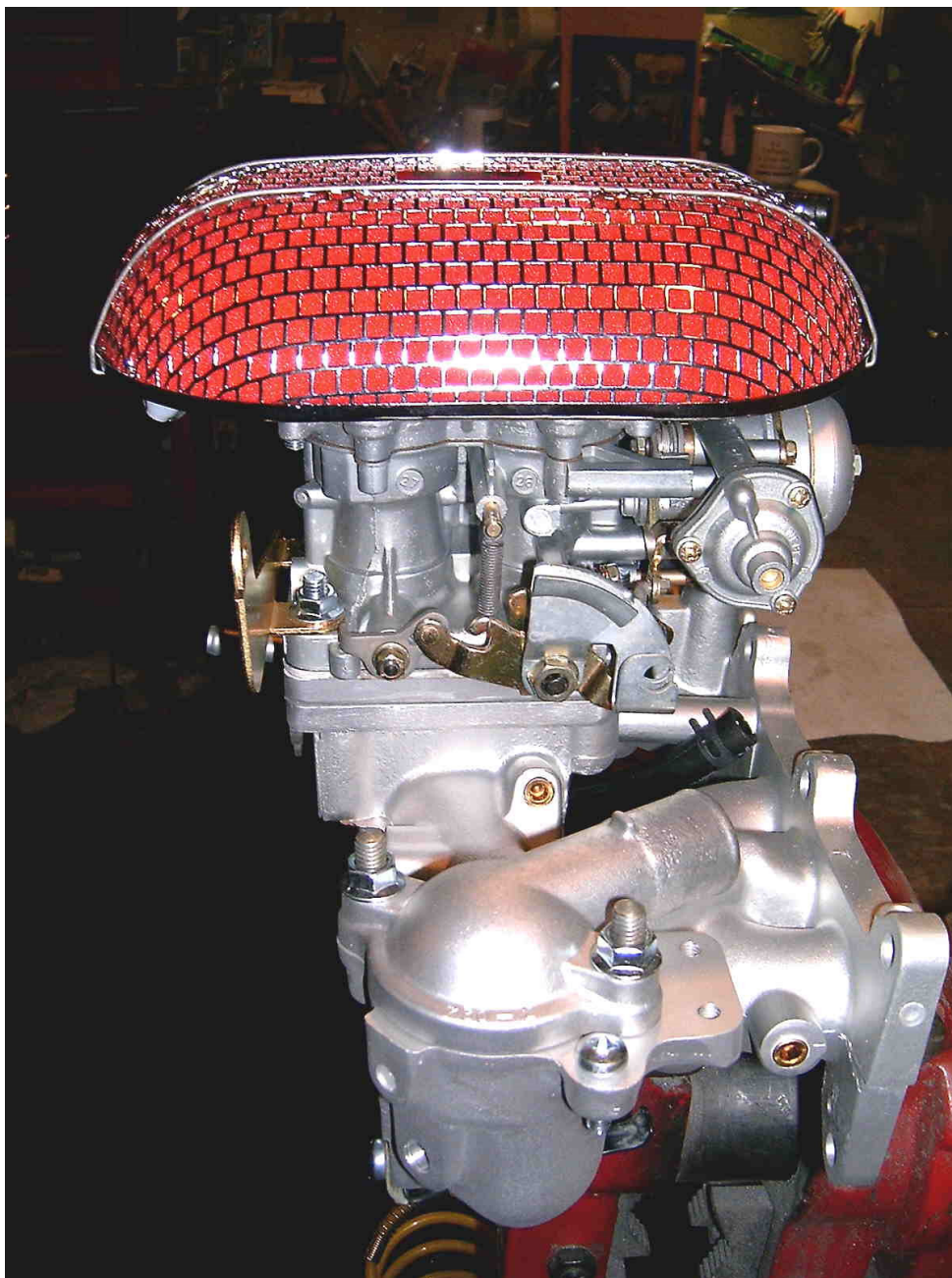
(addict) Thu Mar 17 2005 10:59 AM	My A/F meter still baffels me, it just does not make any sense. I am interested what you see with your meter. The jetting you last posted and the mods you have on your truck are real close to what I have, let me know how your meter responds when you get a chance.
yodta (pooh bah) Thu Mar 17 2005 12:40 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Cool Sarge, let me know. I'm definitely good for either the 600 or the 1000cfm in red when you get 'em in. I finally had to break down and buy a non-advancing timing light. the curiosity was killing me, but dammit, couldn't find anything decent for under \$40. I tried getting one of those el cheapo \$12 harbor freight jobs, just to compare my advancing light with, but that thing was so freakin' dim, I could hardly see the timing mark, AND it was bouncing all over the place. the actron one I just picked up is nice 'n bright & the mark's steady -- whew, no misses. Jeff, yeah, I wanted to try to hook it up last night but it was cold & rainy here. same thing today. I'll probably do it on saturday. heheh, at the risk of getting you riled up again, did you ever hear back from Wil and his check that the USPS lost twice? what part about the A/F meter doesn't make sense? do you have one installed? what's it doing? what is your current jetting, and what kind of response are you getting? when I had my meter hooked up last, I think it would idle one bar rich, go lean, like almost off the gauge, while cruising at highway speeds. on opening the throttle coming out of cruise it would go one bar rich, I think, but I'll let you know what I see this time around.
Sarge (carpal tunnel) Fri Mar 18 2005 12:26 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Be wary of the cheaper A/F meters as they have a delay in them . The more expensive 2 or 3 wire units work much better and show more of a real-time reading and are a lot more accurate. You should also find out what exactly they call "normal" in the fuel curve as most of the time it's pretty lean on fuel . I got the 600cfm filters in today finally, all of them are red . They do now have a much better pcv vent line hookup tube than they used to . I do also have the nylon 90* ones here in stock . Oh, and I forgot to answer you earlier, yes they do just wash up with soap and water . I just dunk mine in a light solution of dish soap in a bucket of warm water , wring it out lightly and allow it to dry . I'd like to know just how much hood clearance you have with your current setup if you have time . Just plop a full can of Play-doh on top of the air filter and slam the hood shut . Measure what is left and let me know , I have an idea for that Toy motor , hehe. BTW, ever done a compression check on that reman motor lately, might explain some of this jetting anomaly I'm seeing with your carb . Sarge
yodta (pooh bah) Fri Mar 18 2005 03:14 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES I fear compression checks. I think I'd rather not know.
JEFFB (addict) Fri Mar 18 2005 11:10 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Quote: at the risk of getting you riled up again, did you ever hear back from Wil and his check that the USPS lost twice? Hey Yod either I'm senile or you got the wrong Jeff. Any ways the jets I have now are the same as the last time we conversed on this issue, here they are: P / S 70 / 60 idles 140 / 150 mains 170 / 180 airs and I am pretty happy with it, but would always like to improve if possible. The A/F meter I have is a 3 wire analog CB performance meter. If I trust the meter it tells me 90% of the time I am running lean. Sometimes I don't think my meter is working correctly, sometimes it gives me some reading, the only thing that is consistant about it is the inconsistancy. Lately here is how my meter has been re-acting: 1. highway driving : 40 - 60mph, stoich 17%, acceleration will richin the mix some, so will de-accelerting, going up a slight hill it will go lean. 60 - 70 mph, the mix may richin up some, average 15.5 %, or may be lean at 17% depends on the day. Going up slight hill will make it go more lean, de-acclerating will make it more rich. 2. Around town driving, idle - 40 mph, just about always lean, needle pegged at 17% and hardly ever moves upless I floor it.

	I once purchased a custom performance jet kit (large jets) the meter almost always was rich. I have just been frustrated with how the meter reads vs what this meter reads. My tail pipe says I'm rich, meter says lean, 220,000 mile engine runs good 🤔 Maybe the A/F sensor I have just has such a narrow band you have to be just right, but I have done some small jet adjustments just like your doing and am expecting to see some change for the better, but nope. sounds like we are somewhat close.
yodta (pooh bah) Fri Mar 18 2005 12:24 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES oops, heheh, yeah, I think there's another Jeff roamin' about here 😊 I imagine that jetting config. runs pretty well. you have the idle advance connected to your manifold, too, right? I think I might have a different meter than you. mine's just got little colored bars on it. I'll let you know what I get when I get it hooked up again, which will probably be tomorrow. right now I'm having some odd running issues, just inconsistent performance, but I think it might be engine heat related because of my water pump problem. I'm gonna break down and do a compression test this weekend too. I'm always afraid to just in case I find something bad. 😊
Sarge (carpal tunnel) Sat Mar 19 2005 04:05 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES The inconsistency in that meter is probably due to a dirty O2 sensor or even getting hear burned out . Might try replacing it although the 3 wire units aren't cheap . The bad part about those guages is on most headers the collector reading is too far away to really do much good. I still do it the old school way by driveability and checking the plugs . If I'm real anal about it I pull the exhaust manifold and take a look at the exhaust valves when they are open with a micro light . Sold the entire first order of filters but I'm adding at least one of the 1kcfm units to the next order for next week . I'll let you know when they come in ... Sarge
Sarge (carpal tunnel) Mon Mar 21 2005 03:03 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Finally got some time to snap a pic of the Ramflo and also work on the DCNVA36/DCNF36/DCNF40 projects . Got some of the brackets done and measurements finished , looks like the whole thing might just work. The 36DCNVA arrived from England on Saturday and I couldn't wait to rip it apart and check the circuits out. Nice stepped and offset progression holes , much better design than the 3*/3* DGV series any day. Manual choke, vacuum advance outlet, side hung high angle float, very narrow and deep float bowl . Also, here's the big one, all jets and emulsion tubes are accesible from the outside like all DCN series carbs . The air jets are located at an accesible well from the top, just unscrew them and lift the whole assembly of the air jet/emulsion tube/main jet out as a unit . The main and air jets just push onto the emulsion tube, very slick on these carbs. The idle jets are accesible from the outside much like the DGV's but all these jets are different than the DGV's.  Here is a shot of a mock-up with the 36DCNVA mounted with the throttle cable bracket . The adapters are 6061 alloy...



Total height of the carb is just at 6" with the adapters from the intake's mounting surface. Installed height with all gaskets and a Ramflo will run about 7.5" or so . Overall, super package and way more tunable .

Finally, here's a shot of the Ramflo mounted on a 32/36DGV built for a Suzuki project



Sarge

[JEFFB](#)
(addict)
Mon Mar 21 2005
12:22 PM

Re: Weber 32/36DGV verses the Weber 38DGES

Sarge, you may be on something here with the meter I have. It is inconsistent with it's readings (bad wiring, bad sensor)from day to day. It seems like it works correctly some times. I have LC headers and I put the sensor in the collector flang. Also this engine is getting some miles on it (~215,000), the tail pipe is some what sooty, so maybe I'll remove the sensor and clean it off some.

[yodta](#)

Re: Weber 32/36DGV verses the Weber 38DGES

looks like you finally figured out that macro feature on the last picture, hahaha! 😊

damn, that 36DCNVA sounds awesome, especially being able to make jetting changes from the outside.

what's that top picture of?

Jeff -- do you have a single wire O2 sensor in the collector, or is it just before the cat? Chad helped me set mine up and he told me to get a 3-wire O2 sensor since the single wire ones require a lot of heat to get going, which means they pretty much have to be in the stock location up near the exhaust ports. the 3-wire sensor I installed worked pretty consistently, but the one I'm going to be using now is a single wire one mounted in the header up top near the exhaust ports. I'll let you know when I get it setup again. right now, I have to replace my cracked radiator!!!

(pooh bah) Mon Mar 21 2005 12:26 PM	
JEFFB (addict) Mon Mar 21 2005 02:56 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I have a three wire, unless the 12v (hot) or ground is not making connection !
yodta (pooh bah) Mon Mar 21 2005 05:25 PM	 Re: Weber 32/36DGV verses the Weber 38DGES your gauge behavior sounds about normal for these cheapie aftermarket gauges. I was talking to the guy who does my machine work a couple of years ago about this when I was having a really tough time getting my truck tuned correctly. he's got a dyno at the shop and we were talking about getting the webers tuned and how he connects an A/F gauge to the exhausts to bring data into the dyno. his dyno reads A/F ratios off of a sensor that threads into the O2 bung as well, only it's a lot more accurate than the setups we use for under \$100 by the time we're done. he says those gauges are okay for ballpark tuning, but can only be but so accurate with their limited displays.
Sarge (carpal tunnel) Tue Mar 22 2005 02:27 AM	 Re: Weber 32/36DGV verses the Weber 38DGES The top picture is of two very interesting carbs . The older looking one is a 40DCNF12 from a Ferrari 308 . The new old stock one next to it is a 36DCNF38 , the 38 designation gives it the vacuum advance like the 36DCNVA . I made a few calls today , the 36DCNF38 is an old school carb and is no longer available except for rare Ebay ones like I scored a few weeks ago . Too bad, those things rock and are worth a pretty fair penny. The 36DCNVA is currently available, all stock is true Italian Webers to boot . Best part is , they are actually cheaper than the 32/36DGV's at current pricing . Bad part is , I have to make the adapters and linkage setups for them from scratch . Once I get the templates made it's no big deal, just a bit of a pia... The O2 sensors and those A/F meters are just what they are intended for, a ballpark idea of fuel curve and jetting. At least once a week I have to argue the point of this with a customer, they keep an eye on that guage and trust it like Gospel . They are merely a tuning tool and not accurate enough to trust to a high extent . Most times they are nice when you effectively get "lost" in jetting not knowing if the carb is lean or rich in a given range . Then you have a better idea of where to go from there . I just tune them to plug color, fuel mileage, power, and driveability . Hasn't failed me in the last 20yrs..... Sarge BTW, the Ramflo order went in today including one special red 1000cfm DGV , should be here at the end of the week or so .
Gnarly4X (carpal tunnel) Tue Mar 22 2005 03:47 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: ... Most times they are nice when you effectively get "lost" in jetting not knowing if the carb is lean or rich in a given range . Then you have a better idea of where to go from there . I just tune them to plug color, fuel mileage, power, and driveability . Hasn't failed me in the last 20yrs..... Sarge, Have you noticed any difference in "plug color" with today's fuel? We have methanol-blend added twice a year here in AZ. Just curious. Gnarls.
Sarge (carpal tunnel) Tue Mar 22 2005 03:57 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Plug colors can vary by region as well as climate. Most of the time a nice light reddish tan is perfect. Some areas the tan shows up more as almost brown and some come up with a weird gray. As long as there's no white ash and driveability/throttle response is where it should be. I've had to re-jet 4 times in the last 2 months due to breaking a new engine in , up to 145's now on the 38DGAS.... Sarge
yodta (pooh bah) Tue Mar 22 2005 12:19 PM	 Re: Weber 32/36DGV verses the Weber 38DGES woohoo, new air filter! thanks man. let me know how much it'll be with shipping to 23462! yeah, I'm with ya on the A/F meter. I think I've done better on my jetting attempts not having that thing hooked up right now

	because it's forced me to go by feel and pay closer attention and keep better notes. besides, how exactly is an A/F meter supposed to behave? there are no instructions that say: <i>when you're at cruise speeds the meter should be lean.</i> <i>when you're on hard throttle it should show a little bit rich.</i> <i>when you're at idle it should be...</i> <i>when you're in the transition circuit it should be...</i> <i>when you're at high rpm it should be...</i> in my tuning, I am after good, strong, responsive throttle response overall, and to me that means good response on light pedal, and good acceleration the more I open the throttle at any given range. I was pretty close to this a couple of weeks ago, though it felt a little bit lean at higher rpm if I remember correctly. I seem to have lost it again for the moment, though. I have to go back to my notes. gotta install a new radiator tonight and change my fuel filter, then I'll mess with the jetting some more, resetting it to that nice spot I was just talking about. I've got some weirdo herky jerky problem sometimes if I come back out to a warm engine after half an hour or an hour or so. harder to start, and if I don't rev it to clear it, it gets jerky. I think it might be flooding a little on startup.
Sarge (carpal tunnel) Tue Mar 22 2005 02:32 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Hot restarts are a problem sometimes , are you running an insulator below the carb ? Some engines and particularly Cruisers almost all need the idle solenoids to prevent the idle circuit from siphoning fuel after the engine is shut off . The heat just boils it out of the carb . Electric chokes also can be a culprit since they don't have the water system's heat to read engine temp and cool off pretty quickly . My 38DGAS does basically the same thing due to the electric choke . A/F meters in a way can be very useful . Basically they should read at the "lean edge" on cruise with no hard load on the motor. Idle should also show this range . Acceleration in most cases should show pretty rich as well as deceleration. As I posted before, all readings should be taken with "a grain of salt" due to delays in read time. I found some more info on the new WWCT carbs yesterday from Mr. Pierce , pretty interesting stuff. Just gotta find a "guinea pig" to try one out. The carb costs in the neighborhood of \$250 or less . It does use it's own jets , no one elses. Idle circuits have their own jet design and incorporate an idle air jet that is adjustable in size for proper blending the off idle transition . It also has a deceleration valve to stop the idle circuit from siphoning fuel when the throttle valves are closed at high revs . A bit taller than DGV's , 32/36mm progressive design as well . So far reports of much higher power and fuel mileage, time will tell on that part . The only thing I don't like is the fact the jets are all different from current stock, that could get expensive. Availability is limited right now , we'll have to see how it goes . Your air filter will cost about \$7.75 to ship . Haven't recieved an invoice yet on the cost , I will let you know. I can bet now that your jetting will change a bit too as well with this filter. If you have the time, I'd install a heat spacer on the carb , I have some 5mm ones here in stock at \$5 each . These are a asbestos type material and work well , some companies carry a bit better solid phenolic type but are sort of hard to locate. All this jetting and tuning info lately has me about swimming in a fog , emails have grown quite a bit as well as new inquiries. On top of it all, I am suppose to write a tuning article for a buddy for his website . Once it's done, I'll post up the link to it Sarge
yodta (pooh bah) Tue Mar 22 2005 03:47 PM	 Re: Weber 32/36DGV verses the Weber 38DGES what's a heat spacer? I've already got a 1/2" aluminum spacer between the carb base & the manifold. sweet, let me know when it arrives and I'll paypal you the payment. I found a K&N 90* PVC elbow for the breather in one of my boxes of tricks. sometimes it pays to save everything! I hear ya on the swimming in a fog -- I'm feeling a little overwhelmed right now. I seem to have lost that sweet spot I stumbled onto last week. messing with too many things at once, so it's probably time to just drive for a little while again and let everything settle in before making anymore changes. I started messing with the timing a little bit, which is probably what hosed me up. I wish I had a good solid number to set my base to. it's gotta be between 0-3* or so. right now it's just feeling kinda lazy and winding up kinda slowly. just put new wires on over the weekend along with the cooling system work. my #2 just disintegrated as I went to go twist the boot loose, so that probably explains the little miss I started noticing.
Sarge (carpal tunnel) Wed Mar 23 2005 02:40 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Ignition parts and timing is SO critical . I find myself letting things go for too long . A quick look once in awhile at my service record book where I track all mods and parts helps a lot . Gee, looks like it's been 3yrs since I replaced my wires too . Duh, time for another set ! The insulators help a lot for those using electric chokes. Since the electric element can cool off so fast the choke thinks the engine is cold after only about 10 minutes. This causes a rich starting condition, the insulator just keeps the carb much cooler to help keep the fuel from boiling out. In some ways the insulator can make the problem worse since the carb is fairly cold compared to the engine. When you shut it off the choke can close even quicker . The best solution is to install a water choke if

	you can find the correct one to work with your system . For engines with small bypass lines it's pretty easy, some actually use the heater hose to heat the choke if the heater has a live recirculating system. Hope all that makes sense, been a long day again... Sarge
Sarge (carpal tunnel) Sat Mar 26 2005 12:20 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, finished up the mounting plates and plenum cutting so the 36DCNVA flows properly (carb in pic 2 above). Finalized the linkage throw and proper angles for the throttle cable as well. Just need to finish the port work and clean it all up before installing it next week. Got some more jets ordered for it so it can be tuned. Hopefully the Ramflo filter for the DCN series will fit it , otherwise I'll have to make one work . Almost forgot I have to pick up another choke cable as the one I have now is too short due to the choke arm being on the other side of the carb . Can't wait to test this thing out on angles and steep inclines. I'll get some pics as soon as it's together... Sarge
77celica (stranger) Sun Mar 27 2005 01:14 AM	 Re: Weber 32/36DGV verses the Weber 38DGES What's drivability like with the weber 38/38. I live in Missouri and it does get cold here in the winter. Will the carb start fine and drive fine in cold weather? It is not a daily driver but it would be nice to have the option to drive it at least 3 seasons out of the year. I also heard the 38/38 has a tendency to bog down on the bottom end--is this true? I want to be able to have good low end throttle response as well as top end. What cam is everyone running and what rpm range is it good for? Thanks P.S.--whoever responds to this next will the 100th post in this thread! I had no idea it would grow like this. There is a lot of good information in here. Thanks everyone for your input.
Sarge (carpal tunnel) Sun Mar 27 2005 01:38 AM	 Re: Weber 32/36DGV verses the Weber 38DGES If someone could help out , I wish I had never posted those pics up above . I hate having to scroll across to read a post . The original pixel size was small, how they heck did they come to cover more than my screen does?? Anyway, to answer your questions about the 38DGAS.... Every bad post or written info I've read about the 38DDGES/DGAS/DGA5 was due to some poor sap not spending the time or having the understanding to jet it right. The 38's fuel curve is very different from the 32/36 progressives. The main circuits use larger auxiliary venturi's and chokes, they are designed to move a lot more air (400+cfm) and bring in the mains much more violently than their cousins. Most need some pretty large idle jets to ramp up into the mains , my Suzuki currently runs 65 idles in both sides with only a 1.6L engine. Granted, this is with a dialed radical cam and much larger valves than stock, fully ported head and intake system . Mains are currently 145's but I have one guy with a 1.3L engine running 155's in his due to a special designed head with the same cam as mine. Air jets are 190's to keep the 38 from sucking too much fuel at high velocities when the engine is wound out . Overall driveability is very good , almost no lag anywhere and throttle response is very crisp with very little input . I've had a few buddies drive it and they are so surprised that it isn't injected. Actually, most wish their injected rigs responded as well as this one does. Fuel mileage even with breaking in the new motor is very respectable for such bad aerodynamics, 20 overall and 24 on good cruises . I do not drive it easy, most shift points are above 4k just due to "fun factor" 😊 None of my customers running a 38mm would ever trade it in for a 32/36, you'd have to pry it out of their cold dead fingers.... Sarge
Sarge (carpal tunnel) Sat Apr 02 2005 01:28 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Did some testing today on the 36DCN38 , this is the synchronous 36mm twin throat , no choke Italian model. Wow, stomps the snot out of the 38DGAS any day of the week hands down . Haven't even had time to get it jetted properly or do any experimenting with the F tubes yet . The real surprise was the idle jets, 50's were too big so I dropped them down to 45's and it the throttle response is very crisp , no lag or nothing at all. Upper throttle response is great even under a load but needs some adjusting yet . Overall driveability is almost scary, response to the throttle is strange since it's lighter than the 38 was at it's best day. Very little input for cruise speed and seems to use as or less fuel than the 38 did . Can't wait to get a filter in to fit the 36DCNVA so I can get the testing done and order a few in for custom builds. Wish I would have done this a lot sooner.... Sarge
yodta (pooh bah) Sat Apr 02 2005 01:52 PM	 Re: Weber 32/36DGV verses the Weber 38DGES if you go back and edit that post, you can pull the pictures. I resize most of mine so that they're no wider than 600px. I usually go with standard sizes where I can: 600x400, 800x600, etc. 20-24mpg?!? you sssssuck!!! I got my A/F meter working again, but I've been having some odd response in my engine lately with the changes I've been

	making, so I gotta get back to my baseline and start over. I've decided on setting my timing at 12* -- but NOTE!!! this is WITH the idle advance connected. I read in the FSM to set it to 0* with the vacuum disconnected & plugged and that should give you 12* when you reconnect it. anyway, I'll drive it like this for a while. if I can't get the timing right, there's no sense in wasting my time on jetting, because I'll never be happy with it.
Sarge (carpal tunnel) Sun Apr 03 2005 01:40 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I would check for total advance @ 4,000 revs . With the idle advance hooked up you should be showing 32* or so , maybe down as low as 28* at that rpm. The main switched vac advance should not be active at that rpm with no load on it . Most of the Japanese mechanical vac systems are good for 8-10* of advance and most top out their ignition advance to a total of 34-36* timing. So , if it reads 28* at 4k , you have a correct working system. Hope that makes sense, been a long day working on the Suzuki's oil pump issues and trying to get time to tune the DCNF as well. Finally figured out the dumb main jets were too small and the oil was overheating, gotta get a guage on this thing. The fittings to the remote filter were so hot it would burn you in less than 1 second. I never have really learned how to manipulate pixel size or orientation on computers. I was lucky to figure out how to post them and that took some help. I tried to edit that post a week or so ago and the system wouldn't allow it . So far this DCNF is a killer, tomorrow it gets it's high angle testing done and basically the snot beaten out of it . Throttle response is ticklish in almost a bad way, breathe on the gas and the truck just launches . Monday I plan to spend most of the day trying to sweet talk the F tube tables from the NY techs so I can figure out what tubes to run . The fuel curve right now is a bit weird and I'm sure that's what is causing it . Hard telling, not too many guys alive that remember how to properly tune and set one these. Sarge
Sarge (carpal tunnel) Fri Apr 08 2005 11:53 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, got some updates. Wheeled the DCNF pretty hard last weekend , with some less than desireable results. I had built into the float chamber a vent tube and closed off the factory slot to keep fuel out of the idle air bleeds and main air jets . Either the tube was getting into the edge of the float or the tube was unable to pass enough air to stabilize atmospheric pressure in the bowl . Fought with it most of the day trying to keep fuel pressure steady and work on the hills. Downhill it wouldn't cooperate at all, just had to keep shutting the fuel pump off . After it finally got to the point it wouldn't stay running I just bypassed the vent altogether and went back to it's basic stock form. Even with the bowl in the rear it performed flawlessly, even at high downhill angles. That carb has way more power than the 38DGAS any day of the week and will certainly kick it's butt offroad. Uphill is no issue at all and it seems like side hills don't affect it as much as I would have originally thought. Basically, these can be run out of the box offroad better than any other carb I've built to date. On top of all the probs, the dumb thing still does better on fuel mileage for the last week in spite of running like crap on the trail the first day and being thrashed doing jet changes. Almost disgusting , really... Sarge
Sarge (carpal tunnel) Sat Apr 09 2005 12:47 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Got a pm from Yota concerning his jetting: I'm considering taking off my choke plates for the summer. on my jetting... 75/60 140/150 185/190 eh, it's so so, takes off when the main comes in, but I think with the air that big it's taking too long to come in. I think if I went to an 80 idle jet it would feel better. I'm gonna try that so I can keep the pulling feel at the top end without going into the secondary. what do you think? the secondary's still bleep. it just lays down if I'm in it at anything less than 4000rpm... The comment about the secondary is pretty common really, most can get the primary jetted close enough to pull well but the secondary just never seems to do it's job. Let's see what causes this.... For one thing, you must know what you are dealing with. Most progressives use a 3.5 auxiliary venturi in the primary. This venturi is where the fuel is actually delivered into the throat from the suction created by the smaller choke area in the throat's bore. Just nothing more than a low pressure area to induce a pull through the main jets and emulsion tubes. The circuit control comes from metering through the main jets, air blending via the emulsion tubes , and air induction controlled by the air jets. The 3.5 size of the auxiliary venturi dictates how much actual fuel/air mix can be sucked in from the main circuit. On most of these progressives, the secondary not only has a larger bore but also a larger 4.5 auxiliary venturi . Most common thinking is to use a larger fuel jet in the secondary when in reality the larger venturi will draw more fuel from a jet the same size as the primary or even more. I set most of the 32/36DGV's up with mains the same size in each side and a smaller air jet on the secondary. The smaller air jet keeps the circuit from going lean at full velocity, fine tuning later will usually result in going a bit bigger in the air jet but I set them up that way for safety's sake. So, if your secondary isn't responding as expected, take a look down the throats and see what size the auxiliaries are , might get surprised. BTW, 38DGAS and 40DFAV's use 4.5's in both sides out of the box . On DGV progressives, you could use a 4.5 from a 38DGAS as a performance upgrade and slightly smaller main jets

What the heck, as long as we're on the subject of main jetting and results ...

Emulsion tubes. It had been mentioned before on this long and tired post , but here's some details about my replies.

F50 emulsion tubes are just a baseline installed in DGV's for sale in North America . It is well understood that most of us here are satisfied with "it starts and moves" . Not so in Europe and if you look at factory E tube types/sizes you will find some surprises. Not one engine type near the 1.2-2.0L size will use an F50 E tube. Why? Well, several reasons and some are almost startling.

Take Yodta's jetting:

75/60

140/150

185/190

A 75 idle is very high, most Euro cars use 45's at most. His main jets also warrant a close inspection of how the carb is being metered. A single carb on his type intake is naturally going to exhibit this trait, almost no way around it since the total volume of the 4 cylinders will overcome the transition too quickly at initial throttle movement. A couple of things can help;

Increase the accelerator pump nozzle size

Lose that F50 Etube!

The size and orientation/height of the holes in the Etubes govern how/when/where/how much air is blended into the fuel stream for the venturi. Float height is also critical as the amount of fuel in the wells also governs how the Etubes work . Upon close inspection, the F50's have a lot of small holes near the top of the tube but almost none at the bottom . They are also fairly small in overall diameter as well as the interior hole size and depth. This overall design produces a lean mix at low velocity (read: during transition to wide open throttle). Consequently, you have to increase the main fuel jet size to correct it . But, in doing so, the air jet must increase a LOT due to almost no air being mixed during high velocity(wide open throttle/high revs). So, the F50 is really not a good choice. Remember my comment about the Suzuki's using 75 idles commonly? Same problem, same manifold/engine design just smaller. In this case, an F6 would be a better choice since it will provide a steeper fuel curve initially and lean out properly at higher velocities. Now, unless you have a very extensive set of tubes and the time to play with them, the F50's work fine and can be dealt with. But , the F6's can actually give way better response to jetting as well as better fuel usage.

So, what do you folks think of all that now that my fingers are sore and I'm blind again? BTW, sent Yodta some Etubes to experiment with, I'm also interested in tube changes in Toy's since I also build carbs for them...

Sarge

[yodta](#)
(pooh bah)
Sat Apr 09 2005
05:04 AM
[Attachment](#)

Re: Weber 32/36DGV verses the Weber 38DGES

okay, first, as noted, that jetting config was killing me, so made a couple of quick changes tonight before installing the new RAM-Flo filter.

I'm now at:

idles: 70/65

main: 140/145

airs: 175/180

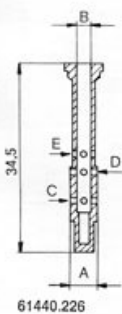
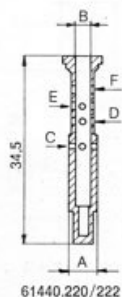
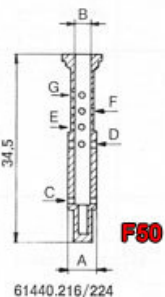
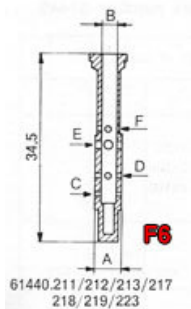
seems to run best overall with the timing around 3-4*

seems a little more solid here. it was just too flat in the bottom end the way I had it before. I'm after good solid response throughout the driving range. this is like a friggin' rubik's cube -- easy to get one side, but hard to get all sides solved.

Sarge, you're right -- the 32/36 on my truck has 3.5/4.5 aux venturis. and you're right about my thinking I needed a larger main jet in the secondary. I mean, it only makes sense that more air needs more fuel, right? apparently not so. I hadn't considered the vacuum's effect.

I've been following along in my pierce manifolds Weber Tuning Manual -- they say the same thing about the e-tubes -- holes at the top are for mixture *weakening* at low rpm or slight acceleration. tubes with holes at the bottom are for *enrichment* at low rpm or slight acceleration. my solution was going to be an huge primary idle jet (80), a 140 main, and a 185 air. that's ridiculous when I can avoid this situation altogether by changing to an e-tube that will enrich the mix at the lower rpm allowing me to use smaller jets all around, but that's where I was headed.

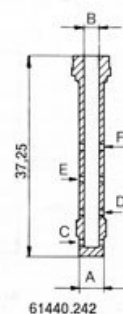
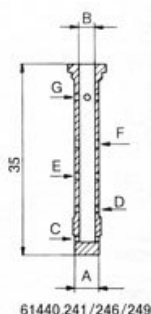
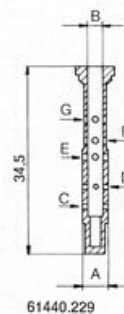
and guys, for those of you who've never seen an emulsion tube, here's a quick (and crappy) scan to give you an idea. the emulsion tube sits in a well right underneath each air corrector jet. looking at the F6 compared to the F50 which is stock (note the difference in placement of the holes guys), my questions are (1.) how will this affect the response at higher rpm?, and (2.) what kind of jetting are we looking at now? significantly smaller jets overall? how will this affect fuel economy?



Emulsion tubes

Part number 61440.....

Part number	Type	mm.		Nr. holes x diameter (1/100 of mm.)							
		A	B	C	D	E	F	G	H	I	L
61440.211	F6	4,25	2,75	2x100	4x100	4x140	4x100				
.212	F8	5	3	2x125	4x125	4x140	4x100				
.213	F24	4	2,75	2x100	4x100	4x140	4x100				
.217	F53	4,5	2,75	2x100	4x100	4x140	4x115				
.218	F56	4,5	2,75	2x100	4x100	4x140	4x150				
.219	F57	4,5	2,75	2x100	4x100	4x140	4x130				
.223	F80	4	2,75	2x100	4x100	4x140	4x150				
61440.216	F50	4,5	2,75	—	4x140	4x140	4x140				
.224	F81	4,5	2,75	4x140	4x140	4x140	4x140				
61440.220	F66	4,5	2,75	4x160	4x120	4x120	—				
.222	F78	4,5	2,75	4x160	2x120	2x120	2x120				
61440.226	F7	4,5	2,75	4x100	4x140	4x100					
61440.229	F87	4,5	2,75	2x100	4x100	4x140	4x150	4x150			
61440.241	F9	4,5	3,5	2x100	2x100	2x100	2x115				
.246	F51	4,5	3,5	2x100	2x100	2x100	2x115	4x100			
.249	F75	4,5	3,5	2x100	2x100	2x100	4x115				
61440.242	F40	4,5	3,5	2x100	2x100	2x100	2x115				



yodta
(pooh bah)
Sat Apr 09 2005
05:26 AM
[Attachment](#)

Re: Weber 32/36DGV verses the Weber 38DGES

here are a couple of shots of the RAM-Flo 1000cfm.
looks cool, works nicely, but the baseplate sits RIGHT on the carb body. Sarge, I see now why you were talking about fashioning a spacer, maybe half inch you think? -- two fold benefit, (1.) it would effectively reduce the profile height of the choke horn under the filter by elevating the baseplate, and (2.) just get it off the carb body! I don't like how close it is. there's no room for anything.

I saw on the back of the box where they have a holley type 5-1/8" round opening baseplate? I already have a holley adapter for the weber that I got from LC for the 11" round filter, so let me know if you have access to the holley type baseplate. I'd prefer that one. ARGHT. nevermind, I just saw the pricing on the lynx site... yipes. I'll make a spacer.



[yodta](#)
 (pooh bah)
 Sat Apr 09 2005
 05:28 AM
[Attachment](#)

📎 Re: Weber 32/36DGV verses the Weber 38DGES

here's one from the side so you can get an idea of just how low profile this thing is.

I really, really like the idea of top feeding better. it's gotta be making little tornadoes beneath this filter the way the air flows in from the top instead of getting drawing in through the side and up over those choke horns. just just seems so much more natural and effective to be a straight shot in. I mean it works for sidedrafts, right?



[Sarge](#)

📎 Re: Weber 32/36DGV verses the Weber 38DGES

(carpal tunnel)
Sun Apr 10 2005
02:30 PM

Ok, fresh cup of Java and here we go .

First, that Weber tuning manual is the only book with the full listing of E tubes available and drawings to map their location. Once you try out a couple of different tubes you will learn how they work . Just look at the selection available for DCNF 61450 series which is the same as the DCOE's . Tuning can be taken to a whole new level here .

If you used the F6 in the primary, it will bring the main in richer as well as *faster in timing*. Same effect as with going to a larger main jet without the "way too rich at cruise" problem. The diameter of the tubes has an effect of more fuel available in the well also. You have to be careful here, F5's and such will really ramp this effect up fast. I'd leave the main size in the primary alone, install the F6 in it and try a driving test. I burned up nearly half a tank yesterday playing with E tubes in the DCNF and have to order some different sizes. This is getting to be way too much fun. I can actually dial in throttle response as well as change the torque curves.

The upper range shouldn't change all that much with that F6 in the primary. You may have to drop the air jet a bit , driving will tell you . Also, if it feels too rich at minor throttle input, try dropping the idle jet down a size . *Timing* between the transition and the main is going to change quite a bit .

The secondary is very tricky and much harder to judge than the primary. You really need to first dial in the primary throat to respond the way you want it , then adjust the secondary to match into it since it is an *addition* to what is already there. I would use the F5 in the secondary and possibly drop it's main jet down one size as well initially. Remember, you should be able to cruise and do general driving on the primary alone, the secondary should only be needed for passing/burning tires. LOL

Believe it or not, most of this would be a wash if you only converted to primary auxiliary venturi to a 4.5 . The primary choke size of 27mm would bring that venturi in harder and more responsive than the 3.5 it was built with. Formula Ford 2.3L engine builders have been doing that mod for years using 4.5mm auxiliaries instead of the DGV 3.5's. Also, take a very close look at your auxiliary venturis and note if they appear "loose". Some do not fit all that well and can create a delay in draw on the main circuit. When I overhaul these carbs they either get shimmed in tight or staked to compensate this. Some of the race teams actually cut a slight groove at the back opening and install an o-ring to seal them up which is not easy to do . It does however give much more consistent performance . All the DCNF, IDF, IDA, and DCOE's fit their venturi's much better and have different size chokes available. This is also part of the reason for the added cost . You really do get what you pay for here, the DGV's were nothing more than an econo replacement model to start with. Honestly, that engine would work much better with a 36-40mm DCNF instead . No one to date makes an adapter kit , hence my building my own setups here .

The air filter height issue takes some thought. On the Sami's for the most part we have a lot of clearance to work with, up to 4.5" total with most motor combo's. You should first use some wax paper and Play-doh to guage the actual height with the hood closed. If you raise the filter to the point it's within 2" of the hood you will effectively feed the motor with only hot air . That carb isn't going to like that, especially in traffic at low speeds. Try to split the difference if you can to allow the best airflow with the least overall heat . Spacing the filter up 1" will give the best flow results as the whole filter can be used instead of just the area above the throats . I have planned to have some nice aluminum spacers made but metal costs have skyrocketed to the point of too much expense to sell them . If I can source a cheaper phenolic plastic instead I may have them done anyway. Let me know when the tubes arrive and we'll do some testing

Sarge

[yodta](#)
(pooh bah)
Sun Apr 10 2005
05:54 PM
[Attachment](#)

 Re: Weber 32/36DGV verses the Weber 38DGES

Quote:

If you used the F6 in the primary, it will bring the main in richer as well as faster in timing. Same effect as with going to a larger main jet without the "way too rich at cruise" problem.

which is exactly the problem I'm having now since I brought the prim. air back down, so it's a little sloppy coming out of cruise at highway, and not quite as a responsive.

Quote:

The secondary is very tricky and much harder to judge than the primary. You really need to first dial in the primary throat to respond the way you want it , then adjust the secondary to match into it since it is an addition to what is already there. I would use the F5 in the secondary and possibly drop it's main jet down one size as well initially. Remember, you should be able to cruise and do general driving on the primary alone, the secondary should only be needed for passing/burning tires

I've always thought it was important to get the primary dialed before screwing with the secondary as well, because of the *addition* effect you mention >> *make changes to the primary. damn. now the secondary no good* << and yes, I totally agree on being able to cruise on light primary throttle. see, this is the stuff they don't tell you in the installation instructions. HOW is the thing supposed to feel when it's properly jetted?!? my goal has always been to get it to behave more like EFI.

Quote:

most of this would be a wash if you only converted to primary auxiliary venturi to a 4.5. The primary choke size of 27mm would bring that venturi in harder and more responsive than the 3.5 it was built with

and the drawback? lowered fuel economy?

what about the e-tube? wouldn't it still be weakening the mix at low speed? with a larger aux. venturi, I'd probably be able to get up and go and cruise on smaller idle & mains, right?

Quote:

You really do get what you pay for here, the DGV's were nothing more than an econo replacement model to start with. Honestly, that engine would work much better with a 36-40mm DCNF instead. No one to date makes an adapter kit, hence my building my own setups here

I *am* curious about the DCNF. you say it's a newer carb, too, right? if we can get mine running more responsively for traditional driving, while still maintaining excellent fuel economy, I'll be content with that. but for God's sake, I want it to DO something miraculous when I put in the secondary!

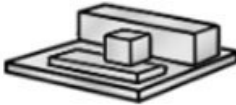
Quote:

If I can source a cheaper phenolic plastic instead I may have them done anyway. Let me know when the tubes arrive and we'll do some testing

looking forward to getting the tubes.

I believe you saw my other post where I'm asking where to find phenolic. I ended up finding Garolite at McMaster-Carr. it varies in price depending on the size, obviously. here's a price list...

Plastics



15 items match your selections

UL Rating	UL 94HB
MIL Specification	MIL-I-24768
Shape	Sheets, Bars, Strips, and Cubes
Material	Garolite
Garolite Material	Grade XX Garolite
Opaque	Black
Lowest Operating Temperature	+0° to +60° F
Highest Operating Temperature	+201° to +300° F
Operating Temperature Range	+32° to +266° F
Performance Characteristic	High Tensile Strength and Flame Retardant
Tensile Strength	23,900 psi lengthwise, 16,100 psi crosswise
Tolerance	Standard
Specifications Met	Military Specifications (MIL) and Underwriters Laboratories (UL)

[Catalog Page](#)

[Return](#) to Search page.

Only show items where is

Sheets, Bars, Strips, and Cubes Type	Thickness	Length	Width	Part Number	Price	Catalog Page
Rectangular Strip	.75"	12"	4"	7031K23	\$16.15 Each	
Rectangular Strip	.75"	24"	4"	7031K25	\$31.63 Each	
Rectangular Strip	1"	24"	4"	7031K35	\$42.18 Each	
Rectangular Strip	1"	12"	4"	7031K33	\$21.53 Each	
Rectangular Strip	1.5"	12"	4"	7031K53	\$32.18 Each	
Rectangular Strip	1.5"	24"	4"	7031K55	\$64.25 Each	
Rectangular Sheet	.75"	6"	4"	7031K21	\$8.40 Each	
Rectangular Sheet	.75"	12"	6"	7031K24	\$23.30 Each	
Rectangular Sheet	1"	6"	4"	7031K31	\$11.20 Each	
Rectangular Sheet	1"	12"	6"	7031K34	\$31.08 Each	
Sheets, Bars, Strips, and Cubes Type	Thickness	Length	Width	Part Number	Price	Catalog Page
Rectangular Sheet	1.5"	12"	6"	7031K54	\$47.55 Each	
Rectangular Sheet	1.5"	6"	4"	7031K51	\$16.10 Each	
Square Sheet	.75"	6"	6"	7031K22	\$12.13 Each	
Square Sheet	1"	6"	6"	7031K32	\$16.18 Each	
Square Sheet	1.5"	6"	6"	7031K52	\$24.10 Each	

Quote:

The air filter height issue takes some thought. On the Sami's for the most part we have a lot of clearance to work with, up to 4.5" total with most motor combo's. You should first use some wax paper and Play-doh to gauge the actual height with the hood closed. If you raise the filter to the point it's within 2" of the hood you will effectively feed the motor with only hot air. That carb isn't going to like that, especially in traffic at low speeds. Try to split the difference if you can to allow the best airflow with the least overall heat. Spacing the filter up 1" will give the best flow results as the whole filter can be used instead of just the area above the throats

I'm really considering a hood scoop implementation to get cooler fresh air in over the carb & intake. this is one of the drawbacks to these "open" air filters -- you're taking away the air intake relocation built into the stock air cleaner and only getting that hot, recycled engine bay air. I've seen snorkel setups (I think they call them remote something or other) that would accomplish this, but then, those are side fed designs again. I'm going to try to find some premanufactured fiber scoop I can cut into my hood & attach with screws or rivets and then fiber over. getting ready to start some bodywork anyway. now would be the time to do it, so any ideas on this where to look would be appreciated. I want it to look smooth & clean.

[yodta](#)
(pooh bah)
Sun Apr 10 2005
06:45 PM
[Attachment](#)

Re: Weber 32/36DGV verses the Weber 38DGES

I just wanted to drop this on here, as well.
my Weber 40/40 carb has F2 e-tubes in it. note the difference in the placement of the holes in comparison to the F6 shown in the image a few posts up.

Sarge, my question is this... this carb (the 40/40) was advertised as designed for sustained high rpm driving. why would they install an F6 tube if the tubes with holes at the bottom are for mixture enrichment at low rpm?

Emulsion tubes		Part number 61440.....									
Part number	Type	mm.		Nr. holes x diameter (1/100 of mm.)							
		A	B	C	D	E	F	G	H	I	L
61440.120	F3	4,5	3,5	4x125	2x100	2x100	4x100				
61440.150	F1	4,5	2,75	1x100	1x100	2x140	2x100				
.151	F26	4,5	2,75	1x100	2x100	4x140	4x100				
.153	F49	4,5	2,75	1x100	1x100	2x140	2x100	2x100	2x100		
.154	F58	4,5	2,75	2x100	2x100	2x140	2x100	2x100	2x100		
61440.155	F63	4,5	2,75	1x100	1x100	2x150	2x150	2x125			
61440.166	F2	4,5	2,75	4x100	4x100	4x140	4x100				
61440.181	F3	4,5	2,75	4x100	4x100	4x140	4x100				
.182	F5	4,25	2,75	4x100	4x100	4x140	4x100				
61440.196	F4	4,75	2,75	4x100	4x100	4x140	4x100	4x120	4x120		
.197	F70	5	2,75	4x100	4x100	—	—	4x120	4x120		

[Gnarly4X](#)
(carpal tunnel)
Mon Apr 11 2005
01:52 AM

Re: Weber 32/36DGV verses the Weber 38DGES

How does the stock carb work compared to all this?
Gnarls.

[Sarge](#)
(carpal tunnel)
Mon Apr 11 2005
02:26 AM

Re: Weber 32/36DGV verses the Weber 38DGES

First, the 40DFAV is completely different in it's circuits. The Euro Ford it was designed for had a very high power band and the carb is built just for that . The F2 stock tubes in it bring the mains in hard and lean the whole thing out at higher revs due to the 28mm chokes working with the 4.5 auxiliaries. Also, stock production jetting on that thing is *180 mains and 185 air jets* ! That is such a huge fuel draw they also went with a 2.5mm inlet instead of the usual 175 or 2.00 . Also note the nozzles in the auxiliaries are very different in flow design, more like the race style DCOE's .

The F2 in the secondary when guaged with the Euro 2L Ford using the 32/36 is interesting due to the engine's valve design. Those had some pretty impressive ports and flow rates for such a small motor . The 5A series carbs used in them had the following:

3.5 aux. (both sides)
140/135 mains
165/160 air
F50/F6 tubes

The intention is to install the F6 in your 32/36 primary and get away from that huge idle jet. Remember, no holes at the top enrichen the circuit at low flow rates. But, the way the holes are done on the lower half also *leans out* the circuit at high velocity. This should keep the initial transition sharp and strong, the cruise stage basically where it's now at and the upper range sharper yet . The key here is the 27mm primary choke, that small size will increase velocity quite a bit even with the 3.5 auxiliary venturi. So, the higher the velocity the harder it draws, this is why you've needed a larger air jet the whole time. The F6 should compensate this , the 140 main jet should be sufficient and you could possibly use a 135 for a better and more economical cruise range. With the F6 tube you should get more immediate and predictable results from the main and air jet changes. Just keep an eye on the A/F guage and the plugs as changes will yield much more with that tube.

The F15 I sent for the secondary should be pretty close in response to the stock F50 , but with slower air bleeding due to a larger body diameter. Also, there are F4 and F5 tubes included in that package, these act similar to the F6 but will punch it up harder on the main jet. We'll just have to guage it once the primary is set up, the secondary should work the best with one of these 3 tubes. I've played with these tubes and jetting to the point of filling a 50 page notebook , 25 gallons of fuel and 6 worn out top cover screws . I can rip the top off a DGV so fast your head would spin.

You guys may notice a lot of unknown lurkers around watching this post , they are customers of mine that want to learn . The only reason I picked on Yodta was he is deeply interested in the finer tuning and throttle response. Not sure how much free time he has to do this , but someone's gotta test things out for the good of all , lol . To answer another question: These carbs, if tuned properly, will provide throttle response so close to GenII EFI it is scary, no kidding . They also last a very long time with no additional tuning or work, just fuel and air filters . I've driven exotic cars that are pretty old with Webers that haven't seen a tech in 20yrs , still very sharp response and no issues whatsoever. Besides, you can't repair most EFI issues with one screwdriver....

The remote air filter adapters do work, but it takes some mods to get them to flow properly. A spacer really needs to be added to keep the mounting base flat with the top of the choke well. Also, the tube has to be at least 3" in diameter and be kept from heatsinking engine bay heat. This is commonly missed, most carbs run good on the highway but have problems in traffic and initial cruise ranges due to the tube getting hot . Also, watch what type of phenolic you get , most are compatible with gasoline but not ethanol. Also, the heat/cold cycles can cause cracking , bakelite is still the best but very expensive, like twice the cost of the material you posted. I'll give McMaster-Carr a call and talk to the techs tomorrow.

[Sarge](#)
(carpal tunnel)
Mon Apr 11 2005
02:29 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

BTW, changing venturi's does not necessarily mean lowered fuel economy. Unless it's jetted wrong , you just make it more efficient...
Sarge

[yodta](#)
(pooh bah)
Mon Apr 11 2005
04:29 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

Quote:

You guys may notice a lot of unknown lurkers around watching this post, they are customers of mine that want to learn . The only reason I picked on Yodta was he is deeply interested in the finer tuning and throttle response. Not sure how much free time he has to do this, but someone's gotta test things out for the good of all, lol.

hahaha! yeah, I'm probably gonna have to start packing my cordless drill in my cab for quick jetting changes again.

Quote:

These carbs, if tuned properly, will provide throttle response so close to GenII EFI it is scary, no kidding.

well, I can't wait to see. I'm pretty excited about the information you've dropped so far, and it all makes sense, so I'll gladly be the guinea pig. between getting the timing issue resolved, the cam Gnarls recommended, and now the expertise on the carb, this is gonna be the best running Weber equipped Toyota in the area.

Quote:

I've played with these tubes and jetting to the point of filling a 50 page notebook, 25 gallons of fuel and 6 worn out

	<i>top cover screws. I can rip the top off a DGV so fast your head would spin.</i> hahaha! yeah, it does get ridiculously mundane pulling those same 6 screws out over and over again. I had to helicoil the carb body on mine from strippin' the threads on two of the six. let us know what you find out from McMaster.
Sarge (carpal tunnel) Tue Apr 12 2005 01:31 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Guinea Pig, You may want to stud the top of that carb, the threads can wear out over time in the aluminum. The whole intenention here other than helping you out is for the whole Toyota community. There is a lot of potential power in those engines, mostly in the torque band as displayed by the cam changes. I'd be tempted to build a one-off custom DCNF 40 for that motor as well, but expense sort of puts a damper on that route. I doubt many Toy enthusiasts would pay \$500 for the bare carb , let alone the necessary adapters and such. One thing I may have missed during all this discussion is the fuel system . What exactly are you using for a pump and regulator? To properly guage jetting and emulsion tubes the fuel system must be very consistent and stable. I'm currently using a Holley Red pump and 12-804 regulator . I know , sort of pathetic, isn't it? The Weber parts are just too high in cost and hard to get at this time. Had another interesting conversation with Weber NA today and learned a bit more about series numbers and such dealing with the whole DCNF family. Most tuners will warn you that this series is designed for individual runner manifolds only, each throat is suppose to operate a given cylinder. Well, we also found 8 different Euro cars that use them as a single or even dual setup for multiple cylinders with a common plenum, HAH! I knew it would work, lol. The next step is to finish the work on the 40DCNF and add a timed vacuum port for the distributor advance, not really looking forward to this one. I also located a set of 30mm chokes for this carb, rare as hen's teeth so I'm gonna grab them tomorrow. Really hope all this pans out, I'm collecting parts at an alarming rate here. Spent another good 20 minutes on the phone with McMaster-Carr's tech dept as well. I asked about high cycle rates on the temp range of the Garolite material. This is a full resin strand material and is expected to hold up quite well during heat/cool cycles. The problem with using any phenolic material such as Bakelite on a carb is this vicious cycle. In cold weather underhood and engine temps can get pretty high despite the cold air. Running an open air filter will still allow the carb to get heated quite a bit under rpm's and air movement cool it down very rapidly. This is what leads to the common problem of "carb icing" . Any trace of moisture in the air becomes frozen in the throats and can block off the venturi . It is especially noticable in low-lying areas where the engine is allowed to pull in moisture and cool it off while driving, usually within a few minutes of startup. Auto makers solved this years ago by using closed intake systems and warm air pipes to feed heated air into the carb during warm up. Mine has only done it once in the last 5yrs, it just lost power but as soon as I pulled off to inspect it the ice was almost gone from the engine heat. Anyway, since it is a high strand material, the Garolite sounds like it should work quite well. I ordered a sheet of the 3/4" thick and it will be here tomorrow. Hopefully I'll have some spacers cut this week and start testing. I also plan to make some isolators for each style carb's base and test those as well for cracking issues. Gonna be a busy month again... Sarge
yodta (pooh bah) Wed Apr 13 2005 05:58 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I'm just using the stock fuel pump, a new one actually. I explored the electric fuel pump route there for a while, but decided against it for now . kept reading about how it should be on the same level as or lower than the fuel tank which is impractical for my truck. also, more importantly, the cut off. in most of my reading, the guys had it wired into the ignition switch, so it would start pumping as soon as the switch was on. I didn't like that. what happens when the motor dies and you're still pumping fuel? on solution to this was wiring it to an oil pressure switch, but then I thought, well crap, what happens if the switch goes bad? the stock seems to be working okay. maybe I'll revisit electric down the road with a Carter pump. so. I dropped in that F6 emulsion tube today. in anticipation of a rich mixture at lower speeds & cruise,, I went ahead and changed the jetting as well: Current (Previous) idles: 65/65 (65/65) mains: 130/145 (140/145) airs: 170/180 (175/180) first let me say that the previous configuration with the F50 tubes was pretty decent. low end pull was better with the 70 p-idle jet. as jetted, it was quite responsive on the highway and would cruise nicely at 70, and pull pretty decent on light pedal. too much pedal, and it would fall down. I'm talking only about the primary here. the secondary as jetted was almost useless. First impression with the F6 Hard to say at this point. it feels okay, but there does seem to be a bit of a boggy feeling. meter reads rich. it gets loud, but doesn't move much for the sound it's making if that makes sense. I'm still getting a feel for it. it's showing way rich on the A/F meter at lower engine speeds & cruise, which is to be expected since the F6 tube richens the mix at lower rpm. I may need to order some smaller main jets, maybe a 125 & a 120.

	I tried taking the primary air up to 175 to see if I could weaken it a bit, but all that did was make the primary come in later, and it was flatter up through around 2500 until I gave it more throttle and then it would pop, which is no good. I also tried taking the p-idle down to a 60, but that was way way too lean. I went from the mix screw being at around 2-1/8 up to about 3 turns out! Anyway, just to get a better feel for what it's actually doing, I'm considering the following combinations: a 130 main with a 155 air, and a 135 main with a 170 air, just to see and get a better feel instead of relying on the meter.
yodta (pooh bah) Wed Apr 13 2005 06:05 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Oh, by the way, very important -- the Aux. Venturies in each of the throats of my carb are both 3.5. I thought the secondary was a 4.5, but it's not. I think I'm gonna make an air filter spacer out of the Garolite, too. kinda figured on the 1/2" to 3/4" rise. check with Pierce on the insulator blocks. they have one on their site for the 32/36 and one for the DCNF as well. http://piercemanifolds.com/accessories.htm
yodta (pooh bah) Thu Apr 14 2005 12:44 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I just ordered some main jets and an F81 emulsion tube this afternoon. I got a 125, 120, and a 115. I'm not sure the way to go is down, though, but as I said, still trying to get a feel, and open to experimentation. the F81 tube is identical to the F50 except it has two small holes at the base of the tube which would, I imagine, reduce the mixture weakening effect at lower rpm. got some gasket material and the insulator, too.
Sarge (carpal tunnel) Thu Apr 14 2005 02:20 AM	 Re: Weber 32/36DGV verses the Weber 38DGES First, you shouldn't have changed jets until you drove it on that F6 tube. What I'm trying to do is show the difference in timing with the current jetting . As your test shows, the primary has plenty at low revs with the current combo but runs out a fuel at higher velocities. The noise with no gain is too much raw fuel without air mixed into it from the tube's configuration. If you drop the main jet down in size you will have to drastically drop the air jet as well , probably in the range of a 160. The F6 tube will show if you have enough velocity or just a large volume of air moving through the carb . This initial run is really showing the secondary as well as (possibly) the primary needs a larger venturi installed. Not sure why you have 3.5's in the auxiliaries, I thought most engines specified over 1600cc would get 4.5's in the secondary for sure . One real issue here is how well that manifold is atomizing the fuel , the F6 so far shows that it is not . This is not totally a bad thing and can be dealt with by adjusting the carb. If this is the case you may just have to go with a tube that is basically the same layout as the F50 but with smaller holes or a smaller outside diameter . Too bad we couldn't hit a dyno shop and spend a couple days dialing it in.... Sarge
yodta (pooh bah) Thu Apr 14 2005 04:14 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I'm actually going to change back to the jetting tomorrow as it was prior to installing the F6. sorry, got excited 😊 who is your parts supplier? Pierce is showing only 3.5 aux. venturis for the DGV & DFV series carburetors. Quote: The F6 tube will show if you have enough velocity or just a large volume of air moving through the carb. the F6 will show what? so after I go back to the previous jetting, what do we do next?
Sarge (carpal tunnel) Thu Apr 14 2005 01:14 PM	 Re: Weber 32/36DGV verses the Weber 38DGES The high jetting you were running tells me the air moving through the carb is not doing so at a very high velocity . This is just a lack of signal, probably from the intake having a bit too large of an internal runner diameter. Offenhauser typically runs pretty large runner bores to help larger valves and high compression work like it should . As a result the air moves slower, but more volume. The speed of the air going through the carb's venturi is the signal the carb receives. You can run into the same problem if the carb's main venturi diameter is too large. Say, if the 32mm throat had a 30mm choke diameter instead of 27mm, the signal would be weaker to the auxiliary venturi . Same deal with the secondary, hence a lot of the 32/36's having a 4.5 in that side. The 4.5 aux's I refer to are from a 38DGAS and are not a total direct fit, most a bit wider and guys use them to repair loose fitting

	venturis. The 4.5's larger outside diameter also forces a better signal to the main circuit since the outside bore is closer to the main venturi's diameter. There really is nothing wrong with the jetting you had before or the F50 tube. It only required that jetting to work with what you have , no big deal . The F6 is pretty extreme in richening the circuit at low end. If you can't run a significantly smaller idle jet then you are pretty much stuck with that size. The only other way around this is to reshape the plenum under the carb to increase flow to the outside where the transition dumps. Try the F50's jetting and note it's response. Then try the other Ftubes with that jetting. I'll have to look up that other F tube you ordered and see what it's map looks like. There should be one close enough to the F50 to respond the way you want it to without any lag. As far as suppliers, I have over a dozen. Pierce is one of my favorites in the US , otherwise the best ones are overseas but it takes extra time. Sarge
yodta (pooh bah) Thu Apr 14 2005 07:25 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: This is just a lack of signal, probably from the intake having a bit too large of an internal runner diameter. Offenhauser typically runs pretty large runner bores to help larger valves and high compression work like it should . As a result the air moves slower, but more volume. The speed of the air going through the carb's venturi is the signal the carb recieves. I should note here that the Offy intake I'm using is the dual plane manifold; the runners for the primary and secondary barrels are isolated. this intake is advertised as designed for providing better low end torque and throttle response. my understanding is that dual plane manifold designs are the "opposite" of oversized manifold runners, in that the air should move faster and more violently than those open plenum designs. I believe the venturis in this carb are 26mm & 27mm. I was trying to find a picture to corroborate this, but I can't seem to turn it up. I'll check the stamps on the side of the carb body again to make sure. I will revert to the jetting I was running that was crispest before the tube swap and play with the other tubes over the next couple of days and make notes. how about we lay out some guidelines for testing, like throttle positions, load, etc. so we're testing and comparing the same thing on each change. as I mentioned in a previous post, the F81 is identical to the F50 tube except it has two more small holes at the bottom of the fat section of the tube. you can see what I'm talking about in one of the e-tube diagram images 17 posts up. look at the diagram with the F6 & F50 marked on it and then in the chart to the right. the F81 is just below the F50 in the second group.
Sarge (carpal tunnel) Fri Apr 15 2005 03:21 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Wait a minute, just exactly how are those runners in the manifold oriented? Is there a common plenum at all or not? Testing really should be done on maybe a daily commute route or somewhere that usually drive in basically the same conditions. It's pretty hard to get control points from day to day but at least if the route is consistent it helps . Sarge
yodta (pooh bah) Fri Apr 15 2005 01:42 PM	 Re: Weber 32/36DGV verses the Weber 38DGES no common plenum at all. there are two holes at the carb mounting surface on the manifold, and the aluminum spacer they provide has two holes, as well, so it keeps the barrels isolated the whole way down. the runner divider inside them manifold is oriented horizontally, and I believe the secondary runner is on top of the primary at the head mounting flanges. ooh, I just thought of something. the insulating spacer I just ordered from pierce is an open plenum design. crap... wonder how that's gonna play in...
yodta	 Re: Weber 32/36DGV verses the Weber 38DGES just got the garolite in today. holy crap is that stuff heavy! I don't know what I'm going to use to cut it, though. thought about the rotozip, maybe, but not sure how tough this stuff is yet.

(pooh bah) Sat Apr 16 2005 03:03 AM	
Sarge (carpal tunnel) Sat Apr 16 2005 02:38 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, that explains the jetting then completely. You have to compensate for the delay quite a bit with those split runner designs, the MG guys have used those for years. It's also going to make it hard to guage F tube changes but should produce some good results anyway. Sarge
yodta (pooh bah) Mon Apr 18 2005 11:25 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I had a pretty frustrating weekend with this thing. seems I'm trying to do too many things at once. for me, there is a cloud surrounding Weber perfection. I'm fine all around the cloud; it's sooo close to being dialed I can taste it! BUT, as soon as I dip into that cloud surrounding perfection, I get SO! FRIGGIN'! LOST! again!!!! anyway, here's a little correspondence from Sarge this weekend... Quote: <i>A lot of guys get the mix screws set wrong and consequently the idle jet size as well. Remember, these settings must be done with the throttle valves closed completely so you are tuning ONLY the idle circuits. The base idle is just set until it's as smooth as possible. That split runner design manifold is going to show a delay in your settlings, take your time and allow the engine to stabilize, sometimes up to 8-10 seconds. If it is correct and vacuum/timing is correct you should be able to idle that motor down to 400 revs or less. I can drop this 1600 as low as 200rpms with the 36DCNF easily. You should see how touchy these idle circuits are in this thing , one 1/32 of a turn is too much. I do like though only using 45's for idles</i> <i>Once the base idle mix is set, try this : Slowly, very slowly raise the idle speed until you hit 2000 revs. If there is no hesitation or flat area , return the idle to 750 or so and try a driving test. Remember, the main circuit also affects timing as the blend between the two circuits changes. If the main is too large, a smaller idle jet is indicated although tuning doesn't seem to come out right. Too small a main jet results in an oversize idle jet and the same tuning problems as well as overall crispness disappears. There is a reason those old Ferrari and Porsche mechanics are paid so welllol.</i> okay, so I took a little time away and went back to the basics and followed these instructions thinking I've got to be missing something... my results: sure enough, I was able to get it to idle at just above 400rpm. according to Pierce, 2 is the magic number on the mixture screw, so that's what I shot for. I disconnected the advance hoses so there was no advance running on the engine (not sure if that was the right thing to do, though. help me out here...). I connected my handheld tach and a vacuum pump to the manifold vacuum hose that normally goes to the idle advance on the distributor to see what kind of vacuum I was getting, and also as a tuning guide -- smoothest idle & highest vacuum, right? at 400rpm, I was getting around 21-23" vacuum. it was bouncing around a little bit indicating a vacuum leak? (probably through the throttle shaft, I think). at this point, I proceeded to adjust the mixture screw. I was very surprised to find that the smoothest, fastest idle here required a different mixture screw setting than when it's idling at 800-850rpm or so, but it makes sense now that I think about it; at 850rpm, the throttle plates are open drawing in more air, hence the need for more fuel for smooth idle -- different mixture screw setting. I was at under 1.5 turns with a 65 jet, so I went down to a 60 and did the whole thing over again and ended up with just under 2 turns. it would probably be equivalent to 5 or 10 minutes on a clock if that makes sense. next test, the slow throttle advance to 2000rpm listening for flat spots or stumble. I still wasn't sure what to do here as far as the distributor hoses, but I went ahead and reconnected both advance hoses. figured that this is how it's gonna be when I'm driving it, so... as I turned in the idle speed screw, what I found was that the whole range below 1200rpm was very unstable. it didn't seem to react much to the screw and then came in in a bit of a rush. at around 700rpm, I got a pretty bad stumble, then again not much of a reaction to screwing in the speed screw. things stabilized at around 1200rpm and then it was smooth sailing up to 2000rpm. so what does this mean? seems to me that it's making a poor transition. in the past, I would increase the size of the idle jet, but perhaps I need to stand firm on the idle circuit and look at the main circuit and reduce the main jet size? not sure what to do at this point. current jetting is: idle: 60/65 main: 140/140 air: 170/180

yodta (pooh bah) Tue Apr 19 2005 01:10 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I went back out a little while ago to mess around some more. I couldn't get it to idle at all with the throttle plates closed all the way. had me scratchin' my head. anyway, now here's what's really puzzling me. if I set the mixture screw with the throttle plates closed, and then I reset the idle to something usable, it runs like crap unless I open the mixture screw more to stabilize it. what good is that? anyway, with the idle speed screw in just to keep the engine running at 400rpm, ever so slightly engaged throttle, I decided to try changing the main jet to see if I could get rid of the stumble as I increased the throttle to 2000rpm. with the screw set at 400rpm, I went to a 150/180 main/air combo, and it still ran crappy up to 1200rpm before clearing up. thinking I went the wrong way with it, I went to a 130/155 main/air combo, and it still did it and seemed to be worse. at this point I was thinking I missed something and started thinking about the mixture screw and noticed that when I opened it up a little more, the bottom end was much smoother. anyway, I took it for a ride. it's nice, but pretty much the same as it ever was so I don't think I did this right, though I do notice that the A/F meter is more responsive now. it goes lean on cruise, and responds to slightly richer than stoich on throttle off of cruise. anyway, I'm surprised at the way it runs with this jetting: 60/65 130/140 155/180
Sarge (carpal tunnel) Tue Apr 19 2005 03:24 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, let's do some analysis here . The jetting and idling tests show two things. One, main jet sizes are very, very close. Not sure which F tubes you have installed at this point but for now we'll ignore that and explain what you are arriving at. Main jets do two things: provide just enough for reasonable power at cruise without a large enough load to activate the power valve. Two, the size should show just at the lean edge to provide fuel economy without sacrificing driveability. You seem to be right on the edge of it here. At this point, you adjust the air jet size to bring response and proper mix to the upper end of that throat. If you have to constantly readjust the idle mix screw to keep the idle running correctly AND have a flat area during the speed test then the size must be increased. Under a load that test will verify the idle jet is too small for sure. Throttle response just off idle is probably slow a bit or may even show a flat area . It should take very little throttle to get the truck moving and actually be a bit touchy to pedal input. One thing to be cautious about is the cruise, if you are driving with very little throttle input and the meter is showing lean there is a chance you are low enough on the throttle to be running partly on the transition. This is why the primary idle jet is so important , it is to keep from overcompensating the main to make up for a lack of fuel when the main is not FULLY operational. Throttle position determines which circuits are active, the overlap between them is the spot that has to be tuned the most. This is the whole balancing act here. Too small an idle jet results in too large a main jet, and vice-versa. You also have to take into consideration how the air jet is affecting the main at lower throttle openings. With certain emulsion tubes like the F50 the low end of the main circuit is affected quite a bit . F6's and such are not and will exhibit totally different low end properties. Throttle position must always be considered when trying to tune out problem areas , the farther the opening the less the transition is active, even at low rpm's. Feathering the throttle lightly will show the problem areas, fast throttle will verify correct tuning overall but not give good driveability . Also, when you get this close you almost need to move only one step and one jet at a time. Drive it to work and back home, then do your changes and note results the next day. Constant jet changes confuses the mind and after awhile you really get lost easily. I do it myself when I'm in a hurry. Also, all vacuum connections and timing advance have to be hooked up when tuning otherwise settings will be wrong. The final post's jetting is close , I'd try this : 60 idle 135 main 160 air Watch out for that spot where the main leans out too much at cruise. You not only risk burning valves but lose power and fuel mileage running it too lean . It should be just about dead center on the meter so the power valve can do it's job when the engine feels a load. Slight inclines shouldn't need more throttle input or very little to easily overcome the load. Don't worry about the secondary for now, just make sure it's not leaning out when you do have to use it . The primary has to be tuned first and seperately since the secondary is an ADDITION , even with that dual runner manifold. Driveability is the whole key here , response should be smooth and crisp at almost all times, even when loading the motor below it's pull ranges. Got a migraine yet? LOL>.. Sarge
yodta (pooh bah) Tue Apr 19 2005 01:39 PM	 Re: Weber 32/36DGV verses the Weber 38DGES okay. I need to order a few more jets. my airs go from 155 to 165. I have the F6 in the primary & the F50 in the secondary.

because the mixture screw was out so far, I decided to go with the 65 idle instead.

so listen, Sarge, when you set your mixture screw on the samis at 250rpm, don't you have to reset it when you set your running idle?

[Sarge](#)
(carpal tunnel)
Wed Apr 20 2005
02:57 AM

 Re: Weber 32/36DGV verses the Weber 38DGES

Well, that's a good question. Most of the time with the way I cut the plenum out, the answer is no. But, some carbs just won't cooperate unless I change the F tubes so yes the idle mix does have to sometimes be re-adjusted. I try to avoid that at all costs since it screws up the transition and main blend. The only time I ever readjust is when I cannot get the main to work properly on cruise mix, if it wants to run lean due to whatever then the main has to go up and the idle jet down. This rarely results in retuning the idle mix, but some are just prone to it. The 36DCNF almost has to be reset a bit, as far as I can tell it is a change in vacuum that is available. Some cams show this more than others, at low idle certain durations will kill off vacuum, others will actually increase it. Just gotta tune to the individual engine. From your vacuum readings I'd take the whole thing with a grain of salt, sounds like vacuum is great at idle and falls off pretty quickly once the engine revs up, or not ??
Sarge

[yodta](#)
(pooh bah)
Wed Apr 20 2005
12:39 PM
[Attachment](#)

 Re: Weber 32/36DGV verses the Weber 38DGES

you know, I haven't done a vacuum profile since installing this cam last summer. probably be a good idea...

what I like about tuning the mix screw at the lower speeds is that you can really hear what's going on as opposed to tuning it at the idle rpm.

I was looking through the back of the Haynes Weber manual, which is about useless for tuning, by the way, at some of the examples they have for other vehicles. I was surprised at some of what I saw. there were lots of vehicles around 2000cc range using the 32/36 as original equipment. almost all of them had 3.5 aux. venturis both sides, 140/170 primary main/air, but there were a few that had 135/150 secondary main/air configurations. I thought it was kinda odd that the secondary had smaller main needs and a smaller air corrector, as well.

anyway, there are quite a few 32/36 carbs that have the 4.5 aux venturis like you mentioned. as you know, there are several different models of 32/36. mine is the 03b, and the only model I could find running it in the manual was the ford Taurus/Cortina 2000, a 1997cc engine.

the jetting config:
60/50
140/140
170/160

my engine is a 2.4L (straight conversion to 2400cc, correct?) engine. that's pretty big for a 4cyl by comparison to what I'm seeing in the back of that manual, and closest thing to it is a 2551cc V-6, and it's running the 38DGAS.

everything else I saw in the 2400cc range was all sportscar type engines running either the DCNF, DCOE, or IDA type carburetors. perhaps, to finally answer the question originally posted here, the 38DGAS may be a better choice if wanting to stick with the "economy" direct fit downdraught carburetors.

oh, and on some of the "GT" types of 4cyl. engines using the 32/36, though only around 2000cc engines, they showed the 4.5 aux. venturis in *both* barrels with the following configuration:

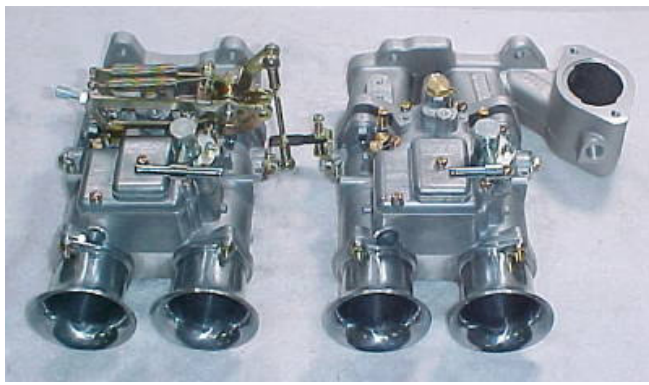
venturis: 26/27
idles: 45/50
mains: 135/140
airs: 170/180
e-tubes: F6/F6

which is pretty damn close to what I was just running with decent results, aside from the aux. venturis and the idle circuit. that was for a Ford Capri 2000 GT and was listed as original equipment. I would have liked to try that configuration, but I wonder why there are no 4.5 aux. venturies available for the 32/36DGEV 033b.

I'm going to stick it out and try to get this thing buttoned up since I'm really really close, but afterwards, I will probably experiment with the 40DFEV I have wrapped up in the garage.

however, anyone riding the fence over the 32/36 or the 38/38, at this point, I'd probably say go with the 38 as it does seem to be more of a performance carburetor, and although the parts are not listed in the Pierce manual, it would probably lend itself to more selection on the aux. venturis, and not just an economy replacement as you mentioned, Sarge.

ALL of the conversion carbs listed in the Haynes manual are DCOE, IDF, or DCNF type carbs, even for the tiny little Honda Civic. there's not a single 32/36 or 38 carb listed, of course when you start talking about those carbs, you're talking real money. the sidedraft conversion for the 22r is around \$1200 with two 40DCOE carbs and the manifold. the 45DCOE's shown below are more, I would imagine.



anyway, some of the new jets should be here soon, so I'll let you guys know when I finally nail this thing.

[yodta](#)
(pooh bah)
Wed Apr 20 2005
05:05 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGV

I just got a quote back from Pierce. apparently they *do* have a catalog number for 4.5 aux. venturis -- \$25 each.

[Sarge](#)
(carpal tunnel)
Thu Apr 21 2005
12:30 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGV

I may have a couple of 4.5's here. I just converted a 32/36 that was built like yours with a 3.5 secondary aux. Be aware that some do not like to come out unless they are already loose. They have to be driven out from the bottom with a dowel rod or something similar. The auxiliaries have to be a tight fit or will cause a delay in the main circuit .

Most of the OEM and conversions use higher quality DCNF ect carbs due to age problems with the DGV's . Most of the Euro's that use 32/36 DGV's are somewhat bastardized models anyway such as Ford's Euro market cars. Don't get me wrong, good DGV's can last 25 years , but the Spanish built models we get here will never see that figure.
Sarge

[yodta](#)
(pooh bah)
Thu Apr 21 2005
01:57 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGV

I was able to pull both of mine out with a little wiggling. the secondary needed a little coaxing with a screwdriver.

if I outfit my carb with larger aux. venturis, I change the time, amount, and speed at which the fuel mixture issues from the main well, right?

do you have any documentation on venturi selection based on displacement?

[yodta](#)
(pooh bah)
Thu Apr 21 2005
11:31 PM
[Attachment](#)

📖 Re: Weber 32/36DGV verses the Weber 38DGV

alright, so I got some interesting information today from the guys at Pierce Manifolds.

I was told that the 32/36 carburetor with 26mm & 27mm venturis is designed & configured for a 1600cc engine putting out 85HP. what the...?!?

I went back to the Pierce Tuning manual on the section where they have a chart for preliminary venturi selection based on engines having maximum power output at around 5000rpm. I couldn't figure out a few days ago why I couldn't make the numbers work for this carburetor with the 2367cc displacement of our engines. DUH!!! it's because the venturis supplied in this carburetor are the wrong size!!!

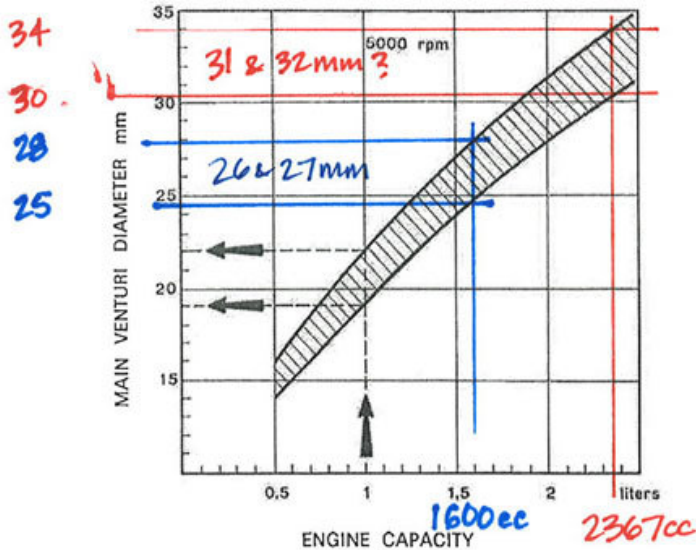


FIG. 31

Main Venturi diameter selection chart for 4-stroke, 1 to 6 cylinder engines having maximum output at around 5000 rpm. All engines fed by one single-barrel down- or side-draft carburetor, without supercharger. If the engine has 2 cylinders select a Venturi corresponding to twice the engine capacity.
Examples: a 1-liter, 4-cylinder engine requires a 19-22 mm dia. Venturi; a 1-liter, 2-cylinder engine requires a 27-32 mm dia. Venturi.

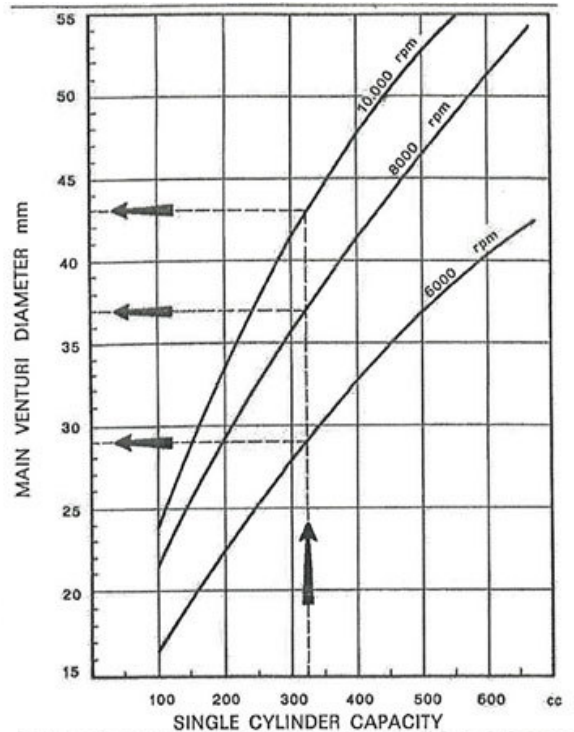


FIG. 32

Main Venturi diameter selection chart for 4-stroke sports engines without supercharger and with feed by one down- or side-draft carburetor to every cylinder. The three curves plotted refer to maximum output speed rates of 6000, 8000 and 10,000 rpm.
Example: a 4-cylinder, 1300 cc engine will have 325 cc unit capacity and will require Venturis of 29 mm dia. at 6000 rpm, 37 mm dia. at 8000 rpm, and about 43 mm. dia. at 10,000 rpm.

according to this chart, for the 22R engine, the main venturis should be between 30mm & 34mm. the guy at Pierce told me that the 32/36 can only flow about 140HP max. that's fine, with the cam profile I have, my numbers are as follows and this carb if properly setup should fall well within range:

Toyota 22R 2.4L engine.

22R (Carb), 2367 cc disp, 9.0:1 compression, 100 hp

22R Header, CompCam 252s Cam, stock valves

1000 RPM - 61.1 brake tq, 11.6 brake HP

1450 RPM - 95.4, 26.3

1900 RPM - 117, 42.5

2350 RPM - 132, 59.2

2800 RPM - 142, 75.6

3250 RPM - 149, 92.2 peak torque

3700 RPM - 146, 103

4150 RPM - 141, 111

4650 RPM - 135, 119 peak HP

5050 RPM - 123, 118

so, that said, I'm waiting to hear back from Pierce on my theory that 31mm & 32mm venturis may be a better fit for this engine. I don't know what the maximum venturi size for the 32/36 is, though, but I doubt the primary barrel can take a 31mm. maybe a 30, but that's still doubtful in my mind as well. for all I know, it might be maxed out at 26mm & 27mm.

I'm curious to know now what the 38DGAS can take venturi wise.

for anyone wondering what difference the venturi makes, it controls the amount of air that can flow through the carburetor. the venturi is a sleeve placed inside the carb barrels that accelerates the mixture. I'm not up on the physics behind it, though. bottom line is selecting too small a venturi will give you good low end torque and better pickup, but will limit top end flow. too large a venturi will give good top end but low end torque will suffer. I need something middle of the road, hence the arrival at 31mm & 32mm, maybe even just try 30mm & 31mm. with as small a dimension as we're talking here, I have to wonder just how much difference it can make.

anyway, I'm pressing on with my tuning as configured for now, but jeez, it was nice to hear a "pro" tell me that the 32/36 carb is a little small for a 2.4L engine and that the stock jetting as shipped is not correct for an engine this size. so I have to wonder, why in the hell is everyone selling the 22R kit with venturis that are too small and incorrect jetting?

(carpal tunnel) Fri Apr 22 2005 04:11 AM	Cost factor, plain and simple. Everyone wants to go 200mph for \$50 . Yeah, a few gallons of nitromethane will do just that , but things don't last very long. What you want is a carb that has a selection of interchangeable venturis, auxiliary venturis, jets and such. Hmm, DCNF series comes to mind right quick. The 32/32, 32/36, 38/38/, and 40/40 DGV/DFV series all have cast-in venturis that are not removable. You can change the auxiliary venturis and change the main circuit's signal/flow but that is all. Look at the book from Pierce again in the DCNF section, there are a lot of venturi's (chokes) available for those carbs. Only drawback is a different bolt pattern, linkage and somewhat limited availability of venturi's stocked here. I can get almost any size from Europe, though. One other factor to keep in mind is signal vs. throttle response. The bigger venturi requires larger auxiliaries and more fuel, economy can disappear very quickly if you go too far. Power comes up at high revs but so does fuel demand. Sarge
yodta (pooh bah) Fri Apr 22 2005 12:22 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I just hate that it took so long to get someone to look at it more closely and scratch his head and go, "yeah, that carb <i>is</i> pretty small for that engine." anyway, it should tune okay, just not optimally, but we'll see. if anything, like you said, I should get good fuel economy and pretty good pickup since the vacuum response will be better. maybe it won't really matter though given the torque curve of my engine. yeah, I'm noticing the DCNF in more of my reading lately. it's pretty apparent to me that the DGEV/DGAS/DFAV series is exactly what you said earlier - an economy OEM type replacement/build. seems if you want the ability to truly customize the carburetor, you gotta spend the extra for the DCNF or DCOE. and yes, I understand better now how you prevent overcarburetion on smaller engines now with these larger, more capable carbs 😊 you really can do just about anything with them. I pulled out the old DFAV last night. it's got 28mm venturis in it, and I think 4.5 chokes, though I haven't had a chance to break into it fully yet. I'm gonna get the old manifold cleaned up and set this aside as the next project. now that I've got my timing issue sorted and a better understanding of tuning, this carburetor may perform better. here's a question for you though on setting the mixture screws on the synchronous carburetors. I've read two techniques on this: 1.) close one mixture screw and set lean best idle with just one screw first, then duplicate the setting on the other screw 2.) set them both at the same time which is the best way to do it?
Sarge (carpal tunnel) Sat Apr 23 2005 02:57 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I have my own set of tricks for balancing the idle screws on synch'd carbs. If you listen closely enough, you can hear each throat just at lean drop, then just give that throat about 1/8 turn out . Most of the time equalizing the number of turns is close enough, but some are more finicky about it . Try tuning it with your ear very close to the top of the carb with the air filter off once, you may be able to hear the lean drop. It starts like a bit of a hiss just before killing off that throat's ability to run . I'd almost like a shot at the original equipment manifold and the 40DFAV, see if there are some potential flow issues that can be corrected. Just depends upon the amount of "meat" in the plenum. I really prefer a single common plenum with the DGV series carbs. In fact, there are a lot of the same common plenum designs used on the DCNF series as well. The common plenum just gives a more smoothness to the mix, less puddling and better overall atomization. That split design Offy works well but I wonder sometimes if they didn't go too far. Sarge
yodta (pooh bah) Sat Apr 23 2005 04:36 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I hear a hiss while adjusting the mix screw if I open it up too far. is this the hiss you're talking about? what causes that? yeah, this Offy dual plane manifold is supposed to be designed for increasing low end torque and probably works really well with the smaller primary barrel of the 32/36 in keeping the velocity high as it travels through the manifold, but it <i>is</i> pretty tight in there. if I had it to do over again, I'd probably just go with the open plenum one which is the same basic open design as the Toyota one and could be used with the other carburetor I have, as well, which I can't do with the Offy with the dual runners.
Sarge (carpal tunnel) Sat Apr 23 2005 11:39 AM	 Re: Weber 32/36DGV verses the Weber 38DGES No, there is almost a whistle when you hit the lean edge on a carb, hard to hear since it's pretty high in frequency. The hiss you hear at rich idle mix is the fuel being sprayed out of the idle circuit, way too strong to be atomized so it just squirts. Just remember to allow the plugs to clear up for a few seconds, helps a lot. Sarge
Sarge	 Re: Weber 32/36DGV verses the Weber 38DGES

(carpal tunnel) Sat Apr 30 2005 12:43 AM	Well, where are we at this week now ? Ordered some different emulsion tubes from Pierce the other day, waiting on those to finalize tuning on the 36DCNF's . Got another coming from Europe, hope to see that in a couple of weeks. Plan to rip into a Toy stock 22R manifold tomorrow, see if a DCNF is a good application or not . Linkage I'm sure will be the main factor, once past that the sky is the limit as long as the casting is thick enough to support cutting . Should be interesting... Sarge
77celica (stranger) Sat Apr 30 2005 05:19 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I feel almost like I am interrupting some good talk here, but I went ahead and bought a 38/38. I should be getting it soon. Sounds like the 32/36 runs pretty good right out of the box on a relatively stock motor. When you start playing with jets I get scared. I will see how the 38/38 does on the engine now. The 32/36 I have is street legal. If I rejet it that would defeat the purpose. I will just sell it to recoup the cost of the 38/38.
yodta (pooh bah) Sat Apr 30 2005 12:38 PM	 Re: Weber 32/36DGV verses the Weber 38DGES oh, no way Ron, I'm glad to see I'm not just rambling on on YOUR post 😊 after the intensity of my reading and experimentation the past couple of months, I really think the 38 is a better choice for this engine than the 32/36, and at 2367cc, there is no way the 38 is overcarburetion for this motor. I've been reading a little on the 4x4wire, as well, and there are a couple of very happy 38 users over there, so buy with confidence. the part that makes the 32/36 street legal I think is that it can be run with the stock emissions system, though, isn't it? dude, you're not just looking for an excuse to buy the 38 are you?!? hahaha!
Sarge (carpal tunnel) Sat Apr 30 2005 01:11 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I'm glad Ron posted that, good to get some more feedback anyway, it is his post:) Anyone else played with their jetting yet? Sarge
yodta	 Re: Weber 32/36DGV verses the Weber 38DGES Sarge, I'm in a cloud right now. I think I'm running way too rich -- throttle just isn't as crisp as it should be, so I'm starting at the bottom extreme, just to verify I'm moving in the right direction. what I've been doing is running main and air jet combos starting with a 155 main (pierce said to start high and work backwards) and an air 30 units above that, so a 185, and tuning for response by changing the air corrector. what I was finding was that increasing the size of the air corrector was bringing in better response under load, i.e., at highway speeds. I was able to hold cruise at say 70mph under light throttle quite easily with a 195 air in it, but with the larger airs, while the mix may be correct, I'm narrowing my drivability, right? because the larger air "brakes" the main? it was pretty flat on the bottom end and then would pop at just below the primary's max travel, which is the main coming in in force, I imagine? so, what I've been doing is finding a workable range and making the translation with a smaller combo. for example, if I got good response with a 155/195, that's approximately the same as using a 150/180, right? 1 main = 3 airs? with each drop in the main, I would try tuning for crispness with the air jet. if I started heading to 45 units difference between the main & air, I drop the main a size with a corresponding 3 size drop in the air, as well, so it went like this while noting the results along the way: 155/195 (feeling better) 150/180 145/165 and then I decided to try coming back up from the bottom to meet the middle because I feel like it's still too rich because the response is so flat and boggy. anyway, right now I'm messing with a 130/175 main/air, an extremely lean mixture setting, to to verify that I'm in the right range. it's very touchy, and it's certainly exhibiting lean symptoms. the circuit is lean to start with, but with the small main and that large air corrector relatively speaking, the mix goes lean very easily, according to my gauge. the motor feels like it easily "tops out" on any given throttle and starts to go lean until I give it more throttle, then it richens momentarily and starts working it's way lean again. so right now, sticking with that 130 main, I put in a 160 air. again, never losing sight of the goal, strong throttle response and good all around responsive driveability. all of the larger main jetting I've done recently has resulted in a "heavy" feel, and just not as responsive as it should be, so this is why I went to this leaner extreme to give that a shot.

(pooh bah) Sat Apr 30 2005 01:21 PM	
Sarge (carpal tunnel) Sun May 01 2005 12:52 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I wouldn't really drop below a 135 main jet, that is the base range I use for Sami's w/1.3L engines. The reason you show lean and fluctuate into rich is the power valve opening up under a load. Gotta do jetting readings with the throttle just into cruise, not pulling hard enough to create vacuum to open the power valve. That additional circuit richens the main so it throws the curve off. With the flow properties of that manifold, you should be somewhere around 145 or so in the primary main. A difference of 45 units between air and fuel is not all that uncommon, you can run a 145 main with a 190 air . It just depends on overall volume/velocity at higher revs in that throat. I'd go back to the larger main and crank the air up, see if that brings the crisp response back. BTW, what F tube are you using right now? Sarge
yodta (pooh bah) Mon May 02 2005 12:50 PM	 Re: Weber 32/36DGV verses the Weber 38DGES okay, yeah, I was finding that the 130 was just way too lean, but it is confirming my larger main jetting. I thought the power valve was only open under WOT? isn't it mechanical on this model? I'm actually at: 70/65 135/140 165/170 F81/F50 tubes (the F81 is the same as the F50, only it has one set of holes at the bottom, too) it's starting to feel good again, but still lagging a little in the bottom end around 2000rpm or so. you know how when you give a car some throttle, it should feel thick and pickup? mine tends to lag a bit right here. it's like its too rich. is this what air bleed screws are for on some carbs? also, is it just my imagination, or does the position of the mixture screw affect this range? seems to. maybe that F81 tube with the extra holes at the bottom is what's making it rich on the bottom end? I found some interesting information on Racetep.com -- they have a NEW chart of Weber Baseline Settings. I sent an email asking how they arrived at these numbers, whether through experimentation or by Weber catalog. check out the numbers for the 38DGES -- 30mm venturis. all other charts I've seen show 27mm venturis. I've asked them to verify this for me, because that would be a great fit for this 2.4L. btw, the DCNF also shows 30mm chokes, as well. they can be changed on the DCNF, though, right? today I will test drive it at: 70/65 140/140 170/165 F81/F50 I really liked the way the F6 tube felt - very full bottom end. once I get this range nailed, I will experiment with the tubes you sent, and then maybe try something with that 40/40 DFAV
yodta (pooh bah) Mon May 02 2005 02:37 PM	 Re: Weber 32/36DGV verses the Weber 38DGES that 140/170 combo's kinda sloppy, and so is the 140/165 in the secondary, but I'm pretty confident in this range at this point. feels too rich and boggy with crappy response, so I'm going to play more with the air jets in this and that previous configuration and see what happens...
Sarge (carpal tunnel) Tue May 03 2005 02:05 PM	 Re: Weber 32/36DGV verses the Weber 38DGES The lag at the bottom end is a timing issue in the main circuit . The extra holes in that tube cause the main to come in later, watch also the outside diameter on these tubes since it controls the amount of fuel in the well in volume. The newer model 38's do have larger venturis. I ran into this awhile back with a hi-po built Suzuki engine for a customer, jetting was just way off for an unknown reason. Finally had to have him measure the venturi, bingo! He's the one running 155 mains to compensate and we may have to swap him out to F6 tubes to make it work right. The DCNF series does have removable venturi's and there is a list on Pierce's site of available sizes for that carb. The 36 I have can be setup for an engine from 1L clear up to 3L with no issues. 26/27 venturi's for your engine is pushing the limit for sure. To me, the base size carb on your 2.4L should be the 38-40 range with proper manifold mods. Later this week I hope to start cutting the stock Yota intake , man what a mess that engine bay is . BTW, what do you think of using the flexible throttle cable and routing it 90° to run the DCNF instead of

	using the hard linkage? Otherwise, it's bell crank hell to get the throttle linkage to work, or use a different cable setup altogether. Throttle response should be crisp even under high torque loads at low revs, it's a hard balance to hit . If it feels "thick" it's good to a point but if you load it hard and response goes away it's too rich. Remember, more holes in the E tube result in more air being blended into the main. More holes also result in more delay as well but better atomization at certain areas of the midrange. This gives better cruise and response at mid-throttle but can cause an overall lack of power as well. If you have to back off the throttle a bit to gain acceleration, try going up or down with the air jets to verify which direction to go with the tubes. If it needs more fuel , either go with a smaller diameter tube or less holes and vice-versa. The power valve is vacuum actuated , whatever value is preset in the spring governs when it opens and how much. The diaphragm located at the float controls the valve in the bottom of the float bowl. Be aware that some of the newer Spanish built DGV's have a problem with a rough casting area under the power valve's sealing surface. If you ever remove the valve, it's junk immediately since you cannot put it exactly back where the rough spots are. You can vacuum test it by locating the port at the sealing surface in the main body. It should be able to hold vacuum steady without loss, if not the valve should be replaced. Sarge
yodta (pooh bah) Tue May 03 2005 03:24 PM	 Re: Weber 32/36DGV verses the Weber 38DGES hey man, I'm all for dumping the stock linkage if possible, though how to you propose to route the throttle cable? the stock one's pretty short. universal cable? as long as it's smooth, I don't mind. in fact, I've always liked the idea of as basic a setup as possible with the carb linkage. with my offy intake, the stock linkage doesn't line up exactly right, anyway. I didn't notice it until I went to go pull that manifold & carb at the salvage yard a couple of weeks ago -- it's very smooth & fluid. I made some minor modifications on my setup so it doesn't bind anymore, but still, I don't like that. I LOVE the customizability of some of the better carburetors. at the very least, I really think that new 38 with the 30mm venturis would work way better for this engine. I estimated 31mm or 32mm venturis to feed this engine according to Pierce's charts, but before I go shelling out MORE money, I'm going to finish tuning this 32/36 as best I can, then try the 40. if I get better response with the 40, I will consider an upgrade. okay, this is the problem I've noticed as you describe it -- it feels thick and responsive, but the response drops noticeably under load. I think I'm at a pretty good point with my jetting right now at: idles: 75/65 mains: 140/140 airs: 175/180 screw: 2-1/8 I'm going to tweak the secondary now and then try the different tubes.
Sarge (carpal tunnel) Wed May 04 2005 01:00 AM	 Re: Weber 32/36DGV verses the Weber 38DGES That sounds more like the appropriate range for your motor , remember I tune engines that are much smaller but actually breathe a lot more cfm , so in a sense they are almost the same. Finally got the new sets of emulsion tubes today from Pierce , didn't get a chance to test them yet since a u-joint decided to bite the bullet:(From what I can figure out, the stock cable at the point where it joins into the rod linkage can be re-routed to fit the DCNF . If nothing else, I can hook it into a bell crank and use solid arms from that point and still be smoother than the stock setup. I have no idea why Toyota did that, the first time I saw a 22R I thought someone had backyard fabbed the dumb thing.... Sarge
yodta (pooh bah) Thu May 05 2005 01:00 PM	 Re: Weber 32/36DGV verses the Weber 38DGES haha, Sarge caught me cheating on you guys over at the 4x4wire.com. there seems to be a few more Weber users over there and I'm getting some feedback from a guy with a 38DGES, but he's got the one with the 27mm venturis, not the newer one with the 30mm venturis, which is what I'm thinking would work better on this engine. the 32/36 is running nicely now on the jetting configuration noted above, but I'm not quite ready to call it tuned yet. I am quite pleased, though. there's still a leeeeeetle bit of slop I think I can tune out, and I'm still evaluating the secondary, but overall, it's running the best it ever has. I just think that little carb is maxxed out on this engine and am really curious to see what the 40/40DFAV will do for me now that I figured out the timing issue I was having since last I ran it on this truck. I will continue on with this post when I make the switch, just for the sake of consolidation. anyway, for those of you following along, the current configuration is: idles: 75/65 mains: 140/140 airs: 175/180 e-tubes: F50/F50 mix. screw: 2-1/8 turns out from seated timing: 0* base (though I'm going to be experimenting with this)

	throttle response is pretty good all around, certainly the best yet. nice and thick down low, and pretty responsive up top, too. oh, and to confirm the e-tube changes... I put in the F6 with this current jetting and it didn't like it at all. obviously not, since the e-tube changes the behaviour of the carb., consequently the requirements for the main circuit. I might try that F6 again Sarge before I send them back to you, but it feels pretty crisp with the F50s in it.
Sarge (carpal tunnel) Fri May 06 2005 02:45 AM	 Re: Weber 32/36DGV verses the Weber 38DGES The F50's are a pretty flat response to jetting and much easier to get along with . The F6's response confirms what I had suspected all along, that carb is way too small . When you had the F6 in it you still had to run a fairly large jet since the signal is so strong with those small venturi's . Too bad these can't be changed in the DGV's, it would be nice to step them up a couple of sizes. I worked a bit today on the DCNF fitting on a stock Yota 22R manifold. BTW, that thing is a nightmare of plugs and crap hung on it but overall decent ports and does have a lot of potential. One serious problem though, throttle cable orientation . The only real way to use the DCNF series would be with a longer throttle cable. I'm not sure if there are any alternatives out there but if there is the carb could easily be fitted and the manifold flowed to handle it. I've run 38mm carbs on smaller manifolds so this would be an easy one. If you have any ideas, I'm wide open to them since building a bell crank system off the carb adapter would be a real pain here.... Sarge
yodta (pooh bah) Fri May 06 2005 07:44 AM	 Re: Weber 32/36DGV verses the Weber 38DGES heheh, the Toyota manifold isn't so bad 😊 what's wrong with plugs? most of those other ports can be removed and plugged with pipe thread plugs. you'll want to pull the small 3 port vacuum port off of the main vacuum port right on the middle of the manifold, and thread it into one of the smaller holes once you pull & plug that giant port. remember, unless you have a mechanical distributor, you need to be able to run manifold vacuum to the distributor as well as ported vacuum for proper ignition timing. on the throttle cable... you don't know of any places to get some kind universal cable we could set up? I just dogpiled for universal throttle cables and pulled up this site. I'm sure we could fashion something. http://www.dansperformanceparts.com/buggy/tcbh/buggytcbh3.htm
Sarge (carpal tunnel) Fri May 06 2005 01:32 PM	 Re: Weber 32/36DGV verses the Weber 38DGES The real issue with the throttle cable is the pedal end on the Toyota . I suppose some sort of hook type cable might work but I'd be wary of the thing possibly popping out of the hole if you snapped your foot off the throttle. The carb end needs to be either a pivot ball or solid end tab ball like the stock cable, I can work with those. What about the Toy suppliers?? Sarge
yodta (pooh bah) Fri May 06 2005 03:03 PM	 Re: Weber 32/36DGV verses the Weber 38DGES most of what I've seen is designed to work with the stock cable. the only difference was the 40DFAV -- they supplied a cable stop I had to cut off ball end of the cable to use. hey, I've got an idea -- I bet we could use the stock cable, and get a cable coupler to extend it. I'm sure someone makes a cable nut like that with holes on both ends for coupling a cable on a small application like this, maybe from that dansperformanceparts.com site I linked up top. I just emailed them for some info.
Sarge (carpal tunnel) Sat May 07 2005 04:15 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I thought about that but want to keep the cable as simple as possible and not risk any chance of the cable ever getting hung up. Stuck throttles aren't funny and a very high liability. I'll look into other types of cable options, maybe just something with a basic lock on ball and much longer... Sarge
cmo (member) Thu May 12 2005 02:33 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, all this talk has convinced me to shelve my plans for fuel injection and get another 38mm. Sooo, anyone have a suggestion on where to pick one up? Sarge, do you actually sell carbs retail or do you just do mods? Can you write us some more detailed instructions on making the carb more flood resistant? Wanna try this get the carb ASAP as I can't live with the 32/36 anymore

	(always have to have it floored-feels like stock). Thanks.
Sarge (carpal tunnel) Thu May 12 2005 12:09 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Currently new 38's are going pretty high , I have one low miles unit that is currently for sale from my own rig . New units are up over \$450 on average for just the carb, the market changes weekly . I do sell new ones but not buying much in the DGV's due to the market getting out of hand . The 38DGES that is for sale is listed here in the Suzuki forums , I will sell it seperately for \$450 for the carb alone. Full port flow work has been done, bore polishing and vent tube mods as well . The vents have to be closed off and a divertor added to keep fuel out of the air jets , not that big of a deal but makes a lot of difference at high angles. This carb is built to flow much higher cfm rates and requires the intake to be matched, may want to look at your plate adapter and manifold.... Sarge
77celica (stranger) Fri May 13 2005 01:39 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES My deal on the 38DGES fell through. After I sent the money and my stock carb and air cleaner to the guy. I am still waiting to get my stuff back (it's been over 10 days now)! I don't know what my plans are for now. I want a 38DGES, but I don't want to invest 400+ dollars in one, especially not knowing how much of an upgrade it is. Things with this car never seem to go right. We have a love/hate relationship.
77celica (stranger) Fri May 13 2005 01:41 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Off topic, but has anyone used sidedrafts before? It will be for a weekend car. It is a second car, so every-so-often may used as a daily driver.
yodta (pooh bah) Fri May 13 2005 01:59 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES sidedrafts are the way to go if you can swing the funds! I don't think you can beat them for performance and tunability, at least that's the conclusion I've come to in my research since this thread began. I must say though, that I'm quite happy with the response I've gotten with the 32/36 as I've got it configured now: idles: 75/65 mains: 140/140 airs: 175/180 e-tubes: F50/F50 mix. screw: 2-1/8 turns out from seated timing: 4* base it's quite responsive throughout, and I think I might be able to get a leeeetle bit more out of it by experimenting a little more with the timing, and tweaking the secondary to tidy it up a bit. check with racetep.com on the 38/38 -- apparently they're stocking a kit with the 30mm venturis. you'll want to verify this before placing your order, though.
JEFFB (addict) Fri May 13 2005 11:06 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES I wish I would have went with the sidedrafts also, I while back I could have picked up a couple with manifold for about twice the price of a new 32/36. Any way I a glad to see you settled on jetting not far from mine: 70/60 idles 140/150 mains 170/180 airs. I have felts that I wanted to always go up on the idles, next tune-up I will give it try
yodta (pooh bah) Fri May 13 2005 12:21 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES yeah, I was gonna email you to tell you I've come full circle on the jetting 🤔 does your secondary work well with that 150 in there? how's it feel when you kick it in? smooth or boosty?

	where's your timing set? and that's with both vac. hoses connected on a working distributor, right?
JEFFB (addict) Fri May 13 2005 02:32 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I'm happy with how the secondary is performing. Smooth or Boosty: Depends on the situation, Gear I am in & rpm's the engine is running, up the latter it would say smooth getting to boosty. It's been a while since I messed with all this stuff, I believe I am runnig 5* with both vacuum hoses attached (just like yours).
cmo (member) Mon May 16 2005 10:51 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Hey Sarge, thanks, but I found one locally already.
yodta (pooh bah) Tue May 17 2005 12:34 AM	 Re: Weber 32/36DGV verses the Weber 38DGES mmm, you talking about a 38 carb? Sarge modifies his so you can run them offroad without flooding.
Sarge (carpal tunnel) Tue May 17 2005 12:39 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Not to mention it's flowed for 30cfm more than out of the box 😊 BTW, I need a measurement if someone can help out. Gotta know the actual travel amount of the throttle cable, before the linkage arm bellcrank. Actual distance the cable travels itself, nothing else. Might have a line on a different cable but gotta figure out the geometry at the carb linkage arm to make it work Sarge
yodta (pooh bah) Tue May 17 2005 01:37 AM	 Re: Weber 32/36DGV verses the Weber 38DGES how to measure? how about if I disconnect the cable from the linkage and depress the pedal all the may, mark the spot, then pull the cable back out?
Sarge (carpal tunnel) Fri May 20 2005 12:20 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Mark a reference point on the cable, have someone push the throttle wide open and remark it again, compare the diff between marks Sarge
77celica (stranger) Sat May 21 2005 05:53 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Anybody here ever try that new rgm300 carb? Are there jets available for it? Can they be rebuilt? I also want to know your opinions on the 40/40 carb. I have a chance to get one of those if I want it also. I know they don't make it anymore. Can parts be had for it? Are any parts interchangeable with the 38/38 or other dgv series carbs? Is this too much carb for my application? Sorry for the offtopic. I thought I would ask while I have people's attention.
Sarge (carpal tunnel) Sun May 22 2005 01:24 PM	 Re: Weber 32/36DGV verses the Weber 38DGES The RGM is fairly limited in production now , also has some quirks about it as well. This carb uses idle air bleed jets , so that puts the total number up to 8 different jets and all are their very own, no other brand/type will fit . No idea about rebuilding or parts availability yet either. The 40DFAV is pretty common and still around , most parts are shared in it other than a few specific sized parts for the DGV's. It's not really too large but must be jetted pretty tight to the motor to make it work properly. If I ever slow down here a bit I'm gonna make these DCNF's work one way or another.... Sarge
77celica	Re: Weber 32/36DGV verses the Weber 38DGES

(stranger) Mon May 23 2005 09:49 PM	This one that I MAY be able to get is off a worked-over hybrid. I am just afraid of getting a carb that I can't get parts for later or that will require extensive jetting and/or modification to work on my car. I really want a 38/38 but I was hoping to acquire a used one at a very good price so I could sell my street legal carb and offset the cost of it. Out of curiosity, how much do you charge to tune carbs? Just in case I couldn't get it dialed in correctly? It may be cheaper than me buying jets and other parts and stabbing in the dark. 🤔
Sarge (carpal tunnel) Tue May 24 2005 02:10 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES That could get expensive with the price of gas, I'm in north central Illinois . Tuning prices depend upon time spent and whether or not the carb needs work . Jets are getting quite costly but tuning just takes time is all. Without the engine/vehicle here it's not easy on motors I'm not used to dealing with every day. The Suzukis I can tune off the top of my head with just some basic info and cylinder pressure checks. Most of the Toy aftermarket shops should be able to tell you a very close jetting point to start with based on your engine, which is about all I do with my customers. From that point the rest is just based upon driving impressions and power gains . Sarge
Sarge (carpal tunnel) Sat Jun 04 2005 02:01 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Anyone figure out a cable travel length yet?? Spent part of last week building a 38DGAS onto a stock intake, looks to work very well with the taller adapter . Also got a closer look at the Offenhauser manifold, what a waste of money. No offense, I'm sure it works well at low revs but the stock manifold would really work better overall from what I've seen. Talked to a couple of guys that have switched back to the stocker and are very surprised how well they worked. One had tried to use a 40DFAV on his Offy with some nasty results, it just couldn't breathe with that split runner design. The design works well on the older inline MG motors, but they do not have the cfm rates at higher revs like the Toy 2.4L engines. Also, I think I've found a solution to the cable adaptation problem for the Toy trucks to run the DCNF carbs. I think we'll just make a cable wheel and use the stock cable to turn the wheel and in turn move a short cable that can drive the carb linkage . Or possibly even a solid ball arm, whichever is the cleanest install . Sarge
yodta (pooh bah) Sat Jun 04 2005 02:10 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES I'll try to get this measurement today or tomorrow. I wouldn't think the dual plane model would be very effective on synchronous carburetors. the smaller runner for use with the progressive carb probably works quite well though to keep the mixture velocity high. when I install the 40 I'm going to be using the stock manifold. hoping to start that in a couple of weeks or so.
Sarge (carpal tunnel) Sun Jun 05 2005 01:34 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES I'll try to get some pics up of the manifold work and plugs used , the main one below the carb was a real pain , something like 22mm . I found out the stock Suzuki trans drain plug is the correct size so I used a spare . Nice to get rid of the vacuum crap, also plugged off the extra water holes from the sensors for the stock carb . I'm seriously not impressed with that split runner, just too small even for a well flowed 32/36 . I talked to the owner of the intake and there is a possibility of the fuel injected later model trucks might have the same throttle cable setup, just longer for the efi . If that's the case, we're in business for the DCNF swap . I'll spend some time at the parts house early next week to verify it Sarge
Sarge (carpal tunnel) Thu Jun 16 2005 01:20 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Well, the 40DCNF project starts next week thanks to some help from this board. The later model 22RE in the 4Runners is longer and has the correct ends to work on the earlier pickups, perfect for this build. Now I just gotta find a test truck to work out the bugs.... Sarge
yodta	📖 Re: Weber 32/36DGV verses the Weber 38DGES

(pooh bah) Thu Jun 16 2005 05:52 PM	cool. have you gotten a cable measurement yet? sorry for dragging my feet on this one. my truck buddy's only around on the weekends and we haven't been able to hang out for a while. I can get one of the guys from the office to help me, though.
Sarge (carpal tunnel) Fri Jun 17 2005 12:51 AM	 Re: Weber 32/36DGV verses the Weber 38DGES No, the only real thing left is actual cable stroke, or distance the cable travels as the pedal goes from idle position to full throttle. That will be the final distance setting from the cable mounting bracket to the throttle wheel mounted on the carb's shaft . Also, does anyone build a full mechanical distributor for the 22R's? If not, I will be forced to modify the carbs and install a vacuum advance port since almost all models of 40-44mm DCNF's do not use them . Like I said, hope to move very forward with this project early next week... Sarge
yodta (pooh bah) Fri Jun 17 2005 12:00 PM	 Re: Weber 32/36DGV verses the Weber 38DGES LC Engineering makes a mechanical distributor. I think they're around \$270. I bought one a long time ago, but switched back to the stock type for the time being.
Sarge (carpal tunnel) Fri Jun 17 2005 01:28 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, so I doubt they are real common . Just needed some info on whether or not I had to set the carbs up with a vacuum advance . No real big deal, but may add a bit to the overall cost . Hoping to keep the prices fair as possible, probably just find used carbs and rebuild them since there are no major wear issues w/DCNF's. Sarge
yodta (pooh bah) Fri Jun 17 2005 01:47 PM	 Re: Weber 32/36DGV verses the Weber 38DGES you know, do you think you could just rig up "ported" vacuum through the air cleaner assy? or do you think that signal wouldn't be strong enough?
Sarge (carpal tunnel) Sat Jun 18 2005 01:13 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Not enough signal, vacuum advance units typically require 10-15"hg to actuate them fully. I'd hate not to give the ability to use the carb to it's full potential. Adding ports is not that bad, just gotta know where to time them... Sarge
yodta (pooh bah) Sat Jun 18 2005 01:46 AM	 Re: Weber 32/36DGV verses the Weber 38DGES how do you mean... where to time them? how can you control that?
Sarge (carpal tunnel) Sun Jun 19 2005 01:43 PM	 Re: Weber 32/36DGV verses the Weber 38DGES The relationship between the throttle valve and the hole for the advance as well as angle/size will determine the volume and timing of vacuum applied to the advance line. For example: On these Suzuki's the advance port at the distributor is 1/8" . Almost all of the Webers use a 3/16" advance port at the carb . I can actually test a difference in ignition timing advance and how fast it opens by altering the length of the vacuum advance line and how far I run the 3/16" tubing before adapting to the 1/8" tubing . If the 3/16" piece is pretty short, the timing jumps up pretty radically . The longer the big tube, the slower and more stable the timing reacts . Almost sounds nuts, but the carb works the same way . If that port is drilled too high like a lot of the Holley's the advance becomes a bit sluggish. If it's too low it can also exhibit a quick initial pull but will drop off a bit as the blade is opened . There is an ideal spot but each carb is different according to the throttle blade angle . Webers that I use for the most part have 78° throttle blades which makes it pretty easy to align the port timing . Specialized tuning is fun but can drive you a bit nuts at the same time BTW, done with those emulsion tubes yet ? Sarge
yodta	 Re: Weber 32/36DGV verses the Weber 38DGES

(pooh bah) Sun Jun 19 2005 03:49 PM	oooh, yeah, I'd completely forgotten about those. I really only used the F6. I'll package 'em up and send 'em back. PM me w/your address and I'll get them out this week. I looked into vacuum timing a little bit months ago and had a couple of ideas for controlling the amount of vacuum, but couldn't think of a way to fabricate the device I was considering. I still wonder sometimes about the ignition curve of my distributor since it's vacuum controlled. you don't typically think of a vacuum hose, its routing, or diameter as a calibrated device. I wonder just how much difference a few inches makes, or even the diameter of the hose when you're talking fractions of an inch.
built4thrashing (Stranger) Tue Jun 21 2005 08:08 AM	 Re: Weber 32/36DGV verses the Weber 38DGES hey guys first post but have been reading this discussion with great interest . I have a suzuki sierra with a weber on it and are having trouble tuning it properly. i need to swap the e tubes i think. the e tubes that were in the carbys i got are F66 and a F93??? i could not find a F93 on the charts you posted. Want to know which would be better for the suzi what barel they should go in. Also while on the Etubes what role do the holes play? what do high holes do and what do the low holes do and how does size of hole effect it. just trying to understand how they work. Thanx Jayson
yodta (pooh bah) Tue Jun 21 2005 11:55 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I'm sure Sarge will chime in here. he's got a lot of experience tuning them on suzukis. is the sierra the same as the samurai here in the states?
Sarge (carpal tunnel) Wed Jun 22 2005 02:48 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Generally, the Sami's use F50's in both sides, you can use the F6 in the secondary and a bit smaller main jet in the secondary as well. This will help to give it a "kick" when opened up . Also, the number and size of the holes at the top of the tube govern initial tip-in on the mains , holes at the bottom work to mix air at higher speeds . Orientation/angle of those holes also plays a big role . There are no F93 tubes available for the DGV series , maybe the numbers got nicked up or something Sarge
built4thrashing (Stranger) Wed Jun 22 2005 09:47 AM	 Re: Weber 32/36DGV verses the Weber 38DGES sorry sarge i should have said the F93 e tube is out of a 34ADM weber thats used here on our early ford falcons.the only other E-tubes i have are F66. One looks like it has had the holes made bigger. These are what most 4cly webers have over here. i suppose the one with the bigger holes should go in the secondary side?? the F66 is similar to the F50 with the holes high up but it only has 3. has less volume in hole sizes but. does less/smaller holes make it richer or leaner. been trying to find out how they effect the fuel delivery but cant find anything on the net thankx
Sarge (carpal tunnel) Thu Jun 23 2005 01:16 AM	 Re: Weber 32/36DGV verses the Weber 38DGES The less air mixed , the more fuel basically. The F66 tube will be a bit richer on the bottom end and a bit leaner on the upper range . I'd use that one in the primary to help override the problems with the Suzuki intake . That old 34ADM , is that one the early style progressive with a vacuum secondary? Sarge
built4thrashing (Stranger) Thu Jun 23 2005 09:58 AM	 Re: Weber 32/36DGV verses the Weber 38DGES the 34adm has a mechanical secondary but has a thicker base with alot of vac tubes. i think it is a full polution model. it also has an electric choke and the top is oval shaped for the air intake. if you want i could take some photos and email them to ya. that F93 e-tube is similar to a F7. but it doesnt step out. it even has similar size holes.
yodta	 Re: Weber 32/36DGV verses the Weber 38DGES

(pooh bah) Tue Jun 28 2005 04:39 PM	Jetting Update: things were a little sluggish in the primary with the warmer weather -- too rich with the 140/140 mains, and the secondary was falling on its face -- too lean I thought. I took it to 135/145 mains and the primary response tightened up a little bit, though the secondary was still lacking & hesitating until the air really got moving. I took the secondary main up to a 150 and it started picking up better. I think this is a better setup, and pretty close to how this carb arrived -- go figure. so for those of you keeping track... idles: 75/65 mains: 135/150 airs: 175/180 e-tubes: F50/F50 mix. screw: 2-1/8 turns out from seated timing: 3-4* base, 12-13* with idle advance connected. it still hesitates slightly if I stomp into the secondary, but I think that has to do with the secondary idle jet. I'm going to try bringing it down to a 60 first, then if it's worse I'll go the other way with it and put in a 70. I think I'm going to get the LC Weber to stock air cleaner adapter to relocate the intake to the front of the vehicle. all I'm doing is sucking in hot engine compartment air this time of year. also following a thread on 4x4 wire about hood scoops/louvres. I'm considering putting in some screened louvres to push air in over the engine and also some underside hood insulation. any thoughts?
yodta (pooh bah) Tue Jun 28 2005 08:31 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Sarge, cable travel -- 2.1 inches travel from closed to open. triple checked.
Sarge (carpal tunnel) Wed Jun 29 2005 02:26 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Thanks for the measurement , that will help a lot . Been working a bit on the DCNF project for Toys lately, had some problems getting a proper area to add the advance port . The base areas are just too thin and no casting is provided, may have to do something different . BTW, any idea of the optimal size ? I'd say for the given engine size a 40mm carb w/28 or 29mm venturi's should work great . What size are the chokes (venturis) in the 40DFAV you have ?? Don't use the stock air cleaner adapter, they restrict air flow badly and will throw off the jetting . If nothing else, make a diverter duct to bring in fresh air from around the headlights. Sarge
yodta (pooh bah) Wed Jun 29 2005 02:37 PM	 Re: Weber 32/36DGV verses the Weber 38DGES mmm, the pierce chart says 31mm or 32mm in the middle of the range for a 2367cc displacement -- scroll up on this page. my 40DFAV has 28mm venturises in it. I'm not sure when I'll get a chance to try it out, but will certainly let you know. as you know, the smaller venturises will guarantee bottom end torque, so 29mm sounds like a nice fit, allowing for easy breathing while not compromising the bottom end. as for the ported vacuum... there's always the LC mechanical distributor, but I think you'd lose fuel economy if you can't make the idle advance work. I can't think off hand of a way to use idle advance without using the normal advance as well -- the LC distributor is all mechanical -- no vac. ports on it it all. I guess one option would be to recurve the mechanical side of the stock distributor to work like the LC mechanical one, then use only the rear diaphragm for idle advance. that might not be a bad idea, actually. I've already ordered the stock air cleaner adapter. it was only \$33 and I have a spare stock filter housing. I'm really curious about this... the inside of the filter assy. is "ramped" up and almost venturi designed to allow for smooth airflow down the carb opening, but yes, the stock opening is a little more restrictive. good idea on the the diverter. I was actually considering a scoop or louvre over or just in front of the carb intake. what do you think?
Sarge	 Re: Weber 32/36DGV verses the Weber 38DGES

(carpal tunnel) Thu Jun 30 2005 01:36 PM	That size chart takes a grain of salt , on 2bbl downdraft intakes I usually subtract 12% or more in venturi size , hence 28-29mm chokes. It seems on most setups the intakes inhibit flow speed just enough to cause a lack of response in the critical areas it's needed for wheeling or daily commuting. 30's would be an upper limit to me on the 40mm carb , just seems like a good combo. I do have already sets of 28-32 chokes here , so changing them out would be no big deal. The port vacuum may be more of a problem than I thought , it's just the way the castings are designed. My plan was to be able to pick up used 40DCNF's and rebuild them to new specs, set them up on Toy stock intakes w/port work done and a set of custom adapters. As a package I could keep the price down pretty reasonable, maybe around \$500 total and offer a pretty sweet setup that is dead reliable and would last forever. If I have to go source very specific models that have the port area cast in then the cost could easily double, there goes the market . The mechanical distributor would be a definite option but would limit the market severely as an added cost to the customers. The scoop or louvre would work fine but you'd also have to deal with rain. Better yet , add a divertor to the underside of the hood to direct the hot air away from the carb... Sarge
yodta (pooh bah) Wed Jul 06 2005 09:25 PM	 Re: Weber 32/36DGV verses the Weber 38DGES well, I installed the new flexfan and against Sarge's better judgement, the Weber adapter for the stock Toyota air cleaner assy. first impressions: the fan is WAY loud, the engine takes longer to wind up, there's a bit of lag, especially on the bottom end, and as predicted it feels like it needs to be rejcted because drivability is way off. because I put the fan & the air cleaner adapter in at the same time, though, I wasn't sure what was causing the lag and since, while watching the tach, it seemed to POP to life at 2800rpm accelerating beyond, I thought the fan. as a test, I took the stock air filter out of its housing and ran down the road without an air filter. the hesitation almost completely disappeared and it felt pretty close to the way it did before, so it appears the air cleaner is restricting flow bigtime, just like Sarge said it would, and that the fan doesn't really have much to do with it. now, on to the good things. the stock air cleaner is much much quieter than any ride-on-top air cleaner I've used to date. I like this. also, throttle response feels nice on light pedal once you get moving, and seems to cruise easier on less pedal, and acceleration from cruise is very very smooth & steady, but only on light throttle. this driving condition is a slow steady influx of air. it falls on its face a good bit when you try to open it up. I would say this effect is more than just "noticeable" -- it's very apparent that something's not right. that said, I think with the stock filter the air is slower to get moving through the filter which is causing the lag, but I can't imagine this flowrate causing that much bother for such a small carburetor. we are talking about flowrate here, right? CFM? so the thicker paper element is stifling the airflow, but is it reducing the total volume that can pass or just the rate at which it can flow past? it seems to do okay once you're up and going, but getting started is a drag, and I mean that literally. it feels spongy & lethargic if that makes any sense. I'm considering dropping back on the mains a size to see if I can change the response and clean it up a little before going back to the Ramflo air filter, but I'm thinking it's not going to make too much difference because this air filter is the limiting factor.
built4thrashing (Stranger) Thu Jul 07 2005 10:57 AM	 Re: Weber 32/36DGV verses the Weber 38DGES hey yodta What ya saying makes sence. we here in australia used to remove the stock aircleaners off our ford escorts and increase the ssecondary main jet and they used to really soar. the paper filters only allow so much to get past. The ramflows are by far the best. nothing else comes close. B4T
yodta (pooh bah) Sat Jul 09 2005 01:45 PM	 Re: Weber 32/36DGV verses the Weber 38DGES yeah, that's what I'm thinking too. these escorts you're talking about -- were the the 16V euro versions? years ago when I was in germany for a couple of months I saw there really tough looking little Ford cars. no badges aside from the Ford ones and a 16V one on the back. and now a question about timing... since I'm getting less air in, it seems to me that I should be able to run more ignition advance without it running too lean. I want to run some distributor tests to see if the filter is limiting the airflow enough to change my vacuum advance.

built4thrashing (Stranger) Tue Jul 12 2005 09:26 AM Attachment	 Re: Weber 32/36DGV verses the Weber 38DGES nah the escorts were only a 2ltr OHC 8valve 4cly but they fairly flew with just a 4speed and an open air filter like the ramflow. They even came in panelvans. i had one and it was quicker than most big v8 family cars. but i did tease the motor a bit 😊
macaroni (Stranger) Wed Jul 13 2005 12:16 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Hi, newbie from England here. This is an awesome thread and the info is just thing I have been looking for for months. I am not an off-roader so please don't ostracize me, but I have fitted a 38DGAS to a Peugeot 205xs. This has a 1360cc engine and on full throttle it goes like stink. After applying the throttle though, there is a nasty flatspot until about 3000rpm. I have been told that the carb is simply too big for my engine but from what I have read here, that may not be the case. These are my jets; main - 140 air - 170 emuls - F6 idles - 45 It idles nicely and goes well on full throttle, I just can't seem to get rid of the flatspot. There has been no mention of the LOVE device as fitted to these carbs. Is that just a UK thing? I have been told it is best to unplug this and block the hose as it can overfuel the carb at low throttle positions. Any ideas guys? Cheers, Antony
built4thrashing (Stranger) Thu Jul 14 2005 09:49 AM	 Re: Weber 32/36DGV verses the Weber 38DGES forgive my ignorance but what is a LOVE device???
yodta (pooh bah) Thu Jul 14 2005 12:24 PM	 Re: Weber 32/36DGV verses the Weber 38DGES hahaha, I was wondering the same thing. I mean I know they come in all shapes and sizes, but I can't think of one you might find on a Weber. Antony, vacuum leaks are good for causing flat spots. have you verified that you have a pristine install? try spraying some carb cleaner around the base of the carb with the engine running and listen for engine speed changes. gotta take care of the basics before jumping into jetting. this carb, did you buy it in a kit designed for your Peugeot?
macaroni	 Re: Weber 32/36DGV verses the Weber 38DGES Don't search for "love device" on the web at work... It is a LOw Vacuum Enhancement device (geddit?) that maintains the idle when this carb is fitted to an auto, like the Capri 3l v6 auto here in Europe. I have tried the carb cleaner test and all seems well. When I got the carb it had been meticulously prepared. It definitely does not come as a kit for Peugeotts. It was previously fitted to a Citroen AX GT hillclimber (same engine as my Pug) and clearly had no need for low speed driveability. I have some great ideas from Sarge to try and solve my problem, so I have some 60 idle jets on the way and I am looking for some 3.5 aux vents from a DGV series. Last night I removed the choke butterflies and shaft for good measure. Right, off to work to find some aircon to cool down.

(Stranger) Fri Jul 15 2005 04:38 AM	
yodta (pooh bah) Fri Jul 15 2005 12:43 PM	 Re: Weber 32/36DGV verses the Weber 38DGES hahaha, yeah, no doubt. get bounced out of a job, or just plain embarrass yourself at the very least. good. yeah, I was going to suggest the lean best idle procedure next for correct idle jet size verification.
yodta (pooh bah) Wed Aug 10 2005 11:04 AM	 Re: Weber 32/36DGV verses the Weber 38DGES okay, a note on my stock air cleaner experiment... long story short, it sucked, or quite the opposite really -- it choked. Sarge, you were right, but I'm guessing you already knew I'd be back to post those results 😊 so, I plugged off all the other tubes, vacuum ports, inlets, etc., installed the Weber to 22R air cleaner adapter, and fastened everything down. the first thing I noticed was that running was much quieter -- that rush of air you normally get with the open air filter elements was gone. I really liked this. it seemed to be a little bit more responsive in certain areas, mostly under light throttle, which I'm guessing is due to increased vacuum since the stock filter element was thicker, but it totally CHOKED at 3000rpm. I mean it felt like someone was pulling backwards on my tailgate as I was trying to accelerate!! it <i>did</i> have to be rejetted, but that was no big surprise, and the fuel economy actually dropped slightly even though I put in leaner jets. I liked that I was pulling in fresh air from the front of the vehicle. I've gotta figure out some way to rig that up for the Ram-flo. anyway, I put the Ram-flo back on a few days ago after running this experiment for a month or two. the choking problem was instantly corrected, and I just last night went back to the jetting I had in prior to the air cleaner swap, so all is well again. now I'm experimenting with that old LC Engineering mechanical distributor again. it's pinging a little on lugging conditions with the timing set to 10° initial like LC says, so I can't be lazy about my shifting if I want to use it, but the secondary is oh so nice... might need to tighten up on the primary circuit a little bit, though. there's something not quite right about the stock vacuum advance ignition curve, so the mechanical distributor seems to run a little more consistently than the distributor with the vacuum advance. I wish I could find a stock ignition curve chart though so I could see what's supposed to happen. I can't seem to make sense of the data in the FSM. more on this later... Sarge, how's the 22R DCNF project coming along?
Sarge (carpal tunnel) Thu Aug 11 2005 01:16 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Other than sourcing some brass heavy wall tubing , it's actually about done . The addition of the vacuum advance port to the carb is a total pain , but I'll get there . If nothing else, I figure it's a necessity for those that don't want to spend the extra dough for the mechanical disty. Honestly, I can't wait to test it out on a local truck here.... Sarge
yodta (pooh bah) Thu Aug 11 2005 02:44 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I'm finding that the mechanical distributor is making for better overall response. there's something off about the ignition curve using the vac. advances, both together or separately. I think the thing to do here is figure out the ignition curve and recurve the stock one to use without vacuum advance. it idles fine at 10°, but I'm getting a little pinging I need to figure out. I don't want to fatten the fuel because it's doing well right now, and if I take down the base timing it might not be as responsive. final tuning is all going to boil down to timing though, I think.
Sarge (carpal tunnel) Sat Aug 13 2005 01:31 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Before committing to adding the advance ports, I do have a plan to address the timing issues . One, the stock disty will be used with no vacuum advances . The low speed spring will be replaced with a bit heavier unit to keep total advance down to around 20° or so with the initial timing set to around 14-16° . This will bring the disty up to a more balanced reaction to the Weber since it is so different in fuel curves compared to the stock carbs. May end up having to offer a modified disty along with the carb kits for

	the best overall performance . Gotta test it first on a local truck I built a 38DGAS/intake setup for Sarge
77celica (stranger) Sun Aug 14 2005 04:42 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Just so you guys know I still check this forum daily. I have been watching this thread for updates. I bought a used 38DGES off ebay last week. It MAY need a rebuild. How hard are these things to rebuild and is there anything I should look out for? The carb came off a 73 landcruiser. Is the baseline jetting on these things that different between applications? Will I need to rejet it? (If I need a rebuild and a rejet it may not have been such an awesome deal then.) I am awaiting an engine swap in the next few weeks before I install the carb. Very soon after it will be time to install the LC Engineering header in my garage, along with 2 1/4" piping (as long as that is reasonable). Thanks, and keep the good information coming. I am glad other people are learning some of this valuable knowlege.
Sarge (carpal tunnel) Sun Aug 14 2005 01:11 PM	 Re: Weber 32/36DGV verses the Weber 38DGES The 38's have some inherit problems with the throttle shaft seals that should be addressed. Some are not installed correctly at the factory but this does require removing the throttle plates and completely realigning them . If you've never done one, let a rebuildr do it or you risk permanent damage . There are the nylon wrap bushings as well as the nylon ring seals on those throttle shafts , some are a real pain to put together . Also, the gear drives have to be re-timed to make it work right at idle . The Cruiser's jetting is a bit different , just have to try it and go from there . You will see quite a gain in torque over the 32/36 for sure.... Sarge
yodta (pooh bah) Mon Aug 15 2005 01:49 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Hey Ron, cool, so you finally got one. rebuild kits aren't too expensive and are pretty simple, really. haven't done a Weber one yet, but I think all you'll need really will be a new cover gasket, needle valve, and a couple of other gaskets. I'm not sure if there's an accelerator pump diaphragm or not, but it looks to me like the Webers are a lot simpler to rebuild than the stock ones. jetting's no big deal. I guess the best thing to do at this point will be to pull the top cover and make a note of which jets it's got in it right now.
yodta (pooh bah) Fri Aug 19 2005 05:00 PM	 Re: Weber 32/36DGV verses the Weber 38DGES so I've been running the mechanical distributor, as you know. I like the response, but I still can't call it properly tuned. it's definitely the most responsive it's ever been. it pulls hard in the primary up through & past 4500rpm, due mostly to the Ramflo air filter. when I bring in the secondary, there it pulls harder. I am having a problem, however with pinging on the wider open throttle positions. it pulls nicely, quietly on mild throttle, but opening it up whether at sub 3000rpm or on hard acceleration pass 3000rpm on up, it pings pretty hard, especially when under load. I have to document the ignition curve I'm getting with this distributor and hope to get around to it this weekend. LC recommends base timing of 10*. retarding the base timing to 8* doesn't help with the pinging. going to 5* does help somewhat, but anything lower than 10* and the response just isn't there. I have considered fattening the fuel, but not quite sure how to go about it and whether the response would suffer. I have tried a 140 main, but it just got sloppy. right now I'm at: idles: 75/60 mains: 135/150 airs: 180/175 I guess I could try like a 145/200 main/air combo to see what happens. I have tried just fattening the main jet, but response suffers so I think I need to bring up the air jet as well to compensate, but this will delay the influx of the main circuit, won't it?
Sarge	 Re: Weber 32/36DGV verses the Weber 38DGES

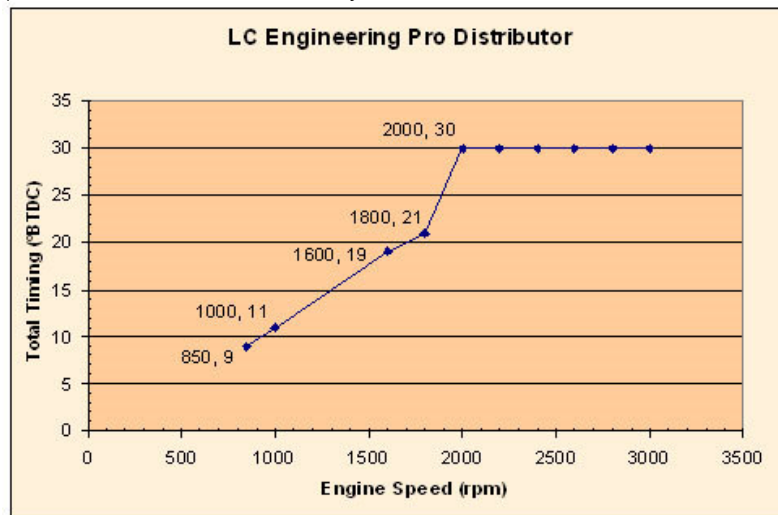
(carpal tunnel) Sat Aug 20 2005 02:11 PM	Air jets won't delay the timing of the main circuit, just alter the mix at higher velocity. Try around 145/175 first, then go up with the air jet if you have to.... Sarge
yodta (pooh bah) Wed Aug 24 2005 11:29 AM	📖 Re: Weber 32/36DGV verses the Weber 38DGES this pinging problem seems to be related to air temperature. it really only does it when the engine's warmed up on hot days, so I'm thinking it's an air charge problem. I need to find a way to get cooler air directed to the carb. the Ramflo definitely works better than the stock air cleaner, but I'm just sucking in hot air. when I think about it though, wouldn't that richen the mixture since hot air is less dense than cold? it would be less air coming in, right, which in theory should richen the mix?
Gnarly4X (carpal tunnel) Wed Aug 24 2005 01:19 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Quote: this pinging problem seems to be related to air temperature. it really only does it when the engine's warmed up on hot days, so I'm thinking it's an air charge problem. I need to find a way to get cooler air directed to the carb. the Ramflo definitely works better than the stock air cleaner, but I'm just sucking in hot air. when I think about it though, wouldn't that richen the mixture since hot air is less dense than cold? it would be less air coming in, right, which in theory should richen the mix? You are correct, the warmer the intake air the less rich the air/fuel mixture should be. I have a same problem here in Arizona. During the winter months I could use 89 octane, but when summer hits and the ambient air temps get up to 100+ degrees, I noticed a little pinging, so I switched to 91 octane. After than, I actually backed off the ignition timing a couple degrees and went back to 89 octane. 😊 Gnarls.
yodta (pooh bah) Wed Aug 24 2005 03:14 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES but wouldn't warm air being less dense richen the mix because there's less air?
Gnarly4X (carpal tunnel) Wed Aug 24 2005 07:42 PM	📖 Re: Weber 32/36DGV verses the Weber 38DGES Quote: but wouldn't warm air being less dense richen the mix because there's less air? Yep... by jove I think 'e's got IT!! As air temperature decreases, air density/air volume becomes greater, resulting in leaner air/fuel mixtures. This creates higher cylinder pressures/temperatures. So, fuel delivery should be increased - richened. That's why you have to choke the shit out of an engine that's very cold. As ambient air temperature increases, air density decreases, as does intake volume, and fuel delivery should be decreased. The other factor that effects the stoichometric number is higher altitude, the higher the altitude, the lower cylinder pressure becomes. And the cylinder temperature decreases. You need to adjust jetting or air/fuel mixtures in an effort to put more air back into the engine. That's essentially what the HAC does on the Toyota carb'd engines. Gnarls.
yodta	📖 Re: Weber 32/36DGV verses the Weber 38DGES

(pooh bah) Thu Aug 25 2005 12:06 AM	oh, I'm sorry gnarls, I must have misread your response -- kinda confused me for a second when you said less rich, because I was thinking less air would make the circuit richer, as in more fuel in the mixture, which would be the opposite of what I think I'm experiencing with the pinging. so if the mix is richer, why does it ping? engines ping when they're lean, right? I thought increasing the fuel delivery "cools" the cylinder and can stop pinging.
Gnarly4X (carpal tunnel) Thu Aug 25 2005 12:45 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: oh, I'm sorry gnarls, I must have misread your response -- kinda confused me for a second when you said less rich, because I was thinking less air would make the circuit richer, as in more fuel in the mixture, which would be the opposite of what I think I'm experiencing with the pinging. so if the mix is richer, why does it ping? engines ping when they're lean, right? I thought increasing the fuel delivery "cools" the cylinder and can stop pinging. Remember, the carb is "mixing" the fuel/air. If the air temp is higher, there is only so much fuel it can hold when it gets to the cylinders. So when it's hotter out the air won't hold as much fuel, so the engine get a slightly leaner mixture and it pings. That's why EFI is great, it's sensors can "correct" and reduce the timing and control other factors simultaneously. But, I think the warmer ambient air temp increases the cylinder temp and pressure, so if your octane rating is a tad too low, you get ping. That's why when I put in 91 octane (better anti-ping), it went away. At least that is my non-technical, pee-brain understanding?? 😊 Gnarls.
yodta (pooh bah) Fri Aug 26 2005 01:06 AM	 Re: Weber 32/36DGV verses the Weber 38DGES see, I knew there was an explanation -- I totally missed the fact that the air is carrying the fuel.
Gnarly4X (carpal tunnel) Fri Aug 26 2005 12:21 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: see, I knew there was an explanation -- I totally missed the fact that the air is carrying the fuel. There is something you can try... when the cylinder pressure goes up, it raises the temp and the spark splug stays hotter. You can try going down one or two heat ranges on your spark plug. That may eliminate or reduce the pre-ignition. My 1967 Corvette 327CU was built & tricked and I had to go down to a cold plug to eliminate the pinging. Just a thought. Gnarls.
yodta (pooh bah) Fri Aug 26 2005 02:25 PM	 Re: Weber 32/36DGV verses the Weber 38DGES hmmm. damn, that's a great idea Gnarls. the timing & jetting do feel good at this point, it's just the pinging under load that's bothering me. you talking about the heat -- now that I think about it, this may be due to the lack of the EGR system which was removed at the time of the Weber install. I was reading in the FSM that the EGR system helps cool the engine as well.
yodta (pooh bah) Sun Aug 28 2005 01:45 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Gnarls, how do I get a cooler plug? I stopped by a local Pep Boys while out running errands, and the guy told me "he doesn't know how to look that up" and asked around the shop. nobody knew.

	can I get them in NGK?
Gnarly4X (carpal tunnel) Sun Aug 28 2005 06:36 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: Gnarls, how do I get a cooler plug? I stopped by a local Pep Boys while out running errands, and the guy told me "he doesn't know how to look that up" and asked around the shop. nobody knew. can I get them in NGK? That doesn't overly surprise me. They all look up data/specs on computer and that's why they often ask you all those totally irrelevant questions when you are buying a part. You might have to go to speed shop and talk to someone who knows their shit. Did you try a NAPA store? I'd call NGK or whatever brand you like. I've had the best burn and plug color on Bosch single electrode plats. I'd just find any cheap copper plug, buy it two heat ranges colder, put them in and see if makes any difference. Then you'll know. I'd run them for about 2 or 3 days then pull them and look to see how they are burning. If they look a little to carboned, then I'd go up (hotter) one heat range. Then if you wanted to, you could go buy your favorite plug in the heat range that worked the best and try it. Let me know what you find out. Gnarls.
Sarge (carpal tunnel) Tue Aug 30 2005 01:27 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Go to a real parts store for starters, get the idiot behind the counter to look in their cross reference books, should be able to identify the numbering system for heat ranges . I know Champions chart by heart, but can't make heads or tails of NGK or Denso's... Sarge
mudrunner88 (old hand) Tue Aug 30 2005 01:53 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Vic Edelbrock's Champion Cross Reference Pae Off-Road.com Reading Spark Plugs and explanation of hot and cold plugs Denso's version The denso plugs have a number to them...as the number goes up they get colder so 16 is there hottest plug and 34 is the coldest..."DENSO heat ranges move up as they get colder; 16 would be our hottest Iridium Power plug, 34 would be our coldest (ranges; 16,20,22,24,27,31,34)" I think Champions are the other way around but do a few searches to be sure...Or just look up a few denso and cross reference the part number with champions...A little work and you will find a pattern in the part numbers you look up. I used to have all this memorized when I drove a 70 Nova with a Semi-Built 283 out of a 57Chevy...It was pretty slapped together with 327 heads and a different cam, a intake from a 350 and all kinds of crazy stuff. Anyways you get the idea from just reading those few articles...The numbers usually represent the heat range just figure out how the brand you want is numbered and your good to go.
Sarge (carpal tunnel) Fri Sep 30 2005 01:10 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Well, how's everyone doing with their tuning?? Been pretty busy, need to finish that 40mm Toy intake and get someone testing it soon . Just haven't had the time lately... Sarge
77celica	 Re: Weber 32/36DGV verses the Weber 38DGES I haven't touch my celica in a couple months. I plan to swap in the 20r out of the parts car next week or so. Then I will replace the carb with the 38DGES and see how it goes from there. I will probably bombard you guys with questions soon. (If you remember, the carb is off a 74? landcruiser) By the way, where is the best place to get an adapter and which one is best? I know you guys tend to prefer the one-piece adapter. Are there any clearance or performance issues?

(stranger) Fri Sep 30 2005 04:26 AM	
yodta (pooh bah) Fri Sep 30 2005 02:09 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I've just been driving mine lately. still pinging. have to check into that plug thing. I'm supposed to be getting the ignition curve info documented to discuss with LCE on that mechanical distributor. now that it's getting cooler, I think I'm going to go back to the stock fan & clutch.
Sarge (carpal tunnel) Sun Oct 02 2005 01:15 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I almost always stick to the two plate adapters, the single ones usually have leaking issues . Also, a bit of extra height allows the airstream to be more effective below the carb instead of the airflow exiting the carb at a hard 90° angle. For the pinging/timing issue, you may want to try "power tuning" instead . Using either a dial-back light or digital set the full advance at 3500 revs or so, usually around 36° total distributor advance . Disregard the initial advance unless there is a pinging problem at low revs . Mine is set up with a modded stock disty, 20° sweep total and the initial is up to 16° at idle . At 3200 or so the advance is all the way out with the mechanical weights. No issues with pinging or hot restarts, much to my own amazement ... Sarge
Sarge (carpal tunnel) Thu Oct 27 2005 11:45 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Ok, so where are we at with all this? How is everyone's current tuning working? Sarge
yodta (pooh bah) Thu Oct 27 2005 11:59 AM	 Re: Weber 32/36DGV verses the Weber 38DGES I've just been driving. I'm satisfied with my current jetting, but it still pings a little bit and I'm almost positive the timing's a little sloppy. it performs pretty well, but still got its laggy spots. so you're running 36° total, then and it's all in by 3200? just haven't had a chance to diagram my ignition curve. I'm going to swap my flex-a-lite fan out and put the stock one back in before I go to work this morning, so I'll do the ignition curve then. how's the DCNF setup coming along?
Gnarly4X (carpal tunnel) Thu Oct 27 2005 12:07 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: I've just been driving. I'm satisfied with my current jetting, but it still pings a little bit and I'm almost positive the timing's a little sloppy. it performs pretty well, but still got its laggy spots. so you're running 36° total, then. just haven't had a chance to diagram my ignition curve. I'm going to swap my flex-a-lite fan out and put the stock one back in before I go to work this morning, so I'll do the ignition curve then. how's the DCNF setup coming along? I played with ignition timing quite a bit on my 22R and I couldn't get it passed about 28 degrees full advance before it would ping on 89 octane. Gnarl's.
yodta (pooh bah) Thu Oct 27 2005 05:47 PM Attachment	 Re: Weber 32/36DGV verses the Weber 38DGES yeah, I'm running premium fuel and still getting some pinging under load at around 2000rpm. pinging gets a lot worse the more I open the throttle. I finally got my curve numbers with this LCE Pro Distributor:

(I know this curve looks kinda funny, but this is how it comes in, there's nothing 'til around 14-1500rpm, then it comes in hard)



This distributor has 20° of advance built in. LC recommends 10° base which should give you 30° advance at 2000rpm, which is what I'm getting. Then that's it -- it's maxed out.

My problem is the pinging, but if I retard the timing, the performance drops off. I'm thinking maybe the ignition curve is too aggressive with this distributor and is coming in too soon on the bottom end.

I also took off the flex-fan fan this morning and put the stock one back on. Much quieter 😊 Don't need the additional cooling now that the cooler weather's coming on, but I the flex-fan made a noticeable difference in my A/C's cooling ability in drawing more air across the condenser at idle.

[77celica](#)
(stranger)
Fri Oct 28 2005
11:08 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGES

I am awaiting my engine transplant before I install my weber 38DGES. I am keeping my fingers crossed that I like it better than my 32/36. I plan on selling the 32/36 to offset the cost of the 38/38.

I hope to get the engines swapped in the next couple weeks. I have household projects to tend to before I can play with the car.

[yodta](#)
(pooh bah)
Fri Oct 28 2005
11:56 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGES

well, keep everything in your current setup until you're completely satisfied with the 38. you might end up like me and find out you want to go back 😊

I just got an email from a guy at LC Engineering. he think an adjustable cam gear might sort my pinging problem -- back my base timing off and compensate with the cam gear.

I'm having a hard time understanding what happens if I retard my timing from 9° to say 5° to stop the pinging and then adding a cam gear. what do I do? advance my cam timing to compensate?

I mean, what's happening? I retard the timing and the spark comes in later. If I were to do that with my current setup, with the loss of power I experience at 5°, I would assume the valves are opening resulting in a loss of power, whereas right now, at 9°, I'm getting preignition, and it's lighting the air/fuel charge before getting proper compression, banging before I'm at TDC, which results in a loss of power as well, correct?

[Sarge](#)
(carpal tunnel)
Sat Oct 29 2005
12:44 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGES

Oh, boy. Where do I start?

Timing issues aren't any fun for sure. That distributor is the whole problem, look at the curve and relative rpm, there's the pinging problem. The advance should be a bit more aggressive at a lower rpm at the same point as the transition circuits in the carb. This way they match, when the carb is fairly rich for acceleration the timing will help it pull better. Your current setup is jumping the timing up pretty high right where the carb will lean out for cruise. If you were running a 38DGAS or the DCNF, the curve would better match the carb.

Cam timing has a pretty high effect. I use a high rpm/duration cam and have it advanced a couple of degrees to keep the midrange torque up a bit. I would suspect you may be off a couple of degrees anyway. Never seen an aftermarket cam that just happened to land dead on, most have to be corrected. Stock units are the same way, they are usually pretty close but never exactly on. I had to change distributors again, the mechanical curve unit I built turned out to have a bad shaft. Just way too much play in it to work correctly. Had no issues though with having the 36° of full advance at 3200, just the sloppy shaft. The curve was relatively mild and even all the way up to that point, but I ran the initial base at 16° as a starting position and used a 20° swing. Is this aftermarket unit of yours full mechanical or does it have a vacuum advance? I could see if it's vacuum that the added advance may cause the pinging. Also, light jetting may cause the carb to temporarily go lean when you move the throttle in

the midrange of the primary.

The DCNF project is on hold for awhile, I need some parts to make this old 40DCNF a better test candidate. The bearings are bad as well as some other issues. Plus, I have to track down a local wheeler and borrow his truck for awhile to test it. The real fun part will be figuring out which F tubes to use. Since the Toy engine is such a torque motor, the whole flow pattern is much different, should be interesting.
Sarge

[Gnarly4X](#)
(carpal tunnel)
Sat Oct 29 2005
02:44 PM

 Re: Weber 32/36DGV verses the Weber 38DGES

Quote:

well, keep everything in your current setup until you're completely satisfied with the 38. you might end up like me and find out you want to go back 😞

I just got an email from a guy at LC Engineering. he think an adjustable cam gear might sort my pinging problem -- back my base timing off and compensate with the cam gear.

I'm having a hard time understanding what happens if I retard my timing from 9° to say 5° to stop the pinging and then adding a cam gear. what do I do? advance my cam timing to compensate?

I mean, what's happening? I retard the timing and the spark comes in later. If I were to do that with my current setup, with the loss of power I experience at 5°, I would assume the valves are opening resulting in a loss of power, whereas right now, at 9°, I'm getting preignition, and it's lighting the air/fuel charge before getting proper compression, banging before I'm at TDC, which results in a loss of power as well, correct?

First, you should NOT let the engine PING!! Back off the ignition timing until you can figure out what's going on. Have you pulled plugs and checked the color? Did you try going down in heat range? There could be a number of things going on that are causing your pinging at the ignition timing advance you have set. You can find cams that are not perfect regarding advertised specs in the profile, however, the centerline would have to be off several degrees before you'd run into a seriously induced "pinging" issue. Your pinging is probably more related to fuel/air mixture. If you do decided to get an adjustable cam gear, I'd bet you'll find, after careful measurements, that the cam is very close to right on spec. You might also try adjusting your valve lash. Go 2 thousands tighter and see what it does. I recommend checking your compression ratio to see what the readings are. Based on your experimenting with carb/jetting adjustments, you should absolutely invest in a good air/fuel meter!! Then you'd see what's really happening with your air/fuel. That's just my worthless opinion.
Gnarls.

[yodta](#)
(pooh bah)
Sat Oct 29 2005
03:40 PM
[Attachment](#)

 Re: Weber 32/36DGV verses the Weber 38DGES

Quote:

That distributor is the whole problem, look at the curve and relative rpm, there's the pinging problem. The advance should be a bit more aggressive at a lower rpm at the same point as the transition circuits in the carb. This way they match, when the carb is fairly rich for acceleration the timing will help it pull better. Your current setup is jumping the timing up pretty high right where the carb will lean out for cruise. If you were running a 38DGAS or the DCNF, the curve would better match the carb.

actually, this distributor *is* pretty aggressive down low. the advance is maxing out at 2000rpm and there's 20° built into it. I've always figured cruise to be anything higher than 2000rpm in small engines, say 2200-3000rpm for this vehicle. it starts to come in at around 1400 and ramps up pretty quickly and is all in by 2000rpm.

my pinging is around 2000-2200rpm. I think if the timing is any more aggressive, it will ping worse.

I understand what you are saying though about the synchronous carbs. if they truly are fatter at the transition and otherwise the same as the 32/36, it may be a better fit for the response I'm looking for while still being economical at cruise. it may be that this 32/36 is truly meant simply as an economy stock replacement. I've been thinking about getting to work on that 40DFAV here shortly.

my current jetting is the best I've been able to get it. the idle circuits are good, and deviation to either side in the mains, lean or rich produces mildly adverse effects indicative of lean (holding back) or rich (bogging) conditions respective of the jetting change, so I'm really leaning toward the timing at this point.

I guess the next thing to do would be to play with the stock distributor and find out exactly what the timing is doing, or is supposed to do. I thought I had some data on this from Gnarls from months and months ago, but after pulling up the old email, it turns out

I'd asked him for the vacuum readings on the ported & manifold ports at varying engine speeds. no biggie, I can swap in my stock distributor pretty quickly and get that data.

oh, by the way, I found an Edelbrock "Ramflo type" foam filter at Pep Boys a while back. I bought it just because it had the 5.25" adapter which fit over an adapter I'd gotten from LCE a while back. it lifted the filter up higher, away from the carb air horns, so should make for smoother flow into the throats in addition to making more of the filter usable. I also cleaned the element in a fairly weak mixture of Simple Green with warm water. I oiled the filter with 30wt. motor oil to catch more of the finer dust particles. and just FYI, the filter element that came with the Edelbrock assy. -- cheap. junk. -- not as durable feeling as the Ramflo one.



[yodta](#)
(pooh bah)
Sat Oct 29 2005
04:00 PM
[Attachment](#)

Re: Weber 32/36DGV verses the Weber 38DGES

here's a shot of the baseplate and how it sits above the air horns. you can see how it can funnel the air better to the throats than before when filter mounting surface of the baseplate was down around the air horns instead of above them.



[Gnarly4X](#)

Re: Weber 32/36DGV verses the Weber 38DGES

(carpal tunnel)
Sat Oct 29 2005
10:50 PM

Quote:

here's a shot of the baseplate and how it sits above the air horns. you can see how it can funnel the air better to the throats than before when filter mounting surface of the baseplate was down around the air horns instead of above them.



That's the cleanest carb I've ever seen sitting on an engine that runs!!!!
Gnarls.

[Sarge](#)
(carpal tunnel)
Sun Oct 30 2005
12:08 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGES

The only issue with the adapter is the most common one I post , it alters the air flow into the throats like almost every adapter out there. That air has to flow straight into the venturis to make them work correctly on any carb, especially the Webers.

The cam timing issue is not usually the cam or it's manufacturer, instead it's the engine. Unless Toyota was dead consistent on build thicknesses, the relationship in height at the head will affect cam timing. I see this a lot in many other motors that use a single overhead cam design. Once the head is removed for planing or gasket changes the height relationship is changed. Another problem is timing degree marks, spend the time to properly TDC and engine and see where the marks are lined up at, most are off a few degrees. This explains why some engines feel so strong and others just run ok , even factory designed/built stuff. I know Toyota's legendary quality well, out of all the builder's I'd trust their stuff more than anyone for sure. That's the biggest reason I'm swapping in a set of their axles , lol.

Gnarls is right, get that ping stopped now. Pre-ignition is a terrible thing on valves, not to mention what it does to rod bearings. The only saving grace is you have nearly diesel spec'd sizes on that crank...
I thought you were running an a/f meter already?
Sarge

[Gnarly4X](#)
(carpal tunnel)
Sun Oct 30 2005
12:33 PM

📖 Re: Weber 32/36DGV verses the Weber 38DGES

Quote:

The cam timing issue is not usually the cam or it's manufacturer, instead it's the engine. Unless Toyota was dead consistent on build thicknesses, the relationship in height at the head will affect cam timing. I see this a lot in many other motors that use a single overhead cam design. Once the head is removed for planing or gasket changes the height relationship is changed. Another problem is timing degree marks, spend the time to properly TDC and engine

	and see where the marks are lined up at, most are off a few degrees. This explains why some engines feel so strong and others just run ok , even factory designed/built stuff. Yes, this is can be a problem if you want to build an engine for dead-nuts on specs and performance. The good news is that is appears that when you shave a head on a 22, and don't compensate absolutely for the fact that the cam and crank are now closer together (adjustable cam gear or head shims), the cam timing is retarded slightly. This usually will increase low to mid-range torque numbers. Gnarls.
yodta (pooh bah) Sun Oct 30 2005 09:55 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: That's the cleanest carb I've ever seen sitting on an engine that runs!!!! Gnarls. heheh, you're giving me too much credit Gnarls 😊 hey, thought of you today -- The Goonies was on tv. love that movie. anyway, there's a scene where Cory Feldman says "Gnarly." Quote: I thought you were running an a/f meter already? I am, it never shows lean on acceleration. there are only two conditions under which I see it go lean; up top on light pedal or once I'm settled in at cruise on the highway, which is normal, right? lean on cruise? rich on acceleration? I backed the base timing down to 5° this afternoon. the pinging is just about gone. I need to drive it a little more to make sure.
Gnarly4X (carpal tunnel) Sun Oct 30 2005 11:57 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: Quote: That's the cleanest carb I've ever seen sitting on an engine that runs!!!! Gnarls. heheh, you're giving me too much credit Gnarls 😊 hey, thought of you today -- The Goonies was on tv. love that movie. anyway, there's a scene where Cory Feldman says "Gnarly." YES... the Goonies is definitely one of my favorite movies... why? I don't know... it's just a fun movie... and it brings back the kid stuff. Gnarls.
Sarge	 Re: Weber 32/36DGV verses the Weber 38DGES Now that's funny, caught part of that movie this afternoon . When you say it doesn't go lean , just what range are you running in and with what guage ? Mine will ping with the DCNF on almost anything much into the stoich range, which makes sense if you think about it . Acceleration needs to be a bit richer, I try to adjust mine to the first couple of bars in the rich area . Plugs still run clean all the time anyway and it pulls the best there too . Auto Meter guage, tri-y header with the sensor in the collector Sarge

(carpal tunnel)
Mon Oct 31 2005
03:18 AM

[yodta](#)
(pooh bah)
Mon Oct 31 2005
01:26 PM
[Attachment](#)

 Re: Weber 32/36DGV verses the Weber 38DGES

this is the air fuel meter I have



stoich is right in the middle. usually, on any acceleration, I'm two bars green, sometimes one more bar up into the yellow. this depends on my throttle position.

if I let it rev up on light throttle, i.e., somewhere in the primary, it goes progressively leaner as then engine speed increases. kinda like going to cruise. the more throttle I give it, the lesser this effect.

if I'm accelerating with the throttle just at the end of the primary, it gets the leaner effect as the engine speed increases.

if I dip into the secondary, it goes 1 bar yellow to the rich side

if I'm WOT, it's 1 bar yellow rich.

it never goes more than two bars yellow rich.

a long time ago when I had it jetted too rich, the gauge never really moved from 1 bar yellow rich, but it wasn't very responsive running that way.

[mudrunner88](#)

 Re: Weber 32/36DGV verses the Weber 38DGES

(old hand) Mon Oct 31 2005 05:05 PM Attachment	Here's my carb settings (LMAO)
Sarge (carpal tunnel) Tue Nov 01 2005 02:34 AM	 Re: Weber 32/36DGV verses the Weber 38DGES From what I know of that guage, two bars yellow under acceleration is too lean . The Auto Meter shows a better range for tuning a carb, that one is more dialed for use with efi systems. What do the plugs look like through all of this?? Sarge
yodta (pooh bah) Tue Nov 01 2005 12:20 PM	 Re: Weber 32/36DGV verses the Weber 38DGES where can I see the Auto Meter gauge? is the one I have known to be inaccurate? the instructions indicate that green is around stoich, and red is around a 12 a/f ratio. I've backed off my timing to 4-5? and the pinging has all but disappeared. still seems to pull okay, though this was not the case with the warmer weather. will read the plugs today.
Gnarly4X (carpal tunnel) Tue Nov 01 2005 12:35 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: I've backed off my timing to 4-5? and the pinging has all but disappeared. Is it still pinging? Even a little ping can be damaging. Gnarls.
yodta (pooh bah) Tue Nov 01 2005 01:25 PM	 Re: Weber 32/36DGV verses the Weber 38DGES I haven't driven it enough to be able to tell yet. on a side note, I just had this argument with both my girlfriend's father and her brother in-law who is a long time Honda mechanic. she's been putting regular fuel in her older Ford Explorer, and it's pinging like mad. I've never heard anything rattle so bad. I kept telling her that she was going to wreck her engine, but the whole family ganged up on me telling me that it won't hurt it. I finally got tired of arguing.
Gnarly4X (carpal tunnel) Tue Nov 01 2005 09:29 PM	 Re: Weber 32/36DGV verses the Weber 38DGES Quote: I haven't driven it enough to be able to tell yet. on a side note, I just had this argument with both my girlfriend's father and her brother in-law who is a long time Honda mechanic. she's been putting regular fuel in her older Ford Explorer, and it's pinging like mad. I've never heard anything rattle so bad. I kept telling her that she was going to wreck her engine, but the whole family ganged up on me telling me that it won't hurt it. I finally got tired of arguing. I've never spoken to anyone (mechanic or not) that has said the pinging will NOT damage or destroy an engine!! Gnarls.
yodta	 Re: Weber 32/36DGV verses the Weber 38DGES

(pooh bah) Tue Nov 01 2005 10:09 PM	I know, man, I know. I couldn't believe Randy (the Honda mechanic brother in-law) wasn't backing me up on it. instead, he said, and I quote, "Any car will ping under the right conditions." what the hell's that supposed to mean? I couldn't think straight at the time with them all ganging up on me. what the heck's a knock sensor even there for in EFI setups if pinging is okay?
Sarge (carpal tunnel) Wed Nov 02 2005 01:33 AM	 Re: Weber 32/36DGV verses the Weber 38DGES Here's Auto Meter's version of the narrow band: http://store.summitracing.com/default.asp?target=egnsearch.asp&N=400442 Sarge
yodta (pooh bah) Wed Nov 02 2005 10:35 AM	 Re: Weber 32/36DGV verses the Weber 38DGES yeah, I looked at a few of those when I was shopping for mine. I don't know, I don't think there's anything wrong with the one I have. an A/F meter is a simple device -- the display on them is simply based on the output voltage from the O2 sensor. the more important thing, I think, is the sensor placement. my understanding is that if it's not a 3-wire heated one, then it's supposed to be as far up the exhaust system as possible to ensure it heats up properly to give a correct reading. mine's in the pipe off my #3.
yodta (pooh bah) Wed Nov 02 2005 12:27 PM	 Re: Weber 32/36DGV verses the Weber 38DGES interesting information on pinging... found here http://www.msgroup.org/Contrary/NEG037.html ~~~~~ >Pinging is the sound of damage being done to your engine. That is not true. In a normal non-pinging engine, the spark plug fires at the desired time and initiates a spherical flame that moves across the combustion chamber consuming the air/fuel mixture as it goes. This flame increases the temperature and pressure in the cylinder and creates your power. When the combustion chamber temperatures get high enough, it is possible for the air/fuel mixture to spontaneously combust (pre-ignition). This is what happens when a car "diesels" on runs on after the ignition is turned off. Commonly the source of the ignition is from carbon deposits or simply a sharp edge on the piston or head surface. When both pre-ignition and regular ignition occur simultaneously, you get two flame fronts moving towards each other. When they meet, they extinguish each other with a loud pop. That pop is the ping. This effect is similar to turning off the acetylene on an oxy/acetylene torch. The ping is not harmful. But it is an indication that there is something amiss, something that may be silently damaging you engine. One source is excessive carbon buildup. That means nothing is wrong and the engine simply needs a good cleaning, ON THE INSIDE. The reason for the excessive carbon could be due to an oil consumption problem, either leaky valve seals or worn piston rings. Either way, the head needs to be removed to solve the root cause, the can be decarboned at the same time. An engine is normally good at burning away carbon on it's own. The problem could also be due to mal-adjusted carbs or a dirty air filter causing the engine to run way to rich. Again, that is a problem that needs correcting and a 1/2 bottle of Techron engine deposit cleaner will quiet it right up. In no case does the pinging from carbon cause engine damage. The other cause of pinging is excessive cylinder temps. As the temps rise, the sharp edges of the piston will ignite the mixture. The excessive temperature will also start to melt the piston. Again this could be due to a number of situations. One case would be a dirty air cooled engine or a water cooled engine with some problem with the cooling system. The other possibly is that engine was designed to run that hot (like a race engine) and simply needs higher octane. This will in time cause engine damage, but it is again an indication of a problem. If the engine is dirty, higher octane will cause the pinging to go away, but it is still running too hot. Contrary to what the gasoline companies advertise, engines never need to change octane. If a new engine is happy with 87 and at 40,000 miles starting pinging, that means is time for some maintenance, not higher octane. Many european cars and bikes need higher octane because of their better fuels. The US has the "worst" fuel in the world. Germany starts the fuel grades at 96 octane, the their engines are designed to need it. Now, many foreign manufacturers "de-tune" their engines to run on our 87 octane gas. If your engine needed 89 or 92 octane new, then that is what you must run. If it didn't need 92 new, and does now, look for a problem. Your comment, however, about altitude was right on track. Now on the subject of a properly tuned engine pinging. Yes, they should ping, a little under certain conditions. Engineering is a field of compromise. You want the most power, the best fuel economy, the cleanest emissions, and the longest longevity out of any engine. But each of these conditions requires different tuning, generally opposite from each other. An engine needs to be tuned to operate at a sweet spot that is the compromise of all requirements. As I said earlier, pinging can be the result of high combustion temps, and this is the type you would expect to occur. High temps are caused by a combination of lean fuel and advanced timing. Lean fuel produces higher combustion temps and hence more

power. It also produces higher emissions and potential engine damage.

When the engine is under sever load and a low RPM (like climbing a steep hill in top gear) then engine temperatures rise and will begin to ping. That is normal. That is desired. Yes, you are damaging the engine and melting the piston. (More on that later). That means that you have crossed the line are no longer is that compromise zone. That is good because engines are not meant to be operated in that fashion. PINGING MEANS IT IS TIME TO DOWNSHIFT.

Engines, particularly motorcycle engines, make their power in the upper 1/3 of the RPM range. If you are under sever load, you want the tachometer up near red line. That is where the engine was designed to run and it is by far the easiest on the motor. When you are lugging an engine, the oil pressure drops and the piston rods begin hammering against the crank shaft because there is no longer a high-pressure film of oil to prevent it. Likewise, the crankshaft in turn hammers against the block (or case). In either case, the damage you are doing to the bearings is far worse than the slight amount of aluminum being burned away. If you switch to a higher octane fuel to prevent the pinging, you may not realize you are destroying your bearings.

You could also retard your timing or richen the carbs to prevent pinging under severe load on whatever octane gas you desire. But again, this will mask the bearing damage you are doing. It also moves the threshold of that "sweet spot" downward. Now you will not have pinging under sever load, but you will also not have complete combustion under normal conditions (such as cruising), and that can lead to poor fuel economy and excessive carbon deposits.

In a nutshell, the engine should ping if properly adjusted, under low RPM, severe load conditions. Next, you should use your transmission to avoid those conditions.

--

Larry Piekarski

~~~~~

Gnarly4X

(carpal tunnel)

Wed Nov 02 2005

09:06 PM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

Quote:

interesting information on pinging...

found here <http://www.msgroup.org/Contrary/NEG037.html>

~~~~~

>Pinging is the sound of damage being done to your engine.

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In a nutshell, the engine should ping if properly adjusted, under low RPM, severe load conditions. Next, you should use your transmission to avoid those conditions.

--

Larry Piekarski
~~~~~

That is utter bullshit... if that were true, every engine would be pinging.. and that just ain't happening!! Sorry... I don't know this guys credentials, but I'd love to meet him.  
Gnarls.

[yodta](#)  
(pooh bah)  
Wed Nov 02 2005  
09:59 PM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

what do you think's BS?  
a lot of it makes sense to me, granted it's just some random post online (do you have any idea how hard it is to find good info on anything these days on the web? everyone's tryin' to sell you crap)  
especially the parts about bangin' away on your bearings if you're pinging under load. I don't know that I buy his claim that pinging doesn't hurt anything, but the info I found interesting was the causes for pinging and what to do about repairing it.

[Gnarly4X](#)  
(carpal tunnel)  
Thu Nov 03 2005  
12:07 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

Quote:

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especially the parts about bangin' away on your bearings if you're pinging under load. I don't know that I buy his claim that pinging doesn't hurt anything, but the info I found interesting was the causes for pinging and what to do about repairing it.

Scott, I'll agree that it's interesting reading, but I'll compare it to the post about the acetone and the link that was posted as "gospel". The link on the acetone was bogus. There was absolutely NO data to support the claims. And, the link you posted is the same.... absolutely NO data to support the comments. If engines were supposed to "ping" they'd all be pinging... and they are

NOT. Help me understand, I'm open to being convinced. I'm just old school and have a hard time understanding that after about 50 years of being around engines that all of a sudden someone posts something on the internet and now I should believe that an engine "pinging" is normal. Again, I'm open to learning, I only know a little bit about engines, but help me understand why an engine is supposed to ping?... Please. Not only does this guy make contradicted statements, but he is totally full of shit and doesn't know what the phuck he's talking about. Scott, you are a very intelligent, educated, logical-minded individual. Please re-read his commentary, then if you still feel the same way, I'll tear his commentary apart word by word!!!! Gnarlz.

[yodta](#)  
(pooh bah)  
Thu Nov 03 2005  
01:41 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

I had a hard time following him separating the types of pinging and, as well, found it somewhat arbitrary and contradictory. in hindsight, I shouldn't have wasted the time with such a random find, but what I found interesting was his descriptions of the different problems that can cause pinging, his suggestion that pinging should be recognized and the cause remedied, and how a properly tuned engine rides on the border of pinging for maximum power. that I believe, and it helps me understand a little more about why mine may be doing it:

I'm already topped out on pump gas.

I'm bordered on maximum timing, and it only pings when I'm lugging it, which I define as hard acceleration coming out of a turn at around 2000rpm in too low of a gear. at higher engine speeds, it doesn't ping. this leads me to believe it's a combination of timing and my driving style. you've always said that performance & economy are not necessarily bed partners. I'll do you one better and go as far as to say that performance and longevity are not bed partners. if I continue to drive this engine on the border, allowing pinging on occasion, I think I'll end up toasting the rings from the excessive heat over time, for a second time. anyway, I'm about to just call it and say this is the best I can do, and that I can either have driveability and longevity while sacrificing a negligible amount of power, or go the other route...

the way I took his final statement about how an engine should ping was not in saying that you should actually drive it pinging, but to downshift so that it does not. this is the part I find applying to my situation. maybe this is that "certain condition" that my girlfriend's brother in-law was talking about, though his take was that it's okay. anyway, most of this post was about what the causes are, then a statement about how and why to fix the problem.

no sir, I'm not going to try to convince you that pinging is okay. I fully respect your knowledge and experience even though you're humble about it, and I'm with you; I don't think it's okay under any situation and is simply an indication that something's off, either timing, carbon, lean mixture or you're just plain driving wrong.

I'd like to find some good, reputable reading on the long term effects of pinging, though I'm pretty sure that running my last engine too lean is what burned up my rings.

[Gnarly4X](#)  
(carpal tunnel)  
Thu Nov 03 2005  
02:20 AM

 **Re: Weber 32/36DGV verses the Weber 38DGES**

Quote:

I had a hard time following him separating the types of pinging and, as well, found it somewhat arbitrary and contradictory.

Yep, me too.

Quote:

in hindsight, I shouldn't have wasted the time with such a random find, ...

Negatory!! This type of "find" and discussion is exactly what we need... help separating the bullshit from the facts...

Quote:

but what I found interesting was his descriptions of the different problems that can cause pinging, his suggestion that pinging should be recognized and the cause remedied, and how a properly tuned engine rides on the border of pinging for maximum power. that I believe, and it helps me understand a little more about why mine may be doing it:

That, I also believe and, in fact, have "tuned" my engines many times to just remove enough "ping" that I couldn't hear it.

Quote:

---

I'm already topped out on pump gas. I'm bordered on maximum timing, and it only pings when I'm lugging it, which I define as hard acceleration coming out of a turn at around 2000rpm in too low of a gear. at higher engine speeds, it doesn't ping. this leads me to believe it's a combination of timing and my driving style. you've always said that performance & economy are not necessarily bed partners. I'll do you one better and go as far as to say that performance and longevity are not bed partners. if I continue to drive this engine on the border, allowing pinging on occasion, I think I'll end up toasting the rings from the excessive heat over time, for a second time. anyway, I'm about to just call it and say this is the best I can do, and that I can either have driveability and longevity while sacrificing a negligible amount of power, or go the other route...

---

I have also experienced the hard ping under lugging or low RPM load. This ping is the one that seems to sound the loudest and most damaging. Although ping at higher RPMs is probably just as damaging.

Quote:

---

the way I took his final statement about how an engine should ping was not in saying that you should actually drive it pinging, but to downshift so that it does not. this is the part I find applying to my situation. maybe this is that "certain condition" that my girlfriend's brother in-law was talking about, though his take was that it's okay.

---

Driving the engine "pinging" any time is not good.. period.

Quote:

---

anyway, most of this post was about what the causes are, then a statement about how and why to fix the problem.

---

Yes, you see his multiple contradictions.

Quote:

---

no sir, I'm not going to try to convince you that pinging is okay. I fully respect your knowledge and experience even though you're humble about it, and I'm with you; I don't think it's okay under any situation and is simply and indication that something's off, either timing, carbon, lean mixture or you're just plain driving wrong.

---

OK, we agree that "pinging" is NOT "OK" and it indicates a problem, it can damage an engine, and it also reduces power.

Quote:

---

I'd like to find some good, reputable reading on the long term effects of pinging, though I'm pretty sure that running my last engine too lean is what burned up my rings.

---

I think you've answered your own quest for "reputable reading".... you done better, you've experienced it for yourself.

Hey...Guess what I bought Sunday????

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                            | Gnarls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <a href="#">yodta</a><br>(pooh bah)<br>Thu Nov 03 2005<br>11:23 AM         | <p> <b>Re: Weber 32/36DGV verses the Weber 38DGES</b></p> <hr/> <p>Quote:</p> <hr/> <p>That, I also believe and, in fact, have "tuned" my engines many times to just remove enough "ping" that I couldn't hear it.</p> <hr/> <p>I've read recently that sometimes you can't hear pinging even though it's going on -- on a motorcycle jetting/tuning page.</p> <p>no way, a digital camera?!?<br/> or even better, a 1987 holder for the GNARLY4X license plate?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Thu Nov 03 2005<br>01:33 PM    | <p> <b>Re: Weber 32/36DGV verses the Weber 38DGES</b></p> <hr/> <p>Your ping is directly related to the jetting, that's what got you there in the first place. If you cause ping with a Weber, the indicator is nasty white plugs if driven within that range for a short period. Yes, there is a chance you have carbon deposits causing the noise, maybe even from playing with the jetting. Sometimes when tuning I just resort to swapping in a new set of plugs to final test mixtures . Occasionally, you get a surprise....<br/> Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                    |
| <a href="#">yodta</a><br>(pooh bah)<br>Thu Nov 03 2005<br>02:17 PM         | <p> <b>Re: Weber 32/36DGV verses the Weber 38DGES</b></p> <hr/> <p>plug reads are next on my list.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <a href="#">Gnarly4X</a><br>(carpal tunnel)<br>Thu Nov 03 2005<br>05:27 PM | <p> <b>Re: Weber 32/36DGV verses the Weber 38DGES</b></p> <hr/> <p>Quote:</p> <hr/> <p>Your ping is directly related to the jetting</p> <hr/> <p>You could be right, but in my experience, a ping occurring from a dead stop and lugging the engine is usually caused by an ignition timing problem, and especially in a vacuum advance/centrifigal disty. A ping occuring at high RPMs under load can be a fuel/air mixture issue.</p> <p>Quote:</p> <hr/> <p>Yes, there is a chance you have carbon deposits causing the noise, maybe even from playing with the jetting.</p> <hr/> <p>Again, perhaps, but with Yodta's driving style, I'd say there probably ain't much carbon on the top of them thar pistons.</p> <p>Quote:</p> <hr/> <p>Sometimes when tuning I just resort to swapping in a new set of plugs to final test mixtures . Occasionally, you get a surprise....<br/> Sarge</p> <hr/> <p>This is a great idea!!</p> |

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|                                                                            | Gnarls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <a href="#">Gnarly4X</a><br>(carpal tunnel)<br>Thu Nov 03 2005<br>05:33 PM |  <b>Re: Weber 32/36DGV verses the Weber 38DGES</b><br><br><div>Quote:</div> <hr/> <p>plug reads are next on my list.</p> <hr/> <p>What the hell has taken you so long... and why have you NOT found a set of plugs with a lower heat range?</p> <p>Gnarls</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <a href="#">yodta</a><br>(pooh bah)<br>Fri Nov 04 2005<br>02:35 AM         |  <b>Re: Weber 32/36DGV verses the Weber 38DGES</b><br><br><p>I gotta pull up that old post about getting the cooler plugs. I don't really know what to ask for. I stopped at two parts stores and the guys don't how to get me a cooler plug.</p> <p>guys, coming home tonight, I was noticing my a/f meter running dead center stoich (1 bar green) on acceleration in third. it's alright but feels like it's holding back some; I'm thinking not fat enough for full acceleration like Sarge was saying. it's cooler tonight than it has been, so I'm wondering if the cold air is leaning out my mix.</p> <p>then when I'm pulling into my neighborhood after having driven about another 10 minutes, I pull the same acceleration in third, and the gauge reads one bar yellow like what I originally reported. not sure why the difference, but I'm tempted to fatten the mix a little to see what happens.</p> <p>my timing is at 5?, no pinging, and it's workable here.<br/> will try to pull the plugs tomorrow or sometime this weekend, maybe stick in a new set after I try this potential jetting change.<br/> gotta pull out my records again...</p>                                            |
| <a href="#">Gnarly4X</a><br>(carpal tunnel)<br>Fri Nov 04 2005<br>09:42 AM |  <b>Re: Weber 32/36DGV verses the Weber 38DGES</b><br><br><div>Quote:</div> <hr/> <p>I gotta pull up that old post about getting the cooler plugs. I don't really know what to ask for. I stopped at two parts stores and the guys don't how to get me a cooler plug.</p> <p>guys, coming home tonight, I was noticing my a/f meter running dead center stoich (1 bar green) on acceleration in third. it's alright but feels like it's holding back some; I'm thinking not fat enough for full acceleration. it's cooler tonight than it has been, so I'm wondering if the cold air is leaning out my mix.</p> <p>then when I'm pulling into my neighborhood after having driven about another 10 minutes, I pull the same acceleration in third, and the gauge reads one bar yellow. not sure why the difference, but I'm tempted to fatten the mix a little to see what happens.</p> <p>my timing is at 5?, no pinging, and it's workable here.<br/> will try to pull the plugs tomorrow or sometime this weekend, maybe stick in a new set after I try this potential jetting change. gotta pull out my records again...</p> <hr/> <p>Okie Dokie... we'll stand by for a full report.</p> <p>Gnarls.</p> |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Fri Nov 04 2005<br>10:45 AM    |  <b>Re: Weber 32/36DGV verses the Weber 38DGES</b><br><br><p>That's my whole point , a stoich mix isn't enough for acceleration . It should show at least a couple of bars rich with moderate throttle input under a load and accelerating . If you let up and cruise, then and only then should it show stoich.</p> <p>Yeah, the ping is caused by timing , but also a direct lack of fuel in his case. Damn, wish everyone didn't live so far away or I'd just fix it myself.</p> <p>Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <a href="#">yodta</a>                                                      |  <b>Re: Weber 32/36DGV verses the Weber 38DGES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

(pooh bah)  
Fri Nov 04 2005  
06:39 PM  
[Attachment](#)

heheh, I don't let *just anyone* go wrenching on my truck, Sarge 😊

got some data this morning and here are some photos of the plugs, in order, 1 to 4, left to right. as you can see, a nice chocolatey look, which indicates a pretty good burn from what little I know about plugs? though they do look a little bit on the lean side for 2 & 3, don't they? I saw some ever so slight evidence of blistering, probably from running it lean in the summer months.



I was trying to get some compression numbers this morning. I was able to get numbers for 1 & 2, but when I threaded the hose into 3, cranked it an came back to see a zeroed gauge, I about pooped myself. I thought I was getting ZERO compression!!! same for #4!!! I panicked for a second and thought crap!! I burned holes in my pistons!!! turns out, it was the schraeder staying open, heheh. I'm sure the expression on my face was priceless. I tried to clean the valve, and it worked for a little while, but stopped again. I think it just needs to be replaced.

anyway, I positioned the gauge so I could kinda see it while cranking the engine. 3 & 4 were up around 180 or so, and I got 175 & 180 for 1 & 2 when the hose worked, so I think I'm good on compression.

I verified my original jetting prior to this:

Primary/Secondary  
Idles: 75/60  
Mains: 135/150  
Airs: 180/175  
E-Tubes: F50/F50

Current jetting as of November 4,2005:

**Primary/Secondary**  
**Idles: 75/60**  
**Mains: 140/150**  
**Airs: 180/175**  
**E-Tubes: F50/F50**

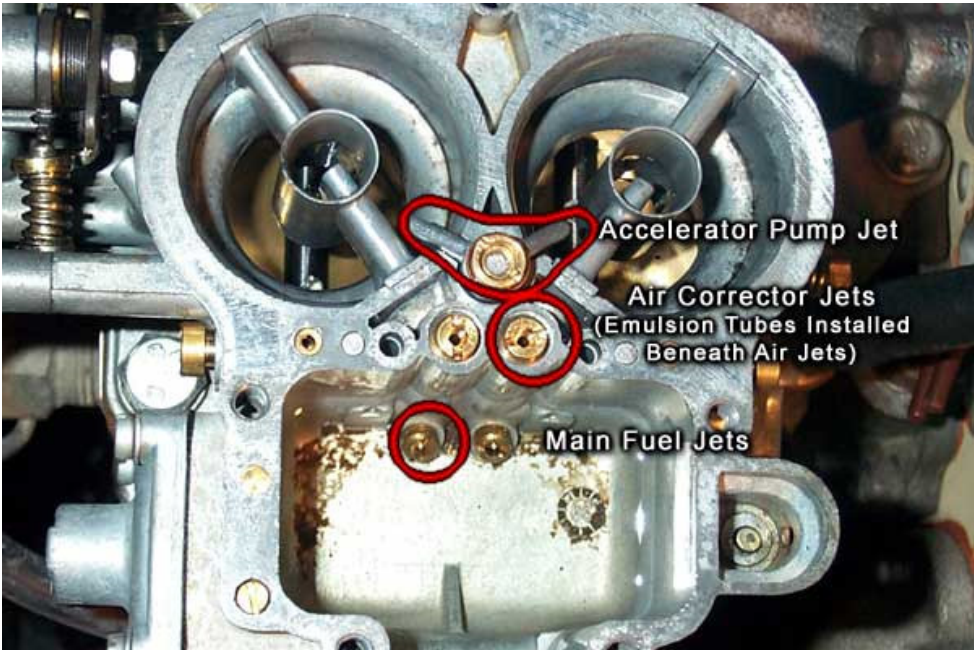
I bumped up the primary main to a 140, and cleaned & lubed the linkage & cable. GOOD GOD this thing feels a lot better. what I am feeling now is nice smooth throttle pedal travel, and as far as the performance, no flat spot, no pinging. it's noticeably more responsive than it was last night, and the gauge now reads 1-2 bars yellow on acceleration consistently, and the lean feeling is gone.

one other thing I would notice is a hesitation on upshifts. like if I was accelerating, then shifted gears, if I wasn't really fast at it and up at higher rpms, the performance would fall off slightly when I got back on the gas until it "caught up" if that makes any sense. not too noticable, but I can feel the difference now. it seems to be more responsive on upshifts; very lively.

the secondary, again, could use a little cleaning up, but I'm gonna dance around a little with the timing again first.

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|                                                                            | <p>good call Sarge. I'd just gone a little too far in the lean direction after having driven it way too rich for so long. you know, I have to say, I've learned a lot in messing with Webers over the past 5 years. I used to only get 12mpg and poor performance when I first started playing around. now it's very very driveable and I even get okay mileage. just depends on how I drive. I'm quite pleased with it at this point.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <a href="#">Gnarly4X</a><br>(carpal tunnel)<br>Fri Nov 04 2005<br>09:26 PM | <p> <b>Re: Weber 32/36DGV verses the Weber 38DGES</b></p> <p>Yodta,</p> <p>This is good shit man!! I love this stuff.. now we got meat to bite on!! Great job! I think the plugs look good. I'd do what Sarge does and change them for new and run them awhile and check them. I can't believe how much you know and have experimented with this carb. I would not be able to have the patience to do that... my hat's off to you!! Man, you are at GURU status on this subject in my opinion. Scott, I'm proud to know you!! YOU are da-MAN!! Sarge, you are da-MAN too!! Gnarl's.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <a href="#">2ndGenToyotaFan</a><br>(addict)<br>Sat Nov 05 2005<br>01:34 AM | <p> <b>Re: Weber 32/36DGV verses the Weber 38DGES</b></p> <p>I've been following this thread from the begining, and although most of the time it hurts my brain, there's a ton of great info in it. Thanks to Sarge, Yodta, and even Gnarl's for keeping up with all the updates. I've got EFI, but all the tuning info has been great.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <a href="#">yodta</a><br>(pooh bah)<br>Sat Nov 05 2005<br>03:38 AM         | <p> <b>Weber 32/36DGV Tuning</b></p> <p>I just hope it helps people who've been having a tough time getting Webers setup and tuned properly. There wasn't a whole lot to read back when I first started trying to get it setup correctly.</p> <p>I just did a search on Google for "Weber 32/36DGV" and this post comes up as the #1 link. pretty cool...</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Sat Nov 05 2005<br>02:37 PM    | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>Wanna see cool? That search linking has resulted in my getting a ton of email , only half of it from this continent. Lots of Euro guys don't have the support we do in our groups . Go ahead, name a country and I've had at least one contact from nearly every one of them. Not to mention some of the craziest engine/car combo's ever, our hotrod guys think they have the market cornerd, HA.</p> <p>A couple of things you should know....<br/> Response off-idle isn't completely in the idle jet size and the transition circuit. Fuel level height, emulsion tube type and main jet size also govern response off-idle. The real trick in doing diagnostics is reading throttle input. This gets pretty difficult since I can't physically see the carb myself. Depending upon throttle position and how a person sets the idle speed also directly affects how the transition acts with the main circuits. There's a phrase to work with, just how far are you opening the throttle when you have a problem?? This is really hard to judge when doing diagnostics. Small notations like "lack of response after shifting gears" or a bit of hiccup when letting the clutch out" are two very different problems. One is a main not coming in early enough, the other is idle jet size/transition.</p> <p>Fuel mileage is now a big concern. You could probably get away with the 135 main jet in the primary easily, just drop the air jet down to match it in, like about a 160 or so. If the response goes away, stay with the 140 and crank the air jet up to get the "cruise lean" effect back. Primary taken care of, the secondary is a bit easier. The 150 is probably too big, I'd say more like a 140 with a 170 air should work.</p> <p>That pattern on those plugs looks ok, but the amount of stark white tells me they were run pretty darn lean in some point. At this point, reset the jets and get a new set of plugs. It will go a long way in helping get it right. The reason they show some richness is probably due to the larger idle jet. If you can drop a size or two when increasing the main, great. The really important rule with idle jets is run as small a jet size as you can get away with. This prevents off-idle over fueling and keeps the plugs cleaner. This is also where power can change quite a bit, if the engine can just pull up smooth without being overfueled overall driveability goes up. EFI guys know how this feels, most fuel injection systems never run much below stoich in any part of the curve. That is also the reason a carb to some extent can build more power and sometimes still produce nearly the same fuel mileage. This is really evident with throttle body systems, the O2 sensor and ecm just maintains the same mixture across the board. Late model stuff takes in consideration the amount of throttle input, how fast it got there, engine rpm, trans and other info and adjusts the fuel curve accordingly. Basically, just like your carb...hehe.<br/> Sarge</p> |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Sat Nov 19 2005<br>12:20 AM    | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>Well, finally got caught up here . I think we just scored a new old stock 40DCNF , who is interested in trying this thing out??<br/> Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <a href="#">yodta</a><br>(pooh bah)<br>Sat Nov 19 2005<br>02:09 PM         | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>hmm. how's the install look? clean? what about the linkage? I need to do some exhaust work on my other car before I consider possibly disabling my main daily driver, but I am interested in the DCNF.</p> <p>I have a stock manifold I can clean up to use, but I was planning on trying to get my 40 setup on it.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|                                                                            | let's have more info on the "kit" and jetting/tuning proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Sun Nov 20 2005<br>12:48 AM    | <b>📖 Re: Weber 32/36DGV Tuning</b><br><p>This will not be in kit form . Instead, a fully assembled and rtr unit. The intake and carb will be complete, from head gasket to air cleaner. It will be offered with the option of the efi throttle cable or the cable can be included. I plan to use a local truck for initial testing as soon as possible and jet tuning. Right now, trying to figure out the pricing...</p> <p>Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <a href="#">yodta</a><br>(pooh bah)<br>Sun Nov 20 2005<br>01:10 AM         | <b>📖 Re: Weber 32/36DGV Tuning</b><br><p>oh, so you're <i>selling</i> the kit you mean? I thought you were looking for someone to help you test &amp; tune it. I'll just watch for now 😊</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Sun Nov 20 2005<br>11:31 AM    | <b>📖 Re: Weber 32/36DGV Tuning</b><br><p>Once testing is finished, yes. Found a local running a 38DGAS for testing, right now it will blaze the Q's on it and want to see how the DCNF compares.</p> <p>Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <a href="#">Gnarly4X</a><br>(carpal tunnel)<br>Sun Nov 20 2005<br>12:40 PM | <b>📖 Re: Weber 32/36DGV Tuning</b><br><p>Quote:</p> <hr/> <p>Well, finally got caught up here . I think we just scored a new old stock 40DCNF , who is interested in trying this thing out??</p> <p>Sarge</p> <hr/> <p>Hey Sarge, is this a newer carb? What is the objective here in testing this carb?... better street performance? better off-road performance? more power? better gas mileage? What cam profile do you invision? What is the condition and modifications to your test engine? What vehicle is being tested? Where and how is the vehicle being driven? Just curious.</p> <p>Gnarls.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Mon Nov 21 2005<br>01:31 AM    | <b>📖 Re: Weber 32/36DGV Tuning</b><br><p>I'm waiting on the truck to arrive now, hopefully in the next week or so . The engine will be tested first for compression readings and such, supposedly it is all original with good compression and never rebuilt. Currently, it has a stock carb on it, I believe it's an '85 . The owner has a 38DGAS that will be installed first, then testing begins . I want to compare all aspects with the 38DGAS since it will be the final installed unit. The 40DCNF will be tested when I'm done with the final work on the 38DGAS. Both are being built as ground-up units including the intake manifold which is being modified. Basically, just all extra crap is removed including the EGR and extra vacuum ports . I've already done one 38DGAS for a local guy , he can smoke the Q78's currently on the truck with stock gearing .</p> <p>The 40DCNF is an old school carb that is still made for sale. They are quite expensive but good used models can be had pretty reasonable. The biggest issues with any DGV series carb including the 38DGAS is the size and orientation of the float bowl. Aside from the bowl being so big, the way they draw fuel and react with the float is bad for anything much over 35* . Some mods can be done to help, but none will cure the design of the bowl. Also, since there is only the metal throttle shafts riding in the aluminum bore, there is the big issue of wear over time. The DCNF series ride on a ball bearing throttle shaft. The float bowl is very narrow and tall and can be modded for a vent extension easily. Overall installed height is nearly identical as well but there are no shared parts between the two series , neither is the bolt pattern. The bug guys have been using them for a very long time now as well as almost any of the older Euro sports cars including Ferrari . Also, the interior venturi's (chokes) can be easily changed for different engines/mods as well as access to the main jets without removing the top cover. Very simple, very effective carbs. I'm using an old 36DCNF on my own 1.6L and love it . Works very well on high angles and is very stable on the street . Fuel mileage is not very good overall, these carbs are designed strictly for performance . Some have had pretty good results despite this, it just takes some jetting work to attain fuel mileage whereas it's pretty easy with a DGV . Sizes range from 36,40,42, and 44mm throats . There are also some variations that were setup for direct blow-through for turbos such as the 36DCNVH from the Maserati bi-turbo engines, a 4cyl. twin design that developed around 260bhp....</p> <p>Sarge</p> |
| <a href="#">77celica</a><br>(stranger)<br>Mon Nov 28 2005<br>06:30 AM      | <b>📖 Re: Weber 32/36DGV Tuning</b><br><p>I've got an elementary question. How do you know what size your jets are? I pulled the top off the 38DGES I purchased (still not installed yet) and the air correction jets are both 180 the main jets don't seem to have markings on them. How do I find out the size? Is there something I am overlooking. This carb came off a 73 landcruiser so I wanted to know what the jet sizes were before I installed it so I would know if I would start out at least in the ballpark.</p> <p>Any help is appreciated. Also if anyone has any tips on tuning a DG series carb I would appreciate it also. I already have the weber idle adjustment procedure.</p> <p>Thanks</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <a href="#">Sarge</a>                                                      | <b>📖 Re: Weber 32/36DGV Tuning</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| <p>(carpal tunnel)<br/>Mon Nov 28 2005<br/>12:18 PM</p>                           | <p>Most of the LC's used 142 mains , since yours has 180 airs that would be my guess . You may have to remove a jet to see the size stamping ,it's on the sides of the jets . Also, be sure to look at the casting numbers just above the linkage, there are several variations of the 38DGES . Just over the weekend I had a guy bring one with some issues over for tuning and found it had 29mm venturis , a very odd size . Most normal market units had 27mm , some later and new models use 30mm . Knowing the basic size of the main venturi, auxiliary venturi and emulsion tubes helps a lot when folks ask me tuning questions . All those factors determine jetting overall....<br/>Sarge</p> |
| <p><a href="#">77celica</a><br/>(stranger)<br/>Mon Nov 28 2005<br/>03:54 PM</p>   | <p><b>📖 Re: Weber 32/36DGV Tuning</b></p> <p>Thanks Sarge and everyone else. I think I should send you all Christmas cards. Here is what I have:</p> <p>venturis 27mm (that's what the stamped # is)<br/>air correction jets 180<br/>main jets 55</p> <p>Does that sound way off? How do those affect rpm range if anyone knows? Keep in mind I have a celica so I may actually hit redline once in a while.</p>                                                                                                                                                                                                                                                                                         |
| <p><a href="#">Sarge</a><br/>(carpal tunnel)<br/>Tue Nov 29 2005<br/>12:03 AM</p> | <p><b>📖 Re: Weber 32/36DGV Tuning</b></p> <p>For that engine, I'd say a fair bit larger on the idle jets and maybe down a little on mains and airs . Give it a shot and see first , but here's my guess:<br/>60 idles<br/>140 mains<br/>170 air<br/>F50 tubes</p> <p>BTW, what was the size on the mains and auxiliary venturis??<br/>Sarge</p>                                                                                                                                                                                                                                                                                                                                                          |
| <p><a href="#">77celica</a><br/>(stranger)<br/>Tue Nov 29 2005<br/>02:21 AM</p>   | <p><b>📖 Re: Weber 32/36DGV Tuning</b></p> <p>I've got a 38DGAS that has been converted to electric choke.<br/>Idles 55<br/>Mains 155<br/>Airs 180<br/>Main venturi 27</p> <p>Can someone please tell me how to find out my aux. venturi size and my emulsion tube type?</p> <p>I plan on installing the carb as is and see what happens. If I am not happy I will rejet it or maybe later swap on the 32/36 again.</p>                                                                                                                                                                                                                                                                                   |
| <p><a href="#">yodta</a></p>                                                      | <p><b>📖 Re: Weber 32/36DGV Tuning</b></p> <p>the aux. venturis are the things that span the throats in this shot.<br/>you can wiggle them a little bit to get them out.</p> <p>I understand that 145 mains work nicely in the 38DGAS for the 22R motor.</p>                                                                                                                                                                                                                                                                                                                                                          |

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| <p>(pooh bah)<br/>Tue Nov 29 2005<br/>03:36 AM</p>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><a href="#">77celica</a><br/>(stranger)<br/>Tue Nov 29 2005<br/>03:51 AM</p>   | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>Quote:</p> <hr/> <p>I've got a 38DGAS that has been converted to electric choke.<br/>Idles 55<br/>Mains 155<br/>Airs 180<br/>Main venturi 27</p> <p>Can someone please tell me how to find out my aux. venturi size and my emulsion tube type?</p> <p>I plan on installing the carb as is and see what happens. If I am not happy I will rejet it or maybe later swap on the 32/36 again.</p> <hr/> <p>Thanks yodta...<br/>Aux. venturi size is 4mm.</p>                                                                                                                                                                                                                                                                                                                                                                                               |
| <p><a href="#">yodta</a><br/>(pooh bah)<br/>Tue Nov 29 2005<br/>04:09 AM</p>      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>sounds about right -- I'm sure Sarge can step in here, but I thought for these carbs they were usually either 3.5 or 4</p> <p>Sarge, what's the deal with the aux. vents again?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p><a href="#">Sarge</a><br/>(carpal tunnel)<br/>Tue Nov 29 2005<br/>11:39 AM</p> | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>38's have a wide market, being originally for a LC it really should have had 4.5's . No need to remove them , the casting number should be easily visible. The emulsion tubes are a different story. You'll have to unscrew the air jets after removing the top to access the emulsion tubes. Once the air jets are removed you can use a slightly tapered steel pick , just a cheap one and not hardened steel as it may break off. Jam it into the emulsion tube and wiggle it from side to side to break it loose then lift it out. If they are stubborn, you can use a 3x.5mm tap and screw it into the tube to remove it. The interior bore at the top can withstand some abuse as it's not affecting it's operation. They should be the same on both sides, just remove one and read it's F series number. I'd bet it's an F50....<br/>Sarge</p> |
| <p><a href="#">yodta</a><br/>(pooh bah)<br/>Tue Nov 29 2005<br/>12:51 PM</p>      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>what's the function of the aux. venturis and the relationship of size to performance?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><a href="#">77celica</a><br/>(stranger)<br/>Tue Nov 29 2005<br/>07:42 PM</p>   | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>Quote:</p> <hr/> <p>Quote:</p> <hr/> <p>I've got a 38DGAS that has been converted to electric choke.<br/>Idles 55<br/>Mains 155<br/>Airs 180<br/>Main venturi 27</p> <p>I plan on installing the carb as is and see what happens. If I am not happy I will rejet it or maybe later swap on the 32/36 again.</p> <hr/> <p>Aux. venturi size is 4mm.</p> <hr/> <p>Emulsion tubes are both F50.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><a href="#">Sarge</a></p>                                                      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>The size of the auxiliaries varies timing of the mains in relation to air speed and volume. Smaller venturi sizes around 3.5 will react quicker at low volumes than a 4.5 , but at midrange the 4.5 will come in very hard . A nice boost on a lot of 32/36's is to swap out the 3.5 auxilary in the secondary for a 4 or 4.5 instead. Gives it a harder kick when the skinny pedal is smashed down for passing/rooster tails...<br/>Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                       |

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| (carpal tunnel)<br>Wed Nov 30 2005<br>02:18 AM                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <a href="#">77celica</a><br>(stranger)<br>Mon Jan 23 2006<br>04:43 AM   | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>Just when you thought this thread would die... 😊</p> <p>I finally got time and energy to swap in the working 20r engine into my car. The swap went fairly easy.</p> <p>I also put on the 38DGES carb and the LC header. It is currently running open header in the garage. I tried and tried to get the car to run with the 38DGES and it wouldn't stay running for more than 10-20 seconds at a time. It will start and run for a few seconds--I can even rev it fine while it is running and then it will just fall on its face and die. When it does this, there is nothing I can do to make it stay running. It is also running very rich (I assume by the smell of gas in the exhaust and my burning eyes.)</p> <p>I, for grins, swapped the 32/36 on to see if it was the carb that was the problem and it runs like a champ with the 32/36. I am assuming I just need to rejet the 38DGES or play with the mixture screws more. Any advice? Also, any suggestions on jet sizes to start with? Where is the best place to get jets?</p> <p>Thanks in advance...I can see the light near the end of the tunnel finally. (I know it never ends, but at least I am progressing!)</p> |
| <a href="#">yodta</a><br>(pooh bah)<br>Tue Jan 24 2006<br>12:51 AM      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>hmm. doesn't backpressure have an effect on idle? most likely it's not your issue here since the 32/36 runs okay.</p> <p>are you saying that with the 38 on it, you can rev it freely and it runs okay, like while holding the throttle open? or you can't even run it holding the throttle open for longer than 20 seconds?</p> <p>assuming you're using the same fuel supply hose as on the 32/36 you shouldn't have any fuel system side problems.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <a href="#">77celica</a><br>(stranger)<br>Tue Jan 24 2006<br>03:38 AM   | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>I thought it was strange too...</p> <p>With the 38DGES on I can't keep it running longer than 20 or so seconds no matter what I do to the throttle. It will rev freely and start ok then after a little while it will die regardless.</p> <p>Maybe my float level is wrong or something? Could the jetting on it be that screwed up that it won't stay idling? I want to tinker with it some more before I go out and buy a bunch of jets.</p> <p>I can't get anyone to give me the baseline jetting for a 38DGES on a 20r so I can have a starting point or anything. I even talked to a weber tech and he was a complete A\$\$\$. You would think if someone called you and wanted a simple question answered and they had hundreds of dollars of your product (two complete carb kits)you wouldn't treat them like crap...Maybe it's just me. I have never gotten such blatant bad service before. I have not gotten what I wanted from other companies and people before, but I have never had someone tell me in so many words "piss off." (sorry just venting)</p>                                                                                                                |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Tue Jan 24 2006<br>01:06 PM | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>Who did you talk to ? Give me the number and name and I'll take care of that issue real quick. Already have a good idea of who it may be , just verify my hunch.</p> <p>The 38DGAS for your engine should have:<br/>55-60 idle jets<br/>140 mains<br/>170 air jets<br/>F50 tubes</p> <p>This is assuming you have the model with 27mm venturis . Check <a href="http://www.piercemanifolds.com">www.piercemanifolds.com</a> for a drawing on the DGV float height . There is a drawing for both the plastic and brass floats. If the motor won't idle when cold there's a chance the choke setting is incorrect or the choke blades are jammed shut . As well, the idle jets could be blocked too. If you need help, shoot me a pm and I'll give you my phone number.<br/>Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                   |
| <a href="#">yodta</a><br>(pooh bah)<br>Tue Jan 24 2006<br>08:50 PM      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>good start Sarge.</p> <p>Ron, is this 38 a new carb, or is it one you bought used?</p> <p>How 'bout popping the cover and making a list of what you've currently got in it. unless they're ridiculously large, the jetting shouldn't be causing the problem.</p> <p>I was thinking some kinda blockage as well.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <a href="#">77celica</a><br>(stranger)<br>Wed Jan 25 2006<br>01:51 AM   | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>This is from one of the 304 previous posts. The carb is used and it came off a 73 Landcruiser.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|                                                                         | <p>Quote:</p> <hr/> <p>I've got a 38DGAS that has been converted to electric choke.<br/> Idles 55<br/> Mains 155<br/> Airs 180<br/> Main venturi 27<br/> Aux. venturi size is 4mm.<br/> Emulsion tubes are both F50.</p> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <a href="#">77celica</a><br>(stranger)<br>Wed Jan 25 2006<br>01:21 PM   | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>Quote:</p> <hr/> <p>Who did you talk to ? Give me the number and name and I'll take care of that issue real quick. Already have a good idea of who it may be , just verify my hunch.</p> <p>The 38DGAS for your engine should have:<br/> 55-60 idle jets<br/> 140 mains<br/> 170 air jets<br/> F50 tubes</p> <p>This is assuming you have the model with 27mm venturis . Check <a href="http://www.piercemanifolds.com">www.piercemanifolds.com</a> for a drawing on the DGV float height . There is a drawing for both the plastic and brass floats. If the motor won't idle when cold there's a chance the choke setting is incorrect or the choke blades are jammed shut . As well, the idle jets could be blocked too. If you need help, shoot me a pm and I'll give you my phone number.<br/> Sarge</p> <hr/> <p>Thanks Sarge.<br/> I wish I had asked for the guy's name. I didn't even write it down. I got the guys number and extension from a tech at carbs-unlimited. I'm going to tinker with it today a little and see what I can do.</p> |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Wed Jan 25 2006<br>02:08 PM | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>The 155 mains are way huge for that motor . Actually, they are sort of big for the Cruiser's six as well.</p> <p>I know pretty well who you are referring to, got some plans for his attitude real soon. I used to get most of the tech calls for Redline if anything was ever mentioned about DGV's, jetting or offroad use . That tech has since moved on, the guy that replaced him is good to deal with but his boss is an a\$\$ of the highest degree. No wonder they keep losing all their good people .<br/> Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <a href="#">yodta</a><br>(pooh bah)<br>Wed Jan 25 2006<br>02:59 PM      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>I had a response written up last night, but got those wicked sql error when I tried to post it.</p> <p>anyway, I was saying those 155's are a bit big for the 20R and that most guys are only running 145's on their 38's for the 22R, but still, it shouldn't stop it from running.</p> <p>I'm thinking there is a blockage somewhere.<br/> when you received this carb, did it look like it was cared for? was it wrapped up or sealed somehow? my 40/40 sitting in its box in the garage is wrapped in a towel at least, though a plastic bag would be better.</p> <p>have you pulled it apart to check it out? looked at the jets?<br/> isn't there some kinda diaphragm on the sides of them? what happens when it's dry rotted or torn?</p> <p>basics... I'm sure it's something simple.<br/> once you get it running, then we can start looking at the tuning aspects.</p>                                                                                                                                                                    |
| <a href="#">77celica</a><br>(stranger)<br>Mon Jan 30 2006<br>06:33 PM   | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <hr/> <p>Alright,<br/> I talked to one of the techs at LC Engineering (John) and he gave me some numbers to work with.</p> <p>The numbers seem conservative to me, but here they are:<br/> mains 140<br/> idles 40<br/> airs 190-195</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|                                                                            | <p>For a 22r he said a good starting point is:<br/> mains 142<br/> idles 45<br/> airs 185</p> <p>What do you guys think? Should I go with their baselines or do you guys have better advice for me? I don't want to spend 100+ dollars on jets stabbing in the dark. By the way, I am at 634 feet elevation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <a href="#">2ndGenToyotaFan</a><br>(addict)<br>Mon Jan 30 2006<br>10:06 PM | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>"634"???? remember, your carb is on the engine, so it would be 636ish. Just trying to keep you honest. 😊</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Wed Feb 01 2006<br>12:39 AM    | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>For the 20R the mains are correct although the airs a bit big. I'd start no lower than a 175 air jet, otherwise you risk leaning too much at high revs. That should work pretty well with your 4.0 auxiliaries.<br/> Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <a href="#">yodta</a><br>(pooh bah)<br>Wed Feb 01 2006<br>02:48 AM         | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>eheh, Jerod keeps a tape measure and a topo of the U.S. in his imaginary box of Weber jets 😊</p> <p>so what's up Ron, you had time to tinker anymore?<br/> figure out that idling/running problem yet? tried/investigated anything?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <a href="#">2ndGenToyotaFan</a><br>(addict)<br>Wed Feb 01 2006<br>03:52 AM | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>The length and indepthness of this thread calls for some humor now and then. What size jets are in my stock 22R-E? It's a little slow going up long steep hills..... Should I go bigger? Smaller? Wider? Maybe more jets? Just brain storming here.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <a href="#">yodta</a><br>(pooh bah)<br>Wed Feb 01 2006<br>12:22 PM         | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>more jets. definitely. installation is a breeze. you just pull out each of your fuel injectors and drop three 80 main jets, four tops, down each runner. then put your injectors back in and prepare to enjoy the ride 😊</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <a href="#">2ndGenToyotaFan</a><br>(addict)<br>Wed Feb 01 2006<br>11:00 PM | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>"The ride"??? Don't you mean the noise! as those jets getting sucked through my manifold into the head and jam all my valves open and then get crushed by the unstoppable pistons? Yeah!!!!!! Rebuild time!!! hehehe</p> <p>mmmmmmmm bent rods..... agggghhhhhh (Homer noise)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <a href="#">77celica</a><br>(stranger)<br>Thu Feb 02 2006<br>03:03 AM      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>Well,<br/> I kind of cheated. I have the 38DGES off at the moment. I reinstalled the 32/36 temporarily to get everything else in order first. I want to get it back on and running soon though. Now that I have a starting point, I can now order the jets and get at least a good baseline. I think I didn't have the idle bleed screws set right. I will try again once I get the exhaust on (if the temptation isn't too great before that).</p> <p>I have a lot of other things going on with this car at the moment. I swapped in a working 20r engine; changed the interior color of the car from tan to black; took off many parts and painted/cleaned them; and installed the LC Engineering header. I wanted to get it running ok so I could drive it to the exhaust shop. I am putting everything back together since I had the car in literally 100+ pieces in the garage.</p> |
| <a href="#">yodta</a><br>(pooh bah)<br>Thu Feb 02 2006<br>12:24 PM         | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>nice!<br/> pics man, pics!!!</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <a href="#">77celica</a>                                                   | <p> <b>Re: Weber 32/36DGV Tuning</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| (stranger)<br>Fri Feb 03 2006<br>12:38 AM                               | <p>I'll post pics some time in the future in a separate post. It is nothing to brag about. The car is still in horrible shape. It needs ridiculous amounts of bodywork. I have even considered trashing it and buying another one and just swapping go-fast parts and building a hybrid.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Fri Feb 03 2006<br>03:44 AM | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>If you have good hearing you can tune those idle mix screws with a section of 1/4" hose. To really make the transitions operate smoothly the idle mix's have to be balanced equally. Using a 12" or so long piece of hose, place the tip of it down into the throat just on top of the auxilary venturi . Make sure when switching back and forth between barrels to place it at the same angle to get an accurate reading. Listen for a very slight whistle just as the lean dropoff point is met. At that point the base mix should be just about right. For best response, go slightly rich about 1/16 of a turn on the screws. You may have to final adjust them for driveability but just keep the turns equal and you'll be fine. Just an old trick, otherwise you can use a synch meter....or just balance by equal number of turns out..<br/>         Sarge</p> |
| <a href="#">yodta</a><br>(pooh bah)<br>Fri Feb 03 2006<br>12:52 PM      | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>I wish you lived around here, Sarge.<br/>         Mine's been running pretty well, but I'm sure it can be tweaked further.</p> <p>It's loving running in this colder weather once it warms up. When I feel how it runs with the secondary kicked in, it makes me want to put on that 40 synchronous!</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <a href="#">Sarge</a><br>(carpal tunnel)<br>Sat Feb 04 2006<br>03:40 AM | <p> <b>Re: Weber 32/36DGV Tuning</b></p> <p>You should drive a DCNF once, throttle response that just doesn't stop...<br/>         That reminds me, I never got that truck to test this thing out yet . Gotta work on that.<br/>         Sarge</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |