

Archived thread:

<https://www.rx7club.com/1st-generation-specific-1979-1985-18/boost-prepping-nikki-secrets-revealed-1083467/>

Boost prepping Nikki secrets revealed

The other thread turned into a conversation with too much speculation. Too hard to find info etc.

<https://www.rx7club.com/1st-generati...i-how-1080192/>

Assuming you've stripped and cleaned the carb, pull the OMP nipples, then pull the boosters and primary venturis. Hog out the venturis to 24mm keeping the shape as accurate is possible. Warm up the main body and freeze the venturis to remove/install. If they fit loose upon reassembly, use some blue loctite.

Cut the booster supports and do the airfoil mod. Slightly expand the hole with a tapered waxed center punch. Be gentle and check the fit in the carb. Get them centered.

Fill the holes where the altitude compensator was with JB-weld or quicksteel, or block off with an aluminum plate. 1/4" thickness to reuse stock screws and some kind of gasket. 12A gasket sets come with this gasket.

Get a .465" drill bit (118 in metric or 1.18mm). Drill these parts:

- *secondary slow air bleeds: nickel plated 60s
- *accel pump nozzles (two holes) and banjo bolt (three holes)
- *primary 92 fuel jets

Fill these parts with solder:

- *the small 40 air bleed under the air horn (remove it first, fill from threaded side so solder doesn't fall into your carb should it ever come loose)
- *primary slow air bleeds: brass 170s (they range from 150 to 190)
- *secondary long slow bleeds

Remove choke flap valve and rod from air horn. Fill both holes with quicksteel. Clean well first for good adhesion. Keep fast idle linkage.

Remove float bolt vent solenoid:

81-82 easily comes out. Block off with a 1/8" aluminum plate and a gasket in the rebuild kit using original screws.

83-85 requires the nylon plunger to be ground down with a dremel stone until it is destroyed enough to remove. Reinstall the solenoid without spring or steel rod.

Fill float bowl vent nipple with quicksteel or block off with a 5/16" vacuum cap (cheap rubber deteriorates so keep that in mind).

Remove both fuel rail banjo bolts. Get rid of both filter strainers (restrictions). Make sure steel fuel tubes are straight and true, bending if necessary. Do not damage the threads in your air horn. Reinstall banjo bolts with new aluminum crush washers supplied in rebuild kit.

Remove stock seats CAREFULLY using a vice grip gently but firmly gripping the body of the seat and a light tap with a hammer. One hit is all it should take. Don't bother trying to use a big screwdriver because the factory tightens these so hard it will damage the brass when you go to unscrew it. Do not crush the seat with the vice grip. Remove the stock tiny filters (restrictions):

81-82 have a short soldered brass filter that sometimes comes off and stays up inside the air horn. Dig it out.
83-85 have a long plastic filter that easily comes off.

Reinstall stock seats with new crush washers from the rebuild kit. Use your big screwdriver. 😊

ABSOLUTELY DO NOT use the aftermarket seats that come in a typical Hygrade kit. They're all machined incorrectly and lead to instant flooding. You've been warned.

New needles in hygrade kits are good quality and seem to work after a few minutes of run time in OEM seats.

Check floats against factory specs. If the carb has never been molested, the factory settings are perfect. If some monkey has been in there with a wrench, good luck with that.

Flip the cast iron baseplate over and study the secondary linkage. Weld the linkage or use a wire tie. I trust a weld more than a wire with boost.

Buy a gasket paper set from your local auto parts store. The blue paper is thick and works well as a base plate gasket that won't leak. The charcoal gray paper is used in the accel pump mod.

base plate gasket:

The new one in the kit is your template. It is very thin and cannot be used for its intended purpose! Only punch holes for the circuits you will actually use. Study it and you'll easily figure it out. This saves time and is less likely to leak.

accel pump gaskets:

Use the new long travel accel pump diaphragm in the Hygrade kit as your template. Trace six gaskets and use a quarter (US and Canada) for the about 1" circle in the middle. Get four longer screws of the exact thickness of the stacked gaskets and same thread pitch. It is very important to get this part right. Chase the threads in the four screw holes as I find they're usually pretty tight. This lets you get away with screws that are slightly too long. Only one hole, upper left corner, is blind. Be careful! 4mm x 0.70

Cut out a strip of 16 gauge steel and drill two holes to fit an 8-32 screw at 1 1/4" or 1 1/8" apart. Bend slightly in two places. File one hole to an oval to match the original accel pump lever arm. Use an 8-32 screw with a lock washer and a 11/32 nut, or a nylock nut to attach new strip to stock arm. Maybe a flat washer or two to get the spacing right. Pull long spring slightly and reinstall 7mm nut on pushrod. Check for binding and other problems. The travel should end when the throttle is fully opened.

The boost prepping mods are basically done at this point. If you've rebuilt these carbs before it gets pretty easy from here. If you've not rebuilt one of these before, you're a noob and will require additional info which won't be covered here. So... search noob! 😊

Bolt the main body to the base plate with the new thick blue gasket paper.

Primary side:

Install the solder filled 40 air bleed in the air horn with red loctite.

Install the 118 drilled fuel jets in the primary side.

Install the 118 drilled nickel plated 60s in the primary slow air bleed holes. This recalibrates the idle for use with large primary venturis and boost.

Primary main air bleeds should be 60 or 70. Don't use 80 (rare) or 90 (common in SA carbs) as it doesn't work correctly with boost.

Do not mod the stock 46 primary long slow bleeds as they are part of the transition circuit and don't amount to much if you mess with them.

Accel pump:

drop a steel ball and the thin brass weight in the accel pump housing area. Wrap the long thick brass 30 screw with teflon tape on the threads and install. Stretch the accel pump spring just a little bit to account for the extra gasket thickness. Don't overdo it. Be sure to also install the accel pump nozzle and banjo bolt with a steel ball and thick brass weight under it.

Secondary side:

Install the main 140 air bleeds. These can be modded later if a delay or hiccup is experienced when the secondaries open.

Install the solder filled long slow bleeds.

Install the solder filled short primary slows in the secondary holes.

The stock 160 fuel jets are a good place to start. If they are pig rich in boost, think of it as a base tune for safety that can be leaned out once you start tuning.

Be sure to reinstall the OMP nipples. Tap them to the boosters and use a box cutter blade as a spacer for a tiny gap. I don't recommend premixing but you're welcome to do it.

Install site glass windows with new gaskets and rubber seals.

Install float bowl jet plug bolts with annealed copper crush washers. Use a propane torch only until they just start to glow. Then let air cool.

Install throttle stop screw and mixture screw. Remove any unneeded linkage from the stack such as cruise control (remove linkage but keep the nickel plated pivot spacer it rides on) and hot start assist (cut off ends but keep the circle of steel). Keep the emergency return spring because it stabilizes the shaft apparently.

Block off all vacuum nipples with vacuum caps or some stock vacuum line with a small piece of a broken drill bit or something shoved inside. OEM vacuum line lasts virtually forever. Can't say the same about cheap rubber vacuum caps. Pro tip: If 84-85, it had an extra solenoid on the secondary vacuum box with a nice OEM vacuum cap. Put this cap on the vertical nipple on the air horn at the altitude compensator flange area. It will fit under most carb hats.

Now the top (air horn) can go on. Choose your screws from the pile of hardware you made during teardown. There are enough screws from a typical FB Nikki teardown to cover everything. Test the screws in the holes and chase threads if necessary. 5mm x 0.80 I find only one or sometimes two holes require chasing.

Important! Cut off the little spacer section of the old choke bimetal bracket before you throw it away. This must go under the throttle return spring bracket for all three screw holes to align correctly.

All the pictures are in the other thread, mostly on page one so be sure to look through it.

This thread won't cover your carb hat or fuel system, charge pipe, type of turbo etc. That's for you to figure out.



This thread sums up a year of research and testing. It has been condensed down to one post. And you guys thought boost prepping a Nikki was hard.

Thread referenced in archived thread.

The thread you've all been waiting for!

No more guessing! No more speculation! Just stuff that works!

Of course your mileage may vary, so don't be afraid to try a different approach if you disagree with anything you see here.

Standard disclaimer: First and foremost you have to be willing to ruin your carb and your engine. This isn't likely a good first project for a noob, unless you're ambitious. A turbo swap isn't usually for the faint of heart. There's always a risk.

This thread is all about what I did on my carbs and what worked. You have the freedom to do whatever you want, so it's on your shoulders if your engine or carb gets broken while following my advice or anyone else's. 😊

Before we begin, do yourself a favor. Get an 81-85 carb if you don't already have one. I tried boosting two 79 carbs and they both leaked out of the secondary side above the base plate due to some casting warpage. Gasket thickness didn't make a difference. Same goes for the accel pump housing. They all seem weaker on the 79-80 carbs for some reason. The 81-85 castings are less likely to warp. Of course you could have your 79 fly-cut like the Holley guys have to do, but who does that?

Don't pay attention to the air horn size differences from SA to FB. The smaller 81-85 doesn't cause problems.

First strip the carb until it has a simplified choke as described here and there on the forum. Also remove the other not needed stuff all around it like the altitude compensator etc. If you struggle here, might as well stop and put in one hundred hours of searching and reading going back at least ten years (but I'd start looking in 2001 first) before you go further. This thread isn't about holding your hand. It's about the hard core boost prepping process to get fast results, and I don't have that many pictures so it's good to know what I'm talking about while you read. Walk before you run, right?

Get a hygrade rebuild kit from Rockauto. The \$30 universal one that has the long travel accel pump diaphragm and the two types of top gaskets.

Buy a .045" drill bit as it will come in handy. This is the 118 drill bit I refer to all the time.

Be sure to photo document the process and start a thread so we can help you. I probably should have, but I didn't. Water under the bridge...

Now on to boost prepping.

Outside of the carb:

Remove the choke flap valve and rod.

Remove the secondary vacuum box from the side of the carb.

Remove and cut off the complicated choke bracket so it acts as a simple spacer under the throttle return spring bracket. This lets you use all three screws at stock length. Don't be like this guy having to use two washers up under one of the top screws and not able to use a 3rd screw down on the side. (not my pic)



Came from this thread: <https://www.rx7club.com/nw-sale-want.../#post11883712>

Keep the fast idle linkage. I do. It comes in handy when you have to step out right after starting a cold engine and not need to keep your foot on the pedal. Standard Sterling cold start procedure applies where you tap the pedal a couple of times, let off, then crank until it fires up, then keep it running with your foot for a few seconds until it settles down. Then set the fast idle with the choke ****. This is the only order that works. Don't pull the **** before you start it because it won't start (there is no choke flap valve anymore, remember?).

Keep the emergency return spring because it stabilizes the shaft according to some folks. I keep it.

Remove the dash pot. No need without a cat. Replace the screws in the throttle cable bracket with shorter ones to make up the difference.

Take the throttle cable "lever" or linkage assembly apart while maintaining their order and delete the hot start assist and cruise control if your car no longer has them. None of mine do. I cut off the hot start assist but keep the large washer section so it is still there to keep the fast idle linkage aligned; you'll see. The cruise control can go with no worries.

Cap off all nipples with a short piece of vacuum hose and a small piece of something shoved into the end. Then add zip ties if you wish. I don't pull the nipples and fill the holes like some do because that's too much work and too likely to fail/leak.

Remove the banjo bolts above each needle and seat. Pull out the strainers and aluminum crush washers. Rebend the fuel rail tubes if necessary so the banjo bolts goes back in without trouble. Add new crush washers but don't reinstall the strainers as they are restrictive. If they get clogged, that's no good for boost. Get a good fuel filter in front of your fuel pump. You'll have the top off the carb periodically for tuning anyway so check for rust chips or other debris. I can't tell you how many times I've thanked the rotary gods I removed my strainers and found all sorts of wonderment down in the bowls. 😊

Remove the float bowl vent solenoid. The 81-82 style is easy. Take out three screws and replace with an aluminum plate of the same thickness (so the stock screws can be reused) and a gasket that comes in the rebuild kit. If 83-85, It needs you to take a dremel stone and grind off the nylon plunger seal thing that prevents it from coming out - or try to cut through the steel but there is no room to work. Then you can unscrew the hex head solenoid, pull the shaft and reinstall

the solenoid. No need for the spring or the wire so they can be deleted. Others have pulled the brass fitting it threads into, but that seems like a lot of work. This thing must go because the float bowls have to receive a boost reference from the carb hat, and this is the only practical way to do it. Others have conjectured about adding a fitting above each float bowl through the top of the air horn. That's a lot of work and is not necessary, but it shows they were thinking along the right lines.

Moving onto the inside of the carb:

Now take off all the parts like the site glass windows, jet plug bolts, jets, accel pump housing and old leathery diaphragm and spring, the 30 stamped brass jet bolt thing above the accel pump, the little brass weight and check ball, then all the air bleeds and accel pump banjo bolt with its larger brass weight and check ball. Also take out the power valve/richer solenoid stuff so the main body is completely stripped for cleaning/degreasing.

High power option:

This next part is if you're interested in hogging your carb out, which, in my opinion, is an absolute must if you like things like low end torque. Also you can perform the booster support cut and aerofoil shape mod at this time.

First pull the OMP nipple tubes and set them aside. I use an old chuck from a drill press because it has three gripping "fingers" that can grab the barbed end and carefully twist and pull them out. I know some use a vicegrip for this, but bending/crushing is possible.

Then use an old secondary main air bleed you don't care about, thread into the sec booster first, grip it with a vice grip and start gently twisting and pulling up straight. Rotate it slightly back and forth and eventually it will come out. Then grab a primary air bleed you don't care about and so on. Pulling secondaries first makes life easier. You'll see.

Now grab a thick washer (around 1/8" will do) of the EXACT size as the OD of your primary venturis. Hold it in a bolt with a nut on each side tightened with two wrenches. Then I like to warm up the carb's main body while I grab a can of that electronics duster canned air stuff. Grab a couple of 1x1 or whatever handy wood pieces you have. Set the carb on them so at least one of the venturis has a clear path to the ground so it can be tapped out. Turn the can upside down and start spraying until the venturi is cold (icy). Sometimes it will fall out. But you usually have to tap it out with the washer+bolt.

Be careful! How many spare carbs and extra venturis do you have just lying around if you screw up?

Find a bigger washer if you choose to hog out your secondary's as well. I'd advise against this because out of all the boost prepped carb threads I've read, not one person did hogged out secondaries and to the best of my knowledge no one hogged their primaries either. But I can say from my own experiences, hogged primaries are the way to go. Mod your secondaries at your own risk and you're on your own for tuning.

With the venturis out of the carb, make sure all the parts are out. Take off the floats, rods and needles from the top but you can leave the seats and fuel rails/banjo bolts on. You should leave the FBVS out for this cleaning step as well as I'm sure there will be nylon and metal debris everywhere. All gaskets should also be removed and scraped off where necessary.

It's time to use some degreaser or carb cleaner (or that nasty carb dip which I've only had to use one one Nikki, ever!). Wash all three main parts of the carb and any hardware if it's dirty. Then dry everything thoroughly with compressed air and don't lose any small stuff. This step should not require any further explanation.

Now hog out your venturis keeping a smooth straight taper from the small end to big. My recent findings suggest that 25.6mm is too big as it introduced a lean glitch at about 1500rpm.* However my other carb at 25.4mm doesn't have the glitch. Looking at RB's old catalog from the 80s, they suggest .98" which is 24.9mm. Yaw hogged his carbs out to 24mm. Sterling and Carl did theirs at 22mm. Do yourselves a favor and keep the size between 24.0 and 24.9mm, especially if

you have a stock ported 12A, but I'd think a stockport would do better with 24mm and a streetport shouldn't need any larger than 24.9mm. I've done all my testing on a 74 ported R5 13B, so my air requirements are going to be a bit more than yours, and the above suggestions are my best educated guess for a 12A. Use your judgement and do another 100 hours of reading if you don't feel confident about which size to go with yet. Just know that the 22mm Sterling carbs have less low end torque than the 24mm Yaw carbs, from what I've read on the forum. The smallest I'd run these days on my 13B is 24.7mm on a small runner NO manifold which flows about the same as a 79 12A manifold. Your research could turn up some other info I haven't read yet.

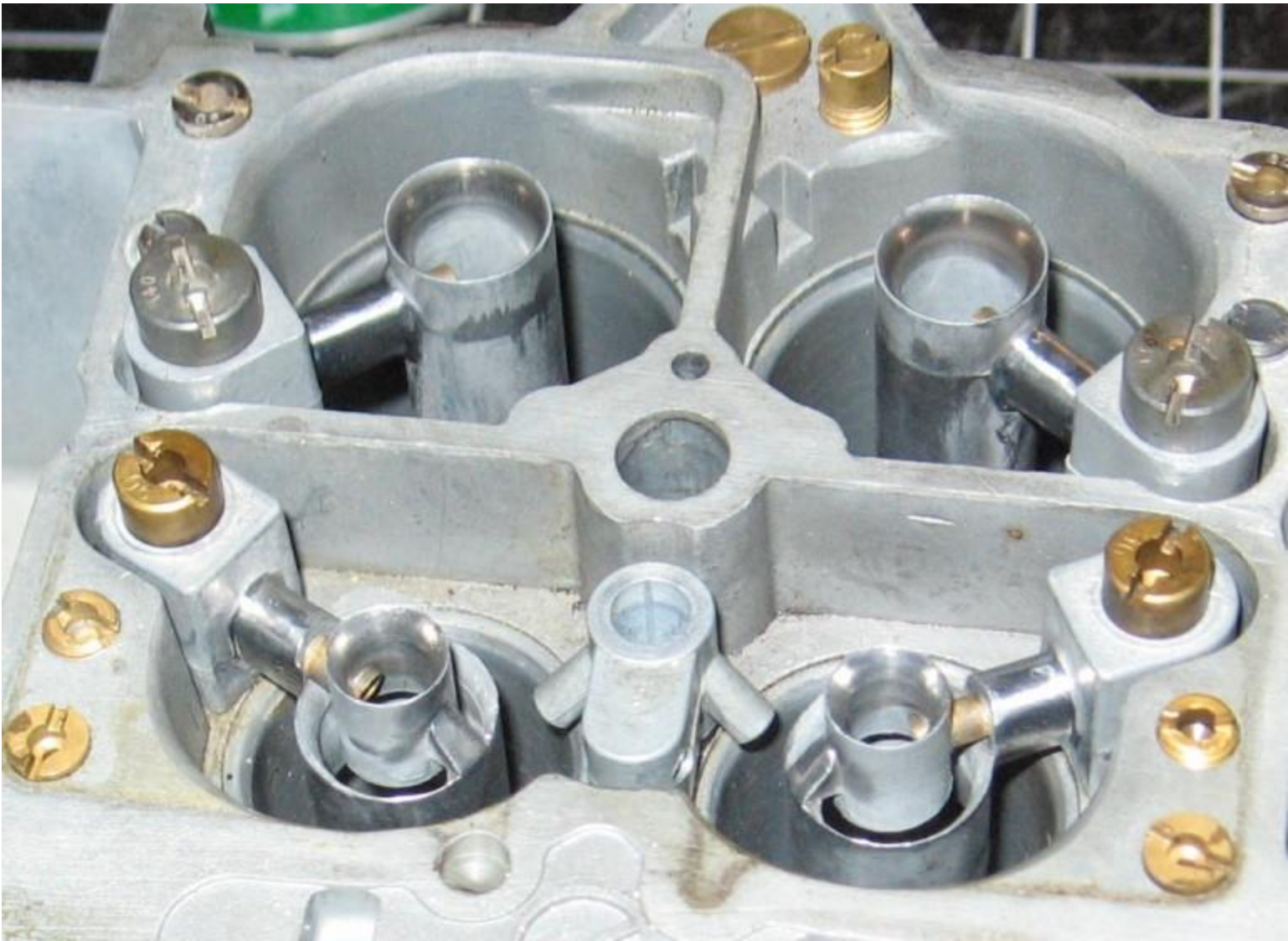
*The Racing Nikki I refer to now and then has 26mm venturis (not cut by me) and its off-idle glitch is awful. Not a fun carb to drive on the street, even though it has a lot of power. Probably why it's a racing carb. Well, I know how to fix it for the street now!

Grab some washers in various sizes and some bolts with nuts. I like 21mm, 22m and on up to 24.7 or whatever size I'm going for. If you don't have the exact size, you can "interpolate" or whatever. I use these as ID guides to keep both venturis the same size at the same position/depth.

I use a die grinder for the bulk of material removal, then a dremel with a sanding drum (coarse then fine) for final shaping. This step can take days. Well, just hours, unless you're new. Then a final polishing can be done. I don't go overboard. Just dremel's version of a scotchbrite pad on a stick is good enough. I've tried the common beige and black ones. The black is what I've used recently and works great. A little texture is left over. Not sure if this is better than a mirror polish, but I'm inclined to think, yes. Laminar flow or something may apply to venturis? Anyone know?

Warm up the carb main body and freeze the venturis. Get the little notch aligned with the hole in the main body. I hold it with a needle nose. Tap them home until at the same depth as stock. Maybe take a pic or two before you begin all this so you know? Like 1mm below the surface or so. Look at it from the bottom too. Make sure it is not too low. I also use some blue loctite here if the boosters end up kinda loose after they've reached the same temp as the main body. The metal is just zink or pot metal so it's not like the best material for perfect dimensional stability in the first place. Remember the venturis will remain cooler than the main body of the carb due to the venturi effect, or at least it makes sense that they would, so a little something in there, and I mean a little! goes a long way. Just take it slow and pay attention to what you're doing.

Cut the booster support arms off and smooth the remaining arm into a pointy aerofoil or airfoil shape underneath and a round smooth top. I do this with small hand files. A hack saw is used to chop off the support first, then a lot of filing. Get ready for sore fingertips unless you can figure out a better technique than I did. It takes a lot time but is worth it. Sterling would then polish his. I kinda polish mine. Not for looks for but flow. If it feels smooth to you, the air will think it's smooth too.



Sterling told me about this next part. Take a tool used for tapping in small wood finishing nails and a little parafin wax used for canning or candle making. Wax the tool on the tapered end (I'm starting to sound like Mr Cake). Tap the tapered end into the booster fittings so they expand a very tiny amount. Don't go overboard. Tap and test in the carb several times until you develop a feel for how much force to use. I like to use the junk air bleeds to tap the boosters back in the carb after the venturis go back in.

<https://www.rx7club.com/1st-generation-specific-1979-1985-18/playing-big-nikkis-1106724/>

If you want to use the canned air stuff to cool the boosters down before they go in, it's what I use. Keep them aligned as perfectly centered as possible. There is no support arm to do this job for you anymore. If they end up too tight, and can't be moved, you expanded them too far. Oops. I'm not sure what to tell you other than maybe heat up the carb body and freeze the booster and try like the dickens to get it back out? Don't heat the carb hotter than it would experience in an engine bay. Don't use a torch either as that is too much heat in too small an area, plus it makes a watery mess. I'm sure you'll figure it out.

Time to drill stuff:

Use your .045" or 118 drill bit to drill these parts: accel pump banjo bolt, accel pump nozzles, primary fuel jets, secondary slow air bleed nickel plated 60s. Actually drill out the tiny jet at the bottom of the accel pump banjo bolt

completely with a bigger drill bit if you want to. I do. This will let enough volume through for both nozzles at .045". Do not drill as large as Sterling suggests at .050". If my 13B is ok at .045", I think your 12A will be too.

Cut a new thick base plate gasket for secondary fuel leak prevention as the new one in the kit is paper-thin. Wait, it *is* paper. 😊 Anyway, yes, even FB carbs will leak a little here. It takes time and effort to cut a gasket, but you have a nice fresh aftermarket gasket to copy. You won't need all the little holes. Just study and punch only the holes you need. I won't hold your hand here. If in doubt, punch them all out. You just risk more leaks is all.

Weld or wire tie the secondary linkage to make mechanical secondaries. I welded all of my boost prepped carbs for longevity, and the simple fact it might be harder to open them under boost (observe the slight secondary butterfly offset that keeps them closed under vacuum and presumably under boost). I felt welding was the safer option, but of course it is less reversible than a simple wiring job.

Now it's time to put this thing back together:

Plunk the main body back onto the base plate. Thick gasket, 10mm head bolts etc.

Fill the secondary vacuum booster hole with quicksteel.

Tap in the OMP nipples with a small hammer and use a box cutter razor blade as a spacer against the boosters. Don't do what Yaw does and only install them a little ways in. This leads to inferior oiling and makes a big oily mess up there. This is not the way the factory does it. They have them right up against the boosters for good reason. If you're worried about the nipples being a restriction, don't be. With hogged venturis, there is plenty of room for air to get past them.

Install the 118 drilled nickel plated 60s and the long air bleeds stamped 45 in the primary side. The reason to do this is two-fold. To recalibrate the idle and transition circuit to work better with hogged venturis, and to get rid of the secondary glitch/hiccup/stumble/delay everyone complains about when going to mech secondaries, which you must do with boost.

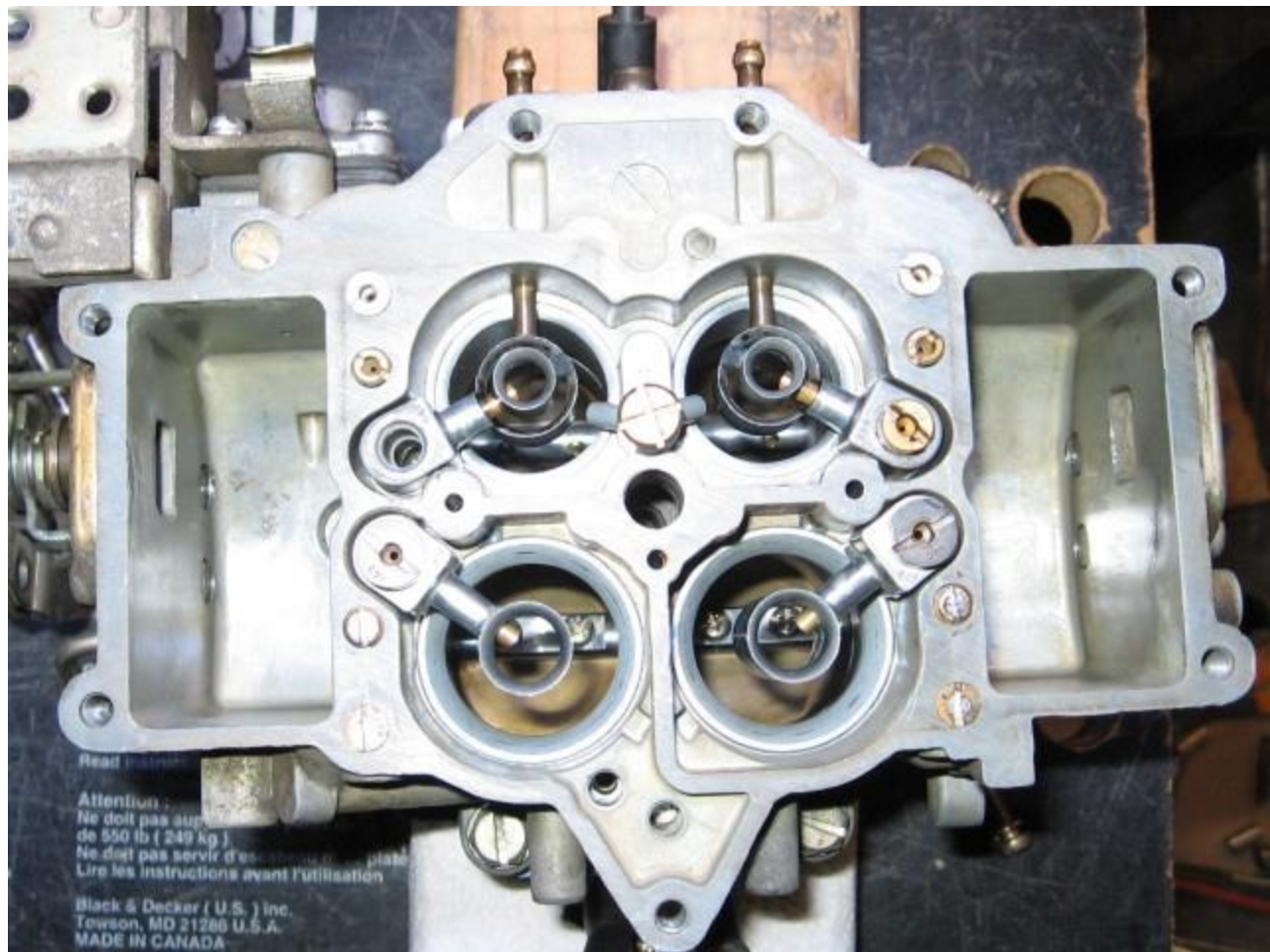
Drop in a checkball and the big brass weight into the accel pump hole. Install the drilled accel pump banjo bolt and nozzle with a new gasket from the kit (or use the old one - whatever you want to use here as the new ones are sometimes cut funny).

Pic of drilled banjo bolt:



Install the primary 60 or 70 main air bleeds the 81-85 carbs come stock with. If you're doing a 79 carb, they came with 90. It can work as I've tried them, but I like the smaller sizes better as they give somewhat better tip-in.

Just a placeholder pic to show an earlier setup with the solder filled slow air bleeds but before the modded secondary main air bleeds were swapped in:



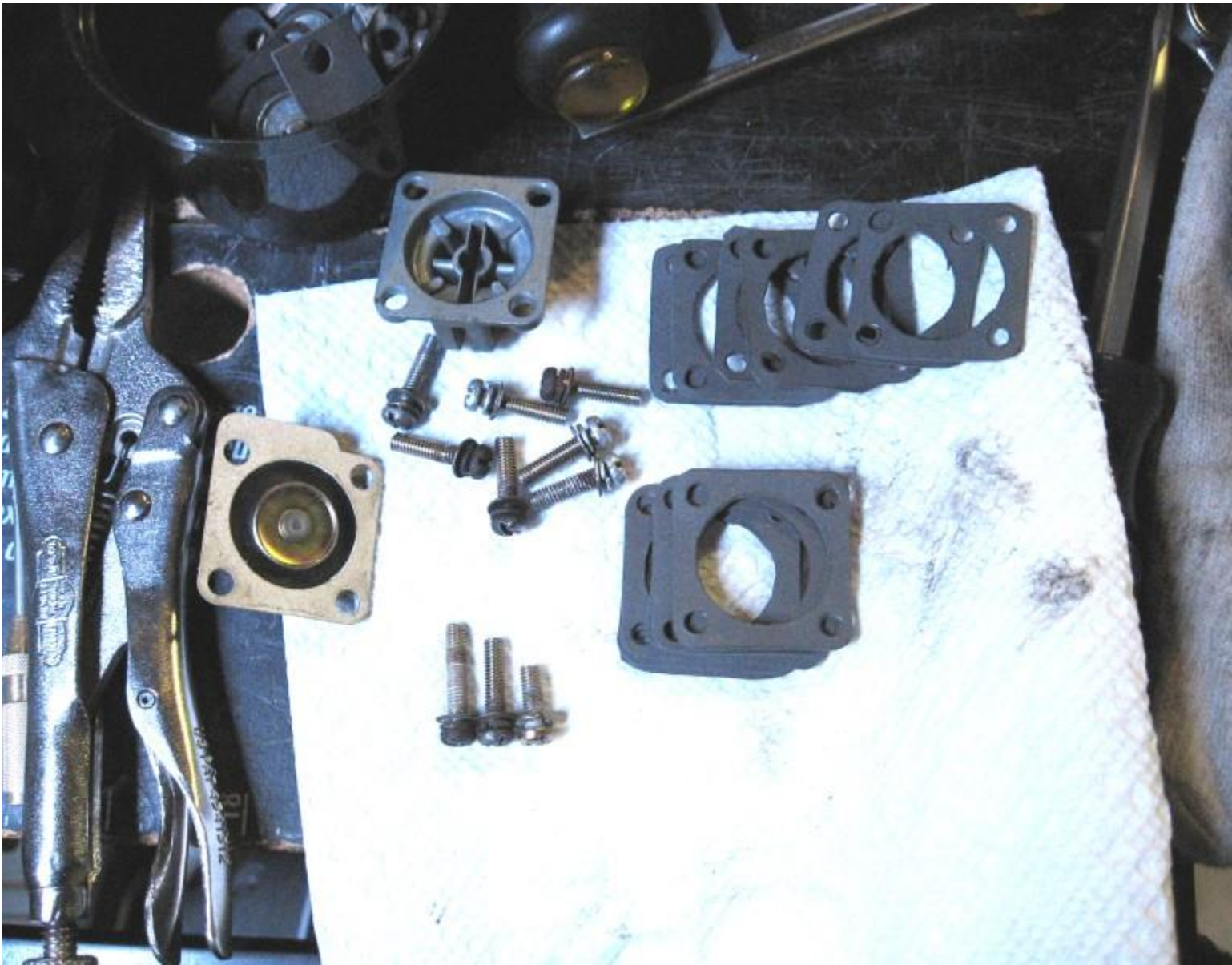
Machine your secondary main air bleeds to accept fuel jets drilled with the 118 or .045" drill bit, or Holley air bleeds at 45. This further reduces or eliminates the secondary hiccup, as too much air is the enemy here, and stock 140 air bleeds are just too big for boost in my experience. You can use a bench grinder to trim the surface height down so the jets will fit a little lower under the air horn. Then cut a new slot to use the same big screwdriver you use for the needle and seats. Then you can drill and tap for the thread pitch* Mazda used on their fuel jets, or the imperial size* Holley used. Either one should be ok. I actually used both; one was a bottoming or blind hole tap while the other had an easy start taper, and the drill bit that came with imperial tapping kit is just a touch smaller than the drill bit recommended for metric. Better safe than sorry. Don't drill too deep as you can end up going all the way through, or the emulsion tube breaks off.

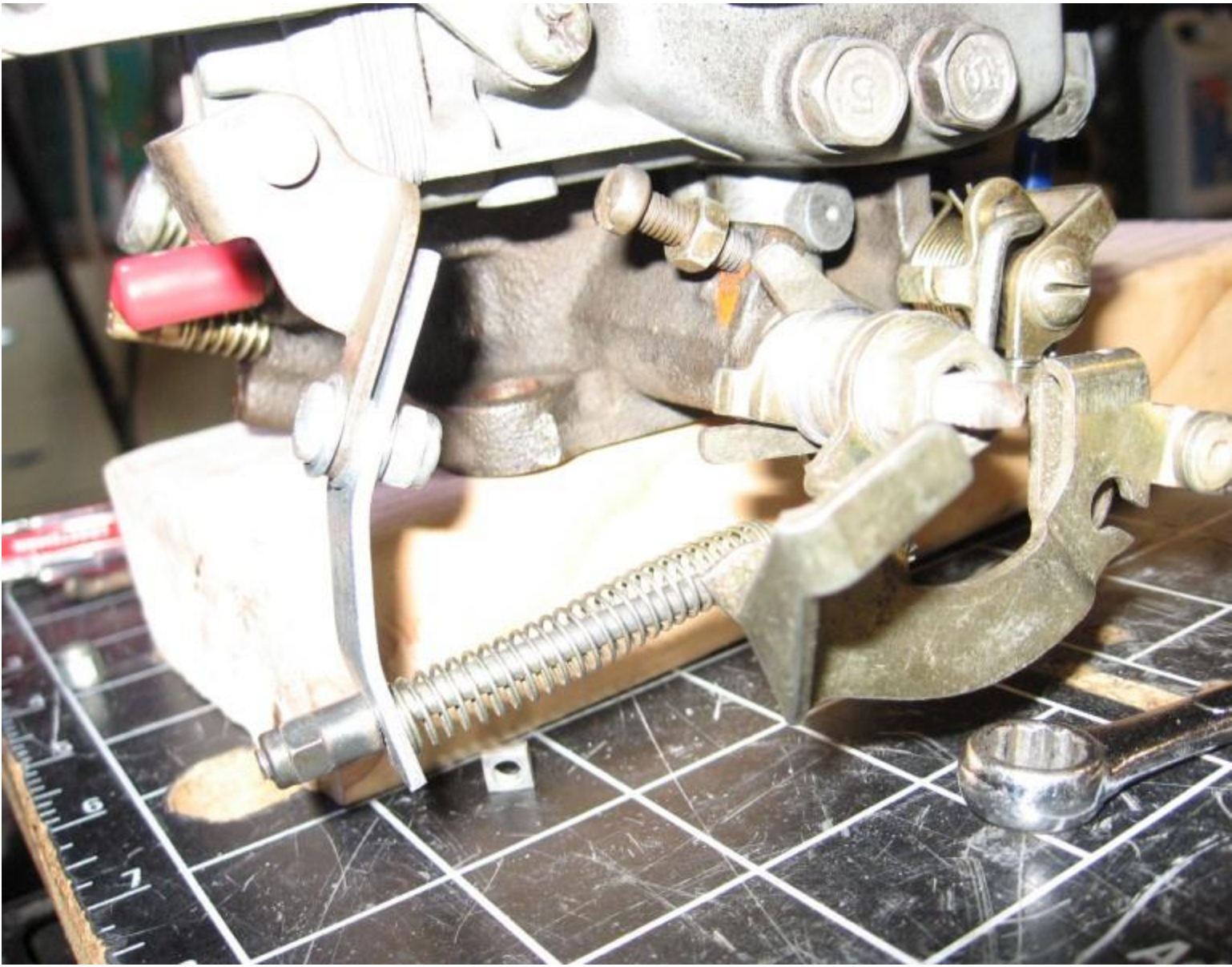
*I'll look up the actual thread pitches later as I don't have them in front of me, but it's not hard for you to figure it out if you're going to do this sort of mod so I don't need to hold your hand. All I had to go on was the fact that Sterling did this mod, so I figured the steps out on my own.

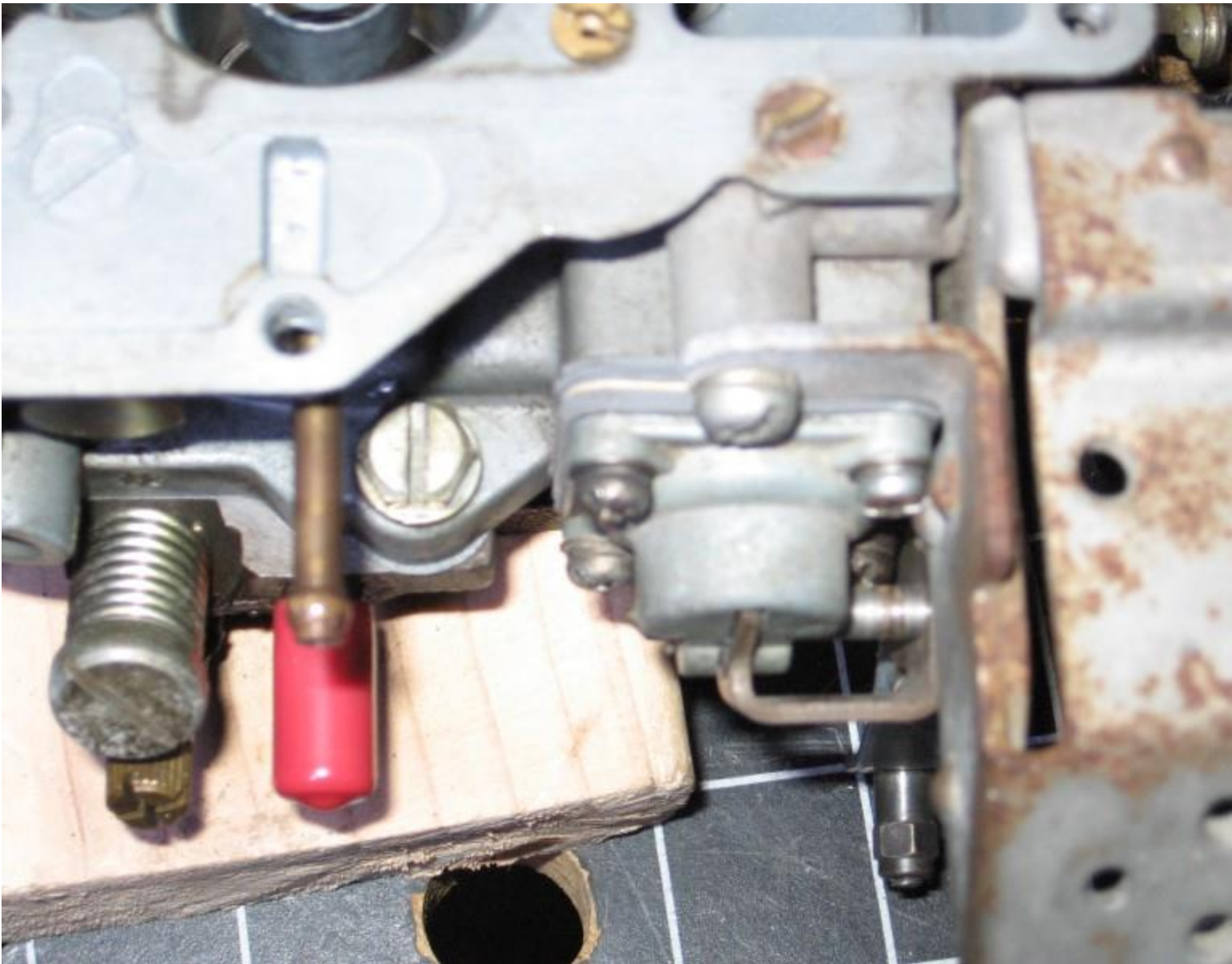
Install your modded secondary main air bleeds and a set of drilled stock 92 jets at 118 or .045", or your Holley 45 air bleeds. Note: 45 or 118 is a good place to start. It's good to have smaller and larger air bleeds on hand for tuning purposes to get rid of the common secondary hiccup but this should be about 90% tuned right out of the box and should reduce the unpleasant delay to a mere minor annoyance or eliminate it entirely.

Do the Sterling accel pump mod: cut 6 (six) gaskets, stretch spring, make a steel bracket; hole spacing 1 1/8", get longer screws, clearance one of the rivets on the throttle cable bracket. The info is here on this forum explained in greater detail by Sterling.

I have a few pics of some early experimental accel pump work on a 79 carb.







Reinstall a check ball and the thin brass weight in the hole in the accel pump diaphragm housing section of the carb. Then wrap the 30 stamped brass screw/jet thing with some teflon tape and screw it in with the same force you used to remove it. Don't over tighten.

Wow, this is getting long. I'll sum up the easy stuff.

Altitude compensator block off plate 1/4" aluminum. A gasket that comes in engine rebuild kits works. Aluminum should be same thickness as flange so original screws can be reused. Or block off the holes your own way.

Get a small torch and some solder. Fill the primary short slow air bleeds and secondary long slow air bleeds with solder. If you don't recall which is which, refer to your pictures. Just a quick note: you're looking for the short brass ones with 150 to 190 stamped on them (usually 170 for FB carbs), and the long ones don't have any numbers at the top. Fill these with solder and install in the secondary side.

If your carb had a richer solenoid or power valve, there were some additional brass fittings on the main body at the secondary side at the top, and one big solenoid fitting down below. Sterling said to reinstall all the brass fittings but you can delete the big solenoid and just fill the gaping hole with quicksteel. It's what I did and it works.

If your carb had the weird spring loaded rods extending from the air horn down into the float bowls at a pair of 40 brass jet-like fittings, I don't know what you can do about those. Time to experiment?

Double check your work before the top goes back in. Depending on your original gasket's condition, either reuse it or throw a new gasket on.

But before you do, you can swap in some new needles and seats, or just new needles if your seats won't budge or they appear to be in good shape. Use a really wide screwdriver. Either way, it will take some break-in time so they can "burnish". I tend to speed up the process by blowing some compressed air into the fuel inlet and letting them bounce carefully for a while. The float heights shouldn't need any adjustment.

Then install the screws, brackets, return springs etc. Pretty easy stuff at this point.

That about does it for the carb.

Just a note: I don't believe in thinning my throttle shafts because I don't believe in this particular mod. It is too easy to screw up, they become very fragile and require a stopper of some kind(?). With boost, I want it as sturdy as possible. Stock shafts don't seem like they are a restriction at all, so they stay stock on all my carb builds. You can ruin yours if you want to. 😊

Hopefully this posts ok. We don't have an edit button anymore.

More recently from:

<https://www.rx7club.com/1st-generation-specific-1979-1985-18/nikki-tuning-wideband-style-1141054/>

You asked about air bleeds. The old thinking was that air bleeds only trim the upper RPM range. It turned out this was incomplete. In fact air bleeds influence the entire RPM range but can affect the upper part because... well duh, the upper range is part of the whole range, isn't it? My personal findings regarding Nikki air bleeds is that it's a 'one size fits all' approach that works. It works every time regardless of NA or boost usage, and I will quote them below.

The only part that can be "tuned" for boost would be the short slow secondary bleeds that come stock as nickel plated 60s. These are perfectly fine for NA use but if boosting you will want to do some work here. I've found that .35mm to .37 is pretty good but it depends on the drill bits you use and what you can get away with while drilling through solder. I would not go any larger than .40 but no one sells pre-drilled any smaller than .50. No one sells brass blanks but I happened to have a couple of old dead Hitachi carbs with usable blanks that I painstakingly drilled out at .20 or .25 by hand a couple of years ago just to try them out. I do not recommend this size as it was too small and lead to some floody issues. I later corrected them by redrilling out to .40 and are now used on NA carbs intended for really huge secondary venturis. Not that it matters all that much for NA, but why not. And I've already got a couple complete sets of solder filled ones in the .35 to .37 range which I'll much rather use with boost anyway.

Whatever you do, DO NOT use fully solder filled bleeds here because the carb uses the tiny hole as an anti-siphon feature. Talk about floody! Yes I've tested this and yes it floods quite spectacularly!

As for the reason we go from stock nickel plated 60s to .35 to .37 is to further speed up when the fuel begins to flow through them secondary emulsion tubes and on out and through the boosters into the engine. I had several spare

primary brass 170s and was willing to try filling them with solder experimentally. Also, my .20 and .25 will break in solder due to how grabby it is compared to brass. And it turns out that .60mm is just too big for a fast response while boosting (the short slow circuit is connected with the transition slots down in the baseplate - take a look and follow the path visually next time you have a Nikki apart). You do not want a lean condition when you open the secondaries in boost because it can pop your engine, and the accel pump mod can only cover so much of the transition... It gets worse with bigger secondary venturi sizes so I like to keep it around 30mm for safety purposes. Any bigger and the delay gets longer, but any smaller and the transcendent power just isn't quite there... even with boost.

120 (118 to 125 range) primary short slows

stock 46 primary long slows

stock 70 main primary air bleeds (some Nikki models came with 60 but can be drilled out to 70 if you have the bit for it)

modded secondary main air bleeds to 80 (machined, slotted, drilled and threaded to accept Hitachi pilot jets drilled to .80mm)

solder filled long slows upper section only -- leave lower section open

stock nickel plated 60 for NA or do as described above for a smaller size between .35 and .37 for boost

This all assumes larger than stock venturis and obviously mechanical secondaries with preferably re-timed secondary opening linkages.