



Yamaha Banshee Racing Pipe Kit T5 Installation Instructions

Included in your NEW Toomey Racing Pipe Kit, are the following parts:

- Right Pipe Body
- Left Pipe Body
- Right and Left Aluminum Silencers with rubber mounts & Stainless Steel bolts
- Uni-Air Filter For stock airbox
- 12 One-Inch snap-in Airbox Vents
- Perfect Jetting Kit with 280 and 270 main jets, 2 jet needles & clips
- Sticker Pack
- 8 Pages of Installation Instructions with Limits of Liability notice

If anything listed above is not found upon opening this package **CALL UPS NOW!** Do not attempt any installation unless you have read and understand the installation instructions, and have made certain you have all of the above listed parts. We check over and verify each box that leaves our shipping department for accuracy and completeness. All claims for missing parts must be made to the shipping company (usually UPS) as the boxes are complete when they leave our dock.

Installation Procedure:

Stock Pipe Removal

Pull all four springs holding the pipes to the engine and the spring that ties the pipes together.

Now you can loosen the 2 hose clamps that hold the rubber joints to the middle curved stinger tubes, (above the carbs).

Now remove the stock mufflers. Each of them is held with three bolts. The most forward bolt may be hard to get to under the plastic fender cover, so you may want to remove the entire rear fender assy.

Next, remove the short stinger tube on either side of the cylinders. Save the black tubular rubber pipe seals because you will use them on the new pipes at the pipe to stinger joint just above the carburetors. The black ones are better than the orange ones although the orange ones are ok to use too.

Now you can remove the bolt on top of the stock pipe that holds it to the stock rubber mount. Now is also a good time to loosen the top bolt on this rubber mount and swing it forward 90 degrees and just lightly snug it down for now. Take off the stock pipes and clean off the cylinder spud onto which the head-pipe flange fits.

Now, look at your lower radiator return hose that runs between the stock pipes, from the bottom of the radiator to the water pump area on the right engine cover. There is a spring (heat shield) wrapped around the hose from about midway, going up to the radiator. It is held in place by a rubber washer glued on the hose at the back of the spring. Remove this washer and slide the spring all the way back and around the corners to where this hose goes into the engine side cover on the right side. Push it right up to the hose clamp. This will help to shield the hose from the heat of the right exhaust pipe. It also might help to loosen the hose clamp on the engine cover fitting a little so you can rotate this hose down and more in toward the engine to get it lower in order to distance it from the right pipe.

Don't forget to tighten up the clamp when you are done. It's pretty safe to say, that if it's covered by the spring, you won't have any problems. If necessary, you could ty-rop the hose to the frame tube to hold it in position more securely, away from the right exhaust pipe. Any small air gap is sufficient.

Installation of the New Pipes

To install your Toomey Racing Pipes, you must first turn the handlebars in the direction of the side you are working on. For example, if you are putting the left pipe on, turn the handlebars all the way to the left. This will get the tie-rod out of your way. On the left side in particular, as you hold the pipe by the center section, (the largest diameter part) up near the mount bracket, put it on the bike by pointing the head pipe part (the small diameter part with the exhaust flange and orange "O"ring) in towards the bike, and at the same time making sure that the stinger (pipe outlet) is held above the choke lever (plunger) back at the carbs.

Then just push the pipe up on the cylinder spud making sure that it is straight and parallel to the spud axis. It may help to put a small amount of grease or oil on the "O" ring in the head-pipe before installing, just to help. Now hook the pipe springs to the pipe and wiggle the pipe to make certain the pipe is all the way up on the cylinder spud.

Next, fasten the pipe at the top to the rubber mount on the outside of the rubber mount with the supplied 8mm Bolt & Lock Nut, and tighten.

Torque = 2.5 Kg-M (18 ft.lbs) Now do the other one the same way.

Installing the Silencers

First you must bolt the mufflers to the long stingers. The long stingers are marked left and right with a stamped "L" and "R", stamped into the muffler mounting flange surface (tube side) (otherwise, you can tell the left one because it is about one inch longer than the right one. The mufflers can be identified by noting that the Toomey Racing aluminum emblem is applied to the outside of the silencer as they sit on the bike, with the small diameter tip pointing to the rear.

Tighten the two 6x16mm Allen bolts to 1.0 Kg-M. (8 ft.lbs.)

Now you place the green Silicone rubber joint seals over the stinger tube and you can slide the stinger tube expanded end over the pipe body stinger outlet and bolt up the silencer rubber mount to the frame just above the silencer, where the rear chrome handle mounts to the frame.



You might want to use a longer bolt for this as the stock one might be a little short. Now you can align and tighten the green silicone seals over the connection of pipe and stinger. Center the Green Seal tube so that both clamps will be on either side of the joint seam so the clamp will snug down on the rubber.

Installation of the Uni-Filter System

This part is really simple because the Uni-Filter is a replacement for the stock foam filter, and installation is the same as for the stock unit. Be sure to use foam filter oil on the new filter as it does not come pre-oiled.

Also, be sure to use a small amount of grease on the foam front seal on the filter frame to insure a good seal and fit.

Install the Uni-Vents in the Box:

First remove the stock box from the frame. Using a 1" (one inch dia.) hole saw, (available at most hardware stores) drill 12 holes just about anywhere you like. We suggest 2 holes at the rear of the box cover right on top, side by side. Next we like 6 holes in two rows of three each vertically down the back of the lower half of the airbox. Then two more, one over the other, on the left side, all the way at the back of the box but still on the side, and the same on the right side rear of the box on that nice flat area. Be sure to de-bur the holes. Any left-over flash on the edge of the holes might prevent the Uni-vents from seating properly. Then just push the filtered vents in the holes. They just snap in.

Now, please remove your Snorkel from the front of the airbox lid, as we won't be needing that anymore.

Since you have your airbox off now, let's do the carbs.



Installing the Jet Kit

First a Tech-Note about our jet kits: For those of you who may wonder, our jet kits are THE most accurate jetting combination possible for this pipe kit. That is why we include it. If we could have used any of the stock parts, we certainly would have. The truth is, the stock parts are simply WRONG no matter how you adjust them. We have special equipment and technology by which we can precisely determine the exact fuel needs at all throttle positions, and loads, for exactly the following equipment combination;

- The Toomey Racing T5 Pipes
- Toomey Racing Silencers
- Stock carbs
- Standard or Boyesen Reeds on the stock reed block
- Boyesen RAD-Valves
- Standard cylinders, and that's IT!

If you have any other parts you want to use, like different silencers or carbs or something like that, these jets might not be accurate and we couldn't possibly be responsible for the results, not to mention your power could be down.

Unless you are a carb expert, it is my recommendation to re-jet only one carb at a time. This way you will positively avoid one of the most common mistakes, --reversing the throttle slides. They really run terrible from zero to about 3/4 throttle when the slides are in backward! It runs like the choke is stuck on. If your bike runs like this when you are done, that's probably what it is. Please read ALL of this to insure everything goes well.

OK! Let's do it!

First, wash your bike really well, especially around the carbs. When you remove them, you don't want dirt getting in the engine or the carbs. Second, wait for it to dry, you don't want any water in the engine or carbs either!

DO NOT SMOKE OR HAVE ANY SOURCE OF SPARK OR FLAME ANYWHERE NEAR YOUR BIKE OR WORK AREA. YOU WILL BE HANDLING RAW FUEL, AND THE DANGER OF FIRE IS GREAT! ALSO, WORK ONLY IN A WELL VENTILATED AREA AS FUEL FUMES ARE TOXIC.

Turn off the fuel petcock and disconnect all the hoses and fuel lines. Loosen the clamp on the rubber intake manifold, at the front of the carb, and the clamp connecting the carb to the airbox.

Unscrew the carb top and pull out the slide and needle assembly. Now you can remove the carb body from the engine.

Watch out for the short black rubber hose that connects the two carbs. This is the tube that communicates the choke from the left carb (the only carb with a choke) to the right carb so the engine will see a choked mixture in both cylinders.

Take it over to your nice clean workbench and remove the float bowl and the float bowl gasket. (Don't rip it! they are hard to replace especially on a Friday night!) Some fuel will run out so be careful.

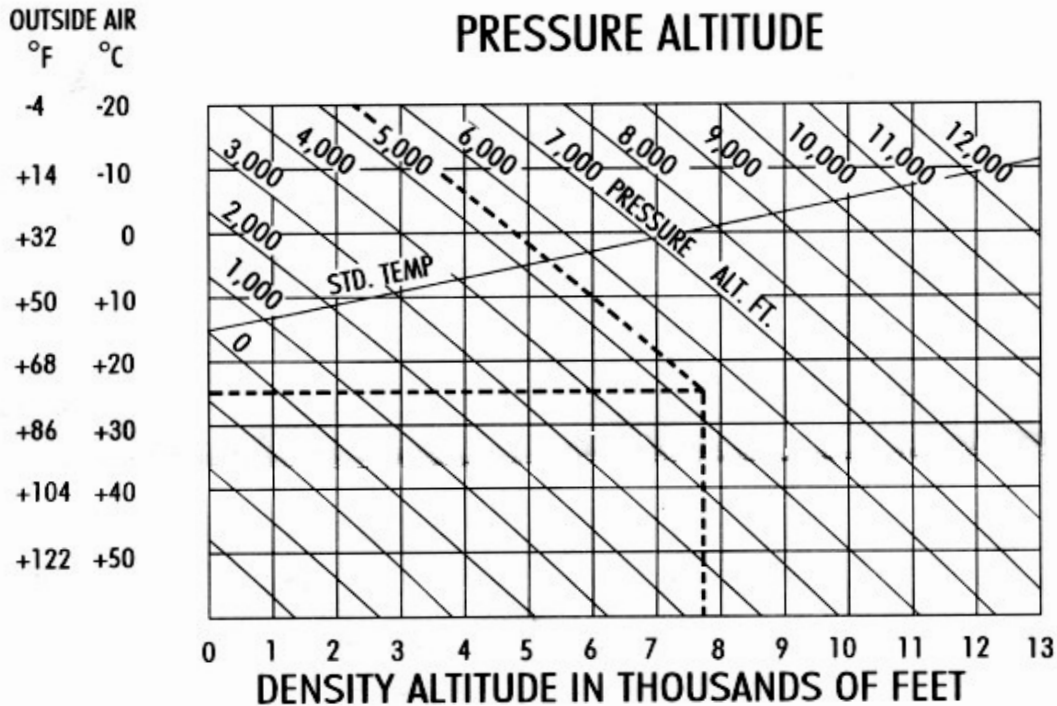
With the float bowl off, turn the carb upside down and there, right in the middle will be the main jet. (the 1/4" long brass hex piece with the hole in the middle, and a number either on the end or the side, usually a #220)

Use a 6mm wrench to unscrew this jet, and replace it with the #280 jet found in your Toomey Racing Jet Kit.

NOTE:

The #270 Jet is for operation higher than 2500 feet in **DENSITY altitude**. Density altitude is actual physical feet above sea-level, corrected for temperature, and it is the altitude at which the engine thinks it is running. For example, at 3000 feet actual, on a 104 degree temperature day, according to the chart below, you go from 104 on the left scale, and follow the chart to the right to meet with the 3000 ft diagonal line, then follow down to the Density altitude of approx 6500ft. **THIS** is the altitude you will be jetting for. So you can see, a sea-level jet is quite rich there.

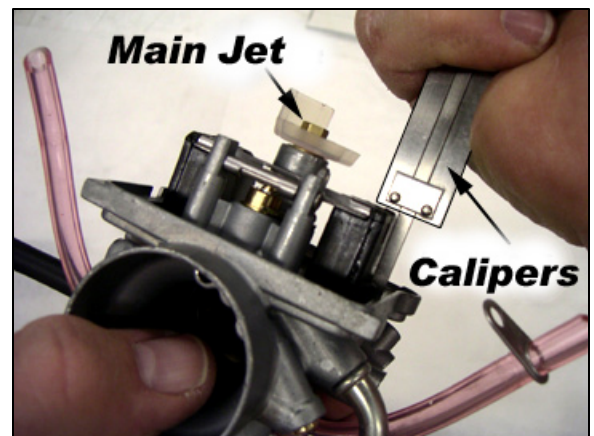
The 280 is the sea level setting up through 2500 feet. On particularly cold days or at very low altitudes (winter in Glamis, which is 200ft BELOW sea-level) you may need a #290 or #300. Conversely, at high altitudes, above 3000 feet you may need a 260, 250 or even less depending on how high you are and how hot it is. We haven't tested at these altitudes, so any recommendation from me would just be a guess. You would do far better to use the chart, or test it yourself when you are there.



Adjusting the Floats

Now you must verify the float level setting, as they are frequently out of adjustment and any bouncing around that the bike does just makes them go off more. They should really be checked at least every 3 months or sooner. If you are racing, set them before every race, when you do your normal pre-race maintenance.

Hold the carb with the throttle bore vertical and the float hinge at the top so that the floats can swing freely. Swing the floats with your finger to verify they are free and operating properly. Now, just rotate the carb towards the upside-down position only until the floats just sit down on the float needle valve. Any more rotation will cause the weight of the floats to push down on the spring loaded float needle valve and you will get an erroneous reading. The proper angle is about a 45 degree angle from vertical.

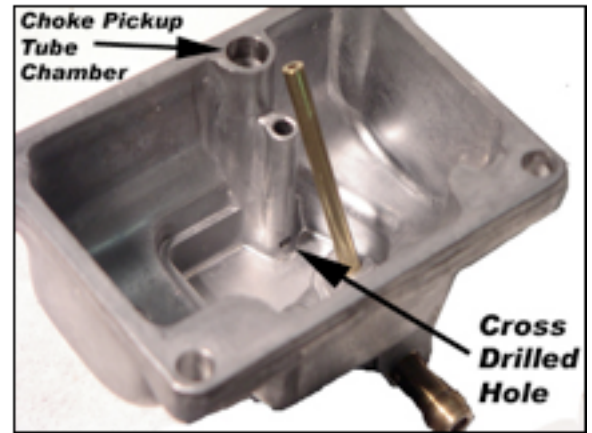


At this point with either a metric measuring scale or the tail end of a pair of calipers as pictured, (or other such accurate measuring device) measure the distance from the float bowl gasket surface -- WITHOUT THE GASKET-- to the top of the float itself.

This measurement should be 21mm exactly on both floats. If you get some other reading just bend or tweak the float arms until you get this setting. Just don't bend them sideways so that they may interfere with the float bowl itself. Check for clearance when you are finished.

When you are satisfied they are perfect, replace the float bowl gasket and float bowl.

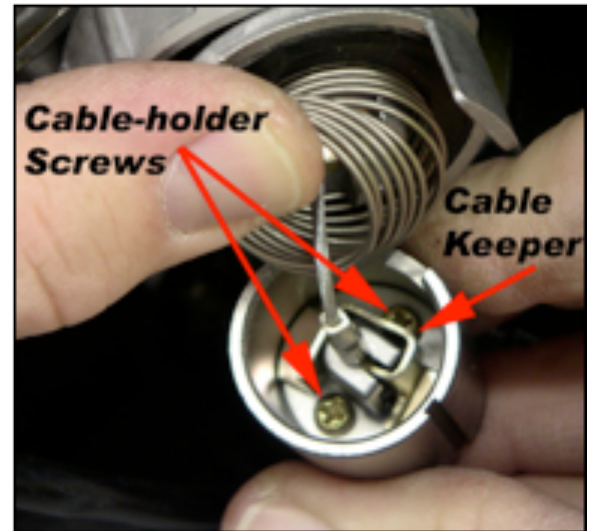
Be SURE the left bowl is on the left, it is the only one cross drilled to allow fuel to the choke! >>>>>>>



Now let's do the needle before you put the carb back on the bike.

Gather up the throttle return spring with your fingers and hold it out of the way as you turn the slide upside down and try to shake loose the gold colored cable keeper out of the slide.

After you have achieved this, you can now slide the throttle cable out of the cast aluminum holder in the slide. Now, unscrew the cast aluminum holder inside the slide as the needle is beneath this.



Once out, simply push out the needle from the bottom-up, and replace it with your jet kit needle with the supplied "E" clip on the FOURTH GROOVE. We count down from the grooved end of the needle.

After you place the needle back in the slide, replace the aluminum cable holder and tighten the screws (gently).

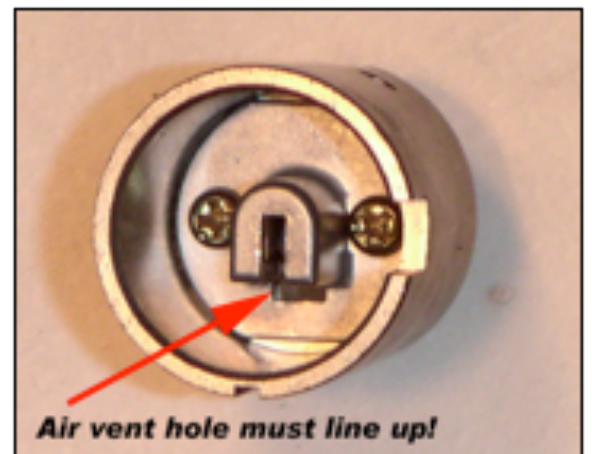
NOTE:

There is a hole in the bottom of the slide on the inside as you look down from the top. Also notice there is a passage way on the aluminum cable holder too.

These must lineup!

The purpose of this passage is so that the slide has an air vent to the top of the carb. Otherwise the slide would act as a piston in the cylinder and compress air above it.

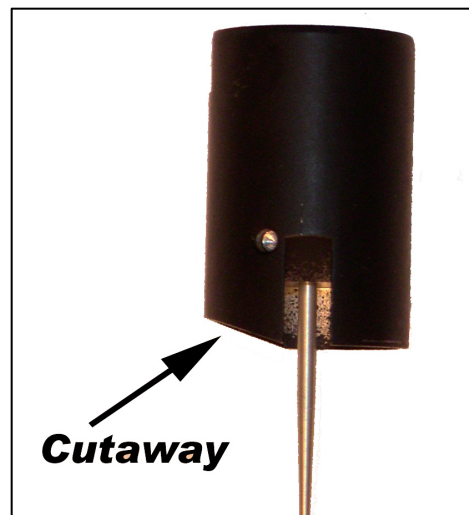
Once the compressed air blew out down the sides of the slide between the slide and the slide bore, the slide might stick on the way down because of the resulting vacuum created.



Please line these holes up!

While holding the throttle return spring, put the cable back in the slide, as well as the gold colored cable keeper and release the spring. Reinstall the slide in the carb making sure the "CUTAWAY" (the slight angle cut on the bottom of the slide) faces the rear of the bike. AND that the guide pin groove (the thin groove that goes from top to bottom on the side of the slide) lines up with the guide pin in the slide bore (in the carb).

The grooves will be on the right side of the left slide and on the left side of the right slide. (ie. the grooves will face each other in the installed position, with the "cutaway" facing the rear of the bike) The other "notch" on the opposite side of the slide (about a quarter inch wide by three eighths high with a forty five degree angled ramp) is the Idle screw ramp. This is only used with normal idle screws, as in our Twist Grip Kits. The stock idle control of course being the white knob on the top of the T.O.R.S.(Throttle Over Ride System) boxes on the top of the carbs.



Now reinstall the carb in the manifold and airbox boot, and tighten the clamps. Now do the other carb the same way. When you're finished, be sure you have the black rubber crossover hose connected between the two carbs properly. If this hose is inadvertently knocked-off, the right cylinder will run extremely lean and won't idle properly, and will probably seize soon.

Verify your throttle cable is working properly by cycling it a couple of times and making sure it lets the slides come all the way down.

You will want to synchronize the two carbs too, after they have been off the machine. The best tool I can recommend for this is a tool called a "UNI-SYN" available at most good auto parts stores. It's fast and accurate. Yes, Synchronization is very important.

EVERYTHING is important.

Carb Sync Procedure

I will assume the throttle handle, cables and the carbs are in perfect condition, and clean.

Synchronization starts with the idle screws backed all the way out so that the throttle valve (slide) is sitting on the bottom of the carb. You will aurally hear the slides bottom out, with a click sound.

You may have to remove the air box, to have the ability to see the slides, or to get your hand in there so that you can put a fore-finger and pinky on each slide at the same time to feel the movement in the case that you cannot see in there.

We use a tool called a "UNI-SYN" which is a hand held vacuum gauge usually available at auto parts stores, or Volkswagen shops. With this tool, you hold it up to the back of each carb to see visually the vacuum level on the attached gauge, but if you don't have one, the following manual method will get you VERY close, if not perfect.

Assuming the slides DO bottom out, and there is normal play in the throttle twist handle, (at least an eighth of an inch of rotation), cycle the throttle a few times forcibly, to full throttle and zero, back and forth, to fully seat the cables. Then... Gently twist the throttle open from zero to 1/4 throttle as you either see or feel the slides to assess how they open, evenly?, or does one lead and the other lag?

If so, using the cable adjuster on top of the carb, adjust the lagging carb, to match the motion of the leading carb, until the slides open together. This can be aurally confirmed by the sound of ONE carb slide bottoming out (good sound, "CLICK!") when the throttle is snapped closed, as opposed to the sound of two independent slides ("Clip-clop" -not good).

When you have them opening in synchronous, tighten all the adjusters, and start the bike. Warm it up, and hold the throttle where you like it to idle, by hand, and by using the cable play adjuster up at the twist (or thumb) handle, open the adjustment until the elimination of play, and subsequent pull on the cable makes the bike idle where you like it. There will be no play in the system at this point, but you are just having this adjuster hold the idle for you, while you set the idle-screws.

Now, screw-in the idle screws just until they have an effect on the idle, then back off 1/8 turn, or if you can, set them right at the moment where they will begin to affect idle. Now do the other side the same way. When complete, loosen the cable adjustment up at the handle to restore play in the handle, lock it down and you are done. The idle should have stayed where it was, because now it is being held by the idle screws, not the cable. NEVER use this cable adjustment to hold the idle for you, except during this process, because there is no play in the cable. There MUST be play, at all times.

PLAY in the cables is really important for safety, so insure there are no routing problems, or snags that affect the idle when turning the handlebars from side to side. If there are, fix them BEFORE you go ride.

This is the final carb setting check list:

1. Needle on the 4th groove
2. #280 Main jet (sea level, #270 for hot days or high altitude <2500')
3. Float setting = 21mm
4. Aircscrew at approx. 1.5 turns out from full in. (Effective range .5 to 2.5)
5. Standard pilot jet (#25)

These ARE the right settings! If it's not running right, IT'S NOT THE CARBURETORS!!
It's in the installation! (you did it)

**If you have any questions or comments relating to OUR
products, please call or email**

**Technical Support:
(805) 239-8870 - tech@toomey.com**

Some things to think about next...



Banshee Clutch Kit
\$105.99

Boyesen Reeds (2 sets)
\$59.98 for both



Hush Kit v3.0
Normal or Spark Arrested
\$139.99 - \$199.99



Twist Grip Conversion Kits
(Thumb type too) \$ 72.99



***** **Warranty Limitations** *****

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The remedy defined in this statement shall be the Purchaser's exclusive remedy against Toomey Racing USA. In no case shall Toomey Racing USA be liable hereunder for any consequential damages.

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