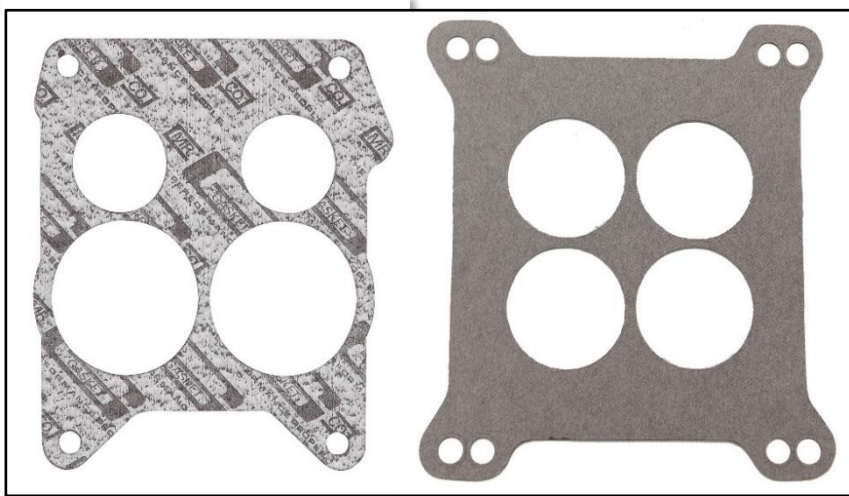


# Holley Sniper Quadrajets EFI On Pontiac Engines

By Larry Klusza, 2023

Pontiac factory four-barrel intake manifolds transitioned to a Quadrajets-specific configuration starting in 1967 and continued through 1978 when Pontiac ceased its own engine production. Leftover engines were used in the 1979 Trans Am until the supply was exhausted. Although the Pontiac specific turbo 301 was still around at that time, it's not relevant to this article.

The standard Pontiac cast iron manifolds have quite good air flow and are very well suited for street performance applications. In most cases, the only reason to switch to an aftermarket aluminum version is to save weight. So, if you wanted EFI but were stuck with the factory cast iron spread bore manifold, then you were forced to use an adapter. Cheaper than an intake manifold? Certainly. But adapters, whether square bore to spread bore or vice versa, are ugly and often inefficient. Then there is the issue of reduced hood clearance they bring with them.



Here are two carb gaskets. Spread bore (left) and square bore (right). You can immediately see the reason why you must match the carb or EFI unit to the manifold, or else employ an adapter of some sort.

Photo 1

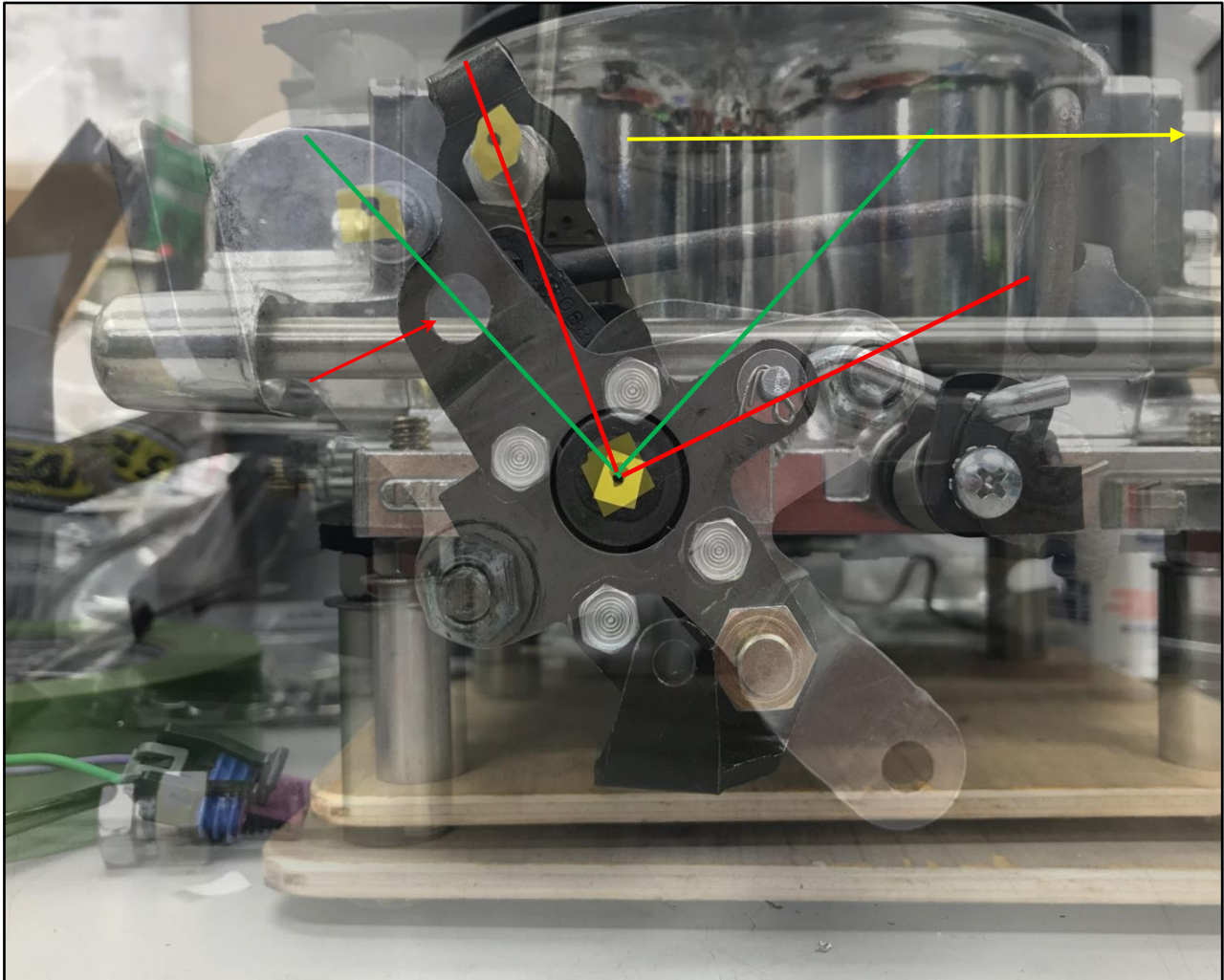
My stock 1970 GTO has the base-level 350 hp, 400 cube engine and I really enjoy the challenge of trying to make any modifications to the engine bay as unobtrusive as possible. I wanted EFI, but also wanted to maintain the stock dual snorkel factory air cleaner under the stock hood, with no visible fuel return lines, regulators, etc. So, I was very excited when Holley introduced their integrated fuel pump/regulator with return and float assembly (mine used model [12-303](#)) along with their [Sniper Quadrajets](#) line of EFI units. Obviously, the bolt and venturi patterns were no issue and height dimensions were comparable to a Q-Jet. The commitment to EFI was expensive enough, so not having to buy an aluminum intake manifold in addition to everything else was a bonus!

However, when installing the Holley Sniper Quadrajets EFI, I encountered an issue which I believe to be specific to this EFI unit on Pontiac engines. The issue is with the alignment of the throttle cable from the TBI unit to the throttle bracket and the arc of the throttle lever and cable as it transits from idle to WOT (Wide Open Throttle).

Most Chevrolet, Oldsmobile, and Buick throttle cable brackets bolt to the carb base using either one or two of the rear Quadrajets carb studs. So, if you raise the carb with a spacer, the bracket goes with it and the relationship remains the same. However, the Pontiac throttle cable mounting bracket bolts to the intake manifold instead of the carb baseplate. Raise the carb with a spacer or adapter, while leaving the throttle cable bracket on the intake manifold, and the linkage

geometry will change drastically. For me, this became problematic. The Sniper Quadrajets differs substantially from both the regular Sniper EFI and the Rochester Quadrajets carburetor. Instead, it more closely resembles Holley's model [4175 Quadrajets replacement](#) carb. I'm sure that folks who have the standard Sniper had little or no problems or I believe the Pontiac community would have heard more about that.

So, I sent an email to Holley Tech Support asking about a Sniper Quadrajets-specific throttle bracket. They replied that they don't have one. With regards to GM fitments, it seems to be a "Chevrolet" world. Apparently, Holley never tested this on a Pontiac. If they had, I think they would have seen what I did.



*Photo 2*

Shown above, I've superimposed two photos; one is my Pontiac Quadrajets (light color throttle lever) and the other is the Holley Sniper Quadrajets EFI (dark color throttle lever). It shows the arc of travel from idle to WOT (Wide Open Throttle). The green lines are from the Q-jet. The red lines are from the Sniper as it comes out of the box. As you can see, there is a substantial difference. The yellow arrow indicates the direction of travel by the throttle cable. With the stock Pontiac cable mounting bracket on the intake manifold, I couldn't reach WOT at the shallow angle of the red line. At that point, the cable was trying to bend the throttle shaft back instead of rotating it to open the throttle blades completely. There was unacceptable misalignment in the horizontal plane as well. Compounding this issue is the fact that the Sniper also requires the use of a 1/4" thick insulator gasket to protect the throttle body's integrated ECU (Electronic Control Unit) from excessive engine heat.

Obviously, the easiest solution is to go with a completely aftermarket bracket assembly like the TrickFlow unit pictured here. This and similar units are available from places like Summit Racing, Jegs, Amazon, eBay, etc. These brackets use one front and one rear carb stud for mounting. When using any spacers, the bracket moves up or down with the carb or throttle body, maintaining cable alignment. An additional benefit is the relocation of the return springs to the front, thereby reducing throttle shaft bushing wear.



Photo 3

There are also other styles that attach across the back of the carb or throttle body, using both rear studs. Designed for the original Quadrajet carb, they won't work on the Sniper Q-Jet as it has the fake front and rear "fuel bowls" that hide the injectors. Just like the Holley 4175 carb it resembles; fuel passes from the front injectors to rear injectors via a transfer tube. These fake fuel bowls block any bracket from spanning across both rear studs.

As stated earlier, Lokar has their own Sniper throttle bracket solution. One that has promise is part number: [TCB-40HS](#). This bracket locates on the left rear stud only. Though designed specifically for the standard Sniper, it may work on the Sniper Quadrajet version as well. However, bear in mind that Lokar's brackets are designed to work with their throttle cables only, so there is that additional expense to consider. My goal, then, was to find or fabricate a throttle cable bracket that would reproduce the Pontiac throttle geometry while retaining a less "blingy" somewhat factory-like appearance as much as possible.

At the time of this writing, internet searches resulted in almost no instances of anyone installing the QuadraJet style Sniper on a Pontiac. Most of the information was in the form of ads and marketing blurbs for the unit itself. However, I did come across an in-depth 2019 installation article from MotorTrend online. It detailed a Sniper QuadraJet install on a [1970 Corvette](#) with a stock cast iron manifold. Corvettes of that year use a simple throttle bracket that bolts to the rear corner of the carb, that utilizes a clamping mechanism for the cable like Pontiac does – very encouraging.

Figure 1 shows the bracket I bought from the [Corvette Central](#) site, though you'll likely find it elsewhere too. Out of the box alignment would put the connection to the Sniper throttle lever in the lower hole (Pg.2, Photo2, Red arrow).

That location would be in the preferred arc of travel but a little closer to the throttle shaft centerline than the Pontiac, requiring more pedal pressure to operate the throttle. Installed that way, I thought the increased effort made it uncomfortable to operate for long periods and barely accommodated the travel available from the stock Pontiac cable. Also, the Pontiac cable jacket end has a little ridge around it to locate it in the correct position on the bracket for the clamp to secure it. Although the Chevrolet bracket is similar, you might have to grind off the little ridge to allow the Pontiac cable to be adjusted properly.

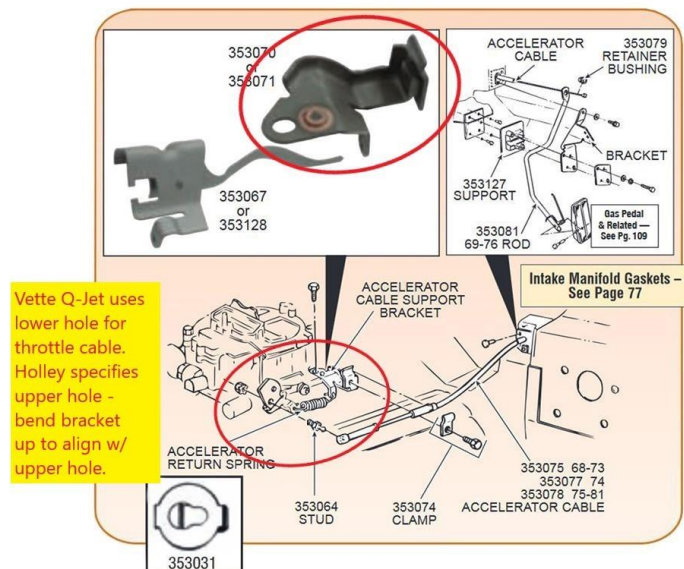


Figure 1



So, I ended up bending the Corvette bracket up slightly, tilting it so it would point to where the upper hole would be on the QuadraJet. I then fabricated a little throttle lever extension plate to relocate the cable end to that point to provide the correct geometry, using the hole favored for Corvettes for a bolt to secure the plate to the lever.



Photo 4



Photo 5

Photo 5 shows a little hole below the ball stud. That was the result of a miscalculation. However, I decided to use it to shift the return spring attachment point forward rather than the usual rear location. The reasons for this are to reduce throttle shaft bushing wear and ensure the throttle position sensor (TPS) returned to "0" consistently.



Photo 6

It was about this time that it became apparent my stock Pontiac throttle cable lacked the stroke length to work in the new position with its greater travel arc. That meant that I'd be going with an aftermarket throttle cable after all. I happened to have a leftover Universal Lokar cable available from my old '38 Chevy street rod. You can also use one of those twenty-dollar equivalents from Amazon. It's a better idea too, because you still must perform a few mods to make it work that I wouldn't want to do on an expensive Lokar unit.

I started with the throttle pedal (Photo 6). I ground off the back of the stud and removed it. I then substituted a 10-32x1" screw to take the clevis. I also put some heat shrink on the threaded part of the screw to protect the clevis from premature wear, then drilled the clevis to fit. In the finished version, I also substituted a nylok nut for the two jam nuts shown in the picture.

Next, the cable housing needs a bit of modification to work. I fashioned a flat mounting plate to mimic the factory Pontiac flange and attached it to the firewall end of the cable housing. Not seen in this picture, I had to round off the hex of the engine side nut a little so it would pass through the square hole in the firewall.



Photo 7

This picture uses a similar cable assembly for illustration. On the throttle body end, I discarded the two adjusting nuts. From the base of the hex portion, I measured out the width of the bracket retaining clamp, which was about 3/4 of an inch, and cut off the rest.

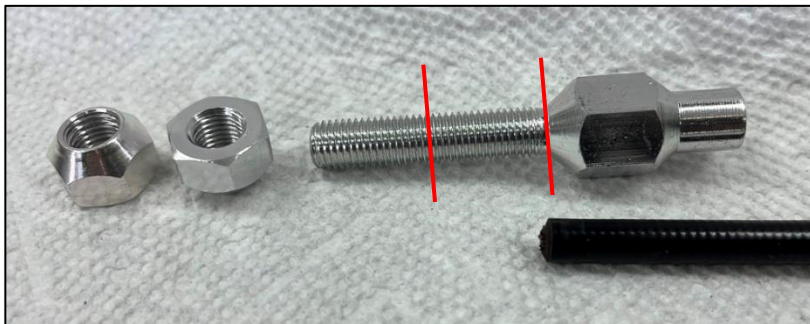


Photo 8

Photo 9 shows the finished piece mocked up in the throttle bracket clamp. I ended up putting two pieces of heat shrink over the threaded portion so the clamp would have something to bite on when it was tightened. Also shown is the piece of Teflon cable liner I salvaged from the old Pontiac cable. Although the cable housing itself is teflon lined, the aluminum fittings on both ends are not. I measured the distance and cut a piece of the teflon liner. I then drilled out the fitting so that the teflon liner just slides snugly into it and is flush with the open end. I performed that same procedure for the throttle pedal end of the cable as well (see Photo 7). Doing so ensures that the entire length of the cable housing assembly is lined.



Photo 9

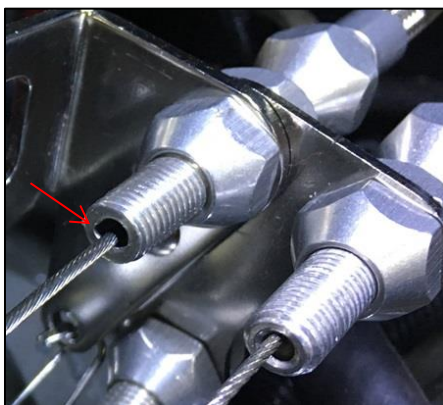
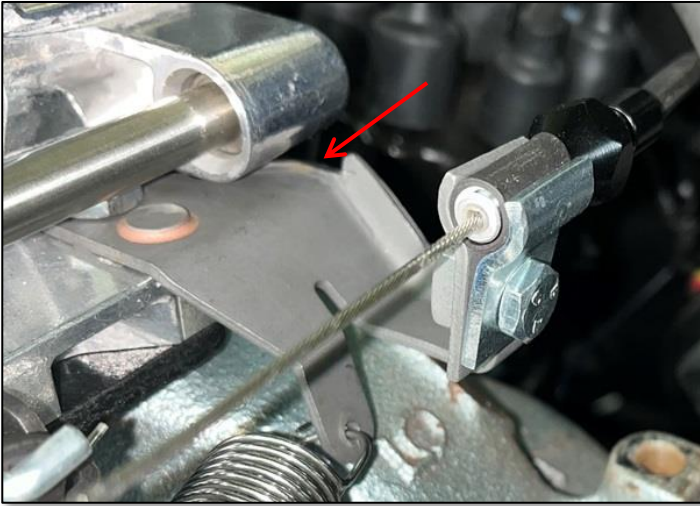


Photo 10

Why go through the trouble of adding the teflon liner? The arrow in photo 10 illustrates what happens if you don't, even on an expensive Lokar cable like the one in this picture. Left uncorrected, the sawing action of the steel cable will eventually wear a groove in the unprotected aluminum portion of the fitting. If the groove goes deep enough, it's possible for the cable to catch and bind, potentially resulting in a stuck throttle (Yikes!). Inspectors performing the NSRA's ([National Street Rod Association](#)) free "[Safety 23](#)" inspection service have acknowledged this as a potential trouble area.





This photo shows the assembly mocked up with the heat shrink applied to the threaded part. The arrow shows where a small portion of the bracket must be ground away due to interference with the fuel transfer tube.

Photo 11



Photo 12

Ultimately, this setup utilizing 1970 Corvette parts and a custom, cut-to-length throttle cable worked nicely. Relocating the cable attachment point on the throttle lever allowed for full travel of the gas pedal. The action is silky smooth and reaches 100% WOT without binding. Once painted and installed, it basically disappeared yet corrects the differences in geometry between Chevrolets and Pontiacs. It also contributes to presenting the somewhat stock appearance I was looking for. The addition of a quick disconnect fitting to the cable end also allows for fast throttle adjustments when necessary. To the untrained eye, what can be seen with the air cleaner assembly in place looks very factory.

Was it all worth it? If you have money and fabrication's not quite your thing, a new manifold and throttle bracket works fine. However, this bracket and cable arrangement is still cheaper than a new intake manifold and I do like the smoothness of the pedal action as well as the look. For me, I think the results and the accompanying sense of accomplishment were worth the effort.

Though they're billed as completely self-learning systems, we often find ourselves spending more time than we'd like tuning and troubleshooting EFI installations. Any time you deviate from an original factory design, things like that are to be expected. Nevertheless, throttle linkage issues like what I found are not. If the product was designed as a replacement for something as specific as a Quadrajets carburetor, then more attention to its applications should have been made by the manufacturer.