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Rochester Quadrajet Throttle Arm Modification for the 200-4R Swap

Economy and performance - the Rochester Quadrajet offers the best of both worlds. Small primary bores with triple venturis offer excellent throttle response and fuel economy. Huge secondary bores hold the potential for massive power.

A TH200-4r overdrive transmission also bridges the gap between performance and economy. Its overdrive gear ratio makes low rpm, high economy highway cruise possible even when sport-performance 3 series rear gear ratios are in the rear differential.

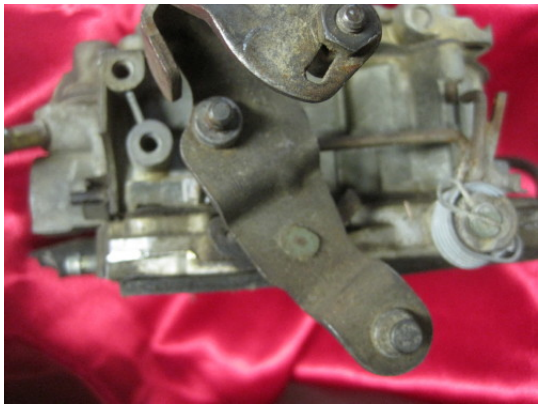
It is natural therefore to want to combine these two performers in our street machines.

The 200-4r automatic transmission senses engine load by throttle position, using a throttle valve (TV) connected via a cable to the carburetor throttle arm. As the throttle is opened, the TV cable is pulled, which in turn depresses the throttle valve and increases line pressure in the transmission.

An issue arises in that not all Quadrajets came from the factory with a throttle arm capable of holding the TV cable of a 200-4r transmission. Early Buick Quadrajets, for example, typically lack the lower throttle arm provision for detent or TV cables. The detent cables from TH350 transmissions for these Buick applications ran through the firewall to the gas pedal instead of the carburetor throttle arm.

Here is an early Buick throttle arm without TV capability:

Exceptions, of course, can be found in the late 1970s Quadrajets and all through the 1980s. For example, some Buicks in 1979 had a lower arm on the throttle shaft for the TH350 detent hookup. Here is a picture:



So what options do we have that allow us to use a non-TV capable Quadrajet with a 200-4R transmission?

<u>Option 1:</u> Swap out the primary shaft

If the "Original" appearance of your Quadrajet throttle arm is not important to you, then you can swap a TV capable primary throttle shaft into your carburetor. Keep in mind that the different models of Quadrajets (4M, M4M, E4M) had different length primary shafts so you will want to get a shaft from the same model.

To swap throttle shafts:

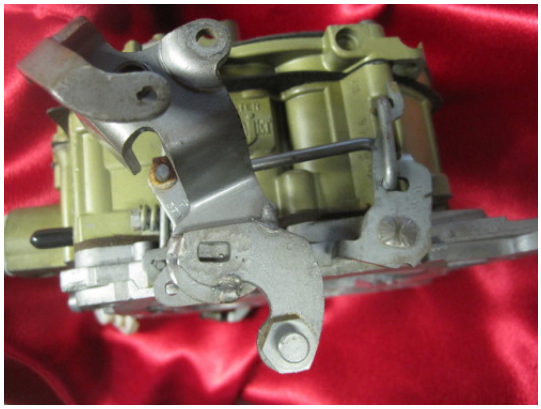
1. Remove the baseplate from your Quadrajet
2. From the underside, grind down the staked ends of the throttle plate retaining screws flush with the shaft. **WARNING:** *if you don't do this you will break off the screw head and the shaft will require drilling and tapping.* **NOTE:** some *early 4MV models will require you to remove primary AND secondary throttle plates - both shafts must be removed to replace one.*
3. Remove the retaining screws and throttle plates.
4. Remove the old primary throttle shaft and install the new.
5. Reassemble using loctite on the throttle plate screws, and be careful to properly index the plates in their bores.

<u>Option 2:</u> Keep the stock primary shaft but add a TV arm

To keep the throttle arm on your Quadrajet looking as "Stock" as possible, scavenging a lower TV arm off a donor throttle arm and welding it onto yours is a good option.

Find a donor throttle shaft with the lower TV/detent provision.

1. Grind the mushroomed retaining flare off the donor shaft and remove the throttle arm from the shaft. **Note** the rectangular keyhole that indexes the arm properly on the shaft.
2. Cut the lower TV arm portion off of the donor arm, leaving only this keyhole and lower TV arm for you to work with.
3. Grind the mushroomed flare off your "good" throttle arm. Apply heat to this area of the good arm so the outline of the keyhole slot becomes visible.
4. Lay the donor TV arm on the good throttle arm, aligning the rectangular keyslots, and clamp in place. **NOTE:** *Alignment here is critical. You must get the TV arm aligned properly with the keyhole on the shaft for the arm to actuate the TV valve properly.* You may want to do some grinding/sanding to round off edges and make the donor piece fit well on the "good" arm.
5. Once aligned properly, tack weld the donor arm in place. Like so:



6. Now weld from the center of the throttle shaft, in the rectangular key slot, working outward to fill the key slot. **NOTE:** *Be sure to weld the shaft to the arm. The weld is what will be keeping the throttle arm from falling off because we removed the mushroomed flare.*

Option 3: have someone do the work for you.

Everyday Performance LLC has modified many Quadrajets for use with the 200-4r transmission. We will be happy to discuss your options. To contact us,

Find us on the web at www.everyday-performance.com

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