

More TV Cable setup info:

From Jakesperformance.com/TV_Cable_Setup_Info.html

Everybody has heard about the importance of properly setting up the TV cable to ensure you don't damage your GM overdrive transmission. This is absolutely true and it IS an important step in properly installing your overdrive transmission. Our goal is to ensure you can make this happen with minimal hassle. We've helped hundreds of enthusiasts do this successfully.

While it is important it is NOT rocket science. The transmissions that use the TV systems started in the mid 70's and have been obsolete in OEM vehicles for over 15 years. The average hotrodder can easily accomplish this task either by using commercially available parts or by using their fabrication skills and ingenuity and in some cases even some stock parts.

We'll talk about some critical steps to doing this.

1. Proper TV cable adjustment. This is simple. You are ideally looking for the TV plunger to be fully "depressed" into the valve body. Depending on the calibration of the TV plunger spring and the transmission hydraulics you may not need to be completely depressed but in all cases you should be very near it.

2. Proper TV geometry at the throttle linkage. This is the most often overlooked step to getting the TV cable properly setup. It's relatively simple to check though and in many cases is an easy fix.

These two things are what must be correct.
Now we will show you how.

Adjusting the TV cable is a pretty simple procedure. If you hold the carburetor or throttle body at WOT (or better yet have a helper do so) you want to activate the release on the cable. These are a button type as used by GM on the cables we use at Jake's Performance. Some use a clip that must be pried "out" of the cable and then pressed back in to lock the cable adjustment. In either case, unlock the cable adjustment and pull the cable sheath AWAY from the carburetor but towards the transmission or rear of vehicle. You want the wire portion of the cable to be tight with no slack. Lock the release now.

Verify that the cable is tight while the throttle is still held wide open (with the engine not running!).

Let the throttle return to the idle position. Feel the wire portion of the cable. It will usually still have some tension, it will always have tension while the engine is running.

This is your baseline TV cable setting. It should be very close. You will not have any further adjustment to tighten it. You CAN however slightly loosen it if the shifts are late and hard indicating high line pressure.

One thing we'll mention, all TV cable brackets need to be rigid and not flex during normal throttle operation.

Now,

We've covered the basic TV cable adjustment. We HIGHLY recommend using a transmission pressure gauge to ensure proper adjustment and transmission pressures. We supply a gauge with our transmissions just for this reason.

What you are looking for on a gauge is instant pressure rise anytime the TV cable is moved. Particularly from the idle position. The average GM overdrive transmission will have 65-90 psi line pressure at idle on a gauge. This should spike with slight pressure applied on the cable or if the throttle is cracked at all.

Note:

Pressures above 90 psi at idle may result in 2nd gear starts, particularly when the transmission fluid is warm. You may need to back off the cable adjustment slightly until you get down to 90 psi or less idle pressure.
As long as you have instant pressure rise on any movement of the TV cable, you will not cause damage to the transmission.

As stated earlier the TV cable geometry at the throttle linkage is often overlooked. In many cases an installed is replacing a TH350 that uses a kickdown cable and not a TV cable with their new overdrive trans and since the brackets for the TH350 kickdown cable

work with the TV cable and the carb already has a stud on it, they mistakenly assume they can just hook it up, adjust it, and go.

The issue here is that the geometry on the carb linkage is not correct. It has a different radius of arc than what is needed for the TV cable. The TV cable needs a 1.093-1.125" measurement, the older TH350 kickdown is closer to 1.375".

This creates a condition where the cable is adjusted correctly but since the geometry is wrong, the overdrive transmission has correct pressures at WOT, but becomes farther away from correct with every degree of throttle less than WOT. Not really an issue at WOT or even 3/4 throttle.

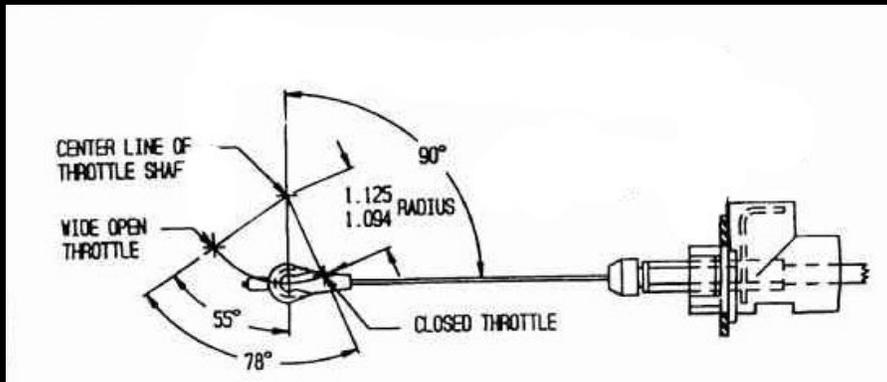
It becomes an issue just off idle, where a street car operates more often than any other throttle angle. What the pressure gauge will show you is little or no pressure spike on very slight throttle movement. This is the killer of automatic overdrives in retrofit applications.

The radius is a simple measurement that can be done with a caliper, a machinist rule, or even in a pinch a tape measure to get an idea.

You measure from the centerline of the throttle shaft to the center of the TV stud. It should be approx 1 and 1/8th inch or slightly less. We prefer to see it on the short side. 1.100".

You also want to see the TV stud rearward of center approximately 20-30 degrees. The OEM spec was 23* but this is not all that critical. It does have some effect on the rate of initial pull of the cable but a properly calibrated performance overdrive transmission will not be overly sensitive.

A picture is provided here to clarify the geometry.



The importance of having proper pressure rise off idle cannot be overstated. A pressure gauge is an invaluable tool for checking this.

It isn't mandatory but it is a time saver and in some cases a transmission saver.

The reason it is so important to have instant pressure rise off idle is because every time you accelerate from a stop, you transition from idle, no load, and low pressure to off idle, accelerating load PLUS torque converter multiplication, and hopefully more pressure.

A torque converter multiplies torque from the engine to the transmission input shaft. Maximum torque multiplication occurs at stall speed. Basically as your car is leaving the stop light. A moderate V8 street engine is making decent torque just off idle, even if only 100 lb/ft, this is multiplied to 200-250 lb/ft to the input shaft. The clutches will not clamp under power without proper pressure. If they slip slightly every time you accelerate from a stop, over a couple of thousand miles they fail.

All you need is proper geometry at the carb linkage and proper TV cable adjustment for a happy overdrive transmission.

If you confirm it with a gauge, you KNOW it is correct.

Approximate pressures you want to see are posted below:

	Idle or Min TV	Full TV
P	70-90 psi	230-275 psi

R	230-300	230-300
N	75-90	230-275
4	75-90	230-275
3	75-90	230-275
2	230+	230+
1	230+	230+