OPERATION

Setting your throttle stop stroke (your closed throttle position):

This is a very important setting. It determines your throttle stop "closed" position- (what RPM's your engine will go to when the throttle stop is activated). The adjustment is done with the aluminum clamping collars. Only one collar is needed, the second is put there as a backup.
The provided allen wrench should be used to loosen or tighten the adjustment collars. NOTE: DO NOT OVERTIGHTEN THE COLLARS. Refer to our "TIPS" page to find a good setting for your application. If you decide to change this setting and want a reference point to get back to it, you can do this by one of two ways:
1) checking your "closed throttle" RPM
2) Use a caliper to measure your stroke and note it in your logbook.

*If additional stroke is desired, you may remove one of the adjustment collars- this will give you additional throttle closing.

Setting the Closed Throttle Opening and Closing Speeds:

By slowing down the speed at which the throttle cylinder closes and opens your throttle, you will eliminate unwanted tire spin, chassis unloading and get smoother and more consistent results.
Adjuster screws #1 and #2 on the square solenoid valve are used to separately adjust the throttle closing and opening speeds. Screw #1 controls the throttle closing speed only (speed of rod as it extends) while screw #2 controls the throttle opening speed only (speed of rod as it retracts). Turning these screws clockwise slows down the corresponding throttle closing/ opening speeds. The screws need to be turned almost all the way in to slow the speeds down. EXAMPLE: If you would like to only slow down the rate at which your car goes back to full throttle when your timer kicks off, turn screw #2 clockwise until seated, then simply crack screw counterclockwise @ 1/8 of a turn or until desired cylinder speed is reached.

Maintenance

It is a good idea to lubricate this system once a year. To do this, turn off the CO2 bottle valve and disconnect the air line that goes from the bottle into the fitting on the solenoid. Place 2 or 3 drops of a light oil into the solenoid fitting. Air tool oil is good, do not use a solvent based oil.

TIPS ON USING A THROTTLE STOP

Written by Peter Biondo

1) FINDING THE RIGHT THROTTLE STOP "CLOSED POSITION" OR "BLADE ANGLE"

Finding how much to mechanically shut your throttle down is crucial. You want to find a setting that will work well and be consistent. I have found 3 blade angles that work well (find the settings below). The most accurate way to adjust your "blade angle" is by RPM- (the rpm your engine drops to while the throttle stop is engaged). Once you have found the right throttle stop rpm, you are done with the mechanical part of it and all ET adjustments should be made with a timer.

As mentioned above, I have found 3 blade angles that work well:

- A "a throttle stop rpm" of 3900- this will work well if your car runs 1 second+ under the index.
- A "throttle stop rpm" of 4300- this will work well if your car runs .3 to .9 under the index.
- A "throttle stop rpm" of 4800- this will work well if your car runs less than .3 under the index.

---

2) FIGURING OUT YOUR THROTTLE STOP RATIO

Before figuring out your ratio you first must enter a number in timer 1 of your throttle stop timer. This number indicates when the throttle stop will come on after launch. Most people prefer to have this number set early for high mph. I recommend letting the car fully launch and flash the converter berfore the throttle stop coming on (.3 to 1.00). After setting this, you will never change it again. To adjust your ET you will change timer 2.

Whether you are using a weather station to predict a throttle stop or not, I highly recommend you learning your throttle stop ratio. The Throttle Stop Ratio is the effect the throttle stop time has on your ET.
Here's an example- if you add 2 tenths (.2) to your throttle stop timer and it changes your ET by 1 tenth (.1), then you have a 2 to 1 ratio. To learn your ratio do the following:
Make one run with a small amount of time (duration) in the throttle stop timer (.5). Make a second run with a large amount of time (2.5). Let's say run # 1 was an 8.40 and run # 2 was an 9.40. You can figure out your throttle stop ratio by dividing the change in the throttle stop time by the change in ET.

$$\frac{\text{Change in throttle stop time}}{\text{Change in ET}} = \text{T/S RATIO} \quad \text{OR} \quad \frac{2.00}{1.00} = 2 \quad \text{Ratio is 2 to}$$

This is called a 2 to 1 ratio. Learning your ratio will allow you to correct for changing track and air conditions. Your ratio depends on your "throttle stop rpm". For most applications a 3900 T/S rpm results in a 2 to 1 ratio, a 4300 T/S rpm results in a 3 to 1 ratio, and a 4800 T/S rpm results in a 5 to 1 ratio. Ratio's may be a little different if your converter is extremely loose or tight.

---

3) YOUR THROTTLE LINKAGE (Applies only to an in-line throttle stop, if you purchased one of our 'base-plate' style stops, disregard this part)

An "In-linkage" throttle control is sensitive to the entire throttle linkage system. It is very important to have an absolutely solid and rigid pedal stop. Without this you can stretch your linkage causing inconsistency. Your cable attaching bracket must also be rigid. Any flexing or binding will ruin the consistency.

---

4) TIME SHIFTING WHILE ON THE STOP

Is it beneficial to shift on time (have a timer shift the car during the stop duration) while on the stop?

The answer really depends on how fast your car runs. Example: If your car runs well under the index (over 1 second under the index), you can gain consistency by shifting on a time. There are 2 major benefits for shifting on time.

- The car will come off the stop in high gear, lessening the chances of spinning the tires at that point.
- The rpm's on the stop will be much more stable when in high gear. In other words, your stop rpm's will climb at a much slower rate when in high gear compared to low gear. This will result in more consistency and a more predictable throttle stop ratio.

*** Cars running less than 1 second under the index will most likely not benefit from shifting by time.
*** When shifting on time, it is good have it shift a few tenths (.3 to .9) after the stop comes on.
*** When shifting on time you should raise your throttle stop rpm 300 to 500 rpm higher than the suggested rpm mentioned in the above #1 example. (Example: cars running one second or more under the index should have a throttle stop rpm of 4200 to 4400 as opposed to the 3900 suggested rpm described above.)