A how-to guide to setting up your throttle slide restrictor

The Briggs & Stratton throttle system is a straight forward approach to power restriction. Conventional flat plate restrictors are a compromise on performance. As the air velocity and direction change as your intake charge passes through a flat plate restrictor fuel tend to pool as it falls out of suspension. This pool of fuel will then reenter the air stream as a competitor hits a bump or pooling reaches the restrictor hole itself. This continual lean to rich condition is what leads to an exotic carburetor set-up, poor engine performance, and unnecessary complexity.

With the Briggs & Stratton slide system your air/fuel ratio remains optimized and therefore jetting can remain the same.

It's as simple as set it, lock it, check it, and go.

STEP 1: Verify the size of your set pin.

- Each slide is identified by color along with a reference to maximum allowable opening. This maximum opening is measured from the base (floor) of the carburetor bore to the front lip of the throttle slide.

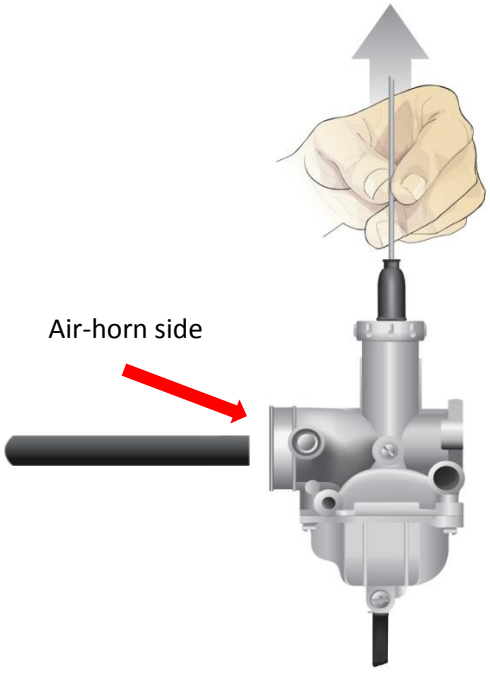
Part Number	Color	Max opening	Corresponding Drill bit/Sox tool #
555735	Purple	.342"	R Blank (.339")/P1
555733	Red	.440"	7/16"Blank (.437")/R1
555740	Green	.490"	31/64" Blank (.485")/G1
555734	Blue	.520"	33/64" Blank (.516')/B1
555741	Yellow	.570"	9/16" Blank (.563)/Y1

CAUTION – The risk of pushing the limit on the slide opening is an unnecessary DQ. For every .010" of slide opening, due to the efficiency limitations of this engine, is less than 1/10th of a HP. Give yourself a buffer because it makes no measurable performance differences.

- For the simplicity of this program 'set pins' can be purchased through Sox Racing or drill bit blanks through vendors like McMaster Carr that correspond to the maximum allowable opening.

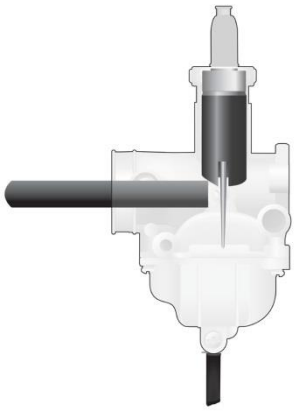
  Used drill bits are not recommended as a burr or damage from use could alter accuracy.
- Always use a set of calipers to verify a bit or a tech tool size before using.

Step 2: With the throttle cap loose lift up on the throttle cable and insert the blank or set tool into from the air inlet side of the carburetor until the tool rests under the front 'lip' of the slide. Release the throttle cable.

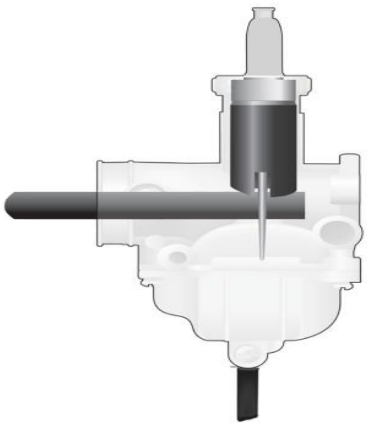


Carefully insert the tool at this point

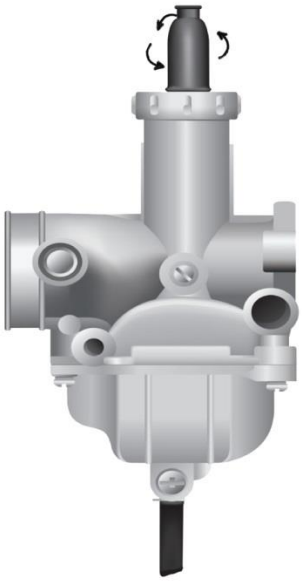
CORRECT



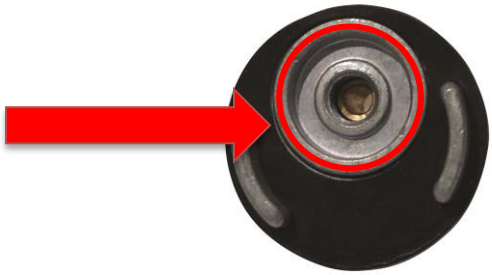
INCORRECT



Step 3: Release the cable so that it rests onto the set pin. Check compliance by GENTLY screwing down the carburetor cap (with the cap gasket in place) until the front 'lip' of the slide makes contact with the set pin. Be careful NOT to over-tighten the cap & damage the slide. Remove the pin by lifting up on the throttle cable.



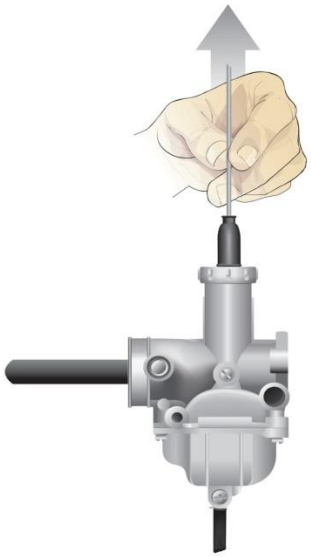
Step 4: In some cases it may be necessary to remove material from the cast stop in the carburetor cap. Material can easily be removed with simple sand paper around a flat bar, or a small file after only a few passes. Make sure to remove the gasket prior to sanding, placing it back onto the cap during reassembly.



- Take only a FEW passes to prevent too much material from being removed, checking often.
- It is important that this sanding/filing process is done uniformly & equally around the circle above highlighted in red. (red arrow)
- It is not legal to use multiple carburetor cap gaskets
- It is not legal to remove material from the slide to meet legality, it MUST remain unaltered
- Carburetor cap gasket must be present & not broken or altered

- ALWAYS make sure to clean cap after removing material to prevent material from entering the carburetor

Step 5: Pull up on the throttle cable, recheck with set pin after insuring the gasket is installed to the carburetor cap, and the cap is tight to the tower. In tech, compliance will be measured based on the maximum possible slide opening, not throttle pedal travel. This might include pulling on the cable through the carburetor cap. In addition to slide travel, another tech point includes insuring the carburetor cap is air- tight, this includes the cable housing. Air may ONLY enter the carburetor at the air horn.



Step 6: Install locking cap, tighten, and recheck.

- Once the locking cap is properly installed (see picture above) it should be painted by track officials, and must not be altered without Tech approval.
- The racer cannot adjust the cap during a race or prior to tech after a race. To manipulate the travel of a restrictor slide in any way to gain an advantage is grounds for DQ.
- The carburetor cable rubber boot IS a tech item that must be in place and in good order.

Step 7: Any time the carburetor is removed, installed, or adjustments made it is **ALWAYS** necessary to check the carburetor slide for free movement throughout the full range of travel before starting the engine. Remove the air filter, if necessary, and **visually confirm** that the slide valve fully closes as the throttle is released. Work the throttle control from closed to fully open watching for any sticking or hang-ups. Always install the correct return spring for this carburetor and use an additional return spring on the throttle pedal as required by your sanctioning body.

The process that will be followed in Tech includes making sure the carb tower is tight, with the carb tower seal in place. If Tech has sealed (painted) engine components, that too is a Tech item. Measuring with the appropriate diameter Pin Gauge is the next step, using the corresponding device. The gauge must NOT be able to travel under the front lip of the carb slide at full throttle (maximum opening, when teched as diagramed above) assuring the throttle cable is at the top of its travel. If the Pin Gauge can travel under the carb slide at full throttle, or any of the conditions outlined above are compromised, a DQ could result.