

# Ford Tractor TSX-241 Carburetor Maintenance Tips

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Here are a few tips that might help you understand what goes on in the carb when you adjust it.

I have a fix for the lean "pop-popping" TSX-241 and I believe that this information would apply to the TSX-33, also. First you need to know that the idle circuit has a big affect on the running of the engine until about half-throttle, and then the main metering system takes over. The idle circuit will affect the performance of this type of carb that has no accelerator pump so if the idle circuit is too lean it will hesitate, stumble or may stall when you throttle it up. You also may encounter a surge in engine RPM at a given throttle setting below half-throttle.

A lean miss at idle that will sound like popcorn popping in the exhaust, and you may need to use the choke during a start up on a hot engine.

A rich mixture will have a constant pup-pup-pup-pup exhaust noise that is rhythmic and the engine sounds like its laboring at idle, where a lean mixture will have a popcorn type pop with no pattern to it.

I use propane to check the idle mixture and have a calibrated meter to control flow. A shade tree method would be to apply the choke and if it made the idle worse, then you have it adjusted properly, or maybe a little on the rich side if you have a laboring pup-pup-pup idle in rhythm with out the choke. If you find that when you use the choke, the idle picks up and the popcorn sound disappears or almost goes away, then you have an idle circuit problem. If turning the idle mixture screw in does not clear this up, then you will need to remove the carb and clean the idle circuit.

Don't be misled like I have and think just because you can get carb spray to flow thru the idle circuit that it's good-to-go. The idle circuit has an idle jet that is .021 in diameter, so you will need a clean idle passage that is larger in diameter than .021. I use a welder tip cleaner and the smallest cleaning wire is .018, the next is .022 and the next size is .025. Remove the idle jet and from the manifold side of the throttle plate and work the .018 wire in the hole until you can get it to come out the hole the jet screws into. The welders tip cleaner has an enlarged middle section that's rough and will enlarge the port some. Work your way up to the .025 wire to insure that the idle port is clean. The idle port is crossed bored, so it's not a straight shot.

The problem that I found on the reproduction 241 is that they did not completely drill the hole through the manifold side of the base, and the circuit was smaller than the idle jet and that's why it did not make much difference when I removed the idle jet - the port was already restricted. Even though it would flow carb cleaner spray, the port was still too small. I don't recommend this, but I drilled the port out with a pin vice and yes I broke a bit in it when I hit the last little bit of slag. Took some work, but I got it out. Another good way to check your idle circuit is to remove the idle jet and if you still have to turn the idle screw in all the way to get it to idle satisfactorily, then you know you have a restriction in your idle circuit.

Technically, when you open the idle screw you inhibit the ability of the idle circuit to draw fuel from the float bowl. What happens is that you open an air bleed that lowers the vacuum to the idle circuit. When you turn the idle screw all the way in (don't jam the screw tight - it is brass and you damage the tip stop when you feel it bottom out), you enable the idle circuit to draw as much fuel as the idle jet will allow. If you find that your engine runs best with the idle screw all the way in, and turning the screw out just a little either stalls the engine or results in an unstable idle, then I would clean the idle port, and when I knew they were clean I would drill the idle jet until I found I had some adjustment with the idle screw that would have some affect on the mixture.

Believe me - .040 is too big. New jets are only a couple bucks so not much to lose to get your N's carb fine-tuned. The Marvel Schebler carb is different from other carbs - the idle mixture is turned IN to richen the fuel mixture and out to lean it out. A good starting point is 1-turn out for the idle mixture and 1-½ turns out for the main needle adjustment.

I fix a lot of these carbs that have the mysterious leak and it gets blamed on the needle and seat. After 30 years, I don't think I have seen but a few needle and seats that were the problem and never the newer Vitron tip type. The problem is the seat is not tight enough. I have a file that I have ground down to fit the two slots in the seat and it fits nice and snug to the point I have to tap it into the slots. I then put the carb mounting studs in a vice, tap my file into the two slots and take a adjustable wrench and fit it over the file and give the seat a good tightening. If someone has damaged the slots in the seat, take a hack saw blade and run it threw the slots to square them up.

This will cure the problem most of the time. When I rebuild a carb, I sand-blast the fuel inlet passage of the carb to remove any debris that may make the needle stick open.

You can also make a tool for the seat, instead of using a file. You start with a 1/2" spade-type wood boring bit. The end result will look like this:



I ground down the cutter point on the spade bit, leaving a stub to center the tool in the needle seat. Then I filed the tip down so that it would have no taper at all, so it is a push fit in the seat slot. Then I cut off the top 3" of the shank and welded it on as a handle. Nothing fancy but it works like a charm.

### TSX-241B Jet Sizes

Gaspump will probably tell you that any carb, when overhauled, should be brought up to the TSX-241B spec. I have pulled apart some old TSX-33's and found the old .021 idle jet still installed. It's time to retire it and replace it. This info may help you:

Econ = 9N9914  
Main = 9N9533  
Idle = 9N9596

NOS TSX-241B Carb. - Don B.	Tisco Kit Opened by Don B.	Tisco's Own Specs from Kit. - Don B.
Econ - .049	Econ = .044	Econ = .043
Main = .046	Main = .042	Main = .043
Idle = .035	Idle = .030	Idle = .033 for TSX-33, .028 for TSX-241

\* It's not known if TISCO still sells a separate kit for the 33 and the 241B.

**The following is a post from an NTC participant who used the information above to solve some carb issues he was having with his 8N:**

I spent this afternoon working on Emily's carb idle circuit. What I found out was the reproduction carb that is on the tractor is marked TSX-241B

I measured the Idle Jet opening with a pin vice and some small wire drills and the jet measured 28-thousandth (.028) of an inch in diameter. I then measured the top Idle Port on the manifold side of the carburetor; it measured the same as the Idle Jet opening 28- thousandth. Problem #1 – the idle port is the same size as Idle Jet opening. I couldn't get to the lower idle port that is cross drilled, so I left that one alone.



**Pin Vice and 6 drill bits**

I drilled out the Idle Jet to 35-thousandth of an inch (.035). Then, I worked on the top Idle Port and opened it up to 40-thousandth of an inch (.040), cleaned out the metal shavings from the port, reassembled the carburetor and re-attached to the tractor.

I started her up and I could tell that the exhaust did not smell real rich as it did in the past. I then knew that things were only going to get better when I started to adjust the carb. Got the carb all adjusted with enough adjustment on the Idle Mixture Screw. The idle screw now has an effect on how the tractor idles. Now comes the best part of all, she now idles at 400 RPM without choke; that made me real happy!!! She has never idled at spec. before. The lowest idle that I could get was 900 RPM, anything lower and the RPM's would start to surge.

Now that she will idle down correctly I can re-adjust the timing at 400 RPM, didn't get to re-timing with the timing light tonight. I'm sure the Advance Plates on the Distributor were affecting the correct timing when I could only get her to idle at 900 RPM before. I can't wait to check the timing tomorrow at proper idle speed.

She sure idles beautifully now; just like my Dad's 1950 8N did when he had his tractor in Michigan.



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