

# Carburetor Spacer Plates and Their Uses

**A**t Pony Carburetors we get asked questions daily about carburetor spacer plates. Spacer plates installed between intake manifolds and carburetors have a variety of functions.

1. Spacer plates sometimes are used to allow peripheral items to be hooked up to intake manifold vacuum. These items include PCV (positive crankcase ventilation), power brake boosters, air condition operating doors, and anything else requiring vacuum to operate.

2. Spacers are sometimes used in a "wedge" shape to level out the carburetor even though the engine was installed at a slant. A good example of this is the late 50's and early 60's Thunderbirds. Virtually all had wedge shaped spacer plates.

3. Some spacers are used to insure proper fit between the intake manifold and the carburetor. An example of this is the 1966 Shelby Hertz with the medium rise cobra intake manifold. The mounting flange is narrower than the bottom of the carburetor, so a 1/4" thick spacer plate was used to fill that void. Another example is the use of the Edelbrock Performer manifold, as its mounting flange is narrower than the bottom of the honeycombed Autolite 4100. If a spacer plate is not used, then the potential for giant vacuum leaks exist.

4. EGR (Exhaust Gas Recirculation) spacer plates were used starting in 1973. By introducing exhaust gas back into the fresh air/fuel mixture, combustion temperatures were lowered. This causes nitrous oxides to be greatly reduced coming out of the tail pipe (emissions or pollution).

5. Some spacer plates are used to reduce heat to the carburetor. There is a lot of misinformation circulating regarding this concept. There are two basic principals that go along with carburetor temperature.

a. If all you are doing is drag racing and trying to get to the end of a quarter mile faster than anybody else, then you want the carburetor to be as cool as you can get it. This concept is called density altitude. With the air more dense, you can get more oxygen per cubic foot and more fuel per cubic foot. More gas exploding in denser air gives you a stronger explosion. A stronger explosion means more power.

An interesting product that we have seen come out in the last couple of years is the "Air Gap" intake. This product is designed for racing only. The concept behind this intake is that it is going to make sure that the air/fuel mixture is as cold as you can get it. I am not sure that it is marketed as "racing only", but I would bet that 99% of the people that buy that intake are only doing street driving.

b. If you are doing normal, street driving, then you want the carburetor to be as hot as you can get it. Since the early 1900's engine designers have engineered "hot spots" underneath carburetors. They did this by using exhaust gas or even hot water. With the carburetor hotter, the carburetor can atomize the air/fuel mixture better. You all know from our discussions about annular fuel discharge that fuel vapor burns easier than liquid.

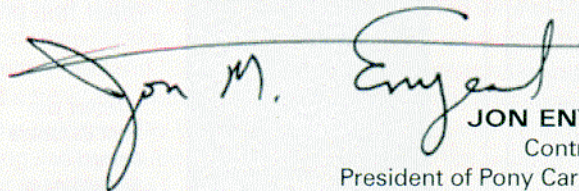
6. Spacer plates have been used in many forms to increase performance (i.e. horsepower). It has long been known that by putting a riser between the intake and the carburetor that the air flow can be straightened out, fuel vapor can be better absorbed into the air stream and the volume of the air plenum increases. All of these things increase horsepower in many instances. The height of the spacer that can be used is determined mainly by hood clearance. It should be noted that a spacer plate with four holes will generally improve part throttle operation and the low and mid range torque will be better. An open (one big hole) spacer plate will generally increase high end horsepower by adding a little bit of mid range torque. It does this by increasing the plenum volume. The only way to get any concrete results is by trying different spacer plates on an engine or chassis dynamometer.

The following is a list of the spacer plates that are still available **BRAND NEW:**

<b>One Barrel</b>	<b>1965-1969</b>	
		<i>(with hot water provision)</i>
<b>Four Barrels</b>	<b>1965-1968</b>	<b>289/302 ci.</b>
	<b>1967-1968</b>	<b>390 ci</b>
	<b>1968-1969</b>	<b>428 ci</b>
	<b>1969</b>	<b>351W ci</b>
	<b>1969-1970</b>	<b>Boss 302 ci</b>
	<b>1970</b>	<b>428 ci</b>

As always, I invite your comments about any of the "Good Carbs" columns. You can reach me at Pony Carburetors by phone, fax, or email.

Happy driving,



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