Autolite 4100 Carburetor Identification Explained

By JON ENYERT
Pony Carburetors

If you have a correct Autolite 4100 on your Mustang — or other appropriate Ford product — you own the finest performing four-barrel carburetor ever made.

It has been 25 years since this model was manufactured, and no one has yet to make a four-barrel carburetor as good as this one.

A BRIEF HISTORY

The Autolite 4100 was introduced in 1957 on 292 and 312 V-8 engines. It was used on many V-8 engines including the 289, 352, and 390 until model year-end 1966, and on a few 428 engines through 1968.

Two sizes of the 4100 were made. Up to 1964½, the carburetor was made in one size, having a 1.12 inch primary venturi diameter and 1-9/16 (1.687) inch primary and secondary bores. (Diameter of each hole in the bottom of the carburetor).

Depending on which year is used as a reference in the Ford Shop Manuals, the CFM (cubic feet per minute) rating was listed as 595 or 605. For easy reference, we will call it 600 CFM.

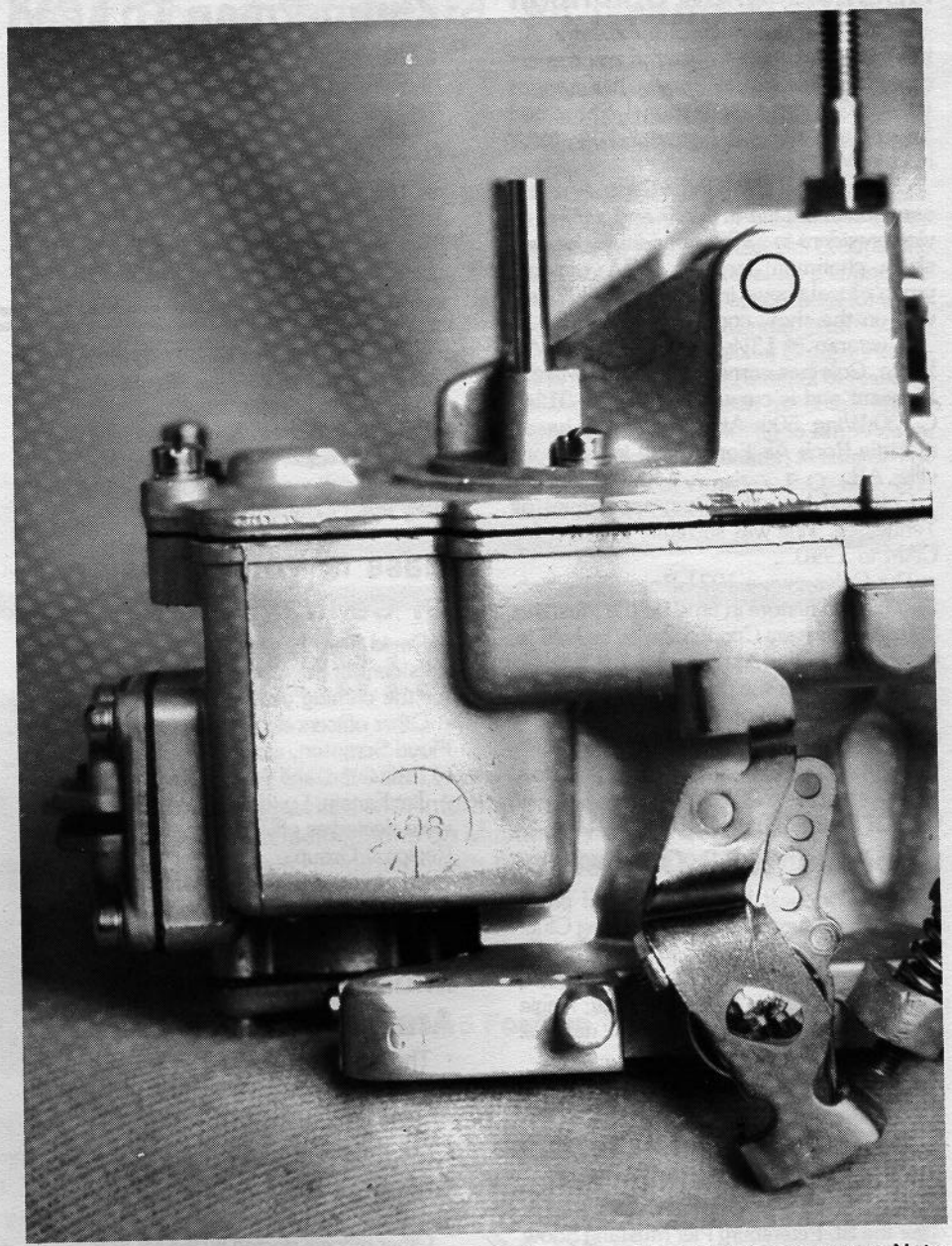
In 1964½ a smaller size was introduced. Its primary venturi was 1.08 inches and the primary and secondary bores were 1-7/16 (1.437) inches. The CFM rating is listed as 480. This size was the *only* one used on the 289 engines (except for the Hi-Po, which will be discussed next month).

Many 289s are running with 1.12 sized carburetors. Without internal modifications, such as a higher performance camshaft and dual exhaust, the 1.08 runs much better, and is actually quicker in the 0-4000 RPM range. A 1.12 will many times cause a hesitation and flat spot on light acceleration. There was a reason for Ford to have two sizes of 4100s.

FUNCTIONAL

The Autolite 4100 is a four-barrel (venturi) downdraft carburetor. The primary side utilizes removable booster venturi assemblies (*) with anular fuel discharge in them. A diaphragm type accelerator pump is used. A replaceable power valve, of a spring-loaded diaphragm-type, richens the fuel mixture upon a decrease in manifold vacuum. (Usually resulting from a higher power demand). The choke system operates with a thermostatic choke spring obtaining its best source from the exhaust manifold through a heat riser tube.

The secondaries are of the vacuum type. (**) These open solely due to venturi vacuum. The venturi vacuum is transmitted through tubes and orifices to a rubber diaphragm at the rear of the carburetor. The diaphragm and its attaching arm are linked to the secondary throttle shaft by an actuator rod. This vacuum must overcome a calibrated spring pressure. The spring is located in the diaphragm cover — at the rear.



This close-up view is of the driver's side front corner and toe of the carburetor. Note the engineering number and above it the designation 1.08. The accelerator pump rod and dashpot assembly were removed for this photograph.

There is a positive closure system to prevent unwanted power. It consists of a nylon pin in the fast idle arm which aligns with a modified triangular shape on the secondary throttle shaft. The secondaries also have removable booster venturi assemblies with anular fuel discharge.

The 4100 has been a maligned carburetor. This was primarily due to the vacuum secon-

daries, which most people simply did not understand. Furthermore, Ford did not have an array of secondary diaphragm springs or information in this technical area. When the carburetor did not perform to expectations, it was removed and replaced with something else.

The carburetor most commonly used as a replacement was a 4150 or 4160 series Holley — also, with vacuum secondaries. You might check your aluminum pots and pans for an Autolite trademark, because that is where a large percentage of 4100 carburetors have ended up.

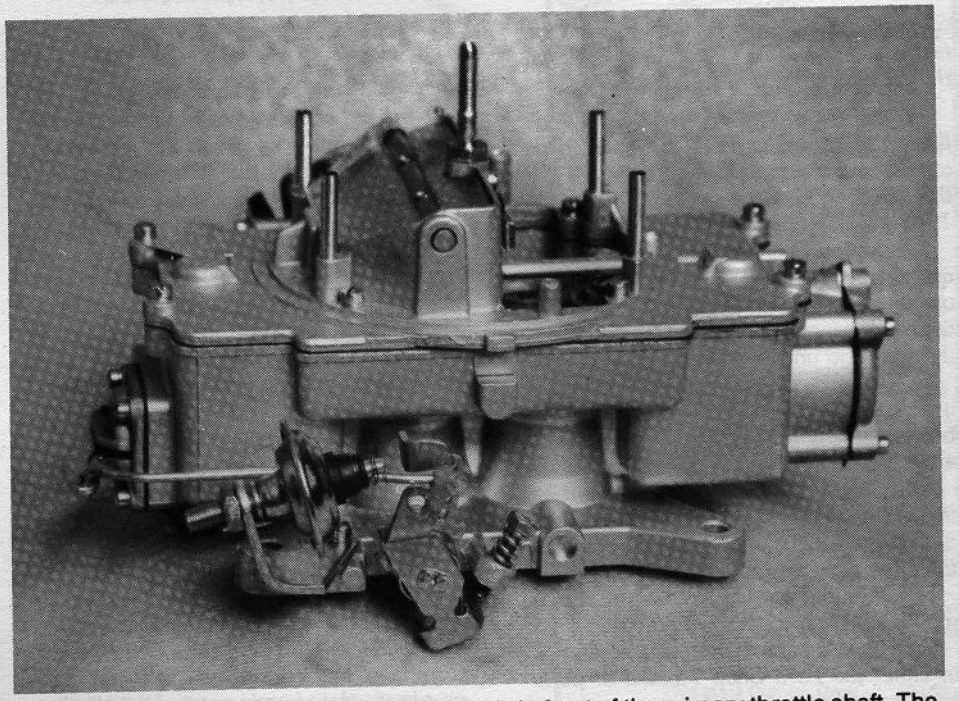
In actuality, the Autolite 4100 is an excellent performer, simple and relatively trouble-free, and capable of outstanding fuel economy as well. (The primary side is identical to the 2100 two-barrel, which has long been considered the finest two-barrel ever made).

IDENTIFICATION

Starting in 1960, all 4100s have two easy ways for specifically identifying them. Note that there are no Ford or Autolite trademarks on the 4100s.

1. The primary venturi size embossed in raised letters on the driver's side of the primary (front) float bowl, right behind the accelerator pump rod. Either 1.12 (large 600 CFM size) or 1.08 (smaller 480 CFM) is on every carburetor.

2. The engineering number is also stamped in the carburetor. The 4100 is mounted to the engine with four mounting bolts (studs). As the carburetor sits on the engine locate the four bolt holes and look at the driver's side front one. On the outside (facing the driver's side fender) the number can be found. (See Figure 1).



Driver's Side View: Note the dashpot assembly in front of the primary throttle shaft. The four brass vent tubes sticking up are important. It is a potential fire hazard to run a 4100 without them.

In 1960 through 1965, this engineering number is the same number as is imprinted on the original carburetor tag — if you're lucky enough to have one. In 1966 through 1968, the engineering number is abbreviated.

In most all cases this engineering number is not the same as the part number, but does follow Ford's part system numbering scheme.

Here is another example of an engineering number and how to decode it (or decode most Ford part numbers, for that matter).

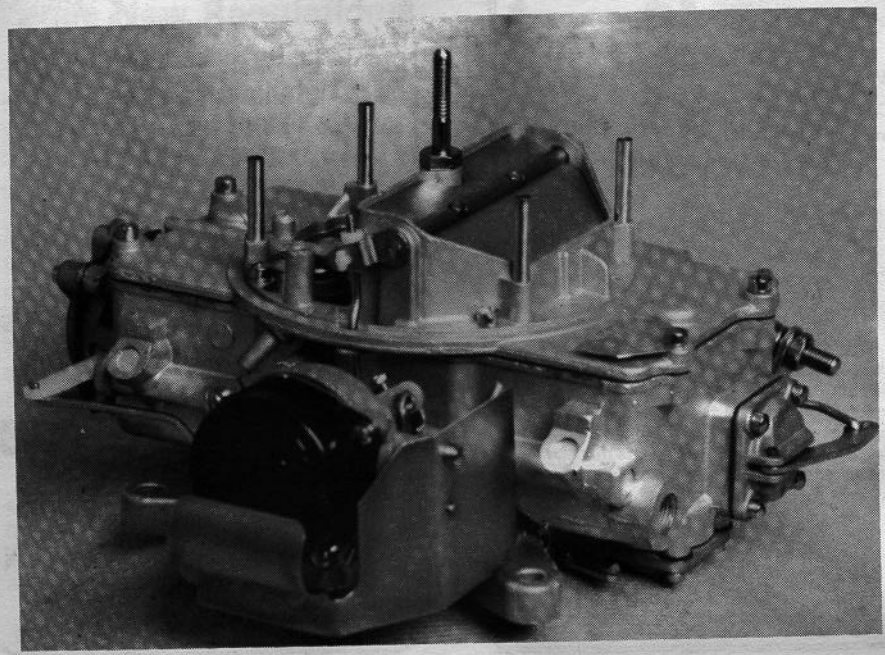
Part #	Prefix	Main #	Suffix
	C52Z	9510	D
Char. #	1234	5	6

1. The first character is the decade in which the part was first used: B — 1950; C — 1960; D — 1970; E — 1980.

2. The second character is the year within the decade that the part was first used.

So far we have determined that the example carburetor (or part) was first used in 1965.

3. The third character indicates the car line that the part generally was first used in. See the chart for reference.



Passenger Side View: Note the shield with the bracket for the heater hose. In cooler climates the choke will not function as well without it. Right above the choke cap there is a small brass tube (facing down at about 7 o'clock). This is the connection for the "fresh" air tube. This tube goes down to the exhaust manifold and is part of the heat riser choke ·'·e system.

Again, this is a general indication of the first car line, and certainly does not mean the only car line.

An example of this is a C1AZ-6731-A oil filter, also known as FL-1. It was used on almost all Ford produced cars from 1957 through 1977, yet the prefix tells us it is a 1961 full-size Ford part.

4. The fourth character is simply a unique character to complete the prefix. This unique character just allows a greater quantity of part numbers, kind of like having a different and unique license plate number.

5. This set of numbers designates a group or type of part. For example, all carburetor assemblies are 9510. All oil filters are 6731. All wheel covers are 1130.

Note: *On carburetor engineering numbers the group number is omitted — all carburetors are 9510 and it is understood, therefore not constantly repeated.*

6. The suffix designates a unique part. It may contain up to three characters.

To complete our example, you would look in either the Ford Shop Manual or parts book to find that our carburetor number is an Autolite 4100 four-barrel for a 1965 Mustang with a 289 engine and automatic transmission with positive crankcase ventilation (PCV valve).

NOTES:

* Anular fuel discharge: fuel discharged around the perimeter of the venturi through holes. Holley is now essentially reintroducing this technology.

** Venturi vacuum: a low pressure area created just below the narrowest part of the throttle bore. By using a very high velocity, sometimes in exccess of 20,000 feet per minute (250 miles per hour, plus-or-minus), this low pressure area (vacuum) can be relatively powerful. The more the throttle plates are open, the more air flows through the venturi at higher velocity. The more velocity the stronger the venturi vacuum. The stronger the venturi vacuum, the farther the secondaries will open.

CHARACTERS & CAR LINE REFERENCE

A	Full Size Ford (Galaxie, LTD)
B	Mid-Size (Fairlane, Torino)
Z	Mustang
O	Mid-Size (Fairlane, Torino)
S	Thunderbird
G	Comet
T	Truck
X	Falcon
U	Bronco
P	Replacement Part

The Ford Oval

From Ford Newsletter

The Ford script-in-oval trademark is one of the best-known symbols in the world. It has been in regular use for more than half a century, although the script lettering dates back to the very beginning of the company.

When the Ford Motor Company was founded in the summer of 1903, Henry Ford's principal engineering assistant, Childe Harold Wills, remembered an earlier hobby. He had trained, among other things, as a commercial artist and in his teens had earned money by printing visiting cards. He still had his old printing press in the attic of his home and, using the script typeface he had used for his visiting cards, he developed a stylized verion of the words "Ford Motor Company."

This lettering was first used on company communications in 1903 and on a car in 1904 when it was used on some examples of the Model C. The words "Ford Motor Company" in the script lettering were used on a brass plate forming part of the starting handle aperture. In 1904, too, the script was used to advertise the cars for the first time, and appeared on the windows of the London Ford Agency.

A more developed form of the script appeared on the 1906 Model K and Model N which had the four script letters "F-o-r-d" embossed in the relief on the radiator header tanks. The letters "F" and "d" had long tails. This was known as the "script with wings" and was used on all Ford cars up to the end of 1910, when the lettering was revised again in the form that is still in use. (A few 1920 cars had a cut-out brass script in this more modern style fixed to the radiator).

The script with the oval was first used for dealer identification in 1912, but the car identification was still the script; actually a winged triangle in orange, which carried the words "Ford" in script and added "The Universal Car."

The first car to carry the script in oval on its radiator was the Model A in 1927. The background was a deep royal blue. The oval badge was used on many Ford cars up until the end of the 1950s, but was then not featured on another vehicle until the mid-1970s.