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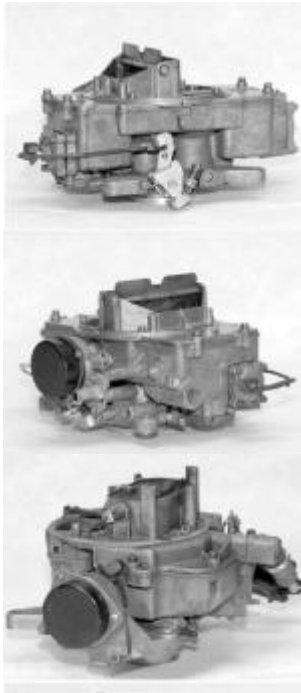
AUTOLITE 4-BARREL CARBURETORS

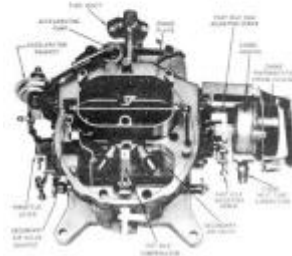
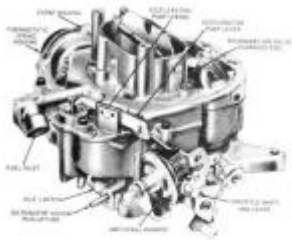
Hemmings Muscle Machines - FEBRUARY 1, 2006 - BY [JIM O'CLAIR](#)

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We have spoken about quite a few types of carburetors in previous installments of this column, such as Carter, Holley and Rochester. One carburetor, however, that we believe hasn't received its just due, is the Autolite or Motorcraft four-barrel.

Originally installed on the 312-cu.in. V-8 engines in 1957, the first-generation Autolite model was referred to as the 4100. Use of this "bare bones" square-bore four-barrel continued on numerous eight-cylinder configurations until finally phased out with the '69 Thunderbird 429 engine. The 4100 Autolite is a very low-maintenance carburetor, once it has been set up properly, and the one-piece cast design of the fuel bowl means the chances of a leak in the





center section of the carburetor are nil. Experienced mechanics will tell you that you can remove the top section of the carburetor and adjust the floats while the car is running.

Debuting in 1966 was the second version from Autolite, the 4300. Incorporating some design improvements, Ford and Mercury used the 4300 models up into 1974. Some '74 pickups with 460 engines also used the 4300. Ford discontinued use of the Autolite four-barrels in Ford and Mercury passenger cars in '74; however, Lincolns and trucks with the 460 engine continued to use the third-generation Autolite 4-barrel, the 4350, until 1978. American Motors 8-cylinder engines also made use of the Autolite four-barrel carburetors, employing the 4300 model in V-8 cars from '70-'74 and the 4350 model in '75-'76. Jeep also continued the use of the 4350 until 1978.

You can locate an Autolite 4100 in these production cars:
1957 Ford, Mercury and Thunderbird with 312-cu.in. engine
1958-'60 Ford and Edsel 332, 352 and 361 engines
1961-'65 Ford 390 (including Police Interceptor)
1962-'63 Mercury 406-cu.in. engine
1963-'64 Ford and Mercury 427-cu.in. engine
1963-'65 Fairlane, 1964-'65 Comet and '65 Mustang with 289-cu.in. engine
1965-'66 Mercury with 410 and 428-cu.in. engines
1957-'65 Ford HD trucks with 272, 292, 330 and 352-cu.in. engines
1966-'69 Thunderbird with 428 and 429-cu.in. engines

Autolite 4300 carburetors came on these vehicles:
1966-'74 Ford Lincoln and Mercury cars with 302, 351, 410, 429 and 460-cu.in. engines
1970-'74 AMC and Jeep with 360, 390 and 401-cu.in. engines
(1970-'74 Mustang 351C and Boss 351 used a model 4300D spread-bore style)

And Autolite 4350 carburetors were available on these cars and trucks:
1975-'78 Lincoln with 460-cu.in. engine
1973-'78 Ford pickups with 460-cu.in. engine
1975-'78 AMC and Jeep with 360, 390 and 401-cu.in. engines

Autolite 4100 carburetors were available in two primary bore sizes. Depending on engine size and application you would find either a 1.08-inch bore diameter or 1.12-inch version. Both automatic and manual choke versions of the 4100 were built, although most manual choke listings for Autolite four-barrels were basically limited to trucks and the 289 "K" engines, and sizes varied between 475cfm and 600cfm.

Automatic chokes were preheated by an aluminum tube, which brought heat up from the

exhaust manifold into the choke body to open the choke spring more quickly. Old-timers refer to the Autolite 4100 as the "shoebox" because of its shape and the simplicity of configuration. Another feature of the Autolite four-barrels was that they were the first carburetor to incorporate an annular discharge booster venturi way back in the late 1950s. An annular discharge booster is a ring of multiple discharge holes located higher in the venturis than your typical straight-leg or down-leg single-hole venturi. This leads to better fuel atomization not only because of the extra holes, but also because of the extra height. Better fuel atomization leads to higher top-end horsepower. The annular design also creates more vacuum, which helps to draw fuel more efficiently. Annular discharge-equipped carburetors can also run smaller jets, because they are more fuel-efficient and are all the rage with performance carburetors used in NASCAR and other racing divisions.

Many styles of aftermarket carburetors have been adapted to annular discharge venturis for racing applications. In fact, Holley paid Ford for the use of this design for many years before eventually buying it from them when Ford discontinued making carburetors and started using fuel injection. Although many were swapped years ago for a Holley 4150 or 4160 (these two models were also featured right alongside the 4100 on many 1960s era engines as original equipment) restorers and muscle car enthusiasts are now seeking out these original-equipment units to complete an authentic Ford or AMC restoration.

The easiest way to identify which Autolite unit you have is by the aluminum tag mounted to one of the top air-horn screws. Ford numbers are six-digit and can be very revealing as to the carburetor's history. The first digit is a letter, which indicates the decade. "B" for 1950s carburetor, "C" for '60s, and "D" for the '70s. The second digit indicates the year it was used for. The third digit will tell you what bodystyle it was primarily used on: "A" for full-size cars, "D" for Falcon/Comet, "Z" for Mustang, etc. The fourth digit is always an "F" for the engine accessories engineering department at Ford, where specifications for all original equipment carburetors were created. The final two digits determined specific features for that carburetor. Variations such as bore size, automatic or manual choke, and the size of the accelerator pump used was identified by these two letters. American Motors tags were even more basic. AMC used a four-digit or five-digit number. The first number 0-8 indicated the specific year, of the 1970s decade, that the carburetor was manufactured (0=1970, 1=1971, etc.). The second digit indicated the letter designation for the engine size (W, R, T, or D). The third digit was either an "A" for automatic transmission or "M" for manual transmission, and the fourth digit was always a "4" for four-barrel. If there is a fifth digit, it indicates you have a revised edition of the original 4-digit model. Both Ford and AMC also used a date code in smaller stampings on their identifying tags. Ignoring the first identifier letter, which is a source code, you should see a sequence indicating a single number for year, a letter for month and one or two digits indicating the day of production.

Jeep used five-digit identification tags with a numbering system similar to the AMC cars; however, the third digit was always an "H" and the identifying digit for the type of transmission and number of barrels became digits 4 and 5. All AMC and Jeep versions of the 4300 or 4350 were equipped with automatic chokes.

Unfortunately, one of the first things an inexperienced rebuilder will do is lose the aluminum tag or forget to reinstall it. This makes identification much more difficult, but not impossible. For the 4100 models, an additional identifying number appears just above the left front manifold mounting bolt on the fuel bowl. This number will not necessarily correspond with the above-mentioned tag sequences but will still indicate the year of production, primary model it was used on and the last identifier digits. Decade letter and "F" digit are not indicated on the casting number. You will find that many original carburetors also list the primary bore size on the fuel bowl too. There is a circle cast into the fuel bowl on the driver's side that should show this diameter. The same type of casting number appears on the model 4300 and 4350 Autolite carburetors; however, the casting number is on the carburetor base plate in the same general area.

While on your quest to find one of these units at a salvage yard or swap meet, you should carry along a straightedge to check the top of the fuel bowl casting just below the air horn. Some of the later-year carburetors (especially 1975 versions for some reason) can experience warpage of this surface after extended use. Of course we recommend that you freshen the carburetor up with a rebuild kit before attempting to install any used unit. Additional replacement parts such as jets and dashpots, while not included in most kits, are still readily available. The correct power valve will be included in a repair kit; however, you can change these to alter your carburetor's performance too. Be sure to buy the proper jets for an Autolite/Motorcraft carburetor because an aftermarket Holley jet does not have the same threads. The accelerator pump on the 4100 models is easily removable from the front of the carburetor. The pump lever has a couple of different holes on it for installing the accelerator pump rod. Placing the rod in the last slot (furthest away from the carburetor) on the lever will help to improve your low rpm power. Moving this rod back into one of the other two adjustment holes on the accelerator lever is also a quick way to correct a carburetor that is dumping too much gas. This smoother surface will lead to better fuel flow. This was not the case with the later 4300 and 4350 models. They have their accelerator pump mounted vertically inside the fuel bowl, and the lever has only one hole and is on top of the carburetor. During the rebuilding process, it's a good idea to take a little emery paper to any burrs you may find on the throttle bores too.

Autolite four-barrels, especially the 4100 models, can also be used anywhere a Holley, Demon or Edelbrock square-bore 4-barrel is currently being used as well. Some applications may require the use of a Holley to Ford/Ford to Holley tapered port adapter to get the correct

barrel spacing to mate to your existing manifold. Many aftermarket performance suppliers have this adapter available. This means that although Autolite four-barrels were featured strictly on AMC and Ford vehicles, there is no reason you can't install one on your GM or Mopar manifold, if you are looking for a good reliable carburetor and don't need a unit more than 600 cfm (most small-block V-8 applications don't need more than that). The Autolite carburetors will bolt onto aftermarket Weiand and Edelbrock manifolds too. Although clearance might be tight with some of the high-rise manifolds out on the market, you can install an Autolite without the thick spacer that was used on the Ford and AMC four-barrel applications as a vacuum or EGR valve connection. Relocating the vacuum source to elsewhere on the intake or mounting the EGR valve directly to the intake manifold will eliminate the necessity of this spacer.

In the process of checking with our local used parts establishments, we discovered that there are still some used Autolite four-barrels alive and kicking on salvage cars. All three versions of this carburetor were found in used condition for between \$75 and \$150 (this does not include the 4300D spread-bore).

Rebuilt units can still be purchased from your local auto parts store, when rebuildable cores are available. A good rebuilt model 4100 sells for about \$250 with a trade-in. 4300 model rebuilds sell for around \$315 with exchange, and rebuilt 4350 4-barrels sell for roughly \$450 exchange.

We suggest if you are going to spend that kind of money that you contact Pony Carburetors and have your unit rebuilt by them. This is especially true with the 4300 and 4350 model carburetors. Pony can do a premium job of remanufacturing your carburetor as well as incorporate some design improvements to make Autolite four-barrels more responsive. They can improve on the original design and performance and give you back a pretty decent street or strip carburetor for \$250 to \$300. They also have some core inventory and will sell you a remanufactured unit for between \$480 and \$520 depending on which of the three models you are coveting.

So, if you're a Ford or AMC enthusiast looking to return your car to its original configuration, or if you're just looking for an inexpensive and easy-to-tune medium-cfm four-barrel carburetor, the Autolite 4000 series carburetor might just be the unit that you have been looking for. It is an ample carburetor for most small-blocks, without the overkill at the gas pump. It's also easy to adjust and can be modified to varying driving or racing conditions.

For more information and additional reading on the Autolite 4100, we recommend that you purchase *Ford Carburetor Guide 4th Edition* by Pony Carburetors at 1-505-526-4949.

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