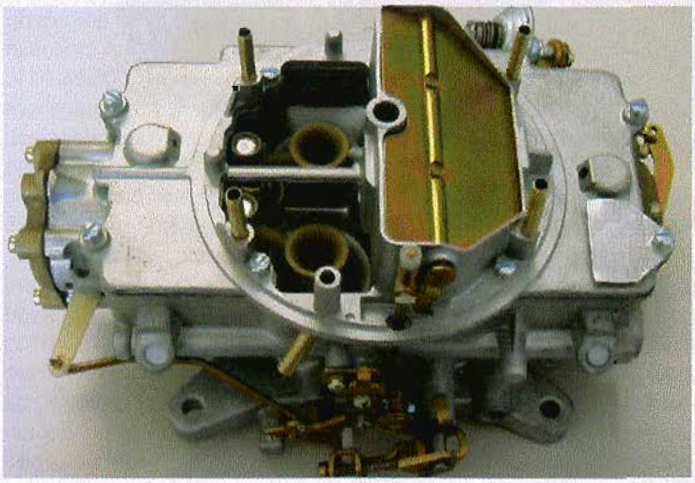
AUTOLITE 4100 HI-PO CARBURETOR

In this month's Good Carbs we will discuss the rare and interesting Hi-Po 4100 carburetor. This carburetor came on the Mustang from 1964½ through 1967 on the High Performance 289 cubic inch engine. See the application chart below for other applications that used this Hi-Po carburetor.

The Hi-Po was also used on the 1966 Shelby Hertz. Even with its performance engineering, it was still more economical and reliable than the Holleys utilized on the remainder of Shelbys. Most people do not know that on any Shelby GT350 or straight Hi-Po that the Autolite will out perform the 715 cfm Holley (or anything else made by Holley or Edelbrock for that matter). Out perform means run faster, make more horsepower and get significantly better fuel economy. This is because of "annular fuel discharge." Annular fuel discharge is a series of small holes around the booster venturi. This type of booster atomizes the fuel closer to vapor than any other carburetor ever manufactured. It is vapor that burns, not liquid. Ford patented this technology in 1957.The last year for the Hi-Po version of the 4100 was 1967. As emission laws started to get more stringent in 1968, this "open emission" carburetor went by the wayside. What a shame.

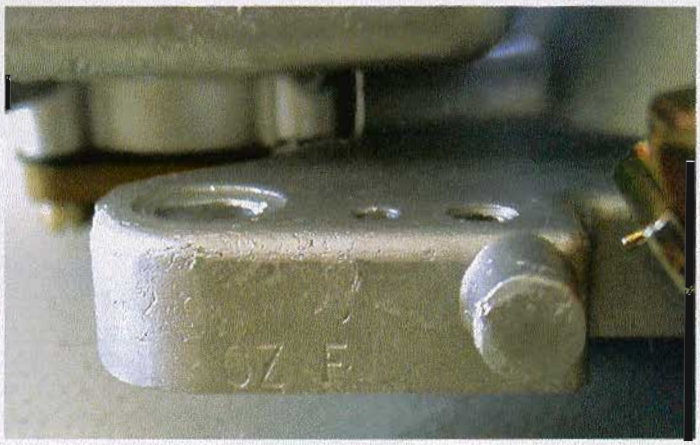


THE SPECIFICS

Externally, a Hi-Po carburetor is a large venturi (1.12") 4100 with a manual choke assembly. Exceptions are the 1963-64 Fairlanes, 1963 Meteors, and 1964 Comets which had automatic chokes. The 1963/64 Hi-Po's had "long snout" accelerator pumps and automatic chokes. Hi-Po carburetors also differ from standard 1.12" 4100s in that they do not have a hot idle compensator at the back of the air horn.

Internally, the Hi-Po has unique booster venturi assemblies. The main and power jetting are also radically different. All of these are calibrated to provide an air fuel ratio of approximately 12:1 providing the maximum power for the CFM utilized at any given time. It is not engineered as Grandma's answer to the fuel shortage. It will provide enough air fuel mixture to allow the 271 HP engine to be satisfied to 8000 RPMs—even if the engine is tuned and ported to achieve 90-percent volumetric efficiency.

As with almost all Ford-produced carburetors, the only sure way to find out what calibration the carburetor you are examining is to look at the engineering number. This number is stamped on the carburetor driver's side front toe. Depending on the year, the engineering number may consist of 3, 4, or 5 characters (See Chart). There were very few calibrations of this carburetor ever made. The chart shows all Hi-Po calibrations produced.



Booster venturi assemblies can be identified, but must be removed from the carb. Once removed, observe the tube side (underside) and look for the letters "M" or "MA" on the primary side and the letters "BA" on the secondary. Most primaries will be an "M" with only a few rare calibrations in 1964½ - 65 utilizing "MA". Main jetting in these carburetors is usually 52F primary and 68F secondary at sea level. Other jetting is as follows:

C40F-AL	51F	P	70F	S
C40F-AT	49F	P	69F	S
C50F-K, M	50F	P	69F	S
C6ZF-F	50F	P	69F	S

NOTE: Without the correct booster venturi assemblies, main jetting can be correct, but the carburetor will not flow correctly.

No discussion of the Hi-Po would be complete without touching on its most distinguishing feature - the manual choke pieces. These choke pieces are unique to the 4100. The 2100 2-barrel manual choke pieces used on pickup and full-size truck applications are similar. However, because of horizontal spacing differences, the fast idle cam/choke actuator will not line up correctly to the fast idle arm and choke cable assembly rendering them useless for correct operation. The fast idle arm is also unique as it does not have a tab on it to unload the choke at full throttle position. This extra tab on the auto choke models would prevent flooding when cranking the engine with a closed-choke butterfly plate.

HI-PO CARBURETOR RARITY

As with any Hi-Po part, these carburetors are extremely hard to find. Their value is directly proportional to rarity. It is certainly not uncommon for certain calibration numbers to be worth in excess of $1,000 in an un-restored condition. Due to the rareness of these carbs, Pony Carburetors sells what we call our "HI-PO Conversion", which is in effect, a clone of the original carb.

When we engineer a Hi-Po Conversion we start off with an Autolite 4100 1.12 Carburetor which originally started off its life on a Galaxy. There is some machine work and welding that has to be done on the

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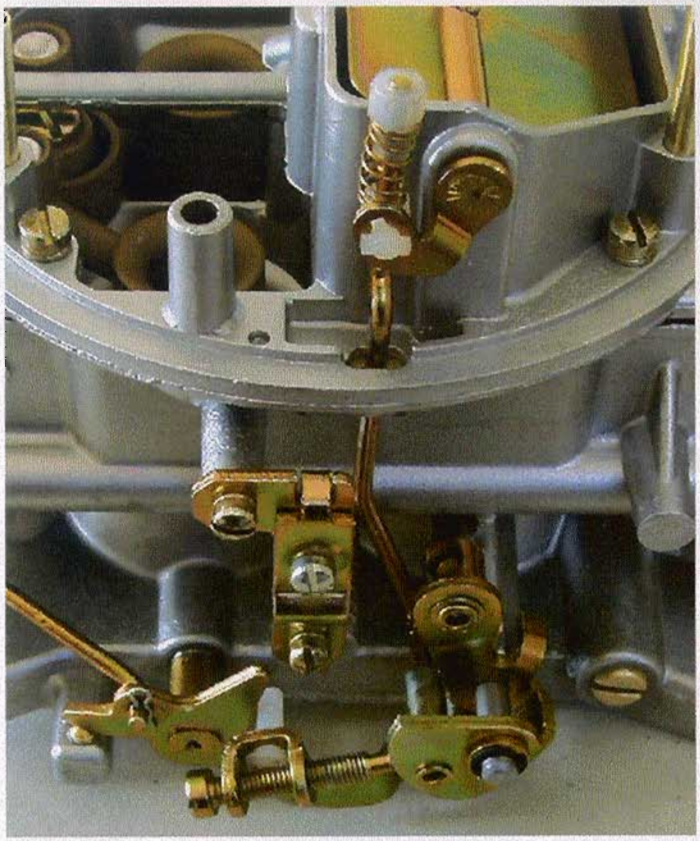

choke side of the carburetor. We now make the manual choke pieces in house. Every detail to make the carburetor look like a Hi-Po is done including the re-stamping of the correct engineering number on the drivers side front toe of the carburetor. In addition, internally we calibrate the carburetor precisely to Hi-Po specifications. This is a lot more than just jets. Not one person in a thousand can tell the difference between our Hi-Po Conversion and the real original carburetor, however we can tell, but that is a little bit unfair. There is one way to tell our conversion from an original Hi-Po and that is to remove the lid of the carburetor and check the engineering stamping on the primary booster venturi cluster. An original Hi-Po will have an M or MA stamping, and our Hi-Po Conversion will have a different number. There is also a slight casting difference that again almost no one knows about. These "clones" sell for about half of what the original carbs sell for.

We hope that you have found this information interesting and useful. As always we invite any comments or questions regarding carburetion.

See you all at the 45th Anniversary in Birmingham where I will be giving my usual tech seminars and doing house calls.

Happy Driving,

Jon M. Enyeart

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HI-PO CARBURETOR APPLICATION CHART

Year	Emissions	Transmission	Car Lines	Engineering Number (Tag)	Stamped on Carburetor	Remarks
				C3OF-AJ	C3OF-AJ	
1963-64	Vent.	All	Fairlane, Meteor	C3OF-AB	C3OF-AB	Auto. Choke
1964	Vent.	Man.	Comet	C4GF-AA	C4GF-AA	Auto. Choke
1964	Vent.	Auto.	Comet	C4GF-E	C4GF-E	Auto. Choke
1964	Vent.	Auto.	Fairlane	C4OF-E	C4OF-E	Auto. Choke
1964-1/2	Vent.	Man.	Mustang, Fairlane, Comet	C4OF-AL	C4OF-AL	
1964-1/2	PCV	Auto.	Fairlane, Comet	C4OF-AT	C4OF-AT	
1965 (early)	PCV	Man.	Mustang, Fairlane, Comet	C5OF-L	C4OF-AL	Used until 2-15-65
1965 (late)	PCV	Man.	Mustang, Fairlane, Comet	C5OF-J	C5OF-J	Used after 2-15-65
1965	Vent.	Auto.	Fairlane, Comet	C5OF-J	C5OF-M	
1965	PCV	Auto.	Fairlane, Comet	C5OF-K	C5OF-K	
1966-67	PCV	Man.	Mustang	C8ZF-C	6Z-C	
1966-67	PCV	Auto.	Shelby, Hertz	C6ZF-F	6Z-F	
1966-67	PCV	Auto.	Mustang	C6ZF-F	6Z-F	
1967	Therm.	Man.	Mustang	C7ZF-B	7Z-B	California Only
1967	Therm.	Auto.	Mustang	C7ZF-C	7Z-C	California Only
				C8ZF-J	8Z-J	
1967	Therm.	All	Service Replacement	C8ZF-K	8Z-K	

The Master Ford Parts book also lists the following Hi-Po calibrations. As of August, 2004 we have never seen any of these and they may or may not exist. If they do exist we would encourage feedback. C4OF-BU, C4OF-BT, C4ZF-G, C5OF-T, C5OF-U

Key to Abbreviations: **Vent:** Vent tube or road draft tube **Man.:** Manual transmission **Auto.:** Automatic transmission
PCV: Positive crankcase ventilation **Therm.:** Thermactor emissions (smog pump)