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Product Information Bulletin

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CHRYSLER CORPORATION'S  
NEWEST 426-CUBIC INCH  
MAXIMUM-PERFORMANCE  
ACCELERATION ENGINES

**ENGINEERING STAFF**

Technical Information  
Section



**CHRYSLER  
CORPORATION**

CHRYSLER CORPORATION'S  
NEWEST 426-CU IN. MAXIMUM-PERFORMANCE  
ACCELERATION ENGINES

A better-breathing version of Chrysler Corporation's 426-cu in. maximum-performance competition engine is being introduced for mid-1963. Like its predecessor, this racing power plant is designed and built expressly for use in supervised acceleration trials. Because it does not offer the stable, even idling of other high-performance engine options offered by Chrysler Corporation, the new "426" is not recommended for everyday driving.

The basic engine design and construction is very similar to the earlier "426", and only the differences which contribute to greater volumetric efficiency are discussed in this bulletin. For more information, refer to the Product Information Bulletin "Chrysler Corporation's 426-Cu In. Maximum-Performance Engines," dated December 7, 1962.

ENGINE SPECIFICATIONS

Rated Output:

11:1 Compression Ratio

415 hp at 5600 rpm  
470 ft-lb at 4400 rpm

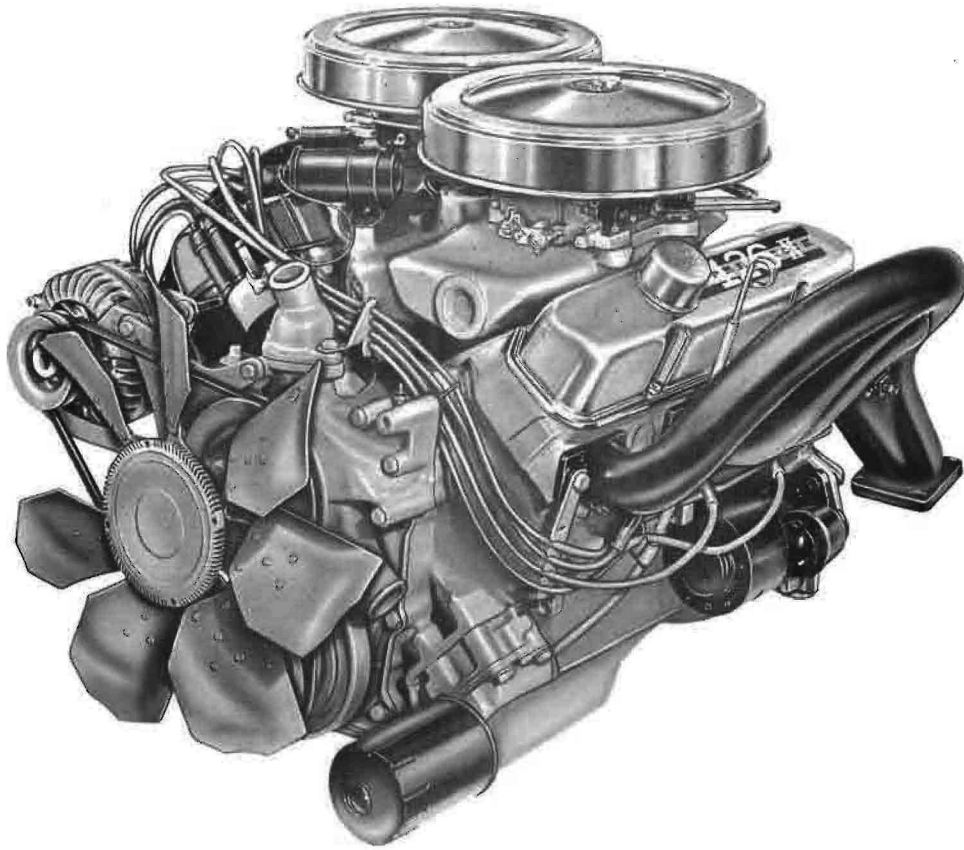
13.5:1 Compression Ratio

425 hp at 5600 rpm  
480 ft-lb at 4400 rpm

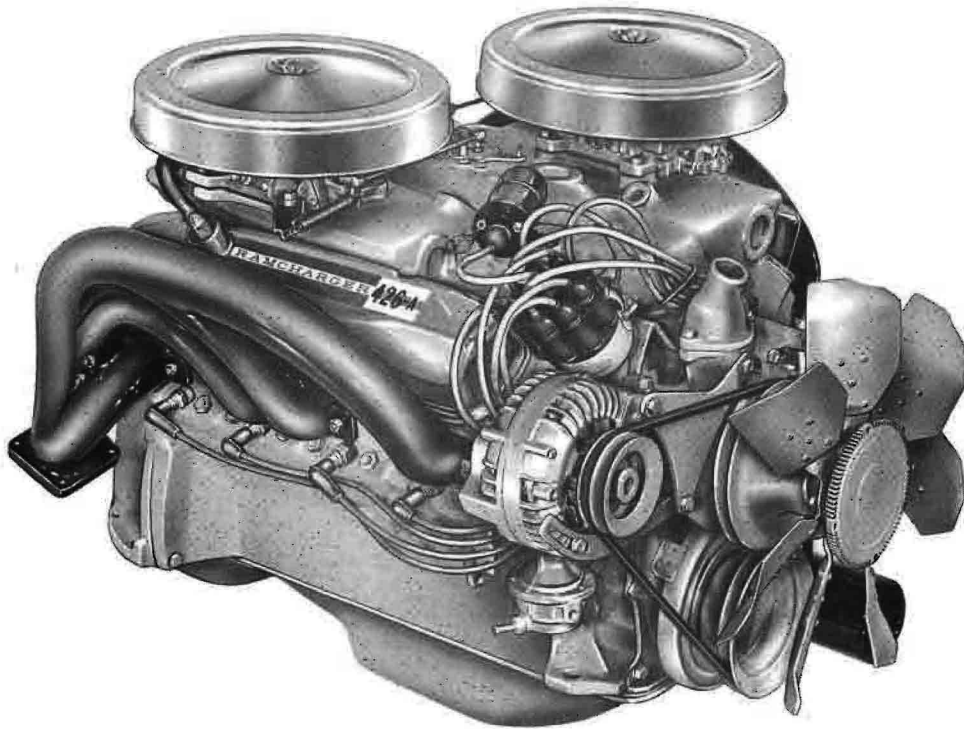
Type	90° "V"
Number of Cylinders	8
Bore	4.250 inches
Stroke	3.750 inches
Piston Displacement	426 cubic inches
Compression Ratios	Standard: 11.0:1; Optional: 13.5:1 <i>stage III is 12.5:1</i>

The potential for greater acceleration is suggested by several engineering refinements incorporated in Chrysler Corporation's newest maximum-performance engine. Because of the extent of these various modifications, new names are used to set it apart from its predecessor.

The Plymouth name is "Super Stock 426-II." Dodge calls it "Ramcharger 426-A." Except for the new decals on the rocker covers, outward appearance of the engine is similar to the familiar "426" introduced in the fall of 1962.



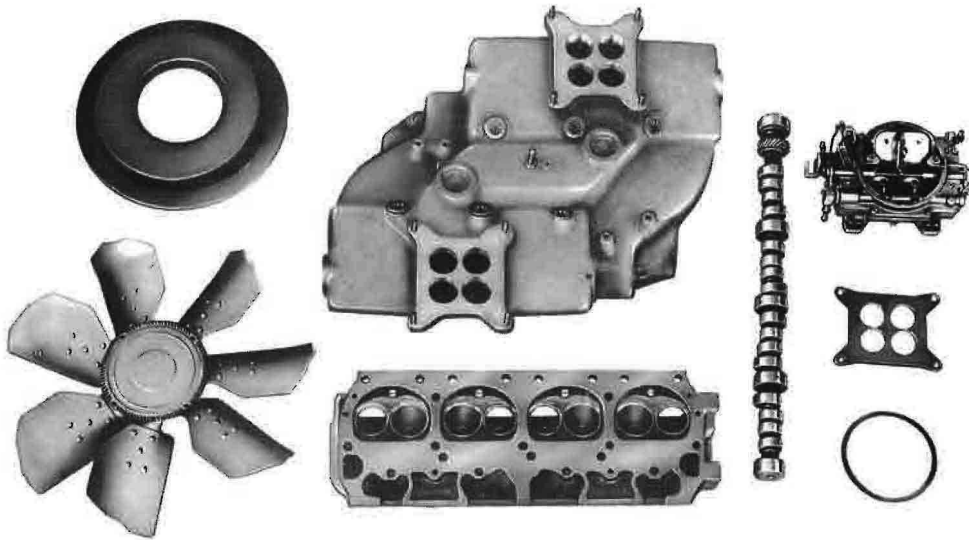
PLYMOUTH SUPER STOCK 426-II



DODGE RAMCHARGER 426-A

The twin four-barrel carburetors, along with their nonsilenced air cleaners, are similar, but larger; however, the upswept, streamlined exhaust headers are the same as last year's "426." The bore, stroke, and compression ratio also remain unchanged.

Engineering changes which increase the air-handling capacity of the induction system include a new, higher-lift camshaft, larger intake manifold risers, and modifications of the cylinder head for increased air flow capacity through the valve seat area.



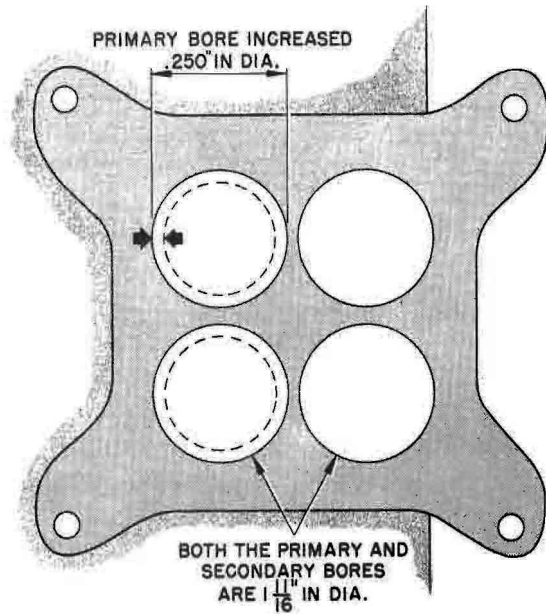
SPECIAL COMPONENTS OF THE 426-CU IN.  
MAXIMUM-PERFORMANCE ENGINE

### Air Breathing Refinements

In some ways, the performance of any internal combustion engine depends upon its effectiveness as an air pump. The more oxygen inducted, the greater the available power. Thus, modifications which improve volumetric efficiency invariably contribute to a greater rate of acceleration. In the newest 426-cu in. maximum-performance engine, this is achieved by the following modifications:

Carburetors Larger Carter AFB-3705S carburetors replace the earlier-type Carter AFB-3447S. Primary bore size is increased .250 inches to 1-11/16 inches to match the secondary bore diameter. The latter continues unchanged. The carburetor air horn diameter is enlarged 3/4 inch, necessitating a similar alteration to the bottom mounting plate of the air cleaner assembly.

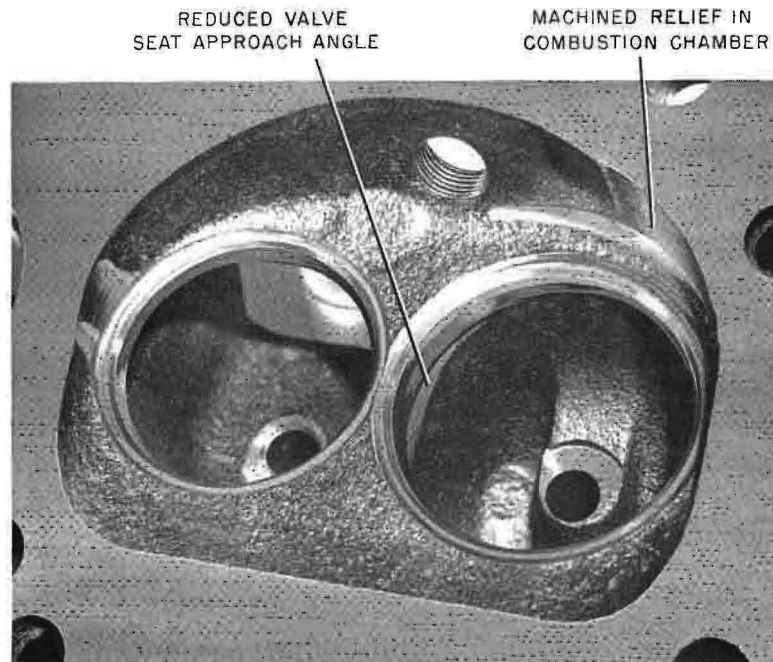
**Ram-Intake Manifold** The short-tube ram-induction characteristics are continued from the earlier "426." However, the riser openings in the new ram-induction manifold are .250 inch larger to match the increase in primary bore diameter of the new carburetors.



**LARGER PRIMARY RISERS  
IN NEW "426" RAM-INTAKE MANIFOLD**

**Cylinder Heads** The regular "426" cylinder head is modified by two additional machining operations which improve the intake air flow characteristics.

The first operation reduces the valve seat approach angle, inside the intake port, from 15 to 0°. This increases the maximum air flow capacity through the valve seat area.



**CYLINDER HEAD MODIFICATIONS - 426-CU IN.  
MAXIMUM-PERFORMANCE ENGINE**

The second operation provides a machined relief in the wall of the combustion chamber, adjacent to the intake valve, to reduce temperature build-up and restriction of the incoming fuel-air mixture.

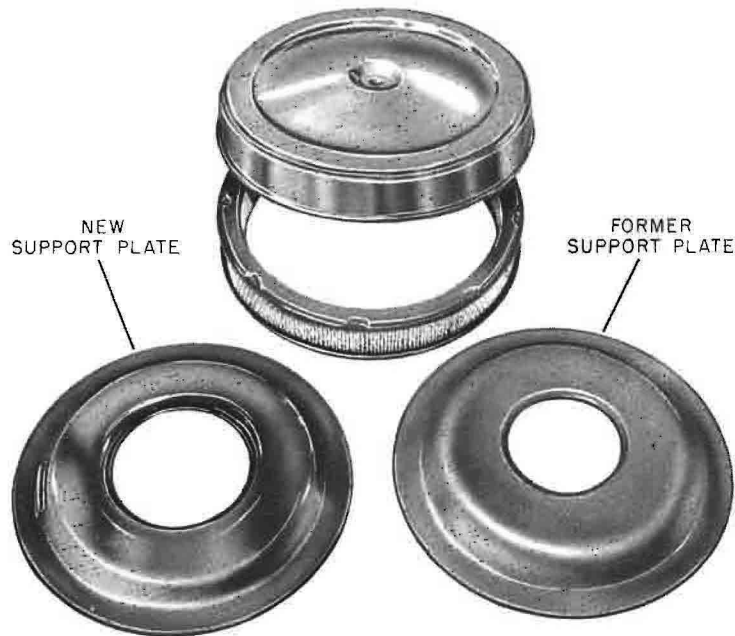
Undesirable temperature build-up often occurs on the intake stroke as the incoming fuel/air mixture flows across the hot metal surfaces inside the combustion chamber. A "scrubbing" action transfers heat to the mixture, causing it to expand. Output is adversely affected, because less fuel/air can be inducted during each intake stroke. By relocating the surfaces immediately confronting the entering gases, this "scrubbing" action is reduced considerably.

Camshaft The outstanding differences in the new camshaft are the higher valve lift, and longer exhaust duration. A comparison of the new camshaft with the earlier type is shown below.

	<u>New "426"</u>	<u>Earlier "426"</u>
Intake Opens	33 <sup>o</sup> BTC	33 <sup>o</sup> BTC
Intake Closes	87 <sup>o</sup> ABC	87 <sup>o</sup> ABC
Intake Duration	300 <sup>o</sup>	300 <sup>o</sup>
Intake Valve Lift	.520"	.509"
Exhaust Opens	87 <sup>o</sup> BBC	78 <sup>o</sup> BBC
Exhaust Closes	41 <sup>o</sup> ATC	42 <sup>o</sup> ATC
Exhaust Duration	308 <sup>o</sup>	300 <sup>o</sup>
Exhaust Valve Lift	.520"	.509"
Valve Overlap	74 <sup>o</sup>	75 <sup>o</sup>

New Fan Assembly A seven-blade fan, with fluid drive, replaces the earlier four-blade solid-drive type. This fan not only improves engine cooling, but requires less power at all speeds.

Air Cleaners The air cleaner elements are the same. However, the support plate openings are larger, as illustrated on the following page.



Basic "426" Engine Components The basic engine block, with its hardened crankshaft, tri-metal bearings, impact-extruded pistons, rings, connecting rods, valves, mechanical lifters, etc., is continued as initially developed for the earlier "426."

The upswept exhaust headers, designed specifically for unrestricted free flow, continue to be used because they tend to minimize back pressure.

#### "426" Engine Accessories

The engine accessories, such as the distributor; fuel, oil and water pumps; starter; alternator; etc., also continue as originally introduced on the earlier engine.

#### The New "426"--An Even More Formidable Champion

During 1962, the 413-cu in. 410 hp Plymouth Super Stock and Dodge Ramcharger engines won a place among the industry's most formidable competition engines. Following this, a second version designed for greater acceleration offered thirteen more cubic inches in displacement and fifteen more horsepower to establish further records as an outstanding acceleration engine. Now, the newest "426" emerges as another achievement in exploring more efficient methods for realizing maximum power--while remaining within established limits of displacement.