

# CHRYSLER CORP.

## ENGINEERING FOR '67s

By John Ethridge, *Technical Editor*

**ENGINES:** *Earth-shaking 440 Magnum and Super Commando new faces... 426 Hemi going places... 318 modernized and civilized, and 383 economized... 273 D/Dart Drag Racer available from Company Store... and small Slant 6 puts out more...*

Beat a Hemi with a 440? Yes! Sounds ridiculous, but with one of the new 440 Magnums in your Dodge or 440 Super Commandos in your Plymouth and everything else being equal, you have a good chance of doing it every time. But before we get into the why's and wherefore's, let's examine this beast in some detail.

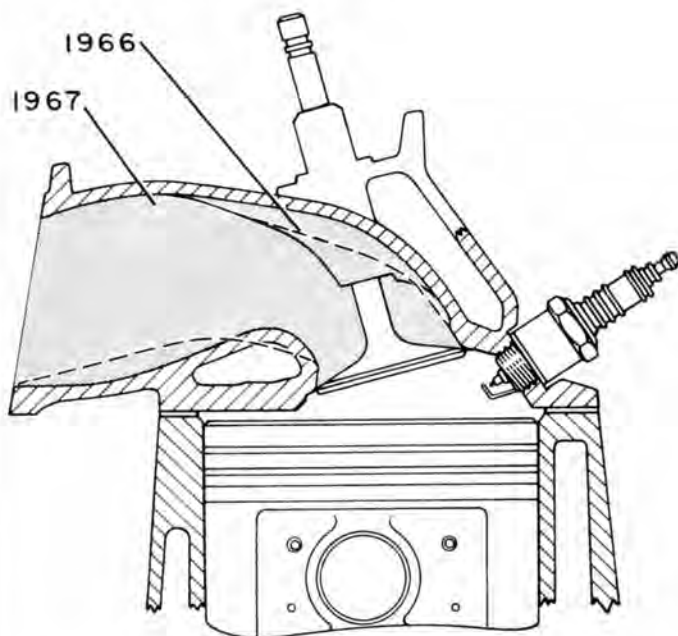
Actually, there's only one version, but for sake of separating their identities, Dodge calls it a Magnum and Plymouth calls it a Super Commando. All 440s, including the 350-hp standard engine, have larger ports this year. The high-performance version has a longer duration cam that moves the 480 lbs.-ft. torque peak from 2800 to 3200 rpm. Valve spring pressures are also increased, and internal flat-wound surge dampers are added to insure rev-ability. The exhaust valve is enlarged from 1.60 to 1.74 diameter with intake remaining at 2.08. A Carter AFB replaces the Holley carb with 1.68 primaries and secondaries (1.44 and 1.68 when Cleaner Air Package is installed).

Along with chromed valve covers and oil filler cap there's a large, twin-snorkel air cleaner, plainly labeled with the contents, to gulp in air. Low-restriction exhaust manifolds and large-diameter twin pipes carry the exhaust away. The hot 440 is rated 375 hp @ 4600 rpm, but feels far more than 10-hp stronger than the 1966 version 440 that was rated at 365 hp. A more believable difference would be 50 hp.

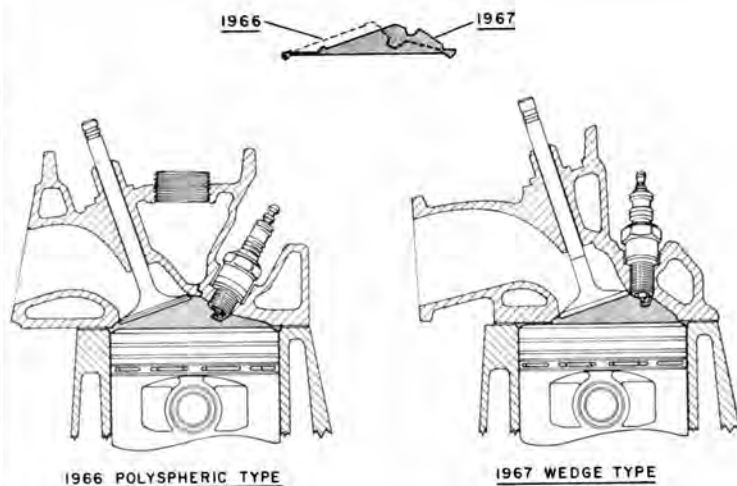
Getting back to our assertion that the high-performance 440 would do in a Hemi in an otherwise equal car, we actually were witness to several contests between the two, over approximately a quarter-mile, with the 440-equipped car winning every time. How is it possible that 375 hp beats 425?

Examination of published torque curves of the dual 4-barrel street Hemi seems to provide the answer. It peaks at 4000 rpm with 490 lbs.-ft. while the tuned 440 peaks at 3200 with 480 lbs.-ft. — only 10 lbs.-ft. less. At 3200 rpm the Hemi produces, at the most, 470 lbs.-ft. which means it also produces less power at that speed. It's easy to forget the 440 has 14 more cubic inches than the Hemi which counts for more than large valves at slower engine speeds. Also, the comparatively milder cam of the 440 augments this effect. In street-gear cars this extra belt of torque coming early in the rev range of each gear gives the 440-engineered car a jump that the Hemi cannot overcome within the quarter-mile.

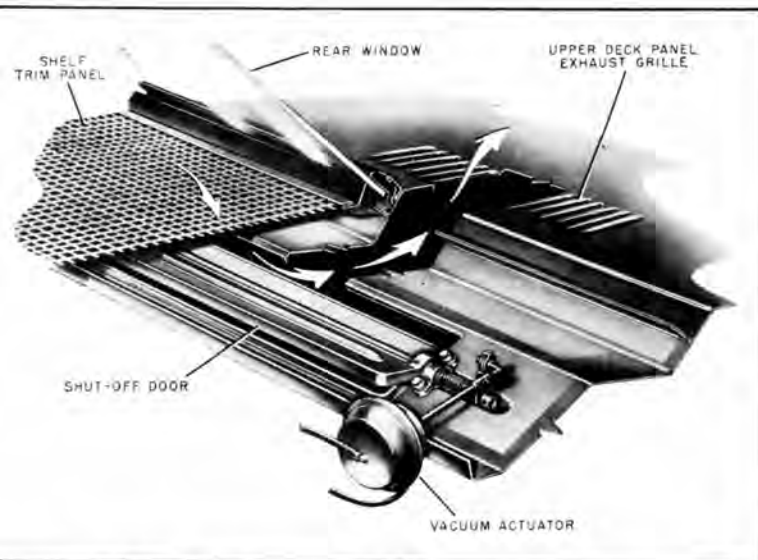
All bets are off, however, if the Hemi or even both cars are equipped with higher numerical strip ratios. Then the Hemi can find its legs quicker, and its superior power and



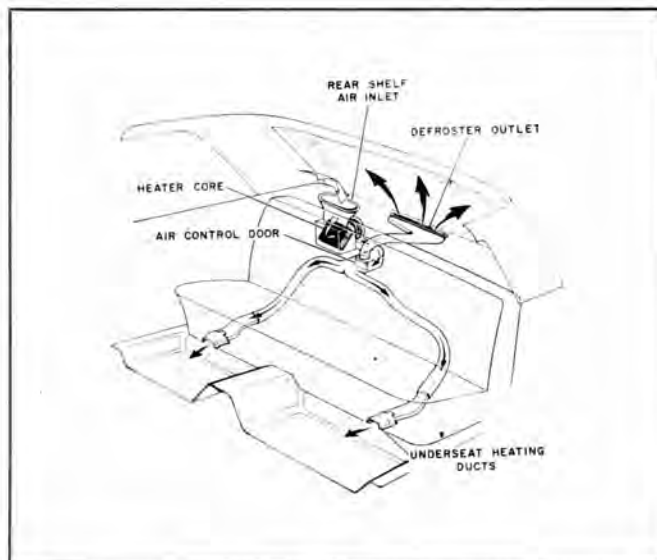
*New head casting for big 440 engine unclogs breathing passages, paves way for higher output of strong new engines.*



*Change in casting method transforms 318 into lightweight. Combustion chamber is now of almost universally used wedge shape.*



All 4-door hardtops and senior 2-door hardtops have vacuum-actuated flow-through ventilation to provide draft-free driving.



Rear seat heater, completely independent of front heater, hastens warmup in extremely cold weather, defrosts rear window.

## '67 ENGINEERING

continued

top-end performance will carry the day. With standard ratios the Hemi will out-accelerate the 440 at any speed above 90 mph or so.

The 426 Hemi, incidentally, will have broader availability in 1967. In addition to being optional in the Belvedere, Coronet and Charger, it also can be had in two new performance cars, the Plymouth GTX and the Dodge R/T. The high-performance 440 will be the standard engine for the last two, and optional in medium and large Plymouths and Dodges as well as Chryslers. Exceptions will be wagons and the Imperial.

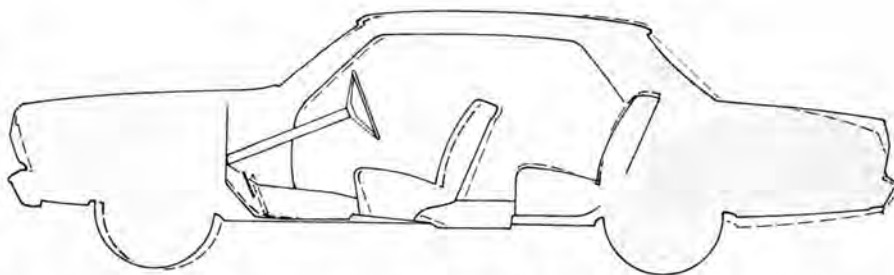
The 318 V-8 has lost 60 pounds of ugly cast iron as a result of switching over to precision casting of the heads and block using furan cores, permitting thin wall construction. Chrysler evidently has become sold on the process after first using it on the 440 in 1966. While in process of working over the 318, they switched to hydraulic valve lifters and adopted a more conventional combustion chamber shape. Basic dimensions and power output are unchanged.

The regular fuel-burning 383 2-barrel uses smaller sized venturis than in 1966, which is claimed to improve both acceleration and economy at the same time. Also, it now uses the same camshaft as the standard 350-hp 440 which happens to be of slightly longer duration than the cam used before.

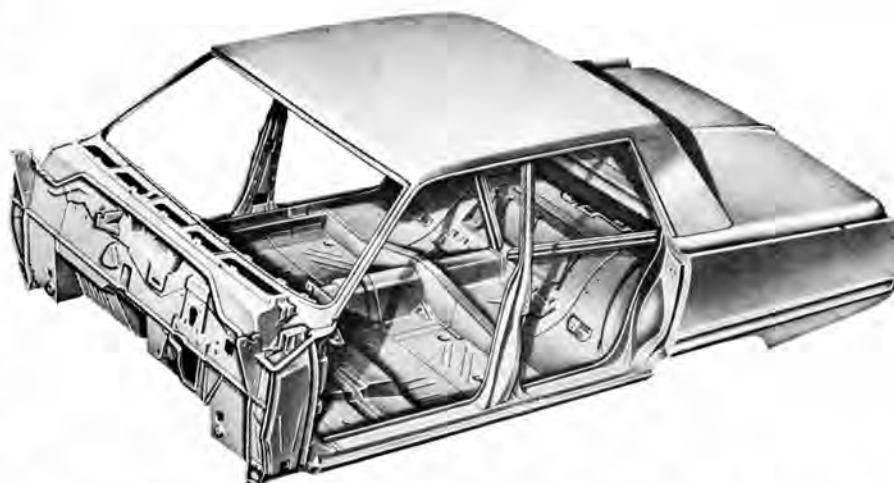
The D/Dart version of the 273 engine is rated at 275 hp — better than 1 hp per cubic inch. Practically a sure winner for Dodge Dart in D/Stock, it can be purchased through Dodge dealers from a list of parts or as part of a completely set-up car. It's blueprinted and contains such goodies as a Camcraft

1966 ———

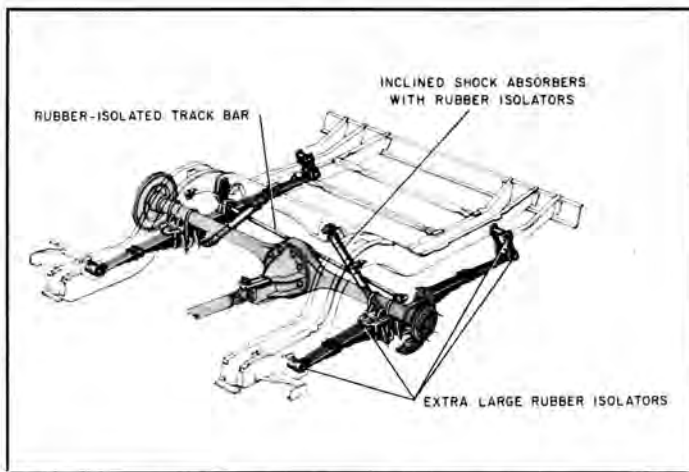
1967 ———



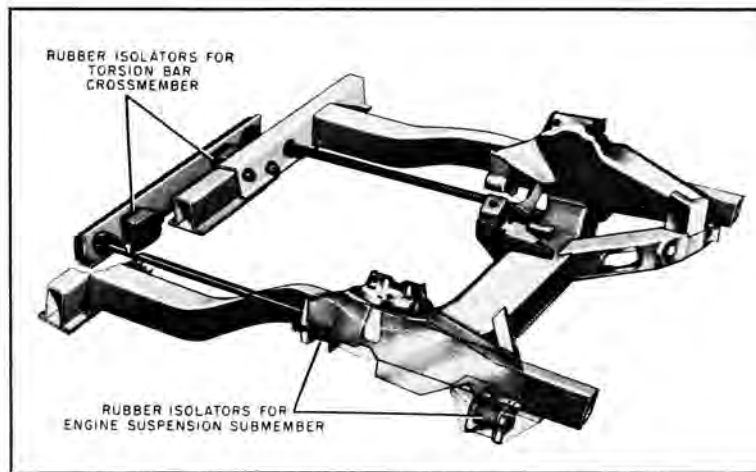
Lengthened wheelbase, somewhat squarer shape give more front leg room, rear head, shoulder room, plus greater trunk space for 1967 Valiant with slight external increase.



New Imperial unitized body bears close resemblance to Chrysler's, gets several hundred pounds of insulating pads, coating. Bolted-on forebody supports forward section.



Extensive use of rubber bushings and pads at all suspension tie points silences Imperial. Track bar locates axle sideways.



Same treatment with rubber does job at front of new Imperial. Engine noise, vibrations are further isolated by sub-member.

camshaft (you read it right the first time), Racer Brown valve springs, and Weber clutch. Doug's headers plus a host of chassis modifications go with the engine to make a complete race car. "Due to the expected use of these vehicles, no warranty coverage applies."

Both the 225 and 170 versions of the 6 have reshaped combustion chambers to permit more complete combustion. The smaller 170 now uses the same camshaft as the 225 which has more overlap, duration, and greater lift. This results in an output of 115 hp @ 4400 rpm — up from 101 in 1966.

**CHASSIS: GTX and R/T standard handling package ... Unit body for Imperial ... New Dart and Valiant**

The new Belvedere GTX and Coronet R/T have as standard many chassis modifications that are available only as options on other models. Spring rates have been increased all-around by going to .92 diameter torsion bars at front and 6-leaf springs at the rear. This changes wheel rates from 102 to 118 lbs./in. at front, and from 115 to 159 at the rear. Front roll stiffness has been increased by the addition of a .94 diameter anti-roll bar. Heavy-duty front ball joints and a set of stiffer shock absorbers complete the suspension package.

Standard for the R/T and GTX are 11 x 3 front and 11 x 2.5 rear drum brakes with 11-inch front discs paired with 10 x 2.5 rear drums as an option. The big drums are manually adjusted — a set-up preferred by serious drag racers.

Firestone Wide-Oval tires on 5.5-inch rims top off the job and contribute a lot to the road manners of these dual-purpose cars.

The Imperial gets its first really new chassis in 10 years, joining the rest of the corporation cars with unitized construction. A sub-frame carrying the en-

gine, front suspension, and torsion bars — and isolated from the main structure by rubber bushings and biscuits — prevents noise and vibration originating in the engine or at the front wheels from being transmitted to the passenger compartment. So complete is the job that a grounding strap between the sub-frame and the main frame is required to complete the horn circuit. The rear suspension has rubber at all interfaces for noise and harshness suppression.

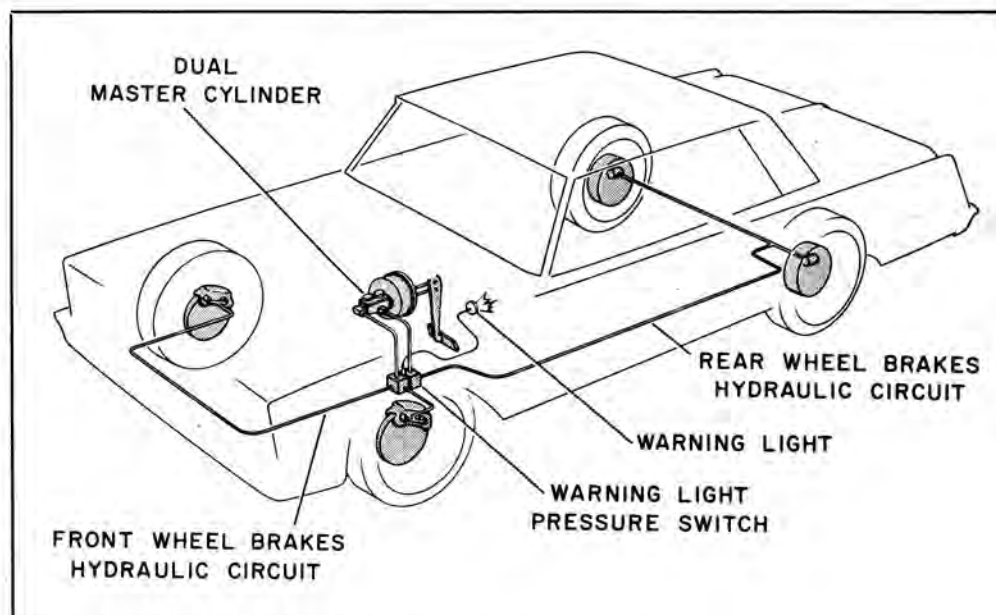
Standard for the new Imperial which, like its predecessor, weighs in excess of 5000 pounds, will be 11.76 diameter front discs and 11 x 2.5 rear drum brakes. Tire size is 9.15 x 15 on 6-inch rims.

The 127-inch wheelbase for the new Imperial falls in between that of the 1966 model and the 1967 Chrysler, which are 129 and 124 respectively. The shorter wheelbase results in a handy 2.7-foot reduction in the turning diam-

eter, making it easier to maneuver in close places.

Powering the Imperial will be a 350-hp version of Chrysler's 440, developing its 480 lbs.-ft. maximum torque at a low 2800 rpm. In keeping with efforts to reduce noise elsewhere in the car, this engine uses a tappet cover lined with a fiberglass pad. There are no optional engines.

The Dart and Valiant also have new chassis for 1967. Wheelbase for the Dart remains at 111 inches, but the Valiant's has been increased 2 inches to 108, resulting in more room inside. External dimensions for both cars are about the same as in 1966. Front treads are .5-inch wider than before to accommodate the larger optional D70-14 Wide-Oval tires. These are mounted on 5.5-inch rims and are available only with an optional handling package. Front disc brakes are continued as an option from the 1966 offerings. /MT



Dual brake system, shown here for disc-braked Imperial, is standard feature on all 1967 Chrysler Corp. cars. Warning light signals failure in either front or rear circuit.