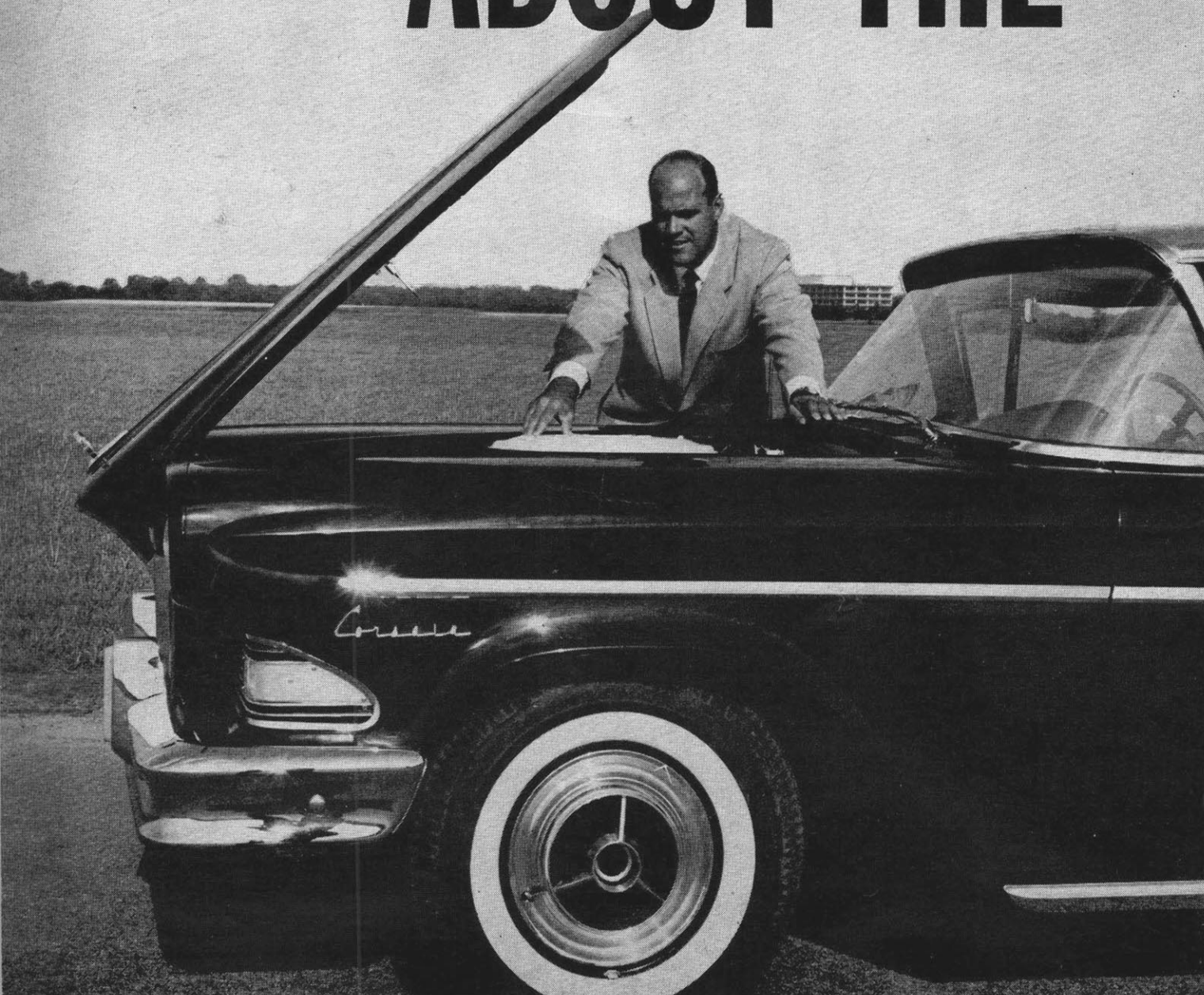
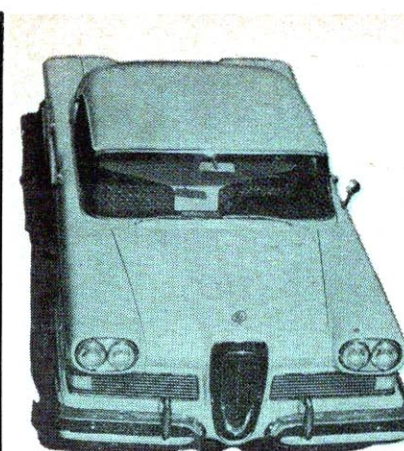
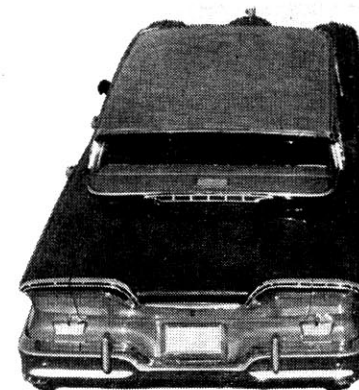


WHAT'S NEW ABOUT THE



Although there are four Edsel passenger car models for '58, all use the same grille and taillight theme.



EDSEL?

The versatile Edsel—first of the '58's, is off to a flying start with fresh styling and two husky V8's

By Ray Brock

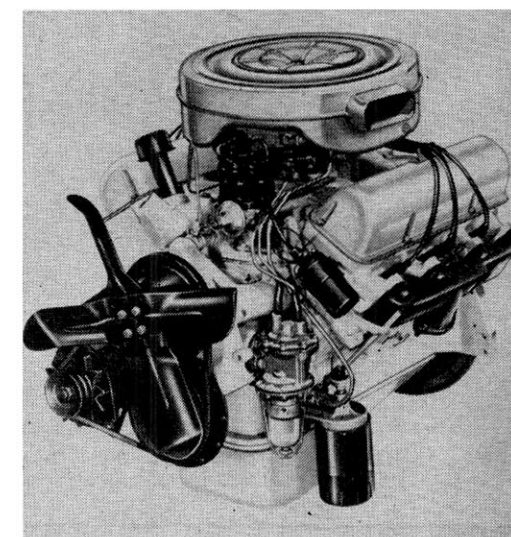
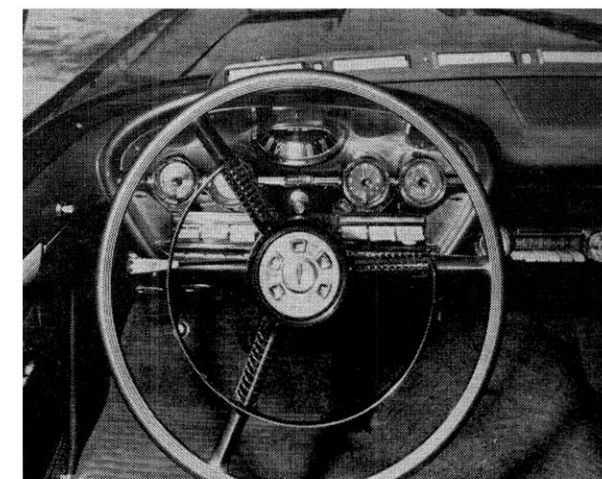
Excitement has never been as high in anticipation of the new car models as it has been during these last few months of 1957. Automotive minded America has been eagerly awaiting the 1958 versions from Detroit and by the time this issue of HRM reaches you, the one car that has probably caused more interest than all the rest will have been unveiled to the public. Edsel is the name.

Named after Henry Ford's son, the Edsel makes its impressive debut with four models and a total of eighteen body styles, all the way from a two-door sedan to convertibles and nine-passenger station wagons. In other words, the Edsel is invading the automotive field with an aim toward grabbing a fair sized chunk of our country's biggest business. Edsel buyers are naturally going to have to be wooed from other brands which is exactly why the Edsel was conceived, the idea being that although other cars in the Ford family would lose some customers, the majority of the new customers would come from the Chrysler or General Motors families.

The four models in the '58 Edsel passenger car line are the Ranger, Pacer, Corsair and Citation, listed in order from lowest to highest priced. The Ranger and Pacer both use the same chassis, body and engine, so in the remainder of this article, we'll refer to them as the small Edsels to simplify descriptions. The Corsair and Citation use another chassis, body and engine, so will be grouped together as the big Edsels. The station wagons have their own model names but use the same basic chassis and engine as the low priced Edsels, so descriptive material for the small models will apply to the station wagons as well.

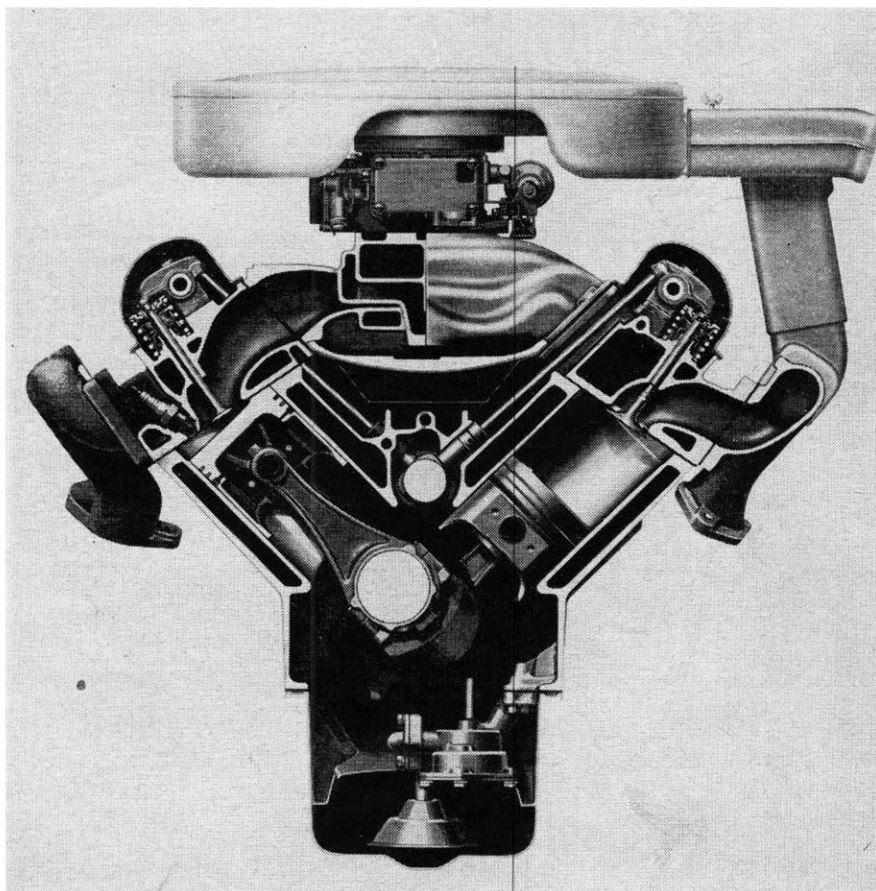
The body for the small models is basically the same as that used by the Fairlane Ford series but with exterior panelling designed so completely different that there is no chance to confuse the two. The big models use the Mercury body but here too, Edsel styling prevents any mistaken identity. All station wagon models use Ford wagon bodies with Edsel styling. Overall length of the small cars is 210-inches with an average height of 56.4 inches and a width of 78.8 inches. The big models are 219 inches long, 56.8 inches high and 79.8 inches wide.

Styling for the Edsel was planned so that there could be no



Top picture of Edsel instrument panel and steering wheel reveals the rotating speedometer dial, compact instrument cluster and five automatic transmission buttons in the center of the stationary steering wheel hub. Engine drawing is of 361 cubic inch small Edsel engine which promises to be a mechanic's delight with easy-to-reach location of spark plugs, ignition and fuel pump. Oil filter is also in accessible spot.

CONTINUED



The center ring of the Edsel grille, top picture, is named the "impact ring" and is used together with a divided bumper to protect the grille. Quad headlights are standard equipment on all models. The 410 cubic inch engine in the cutaway drawing above is used in the Corsair and Citation models. Note large port area, 10° block angle and piston which forms combustion chamber, spark plugs above exhaust manifolds, Y block.

mistake by the motorist about what brand of automobile he was seeing out on the highway. Whether viewed from the rear or through a rear view mirror, styling wanted the public to know that it was an Edsel. For this reason, a "Vertical Theme" was used for the grille to make it unlike any other car on the road. The inner part of the vertical grille is called an "impact ring" and is actually designed to augment the wrap around bumpers for frontal protection.

From the rear, long, horizontal tail lights and a depression in the middle of the deck lid immediately identify the Edsel. The outboard section of the tail light acts as a normal tail light, a stop light and a turn signal. The inboard section mounted on the deck lid provides normal tail light illumination only.

Viewed from the interior, the Edsel has an impressive selection of color and fabric combinations but the two items which soon catch the eye are the push button auto-

WHAT'S NEW ABOUT THE EDESEL? continued

matic transmission selector located in the middle of the steering wheel and the instrument panel. Five buttons spaced around the steering wheel hub permit selection of Park, Reverse, Neutral, Drive and Low at the flick of a finger. A planetary gear arrangement keeps the center part of the hub stationary while the steering wheel is turned. Depression of a button makes an electrical contact which activates a relay which in turn supplies electrical energy to an electric motor which moves the shift lever on the transmission to the position desired.

The instrument panel is closely grouped in front of the driver with a raised ring to keep panel light reflections from the windshield during night driving. The central instrument is the speedometer and it is located on the top part of the dash panel. A round, compass like dial with imprinted numbers rotates past a fixed needle to give speed readings. Spaces for four additional instruments, two to the left and two to the right are provided but only the fuel gauge is standard equipment. The other three are for a tachometer, a clock and a heater or air conditioning dial, all of which are optional equipment. Two groups of wide handles below the instruments take care of such items as lights, wipers, antenna, cigar lighter, etc., and another row of warning lights below the switches warn the driver when oil pressure, generator, heat, etc. are not normal.

The small Edsels use the Ford Fairlane chassis with a 118 inch wheelbase. Front wheel tread is 59½ inches and rear tread is 59 inches. The frame is of a ladder type construction with box type side rails and five crossmembers. An "I" beam X-member is used with the convertible body. Side frame rails flare out between the wheels to permit a recessed floor pan for passenger foot room and the frame is identical in basic design to the new chassis introduced with the '57 Ford. The chassis for the big cars is basically the same as the Mercury and the frame is similar to the Ford frame except for a six-inch longer 124 inch wheelbase.

Independent front suspension for all Edsel cars is the same with one-piece steel stampings used for both upper and lower suspension arms. A one-piece spindle and steering arm is located between the two A-arms by ball joints riveted to the A-arms. A coil spring acts in compression between the lower A-arm and a seat in the frame rail. The compression rate of these springs is 380 lbs/in for the small cars and 390 lbs/in for the small convertible. Surprisingly, the big cars have a spring rate of 360 lbs/in with 380 lbs/in for converti-

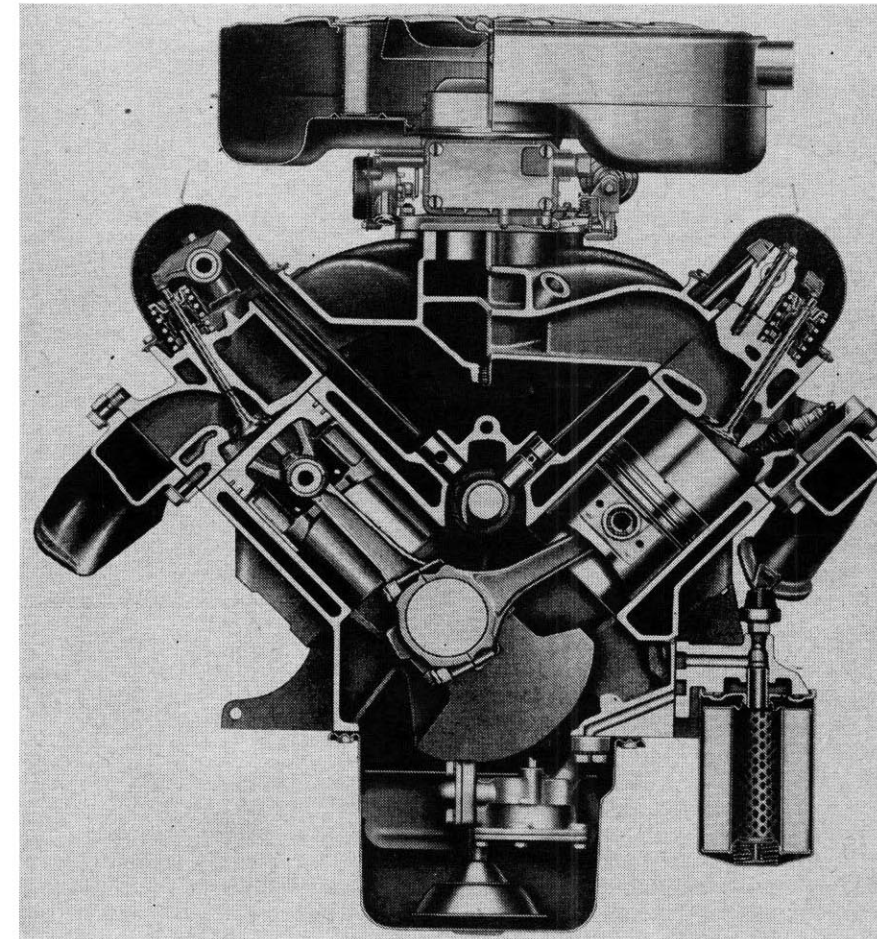
bles. A double-acting tubular shock is rubber mounted inside each coil spring between the lower A-arm and the frame and a link-type stabilizer bar is also rubber bushed to each lower A-arm while clamped to the frame in between.

Standard steering on all Edsels is a recirculating ball and nut type to keep steering effort at a minimum but for those who desire, two types of power steering are also available. The first is a linkage type similar to that used by Ford the past few years and is used for standard transmission cars or when dealer installed. The second type must be factory installed and cannot be used with standard transmission cars since the integral power steering and gear unit does not permit room for mechanical shift linkage needed with a standard transmission. A unique feature of this unit is that the vane type pump is mounted over the front of the crankshaft between the block and the front damper pulley. It is driven directly by the crank through a shaft key instead of by the common V-belt. Both types of power steering are the assist type and retain a mechanical link between the driver and the wheels for a positive feel of control.

The rear suspension is identical on all Edsel series as far as axle and springs go with only a slight difference in rear spring mounting to the frame necessary. Spring leaves are 2-inches wide, 55 inches long and 6, 7 or 8 leaves used, according to model. Seven for the big cars, six for the small cars and eight for the wagons. The fore ends of the rear springs on the small Edsel are rubber bushed to brackets on the outside of the frame rail while the big car has the brackets on the inside of the frame. The small car uses a tension type rear shackle while the big car uses a compression type shackle at the rear of each spring. All versions have three rubber snubbers to absorb torque in extreme cases, one over the differential and the others located one on each frame rail to strike midway between the front of the spring and the axle under hard usage.

The semi-floating rear axle is the same for all series and identical to that used with '57 Fords and Mercs. A straddle mounted pinion is used for greater rigidity and longer life and can be taken out without removing the rest of the rear end for bearing or seal servicing. Gear ratios used by Edsel are 2.91 for automatic transmissions, 3.70 for standard transmission and 3.89 for overdrive cars. A 3.22 axle is also listed as a "performance" ratio for the automatic transmission cars.

Brakes for all models are Bendix Duo-Servo type with an automatic adjuster. All drums are 11 inches in diameter but lining



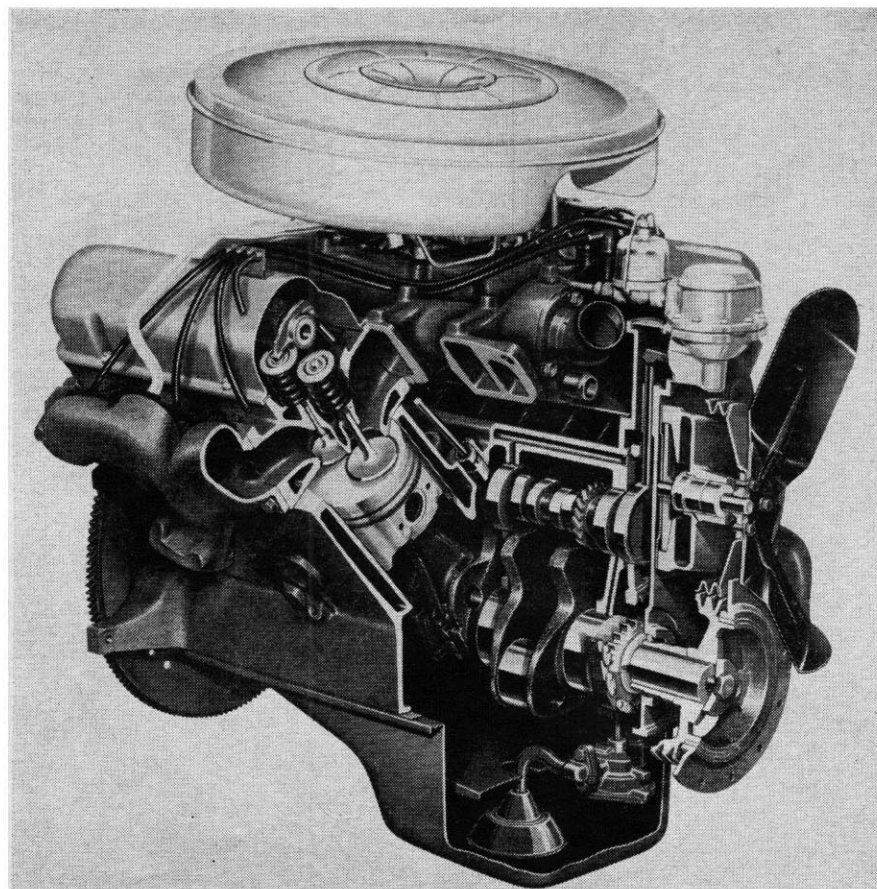
Seen from the rear, the Edsel Ranger model, top picture, presents a new approach to taillight styling with wide "eyebrow" type units that illuminate fully. The cutaway for the Ranger and Pacer engines reveals the unusual design whereby the intake manifold is not only the engine top cover but also extends under the rocker covers. Note the narrow head with short, large ports and push rods extending through the manifold.

widths vary a bit. The large cars use a 3-inch front lining and a 2-inch rear lining for a total brake area of 212.8 square inches. The small cars use a 2½-inch front lining and a 2-inch rear lining for 191.5 square inches. The automatic adjuster has a cable, lever and spring arrangement which will take a "bite" on the adjusting screw located between the bottom of the brake shoes if there is too much clearance and then open out the threaded adjusting

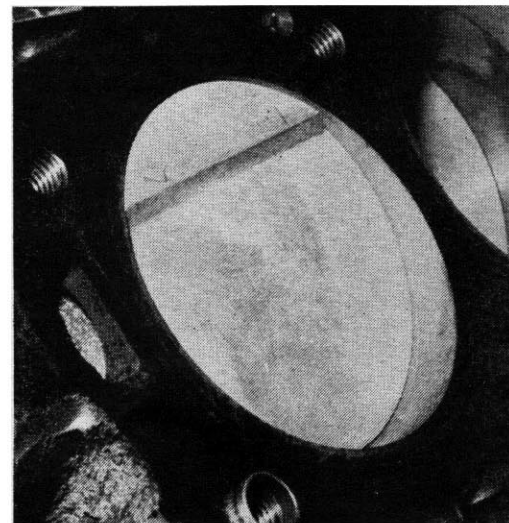
screw to keep the brake clearances correct. This "bite" takes place only when the brakes are applied as the car is rolling in reverse and can not over-adjust the shoes.

The power brakes are of the conventional vacuum booster type with the booster unit firewall mounted between the pedal linkage and the master cylinder. A vacuum line goes from the unit to the intake manifold.

(Continued on following page)



New 410 inch big Edsel engine has very large ports and both valves are of ample size to give excellent high speed operation. The lifters are hydraulic and only a single large valve spring is used but engine rpm will reportedly exceed 5000 without lifter pump-up or valve float. Combustion chamber is formed in 410 engine by 10° angle of block and small wedge on upper portion of pistons. Compression ratio, 10½.



Autothermic with a full skirt, a flat top, .975 inch pin diameter and three rings.

The heads as mentioned earlier are very narrow, in fact only about 5¾ inches wide and have very large ports. The combustion chamber is a cast angle wedge with a compression ratio of 10.5 to 1. Intake ports are evenly spaced along the head and the individual exhaust ports are very nearly even with only a slightly wider spacing between the two center ports. Valve size is very good with 2.027 inch intakes of Sil-Chrome steel and 30° seats plus 1.556 inch exhaust with 45° seats. A single large diameter spring is used on each valve with a mushroom neoprene seal to control valve stem oiling. Rocker arms are non-adjustable and have a ratio of 1.77 to 1. They are mounted to a common shaft on each side and a cap screw through the shaft and a rocker stand between each pair of rockers fastens the assembly to the head. The push rods are solid and the tappets are hydraulic to compensate for wear and heat expansion. Valve timing for the cam is: Intake open, 17° BTC, close 59° ABC, exhaust open 57° BBC, close 19° ATC. Lift for both intake and exhaust is .401 at the valve.

Oiling for the new 361 engine is supplied by an eccentric rotor pump which

bolts to the front part of the engine block with a pickup screen in the forward located oil pan sump. Oil from the pump passes directly through a short passage to a full flow filter on the left front of the engine and from there back into the oil galleries in the block. All moving parts of the engine are lubricated either by direct pressure or by pressure mist.

The large intake manifold will certainly qualify as the heaviest ever built by Ford and certainly one of the most unusual ever built by anybody. The vacuum and centrifugally advanced distributor clamps to a seat in the front of the manifold which places it in easy servicing position and it is gear driven from the front of the cam with the oil pump hex shaft being engaged by the lower end of the distributor drive. Intake passages are huge and should contribute to good high speed operation although economy figures probably won't be much to shout about. But then, full size cars today aren't particularly noted for being thrifty on a cross country high speed cruise anyway. The single quad carburetor is of the Holley variety and is protected by a dry type air cleaner with a replaceable paper element. These elements are good for many thousands of miles with only an occasional shaking of

the element to remove loose dirt. The fuel pump is a double pump unit with fuel supplied and filtered through the lower portion and a vacuum boost for the wiper motor supplied by the upper unit. Pump mounting is on the left front of the block near the oil filter.

This 361 Edsel engine promises to be a real good one and should be readily adaptable to a few modifications. One of the first items to hit the accessory market should be an aluminum intake manifold which will afford more carburetion and probably eliminate 50 pounds of weight. Port and valve size is ample although a bit of polishing wouldn't hurt. One item that is going to please owners is that spark plugs are located above the exhaust manifolds instead of below as on other Ford Motor Company engines in the past which will both ease plug changing and prevent burned knuckles.

Taking a look at the big 410 cubic inch Edsel engine, we find that it differs greatly from the 361 in design although they both have many of the same Ford engineering features. The 410 block is of the Y-block design with 90° V8 cylinder banks and is conventional to past Ford blocks except that the block surfaces are milled at a ten
(Continued on page 78)

WHAT'S NEW ABOUT THE EDESEL? continued

fold and a reserve tank mounted behind the left front wheel maintains enough vacuum for several stops should the engine die as the car comes to a stop. A direct mechanical linkage also permits stops without engine vacuum although the effort needed is much greater than with the assist.

Tires and wheels are 14-inch with 8.50 x 14 tubeless tires used on the big cars and 8.00 x 14 tubeless used on the smaller models. The stamped steel wheels have a very wide flange on the outside of the wheel to give added protection against tire roll-off on severe turns. This wide flange also prevents changing tires in the normal manner since the bead cannot be pried over the outside of the wheel. The tire must be removed and installed over the inside of the wheel.

Transmissions available in the small series include standard shift, standard with overdrive and automatic. The automatic is the only one available in the big series. The standard trans is similar to that used in '57 by Ford and so is the overdrive unit. Gear ratios are 2.49 in low, 1.58 in second and direct in third. Reverse is 3.15 and overdrive reduces engine speed by 28% percent. The automatic transmission used with the smaller cars is of the Fordo-

matic type with ratios of 2.40 in low, 1.47 in second, direct in third and 2.00 in reverse. The automatic transmission used in the big cars is of the same basic design but has a 2.37 low, 1.48 second, direct third and 1.84 reverse.

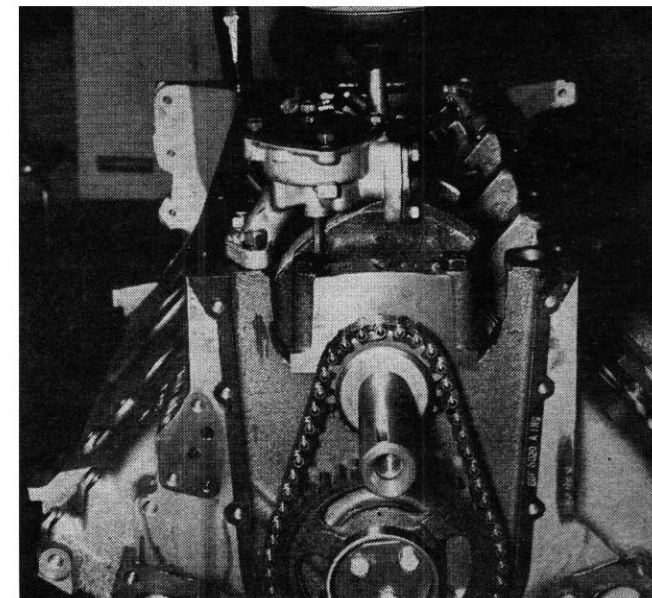
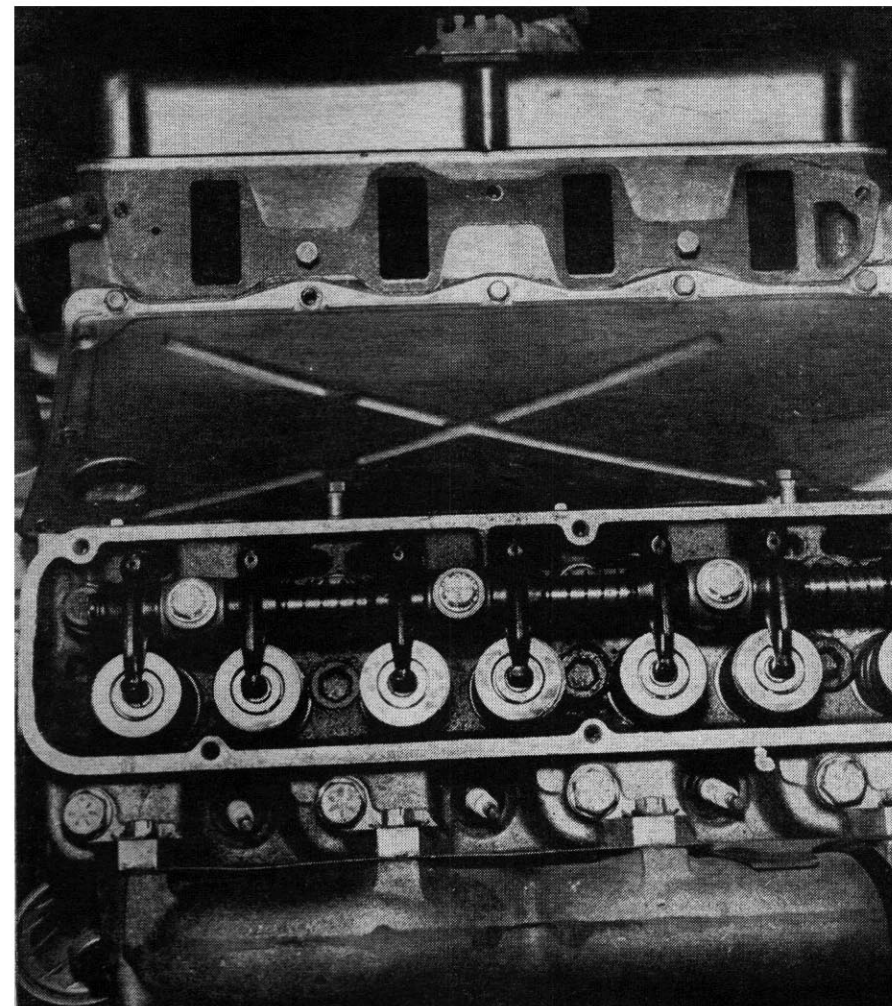
The clutch used with the standard shift models is an 11-inch semi-centrifugal type with a cast iron pressure plate and a spring loading of 1710 pounds. Both throwout and pilot bearings are sealed and require no lubrication.

We have purposely neglected all mention of the Edsel engines until now because this is where the Edsel is really new. There are two brand new engines for the '58 line and little or nothing will interchange with any Ford Motor Company engines used up until this time. The smaller Edsels will be powered by a 361-inch V8 rated at 300 horsepower with 405 foot/pounds of torque at 2900 rpm and the larger cars will have an entirely different engine of 410 cubic inches and a rating of 345 horsepower with 472 foot/pounds of torque at 2600 rpm.

To prevent confusion, we will go through these engines one at a time starting with the 361 cubic inch small engine. The block is of the 90° V8 design with the Ford Y-block feature at the bottom to give added

support to the main bearing webs. The lately popular method of using the intake manifold for the top engine cover is used on this engine, only the 361 Edsel goes even further than most by extending the outer edges of the manifold beneath the rocker arm covers. Check the cutaway drawing on the 361 and note how the push rods pass through holes in the intake manifold instead of through the edge of the head as they normally do in a V8. Weight of the bare block was not available to us at press time but it is undoubtedly far less than past ohv Ford V8's. The heads too probably weigh far less due to less width than usual but the large intake manifold should help even things up. The piston bore is 4.05 inches.

The crankshaft is cast of Pearlitic alloy iron which is the method that has been used by Ford for several years and the finished weight of the crank is 62 pounds. The stroke is 3.50 inches and the main bearing journals are 2.750 inches in diameter, less clearances. Thrust is taken by the center main. Rod journals are 2.69 inches in diameter and the forged steel rods are 6.54 inches long from crank pin center to the piston pin center. Bearing inserts for both mains and rods are steel-backed copper lead. The pistons are aluminum alloy



Huge intake ports in the heads of the 410 engine are nearly three inches high, provide lots of area to intake valves. Single rocker shaft and non-adjustable rockers are held to heads by four cap screws and heads are fastened to block by ten evenly spaced cap screws. Deep Y-block is designed to give added support to the main bearings. The oil pump mounts to the lower face of the block and small hex shaft fits into distributor.

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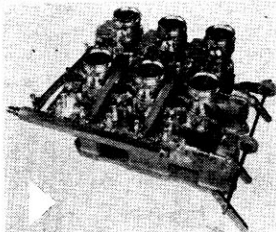
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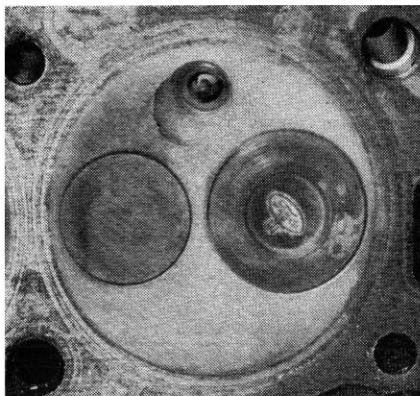
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WHAT'S NEW ABOUT THE EDSSEL?

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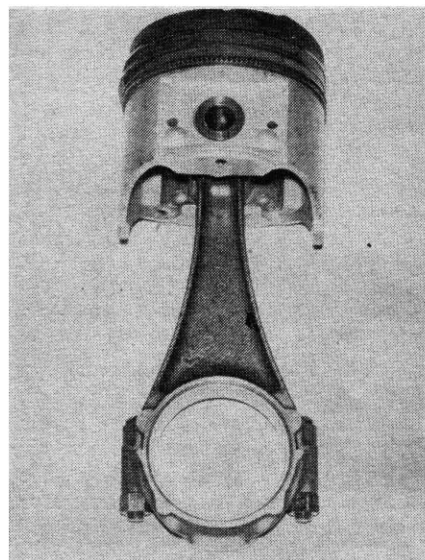
"Rams horn" cast exhaust manifold has large cross section to provide good gas flow with minimum of back pressure. Both intake and exhaust ports are evenly spaced.

degree angle instead of perpendicular to the cylinder bores. By looking at the cut-away on the 410, you can see how this ten degree slant is used to form a cylindrical wedge combustion chamber. The heads are absolutely flat except for a slight pocket around the spark plug and the valves seat on the flat head surface. The entire combustion chamber is a result of the angle slice on the block and a slight wedge on the top edge of the otherwise flat top piston. The compression ratio of this chamber is 10.5 to 1.

The crankshaft is cast of Pearlitic iron, according to Ford policy and has a finished weight of 76 pounds. Main bearing journals are a husky 2.90 inches in diameter with the thrust taken by the center main. A stroke of 3.70 inches is used with 2.750 inch diameter rod journals. The rods are 6.60 inches long center to center with a .975 inch piston pin and steel-backed copper lead inserts are used for both the rod and main bearings. Pistons are aluminum alloy Autothermic with a slipper skirt and three rings.

Cylinder heads are more conventional in width than those used with the 361 engine but do present something new for American engines of late since the head is absolutely flat, except as mentioned earlier, for a small pocket around the spark plug electrode. Intake and exhaust ports are very large and are evenly spaced. Both valves seat right on the flat head with 2.085 inch Sil-chrome intakes and 1.775

2.085-inch diameter intake valve and 1.775 inch exhaust valve seat flat on the chamberless 410 head. Only the small pocket at the spark plug mars otherwise flat surface.

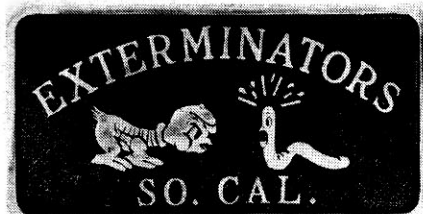


Rod and piston used in the 410 engine display the husky design of the new Edsel engines. Slipper skirt type piston is for a 4.20 inch bore, rod for 2.750 inch journal.

inch Austenitic exhaust valves used. A 30° seat is used for the intake and a 45° seat for the exhaust. A single valve spring with a wound flat damper inside is used for each valve with mushroom type neoprene seals to prevent excessive guide oiling. The rocker arms are non-adjustable, with a ratio of 1.77 to 1, and pivot on a single common shaft held to each head by cap screws. Push rods are solid and tappets are hydraulic.

The cast iron camshaft has large 2.26 inch bearing journals which permits large cam lobes and a resultant low unit loading pressure on the cam to prevent cam wear. Intake valve opening is at 27° BTC and closing is at 69° ABC. The exhaust opens at 69° BBC and closes at 27° ATC with a lift of .444 to both valves.

The oil system for the 410 engine is identical to that used with the 361 and the pan sump for the 410 is also located at the front of the engine. A new type of water routing for the cooling system has been introduced with the 410 engine. Water is routed directly from the pump to the heads and intake manifold with the thermostat in the front of the manifold keeping the water in the heads and manifold until the proper operating temperature is reached. This use of hot water to heat the intake manifold speeds warmup periods for cold weather starts and the direct routing to the heads insures proper



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cooling with long valve life. A second pair of thermostats in the front of the block open when block temperature reaches the desired heat and permit a flow of water independent from that in the heads to circulate through the block and then into the intake manifold for recirculation back through the radiator. Carburetion used with the water heated manifold is a single Ford Holley four-throat with a dry type replaceable paper element air cleaner. An air intake duct off the side of the air cleaner has a heat operated butterfly which automatically selects cold air for normal operation or warm air from a duct which surrounds the exhaust manifold for cold starts.

The distributor is driven from a gear just ahead of the first cam lobe and also engages the shaft that drives the oil pump. Both centrifugal and vacuum advances are used with a single set of points. A single unit fuel pump and fuel filter are also located on the top front of the block adjacent to the distributor so both should be very easy to service.

Spark plugs are easily accessible from the top of the engine where they fit between the large ram's horn exhaust manifolds and the rocker arm covers. Like the 361 engine, burned fingers should be hard-er to come by.

We had no weight figures available for either complete engine at press time but we have information from a reliable source that the 410 engine, although 40 plus inches bigger than the '57 Lincoln 368 engine, is nearly thirty pounds lighter. Outside dimensions such as width and length are within an inch in all directions.

We had an opportunity to drive the Pacer and Corsair four door hardtop models during a recent press preview at Detroit. Both cars seem very agile with the 410 model having a definite advantage in the acceleration department. Ride and handling were very good in the best Ford Motor Company tradition and there were plenty of styling features to catch the eye. A lot of these cars will be sold due to styling but personally, the part that really caught our eye was in the engine department. These two new engines have what it takes to produce all day cross country cruising while just loafing. Wearing one of them out should require an awful lot of hard miles.



"Sorry . . . but it was a nice try, ski-foot!"

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