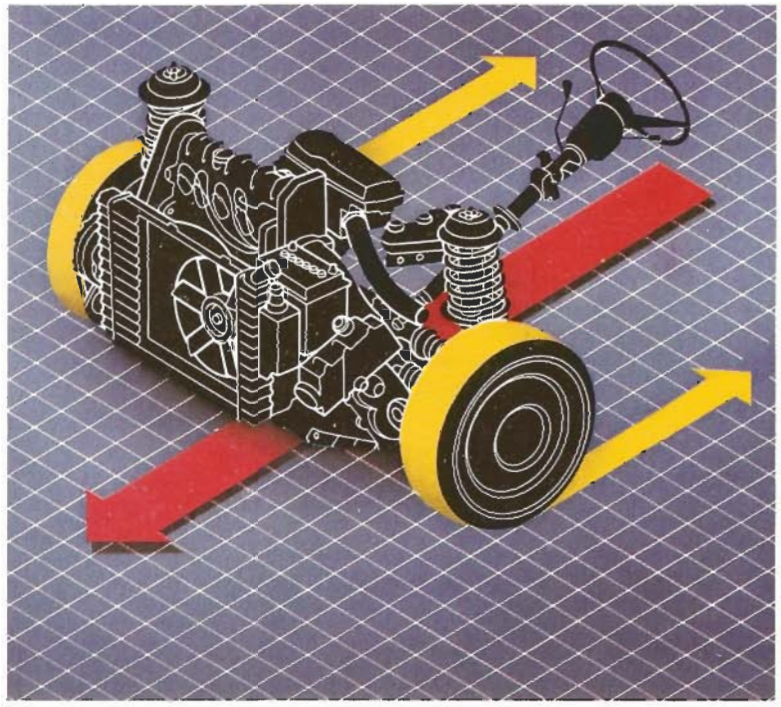
THE NEW CHRYSLER CORPORATION

FRONT-WHEEL DRIVE BUYER'S GUIDE



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For additional copies of *"The Front-Wheel Drive Buyer's Guide"* write to: Buyer's Guide, 35000 Industrial Road, Livonia, Michigan 48150.

Front-Wheel Drive: The way America is going.

"There's a new wave of American enthusiasm for smaller FWD cars. Smaller cars that are fuel and space efficient, relatively inexpensive to own and operate, and fun to drive as well. The simplicity of front-wheel drive makes it a system right for the times. The front-wheel drive concept sets off a chain of opportunities that permits the building of a more efficient automobile than the front-and-rear power train system we are used to. Better weight efficiency. Space efficiency. Power efficiency. And better resultant fuel economy. All this with outstanding ride and control.

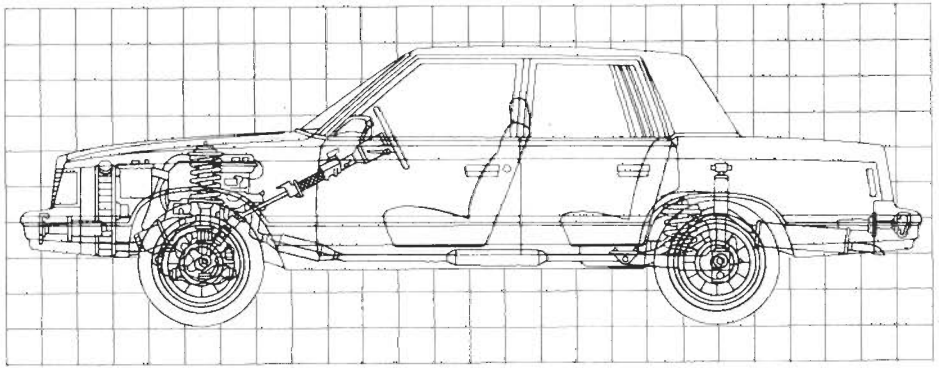
Chrysler was one of the first major American manufacturers to recognize the concept of front-wheel drive as the new wave of automotive efficiency. In fact, by 1985 Chrysler will be the first all front-wheel drive American car company.

Most Americans, we feel, do not yet completely understand the front-wheel drive concept. Therefore, we have prepared this booklet to tell you, the American car buyer, the history of front-wheel drive and the many benefits and advantages it offers. After you have read it we think you'll be a front-wheel drive convert. And you'll know all you need to know about our front-wheel drive products to buy them.

Front-wheel drive. The New Chrysler Corporation believes in it."

Lee A. Iacocca

LEE A. IACOCCA
Chairman,
The New Chrysler Corporation



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THE STORY OF FRONT-WHEEL DRIVE

Front-wheel drive (FWD) is as old as the car itself. Nicholas Cugnot's three-wheel steam tractor of 1769, the first motor vehicle, had front-wheel drive with a single front wheel. Dr. Ferdinand Porsche's first cars (circa 1900) had FWD. In Porsche's biography, he is quoted as saying: "The suitability of the front wheels, both steering and driving, eliminates in one fell swoop the unpleasantness of the vehicle with rear-wheel drive which is pushed, whereas front-wheel drive plus steering is identical with horse propulsion in that the vehicle is being drawn, and when a corner is taken, is pulled always and immediately in the new direction."

As cars became more sophisticated, automotive design evolved into four basic categories —front engine/front-wheel drive, front engine/rear drive, rear engine/rear drive, and mid-engine/rear drive. Controversy arose concerning the superiority of one design over the others. Front-wheel drive builders continued to argue that no one in his right mind would put the horse behind the cart.

This kind of thinking made sense to nearly everyone except engineers, whose lack of enthusiasm for front-wheel drive was due to the fact that universal joints, needed to transmit power and steering control from the engine to the drive wheels, were at that time unreliable for FWD service.

During the late 1920's, when universal joints of satisfactory durability had been perfected, engineers took another look at FWD. In Europe, the narrow, winding roads generated the demand for smaller cars with maximum handling ability. From this modest beginning, the front-wheel drive wave began to grow.

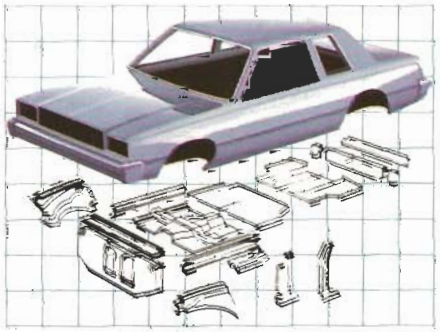
As car manufacturing progressed in America, the most generally used drive train was rear-wheel drive. There was no need for compactness or fuel economy. Big powerful machines were what people wanted. And they could afford them. From force of habit or for reasons of cost, the rear-wheel drive car has remained standard in America.

In Europe, on the other hand, front-wheel drive afforded design engineers unique possibilities in creating small and medium-sized cars that offered compactness, comfort, large interior space, load-carrying ability and superior road handling. Both American and European engineers saw the inherent advantages of FWD, but European designers pursued its possibilities more diligently simply because they had a greater need for it.

The engineering advantages of Front-Wheel Drive

BODY

Theoretically, front-wheel drive gives the body designer greater freedom of expression. A lower floor pan made possible by the elimination of transmission hump and drive shaft tunnel permits lower bodies without sacrificing headroom. It also permits moving the fuel tank ahead of the rear wheels to enhance protection in event of a rear-end collision. And it allows a large trunk capacity. Frameless body construction also becomes possible, allowing even further reductions in overall height. What's more, it allows the installation of deeper seat cushions because humps and tunnels are almost removed from the floor. The flatter floor, moreover, provides more room and comfort for the passengers. All that FWD vehicles require in the rear is a simple beam axle or independent trailing arms that reduce trunk intrusion to a minimum. And with a flatter floor without a drive-shaft tunnel, the underbody aerodynamics can be improved. Because driving thrust is not transmitted through the rear portion of the FWD car frame, lighter sections can be used; the only prerequisite is that enough strength be provided for body rigidity and the absorption of possible rear bumper impact. All drive components can be contained in the front, combining the engine, transmission and final drive (transaxle) into a single unit that makes a compact power package.



DRIVE TRAIN

With the entire power package in a single unit, front-wheel drive offers definite advantages over the rear-drive system. Because everything is up front and in one place, a few light alloy castings can

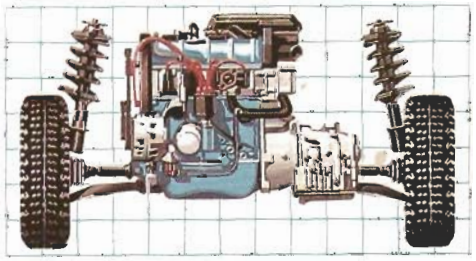
house the entire power train unit, giving rigidity and alignment that are not possible with rear-drive arrangements. The final drive is close to the transmission, not divorced from it by a long propeller shaft. Noises from the transaxle and drive shaft are minimized in the passenger compartment, and soundproofing the passenger compartment is simplified.

HANDLING

Directional stability, the ability to stay on course, is something that a driver always wants when cruising along the highway or climbing a slippery grade. When partial wheelspin sets in on a rear-wheel drive car, the tail end will often drift sideways. The FWD car keeps the same heading because its rear wheels are free of torque loads and side forces. They do not influence the car's steering operation. Any lateral drift at the front end of a FWD car can be corrected with a minimum of wheel movement while many wheel turns may be necessary to correct rear skid on a RWD vehicle. Some FWD advocates mention the "arrow principle" in explaining the good straight-line or cross-wind stability of FWD. To illustrate their point, they suggest that it is harder to hit a target with a thrown dart if you throw the feathered end first. While there is a more complex explanation than this "logic" the fact remains that a FWD does offer unusually stable behavior in a crosswind or when buffeted by the turbulent air of a passing truck.

RIDE

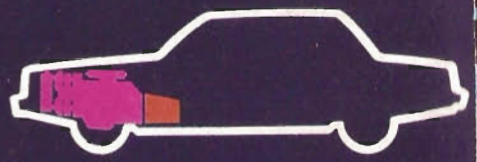
Front-wheel drive can contribute to great ride comfort. This is because it opens the way for independent suspension at little or no extra cost. It eliminates the conventional rear axle with its



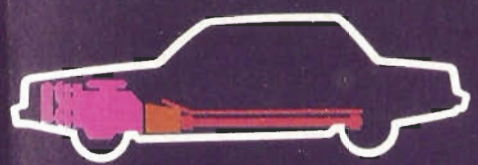
gearing, the biggest mass of unsprung weight in a conventional car and one of the enemies of a smooth ride. (Unsprung weight is the weight of components, such as wheels, tires and axles, that is not supported by the springs.) The rear wheels can be mounted on a lightweight axle, needing only a simple attachment because it's free of driving torque and thrust load. Softer, longer springs can be used to further improve the ride.

A close look at how FWD saves space and weight.

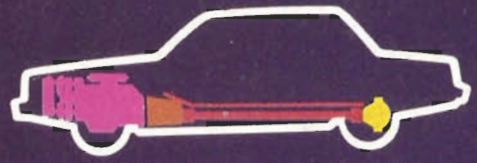
The size and weight of an automobile is governed to a great degree by the type of engine/power train arrangement it uses. See how FWD saves space and weight when compared to the conventional front-engine/rear-drive system.



1. In order to have a reasonably sized passenger compartment and trunk area in this rear-wheel drive design, it is obvious that the car is going to have to be rather long. And as a general rule, that means more weight.



2. In this conventional design passengers must sit between the engine in the front and the high differential in the rear. The fuel tank has to go somewhere . . .



3. . . . either in front of the differential where it encroaches upon an already crowded passenger compartment . . .

4. . . . or behind the differential where it can rob trunk space.

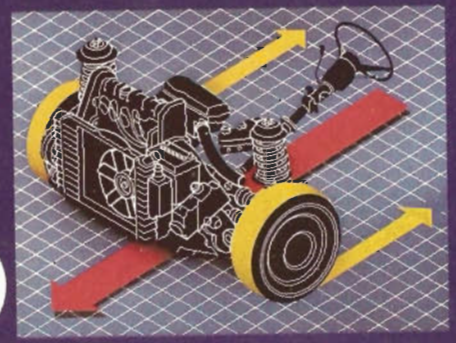
Now...let's get rid of the drive shaft and differential and reposition the fuel tank and see what happens in the FWD car.

5. With the front wheels driving the car we can shorten the engine compartment. First, we mount the engine transversely. Then, because a transaxle feeds power directly to the front wheels, the transmission hump is virtually eliminated. This also saves space and weight.

6. With the drive shaft, rear differential, and high drive shaft tunnel gone, passengers sit comfortably. The fuel tank is moved forward . . . still maintaining good trunk space even though the rear end is shortened.

7. Net result? Seating area comparable to a larger rear-drive car . . . with a minimum hump to steal foot room from passengers. This, plus good trunk space. And all in less overall length than a rear-wheel drive vehicle.

Reduction in length means a substantial reduction in body weight. The small transaxle and the elimination of the long drive shaft and bulky rear differential provide a further weight reduction. And because of this total weight reduction, a large displacement heavy engine isn't required to move the car. Consequently, the engine needed can be smaller, lighter, and more fuel efficient. In the battle for fuel economy, the name of the game is weight reduction, and that means front-wheel drive!



FWD is the wave of the future.