



## BMW 1800-TI

This little Q-ship may be all the cars you've ever wanted rolled into one

So, what's a BMW? Maybe it's all the cars you've ever wanted rolled into one. If you've ever coveted a Porsche SC, a Volvo 122-S, a Mercedes-Benz 220-SE, an Alfa TI, a Rover 2000, a Pontiac GTO, a Citroen DS-19, a Lotus-Cortina, a Peugeot 404 or a Mini-Cooper S, you'll find most (*most*—not many) of their best attributes secreted away in this plain brown wrapper called the BMW 1800-TI.

The BMW 1800-TI handles as well as most full-blooded sports cars, is as well-appointed as many a luxury touring car, as reliable as an economy car, comfortable as a full-sized American car, handy as a utility sedan and as much fun to drive as a souped-up "stock" car. That's pretty much the definition of a sports sedan, and as far as we're concerned, the BMW ranks with the best that league's got to offer.

The BMW is definitely an enthusiast's automobile, a fine piece of machinery that could conceivably find favor with the general public, but which will only be fully appreciated by the connoisseur. The public, however, is not very big on sports sedans unless they've got some novelty angle. The 1800-TI has little immediately-apparent novelty; it's simply the best car that BMW

could make. There's nothing about a first look that will make blood start pounding in your temples. It looks almost staid, and it's a bit rich for the kind of buyers who favor unexciting machinery. But owning one is like having your cake and eating it too—it's a car that is almost anything its owner wants it to be.

The 1800-TI *could* be an ill-conceived jack of all trades. In fact, it's about as uncompromised a design as we know of—it just happened to wind up in a slot no other manufacturer has tried to fill. It may be a dead end, but we're inclined to think that this is the way the middle-to-upper class European sedan will go in the next decade.

So let's take a second look. There's no other car like the BMW 1800-TI. It's in a class where the competition—and the market—is small. That's what makes it so hard to say what a BMW is. It doesn't directly relate to any other car. It would be easy to describe it as the same sort of car as Brand X, but Brand X doesn't exist—at least, not yet. Besides, the BMW is an almost invisible car on the American market, though the name commands great respect and prestige in Europe. So we have to go outside our normal frames of reference and compare the BMW to cars it doesn't even come close to competing with.

When casting around for other cars to compare the BMW to, the two examples that spring to mind are the Porsche SC and the Volvo 122-S. The overall quality and finish are similar to the Porsche, as are the driving position and comfort. Strangely enough, the BMW's acceleration is slightly better than the Porsche's, though it loses out on absolute top speed. Both the BMW and the Volvo have styling that is not going to change for a while—conservative, slightly-dated and ever-green. It's about the same size and general configuration as the Volvo, but much more luxuriously appointed, which is to be expected . . . the BMW costs a thousand dollars more than the Volvo. What is *not* expected is that the BMW is as well-made as the Porsche . . . and the BMW costs a thousand dollars less.

The 1800-TI is also something like a Mercedes 220-SE, but more sporting in flavor and lighter on its feet. Like the Alfa TI, the Pontiac GTO and the Mini-Cooper S; the 1800-TI is a real Q-ship, with about double the performance it looks like it should have. It's as roomy inside as a GTO (some interior dimensions are larger than a Cadillac's) and is endowed with the same all-enveloping comfort of a Peugeot 404 and the effortless pace of a Citroën; neither driver nor passengers feel strain or fatigue after a far-ranging trip. While the BMW isn't up to the impossibly high standards of ride smoothness, harshness control and road holding set by the Rover 2000, it's a good deal quicker. And besides all this, the BMW is just plain good basic transportation.

The 1800-TI is derived from the BMW 1500 model (which looks identical), but includes a bigger, more powerful engine, a handling package and a few other items. It doesn't sound like much, but it's a complete transformation; the 1800-TI is to the 1500 what the Pontiac GTO is to the Tempest.

We covered most of the car's fundamentals in our Road Research Report on the 1500 (*C/D*, August 1963), but to recapitulate: the reason we liked the car so much was because its components are so well integrated. The engine, chassis, body, suspension, brakes, transmission and interior are all quite modern in concept and obviously well thought out in the drawing board stages. It was a design that was "right" from the beginning, and although a few bugs cropped up during

its developmental period (1961-62), they had been successfully exterminated by the time the car went into production (1963).

The initials BMW stand for Bayerische Motoren Werke, or Bavarian Motor Works, located in Munich, West Germany. The firm has traditionally been oriented towards sporting competition, having produced many race-worthy automobiles like the legendary BMW 327/328, and today, BMW's racing department is reportedly larger than Mercedes'. The factory's team of 1800-TIs racked up innumerable victories last year, including lapping the Avus track in Berlin at an average speed of 112.2 mph, and beating the Mercedes factory team by a full lap in a 12-hour race on the tortuous Nürburgring.

The specifications for the entire BMW 1500/1600/1800/1800-TI range include a robust unit-construction body/chassis, a single-overhead camshaft four-cylinder engine and power-assisted disc brakes at the front.

The engine is a remarkable unit, small and—with an aluminum head—relatively light. It has huge ports and nearly-hemispherical combustion chambers, enabling it to develop more power than any sedan engine of similar displacement. The bottom end—with its five main bearing crankshaft—has great strength, and the single overhead cam arrangement permits astronomical rpms. Sports/racing versions of this engine have been taken out to a full two liters and tuned to 185 conservatively-rated German horsepower. The factory sells a few specially-prepared 1800-TIs rated at 170 hp, so at 124 hp in the stock TI, it isn't exactly straining.

The engine sits canted over at a 30° angle in the sedan. You hear it only at idle (it rocks restlessly) or at full throttle at high rpms (it vibrates throatily). Under normal touring conditions, it's dead silent and as smooth a four-cylinder as we've ever revved. It differs from the tamer 1500, 1600 and 1800 engines primarily in carburetion. Where the others have a small, single-throat Solex, the TI engine has two enormous double-throat Solex PHHs. The 1800 and 1800-TI engines also have larger valves (1.654 in intake, 1.378 in exhaust) and a greater displacement (108.2 cu in) than the 1500/1600. Additionally, the TI has a higher compression ratio (9.5:1), an alternator (to make room for the intake plumbing), and beefed-up connecting rods and bearings. The factory swears that the same camshaft is used in all engines: valve timing 4,54; 54,4 with a .354-in lift for both intake and exhaust.

The engine is coupled (via a bear-of-a-hug clutch) to a marvelous transmission with well-suited ratios and an unbeatable synchromesh. It lets out a little sigh each time the synchro rings are compressed, a sound that either delights or infuriates you, depending on whether or not you love mechanical noises. The TI comes with a 4.11 final drive, though presumably the 4.22 and 4.36 gears of the 1500, 1600 and 1800 are available on special order. Options for racing include a ZF 5-speed transmission and limited-slip differential.

The front suspension is a MacPherson strut system similar to the Porsche 911's, except that the BMW uses coil springs. The rear suspension is a trailing arm system similar to Triumph 2000's (not yet seen in this country). In the TI, the springs are stiffened, an anti-sway bar fitted at the rear as well as the front, and belted tires on wider rims are standard equipment. Even unladen, the rear wheels have a slight negative camber. Unlike swing axles, large wheel movements do not cause significant camber changes, so the BMW's behavior is always predictable and stable.

With 53% of the vehicle's weight on the front wheels,



The BMW range of 1500, 1600 and 1800cc sedans is handsomely styled without being striking in design. As may be gathered from the overall view, visibility is excellent in all directions. Below, the lights and chrome trim are tastefully integrated with the sheet-metal.





we expected a certain amount of understeer. This is present at slow speeds, but there is a wide working range of neutral steer. Oversteer becomes apparent at very high cornering speeds or in the wet. Body roll is much less than we'd expect from such a tall car with relatively soft springs. In general, the road-holding is superior to any sports car in its price class.

The steering is a ZF-built Gemmer worm-and-roller, sort of lifeless at slow speeds but decidedly positive. It could be geared a shade shorter for easier parking, but that would make the car far less pleasant for fast, open road driving, where the TI really comes into its own element.

The brakes, a disc/drum arrangement, will pull close to one "g" on a panic stop, but it takes a lot of muscle and leaves some odor—they don't feel nearly as good as they really are. They're always there, ready to stop the car without nose-dive or fade. The handbrake, between the front seats, seemed exceptionally powerful—capable of holding the car on any hill we could find.

The BMW's interior is the *pièce de résistance*. It's luxurious and comfortable in the firm, no-nonsense German manner. The front seats are made by Reutter, with backs that adjust anywhere from the vertical to the horizontal. There is an unbelievable amount of fore-and-aft travel, little of which impinges on the rear seat passengers' leg- and knee-room. The rear seats, incidentally, are as comfortable as those in many a full-sized American sedan, maybe better.

The driver's seating position is upright and chair-height, which used to be pretty comfortable before Jimmy Clark made lie-down driving fashionable, and we found the position tolerable for periods up to eight hours at a stretch. The steering wheel (not what you'd call handsome) and the pedals are well-placed, making a sizeable contribution to the BMW's seven-league driving boots.

The instruments and controls are likewise well-placed, easy to read and operate, with the exception of the tachometer (standard on the TI), which is too small for an engine so willing to rev, and the knurled

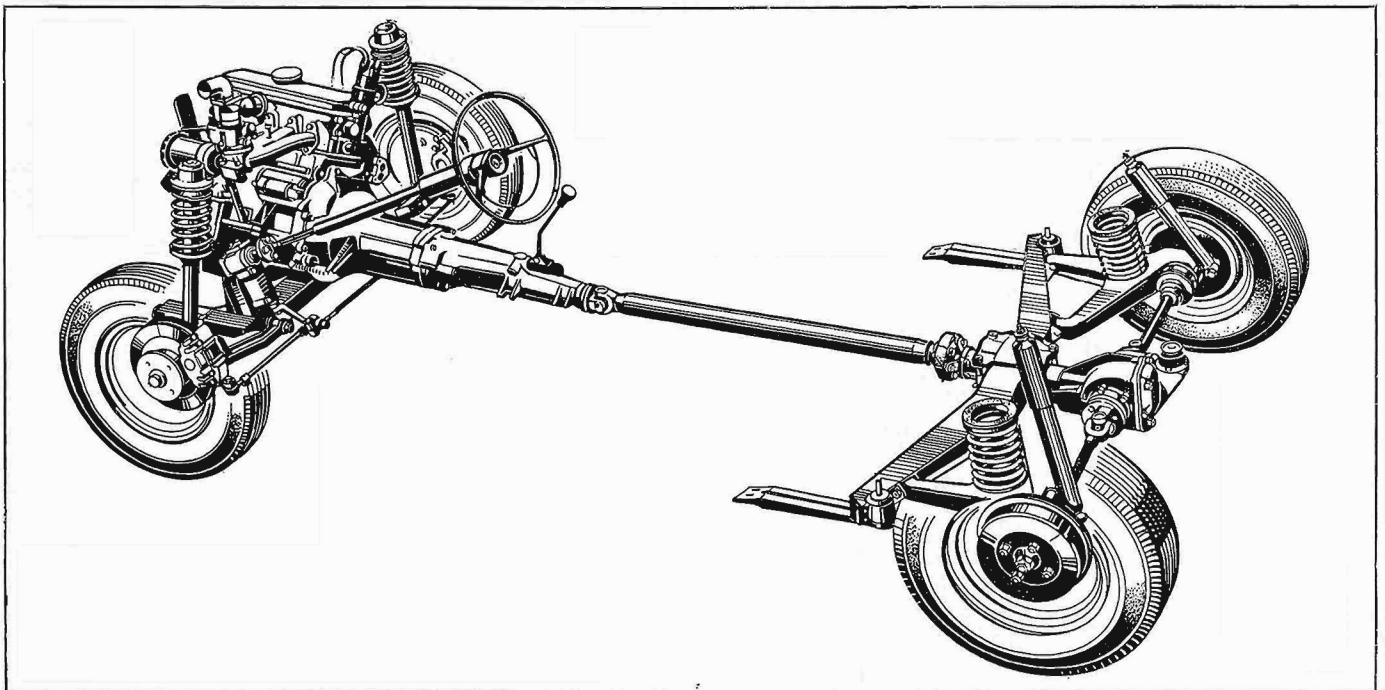
knobs that operate the quarter-lights, which are tiresome to use although very precise. The interior materials and hardware are the best to be had, like the body finish and workmanship, on a par with Mercedes and Porsche.

The car rides extremely quiet with all the windows rolled up and the absence of road noise is noteworthy. Some fiddling around with the amount and angle of the windows and vent panes is necessary when cruising at high speeds . . . and it will cruise happily at over 100 mph. Though the ride is firm, even "pitchy" on an undulating surface, (though not overly harsh for a sports sedan), nary a rattle or squeak was to be heard from the body. The quality control is amazing when you consider that it's put together by Bavarians, who are all individuals and not much given to the regimentation of mass-production lines. There is evidence of great care in the craftsmanship, which probably involves more specialized hand labor than any sedan short of a Maserati Berlina.

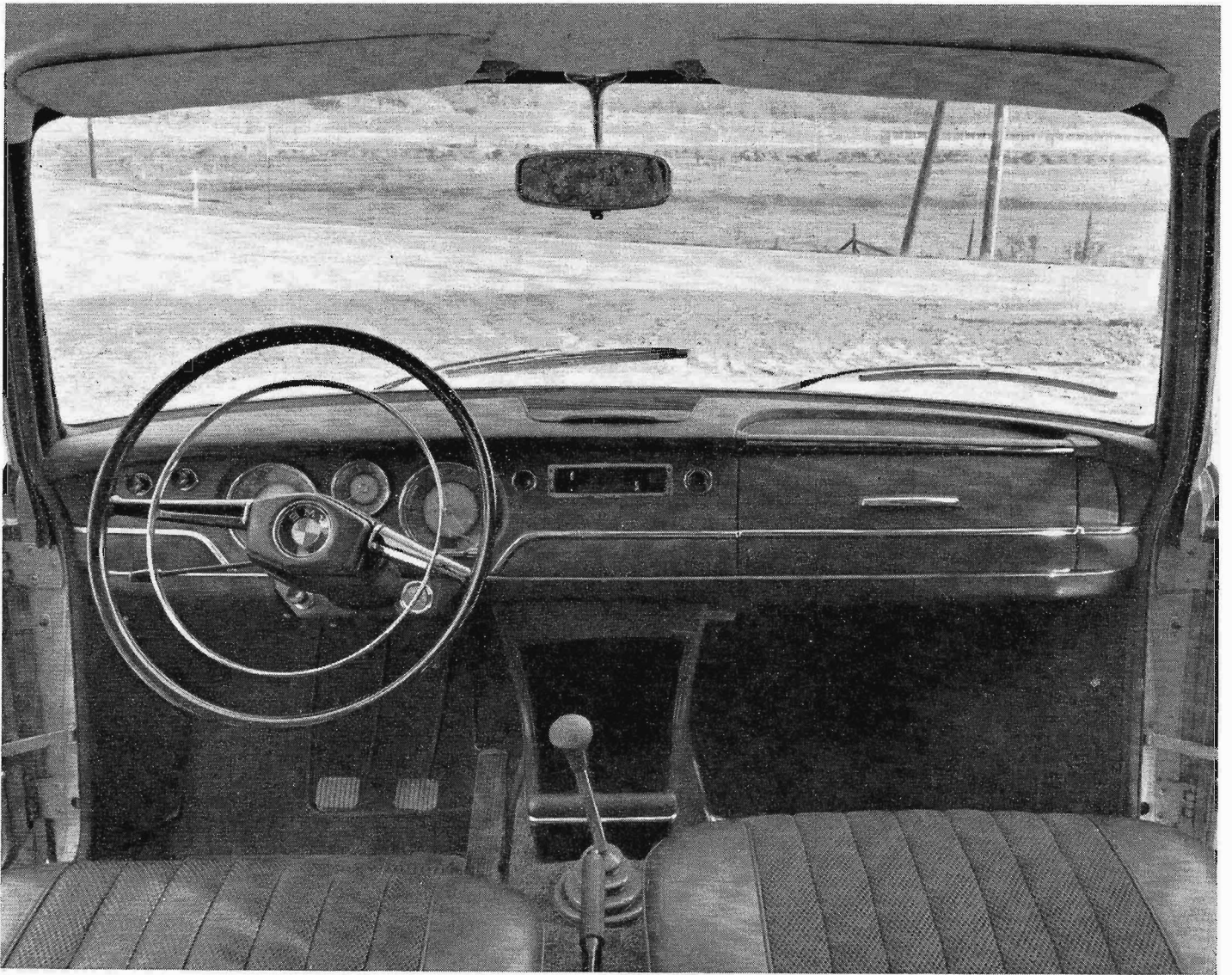
The deck lids and doors open very wide, and accessibility to the engine compartment and the trunk is excellent. The trunk will hold a literally staggering amount of luggage, much more than most European sedans. Entry and exit to either front or rear seats is good by any standards, though the door sills are high.

Finally, the BMW is economical and reliable. It shouldn't need much attention or service, but when it does, Hoffman Motors (the U.S. distributors) stand ready to render prompt assistance. This much-maligned company has made giant strides in the past few years and we have no reservations about recommending them as a sales and service organization.

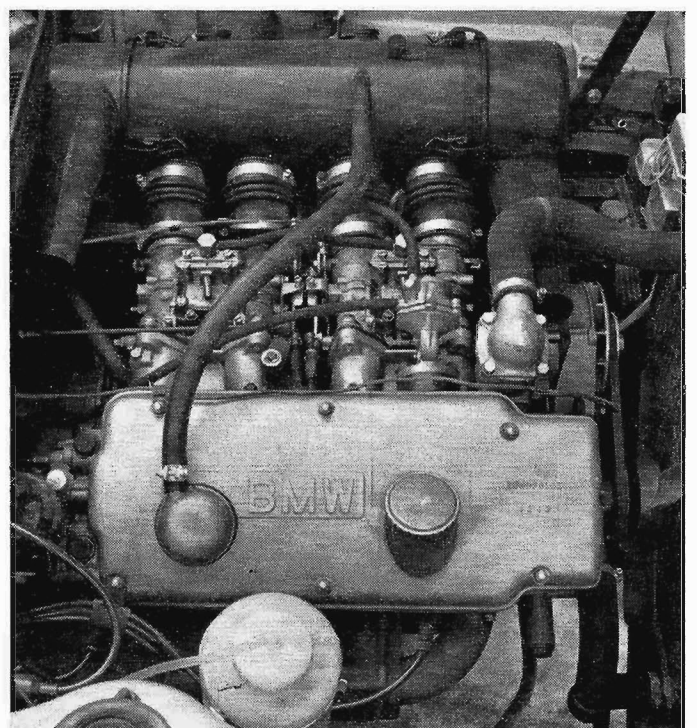
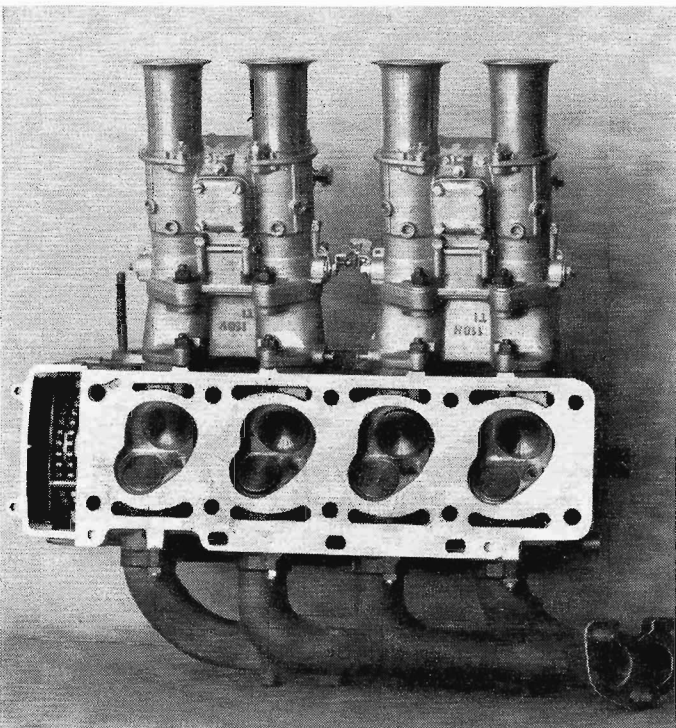
So that's what a BMW is. We have taken some pains with the car's definition-by-comparison because every once in a while a car comes along that richly deserves recognition but remains pretty much an unknown quantity. A BMW 1800-TI would make an ideal alternative for someone who can't settle on either a sports car or a utility sedan because he wants the best of both worlds. The BMW will give him exactly that.



The engine, running gear and suspension of the BMW (a 1500 shown here) are modern and reliable. The MacPherson-strut front suspension is similar to the Porsche 911's; the trailing-arm rear suspension is similar to the Triumph 2000's. The TI uses a rear stabilizer bar.



The cockpit, above, is intelligently laid-out and furnished with high-quality hardware. The controls are positioned perfectly for effortless driving. Below, a comparison of the Weber-carbureted Alpina conversion (on a stock head) with the 1800-TI engine as installed.



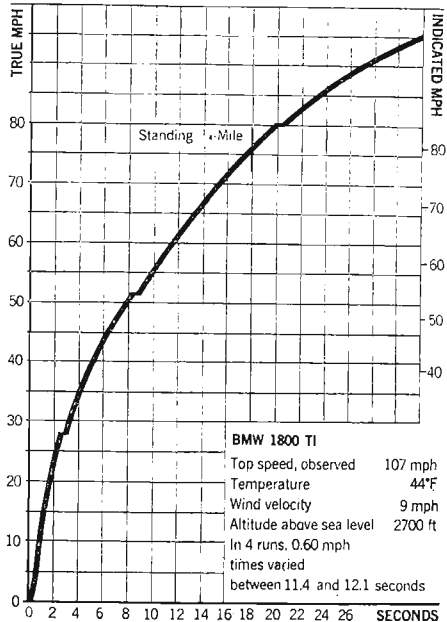
## BMW 1800 TI

Importer: Hoffman Motors Inc.  
443 Park Ave.  
New York, N.Y.

Price as tested: \$3530

### ACCELERATION

Zero to	Seconds
30 mph	3.3
40 mph	5.2
50 mph	7.9
60 mph	11.6
70 mph	15.2
80 mph	20.0
90 mph	27.0
Standing 1/4-mile	76 mph in 18.0



### ENGINE

Water-cooled four-in-line, cast iron block, .5 main bearings  
 Bore x stroke.....3.31 x 3.15 in, 84 x 80 mm  
 Displacement.....108 cu in, 1773 cc  
 Compression ratio.....9.5 to one  
 Carburetion...2 side-draft dual-throat Solex 40 PHH  
 Valve gear.....Single chain-driven overhead camshaft  
 Power (SAE).....124 bhp @ 6000 rpm  
 Torque.....117.5 lbs-ft @ 4000 rpm  
 Specific power output.....1.15 bhp per cu in, 70 bhp per liter  
 Usable range of engine speeds 900-6200 rpm  
 Electrical system...12-volt, 77 amp-hr battery, 66 amp-hr alternator  
 Fuel recommended.....Premium  
 Mileage.....16-23 mpg  
 Range on 14-gallon tank.....225-320 miles

### DRIVE TRAIN

Clutch.....7.87-inch single dry plate  
 Transmission.....4-speed all-synchro gearbox

Gear	Ratio	Over-all	mph/1000	Max
Rev		rpm		mph
1st	4.15	17.10	4.2	26
2nd	3.82	15.68	4.6	28.5
3rd	2.07	8.50	8.4	52.1
4th	1.33	5.46	13.0	80.6
5th	1.00	4.11	17.3	107.0

Final drive ratio.....4.11 to one

### CHASSIS

Unit-construction, all-steel body.  
 Wheelbase.....100.4 in  
 Track.....F 52, R 54 in  
 Length.....177 in  
 Width.....67.5 in  
 Height.....57 in  
 Ground clearance.....5.9 in  
 Dry weight.....2180 lbs  
 Curb weight.....2360 lbs  
 Test weight.....2680 lbs  
 Weight distribution front/rear.....54/46%  
 Pounds per bhp (test weight).....21.6  
 Suspension F: Ind., lower wishbone and MacPherson strut, stabilizer bar.  
 R: Ind., semi-trailing arms, coil springs, stabilizer bar.  
 Brakes...10.5-in discs front, 10-in discs rear, 378 sq in swept area  
 Steering.....Worm and roller  
 Turns, lock to lock.....3.5  
 Turning circle.....31.5 ft  
 Tires.....600-14  
 Revs per mile.....854

### CHECK LIST

#### ENGINE

Starting.....Good  
 Response.....Fair  
 Noise.....Good  
 Vibration.....Fair

#### DRIVE TRAIN

Clutch action.....Good  
 Transmission linkage.....Excellent  
 Synchromesh action.....Excellent  
 Power-to-ground transmission.....Excellent

#### BRAKES

Response.....Good  
 Pedal pressure.....Fair  
 Fade resistance.....Very good  
 Smoothness.....Good  
 Directional stability.....Very good

#### STEERING

Response.....Fair  
 Accuracy.....Very good  
 Feedback.....Fair  
 Road feel.....Very good

#### SUSPENSION

Harshness control.....Good  
 Roll stiffness.....Excellent  
 Tracking.....Excellent  
 Pitch control.....Fair  
 Shock damping.....Excellent

#### CONTROLS

Location.....Excellent  
 Relationship.....Excellent  
 Small controls.....Very good

#### INTERIOR

Visibility.....Excellent  
 Instrumentation.....Good  
 Lighting.....Good  
 Entry/exit.....Good  
 Front seating comfort.....Excellent  
 Front seating room.....Excellent  
 Rear seating comfort.....Excellent  
 Rear seating room.....Very good  
 Storage space.....Excellent  
 Wind noise.....Excellent  
 Road noise.....Good

#### WEATHER PROTECTION

Heater.....Good  
 Defroster.....Good  
 Ventilation.....Good  
 Weather sealing.....Excellent  
 Windshield wiper action.....Good

#### QUALITY CONTROL

Materials, exterior.....Excellent  
 Materials, interior.....Excellent  
 Exterior finish.....Excellent  
 Interior finish.....Excellent  
 Hardware and trim.....Excellent

#### GENERAL

Service accessibility.....Excellent  
 Luggage space.....Excellent  
 Bumper protection.....Good  
 Exterior lighting.....Good  
 Resistance to crosswinds.....Good

