Nissan's GTR

Top of the Skyline

The GT-R is the latest model of the Skyline GT series.

The Skyline 2000 GT-R Hardtop*

The Nissan Skyline GT-R is the latest and most powerful model of the Skyline GT series, first developed in 1963 by the former Prince Motor Company before it was absorbed by the Nissan Motor Company.

The bases for the GT-R include a very conventional sedan and hardtop mounting either a four-cylinder, 1,800-cc engine or 1,600-cc engine, and the 2000 GT, a hot 2,000-cc model with the same basic body but with an engine room some 15 cm (six in.) longer, in which is mounted a six-cylinder, 130-bhp Nissan L20 engine.

* domestic name

The 2000 GT is a touring vehicle with a functional production model engine and is one of the most popular cars in Japan, where more than 10,000 units are sold monthly.

In addition to the length and engine differences between the 1800 and 1600 series on one hand and the 2000 GT series on the other, there is a big difference in the suspension.

The 1800 and 1600 models have very conventional suspensions—McPherson struts up front and semi-elliptic leaf springs with rigid axle in the rear. However, although the 2000 GT uses the same struts for its front end, the rear has independent suspension using semi-trailing arms, double universal joints and coil springs. This is the production setup Nissan uses for its sports models, including those in the Datsun series. It performs well in both races and rallies, while in standard vehicles it provides a good ride.

The hottest of the Skyline 2000 GT series is this 2000 GT-R, the "R" standing for "Racing". The S-20 engine mounted in the 2000 GT-R is a detuned version of the DOHC (double overhead camshaft)-engine mounted in the Nissan R-380 prototype racing car that performed so well in 1968 and 1969.

It is an in-line six-cylinder, 1,989-cc engine equipped with three twin-barrel Solex carburetors. It

The R of the 2000 GT-R stands for "racing"

develops 160 bhp at 7,000 rpm and a maximum torque of 18.0 kgm (130.4 lb-ft.) at 5,600 rpms, with a compression ratio of 9.5:1 and four valves per cylinder for a total of 24 valves. This powerplant is perhaps the costliest and highest-quality engine ever to be mounted in a stock production touring car in the world.

Despite the fact that this 160-bhp 2000 GT-R in stock condition has a dry weight of 1,145 kg (2,519 lbs.), it can attain a maximum speed of 200 kph (124 mph).

In terms of styling, the only difference from the 2000 GT is that the GT-R has a hardtop body. The radiator grille with its large opening, the overhanging front and rear fenders and the rear spoiler all contribute to make its overall width 70 mm (2.3 in.) wider than the 2000 GT and reduce overall height by five mm (.20 in.).

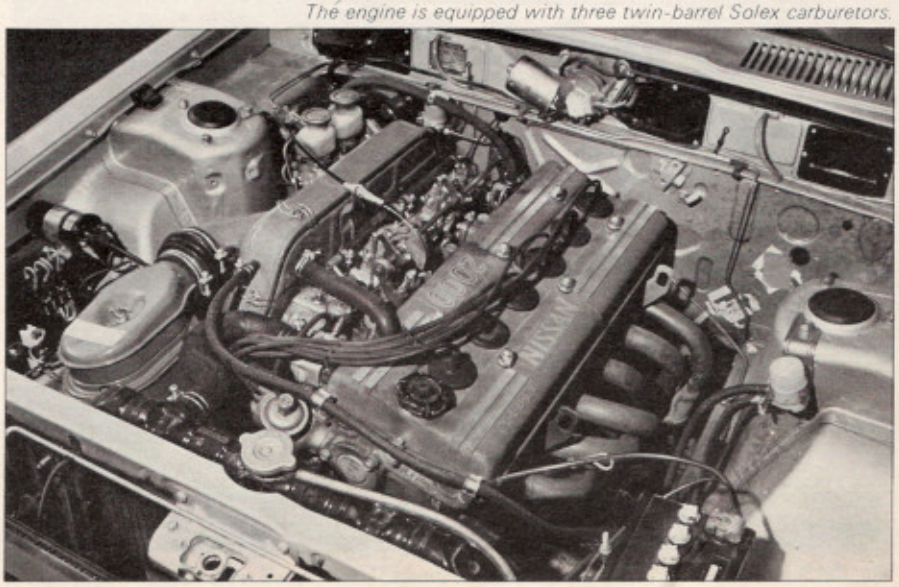
The interior is finished in black throughout and is basically unchanged from the 2000 GT. However, because it is an out-and-out sports car it has neither radio nor heater, which is quite unusual for a Japanese car.

The suspension is similar to the 2000 GT's—independent on all four wheels with struts up front and semi-trailing arms for the rear. However, the tread has been increased, the springs and shock absorbers have been beefed up for high-speed driving, and a stabilizer has been mounted on the rear suspension, thus bringing the car up to full-fledged GT standards.

Disc brakes are fitted on all four wheels as standard equipment, perhaps the biggest single modification. In addition, a six-inch-diameter brake booster is offered as another new feature.

The brakes have two hydraulic systems and a tandem master cylinder. To prevent locking of the rear wheels, a pressure control valve (N-P valve) is fitted.

The engine is equipped with three twin-barrel Solex carburetors.



The GT-R is available only in Japan.

The clutch is a diaphragm-spring unit. The transmission is a Porsche-type servo-synchromesh box with five forward speeds and one reverse speed. The propeller shaft has three universal joints, and 175 HR-14 wide-tread radial tires are standard equipment.

The predecessor of the 2000 GT-R was the top touring car champion in Japan, having won 50 victories. However, by 1972, Toyo Kogyo's rotary-engined cars began to pose a threat to the supremacy of the Skyline series, so that today the fastest touring car in Japan is the Mazda RX-3 (called the Savanna in Japan).

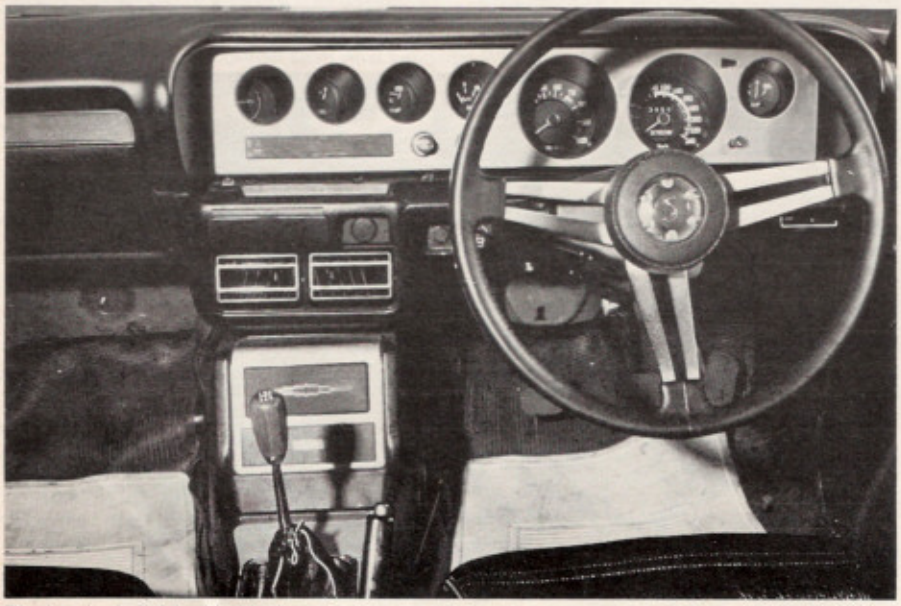
It was expected that the 2000 GT-R would be placed on the market in order to regain the position of supremacy its predecessor had enjoyed in racing, but the new model has been toned down somewhat so that it can be used on public roads.

The current impression is that Nissan has placed this car, with its particular engine (DOHC and 24 valves) on the market to improve the image of the Skyline series.

Nonetheless, the Skyline 2000 GT-R still features the most extravagant of mechanisms and is the fastest automobile in its class in the world, even by touring car standards. But because of servicing problems, it is available only in Japan. It is a car any sports-loving driver would like to own once in his lifetime. It is also the favorite of young people in Japan.

Practically speaking, the Skyline 2000 GT-R is quite expensive. It is heavy to manipulate and gulps gasoline. Thus while it is not a car for general use, it does feature standards of high performance befitting the GT name.

Yet the old model was a true racing machine—not even equipped with a brake booster. In this respect, the new model is perhaps designed too much for street use and its character is somewhat weaker than the previous model's.



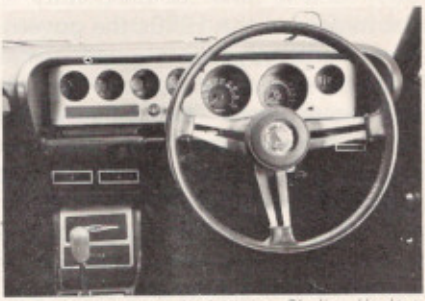
The interior is finished in black.

engines.

Nissan Skyline 2000 GT-R Hardtop (domestic name)

Nissan Motors announced on January 26 a full model change of its Nissan Skyline 2000 GT-R Hardtop, the hottest of the Skyline series. The GT-R is a passenger car featuring racing machine performance, created through feedback of Nissan's highest automotive technology, such as its R380 engine, a powerplant developed for motor sports. Current model changes include disc brakes on all four wheels, a rear stabilizer bar, 175HR × 14 radial tires, and a rear spoiler—all as standard equipment to improve roadholding and aerodynamic stability. The engine is an in-line four-

Nissan Skyline Hardtop 2000 GT-R



The instrument panel of Nissan Skyline Hardtop 2000 GT-R.

cylinder double overhead camshaft 1,989-cc engine generating 155 bhp at 7,000 rpm and a maximum torque of 17.6 kgm at 5,600 rpm. In the high-octane-gasoline engine, power output goes up to 160 bhp at 7,000 rpm and maximum torque to 18.0 kgm at 5,600 rpm. As for the chassis, the track has been increased and improved springs fitted, while the transmission is a Porsche—type 5-speed synchronized gearbox.

Nissan Skyline 2000GTR*

ROAD TEST

The 2000 GTR is a high-performance car for general use.

By Eizo Ikeda and Hiroshi Sonobe, *Tokyo*

It is quite unusual for a top mass-production automobile manufacturer to produce a vehicle that can be entered in a race without any modifications or special tuning whatsoever. This is all the more so when that manufacturer happens to be Nissan Motors, which already produces a full-fledged GT car, the Fairlady 240Z, and should hardly need anything more in the area of sports vehicles.

But at the same time, it is also true that there are some people, albeit very few in number, who aspire to a "wolf in sheep's skin" vehicle, that is an ultra-high-performance touring car. Of course, the touring car races that are held in Japan are perhaps the ultimate targets for such vehicles. In fact, if there were no passenger car races, this vehicle might not have seen the light of day.

Today, the vehicles of the Skyline series are Nissan products, but originally they came into being as vehicles manufactured by the Prince Motor Company, which was subsequently absorbed by Nissan. Prince Motors had always been an enthusiastic participant in motor racing ever since motor racing came into being in Japan, and has excelled in putting together highly specialized and unique vehicles.

In 1963, when full-fledged racing began, Prince entered with vehicles that were essentially modified sports sedans. However, after being defeated by a Porsche in the 1964 Japan Grand Prix, Prince manufactured a true prototype sports car, the R-380. This machine was a 2-liter racing car that, although classified as a prototype sports car, was in fact designed for racing.

Subsequently, in 1966, Prince Motors merged with Nissan Motors, and so this vehicle has since been known as the Nissan R-380.

Things changed when the Prince engineers in charge of Nissan's racing division decided that a powerful sedan was needed for domestic races and so then decided to transplant a new powerplant into the Skyline GT (four-door sedan) that until then had been carrying a slightly modified but nonetheless ordinary engine.

The engine adopted for this purpose was the S-20 six-cylinder double overhead camshaft four-valve monster that was based on the GR-8 engine of the R-380 developed expressly for racing purposes, an engine that produced 160 horsepower with ease from its 2-liter displacement.

To qualify for participation in its particular class of racing, it had to be sold on the market, and so it was. In other words, a car that had developed primarily for racing was now making its appearance on public roads. Its heavy clutch and power that was virtually beyond control when at its peak astounded even hardened motor sports fans.

But it easily lived up to its expectations in races. Its popularity rose rapidly, and today it is a racing touring car representative of Japan although it has yet to participate in overseas races like the Mazda rotary engine cars.

In 1972, when the Skyline series underwent a remodelling in style, the GTR disappeared from the market for a while. At the time, it was thought that production had ceased because of the new emission control restrictions, but in 1973 it reappeared with the identical power plant. The new version was designed for somewhat easier handling for open road use to some extent, but nonetheless the very fact that a super sports sedan like this should be roaming about the streets today is of much interest when considered in light of the severe restrictions Japan's

**domestic name*

heater or air ducts should certainly be fitted as standard equipment, and since the car is available only on the domestic market, the manufacturer should be fully aware of these basic requirements of the Japanese owner.

At this time, when emission controls are becoming stricter and stricter, the GTR may well be the last of the super touring cars.

It is highly unlikely that a car like this, a wolf in disguise, will ever be manufactured as a sedan for general use in the future.

The Skyline GTR is perhaps the ultimate in reciprocating engine passenger cars to be manufactured in Japan, of a type and concept never to be seen again, and this gave rise to mixed feelings on the part of the road testing team.

Summary

The racing character as seen in the previous GTR has been toned down considerably, and the new GTR incorporates modifications designed for greatly improved road use. On the other hand, when considering the fact that all practical but non-functional (for driving purposes, that is) equipment has been eliminated in order to make this an out-and-out car for driving and driving alone, it does not have the full capabilities for participating in sports events in its stock form. It is quite clear that the manufacturer had in mind a car designed to be enjoyed on the open road.

In terms of equipment, even a heater is not included as standard equipment, leaving the car with only driving functions, and so in cold climes, a heater will have to be added as an option.

Externally, it is no different from the standard Skyline hardtops, except for the overhanging fender extensions and wide tires resting solidly on the ground which bespeak of the character of the car.

When the car moves off, the twin overhead camshafts and the four-valves-per-cylinder engine rev up like a racing car engine to provide truly amazing acceleration. However, the new GTR has a somewhat lighter clutch and is now much easier to drive on city streets too. Quick starts from slick surfaces are quite difficult.

In terms of handling, the limited slip axle is very effective, and the vehicle understeers conspicuously. However, it stayed under control very well in attempts at fast cornering. Steering response tends to lag at times because of the variable steering ratio. Once the driver gets used to the GTR, positive driving is no problem. The only thing to bear in mind is that the engine must be kept under control to avoid overpowering.

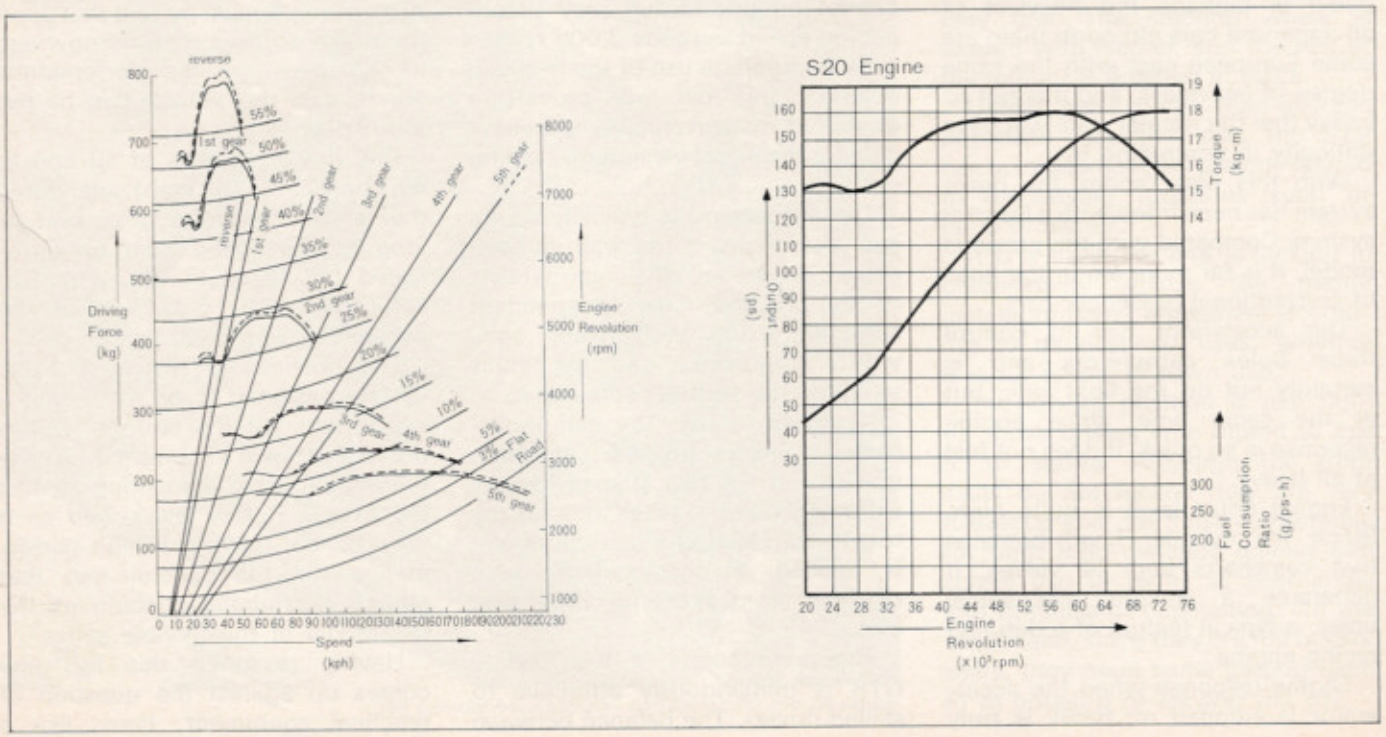
The brakes are four-wheel discs. Their effectiveness hardly differs from those of conventional vehicles except under severe driving conditions, where they are far more durable and stable.

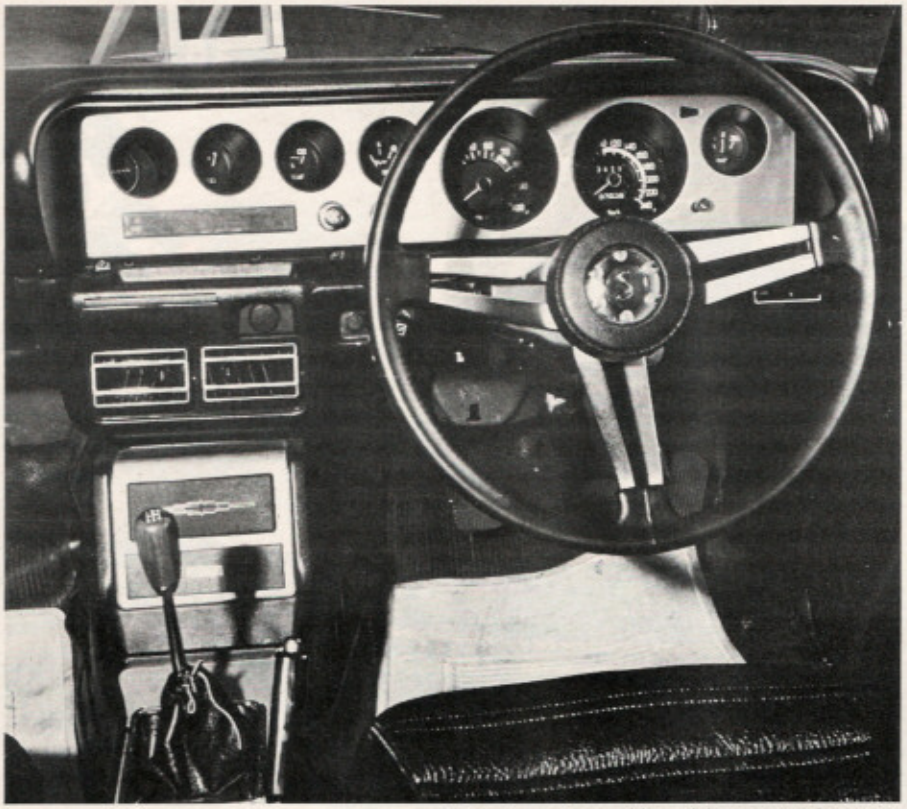
The ride and seat support provided is typical of a sports car, and the GTR is fully capable of traveling over rough surfaces.

In terms of economy, the initial cost of the car is twice that of the conventional model.

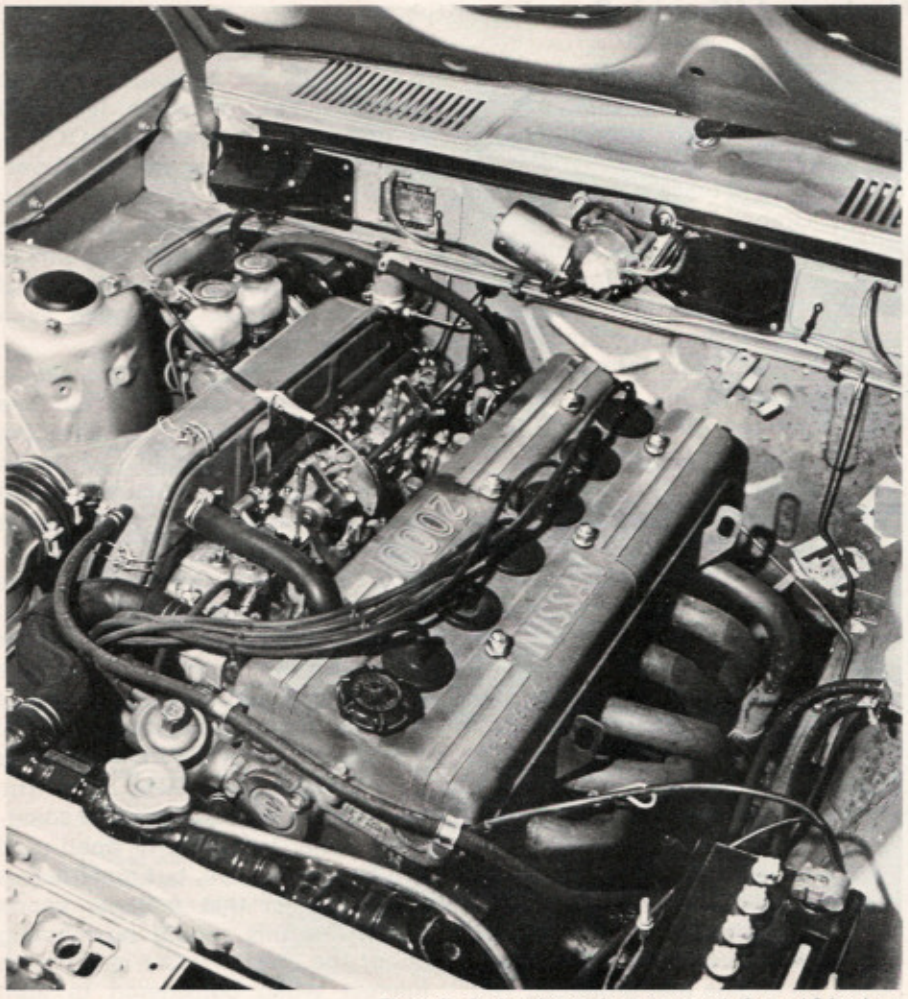
As for fuel consumption, since fifth speed is generally used on highways, economy is good, while even on mountain roads, since it is not possible to utilize the full power of the engine, fuel economy turned out to be far beyond our expectations.

Although the standards of performance are extremely high, this is the sort of car whose performance the driver can take pride in, not demonstrating it at all times but saving it to surprise others when the opportunity presents itself. If it were not for the restrictions and limitations of Japanese roads, this would be a fleet-footed GT car indeed.





The instrument panel is a plain unpretentious grey.



The cylinder head contains two camshafts and 24 valves.

automotive industry is now facing in terms of emission control and safety measures.

It is impossible to deny speed to a car and the Skyline GTR is a prime example of the fact that unusual cars have extremely long lives. The GTR is not immediately identifiable to the eye from the other vehicles of the Skyline series, but the small "GTR" emblem it bears on the rear skirt beneath the trunk indicates that it has standards of performance far above those of other models of the time. And it is also extremely expensive, costing twice as much as a standard Skyline.

Based upon the standard 2000 GT hardtop body, the Skyline 2000 GTR differs from the GT model in its simplified radiator grille, its oversize tire housing cutaways, its overhanging fender lips, and its "GTR" emblem.

These features apply equally to the previous model GTR, and enable the viewer to immediately identify the GTR as such, provided he is aware of these differences.

As for the differences in interior between the GTR and the GT, the GTR has full bucket seats up front that support the sides of the body. These bucket seats are secured at a set angle, and do not recline.

The instrument panel is basically the same in layout as that of the GT, except that while the panel of the GT has a wood grain finish, the GTR's panel is a plain unpretentious grey one. The steering wheel is wound with leather, and the rest of the interior is finished in black.

Unlike most better-than-average Japanese passenger cars, the GTR has no equipment not directly related to its driving functions such as radio or heater.

It is a basic car and is lacking in practicability unless the owner installs optional equipment according to its destined uses, whether it is for sports or town use.

The driving position is just right for those drivers who intend to use it for sports. Although the front seats do not recline they are very luxurious and are most comfortable for both long-distance driving and sports use in terms of seat angle and firmness of cushioning. On the other hand, since they are full bucket seats, they need some getting used to in entering or leaving the car.

The 2000 GTR understeers.

Generally speaking, the pedals are on the heavy side, as may be expected, for control of the car's 160-horsepower output. The clutch pedal is perhaps the heaviest of all Japanese cars although there are some European cars with the same degree of heaviness, and it is not so heavy that the normal male will have difficulty in controlling it.

With this new model, the brake system has been fitted with a booster system. Compared with the previous model, it is far more along the lines of conventional passenger cars.

The accelerator has to control three Solex carburetors and is certainly not on the light side, but at the same time, since engine response is so quick, it does not feel at all heavy.

Engine noise level is quite high. Since the cylinder head contains two camshafts and 24 valves, it generates a unique mechanical noise, a typical feature of a detuned racing engine.

Engine response when the accelerator is stepped on firmly is truly astounding: the engine zooms up to 7,000 rpms with virtually no time lag.

The true worth of the engine cannot be put to full play unless engine speed exceeds 3,500 rpms.

By appropriate use of the 5-speed gearbox, this car will provide a degree of maneuverability unbelievable for the street version of a racing car.

The suspension is typically sports car, providing stiff and well-damped action. However, the rear wheels of the Skyline have independent springing using semi-trailing arms with a long stroke, and this serves to soften the stiffness somewhat.

Needless to say, the car understeers. Since ground adhesion qualities of the rear suspension are extremely good, it takes time for the rear to start sliding when the power is applied, a characteristic quite different from powerful rigid axle cars.

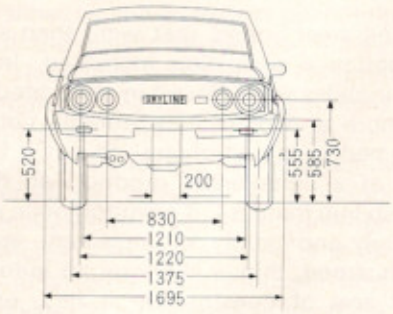
The performance of the Skyline GTR is tremendously attractive to skilled drivers. The balance between its power and suspension is excellent, while the noise and power of the engine are both highly enticing to the enthusiast.

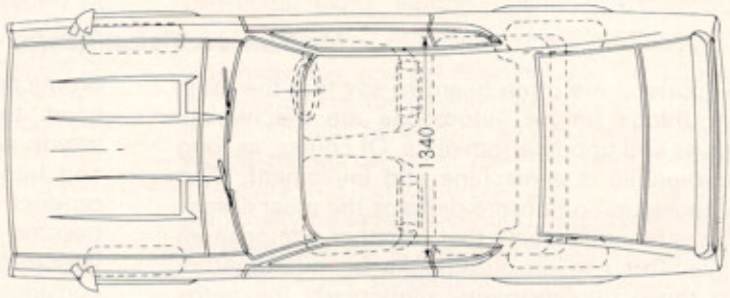
However, it must be said that apart from race courses there is nowhere in Japan where the performance potential of this vehicle can be put to full play.

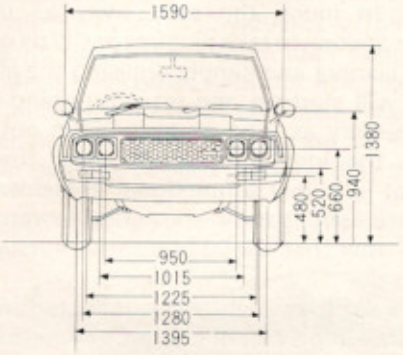
City driving speeds of 40 kph to 60 kph (25 to 38 mph) are within the range of second gear, and as long as the speed limit on high-speed toll roads in Japan is 100 kph (63 mph), only half of the capabilities of the car can be used.

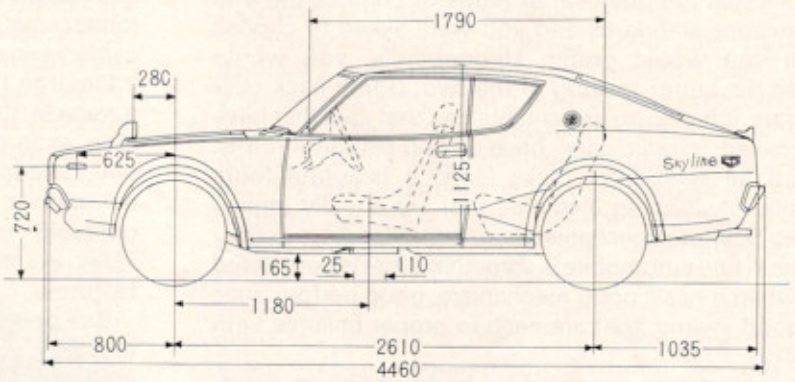
The previous GTR was a basic vehicle designed to be made into a racing car, but the current GTR is not likely to win in current Japanese touring car races competing against the Mazda Rotary RX-3, and so it may be considered a high-performance car for general use that retains a symbolic position as the top model of the Skyline series.

Having reasoned this far, one comes up against the question of practical equipment: items like a









ENGINE:
- **type:** S20
- **bore × stroke:** 82.0 × 62.8 mm
- **displacement:** 1,989 cc
- **compression ratio:** 9.5 : 1
- **bhp @ rpm, net:** 160/7,000
- **torque @ rpm:** 18/5,600
- **carburetion:** Double choke side draft 3 Nissan Skyline 2000 GT-R
- **fuel requirement:** high octane

DRIVE TRAIN:
- **transmission:** 5-speed manual
- **gear ratio:** 1. 2.906 (synchronized)
  2. 1.902 (synchronized)
  3. 1.303 (synchronized)
  4. 1.000 (synchronized)
  5. 0.864 (synchronized)

CHASSIS BODY:
- **layout:** front engine, rear-wheel-drive
- **body frame:** monocoque
- **brake system:** F. disc R. disc
- **wheel:** 5-Jx14
- **tires:** F. 175HR14 R.175HR14
- **steering type:** ball nut type
- **front suspension:** independent, McPherson strut/coil spring
- **rear suspension:** semi-trailing arm type

ACCOMODATION:
- **seating capacity:** 5
- **seat width:** 0.510 m
- **head room:** 0.950 m
- **seat back adjustment degree:** adjusted

INSTRUMENTATION:
- **instruments:** 240-kph speedometer, 99,999-km odometer, 999.9-km trip odo., 10,000-rpm tachometer, fuel level, temperature gauge, oil pressure gauge, ammeter, clock
- **warning lights:** brake system, high beam, steering lock, directionals, speed alarm, hazard warning light, fuel level, oil pressure gauge, temperature gauge

MAINTENANCE:
- **oil change:** 5,000 km
- **filter change:** 10,000 km
- **chassis lube:** every two years
- **minor tuneup:** 3,000 km
- **major tuneup:** 6,000 km

GENERAL:
- **curb weight:** 1,145 kg
- **weight distribution:** F. 55.5% R. 44.5%
- **wheelbase:** 2.610 m
- **tread (track) front/rear:** F. 1.395 m R. 1.375 m
- **length:** 4.460 m
- **width:** 1.695 m
- **height:** 1.380 m
- **ground clearance:** 0.165 m
- **turning circle:** 10.4 m
- **overhang front/rear:** 0.800 m/1.035 m
- **fuel capacity:** 55 ltr.
- **max. speed:** 200 kph
- **fuel consumption:** 14.5 km/ltr. at 60 kph
- **min. stopping distance:** 13.5 m at 50 kph