NEWS RELEASE

RENAULT PRESS OFFICE

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A TO Z CLOSE-UP FOCUS ON THE RENAULT 21

Layout & technicalities: what's new, what's different and how it works

RANGE & LAYOUT

All versions of the Renault 21 have front-wheel-drive, a unitary body structure and all-independent suspension, with the spare wheel housed under the boot floor and the fuel tank forward of it, immediately behind the rear suspension. But there are two different engine and transmission arrangements. To make the most efficient use of existing components (and the factories that make them), the 21 is equipped either with:

* a transverse engine/transmission, with overhung gearbox, MacPherson strut front suspension and low-set steering rack, the whole arrangement resembling that used in the Renault 9 and 11. Versions thus equipped are the Renault 21 **TL, TS, RS and GTS**, which use the 1,721cc type F petrol engine and type JB gearbox.

OR

* an in-line engine/transmission layout with the engine overhung forward of the transaxle, as in the Renault 25 and Espace. These versions are the **RX and TXE**, with the 1,995cc type J engine, driving through a type NG gearbox. With this layout is a new MacPherson strut front suspension, necessitated by the greater weight and higher performance of these versions, and a new steering layout with high-set rack.

The adoption of these alternative layouts has been eased by the use of two different designs of front sub-frame. This is attached to the body by 4 bolts, so that it may be easily removed, and carries engine and transmission together with the lower suspension attachment points.

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Western Avenue, London W3 0RZ
Telephone: 01-992 3481 (Night line: 01-977 4605)

The sub-frames are designed to filter noise and vibration, whether caused by the engine or fed through the suspension, in two stages. This reduces cabin noise by 3 to 7 decibels. This is the first time this technology has been used with the in-line engine installation.

There is a 2.4in. difference in wheelbase between the two layouts. In effect, within the same overall length, the in-line installation needs a shorter wheelbase. But on the bodywork this makes no difference - beyond the need for two different types of front wing and wheel arch (and the two different sub-frames).

Front suspension upper attachment points are identical for both installations. There is no fundamental diffference in any other dimension between the two layouts. Cabin interior measurements and boot space remain the same whichever engine is used, but the front track is 2cm (0.8in.) wider with the in-line engine.

WHY TWO LAYOUTS?

This solution was decided upon for six main reasons:

- to use existing Renault components and manufacturing facilities;
- because no gearbox existed to match the 2.0 litre engine in a transverse installation and a new one would have cost FFr 1bn (£90m);
- to avoid using too high-capacity a gearbox (too large and too heavy) with the 1.7 litre unit installed in-line;
- the extra investment in panel duplication could be limited to different front wings and wheel arches, and a steering rack mounting bracket for the in-line engine;
- it allowed the use of existing mechanical assemblies with a new front suspension
- it posed no problems in assembly - the same robots assemble the front body for both types and install the two types of sub-frame - good design and good business sense.

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NEW REAR SUSPENSION

All versions use the rear suspension layout first seen in the Renault 5 GT Turbo - with trailing arms, programmed movement, and four transverse torsion bars serving as both springs and anti-roll bars. Two different sets of spring and damper settings are used for the different layouts.

This system ensures a very high transverse mechanical stiffness (stability); corrective deflection when cornering (handling); high vertical flexibility (comfort), and is extremely compact (boot space). (*See separate notes, p.14)

The fuel tank in all versions is of plastic, with 14.5 gallons (66 litres) capacity, and is secured under the boot floor by two metal bands. The spare wheel is behind the fuel tank for reasons of safety, cleanliness and aerodynamics.

ENGINES

Two types of engine power the initial Renault 21 UK models:
- the 1,721cc type F petrol engine, resembling that of the Renault 9/11 GTX and TXE;
- the 1,995 cc type J petrol engine derived from that powering the Renault 25 TS and GTS and Espace.

The type F engines have a cast-iron block, with camshaft driven by toothed belt, allowing very high valve acceleration. Power outputs of 76 or 90 bhp are derived from the 82 bhp Renault 9/11 unit by:
- a more rigid block (lower noise level);
- cooling system with expansion chamber integral with radiator;
- solid-state electronic ignition taking account of operating temperature to improve knock-protection;

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- in the 90 bhp version, a gain in power due to higher operating speeds, free-flow exhaust manifold, double-mapped ignition characteristic (using oil temperature) and oil-spray cooling of piston undersides.

The J-series 1,995cc, 120 bhp engines have the most sophisticated electronics, including:
- integrated ignition and fuel injection control;
- fuel injection cut-off on the overrun;
- idling speed control (lower idling speeds, lower vibration, less exhaust emission when cold);
- cylinder-by-cylinder knock detection for the first time in a naturally-aspirated engine (1deg. knock margin);
- degraded mode operation: ability to function without sensor information, using average values;
- diagnostics: ability to communicate with XR25 test unit, even to detect intermittent faults;
- altitude correction;
- battery voltage compensation to correct fuel injection opening times.

NEW FEATURES

These J-series engines are fundamentally new in that fuel injection is used for the first time on the 2.0 litre, and that they draw on all the most recent Renault expertise in engine systems, gained from experience (for instance) with the 2.2 litre Renault 25GTX fuel injection engine and the V6 Turbo engines of the Renault 25 and Alpine. They therefore achieve an excellent balance between power and torque output, low fuel consumption and low exhaust emissions, shown up by performance, economy and ease of operation.

Special mechanicl features of the Renault 21 RX and TXE engines include:
- compression ratio increased to 10:1, by use of special pistons with electronic fuel injection, improving both performance and economy;

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- a "long-branch" inlet manifold which produces a high, flat torque curve over a wide speed range without affecting power output;
- aluminium rockers, which reduce inertia and whose high polish reduces wear, both factors tending to improve engine breathing.

TRANSMISSION COMPONENTS

CLUTCHES

All Renault 21 versions use a single dry-disc, diaphragm spring clutch. The thrust bearing uses a ball-race, and operation (by cable) is fitted with automatic adjustment of clutch pedal free play, as in the Renault 5, 9, 11 and Extra.

GEARBOXES

Two types of transmission are used, depending on its layout:

- the type JB box with the transversely installed 1,721cc engines (like that in the Renault 9 and 11);
- the type NG with the in-line (longitudinal) engines - similar to that in the Renault 25 TS and GTS, and Espace.

Features of JB gearbox

- The bearings in the final drive casing use conical rollers rather than ball-type - a modification being extended progressively to all JB boxes.
- The JB3 box has the same internal and final drive ratios as those in the Renault 9 and 11 GTX and TXE.
- The JB3S box of the RS version has the same internal and final drive ratios as in the Renault 9 and 11 Turbo; it differs from the standard JB3 in having closer ratios and a final drive ratio raised by about 9%, giving better acceleration in each gear - the 21 RS being 12% quicker from 50 to 68 mph (80-110 km/h) in 5th gear, and 16% quicker in 4th.

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SUSPENSION, RIDE & HANDLING

Suspension design and development was aimed above all at achieving an extremely fine balance between comfort and handling through the use of well-proven features from the most recent Renault models.

To achieve this, the same general suspension layout is used whether the engine is installed in-line or transversely. Thus, the Renault 21 features:

- MacPherson strut front suspension with lower wishbones and negative offset geometry, with coil springs and anti-roll bar;
- rack and pinion steering (low-mounted rack with transverse engine, high-mounted with longitudinal), which may be power-assisted as standard or optionally on certain versions;
- rear suspension like that of the 5 GT Turbo, with trailing arms and programmed deflection (using V-profile cross-member). The spring and anti-roll functions are both served by 4 transverse torsion bars.

Advantages:

* very high transverse mechancial stiffness (stability);
* corrective deflection when cornering (handling);
* high vertical flexibility (comfort);
* extremely compact (boot space).

BRAKES

All versions of the Renault 21 use an X-split system with negative-offset front suspension geometry. All cars also have disc front brakes and rear drums, plus vacuum servo and rear pressure limiter.

The ventilated discs of the in-line engine versions (of 9.6 or 10.4in. diameter) have new Bendix type IVM calipers, giving more even pad wear and quicker pedal response.

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The rear drums have ratchet-type adjustment for wear. Acting very progressively, this system reduces pedal travel and ensures quicker response. The 9in. drums are of composite construction, with cast iron friction surfaces and sheet steel discs, giving a saving in weight of about 6.2 lbs and of noise.

A pressure limiter in all versions controls pressure applied to the rear brakes. The stability of the Renault 21 under braking results from the trailing-arm rear suspension, which does not lift the back end. This complements and completes the anti-dive effect built into the front suspension geometry.

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AERODYNAMICS

This is one of the strongest features of the Renault 21, whose shape was studied and developed in the S10 wind tunnel at St. Cyr Aerotechnical Institute. The following values were obtained:-

Cd.A	A	Cd	Version
6.14	21.0	0.29	RENAULT 21 TL
6.57	21.2	0.31	RENAULT 21 TS, GTS, RS
6.78	21.2	0.32	RENAULT 21 RX, TXE

These results flow from collaboration between stylists and engineers in search of an optimum shape from both interior space and aerodynamic points of view. Thus by comparison with the Renault 18, which was itself better than average (Renault 18 GTL, A=20.2sq.ft. & Cd=0.34), a major improvement has been achieved.

This allows the Renault 21 to approach the record set by the Renault 25 (Cd=0.28) for a mass-produced saloon car.

Its aerodynamic quality has been achieved by:

* generally fluid lines, with sloping nose, steeply raked front grille and windscreen, and deep rear luggage boot.
* careful integration of all parts of the bodywork:
  - "autoclave" type doors mask the gutters;
  - glass stuck in place (screen, rear window, rear side windows);
  - semi-flush side windows (only 3mm recessed), which achieve about 80% of the saving theoretically possible with completely flush fitting, at far lower cost and greater convenience, especially in wet conditions with their encouragement of water flow;
  - streamlined door mirrors;
  - flat wheel trims;
  - integral front and rear bumpers.
* careful design of the body underside:
  - front spoiler integral with bumper to facilitate engine cooling;

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- centre zone free of drag-creating features;
- smooth undersurface towards the rear, with rear suspension, fuel tank and spare wheel housing all beneath the bumper.

* optimised cooling air flow through:
  - the cross-section of the air passage matched to need. Air enters at bumper level (two different size air intakes are used) and the front grille is sealed in all petrol-engined versions except the RS and RX which have an open grille;
  - the use of a convergent passage to feed the radiator;
  - the relative position of the radiator within the engine compartment.
* sealing of the front surfaces of the car including lateral sealing of the headlamp housings to the front bumper.

CORROSION PROTECTION

Achievement of successful modern corrosion protection begins with a new vehicle's body design. On the 21 this led, for example, to the choice of one-piece side panels and adhesive installation of all fixed glass.

Use of pre-treated steels also plays an active role. In the Renault 21, pre-treated steels represent 27 per cent of the total body-in-white: electrolytic zinc deposit coated steels for the 4 door panels, bonnet, boot lid, and headlamp support structure; zinc-rich coated steels for front wings; galvanised steels for the bumper shock absorber mountings.

For the first time on a Renault model, the front grille is made of steel pre-treated on its outer surface to improve resistance to stone chip damage.

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Special wear test

Like the Renault 25, the Renault 21 body has successfully passed the new accelerated wear test defined in the design specification. This consists of exposing the car to a salty fog in a hot, humid climatic chamber - then allowing it to dry in a hot, dry atmosphere. After three months of this treatment the body is completely dismantled to study its reaction in minute detail.

As in all recent Renaults, the front wheel arches receive supplementary protection with moulded polypropylene inner shields, while the lower part of the engine compartment has deflectors to prevent entry of water thrown up from the road. Finally, to minimise wear in use, an extra, colourless protective film is applied to the bonnet and boot bearing pads and the front door kick plates.

WEIGHT SAVING

For its size, the Renault 21 is competitive in weight. If a Renault 18 TL were enlarged to the same overall dimensions as a 21 TL, it would weigh about 100 lbs more despite its smaller engine. Yet, version for version, the 21 is considerably better-equipped than the 18 - a measure of the progress achieved through computer-aided design, greater expertise in pressing of coated steels, and gains through the use of high-strength steels.

Without making any concessions in safety or rigidity, the body-in-white of the Renault 21 weighs less than 617 lbs (280 kg).

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INTERIOR SPACE

This is another strong feature of the Renault 21 which, against its competitors with overall lengths from 13ft to 15ft, is the only car offering such generous space in all three directions, in both front and back seats.

Lengthwise, the 21 makes excellent use of interior space within the given length (175.7 to 175.8in.), representing an efficient balance between:

- overall cabin length - 70.9in. from accelerator pedal to junction of back seat cushion and squab;
- back seat knee room of 8.1in., - very large for a car in this class;
- boot space of 17.3 cu.ft., which enables the 21 to match the largest of its competitors, but can be further extended in most versions.

Crosswise, the greater frontal area and design of the door panels have permitted exceptional elbow room for a car in this class, and very good shoulder room, while headroom (measured at an angle of 14°) is generous both front and rear.

LUGGAGE SPACE

This is maximised by careful division of the available length between cabin and boot, use of a high rear deckline, and its regular shape. Access is made easier by its low sill and integration of parts of the rear lamp clusters to widen the opening.

Boot space may also be increased by use of the 1/3-2/3 split fold back seat, either standard or optional on most versions, enlarging its volume by 4.9, 7.4 or 12.4 cu.ft. and increasing its useful length from 40.2 to 74.8in.

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ACCESSIBILITY

Several features make for easy access to the 21's interior:

- The 4 doors, of the "autoclave" (wrap-over) type, curving into the roofline, allow an extra inch of opening height compared with a conventional door. This advantage is amplified by the wide door opening angles (73° at the front, 70° at the rear);
- the boot lid gives very easy access because of its width, depth and low sill.

VISIBILITY

The Renault 21 has a large, 32.1 sq.ft. glass area, through the use of a "six-light" layout with rear side windows, the slimness of the roof pillars and the "autoclave" type doors. So blind spots are much reduced and all occupants enjoy an excellent view out (the driver's field of view extends through 315°54'), while the interior is light and airy.

COMFORT

Ergonomic studies during the 21's development aimed to achieve comfortable seating for all occupants - each seat being the subject of special study. So the driver's seat cushion is adjustable for height (with an angle change of 7°) on all versions except the TL and TS and the steering wheel is height adjustable in the TXE.

Front seats are of the "Monotrace" (single track) design, 2in. wider than those in the Renault 9/11, with dual hardness foam construction, height-adjustable head restraints (except TL and TS), adjustable backrest angle, fore-and-aft adjustment, and tilt adjustment on curved runners for the passenger seat in the TXE. For rear passengers the backrest is angled at 25° - the optimum for upper body comfort - while the "Monotrace" front seats increase rear foot room and with the split rear seat comes a folding centre armrest and integral head restraints.

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HEATING & VENTILATION

The Renault 21 uses an air-blending system (adopted on all recent Renault models). The heater radiator is permanently hot but air flow through it is controlled not by the car's speed but by a fan. Good temperature distribution is assured by numerous air inlets, with those in the upper part of the cabin adjustable for angle and heater controls accessible to both driver and front passenger. Air is extracted via the rear parcel shelf, the stale air travelling through the boot which has outlet valves in the rear wheel arches.

SOUNDPROOFING

Accoustic specialists were closely involved with the 21's development, and achieved major reductions in noise. Sound insulation is improved particularly by the filtered sub-frame mountings and new floor insulation with a composite material three times more effective than before.

Other noise-deadening features include stiffening of the engine asssemblies by addition of a light alloy lower casing on the 2.0 litre and reinforcing the 1.7 litre blocks; door seals designed to reduce wind noise; development work on the heater fan and its motor; a one-piece moulded mat on the cabin side of the front bulkhead; a butumen layer inside the door panels and a Renault-developed absorbent roof lining.

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REAR SUSPENSION - additional explanation

The rear suspension of the Renault 21 looks superficially like the familiar torsion axle, but is more subtle. It is a development of the system introduced successfully on the Renault 5GT Turbo.

The two trailing arms on which the wheels are mounted are joined by a V section sheet metal cross member which permits a programmed amount of independent wheel movement, while four torsion bars provide the springing and control the roll. With dampers lying nearly flat, the whole assembly is extremely compact. It allows the floor level to be lowered by up to 4 in., and eliminates the intrusion into boot space which can be caused by coil spring struts.

The trailing arms swing on two torsion bars anchored to the frame. These are clamped together at the centre of the car and the same clamp joins them to two shorter torsion bars which are splined to the trailing arms.

Working together, the four torsion bars not only twist but bend slightly as the deflection increases. This bending of the torsion bars produces a slight change in wheel camber, which helps to maintain consistent handling with changes in load. At the same time, the cross member, with its arc-welded gussets, gives the suspension great lateral stiffness.

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THE TWENTY ONE - TODAY

RENAULT'S NEW "KEY OF THE DOOR" MODEL SPEARHEADS UK ATTACK
Launch range of 6 versions - 2 engine sizes - 3 power levels - 3 equipment line-ups

A new and powerful multi-pronged weapon from Renault's 1986 armoury is launched into the UK car market today (June 11), only three months after its debut in France.

Spanning the fiercely competitive upper medium sector of family saloons and fleet cars, the RENAULT 21 arrives initially in six petrol-engined versions, offering two engine sizes (1.7 and 2.0 litres), three power outputs and three levels of equipment. Seven more versions, including estate models, will follow later.

This well-styled, aerodynamically efficient 4-door, 5-seater - planned for high production levels for the international market - will spearhead Renault UK's 1986-87 sales drive, pitching headlong against major competitors like the Ford Sierra, Vauxhall Cavalier and Austin Montego.

Its objective: to hit 25,000 sales in a full year (or at least a third of Renault sales), to take 1.4 per cent of next year's total UK car market and clock up half of Renault's fleet sales.

With its launch backed by a nation-wide £4m advertising campaign, advanced design, equipment and, above all, pricing, make the Renault 21 the hottest contender in its class today. Prices range from £6,485 to £10,170.

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Western Avenue, London W3 0RZ
Telephone: 01-992 3481 (Night line: 01-977 4605)

MARKET PERSPECTIVE

Representing a total investment of FFr 5bn (£500m), the Renault 21 is the company's fifth major new model to be launched in just over four years, giving Renault the largest and youngest range of any European manufacturer.

Western Europe's upper medium sector of the market accounted for 2,650,000 registrations last year, or 26 per cent of the total, while in Britain the same segment saw nearly 443,000 sales, or around 24 per cent of the total market - clearly pinpointing the importance of the 21 to Renault's UK operations as the only really new European model in this sector since 1982.

UK RANGE

For its British launch, the Renault 21 starts with six variants - four powered by the 1.7-litre engine, producing 76 or 90 bhp (TL, TS, GTS and RS), and two 2.0-litre, 120 bhp versions (RX and TXE).

All versions have front-wheel-drive and 5-speed gearboxes, the 1.7-litre models with engine and transmission mounted transversely and the 2.0-litres with longitudinal ("North-South") mounting. Suspension is all-independent, with a new and unusual rear layout, while other features include electronic ignition, excellent roadholding qualities and exceptional interior space, with a large, 17.3 cu.ft. luggage boot (expandable to 29.7 cu.ft.), within an all-up length of just over 14ft. 6in.

Aerodynamics played a major role in design, bringing the all-important drag factor down to a minimum Cd. of 0.29, to produce top speeds of between 110 and 125 mph and fuel economy up to 55.4 mpg at 56 mph on the TS/GTS versions.

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An impressive equipment line-up includes as standard on most versions:

- digital stereo radio/stereo cassette system
- 60/40 split rear seats (to extend boot space)
- driver's seat height adjustment
- rear seat belts
- full instrumentation including electronic rev counter
- velour upholstery and upholstered recessed door panels.

"THE CAR THAT MEANS BUSINESS"

With the Renault 21, the company is continuing its important range renewal policy - which started in 1981 with the Renault 9 and continued with the Renault 11, 5 and 25 - so that it is now represented in every principal market sector.

Following its unveiling at this year's Geneva Motor Show, the 21 began sales in France in March, then in Germany (mid-April), Italy and Belgium (May) and now, in June, the UK. The parent company sees this newcomer as a vital key to the success of its current recovery programme and drive towards profitability. Its importance in Britain is summed up by Mr. Guy Bergeaud, Managing Director of Renault UK Ltd:-

"The Renault 21 is the car that we need in the upper medium segment - a particularly good car for the British market. We believe it will appeal particularly to fleet users and buyers in companies. With the 21 we are dealing in a quarter of the sales market. We want to achieve a third of our total car sales with the 21, and this will represent half of our total fleet sales.

So whichever way you look at it, the Renault 21 means business - business in the marketplace, more business for our dealers, good business sense for business customers - and better business for Renault UK.

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"We think the 21 really revives the spirit of motoring in the family car segment - a major asset of this car. It is exactly what today's customers want, with lots of space, good performance and equipment, and many good technical features. It is extremely competitive in price and specification, so should give our competitors a real run for their money. We already have a launch stock of 6,000 cars in the country. We are aiming for up to 14,000 Renault 21 sales by the end of this year and at least 25,000 in 1987."

PRODUCTION - AT FIVE PLANTS

Main production of the Renault 21 is taking place at Sandouville, near Le Havre, where about half of the FFr 5bn investment has been channelled into capital equipment. But the 21 is also being assembled at Haren (Belgium), Douai, and Maubeuge (Northern France), and in Spain. Models for the North American market, where it will be launched early in 1987, will also come from Maubeuge.

Total production of the Renault 21, when on full stream, is likely to reach 1,400 cars a day.

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THE U.K. LAUNCH RANGE - BRIEF SKETCH

For the UK market, Renault starts with these six versions:-

RENAULT 21 TL 1721cc, 76 bhp, 110 mph, 0-62 mph 12.0sec., 5-speed, up to 53.3 mpg, Cd. 0.29

RENAULT 21 TS 1721cc, 90 bhp, 116 mph, 0-62 mph 10.7sec., 5-speed, up to 55.4 mpg, Cd. 0.31

RENAULT 21 GTS 1721cc, 90 bhp, 116 mph, 0-62 mph 10.7sec., 5-speed, up to 55.4 mpg, Cd. 0.31

RENAULT 21 RS 1721cc, 90 bhp, 116 mph, 0-62 mph 10.7sec., 5-speed (close-ratio),up to 52.3mpg,Cd.0.31

RENAULT 21 RX 1995cc, 120 bhp, 125 mph, 0-62 mph 9.7sec., 5-speed, up to 48.7 mpg, Cd. 0.32

RENAULT 21 TXE 1995cc, 120 bhp, 125 mph, 0-62 mph 9.7sec., 5-speed, up to 48.7 mpg, Cd. 0.32.

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RENAULT 21 - ADVANCED DESIGN FOR AFTER-SALES SERVICE AND REPAIRS, IMPROVED ECONOMY AND DURABILITY

From the outset, the Renault 21 was designed with low cost of ownership as a priority. It incorporates many important features which enable repair and replacement costs and parts prices to be kept to a minimum. Simultaneously, it is the latest of the new generation of technologically advanced Renault models embodying systems designed to improve economy and durability.

TECHNICAL FEATURES

The computer-designed bodyshell is a very rigid construction - yet weighs only 620 lb. (100 lb. less than the Renault 18.

Engine, transmission and suspension components are carried on a sub-frame (the first time such technology has been used for an in-line engine). The result - a notable reduction of 5db in cabin noise.

Anti-corrosion: one-piece side panels reduce the number of joints where corrosion can start. Many panels are pressed from pre-protected steel, with the front grille specially protected to improve resistance to stone-chip damage and paint finish is also more damage-resistant.

Advanced electronics

All versions are equipped with solid-state electronic ignition. On the 1721cc versions this system responds to the switching on of the electric fan, to increase anti-knock protection under extreme operating conditions.

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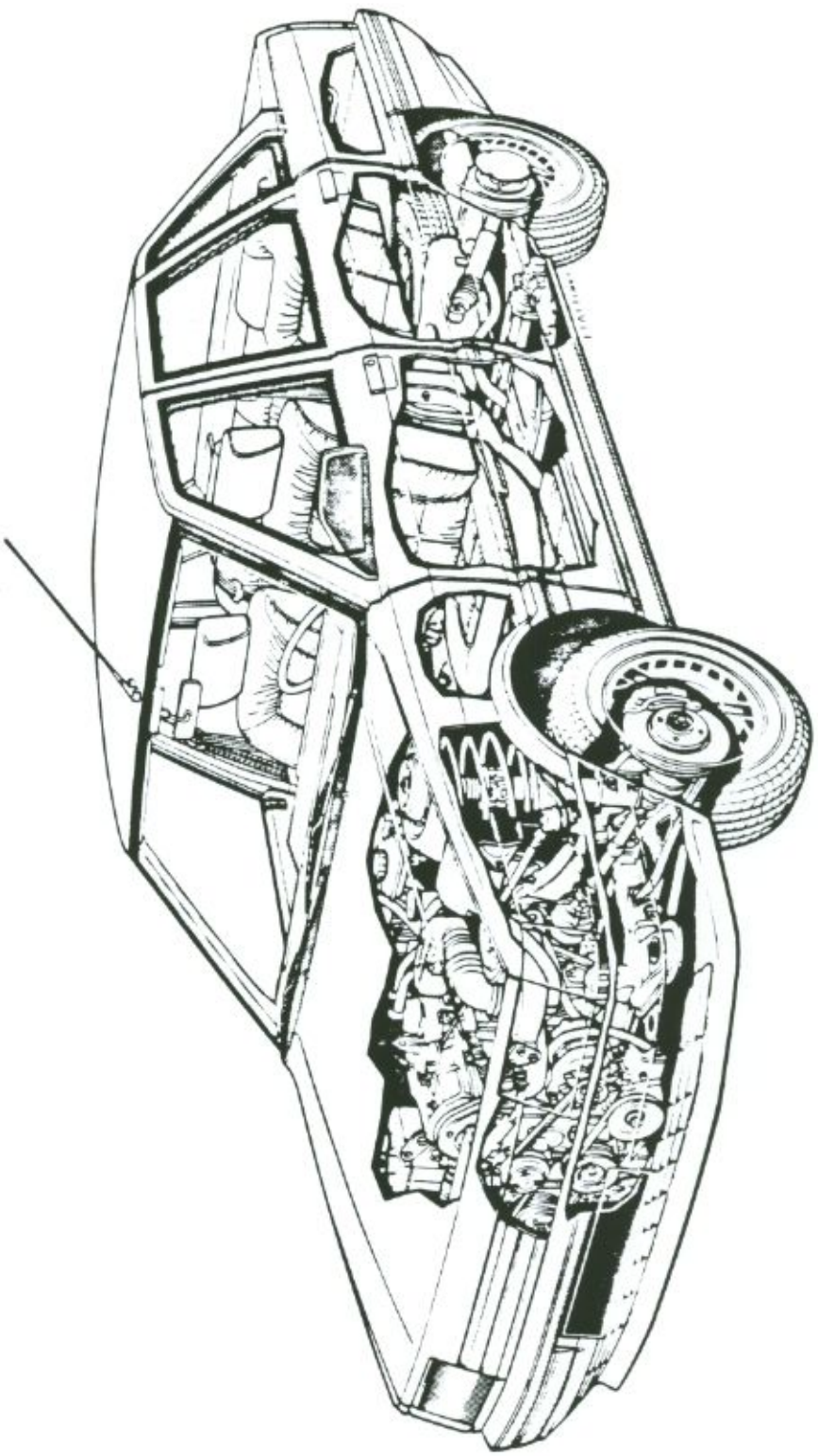
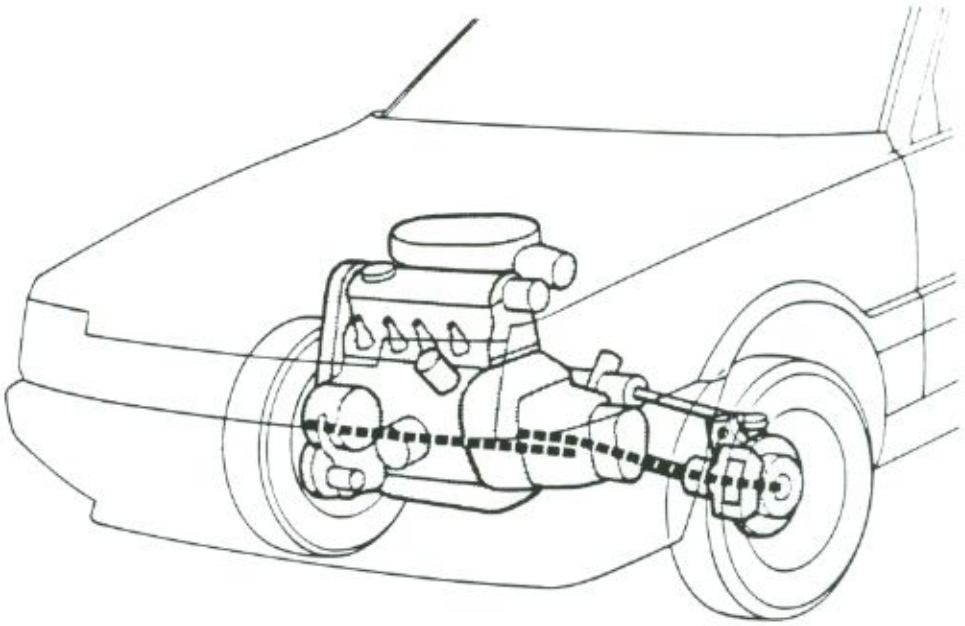
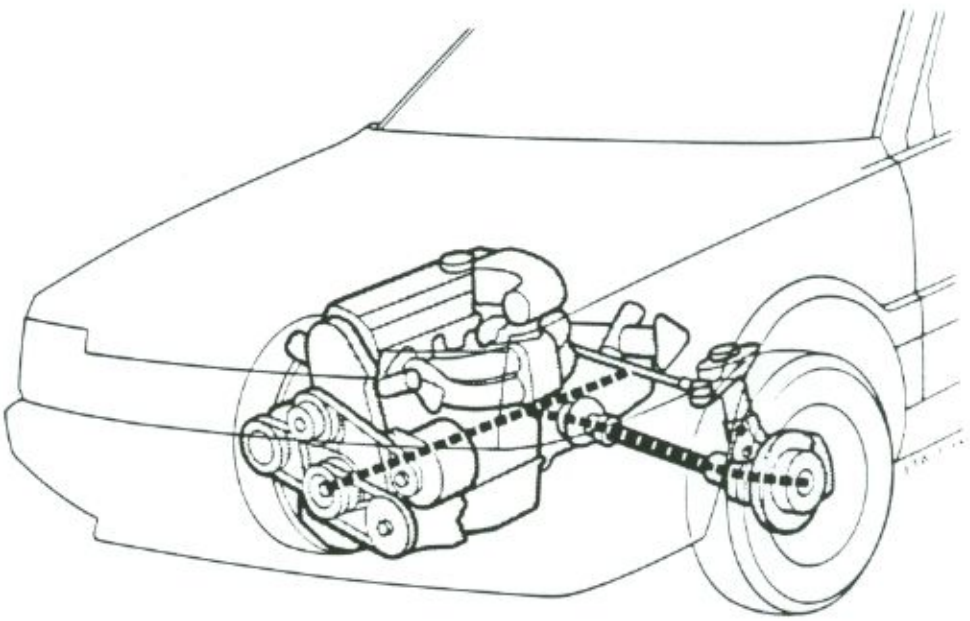
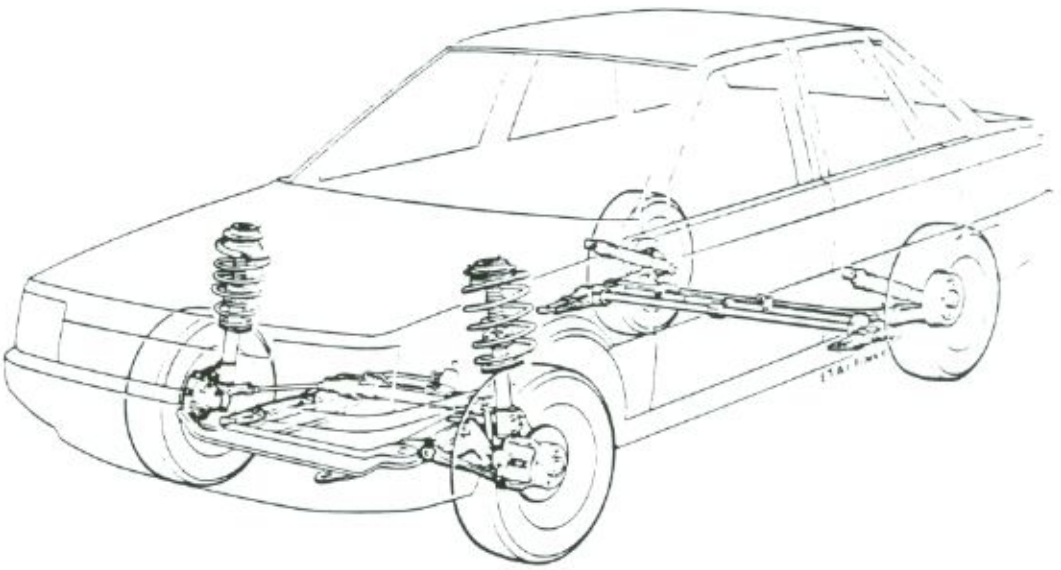
Western Avenue, London W3 0RZ
Telephone: 01-992 3481 (Night line: 01-977 4605)



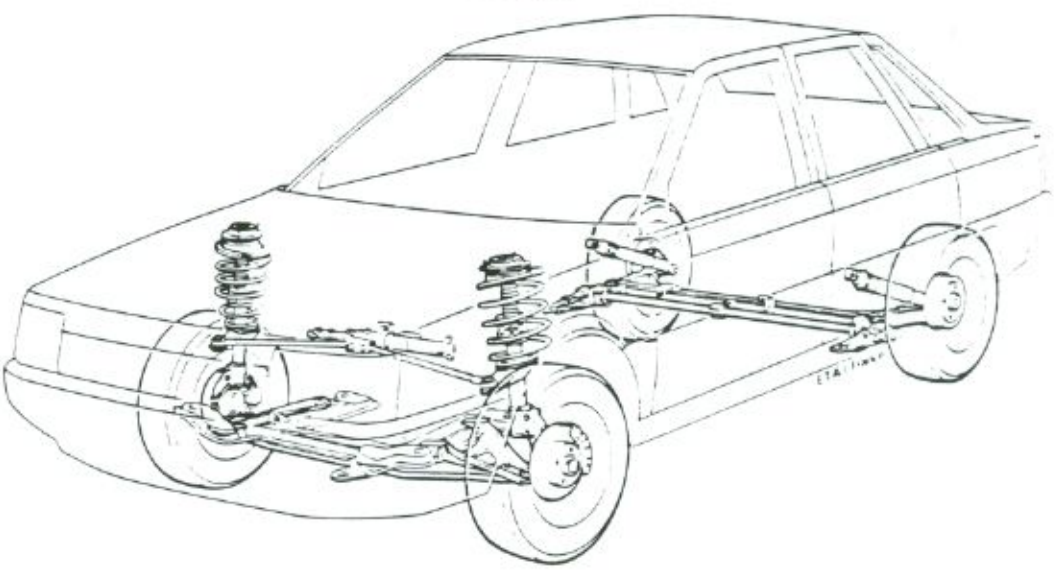


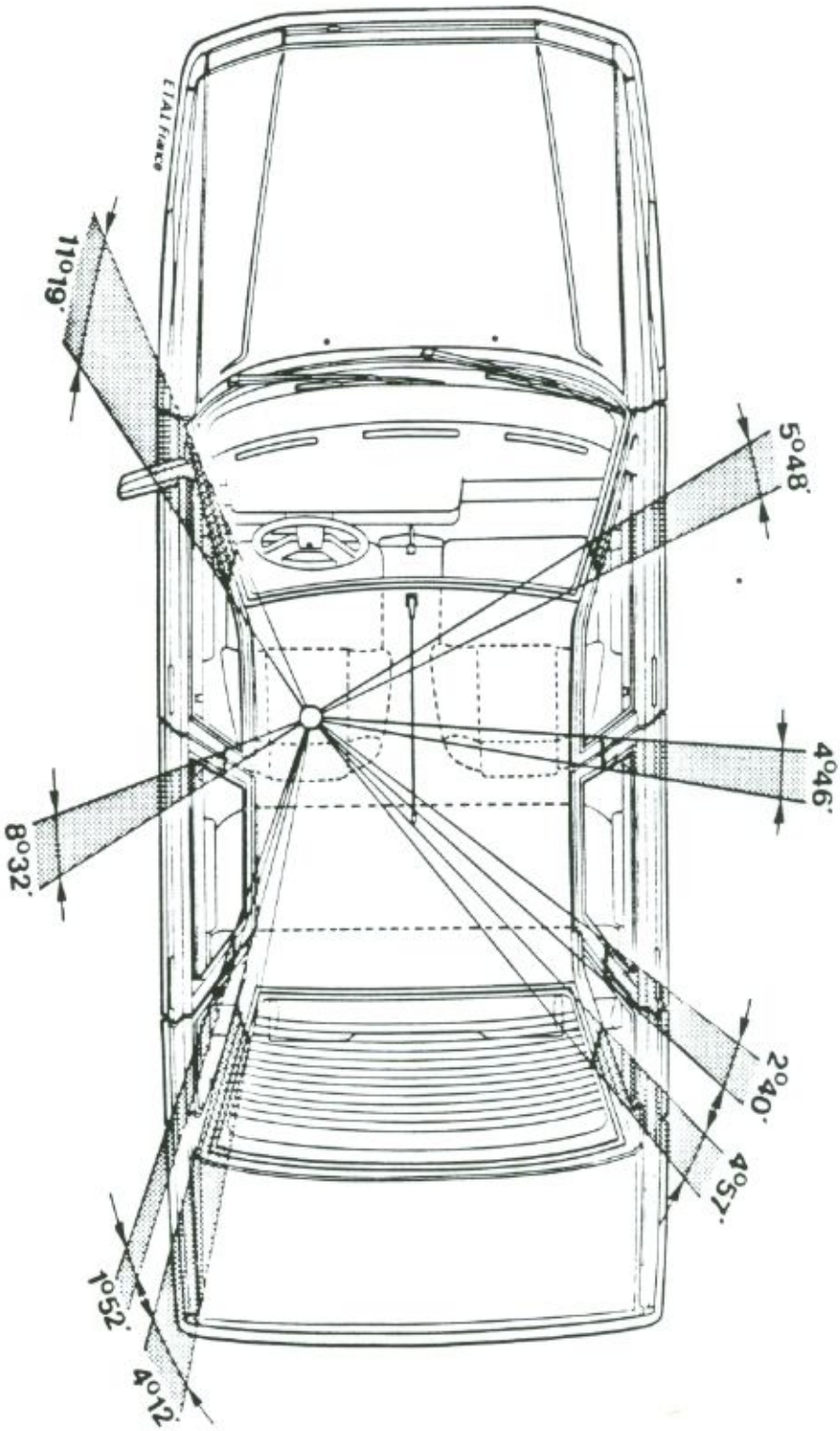


Transverse engine



In-line engine

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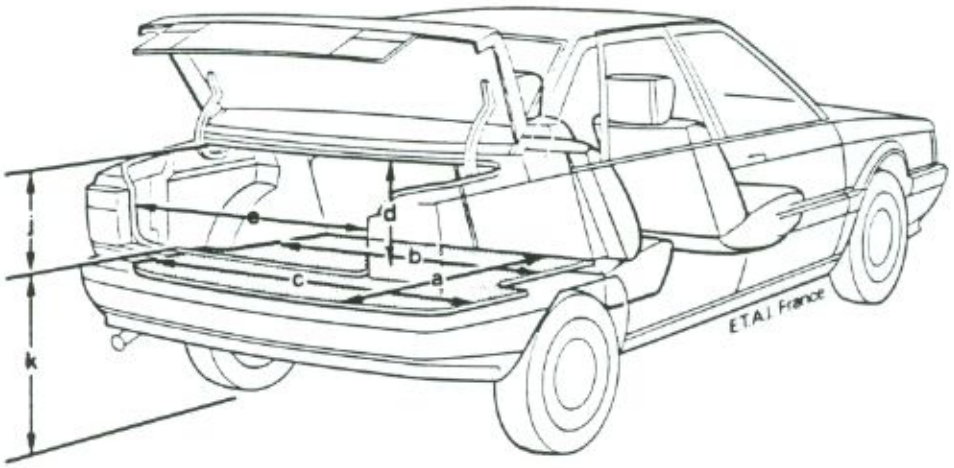

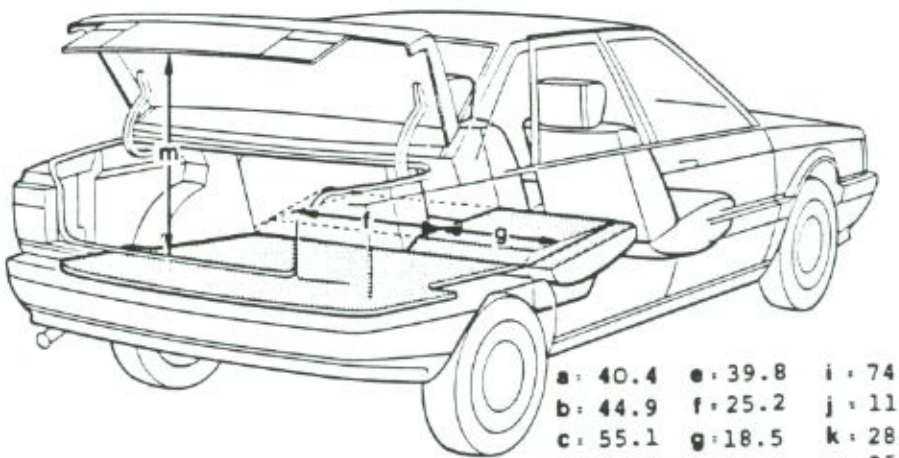

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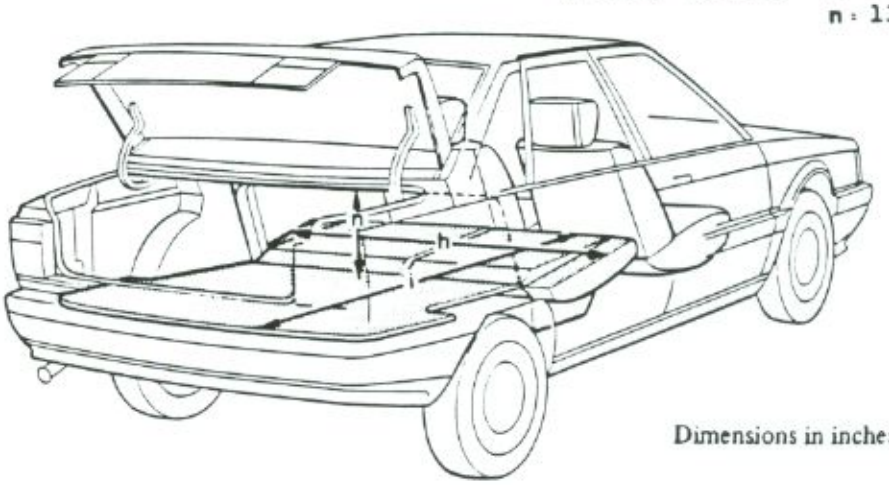
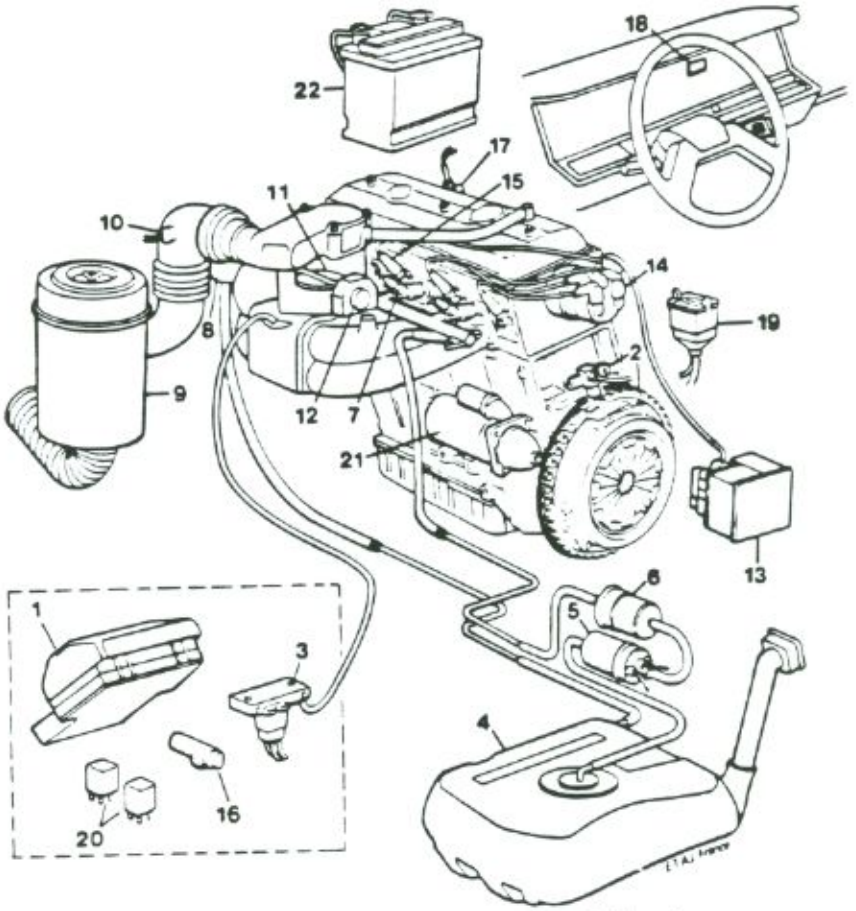
		n: 13.8

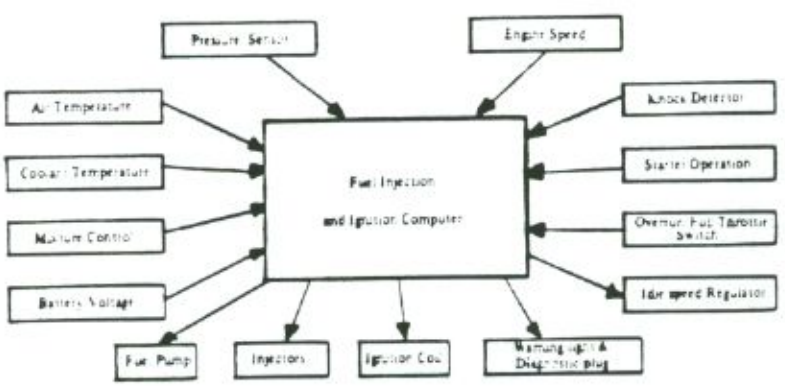


Dimensions in inches

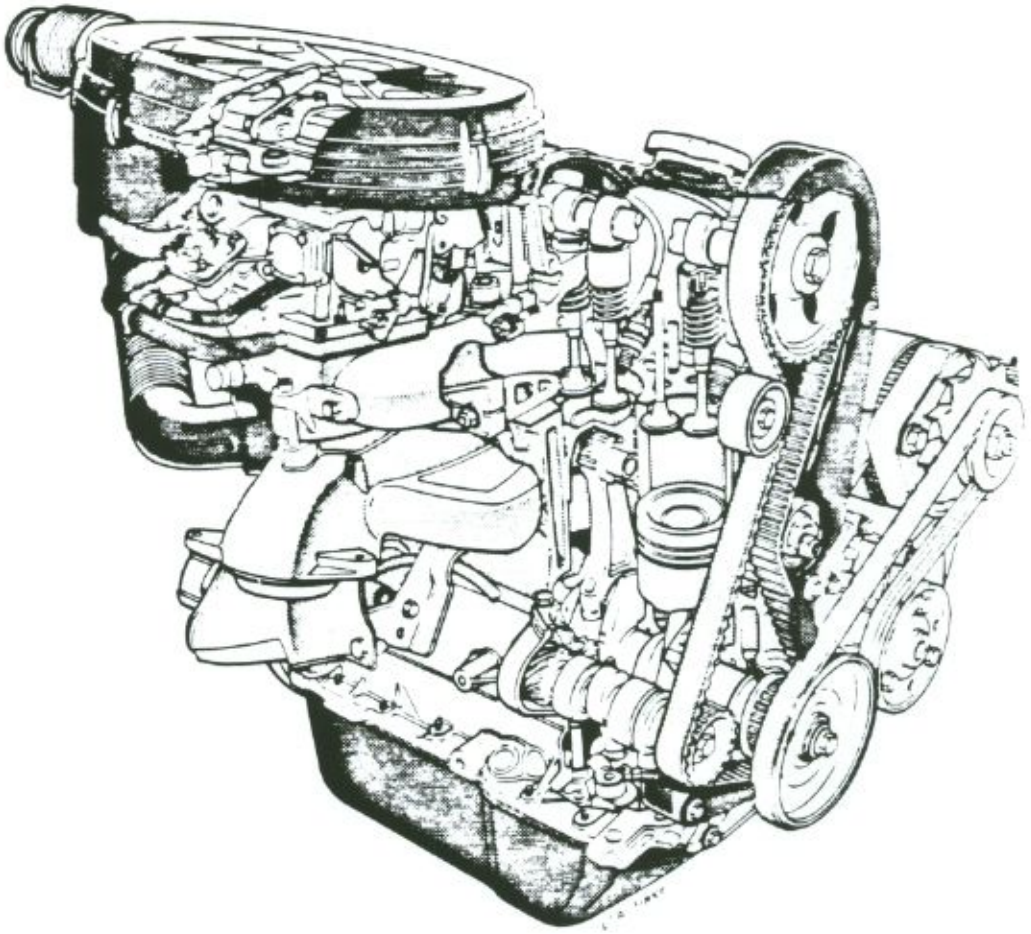


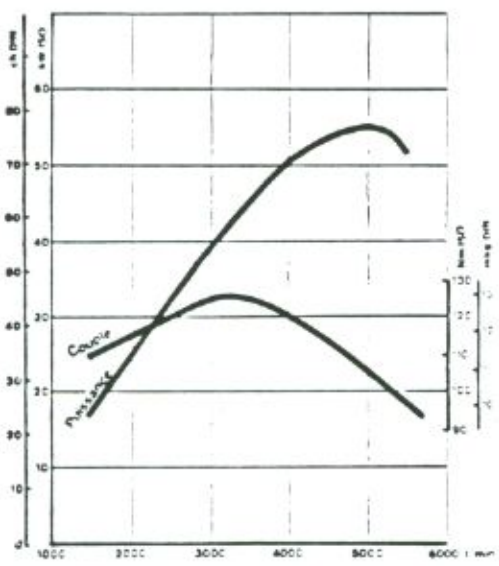
1 Electronic control computer
2 Position speed sensor and target
3 Pressure sensor
4 Fuel tank
5 Electric fuel pump
6 Fuel filter
7 Electromagnetic injectors
8 Fuel pressure regulator
9 Air filter
10 Air temperature sensor
11 Inlet butterfly housing
12 Overrun/Full throttle sensor
13 Ignition module and high tension coil
14 Distributor
15 Sparking plugs
16 Slow-running mixture strength sensor
17 Coolant temperature sensor
18 Dashboard warning light
19 Diagnostic plug
20 Relays
21 Starter motor
22 Battery

Note: neither the knock-detector nor the idling speed regulator is shown here



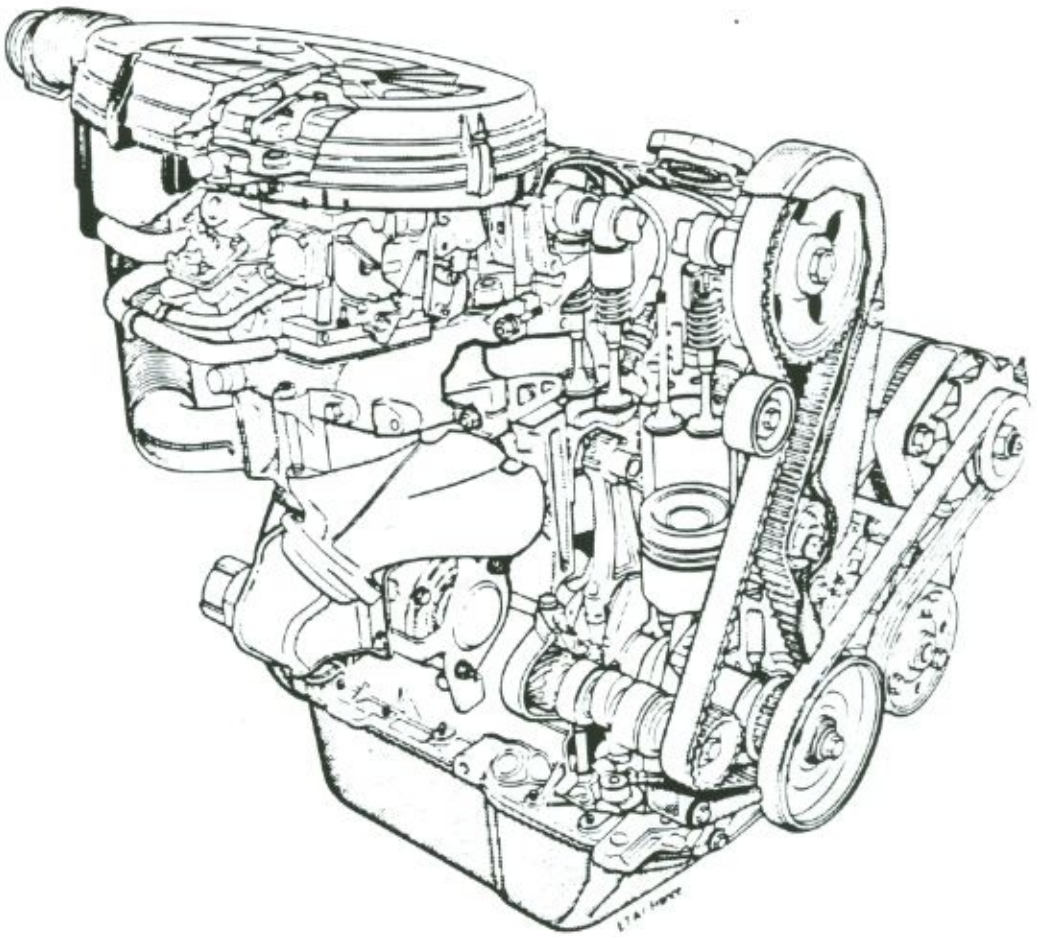
76bhp 'F' petrol ENGINE

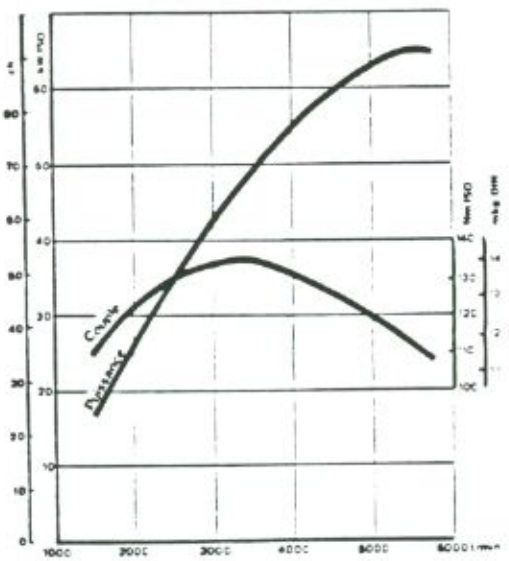




PRINCIPAL CHARACTERISTICS	
Type No	:F2N – B712
Fuel	:Super
Layout	:4 cylinders in-line, vertical
Material	:Cast iron block, light alloy head
Crankshaft	:5 main bearings
Bore x stroke	:81 x 83.5mm
Capacity	:1,721cc
Compression ratio	:9.2 to 1
Max Power ISO (DIN)	:55kw (76bhp) @ 5,000rpm
Max Torque ISO (DIN)	:126Nm (95 lb-ft) @ 3,250rpm
Valve gear	:SOHC, toothed belt drive
Valve timing	:4 - 40 - 40 - 4
Ignition	:Solid-state electronic (AEI)
Fuel system	:Double-choke carburettor
Cooling	:Liquid, pressurised
Application	:RENAULT 21 TL

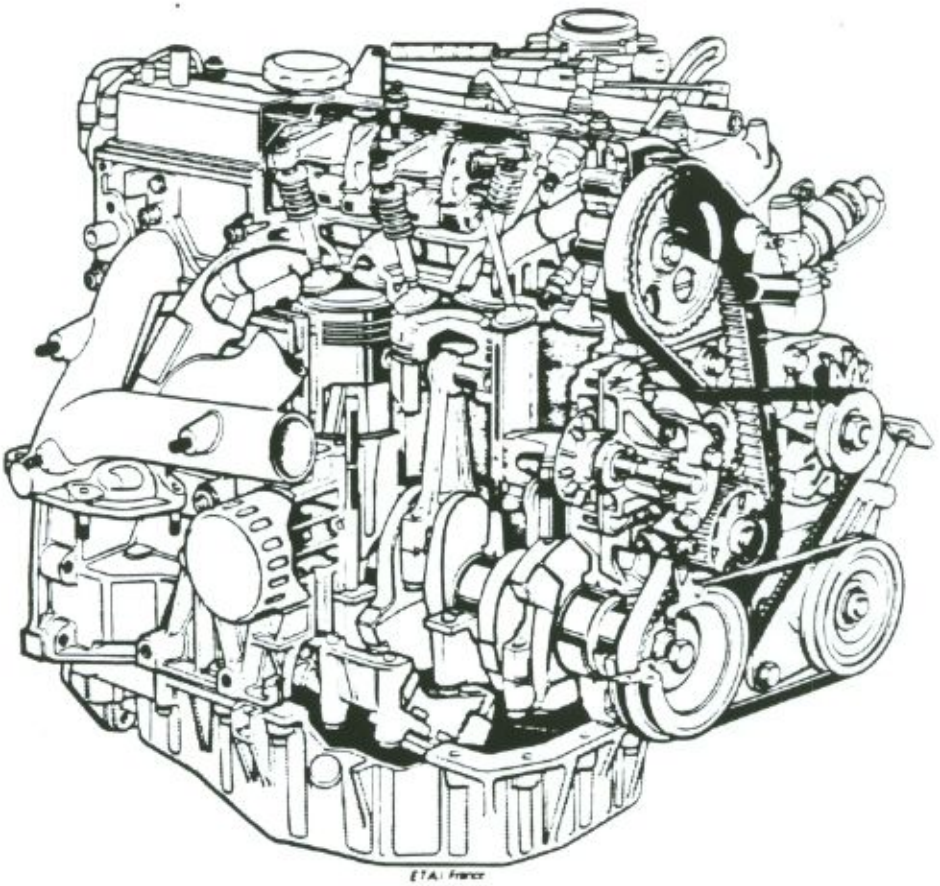
90bhp 'F' petrol ENGINE

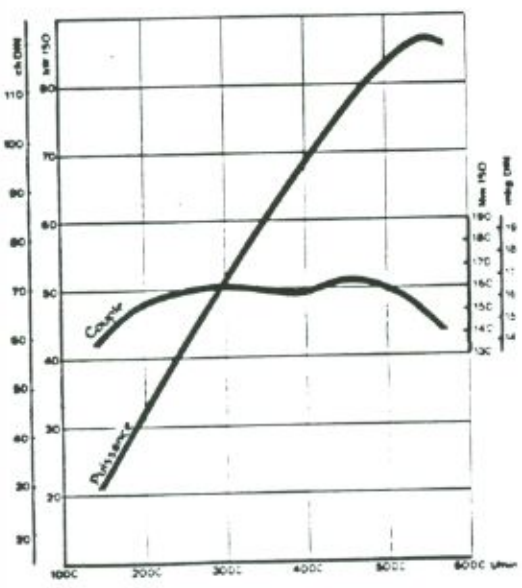




PRINCIPAL CHARACTERISTICS	
Type No	:F2N – C710
Fuel	:Super
Layout	:4 cylinders in-line, vertical
Material	:Cast iron block, light alloy head
Crankshaft	:5 main bearings
Bore x stroke	:81 x 83.5mm
Capacity	:1,721cc
Compression ratio	:10.0 to 1
Max Power ISO (DIN)	:65kw (90bhp)@ 5,500rpm
Max Torque ISO (DIN)	:135Nm (102 lb-ft) @ 3,500rpm
Valve gear	:SOHC, toothed belt drive
Valve timing	:8 - 52 - 52 - 8
Ignition	:Solid-state electronic (AEI)
Fuel system	:Double-choke carburettor
Cooling	:Liquid, pressurised
Application	:RENAULT 21 TS, RS, GTS, TSE

120bhp 'J' petrol ENGINE





PRINCIPAL CHARACTERISTICS	
Type No	:J7R – R750
Fuel	:Super
Layout	:4 cylinders in-line, vertical
Material	:All light alloy
Crankshaft	:5 main bearings
Bore x stroke	:88 x 82mm
Capacity	:1,995cc
Compression ratio	:10.0 to 1
Max Power ISO (DIN)	:86.5kw (120bhp) @ 5,500rpm
Max Torque ISO (DIN)	:164 Nm (124 lb-ft) @ 4,500rpm (*)
Valve gear	:SOHC, toothed belt drive
Valve timing	:17 - 63 -63 - 17
Ignition	:Solid-state electronic (AEI)
Fuel system	:Renault electronic injection
Cooling	:Liquid, pressurised
Application	:RENAULT 21 RX, TXE

(*) over 118 lb-ft from 2,250rpm to 5,250rpm

Renault Press

RENAULT 21 RX — TECHNICAL SPECIFICATION

GENERAL

Type	4-door, 5-seat saloon; front-wheel-drive, longitudinal engine and transmission, all-independent suspension, spare wheel beneath boot floor, fuel tank forward of spare wheel, all-steel monocoque.
Cd.	0.32
Cd.A.	6.78
Glass area (sq.ft.)	31.1

ENGINE

Type No.	J7R-R750
Cycle	4-stroke petrol
Installation	In-line, inclined 15° towards inlet side
Arrangement	4 cylinders in-line, vertical
Material	Light alloy block, head & lower casing
Cylinder liners	Wet, removeable
Combustion chambers	Hemispherical
Crankshaft main bearings	5
Bore x stroke (mm)	88 x 82
Capacity (cc)	1,995
Compression ratio	10.0:1
Fuel grade	98 RON (4-star)
Max. power, kw ISO (bhp DIN)	86.5 (120)
at engine speed, rpm	5,500
Max. torque, Nm ISO (lb-ft)	164 (124)
at engine speed, rpm	4,500
Valve operation	
* camshaft	One, overhead
* camshaft drive	Toothed belt
* valve timing diagram	17°-63°-63°-17°
* valves	V-opposed, operated by rockers
Ignition: firing order	Solid-state electronic (AEI) integrated with fuel injection; 1-3-2-4
Fuel system	Multi-point electronic fuel injection with over-run cut-off and knock detector
Fuel pump	Electric, on right rear longeron
Air supply	Filtered
Cold starting system	Electronic compensation for coolant temperature
Engine cooling	
* type	Liquid, pressurised, with expansion chamber
* thermostat opens	88°C
* fan	Electric blow-through, 12.6in. diameter, 150W motor
Lubrication	Conventional circuit with gear-type pump driven by layshaft, & filter.

ELECTRICAL EQUIPMENT

Battery	12v/250-5- Ah
Alternator	60 amp
Regulator	Electronic, integral with alternator, with dashboard warning light.

/Contd...

CLUTCH

Type	Single dry disc
Mechanism	Diaphragm spring
Thrust bearing	Ball-type
Operation	Mechanical, by cable with automatic adjustment of pedal free play

GEARBOX

Type	Manual, in-line, 5-speed NG9
Casing	2 light alloy half-shells
Operation	"Twin-rod" with floor lever
Ratios & speeds in mph per 1,000 rpm with tyres (circ.)	185/65 R 14 H (71.5ins).
1st	45/11=4.091 - 4.78 mph
2nd	37/17=2.176 - 9.02 mph
3rd	31/22=1.409 - 13.94 mph
4th	34/33=1.030 - 19.06 mph
5th	31/36=0.861 - 22.81 mph
Reverse	39/11=3.545 - 5.54 mph
Final drive	31/9=3.444

DRIVE SHAFTS

Type	Two tubular shafts (27 x 35) each with two constant-velocity joints
Inboard joints	RC490, plunge-accommodating, 3-roller type
Outboard joints	UF 95, 6-ball type

STEERING

Type	Rack & pinion, rack installed high with single output & long droplinks
Midpoint ratio	24.3:1 (manual); 17.4:1 (p/a)
Steering wheel diameter	15.0 ins.
Turns lock to lock	4.5 (manual); 3.2 (power-assisted)
Turning circle, kerbs	34.6 ft.

SUSPENSION

FRONT	
Geometry	MacPherson strut, lower wishbone & negative-offset geometry
Springs	Inclined coil, with telescopic hydraulic dampers
Spring rate	175 lbs/in
Anti-roll bar	X-section, 24.5 x 15mm
REAR	
Geometry	Independent, trailing arms with programmed geometry
Springs	4 transverse torsion bars and inclined telescopic hydraulic dampers
Spring rates	175 lbs/in. unladen
Anti-roll bar	Solid, 24mm diameter
Torsion bars	22.5mm diameter

BRAKES

Circuit	Hydraulic, X-split
Safety	Nivocode

/Contd...

(BRAKES)	
Servo	Single 9in vacuum servo, ratio 3.45
Master cylinder	Integral tandem, 22 x 36mm
Regulator	Modulated by load and pressure
Front brakes	
* type	Ventilated disc, 10.43in. diameter, 20mm thick
* slave cylinders	54mm diameter
* Friction surface per wheel with new pads	25.4 sq.in.
Rear brakes	
* type	Composite drum, 8.98in. diameter, 1.57in. wide shoes with automatic wear adjustment
* slave cylinders	22mm diameter
* friction surface per wheel with new shoes	42.2 sq.in.
Handbrake	Mechanically operated via cable, operating on rear wheels

WHEELS

Material	Pressed steel
Dimensions	5.5B 13 4 CH 36
Fixing	4 bolts, 100mm pitch circle

TYRES

Type	Radial-ply tubeless
Size	185/65 R 14 H
Rolling circumference	71.5 ins.

CAPACITIES

Fuel tank	14.5 gallons/66 litres (plastic)
Cooling system (pints)	13.0
Engine oil (litres)	5.3
Gearbox oil (litres)	2.0

LOAD SPACE

Platform area (sq.ft.)	13.3
Volume (cubic feet)	17.3

WEIGHTS

Kerb weight	2,414 lbs (1,095 kgs)
on front wheels	1,477 lbs
on rear wheels	937 lbs
Gross vehicle weight	3,373 lbs (1,530 kgs)
on front wheels, max.	1,874 lbs
on rear wheels, max.	1,675 lbs
Payload including driver	959 lbs
Towing weight (braked)	2,359 lbs (1,070 kgs)
Towing weight (unbraked)	1,179 lbs (535 kgs)

FUEL CONSUMPTION

Steady 56 mph (90 km/h)	48.7 mpg (5.0 lts)
Steady 75 mph (120 km/h)	39.8 mpg (7.1 lts)
Urban cycle	26.4 mpg (10.7 lts)

/Contd...

PERFORMANCE

Maximum speed	125 mph
0-62 mph (sec)	9.7
Standing ½-mile (sec)	16.8
Standing kilometre (sec)	30.9
Max. start gradient, MTW	12%

DIMENSIONS

Overall length	175.8 in.
Overall width	67.5 in.
Overall height	55.7 in.
Wheelbase	102.4 in.
Ground clearance (laden)	4.7 in.
Front track	57.2 in.
Rear track	55.4 in.
Front shoulder width	58.4 in.
Rear shoulder width	58.5 in.

SERVICE INTERVALS

Minor service & oil change	6,000 miles
Major service	30,000 miles

-ends-

RENAULT 21 GTS — TECHNICAL SPECIFICATION

GENERAL

Type	4-door, 5-seat saloon; front-wheel-drive, transverse engine and transmission, all-independent suspension, spare wheel beneath boot floor, fuel tank foward of spare wheel, all-steel monocoque.
Cd.	0.31
Cd.A.	6.57
Glass area (sq.ft.)	31.1

ENGINE

Type No.	F2N-C710
Cycle	4-stroke petrol
Installation	Transverse, inclined 12° rearwards
Arrangement	4 cylinders in-line, vertical
Material	Cast iron block, light alloy head
Cylinder liners	Integral, siamesed bores
Combustion chambers	Heron type, in piston crown
Crankshaft main bearings	5
Bore x stroke (mm)	81 x 83.5
Capacity (cc)	1,721
Compression ratio	10.0:1
Fuel grade	98 RON (4-star)
Max. power, kw ISO (bhp DIN)	65 (90)
at engine speed, rpm	5,500
Max. torque, Nm ISO (lb-ft)	135 (102)
at engine speed, rpm	3,500
Valve operation	
* camshaft	One, overhead
* camshaft drive	Toothed belt
* valve timing diagram	8°-52°-52°-8°
* valves	Overhead, in line, operated by tappets
Ignition: firing order	Solid-state electronic (AEI); 1-3-2-4
Fuel system	Twin-choke Solex 28-34 carburettor
Fuel pump	Mechanical, driven from camshaft
Air supply	Filter with thermostatic intake control
Cold starting system	Manual choke control
Engine cooling	
* type	Liquid, pressurised, with expansion chamber integral with radiator header tank
* thermostat opens	89°C
* fan	Electric, 11.4in. diam., 75W motor
Lubrication	Conventional circuit with gear-type pump driven from layshaft, & filter

ELECTRICAL EQUIPMENT

Battery	12v/250-50 Ah
Alternator	60 amp
Regulator	Electronic, integral with alternator, with dashboard warning light.

/Contd...

CLUTCH

Type	Single dry disc
Mechanism	Diaphragm spring
Thrust bearing	Ball-type, permanent-contact
Operation	Mechanical, by cable, with automatic adjustment of pedal free play.

GEARBOX

Type	Manual, transverse, 5-speed JB3
Casing	Light alloy shell
Operation	"Single-rod" with floor lever
Ratios & speeds in mph per 1,000 rpm with tyres (circ.)	175/70 R 13 T (69.3ins).
1st	41/11=3.727 - 4.94 mph
2nd	39/19=2.053 - 8.97 mph
3rd	33/25=1.320 - 13.95 mph
4th	29/30=0.967 - 19.05 mph
5th	27/34=0.794 - 23.19 mph
Reverse	39/11=3.545 - 5.19 mph
Final drive	57/16=3.563

DRIVE SHAFTS

Type	Two tubular shafts (27 x35) each with two constant-velocity joints
Inboard joints	GI 62 tripod type
Outboard joints	GE 86 tripod type

STEERING

Type	Rack & pinion, rack installed low on front subframe
Midpoint ratio	21.6:1
Steering wheel diameter	15.0 ins.
Turns lock to lock	4
Turning cirlce, kerbs	33.5 ft.

SUSPENSION

FRONT	
Geometry	MacPherson strut, lower wishbone & negative-offset geometry
Springs	Coil, with telescopic hydraulic dampers
Spring rate	170 lbs/in
Anti-roll bar	Solid, 25mm diameter
REAR	
Geometry	Independent, trailing arms with programmed geometry
Springs	4 transverse torsion bars and inclined telescopic hydraulic dampers
Spring rates	165 lbs/in. unladen
Anti-rollbar	Solid, 21mm diameter
Torsion bars	24.5mm diameter.

BRAKES

Circuit	Hydraulic, X-split
Safety	Nivocode

/Contd...

(BRAKES)	
Servo	Single 8in vacuum servo, ratio 2.85
Master cylinder	Integral tandem, 19 x 30mm
Regulator	2 fixed regulators
Front brakes	
* type	Ventilated disc, 9.37in. diameter, 20mm thick
* slave cylinders	48mm diameter
* friction surface per wheel with new pads	22.1 sq.in.
Rear brakes	
* type	Drum, 7.09in. diam., 1.57in. wide shoes
* Slave cylinders	22mm diameter
* Friction surface per wheel with new shoes	35.2 sq.in.
Handbrake	Mechanically operated via cable, operating on rear wheels

WHEELS

Material	Pressed steel
Dimensions	5.5B 13 4 CH 36
Fixing	4 bolts, 100mm pitch circle

TYRES

Type	Radial-ply tubeless
Size	175/70 R 13 T
Rolling circumference	69.3ins.

CAPACITIES

Fuel tank	14.5 gallons/66 litres (plastic)
Cooling system (pints)	9.9
Engine oil (litres)	5.5 (including filter)
Gearbox oil (litres)	3.4

LOAD SPACE

Platform area (sq.ft.)	13.3
Volume (cubic feet)	17.3

WEIGHTS

Kerb weight	2,160 lbs (980 kgs)
on front wheels	1,278 lbs
on rear wheels	882 lbs
Gross vehicle weight	3,175 lbs (1,440 kgs)
on front wheels, max.	1,698 lbs
on rear wheels, max.	1,686 lbs
Payload including driver	1,014 lbs
Towing weight (braked)	2,337 lbs (1,060 kgs)
Towing weight (unbraked)	1,069 lbs (485 kgs)

FUEL CONSUMPTION

Steady 56 mph (90 km/h)	55.4 mpg (5.1 lts)
Steady 75 mph (120 km/h)	43.5 mpg (6.5 lts)
Urban cycle	31.4 mpg (9.0 lts)

/Contd...

PERFORMANCE

Maximum speed	116 mph
0-62 mph (sec)	10.7
Standing ½-mile (sec)	17.4
Standing kilometre (sec)	32.1
Max. start gradient, MTW	12%

DIMENSIONS

Overall length	175.5 in.
Overall width	67.5 in.
Overall height	55.7 in.
Wheelbase	104.7 in.
Ground clearance (laden)	4.7 in.
Front track	56.3 in.
Rear track	55.2 in.
Front shoulder width	58.4 in.
Rear shoulder width	58.5 in.

SERVICE INTERVALS

Minor service & oil change	6,000 miles
Major service	30,000 miles

-ends-

RENAULT 21 TL — TECHNICAL SPECIFICATION

GENERAL

Type	4-door, 5-seat saloon; front-wheel-drive, transverse engine and transmission, all-independent suspension, spare wheel beneath boot floor, fuel tank forward of spare wheel, all-steel monocoque.
Cd.	0.29
Cd.A.	6.13

ENGINE

Type No.	F2N-B712
Cycle	4-stroke petrol
Installation	Transverse, inclined 12° rearwards
Arrangement	4 cylinders in-line, vertical
Material	Cast iron block, light alloy head
Cylinder liners	Integral, siamesed bores
Combustion chambers	Heron type, in piston crown
Crankshaft main bearings	5
Bore x stroke (mm)	81 x 83.5
Capacity (cc)	1,721
Compression ratio	9.2:1
Fuel grade	98 RON (4-star)
Max. power,kW ISO (bhp DIN)	55 (76)
at engine speed, rpm	5,000
Max. torque, Nm ISO (lb-ft)	126 (95)
at engine speed, rpm	3,250
Valve operation	
* camshaft	One, overhead
* camshaft drive	Toothed belt
* valve timing diagram	4°-40°-40°-4°
* valves	Overhead, in line, operated by tappets
Ignition: firing order	Solid-state electronic (AEI); 1-3-2-4
Fuel system	Twin-choke Solex 28-34 carburettor
Fuel pump	Mechanical, driven from camshaft
Air supply	Filter with thermostatic intake control
Cold starting system	Manual choke control
Engine cooling	
* type	Liquid, pressurised, with expansion chamber integral with radiator header tank
* thermostat opens	89°C
* fan	Electric, 11.4in. diam., 75W motor
Lubrication	Conventional circuit with gear-type pump driven by layshaft, & filter.

GEARBOX

Type	Manual, transverse, 5-speed, JB3
Casing	Light alloy shell
Operation	"Single-rod" with floor lever

/Contd...

(GEARBOX)	
Ratios & speeds in mph per 1,000 rpm with tyres (circ.)	155R 13T (69.3ins) (175/70R 13T tyres available at no extra cost)
1st	41/11=3.727 - 4.94 mph
2nd	39/19=2.053 - 8.97 mph
3rd	33/25=1.320 - 13.95 mph
4th	29/30=0.967 - 19.05 mph
5th	27/34=0.794 - 23.19 mph
Reverse	39/11=3.545 - 5.19 mph
Final drive	56/17=3.563

DRIVE SHAFTS

Type	Two tubular shafts (27 x 35), each with two constant-velocity joints
Inboard joints	GI 62 tripod type
Outboard joints	GE 86 tripod type

STEERING

Type	Rack & pinion, rack installed low on front subframe
Midpoint ratio	21.6:1
Steering wheel diameter	15.0 ins.
Turns lock to lock	4
Turning circle, kerbs	33.5 ft.

SUSPENSION

FRONT	
Geometry	MacPherson strut, lower wishbone & negative-offset geometry
Springs	Coil, with telescopic hydraulic dampers
Spring rate	170 lbs/in
Anti-roll bar	Solid, 21mm diameter
REAR	
Geometry	Independent, trailing arms with programmed geometry
Springs	4 transverse torsion bars and inclined telescopic hydraulic dampers
Spring rates	165 lbs/in. unladen
Anti-roll bar	Solid, 21mm diameter
Torsion bars	24.5mm diameter

BRAKES

Circuit	Hydraulic, X-split
Safety	Nivocode
Servo	Single 8in vacuum servo, ratio 2.85
Master cylinder	Integral tandem, 19 x 30mm
Regulator	2 fixed regulators
Front brakes	
* Type	Plain disc, 9.37in.diam.,12mm thick
* Slave cylinders	48mm diameter
* Friction surface per wheel with new pads	22.1 sq.in.

/Contd...

(BRAKES)

Rear brakes	
* Type	Drum, 7.09in. diam., 1.57in. wide shoes
* Slave cylinders	22mm diameter
* Friction surface per wheel with new shoes	35.2 sq.in.
Handbrake	Mechanically operated via cable, operating on rear wheels

WHEELS

Material	Pressed steel
Dimensions	5.5B 13 4 CH 36
Fixing	4 bolts, 100mm pitch circle

TYRES

Type	Radial-ply tubeless
Size	155/80 R 13 T (or 175/70 R 13 T)
Rolling circumference	69.3ins.

CAPACITIES

Fuel tank	14.5 gallons/66 litres (plastic)
Cooling system (pints)	9.9
Engine oil (litres)	5.5 (including filter)
Gearbox oil (litres)	3.4

LOAD SPACE

Platform area (sq.ft.)	13.3
Volume (cubic feet)	17.3

WEIGHTS

Kerb weight	2,105 lbs (955 kgs)
on front wheels, min.	1,223 lbs
on rear wheels, min.	882 lbs
Gross vehicle weight	3,053 lbs (1,385 kgs)
on front wheels, max.	1,565 lbs
on rear wheels, max.	1,609 lbs
Payload including driver	948 lbs max./882 min.
Towing weight (braked)	2,205 lbs (1,000 kgs)
Towing weight (unbraked)	1,047 lbs (475 kgs)

FUEL CONSUMPTION

Steady 56 mph (90 km/h)	53.3 mpg (5.3 lts)
Steady 75 mph (120 km/h)	41.5 mpg (6.8 lts)
Urban cycle	31.0 mpg (9.1 lts)

PERFORMANCE

Maximum speed	110 mph
0-62 mph (sec)	12.0
Standing ¼-mile (sec)	18.3
Standing kilometre (sec)	33.7
Max. start gradient, MTW	12%

/Contd...

ELECTRICAL EQUIPMENT

Battery	12v/250-50Ah
Alternator	60 amp
Regulator	Electronic, integral with alternator, with dashboard warning light.

CLUTCH

Type	Single dry disc
Mechanism	Diaphragm spring
Thrust bearing	Ball-type, permanent-contact
Operation	Mechanical, by cable with automatic adjustment of pedal free play.

DIMENSIONS

Overall length	175.5 in.
Overall width	67.2 in.
Overall height	55.7 in.
Wheelbase	104.7 in.
Ground clearance (laden)	4.7 in.
Front track	56.3 in.
Rear track	55.2 in.
Front shoulder width	58.4 in.
Rear shoulder width	58.5 in.

SERVICE INTERVALS

Minor service & oil change	6,000 miles
Major service	30,000 miles

-ends-

RENAULT 21 TS TECHNICAL SPECIFICATION

GENERAL

Type	4-door, 5-seat saloon; front-wheel-drive, transverse engine and transmission, all-independent suspension, spare wheel beneath boot floor, fuel tank forward of spare wheel, all-steel monocoque.
Cd.	0.31
Cd.A.	6.57
Glass area (sq.ft.)	31.1

ENGINE

Type No.	F2N-C710
Cycle	4-stroke petrol
Installation	Transverse, inclined 12° rearwards
Arrangement	4 cylinders in-line, vertical
Material	Cast iron block, light alloy head
Cylinder liners	Integral, siamesed bores
Combustion chambers	Heron type, in piston crown
Crankshaft main bearings	5
Bore x stroke (mm)	81 x 83.5
Capacity (cc)	1,721
Compression ratio	10.0:1
Fuel grade	98 RON (4-star)
Max. power,kw ISO (bhp DIN)	65 (90)
at engine speed, rpm	5,500
Max. torque, Nm ISO (lb-ft)	135 (102)
at engine speed, rpm	3,500
Valve operation	
* camshaft	One, overhead
* camshaft drive	Toothed belt
* valve timing diagram	8°-52°-52°-8°
* valves	Overhead, in line, operated by tappets
Ignition: firing order	Solid-state electronic (AEI); 1-3-2-4
Fuel system	Twin-choke Solex 28-34 carburettor
Fuel pump	Mechanical, driven from camshaft
Air supply	Filter with thermostatic intake control
Cold starting system	Manual choke control
Engine cooling	
* type	Liquid, pressurised, with expansion chamber integral with radiator header tank
* thermostat opens	89°C
* fan	Electric, 11.4in. diam., 75W motor
Lubrication	Conventional circuit with gear-type pump driven by layshaft, & filter.

ELECTRICAL EQUIPMENT

Battery	12v/250 -50Ah
Alternator	60 amp
Regulator	Electronic, integral with alternator, with dashboard warning light.

/Contd...

CLUTCH

Type	Single dry disc
Mechanism	Diaphragm spring
Thrust bearing	Ball-type, permanent-contact
Operation	Mechanical, by cable, with automatic adjustment of pedal free play.

GEARBOX

Type	Manual, transverse, 5-speed JB3
Casing	Light alloy shell
Operation	"Single-rod" with floor lever
Ratios & speeds in mph per 1,000 rpm with tyres (circ.)	175/70 R 13 T (69.3ins).
1st	41/11=3.727 - 4.94 mph
2nd	39/19=2.053 - 8.97 mph
3rd	33/25=1.320 - 13.95 mph
4th	29/30=0.967 - 19.05 mph
5th	27/34=0.794 - 23.19 mph
Reverse	39/11=3.545 - 5.19 mph
Final drive	57/16=3.563

DRIVE SHAFTS

Type	Two tubular shafts (27 x 35) each with two constant-velocity joints
Inboard joints	GI 62 tripod type
Outboard joints	GE 86 tripod type

STEERING

Type	Rack & pinion, rack installed low on front subframe
Midpoint ratio	21.6:1
Steering wheel diameter	15.0 ins.
Turns lock to lock	4
Turning circle, kerbs	33.5 ft.

SUSPENSION

FRONT	
Geometry	MacPherson strut, lower wishbone & negative-offset geometry
Springs	Coil, with telescopic hydraulic dampers
Spring rate	170 lbs/in
Anti-roll bar	Solid, 25mm diameter
REAR	
Geometry	Independent, trailing arms with programmed geometry
Springs	4 transverse torsion bars and inclined telescopic hydraulic dampers
Spring rates	165 lbs/in. unladen
Anti-roll bar	Solid, 21mm diameter
Torsion bars	24.5mm diameter.

BRAKES

Circuit	Hydraulic, X-split
Safety	Nivocode

/Contd...

(BRAKES)	
Servo	Single 8in vacuum servo, ratio 2.85
Master cylinder	Integral tandem, 19 x 30mm
Regulator	2 fixed regulators
Front brakes	
* Type	Ventilated disc, 9.37in. diam., 20mm thick
* Slave cylinders	48mm diameter
* Friction surface per wheel with new pads	22.1 sq.in.
Rear brakes	
* Type	Drum, 7.09in. diam., 1.57in. wide shoes
* Slave cylinders	22mm diameter
* Friction surface per wheel with new shoes	35.2 sq. in.
Handbrake	Mechanically operated via cable, operating on rear wheels

WHEELS

Material	Pressed steel
Dimensions	5.5B 13 4 CH 36
Fixing	4 bolts, 100mm pitch circle

TYRES

Type	Radial-ply tubeless
Size	175/70 R 13 T
Rolling circumference	69.3ins.

CAPACITIES

Fuel tank	14.5 gallons/66 litres (plastic)
Cooling system (pints)	9.9
Engine oil (litres)	5.5 (including filter)
Gearbox oil (litres)	3.4

LOAD SPACE

Platform area (sq.ft.)	13.3
Volume (cubic feet)	17.3

WEIGHTS

Kerb weight	2,138 lbs (970 kgs)
on front wheels	1,256 lbs
on rear wheels	882 lbs
Gross vehicle weight	3,175 lbs (1,440 kgs)
on front wheels, max.	1,698 lbs
on rear wheels, max.	1,686 lbs
Payload including driver	1,036 lbs
Towing weight (braked)	2,337 lbs (1,060 kgs)
Towing weight (unbraked)	1,069 lbs (485 kgs)

FUEL CONSUMPTION

Steady 56 mph (90 km/h)	55.4 mpg (5.1 lts)
Steady 75 mph (120 km/h)	43.5 mpg (6.5 lts)
Urban cycle	31.4 mpg (9.0 lts)

/Contd...

PERFORMANCE

Maximum speed	116 mph
0-62 mph (sec)	10.7
Standing ¼-mile (sec)	17.4
Standing kilometre (sec)	32.1
Max. start gradient, MTW	12%

DIMENSIONS

Overall length	175.5 in.
Overall width	67.5 in.
Overall height	55.7 in.
Wheelbase	104.7 in.
Ground clearance (laden)	4.7 in.
Front track	56.3 in.
Rear track	55.2 in.
Front shoulder width	58.4 in.
Rear shoulder width	58.5 in.

SERVICE INTERVALS

Minor service & oil change	6,000 miles
Major service	30,000 miles

-ends-

RENAULT 21 TXE — TECHNICAL SPECIFICATION

GENERAL

Type	4-door, 5-seat saloon; front-wheel drive, longitudinal engine and transmission, all-independent suspension, spare wheel beneath boot floor, fuel tank foward of spare wheel, all-steel monocoque.
Cd.	0.32
Cd.A.	6.78
Glass area (sq.ft.)	31.1

ENGINE

Type No.	J7R-R750
Cycle	4-stroke petrol
Installation	In-line, inclined 15° towards inlet side
Arrangement	4 cylinders in-line, vertical
Material	Light alloy block, head & lower casting
Cylinder liners	Wet, removeable
Combustion chambers	Hemispherical
Crankshaft main bearings	5
Bore x stroke (mm)	88 x 82
Capacity (cc)	1,995
Compression ratio	10.0:1
Fuel grade	98 RON (4-star)
Max. power, kw ISO (bhp DIN)	86.5 (120)
at engine speed, rpm	5,500
Max. torque, Nm ISO (lb-ft)	164 (124)
at engine speed, rpm	4.500
Valve operation	
* camshaft	One, overhead
* camshaft drive	Toothed belt
* valve timing diagram	17°-63°-63°-17°
* valves	V-opposed, operated by rockers
Ignition: firing order	Solid-state electronic (AEI) integrated with fuel injection; 1-3-2-4
Fuel system	Multi-point electronic fuel injection with over-run cut-off and knock detector
Fuel pump	Electric, on right rear longeron
Air supply	Filtered
Cold starting system	Electronic compensation for coolant temperature
Engine cooling	
* type	Liquid, pressurised, with expansion chamber
* thermostat opens	88°C
* fan	Electric blow-through, 12.6in. diameter, 150W motor
Lubrication	Conventional circuit with gear-type pump driven by layshaft, & filter.

ELECTRICAL EQUIPMENT

Battery	12v/250-50 Ah
Alternator	60 amp
Regulator	Electronic, integral with alternator, with dashboard warning light.

/Contd...

CLUTCH

Type	Single dry disc
Mechanism	Diaphragm-spring
Thrust bearing	Ball-type
Operation	Mechanical, by cable with automatic adjustment of pedal free play

GEARBOX

Type	Manual, in-line. 5-speed NG9
Casing	2 light alloy half-shells
Operation	"Twin-rod" with floor lever
Ratios & speeds in mph per 1,000 rpm with tyres (circ.)	185/65 R 14 H (71.5ins.)
1st	45/11=4.091 - 4.78 mph
2nd	37/17=2.176 - 9.02 mph
3rd	31/22=1.409 - 13.94 mph
4th	34/33=1.030 - 19.06 mph
5th	31/36=0.861 - 22.81 mph
Reverse	39/11=3.545 - 5.54 mph
Final drive	31/9=3.444

DRIVE SHAFTS

Type	Two tubular shafts (27 x 35) each with two constant-velocity joints
Inboard joints	RC490, plunge-accommodating, 3-roller type
Outboard joints	UF95, 6-ball type

STEERING

Type	Rack & pinion, rack installed high with single output & long droplinks
Midpoint ratio	17.4:1
Steering wheel diameter	15.0 ins.
Turns lock to lock	3.2
Power assistance	With integral jack & rotary valve
Turning circle, kerbs	34.6 ft.
Steering wheel adjustment	Standard

SUSPENSION

FRONT	
Geometry	MacPherson strut, lower wishbone & negative-offset geometry
Springs	Inclined coil, with telescopic hydraulic dampers
Spring rate	175 lbs/in.
Anti-roll bar	X-section, 24.5 x 15mm
REAR	
Geometry	Independent, trailing arms with programmed geometry
Springs	4 transverse torsion bars and inclined telescopic hydraulic dampers
Spring rates	175 lbs/in unladen
Anti-roll bar	Solid, 24mm diameter
Torsion bars	22.5mm diameter

BRAKES

Circuit	Hydraulic, X-split
Safety	Nivocode

/Contd...

(BRAKES)	
Servo	Single 9in vacuum servo, ratio 3.45
Master cylinder	Integral tandem, 22 x 36mm
Regulator	Modulated by load and pressure
Front brakes	
* type	Ventilated disc, 10.43in. diameter 20mm thick
* slave cylinders	54mm diameter
* friction surface per wheel with new pads	25.4 sq.in.
Rear brakes	
* type	Composite drum, 8.98in. diameter, 1.57in. wide shoes with automatic wear adjustment
* slave cylinders	22mm diameter
* friction surface per wheel with new shoes	42.2 sq.in.
Handbrake	Mechanically operated via cable, operating on rear wheels.

WHEELS

Material	Pressed steel
Dimensions	5.5B 14 4 CH 36
Fixing	4 bolts, 100mm pitch circle

TYRES

Type	Radial-ply tubeless
Size	185/65 R 14 H
Rolling circumference	71.5 ins.

CAPACITIES

Fuel tank	14.5 gallons/66 litres (plastic)
Cooling system (pints)	13.0
Engine oil (litres)	5.3
Gearbox oil (litres)	2.0

LOAD SPACE

Platform area (sq.ft.)	13.3
Volume (cubic feet)	17.3

WEIGHTS

Kerb weight	2,425 lbs (1,100 kgs)
on front wheels	1,477 lbs
on rear wheels	948 lbs
Gross vehicle weight	3,373 lbs (1,530 kgs)
on front wheels, max.	1,874 lbs
on rear wheels, max.	1,675 lbs
Payload including driver	948 lbs
Towing weight (braked)	2,359 lbs (1,070 kgs)
Towing weight (unbraked)	1,179 lbs (535 kgs)

FUEL CONSUMPTION

Steady 56 mph (90 km/h)	48.7 mpg (5.8 lts)
Steady 75 mph (120 km/h)	39.8 mpg (7.1 lts)
Urban cycle	26.4 mpg (10.7 lts)

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PERFORMANCE

Maximum speed	125 mph
0-62 mph (sec)	9.7
Standing ¼-mile (sec)	16.8
Standing kilometre (sec)	30.9
Max. start gradient, MTW	12%

DIMENSIONS

Overall length	175.8 in.
Overall width	67.5 in.
Overall height	55.7 in.
Wheelbase	102.4 in.
Ground clearance (laden)	4.7 in.
Front track	57.2 in.
Rear track	55.4 in.
Front shoulder width	58.0 in.
Rear shoulder width	58.0 in.

SERVICE INTERVALS

Minor service & oil change	6,000 miles
Major service	30,000 miles

-ends-

RENAULT 21 RS — TECHNICAL SPECIFICATION

GENERAL

Type	4-door, 5-seat saloon; front-wheel-drive, transverse engine and transmission, all-independent suspension, spare wheel beneath boot floor, fuel tank forward of spare wheel, all-steel monocoque.
Cd.	0.31
Cd.A.	6.57
Glass area (sq.ft.)	31.1

ENGINE

Type No.	F2N-C710
Cycle	4-stroke petrol
Installation	Transverse, inclined 12° rearwards
Arrangement	4 cylinders in-line, vertical
Material	Cast iron block, light alloy head
Cylinder liners	Integral, siamesed bores
Combustion chambers	Heron type, in piston crown
Crankshaft main bearings	5
Bore x stroke (mm)	81 x 83.5
Capacity (cc) 1,721	
Compression ratio	10.0:1
Fuel grade	98 RON (4-star)
Max. power, kw ISO (bhp DIN)	65 (90)
at engine speed rpm	5,500
Max. torque, Nm ISO (lb-ft)	135 (102)
at engine speed rpm	3,500
Valve operation	
* camshaft	One, overhead
* camshaft drive	Toothed belt
* valve timing diagram	8°-52°-52°-8°
* valves	Overhead, in line, operated by tappets
Ignition: firing order	Solid-state electronic (AEI); 1-3-2-4
Fuel system	Twin-choke Solex 28-34 carburettor
Fuel pump	Mechanical, driven from camshaft
Air supply	Filter with thermostatic intake control
Cold starting system	Manual choke control
Engine cooling	
* type	Liquid, pressurised, with expansion chamber integral with radiator header tank
* thermostat opens	89°C
* fan	Electric, 11.3in. diam., 75W motor
Lubrication	Conventional circuit with gear-type pump driven from layshaft, & filter

ELECTRICAL EQUIPMENT

Battery	12v/250-5- Ah
Alternator	60 amp
Regulator	Electronic, integral with alternator, with dashboard warning light.

/Contd...

CLUTCH

Type	Single dry disc
Mechanism	Diaphragm spring
Thrust bearing	Ball-type, permanent-contact
Operation	Mechanical, by cable, with automatic adjustment of pedal free play

GEARBOX

Type	Manual, transverse, 5-speed JB3S (close ratio)
Casing	Light alloy shell
Operation	"Single-rod" with floor lever
Ratios & speeds in mph per 1,000 rpm with tyres (circ.)	175/70 R 13 T (69.3ins).
1st	34/11=3.091 - 5.22 mph
2nd	35/19=1.852 - 8.76 mph
3rd	33/25=1.320 - 12.22 mph
4th	29/30=0.967 - 16.69 mph
5th	25/33=0.758 - 21.29 mph
Reverse	39/11=3.545 - 4.54 mph
Final drive	61/15=4.067

DRIVE SHAFTS

Type	Two tubular shafts (27 x 35) each with two constant-velocity joints
Inboard joints	GI 62 tripod type
Outboard joints	GE 86 tripod type

STEERING

Type	Rack & pinion, rack installed low on front subframe
Midpoint ratio	21.6:1
Steering wheel diameter	15.0 ins.
Turns lock to lock	4
Turning circle, kerbs	33.5 ft.

SUSPENSION

FRONT	
Geometry	MacPherson strut, lower wishbone & negative-offset geomtry
Springs	Coil, with telescopic hydraulic dampers
Spring rate	170 lbs/in
Anti-roll bar	Solid, 25mm diameter
REAR	
Geometry	Independent, trailing arms with programmed geometry
Springs	4 transverse torsion bars and inclined telescopic hydraulic dampers
Spring rates	165 lbs/in. unladen
Anti-roll bar	Solid, 21mm diameter
Torsion bars	24.5mm diameter

BRAKES

Circuit	Hydraulic, X-split
Safety	Nivocode

/Contd...

(BRAKES)	
Servo	Single 8in vacuum servo, ratio 2.85
Master cylinder	Integral tandem, 19 x 30mm
Regulator	2 fixed regulators
Front brakes	
* type	Ventilated disc, 9.37in. diameter, 20mm thick
* slave cylinders	48mm diameter
* friction surface per wheel with new pads	22.1 sq.in.
Rear brakes	
* type	Drum, 7.09in. diam., 1.57in. wide shoes
* slave cylinders	22mm diameter
* friction surface per wheel with new shoes	35.2 sq.in.
Handbrake	Mechanically operated via cable, operating on rear wheels
WHEELS	
Material	Pressed steel
Dimensions	5.5B 13 4 CH 36
Fixing	4 bolts, 100mm pitch circle
TYRES	
Type	Radial-ply tubeless
Size	175/70 R 13 T
Rolling circumference	69.3ins.
CAPACITIES	
Fuel tank	14.5 gallons/66 litre (plastic)
Cooling system (pints)	9.9
Engine oil (litres)	5.5 (including filter)
Gearbox oil (litres)	3.4
LOAD SPACE	
Platform area (sq.ft.)	13.3
Volume (cubic feet)	17.3
WEIGHTS	
Kerb weight	2,205 lbs (1,000 kgs)
on front wheels	1,301 lbs
on rear wheels	904 lbs
Gross vehicle weight	3,175 lbs (1,440 kgs)
on front wheels, max.	1,698 lbs
on rear wheels, max.	1,686 lbs
Payload including driver	970 lbs
Towing weight (braked)	2,337 lbs (1,060 kgs)
Towing weight (unbraked)	1,069 lbs (485 kgs)
FUEL CONSUMPTION	
Steady 56 mph (90 km/h)	52.3 mpg (5.4 lts)
Steady 75 mph (120 km/h)	41.5 mpg (6.8 lts)
Urban cycle	28.5 mpg (9.9 lts)

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PERFORMANCE

Maximum speed	116 mph
0-62 mph (sec)	10.7
Standing ¼-mile (sec)	17.4
Standing kilometre (sec)	32.1
Max. start gradient, MTW	12%

DIMENSIONS

Overall length	175.5 in.
Overall width	67.5 in.
Overall height	55.7 in.
Wheelbase	104.7 in.
Ground clearance (laden)	4.7 in.
Front track	56.3 in.
Rear track	55.2 in.
Front shoulder width	58.4 in.
Rear shoulder width	58.5 in.

SERVICE INTERVALS

Minor service & oil change	6,000 miles
Major service	30,000 miles

-ends-