

A daring Clio dedicated to driving pleasure,

**Renault starts selling the exclusive Clio Renault Sport V6 in
November 2000**

Presented as a preview at the Mondial de l'Automobile 1998 in the form of a study derived from the competition-only "Trophy" version, the Clio Renault Sport V6 will go on sale in November 2000. A project begun and overseen by Renault Sport, the Clio Renault Sport V6 has been developed and assembled in partnership with TWR (Tom Walkinshaw Racing), which will also be responsible for assembling the car in low-volume series from parts supplied by Renault. The project has thus benefitted from the expertise of two major players in motor sport. Strictly a two-seater, with its engine positioned mid-rear, with a design which evokes sportiness and a V6 3-litre 24-valve engine of 230bhp driving through a 6-speed gearbox, the Clio Renault Sport V6 is a unique vehicle. This extraordinary Clio, capable of accelerating from 0 to 100 km/h in 6.4 seconds, is aimed at a body of demanding and enthusiastic customers who are looking for a distinctive and powerful vehicle which combines driving pleasure with comfort. Its price has been set at FRF 240,000.

A real best-seller since its introduction in 1990, Clio has not finished astonishing its audience. Faced with extremely tough competition, Clio has remained consistently among the front-runners in French and European sales. The Clio 2 now broadens its appeal with the development of versions dedicated to driving enjoyment and carrying the Renault Sport badge. Through its use of this badge, Renault daringly expresses the sporting spirit that runs in the company's blood, combining mechanical performance, travelling pleasure and driving enjoyment. Following the sporting 2.0 16V of 172bhp, an exclusive Grand Touring version with a V6 engine transversely installed in the mid-rear position now arrives as the pinnacle of the range.

The Clio Renault Sport V6 is a unique car of passion, unique, a member of the "exclusive" sporting models, the coupés, cabriolets and roadsters. This breed of cars with a strong personality notably includes the Audi TT 1.8T 20V Quattro, the BMW Z3 Coupé 2.7, the Mercedes SLK 230, the Porsche Boxter 2.7 and the Honda S2000. In 1999 these models achieved sales of 836 units in France and 18,732 in Europe. In the first 5 months of 2000, their sales had already topped these figures with 1,086 and 24,314 units in France and Europe respectively.

The dynamism of this market niche is explained by the desire of an increasing number of drivers to travel "differently", at the wheel of fun cars with the emphasis on driving enjoyment. The product offer is following this tendency and is full of developments and novelties.

Inspired by F1

Making a surprise appearance at the 1998 Mondial de l'Automobile, the Clio Renault Sport V6 was one of the stars of the Renault stand. Presented as a realistic study based on the Clio Renault Sport V6 Trophy, a model intended for circuit competition, this road-going version immediately attracted the attention of the media and of a wide public of enthusiasts and car admirers.

Following the evident success of this model initiated by Renault Sport, Renault quickly began a development and manufacturing study. Entrusted to the TWR (Tom Walkinshaw Racing) company, based in England, this study confirmed the manufacturing feasibility of the project in accordance with a specification laid down by Renault, in terms of quality, safety, and the highest level of road-going behaviour and equipment.

Similarly to the image of Renault Sport, TWR is a well-known specialist in motor sport and notably in F1 with the Arrows team. In addition to this involvement in motor sport, TWR was able to exploit its know-how in the area of Grand Touring vehicle development and production (Jaguar XJ 220, Aston Martin DB7, Volvo C70...).

Renault's objective was to develop the Clio Renault Sport V6 and put it into production in an extremely short time (18 months). TWR, with its engineering abilities and its production facilities perfectly adapted to the manufacture of low-volume vehicles, responded totally to this need.

The project depended on TWR's considerable data processing capacity for modelling (structure, cooling, deformation in the event of impact...) but also for visualisation, thanks to a virtual-image studio, and involved up to 100 experts including 60 engineers.

Cars hand-built in the TWR workshops

The manufacturing process follows this logistic arrangement: the Douvrin factory (Française de Mécanique PSA - Renault) supplies the engines, the Renault factories at Cléon and Flins respectively the gearboxes and the body in white with its hinged attachments. The Grand Couronne site collects and delivers those parts from the range which are not specific to the Clio Renault Sport V6.

All the necessary bodywork modifications, and then final assembly, are carried out by hand on the TWR site at Uddevalla in Sweden by highly qualified technicians. This organisation ensures exemplary build quality. Each of the 12 cars produced each day is thus treated as a unique example.

A strong design, evocative of dynamism and sportiness, an expression of driving enjoyment

Renault's designers have given this car a unique style, expressing its philosophy: playful and powerful, but also civilised and accomplished. A thoroughbred, the Clio Renault Sport V6 asserts its sporting temperament and suggests driving enjoyment. Wider (+ 171 mm) and lower (- 66 mm) than a "standard" Clio, standing on 17-inch wheels at its extreme corners, the Clio Renault Sport V6 truly hugs the road.

Although the body shell, bonnet panel, roof and rear hatch are taken from the Clio Renault Sport 2.0 16V, the bumpers as well as the front and rear wings are specific, while the sill panels and body sides are provided with composite covers. These body-coloured special parts are completely integrated into the car's design and endow it with a sporting appearance.

Borrowed from the world of competition, the design of these parts also contributes to the efficiency of the vehicle by improving aerodynamics and cooling. The wide front spoiler together with the discreet spoiler above the rear hatch increase downforce and therefore roadholding. The heavily perforated front bumper admits air to the radiator, while the widened front wings reflect the appearance of F1 side pods, with integral air intakes to ventilate the engine compartment. The left-hand intake is also connected to the induction system and assumes the role of dynamic air intake.

Other sports-type features include the fuel filler cap, the twin round stainless steel exhaust pipes emerging from the centre of the rear bumper, the honeycomb grilles around the rear silencers, the front foglamps and the cooling air intakes in the front bumper.

Luxurious interior treatment

The cabin interior of the Clio Renault Sport V6 benefits from the same luxurious treatment as that of the Clio Renault Sport 2.0 16V, with a combination of leather and alcantara in blending shades of blue for the seat upholstery and interior trim. The driving position is also equipped with a leather-trimmed steering wheel with raised anti-slip finish, and the dashboard has the same white-faced dials found in the Clio Renault Sport 2.0 16V. The specially designed gear lever with its massive aluminium knob is provided with an extension to bring it closer to the steering wheel and position it better for sporting driving. The lever emerges from an aluminium console with the same circular design as the fuel filler cap. The pedals are specially designed for sporting driving and have aluminium plates with anti-slip inserts.

This luxurious treatment of the cabin interior is accompanied by one of the most complete equipment lists. All comfort and appearance features are fitted as standard (air conditioning plus heat-reflective windscreen and tinted glass, electric windows, remote control central locking, power assisted steering, Radiosat 6000 6-CD changer). The only available accessory is a baggage protection cover specially designed for the Clio Renault Sport V6.

The Clio Renault Sport V6 is provided with a 45-litre stowage space with retaining net between the backs of the seats and the engine compartment, as well as a 67-litre luggage compartment under the front bonnet panel.

A unique layout, combining efficiency and safety

The Clio Renault Sport V6 is provided with a unique layout for a compact sports model with a 3-litre V6 24-valve engine, driving through a 6-speed gearbox, transversely mounted in the mid-rear position. This choice of layout optimises compactness and static balance, and improves dynamic performance. The development of the chassis has been jointly undertaken by two F1 specialists, TWR and Renault Sport, to ensure stability and steering and handling precision.

The installation of the engine and transmission assembly in a transverse mid-rear position necessitated a complete redesign of the Clio 2 chassis. New structural members were added to increase the stiffness of the body shell and to provide new mounting points both for the powertrain and the suspension units. The rear structure is entirely specific with new spring turrets, a lower subframe carrying the rear suspension, and an upper section allowing the pendular mounting of the powertrain. The original front sub-frame of the Clio Renault Sport 2.0 16V is modified and provided with a strengthening X-member.

The front and rear suspensions are specific, although they include several parts taken from other cars in the Renault range. The front suspension geometry remains MacPherson-type but takes the anti-roll bar from the Clio Trophy. The multi-link type rear suspension, with aluminium transverse member, includes a wheel alignment adjustment link which allows the suspension geometry to be reset.

The 38mm increase in wheelbase, and widening of the front track by 110mm and the rear track by 138mm, places the wheels at the four corners of the car, ensuring its balance and extremely good dynamic behaviour. The calibration of the dampers and the choice of spring rates guarantees comfort and dynamic behaviour worthy of a Grand Touring car. The 17-inch OZ "Superturismo" light alloy wheels are shod with Michelin Pilot Sport tyres, with dimensions 205/50 at the front and 235/45 at the rear. The structure of the tyre has been specially developed to fully exploit the potential of the Clio Renault Sport V6 chassis. These adaptations provide the Clio Renault Sport V6 with the highest standards of behaviour, with a highly effective chassis which is none the less easy to exploit. The balance between the effectiveness of the chassis and the available power output is one of the main elements in creating the driving enjoyment of the Clio Renault Sport V6.

The braking system responds to the active safety needs of a car with a sporting character. It includes four ventilated disc brakes, 330mm in diameter at the front and 300mm at the rear, with separate front/rear double circuits assisted by twin 7"/8" servo units. Generously dimensioned, the Clio Renault Sport V6 braking system is notable for its response and its fade resistance.

Developed for competition, the 4-piston AP Racing front calipers are used for the first time in a "production" car. They are notable for their lightness and for their exceptional resistance to heating, thanks to external high-pressure hydraulic lines which ensure optimum cooling of the brake fluid. The 4-sensor Bosch 5.3 ABS already used on some sports models completes the configuration of the Clio Renault Sport V6 braking system.

Passive safety of the highest level

The developments applied to the structure allow the Clio Renault Sport V6 to comply with the most severe requirements in terms of passive safety. The reinforcements have been positioned so that the loads resulting from an impact pass through the body sides, thus preserving the cabin interior space. Computer simulations, followed by crash tests have confirmed the excellent structural strength of the Clio Renault Sport V6.

In addition to this improved passive safety, the Clio Renault Sport V6 carries over all the passive safety equipment common to the Clio range. It is equipped with the Renault System for Restraint and Protection (SRP) comprising the latest generation of occupant restraint systems: programmed restraint safety belts with pretensioners and 400daN load limiters, twin controlled-deflation front airbags, and head/thorax side airbags. Close-contact head restraints complete the safety equipment.

First-rate powertrains with a specially developed version of the 3.0 V6 24V engine plus a new 6-speed manual gearbox

The Clio Renault Sport V6 was built around the 3.0 V6 24V engine (L7X 210bhp). Installed transversely in the mid-rear position, it delivers 230bhp (+20bhp by comparison with the standard engine) following special development carried out with the help of the engine experts at Renault Sport. Power is transmitted to the rear wheels via a new 6-speed manual gearbox, the "PK6".

This powertrain provides all the driving pleasure appropriate to a Grand Touring car, with a flexible yet powerful engine, delivering the feeling of acceleration even from the lowest speeds. The high torque, exploited in optimum fashion by the 6-speed gearbox, results in generous and lively response over a wide speed range, enabling the efficiency of the chassis to be fully utilised. The good all-round qualities of the Clio Renault Sport V6 account for its excellent performance with a top speed of 235 km/h, 6.4 seconds to accelerate from 0 to 100 km/h and 26.5 seconds for the 1,000 m standing start.

The engine specialists at Renault Sport made many changes to improve performance while retaining ease of driving. Developed in less than 10 months, this version of the 3.0 V6 24V is notable for the application of changes to the induction, pistons and injection, which have enabled the output to be raised to 230bhp at 6,000rpm with a maximum torque of 300Nm at 3,750rpm (compared with 210bhp at 6,000rpm and 285Nm at 3,750rpm), while continuing to comply with the Euro 3 (Euro 2000) emission standards.

The engine specialists achieved the gain in power by increasing the compression ratio and improving the gas flow within the induction and exhaust systems. The more open induction and the special stainless-steel exhaust system also result in an agreeably sporting sound quality. Variable inlet valve timing with two camshaft variators (one per cylinder bank) allows the engine to work with two different valve timings according to operating condition, while the standard motorised throttle valve of the the V6 is retained. The main changes are as follows:

- the pistons are specific. They embody:
 - a different shaped crown which results in a higher compression ratio (11.4 instead of 10.9) while maintaining combustion quality
 - a redesigned skirt to take account of the increased performance and to reduce friction
 - a surface treatment, down to the first ring, to withstand the higher temperature at ring level due at high load
- to improve the engine's breathing, the cylinder head inlet ports were reworked:
 - the port cross-section is increased by 4%
 - the surface finish is improved
 - alignment of the head and inlet manifold has been optimised
- the speed limiter setting has been increased by 500rpm, rising from 6,600rpm to 7,100rpm. This 500rpm increase allows higher speeds to be achieved in each gear before changing up
- the specially developed exhaust system reduces back-pressure at the engine exhaust ports. Its symmetrical form, as well as the unique high-volume silencers result in better performance and a more pleasant sound
- the engine flywheel is lightened in order to enhance the speed of engine response
- fitting of spark plugs with a colder rating to take account of higher operating temperatures
- improved engine lubrication through the use of a semi-synthetic 5W/40 oil and the addition of a coolant/oil heat exchanger

Cooling was especially carefully developed, with a radiator of generous capacity. Apart from the scoops on each side of the car, the fairings beneath the body were also designed to assist ventilation of the entire powertrain assembly.

A new 6-speed manual gearbox

The Clio Renault Sport V6 is fitted with the new 6-speed manual gearbox known as the "PK6". With short selector movements and great precision of operation, the "PK6" provides the characteristics of a sports gearbox combined with high comfort, thanks to the low selector effort and good filtration of vibrations. The 6th speed makes long journeys more pleasant by reducing both noise levels and fuel consumption.

It should be recalled that this new "PK6" gearbox is basically a reworking of an existing 5-speed unit but equipped with a completely new internal control mechanism. The selector forks are mounted either on Teflon-coated bushes or on needle bearings. Selector precision is improved, while selector effort is reduced by 30% and lever movement by 15%. Mechanical friction losses, meanwhile, are reduced by 20%. As a measure of its technical performance, the new PK 6 gearbox weighs 2kg less than the previous 5-speed unit from which it was developed, while it is sufficiently compact to allow its installation with the transverse V6 engine in the Clio Renault Sport V6.

The cable gear selector mechanism in the Clio Renault Sport V6 benefits from filtering elements which achieve a good compromise between filtration of vibrations and the feeling of control. Also for ease of use, an LuK clutch allows excitation of the gearbox by the engine to be limited through the use of a "flexible" attachment, and to maintain the clutch operating point and effort constant thanks to a specially developed mechanism.

The price of exclusiveness

The Clio Renault Sport V6 will go on sale in November at a price of FRF 240,000.

RENAULT SPORT CLIO V6

FRENCH RANGE	
VERSION	
Type of emission control	EURO 2000
Characteristic features	
TYPE APPROVAL NUMBERS	C61A06
Fiscal rating	16
Number of seats	2
ENGINE	V6 L7X at 60°
Engine type	V6 L7X at 60°
Capacity (cc)	2,946
Bore x Stroke (mm)	87 x 82.6
Number of cylinders / valves	6 / 24
Compression ratio	11,4:1
Max. power kW (bhp) at rpm	166 (230) à 6000
Max. torque Nm (m.kg) at rpm	300 (30,6) à 3750
Injection type	Bosch ME 7.4 sequential
TRANSMISSION	Manual - Automatic
	6-speed manual
GEARBOX	Type
	PK6
Number of forward gears	6
Speed in kph at 1,000 rpm in 1st	8.00
in 2nd	14.85
in 3rd	21.08
in 4th	28.35
in 5th	34.83
in 6th	41.34
WHEELS - TYRES	Reference rims (")
	7x17 and 8.5x17
	Tyres front/rear
	205/50 ZR 17 / 235/45 ZR 17
CAPACITY	Fuel tank (litres)
	61
Engine oil capacity with filter (litres)	5.5
Coolant fluid capacity (litres)	15.0
AERODYNAMICS	CdA/ Cd
	2.01/0.37
BRAKING	Type of braking circuit
	Double circuit front/rear separate
ABS	Yes
Servobrake: single (S), double (D) - dia. (")	D - 7/8
Front plain (PD), ventilated discs (VD) - dia. (mm)	VD 330 - 4-piston calipers
Rear plain (PD), ventilated discs (VD) - dia. (mm)	VD 300
STEERING	Power-assisted
	Standard
Turns lock to lock	2.75
Turning circle between kerbs (m)	13
AXLES	Front
	Mac Pherson
Rear	Multibras
Front/rear anti-roll bar - dia. (mm)	25 / -
FUEL CONSUMPTION	CO2 (g/km)
	267
EEC standard 93/116	Urban cycle
(litres/100 km)	14.9
	Extra-urban cycle
	8.9
	Combined cycle
	11.2
PERFORMANCE	Max. speed (kph)
	235
0 - 100 kph (s)	6.4
Standing qtr mile (s)	14.5
Standing km (s)	26.5
WEIGHT (kg)	Unladen kerb weight
	1,335
Front unladen kerb weight	535
Rear unladen kerb weight	800
Gross Vehicle Weight (GVW.)	1,545
Within GVW limits, max. available front weight	720
Within GVW limits, max. available rear weight	950
Payload	210

RENAULT SPORT CLIO V6

FRENCH RANGE

External features

Body-tone rear sports spoiler	S
Body-tone bumpers	S
17" OZ "Superturismo" light alloy rims	S
High-tinted back-light	S
Heat-reflective windscreen	S
"Iceberg grey" metallic paint	S
Body-tone exterior rearview mirrors	S
High-filtration tinted windows	S

Active and passive safety

ABS	S
Programmed-restraint driver airbags	S
Programmed-restraint passenger airbags	S
Head-chest side airbags	S
Driver "seat belt unfastened" warning light	S
"Doors open" warning light	S
Close-protection front head restraints with comfort adjustment	S
Impact bars in doors	S
Front safety belts with pre-tensioners and load limiters	S
Power-assisted steering	S
Side protection padding in the doors	S

Vehicle protection

Door opening anti-picking system	S
Radio-frequency electronic door locking	S
Chassis number visible from the outside	S
Engine immobilizer system	S

Driving

White instrument dials on dash	S
Rev counter	S
External temperature indicator	S
Multi-function on-board computer	S
Aluminium finish pedal pads with anti-slip inserts	S
Height-adjustable 3-spoke steering wheel	S
Gear change optimization light	S

Visibility - Lighting

Variable-speed wipe on windscreen	S
"Intelligent" rear window wipe	S
3rd high-up brake light	S
Additional headlights	S
Twin-optic headlights adjustable from the driver position	S
Exterior rearview mirrors (aspheric on driver's side) electrically controlled with defrosting	S

RENAULT SPORT CLIO V6

FRENCH RANGE

Comfort

"Lights on" warning buzzer	S
Brushed-aluminium style interior finish	S
Door sill lighting	S
Dashboard lighting with rheostat	S
Vehicle protection cover	A
Electric front windows with one-touch up driver's side	S
Front passenger grab handle	S
Alcantara gear lever bellows and aluminium knob	S
Passenger reading light	S
Front floor mats	S
Delayed switch-off courtesy lights	S
Leather-trimmed steering wheel with raised anti-slip finish	S

Heating - Ventilation

Air conditioning with particulate filter	S
Air recirculation function	S

Stowage

Storage pocket in front door panels	S
Glovebox with lid including cupholders	S
Luggage compartment under front bonnet panel (approx. 67 litres)	S
Map pocket on the back of the front seats	S
Cubby beneath dash	S
Storage space with luggage retaining net behind front seats (approx. 45 litres)	S

Seats

Door panels with alcantara insert	S
Height- and lumbar-adjustable driver's seat	S
Leather and alcantara "Sports" seat	S

Radios

Radiosat 6000 6-CD multi-changer RDS, 6 speakers, fingertip controls under steering wheel	S
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S: Standard O: Optional A: Accessory