



The 207 RC... intense passion

PEUGEOT, PROUD OF ITS HISTORICAL AND SPORTING HERITAGE IN THE SEGMENT OF SMALL AND POWERFUL CARS, MAINLY IN THE "20." SERIES, OWED IT TO ITSELF TO OFFER AN RC VERSION OF THE 207.

The 207 RC will be marketed early in the spring and will continue the legend of small sports cars – the 205 GTi in the 1980s and the 206 RC more recently – that have delighted enthusiasts of pure driving sensation and provoked some wistful thoughts among drivers of less tempestuous versions.

This new sports car is the natural contemporary embodiment of a compact vehicle with a strong temperament. Its sophisticated technology, the result of Peugeot expertise, makes a car that is both versatile and exceptionally user-friendly. It combines arguments that will appeal to «stopwatch purists» and devotees of upmarket sports models, ensuring they can savour their enjoyment to the full.

> The chemistry of the 207 RC combines:

- ***The elegant and expressive style of the "sport" 3-door 207, enhanced by distinctive attributes and a touch of ostentation.***

Enhancing its efficiency and visual personalisation, they create a sports look clearly identifiable by enthusiasts.

- ***The determined and assertive personality of the 207, powered by the "heart of an athlete", the fruit of cooperation with BMW.***

Namely a direct injection turbo engine developing 128 kW (≈ 175 bhp) and a torque of 240 Nm at

1600 rpm. Ready to be put to the test, it offers a high performance level as amply illustrated in the following figures:

Maximum speed:	220 kph
1,000 m standing start:	27.8 s
0 to 100 kph:	7.1 s
Re-acceleration 80 -120 kph:	7 s
(in 5 th)	

The distinctive sound of its exhaust further expresses its sporty temperament.

- ***The handling characteristics of the range bursting with hi-tech equipment.***

Chosen and developed with Peugeot expertise for maximum efficiency, the wheels and suspension ensure driveability combined with a level of active safety never before attained in this category, in particular an ESP equipped with an SSP function which allows every driver to enjoy their particular driving style to the full.

- ***The bright, ergonomic passenger compartment of the 207, equipped and decorated for four kindred spirits with a passion for sport.***

The resolutely sporty character of the 207 RC is designed to be experienced passionately on a daily basis. However, sitting in their bucket seat in front of a wheel with thumb recesses

and a checkerboard instrument panel, drivers can legitimately dream of the genuine racing experience just by fastening their seatbelt, only on a circuit of course!

- ***Convenience equipment providing in-car enjoyment whatever the distance, ambience and circumstances...***

Like the automatic air conditioning, a range of audio and telematic systems and useful driving aids such as the speed limiter.

The 207 RC, ready to win the hearts and minds of enthusiasts everywhere, embodies all the ingredients of driving pleasure!

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Exterior style

The 207 RC has the same 4.037 m length as the 207 Sport hatchback, as well as the same dynamic profile offered by its 3-door body shape.

Its expressive front aspect features an air intake with metallic finish, circular fog lamps with chrome surrounds and immense headlamps framing a «purposeful» lion.

In a reference to the 206 WRC, the «sport» wheel arches of the 207 highlight the wide tracks and offer the promise of aerodynamic and sporty performance.

The 207 RC stands out however by sports features that enhance its efficiency, such as:

- a raised spoiler on the tailgate, optimising aerodynamic performance at high speed with a gain of 25 kg at 200 kph,
- Bridgestone Potenza 205/45R17W tyres mounted on original «Pitlane» 17" nine-spoke wheels,
- a trapezoid chrome dual exhaust nozzle.

These subtly powerful credentials are accompanied by exclusive finishing touches that reveal its personality, such as:

- elliptical headlamps with static lateral lighting, with dark «black chrome» mask creating a steely look of determination,
- a dark tinted rear windscreen and rear quarter panels,
- door mirror shells with a satin chrome finish,
- full body-colour paintwork covering the lower rear panel and parking assistance sensors, whereas all other 207s have a grained black panel,
- door pillars with «brilliant black» adhesives.

Designed with distinctive attention to detail, the 207 RC emphasises its sporting personality while illustrating to optimum effect the dynamic visual appearance of the entire hatchback range.



Interior style

With its evident sporting connotations, the passenger compartment of the 207 RC gives four occupants an authentic taste of the world of motor sport.

The front «bucket» seats – ergonomic sculpted frames dedicated to imaginary competition – offer exceptional lateral support from the base of the body to the shoulders. Their integral head restraints simulate a «harness locator» that accentuates the sporting theme.

At the rear, both passengers have modelled seats, offering excellent lateral support, with retractable curved head restraints that do not impede rear vision when the seats are unoccupied.

Around these highly stylised «furnishings», the dynamic interior specific to 207s raises the tone.

The instrument panel, derived from the world of

the motorbike with its circular chrome-surround dials, catches the eye with its black checkerboard backgrounds, fan-shaped typography and red needles. It has five dials or indicators, including oil temperature.

The steering wheel is height and reach adjustable over a 40 mm distance and has thumb recesses. It comes with a smooth/perforated semi-leather trim enhanced by a soft-to-the-touch decorative Indy ring.

The active footrest has an aluminium finish with non-slip studs, following the example of the upper surfaces of all three pedals.

The Indy decoration and its soft touch finish is an exclusive feature of the RC. This decoration can be found on the four fascia panel air vent trims and on the vertical trims of the centre console.



1.6 litre THP 175 bhp engine

Cooperation

The 1.6 litre THP16v 128 kW (≈ 175 bhp) engine is a new member of the petrol engine family and derives from cooperation between PSA Peugeot Citroën and the BMW Group.

The aim of this association is to develop engines equipped with innovative technologies that offer a high level of performance – and economical fuel consumption – while meeting the cost constraints

imposed on the lower and lower to medium segments to which they belong.

To resolve this problem, each partner brought the full weight of its experience and know-how in fields of engine design and the implementation of manufacturing processes.

The engines are produced at the PSA Peugeot Citroën plant in Douvrin, France.



Characteristics

This “EP6 DTS” engine is a sporty offshoot of the “EP6 DT”, the dynamic and versatile 1.6 litre THP engine developing 110 kW (\approx 150 bhp) which appeared in the autumn of 2006 under the bonnet of the 207. They bear a very close resemblance in terms of their mechanical components and hi-tech specification, however engine mapping has been entirely recalibrated for a sportier style, with changes to the turbo housing and its material to allow higher power levels to be obtained.

From the earliest design stages, the engine specification sought to combine a number of objectives:

- to provide power of the highest order, directly comparable to that of the best 2.0 litre engines,
- to obtain high flexibility in use, particularly through a high level of available torque at the very lowest engine speeds,
- to contain fuel consumption and emissions,
- to overcome compactness and weight constraints to facilitate its installation in small vehicles.

The aim is therefore to favour driveability and driving pleasure while optimising running costs.

The technical choice of a 4 cylinder 1.6 litre engine took precedence because small turbo-charged engines with a high fuel rating offer a significant advantage in terms of fuel consumption compared to conventional naturally aspirated engines with a larger capacity. This downsizing strategy is comparable with that applied to the Marque’s HDi diesel engines.

This 1.6 litre THP 4 cylinder engine has a capacity of 1598 cm³ and develops a maximum power of 128 kW (\approx 175 bhp) at 6000 rpm. It has a sixteen valve cylinder head with dual overhead camshafts.

Particular attention was paid to torque development

and response time. As a result, even at 1000 rpm a torque of 153 Nm is available. Its maximum torque of 240 Nm is reached at only 1600 rpm and this value remains unchanged up to 4500 rpm. It is still 204 Nm at 6000 rpm.

However, this maximum torque can be increased further thanks to the overboost function, which temporarily increases the engine’s turbo-charging pressure. It can then attain 260 Nm during intensive use of the accelerator pedal. Overboost is activated in one of the three top gears under full load from low engine speeds up to 5200 rpm.

Several technological innovations made it possible to rise to this technical challenge, in particular:

- direct injection,
- a Twin-Scroll turbocharger,
- a cylinder head timed by two overhead camshafts with continuous variable timing for the intake,
- a piloted oil pump,
- an innovative crankcase.

Direct injection for a high level of performance

Direct injection allows a high fuel rating in tandem with low fuel consumption. It also gives excellent results in terms of emissions.

A high pressure pump with two pistons driven mechanically and mounted at the end of the intake camshaft supplies the injectors via a stainless-steel distribution rail. High pressure injectors spray the fuel directly and laterally into the combustion chamber at a maximum pressure of 120 bar. The blend is distributed evenly in the chamber, meaning combustion is improved and the engine’s overall efficiency is increased. In addition, direct injection helps to reduce the quantity of fuel that has not burned off completely



by limiting the proportion of fuel in contact with the walls.

It should be noted that this turbo-charged petrol engine reaches the relatively high rate of compression of 10.5:1.

The Twin-Scroll turbocharger, a first in this category, for maximum responsiveness

As with the 1.6 litre THP developing 110 kW (≈ 150 bhp), the use of a Twin-Scroll turbocharger is a first at this level of engine capacity and in fact at this level in the range.

As the name "Twin-Scroll" implies, the system groups the cylinder gas ducts in the exhaust manifold and turbocharger in pairs ("twin"). The ducts therefore convey gases from cylinders 1 and 4 as well as 2 and 3. These two columns of pulsing gas are routed through scrolls, and the flows combine in optimal fashion directly in the turbine to give it maximum thrust.

This configuration, which separates exhaust gases as far as the turbine inlet, exploits their dynamic properties to the full.

This gives rise to a remarkable degree of engine responsiveness, since pressure build-up begins from 1000 rpm and attains maximum torque from 1600 rpm. Response time, often criticised on turbo-charged petrol engines, is therefore dramatically reduced. Response time was also carefully analysed in terms of engine mapping to encourage its instantaneous effect.

The flow of exhaust gases accelerates the turbine up to an engine speed of 220,000 rpm. At the same time, it drives the compressor which compresses fresh air. A wastegate operates above a maximum compression load of 0.8 bar.

However, when the overboost is triggered, opening of the wastegate is delayed to attain a pressure of 1 bar momentarily, thereby increasing the maximum torque to 260 Nm.

Due to the increase in power in relation to the 1.6 litre THP 110 kW (≈ 150 bhp) engine, the turbine

housing of the KKK turbocharger is made of steel rather than cast iron.

The cylinder head with dual overhead camshafts and variable timing

The cylinder head of this 4-cylinder engine is equipped with two machined overhead camshafts, and also hydraulic tappets for automatic take-up of valve clearance. Thanks to the wide angle of these valves, a considerable reduction of friction is possible through the use of roller cam followers for all elements of the manual transmission. Indeed, one of the project's priorities was to reduce losses through friction in order to reduce fuel consumption.

The weight of the timing was also optimised to facilitate the build up of engine speed. With this in mind, the valve stems have a diameter of only 5 mm.

Continuous variable timing of the intake camshaft (also called VVT, Variable Valve Timing) ensures optimal power and torque, combined with very favourable values for fuel consumption and emissions.

Oil pump with controlled flow to reduce fuel consumption

The pump with toothed pinions, driven by a chain, provides the exact volume of oil necessary under all operating conditions. Thanks to optimised control avoiding unnecessary energy consumption, this controlled-flow pump consumes up to 160 Watts less energy than a conventional pump, while reducing fuel consumption by around 1 % in the European combined cycle. At 6000 rpm, the gain is 1.25 kW.

In addition, because turbocharged engines are subject to high thermal loads, an oil/water heat exchanger incorporated in the oil filter and with the help of a piloted thermostat maintains the oil temperature at a safe level, even under full load.



Furthermore, by heating the oil more quickly, the exchanger shortens the duration of the temperature build-up phase while reducing fuel consumption and, as a result, emissions.

A crankcase with exceptional properties

Construction of the crankcase in aluminium and in two parts – cylinder block and main bearing cap casting – guarantees:

- extreme rigidity thanks to strengthening grooves,
- excellent acoustics, similar to those of a thicker and therefore much heavier cast-iron crankcase.

The crankcase has cast-iron liners inserted at the foundry. The main bearing cap casting is screwed to the cylinder block, enclosing the crankshaft. Due to important physical constraints resulting from torque generated by the presence of the turbocharger, sintered steel inserts are cast in

the main bearing cap casting at the level of the crankshaft bearings. In addition, particular attention was paid to reducing friction in the crankshaft.

Lastly, the crankcase is designed to encourage air movements resulting from connecting rod movements in order to minimise pumping losses at high engine speeds.

Easy maintenance

Depending on conditions of use and driving style, the oil change interval will be 30,000 km or 2 years. The spark plugs and the air filter must be changed every 60,000 km. Actuation of the camshafts by means of a chain is not only accurate and reliable, but also maintenance-free for the entire lifetime of the engine, and no servicing operations are required on the valves thanks to their automatic hydraulic take-up.



Gearbox

This version adopts the «BE4/5T» 5-speed manual gearbox. This gearbox is already coupled with a wide range of petrol and diesel engines within the PSA Peugeot Citroën Group.

On this new sporty petrol engine, the gearbox benefits from special gear staging and shorter gear ratios that make the very most of the engine's superb flexibility. Only first gear is lengthened to

obtain «more dynamic» gear changes in corners at reduced speed, such as a hairpin bend, enabling the vehicle to be driven at 66 kph thanks to a maximum engine speed extended to 6800 rpm for the first two gears.

Note also that the clutch has been reinforced to support the temporary torque of 260 Nm when the overboost function is active.



Performance

The sporty temperament of the 207 RC, a direct result of engine technology and the excellence of the chassis, can be seen clearly in the following figures.

For example, with driver only, just 27.8 s are required to cover the 1000 m standing start, while 0 to 100 kph is attained in only 7.1 s, placing it clearly ahead of its forerunner, the 206 RC. Figures for acceleration are equally eloquent: 7.0 s in top

gear from 80 to 120 kph (compared to 10.6 s with the 206 RC). Maximum speed, attained in 5th gear, is 220 kph.

Lastly, the technologies used for this engine and their effect on torque availability at low engine speeds limit fuel consumption (7.2 litres in the combined cycle versus 8.6 litres for the 206 RC) and also CO₂ emissions (171 g/km versus 204 g/km on the 206).



Adaptations

Here, the rigorous handling of the 207, already widely appreciated by its customers, is at its most dynamic. The RC is based on a chassis that gives all 207s dynamic styling without compromising

safety. With this resolutely sporty engine and a number of specific adaptations, the 207 RC offers extremely efficient and stable handling while remaining very easy to drive.

Wheels and suspension

As on all 207s, the wheels and suspension feature a McPherson type front axle. For the RC, the front articulation of the wishbone takes the form of a ball joint, in place of the elastic articulation. The rear articulation, while still elastic, is strengthened. This assembly guarantees perfect road holding by the front wheels for maximum precision under load.

The stiffness of the rear axle deformable crossmember has been increased by nearly 30%

compared to the 207 equipped with the 1.6 litre THP 110 kW (≈ 150 bhp).

Hydraulic dampers with valves set to a pressure of 5 bar are structurally identical to the rest of the range and obey patterns specifically designed for the 207 equipped with this engine. Similarly, the rigidity of the front and rear springs has been increased to make the chassis as efficient as possible in terms of road holding.



Steering

The «brushless» electric power steering, acknowledged since its launch for its versatility, offers good handling at low speed and precision at high speed and is recalibrated on this version to

take account of engine performance and to offer maximum feedback of information for maximum precision while driving.

Brakes


Braking is assured at the front by special ventilated discs with a diameter of 302 mm and a thickness of 26 mm. The diameter of the brake calipers on these discs has been increased to 57 mm. 249 x 9 mm non-ventilated discs are used at the rear.

A Teves Mk60 ESP (Electronic Stability Program) system is featured on this version as standard. It includes ABS, electronic brake force distribution

(EBFD), emergency brake assist (EBA), traction control (ASR) and stability control (CDS), which detects any incipient understeer or oversteer. Lastly, it allows the integration of an all-new system, the SSP (see section on Safety).

The ESP and its functions (AFU, ASR, CDS) are fully disconnectable, to allow demanding and experienced customers to exploit the capacities of the 207 RC to the full.

Tyres

The 207 RC is fitted exclusively with new «Pitlane» 17 inch alloy wheels with 9 spokes, exhibited at the 2006 Paris Motor Show on the 207  pure

concept car. They are clad with Bridgestone Potenza RE050A 205/45 R17 W tyres.



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Safety

The SSP function

In safety terms, the 207 RC incorporates a major innovation, the SSP system (Steering Stability Program). Under certain braking conditions, this system serves as a link between the ESP function and the vehicle's electric power steering. The purpose of the dialogue between these two systems is to improve the vehicle's stability and straight line stopping distance, when braking on surfaces where traction differs between the right and left wheels (for example one side consisting of «high traction» asphalt and the other composed of ice, mud or wet grass, etc).

In normal weather, the ESP function will recognise the asymmetry of the road surface and limit braking on the high traction side. This strategy preserves the car's stability but does not optimise braking efficiency.

In this situation, the system applies more braking

power to wheels with a good grip on the road and, anticipating vehicle instability, applies torque to the steering to help the driver achieve an optimal steering wheel angle.

The torque is transmitted less than 100 ms after the onset of braking and the recommended angle can be as high as 80 degrees.

This is not an «automatic opposite lock», since the driver can choose not to follow the steering wheel instruction (in this case, braking returns to a classic strategy favouring stability).

Overall, depending on conditions, this system reduces the stopping distance by between 4 and 10%, while guaranteeing vehicle stability. Still uncommon, it is the first time the system has been applied to a vehicle in this segment.

Safety features common to all 207s

As on all 207s, the 207 RC incorporates a double absorption bar on the engine compartment front panel which distributes energy absorption more efficiently in the event of impact to facilitate its dissipation and, in particular, enhance the protection of pedestrians hit by the vehicle. This concept derives directly from the 407.

For side impact, reinforcements on the body and superstructure enable them to absorb energy and preserve a survival cell. Sill reinforcements and tubular bars in the doors encourage overall

rigidity. Door padding also contributes to energy absorption.

The 207 RC, like all three door versions of the 207, is reinforced against side impact by a retention pin ensuring a permanent link between the door and the 'B' post, ensuring optimal strength of the overall assembly.

Two front air bags, two side air bags and two curtain air bags also play a part in protecting the front and rear passengers.



Euro Ncap awarded five stars to the 207 in the adult protection test, four stars in the child protection test and three stars in the test for pedestrians hit by the vehicle.

Lastly, the RT3 telematic system, available as an option, provides (in addition to its audio, telephone and navigation functions), access to a local assistance service and the Peugeot Emergency service. This localised emergency call service is offered free of charge for an unlimited duration and is deployed to date in France, Germany, Spain, Italy, Belgium and

Luxembourg. It offers customers the guarantee that they will receive assistance in their own language. This service can be launched manually or automatically (if pyrotechnic devices such as air bags are triggered) ensuring rapid intervention by the appropriate emergency services.

Since its launch in 2003, more than 1000 users have been assisted by Peugeot Emergency.

This emergency call system has recently been certified with the French civil defence authorities after being approved by the Direction de la Défense et de la Sécurité Civile (DDSC) attached to the French Interior Ministry.

> Convenience equipment

Occupants of the 207 RC will appreciate convenience equipment available either as standard or as an option and designed to enhance their enjoyment of this sporty car still further.

Hinged rear windows, the athermic front windscreen and dual zone air conditioning ensure a well-ventilated interior ambience and temperature comfort that enhances wellbeing in all seats.

The mono CD RDS RD4 radio, available as standard, lightens the journey, or accompanies its tempo !

An MPR compatible dual tuner version or an RT3 system combining an RDS radio, GPS satellite navigation, and a GSM phone with 7" 16/9 colour screen are available as an option.

A JBL hi-fi installation combined with the dual tuner radio or the RT3 system will delight music lovers.

A «Bluetooth» hands-free kit is also available as an option with RD4 radios. This system pairs a mobile phone of the same name with the car's radio equipment by means of radio waves.

From their enviable position behind the wheel, drivers of the 207 RC benefit from valuable aids available as standard to enhance comfort and driving safety:

- a rear parking assistance system,
- a speed limiter coupled with a cruise control,
- a direct tyre under-inflation sensor,
- elliptical headlamps combined with static directional lighting,
- automatic switching on of headlamps,
- automatic windscreen wipers with rain sensor,
- large door mirrors that fold by remote control,
- an electrochrome interior rear-view mirror.



Colours and trim

Body colours

The range of body colours consists of six shades all with «motor sport» styling.

Opaque colours:

- Bianca White
- Flamenco Red

Metallic colours:

- Obsidien Black
- Aegean Blue
- Aluminium
- Shark Grey

Some of these colours will be chosen to highlight the upmarket exclusivity of the 207 RC, for example the new Shark Grey which creates a monochrome effect with the wheels, dark-tinted rear windscreen and rear quarter panels, the new brilliance of the door pillar trims and even the very hi-tech satin chrome finish of the door mirror shells.

Others will clearly portray the car's temperament and, for possible competition on a circuit or closed road, will show off sponsors' stickers or race numbers to optimum effect.

Interior trim

With the emphasis on materials from the world of sport, the front seats have a dark alcantara trim dark for the centre, seat backs and head restraints. The side cushions in contact with the body are finished with a «trami» 3D mesh. The rest of the seat is covered with a particularly low-maintenance material. The seats are enhanced

by visible light-coloured stitching which finds echoes in the passenger compartment on the door panels with their alcantara trim, the carpets and the gear lever gaiter.

The trim of the rear bench seat echoes this composition.

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1.6 litre THP 16v 128 kW (≈175 bhp)
Manual gearbox

ENGINE		EP6 DTS - Euro 4
Capacity (cm³)		1598
Max. power (kW) / engine speed (rpm)		128 / 6000
Max. torque (Nm) / engine speed (rpm)		240 (260*) / 1600
TRANSMISSION		
Gearbox type		BE4 / 5T
Final drive		19 / 75
Speed (kph) per 1000 rpm	in 1 st	9,77
	in 2 nd	15,30
	in 3 rd	20,90
	in 4 th	27,10
	in 5 th	33,19
TYRES		
Dimensions		205 / 45 R 17 W
Rolling circumference (m)		1,879
ADMINISTRATIVE FISCAL RATING		10
MAXIMUM SPEED (kph)		220
PERFORMANCE - Driver only / «1/2 load»		
0 to 400 m (s)		15,2 / 15,6
0 to 1,000 m (s)		27,8 / 28,5
0 to 100 kph (s)		7,1 / 7,6
80 to 120 kph in top gear (s)		7,0 / 7,5
80 to 120 kph in next to top gear (s)		5,5 / 6,0
FUEL CONSUMPTION (litres/100 km - g/km)		
ECE		9,9
EUDC		5,7
COMBINED / CO2		7,2 / 171
KERB WEIGHT (kg) - with full tank		1250

(*) Overboost, one-off enrichment of air and fuel