

RENAULT'S NEW 1.3 TCE ENGINE

ENHANCED ENJOYMENT OF PETROL DRIVING WITH SCENIC

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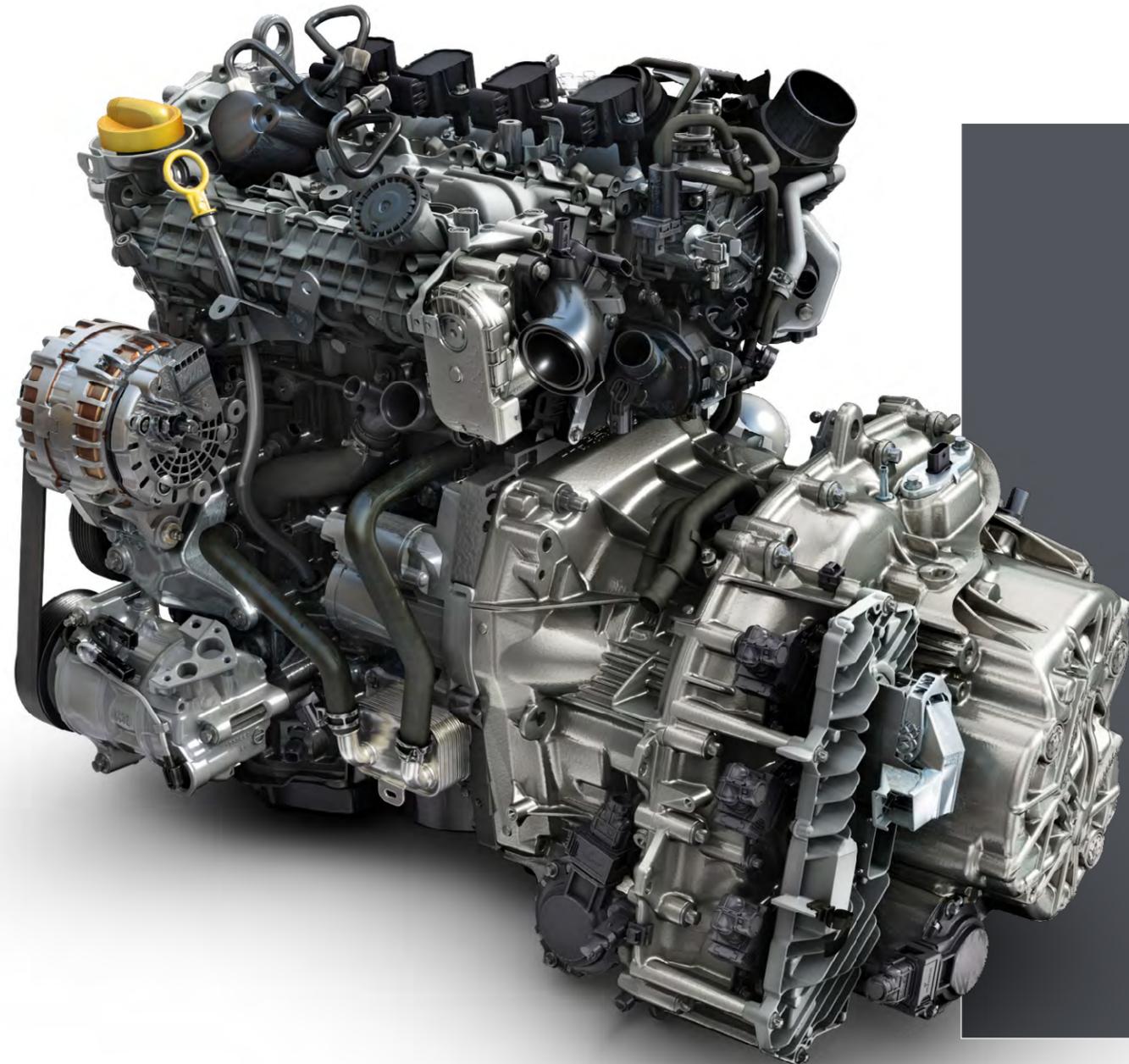
The 1.3 TCe is a new generation of engine jointly developed by Renault-Nissan-Mitsubishi, and their partner Daimler. Designed to meet the highest quality standards of the two partners, it offers a broader power range than the previous TCe engine, increased torque (particularly at low engine speeds), and lower CO₂ emissions paired with fuel consumption savings.

Initially developed for Scenic and Grand Scenic, with manual or Efficient Dual Clutch (EDC) transmissions, the 1.3 TCe will be integrated into other models in Renault and Nissan's lines. This engine is a key element of the Alliance's strategic response to changing market demand as it turns more and more toward petrol engines.



INNOVATION THROUGH COOPERATION

The new 1.3 TCe is one of many results of the collaboration between the Alliance and Daimler. Currently, the Alliance and Daimler are working on more than 13 joint projects.



EXPERIENCE

The collaboration between the Alliance and Daimler has already borne fruit, with such landmark projects as the joint development of Twingo with Smart or the supply of numerous engines (1.5 dCi, 1.6 dCi, 1.0 SCe, 0.9 TCe).

DEVELOPMENT

The new 1.3 TCe engine is the product of four years of joint studies and developments between Daimler and the Alliance. It represents the highest level in terms of performance and comfort, while at the same time meeting the strictest standards of reliability and durability.

PRODUCTION

The 1.3 TCe will be produced at two of the Alliance's industrial facilities: in Valladolid (Spain) and in Sunderland (United Kingdom), in the Nissan Motor United Kingdom factory (NMUK). It will also be fabricated in Germany at Daimler's factory in Köllda, and in China at the Dongfeng Renault Automotive Company (DRAC) and the Beijing Benz Automotive Company (BBAC).

SALES

Cars equipped with this motor will be sold in Europe, Russia, Brazil, China, Japan, and South Korea. Further marketing is also planned in Africa, the Middle East, and India. Sales volumes for the 1.3 TCe are projected at 1 million units a year, and it will be included in the Alliance's B, C, and D segment cars and in Daimler cars in the "compact premium" category.



OUR NEW PETROL ENGINE EXPRESSES ALL THE ENGINEERING TALENT OF GROUPE RENAULT, OF THE ALLIANCE, AND OF OUR PARTNER DAIMLER. THIS 1.3 TCE, WHICH MEETS THE QUALITY STANDARDS OF BOTH THE ALLIANCE AND DAIMLER, REQUIRED MORE THAN 40,000 HOURS OF TESTS AND SIMULATIONS. ITS FUTURE IS GLOBAL, GIVEN THAT IT WILL BE FABRICATED IN FIVE DIFFERENT FACTORIES, WITH VOLUMES EVENTUALLY APPROACHING A MILLION UNITS PER YEAR."

PHILIPPE BRUNET

Vice-president of Engineering for electric and combustion engines for the Alliance



OPTIMAL COMFORT AND LOW EMISSIONS

At a moment when more and more consumers are seeking competitive petrol engines, Renault proudly introduces the new generation 1.3 TCe engine for the Scenic and Grand Scenic.



A WIDER RANGE

This engine block comes in three levels of power: 115, 140, and 160 hp. This is combined with the choice of either a 6-speed manual transmission or—for the first time in a petrol engine Scenic—an automatic 7-speed double clutch (EDC) transmission (140 and 160 with the 1.3 TCe).



COMFORT AND EFFICIENCY

By comparison to the previous TCe engine the 1.3 TCe is more powerful (up to 160 horsepower). We have adopted a series of technologies that, when combined with greater engine displacement, enhance driving comfort thanks to increased torque (up to 17%). At the same time, the efficiency gains thanks to the 1.3 TCe's modern design have lowered both fuel consumption and CO2 emissions (up to -8% in Grand Scenic).



TORQUE AND POWER GET A BOOST

The progress in terms of driving comfort is striking, when compared to the previous version. At the same power, the 1.3 TCe boasts a torque increase of 30 Nm (16%) in comparison to the 1.2 TCe. The 140 hp version sees increases of 10 hp and 35 Nm (17%). For daily driving, these increases translate into a smoother response at low engine speeds, a more vigorous acceleration, and cleaner passing manoeuvres.



EMISSIONS GET CUT

At the same time, CO2 emissions are notably lower: -5.5% in Scenic and -8% in Grand Scenic, never exceeding 125 g/km for either car. These gains are the result of a fundamental reworking of the engine, whether at the level of fuel injection, of the combustion chamber, of friction reduction, or of optimization of the turbocharger.

RELIABILITY: EXTENSIVE VALIDATION TESTING

The new 1.3 TCe meets the highest and most strenuous quality standards of both the Alliance and Daimler.

The specifications conceived jointly by the Alliance and Daimler required engineers to devise a host of trials to ensure the 1.3 TCe's durability.

This engine has passed over 40,000 hours on the engine test bench and in simulations—that's almost 14 years of use, at eight hours a day, and six times more than industry average. The 1.3 TCe also underwent 300,000 km of validation testing in extreme conditions (heatwave, extreme cold, drought, and high humidity) in the Scenic. In addition, chain drive distribution ensures lower maintenance costs over time.

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THE AUTOMOTIVE ENGINEERS OF RENAULT, NISSAN, AND DAIMLER HAVE DEPLOYED ALL THEIR EXPERTISE TO DEVELOP THIS NEW 1.3 TCE ENGINE AND TO ENSURE THAT IT IS AT ONCE COMPETITIVELY POWERFUL AND EFFICIENT. THEIR INNOVATIONS HAVE RAISED THE BAR IN OUR LINE OF ENGINES, AND WE'RE PROUD TO BE ABLE TO OFFER OUR CLIENTELE THIS LEVEL OF DRIVING PLEASURE.”

GASPAR GASCON ABELLAN

Director of Product Engineering at Groupe Renault



THE 1.3 TCe ENGINE IN DETAIL

The new 1.3 TCe engine introduces a number of innovations in the name of driving pleasure, performance, and efficiency.

BORE SPRAY COATING

For the first time the Alliance is applying this technological innovation to an engine destined for a wide market. Using a plasma torch, a fine film of very hard steel is sprayed on the shafts of the cylinders to enhance heat conductivity during combustion. Aside from creating significant savings in mass, this technique greatly decreases uncontrolled detonations (clicking) in the engine and increases the compression rate for greater efficiency. The Bore Spray Coating technique alone is responsible for a 1% reduction in consumption and emissions.



CYLINDER HEAD

The new 1.3 TCe engine unveils an unprecedented triangular "Delta" cylinder head. Its compact form allows for more room under the hood, as well as reducing weight. The injectors are centrally installed for better combustion. And lastly, the exhaust manifold is partially integrated into the cylinder head for more efficient cooling of exhaust gas and more efficient combustion, particularly at low engine speeds and high loads.



TURBO

The turbocharger is now equipped with a motor-driven recirculating safety valve ("e-waste gate"), unlike the pneumatic valves in older versions. More responsive, particularly at low engine speeds, this waste gate allows for optimum engine mapping (especially during transition phases) without affecting drivability. The elimination of the solenoid valve also ensures reliability.



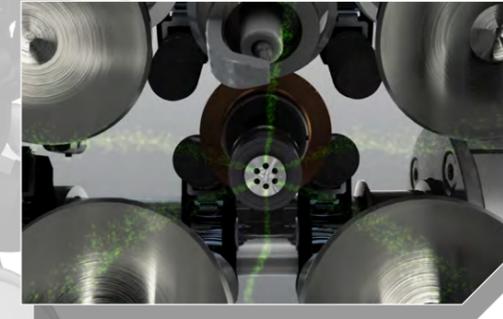
INJECTORS

The injector nozzles comprise 6 holes for better fuel atomization. They are fed by a common rail at high pressure: 250 bars, against the previous 1.2 TCe engine's 200 bars.



VARIABLE VALVE TIMING WITH ROCKER ARM

The valve train features a finger follower-type rocker arm with hydraulic guidance support, rather than tappets. The primary benefit of this new system is a reduction in internal friction and the promise of greater durability. In addition, the engine enjoys greater efficiency thanks to twin independent variable camshaft timing for intake and exhaust.



SCENIC: THE FAMILY CAR REINVENTED

The Renault Scenic is the fourth generation of a best-seller bought over 200 million times since 1996.

Its attractive flair, its emphasis on comfort, and the ingenuity of its design make it a trend-setter in its segment.



A DISTINGUISHING STYLE

From the outset, Scenic seduces with the sleek power of its profile. It stands out from the crowd as much with its two-tone body as with its lighting signature: the iconic C-shaped headlamps and tail lamps whose "Edge Light" technology lends a 3D effect. It is also distinguished by 20-inch alloy wheels across the Scenic range. Their enlarged diameter helps lower the perceived height of the roof.



PANORAMIC VISION

As ever, Scenic is characterized by its extensive window surfaces, so essential for well-being. Its sweeping, sloped windscreen offers maxim visibility. The panoramic fixed-glass sunroof (optional) floods the interior with sunlight.



EVERYTHING HAS ITS PLACE

Designed with the needs of its occupants in mind, the cabin is full of clever storage spaces: the sliding center console that reveals a 13-liter storage space, the Easy Life drawer that faces the passenger (11.5 liters), as well as four floor hatches. Scenic offers a total of 63 liters of storage space spread throughout the interior.



CUSTOMIZED WITH A SNAP OF THE FINGERS

With the One Touch Folding system, the rear seats fold at the touch of a button, or through the R-Link interface. Even when they are in place, the trunk boasts a record-breaking volume: 506 dm³ VDA (572 liters) in Scenic, giving it the best value in its segment. In Grand Scenic, the trunk is at a volume of 533 dm³ VDA (596 liters) in the 7-seat version (with the seats of the third row folded) up to 718 dm³ VDA (765 liters) in the 5-seat version.



A NEW LEVEL OF COMFORT

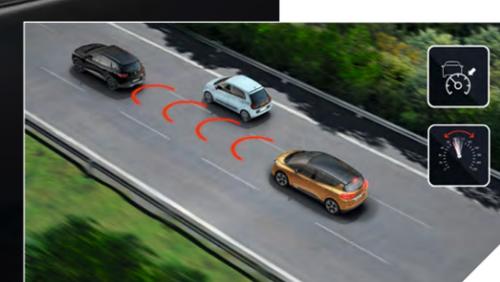
Scenic offers excellent comfort, in particular due to the capacity of its high-flanked wheels (107 mm) to absorb unevenness. Outright potholes are less perceptible thanks to the large diameter of the tire treads. The supportive, highly adjustable seats are furnished with a dual-hardness foam for optimal posture comfort, especially on long drives.



TECHNOLOGY MAKES LIFE EASIER

In town you will particularly appreciate the rear-view camera and the Easy Park Assist system, which maneuvers automatically in "hands free" mode. The head-up display keeps essential information in your field of vision. And Renault's MULTI-SENSE technology lets you adapt vehicle settings to your every mood.

SECURITY WITHOUT COMPROMISE



To maximize security, Scenic proposes an array of cutting-edge advanced driver assistance systems (ADAS), which can be easily activated from the R-LINK 2 tablet.

- ☐ Automatic Emergency Breaking with pedestrian detection (AEB)
- ☐ Lane Departure Warning (LDW)
- ☐ Safety distance warning (DW)
- ☐ Traffic Sign Recognition (TSR)
- ☐ Blind Spot Warning (BSW)
- ☐ Fatigue Detection Warning (FDW)



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THE NEW PETROL ENGINE 1.3 TCE RESPONDS WITH MODERNITY TO THE NEW DEMANDS OF THE MARKET AND OF CLIENTS. AVAILABLE AT SEVERAL LEVELS OF POWER, FROM 115 TO 160 HP AND IN MANUAL OR EDC TRANSMISSION, IT WILL BE CALLED ON TO PLAY A KEY ROLE IN THE RENAULT LINE. IT IS PARTICULARLY WELL SUITED TO THE RENAULT SCENIC, BRINGING ENHANCED COMFORT IN LINE WITH LOW EMISSIONS TO THE HIGHEST STANDARDS OF ITS SEGMENT.”

ALI KASSAI
Product Director at Groupe Renault

DISCOVER



The dimensions
of Scenic



The dimensions
of 5-seater Grand Scenic



The dimensions
of 7-seater Grand Scenic



The technical
specifications of Scenic
and Grand Scenic

