

HELE system technical description

The 2010 Paris Motor Show provides the backdrop to Ferrari's presentation of the new HELE (High Emotion Low Emissions) system designed to reduce the environmental impact of its cars whilst boosting their performance and driving pleasure.

The first model to benefit from the HELE system is the Ferrari California which, at launch, produced 299 g/km of CO₂ on the combined ECE+EUDC cycle. Thanks to the HELE system, however, that figure has been drastically reduced and the Prancing Horse convertible now produces just 270 g/km. However, emissions fall by up to 23 per cent over an urban cycle that represents real-life use by a client.

The Maranello engineers are tackling the emissions challenge by optimising the existing technological content of the car and by introducing innovations designed to reduce its energy requirements (vehicle efficiency) and increase the amount of power generated (engine efficiency).

Together with the Stop&Start system, HELE incorporates new intelligent engine fan and fuel pump control, electronic air-conditioning compressor displacement control and a gear-shift pattern that adapts to driving style.

All of these solutions cut emissions and boost sportiness. In fact, in terms of the cooling system, the introduction of the brushless motor and continual fan speed control has allowed the Ferrari technicians to decrease current absorption and cut the system's weight by over 2 kg as well as reduce aerodynamic drag by 5 per cent at high speeds.

The fuel pump capacity is controlled constantly by the engine CPU to limit power demands on the alternator, while intelligent air-conditioning compressor displacement control slashes the amount of torque absorbed by the system by 35 per cent and makes for more rapid, efficient cabin cooling.

The result of these refinements is that, under normal running conditions, the engine can avail of an extra 25 Nm of torque which in turn boosts responsiveness.

With regard to the transmission, in automatic mode the gearbox CPU automatically identifies the driving style being used and adapts the gear shifts to match. If, for instance, it recognises a driving style that demands moderate torque at low engine speeds (typical of city driving), it optimises the gear shifts to cut fuel consumption. If, however, a sportier driving style is adopted, then gear shifting becomes more high performance too. There is also a pedal map for each gear to guarantee maximum responsiveness to even small amounts of pressure on the accelerator and very precise torque delivery at all times.

Added to this, the California is the first Ferrari to sport the Stop&Start system which restarts the car in just 230 milliseconds, so that there is no impingement at all on driveability. Once again, the technicians' goal with this technology was to improve fuel consumption levels and sportiness in tandem. They have done so using features designed specifically to allow the driver to restart the engine not just by releasing the brake pedal, but also by using the accelerator pedal (ideal for people who left-foot brake) or the UP paddle mounted on the steering wheel.

Ferrari California Personalisation Programme

An incredibly wide array of personalisation options is available to ensure that the Ferrari California's high performance GT soul shines through at all times. While it's true that all Prancing Horse cars are

unique, it is equally the case that Ferrari California owners can further enhance either the sportier or more glamorous side of their car, thanks to what goes well beyond a conventional personalisation programme.

The Ferrari California personalisation programme offers a superb range of options in the four traditional areas: Racing and Track, Exteriors and Colours, Interiors and Materials, and Equipment and Travel. In addition to this, however, clients may also request specific content not included in the catalogue to make their car even more unique and individual.

Two-tone liveries and three-layer paintwork underscore the depth of the colour and sleek forms of the Ferrari California. They also permit owners to add an extra touch of exclusivity to the exterior of their new car. There is a virtually endless palette of colours available, in fact: 16 basic colours, 10 inspired by the Grand Tourers of the 1950s and 60s and a further 12 from the recent Ferrari model range. Alternatively, owners may have their own custom colour made up on provision of a sample. Such is the detail of our personalisation programme that even the brake calipers are available in a choice of different tints.

The exterior personalisation options extend beyond the merely aesthetic to the functional too: choices include 19" wheel rims or sportier forged 20" versions with either coloured or diamond finish. Certain elements of the car, such as the front spoiler, the rear diffuser and the licence plate surround, are even available in lightweight carbon-fibre. There is equal freedom when it comes to the cabin where owners can further underscore the car's character by opting for out-of-range leather, Alcantara® upholstery or any of a wide range of carbon-fibre trim elements.

The in-car spec can also be enriched with other accessories, including a JBL Professional audio system, a rear parking camera or heat-absorbing windscreen, to name but a few.

The Ferrari California displayed on the stand features new combinations of colours for the exterior and new materials and equipment for the cockpit.