

TREMEC TR-9080 DCT

8-Speed Dual Clutch Transmission for Transaxle Applications

Designed for high-performance sports cars and super cars, the new 8-speed TR-9080 DCT models are the first in the family of vehicle transaxles from TREMEC that combine the transmission, differential and axle drive in one compact package.

Performance

With an automated dual clutch transmission (DCT), engine output is coupled to either of two transmission input shafts. Each clutch functions as both a launch clutch and dynamic shifting clutch, enabling clutch-to-clutch shifts without torque interruption, giving the driver uninterrupted traction and more efficient driving.

The innovative TR-9080 DCT provides lightning-fast shifts in less than 100 milliseconds from best-in-class controls software, solenoids and hydraulics.

Control Solutions

The DCT is controlled with a high-performance, 32-bit transmission control unit. All systems - including hardware such as low-leak solenoid valves and electro-hydraulic actuation systems, to control systems and software - were internally developed for maximum performance without compromise.

To create the optimal performance during launch and shifting, TREMEC developed advanced algorithms capable of calculating torque targets in real time. Fast and repeatable torque control is achieved through model-based control strategies, using detailed knowledge and characterization of all transmission subsystems and components.

Mechanical Design

The in-house designed concentric wet dual clutch offers high torque and thermal capacity in a compact package. This innovative wet clutch has TREMEC-proprietary optimized friction materials with the ability to cool the clutches only when needed, boosting efficiency.

TREMEC's vertically integrated manufacturing allows customized gear design and development for tight tolerances and famously robust durability. Power-honed synchro/speed gears give a quiet ride without sacrificing performance.

The TREMEC-designed limited slip differentials feature spiral bevel designs that allow the entire transaxle to use a single fluid, allowing mass savings from a single oil cooler, pump, oil sump and filtration system. The force-cooled electro-hydraulically controlled limited slip differential (eLSD) is integrated with the transmission control system to allow fast responsiveness and fine control of the locking ratio and give the ability to withstand sustained high-performance driving.

Features at a Glance:

- Continuous torque over a wide ratio range allowing high performance driving and efficient highway driving
- Over-torque shifting with torque boost for performance launch
- Offered with mechanical or electronic limited slip differentials
- Torque capacity to 800 Nm (590 lb-ft)
- 7,500 RPM maximum input speed
- ISO 26262 and ASIL-D safety standards compliant

