DSG

Presentation of robotized gearbox

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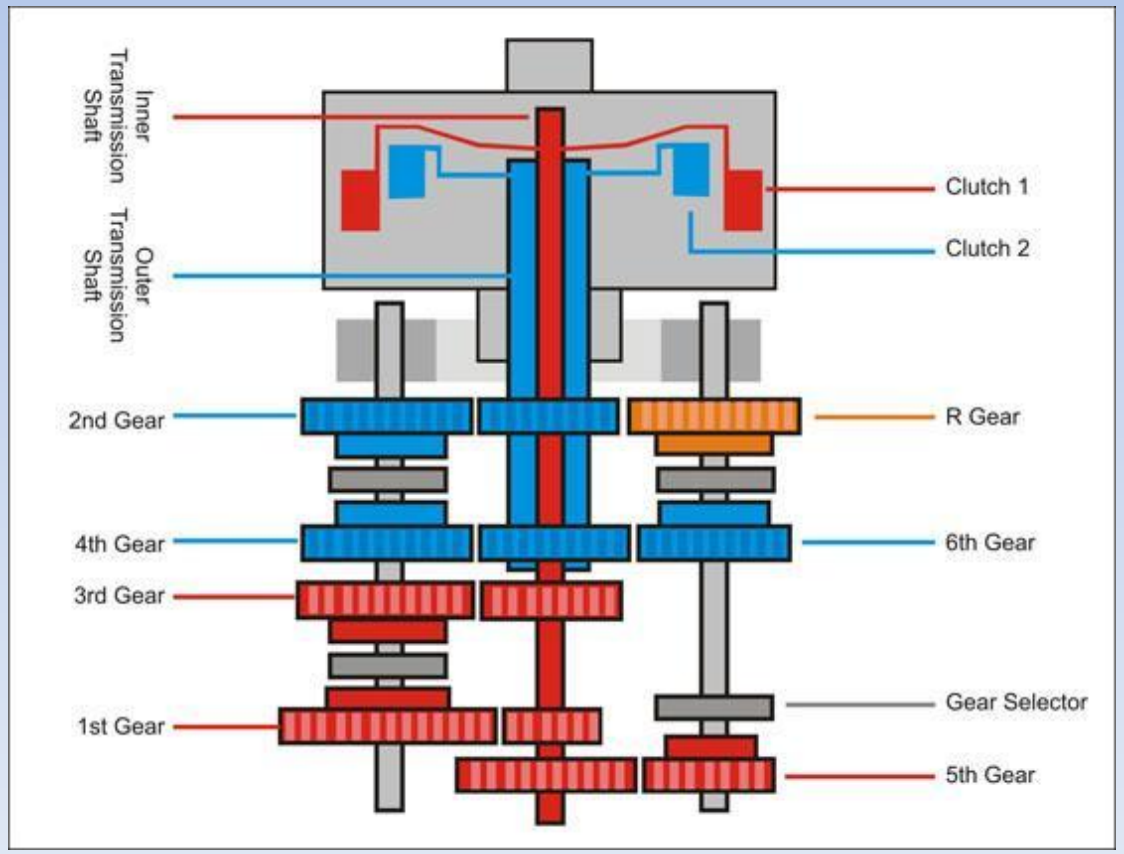
dual-clutch

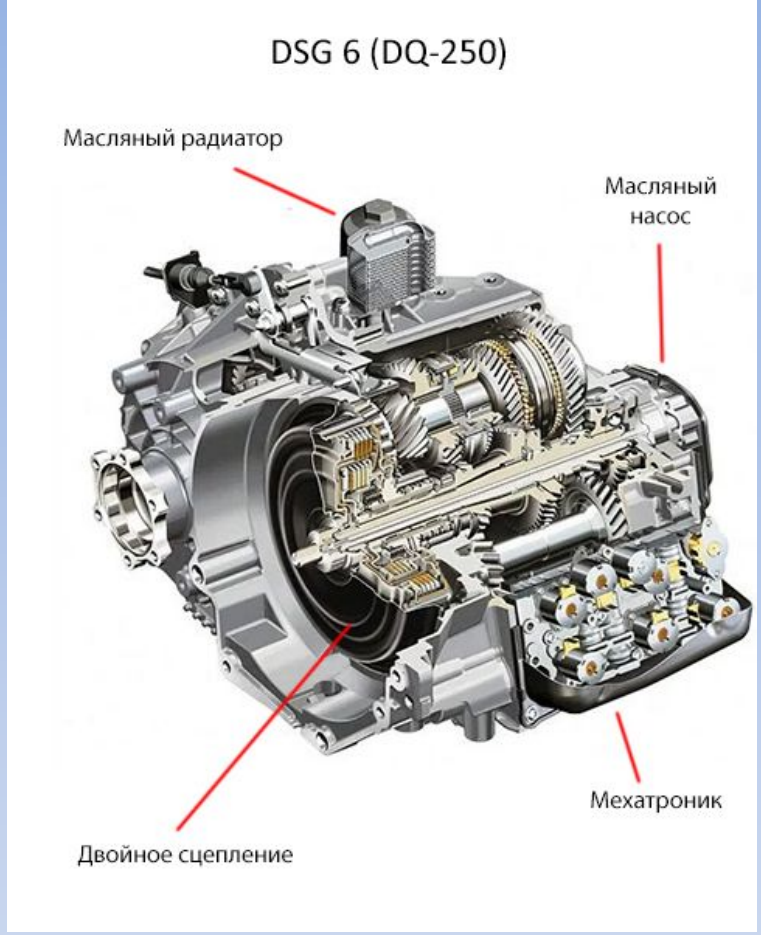
- A dual-clutch transmission, (DCT) (sometimes referred to as a twin-clutch transmission or double-clutch transmission), is a type of automatic transmission or automated automotive transmission. It uses two separate clutches for odd and even gear sets. It can fundamentally be described as two separate manual transmissions (with their respective clutches) contained within one housing, and working as one unit.



Automatic and manual modes

- They are usually operated in a fully automatic mode, and many also have the ability to allow the driver to manually shift gears in semi-automatic mode, albeit still carried out by the transmission's electro-hydraulics.

Dual-clutch transmissions use two fundamentally different types of clutches: either two wet multi-plate clutches, bathed in oil (for cooling)—or two dry single-plate clutches. The wet clutch design is generally used for higher torque engines that can generate 350 newton metres and more (the wet multi-plate clutch in the Bugatti Veyron is designed to cope with 1,250 N·m, whereas the dry clutch design is generally suitable for smaller vehicles with lower torque outputs up to 250 N·m However, while the dry clutch variants may be limited in torque compared to their wet clutch counterparts, the dry clutch variants offer an increase in fuel efficiency, due to the lack of pumping losses of the transmission fluid in the clutch housing.



Benefits and Disadvantages

- Benefits:
- shift up speed is about 8 cm, which provides a dynamic acceleration of the vehicle;
- Disadvantages:
- significantly increases the cost of the car;
- more expensive to repair because of the complexity of the design;
- costly procedure Oil Change (in DSG-6);
- a slight delay before the sharp acceleration when driving at moderate speeds