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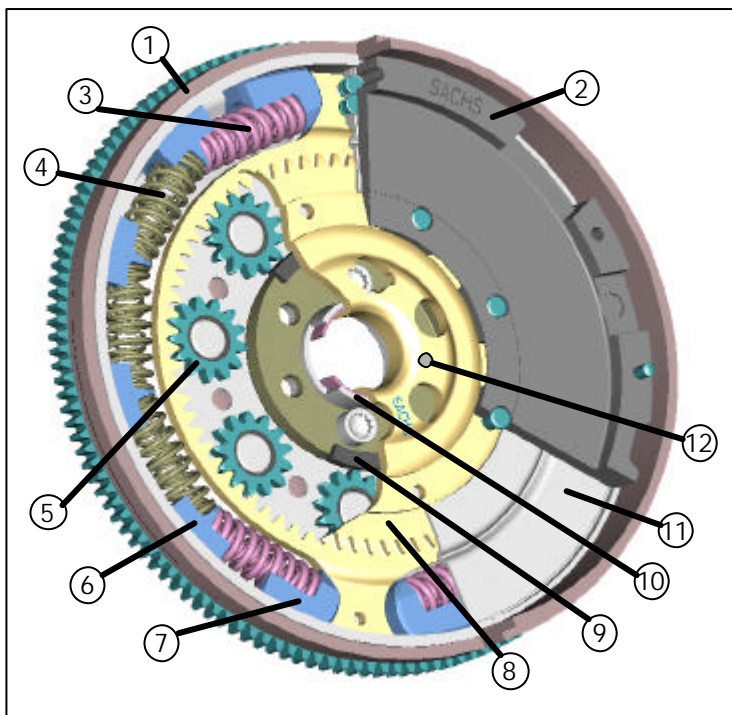
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Dual-mass flywheel / SACHS Planet dual-mass flywheel

Notes and hints for experts



Dual-mass flywheels are installed in many modern vehicles to decrease noise and improve refinement on the move.

- ① = Primary flywheel with starter ring gear
- ② = Secondary flywheel
- ③ = Firm springs
- ④ = Soft springs
- ⑤ = Planet wheel
- ⑥ = Guide shoe
- ⑦ = Spring seat
- ⑧ = Ring gear
- ⑨ = Axial plain bearing
- ⑩ = Radial plain bearing
- ⑪ = Cover plate to retain the grease packing
- ⑫ = Hole for pin to prevent rotation

What experts should know before doing repair work:

● General notes

- Clean the dual-mass flywheel with **oil and grease-free rags only**. High-pressure cleaners, steam jets, cleaning sprays or compressed air must not be used.
 - ➔ They could lead to dirt or cleaning agents getting inside the dual-mass flywheel and causing increased wear.
- For technical reasons, the secondary flywheel **friction area must not be reworked!**
- The primary and secondary flywheel are to be **prevented from rotating with a 6-mm pin** before **removing the crankshaft**.
 - ➔ If this is omitted, the secondary flywheel could be damaged by a bolt head.
- **Always renew the crankshaft connecting bolts. Please observe the tightening torques for the bolts.** Observe the vehicle manufacturers' instructions (expansion bolts, securing material).
- When **replacing the clutch for the 2nd time**, always replace the **dual-mass flywheel as well**.
 - ➔ The torsional damper in the dual-mass flywheel is also subject to wear. ➔

- **Testing**

- **Reliable functioning** of dual-mass flywheels can only be checked on a **special test rig**.
- In the workshop, **only provisional testing can be carried out** :
If the primary and secondary flywheels can be rotated by more than 20 mm in opposite directions by hand (measured on the circumference, depending on the type of flywheel and the diameter), the wear limit has been reached.

- **Possible causes of damage/failure of the dual-mass flywheel**

- ➔ Frequent stalling of the engine / driving at extremely low engine speeds
- ➔ Irregular operation of the ignition and fuel injection systems
- ➔ Different compression pressures in various cylinders
- ➔ Extreme vibration due to worn drivetrain components
- ➔ Overheating

- **Typical damage to flywheels**

Secondary flywheel overheating is caused by misuse of the clutch, e.g. by allowing it to slip excessively.

- ➔ This is easily recognised when heat cracks and annealing colours occur.
- ➔ The heat makes the damping lubricant ineffective. The guide shoes, spring seats and springs "run dry" .



Overheated secondary flywheel.
Heat cracks, burn marks on the friction surface of the secondary flywheel.



The lubricant emerges between the primary and secondary flywheels.
The lubricant has been destroyed by overheating.