

Ancillary components and belt drive



Brief description

Various ancillary components are driven by the crankshaft of the engine with the aid of one or two drive belts.

The belt is routed over deflection pulleys in order to ensure sufficient hold (adhesion) about the drive wheels.

Tensioning rollers subject the belt to the necessary preload.

The ancillary components fulfil various tasks only when the engine is running.

Requirements and Objectives

The following requirements and objectives apply to the ancillary components and belt drive.

- Requirements
 - Slip-free drive of ancillary components
 - Maintenance-free
 - Optimum power output of ancillary components
- Objectives
 - Improvement of noise characteristics
 - Increase in charge levels in the lower speed range

System structure



The belt drive consists of following components:

- Torsional vibration damper
- Starter motor
- Alternator
- A/C compressor
- Belts
- Tensioning pulleys or one idler pulley

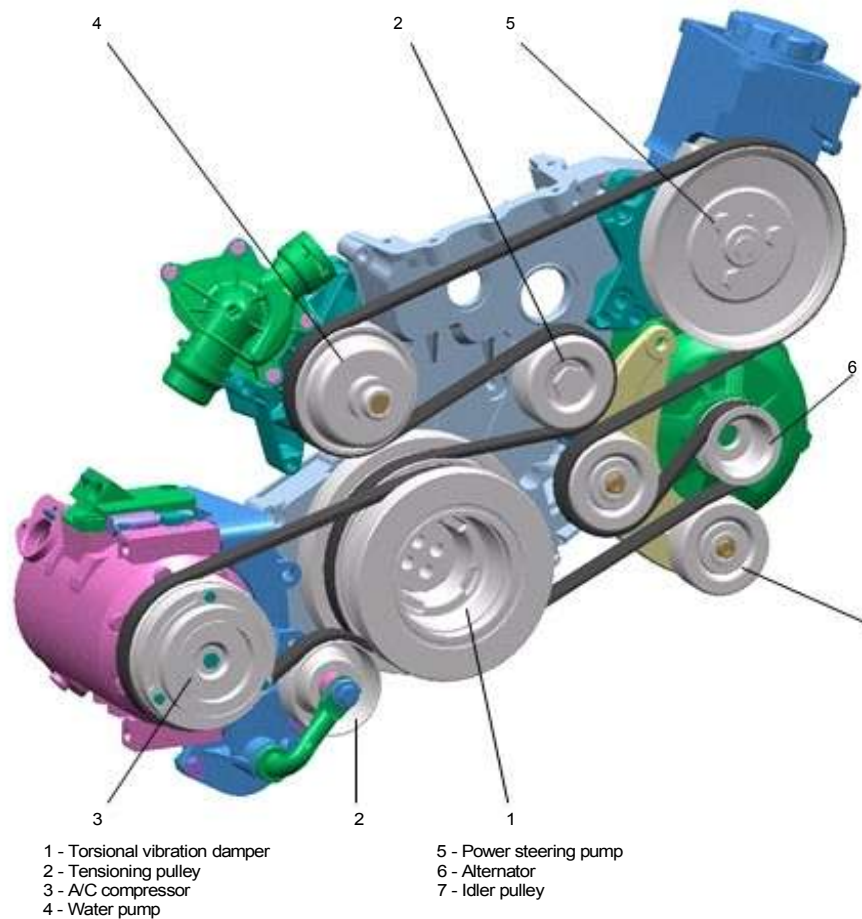
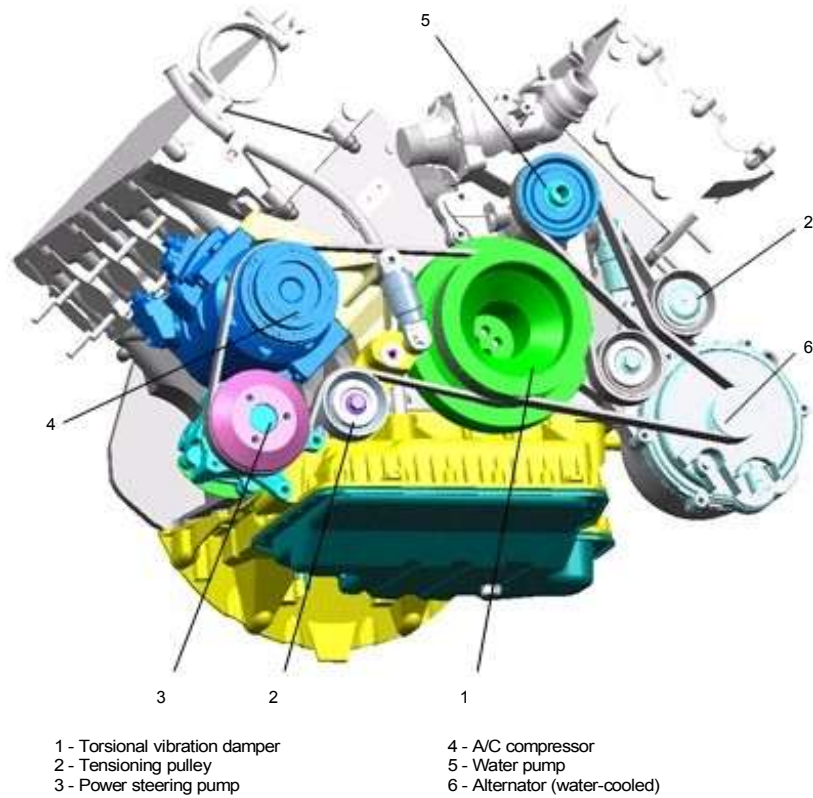


Fig. 29: Belt drive M57 E38/E39

KT-3705



KT-3693

Fig. 30: Belt drive M67 E38

Component description

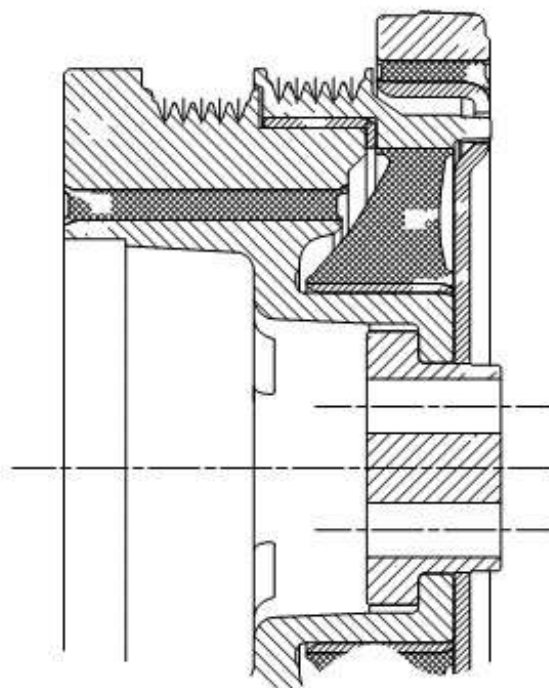
Torsional vibration damper



The M57 and M67 both feature an adaptive (engine-specific) vibration damper with decoupled belt pulley.

Torsional vibration damper M57 E38/E39

- Dual damper adapted specifically to type of engine
- 3 variants of vibration dampers
(integrated pulley for ancillary component drive)
- Mounting with 4 central bolts
(tightening torque 45 Nm)



KT-4316

Fig. 31: Torsional vibration damper M57

Vehicle	Part number
E39 manual gearbox (S5D 390Z)	2 247 886.1
E39 automatic gearbox (GM-5)	2 247 890.9
E38 automatic gearbox (5HP-24)	2 248 520.9

Torsional vibration damper M67 E38

- Torsional vibration damper with decoupled pulley
- Mounting with 4 central bolts
(tightening torque 45 Nm)



Starter motor

Starter M57 E38/E39

- Starter secured to gearbox casing
- Weight-optimised version

Starter M67 E38

- Starter mounted on engine block on cylinder bank 2 side
- Common part with M51
- Starter cable (separate power supply line for E-box)

Technical data:

	M57	M67
Rated output	2.2	kW
Rated voltage	12	V
Test voltage	13–0.26 V	V

Alternator (also refer to TLF TA3 M51 TÜ)



Alternator M57 E38/E39 (as on M51)

- Basic compact alternator 95 A with start load response
- Special version 140 A alternator with load response

Alternator M67 E38

- Liquid-cooled compact alternator (as on M62)

A/C compressor

- Output-controlled A/C compressor
- Maintenance-free drive

Belts

Poly-V-belt drive M57 E38/E39

- Maintenance-free
- Automatic retensioning
(concept based on M47)
- Two belt levels
 - Rear: Water pump, power steering pump,
Alternator
 - Front: A/C compressor

Poly-V-belt drive M67

- Maintenance-free
- Self-retensioning
- Two belt levels
 - Rear: A/C compressor, power steering pump
 - Front: Alternator, water pump

Tensioning pulley or idler pulley

The tensioning pulley is designed as a spring-loaded element, thus rendering the hydraulic connection (M47) unnecessary.

The idler pulley arranged on the alternator ensures the belt drive runs more smoothly.

