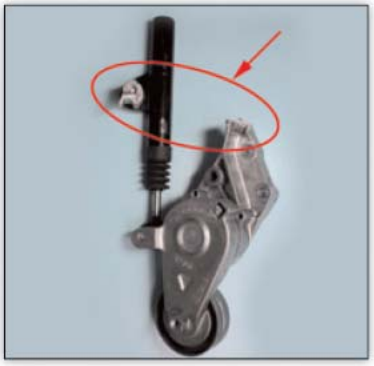
SERVICE-INFO

Overrunning Alternator Pulley related failures

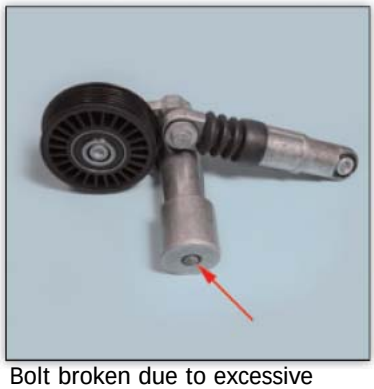
As vehicle manufacturers are constantly increasing the electrical requirements on today's vehicles, alternators are getting larger. Torsional vibration from the crankshaft has historically been transmitted into the accessories with little or no adverse effect. Larger alternators with larger rotating masses require larger belts and corresponding larger tensioners to cope with the increase in mass and vibration.

The Overrunning Alternator pulley (OAP) is a one way clutch fitted to the alternator that allows the alternator (largest mass in the auxiliary drive) to be decoupled when the crankshaft slows thus reducing the torque reversal seen in a typical auxiliary drive belt system. The OAP is a cost effective solution for vehicle manufacturers compared to larger belts and tensioners.

When carrying out an auxiliary drive belt replacement it is essential that all related components are checked for wear or damage. The OAP must be checked and replaced if found to be faulty. With the belt removed and the alternator rotor locked the OAP should be free to rotate in the anti clockwise direction only. Failure to replace a faulty OAP will result in excessive vibration that can potentially damage the related components. Below are some examples of typical vibration induced failures consistent with a failed OAP.



Excessive vibration causing housing to break.



Bolt broken due to excessive side load.

Excessive vibration causing housing to break.

Many vehicle applications use more than one alternator, the easiest way to correctly identify the OAP required is to cross reference the number highlighted on the end of the pulley. A special tool, a torx with locking piece is required to remove OAP's

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