



The Role of the Automatic Tensioner

The dual roles of the automatic belt tensioner are to: 1) apply the correct amount of tension on the serpentine belt as it transfers torque from the crankshaft to the system accessories and 2) smooth out crankshaft vibration associated with the transfer of power. Automatic belt tensioners are wear parts, not "hard parts." The average automatic belt tensioner arm will cycle over one billion times for every 160,000 vehicle kilometers. Internal components in the tensioner can fail causing stress on the belt and other accessory components. A tensioner is a relatively inexpensive part to replace and can help protect other components such as the water pump, alternator and A/C compressor from undue stress and premature failure. For example, a major cause of alternator comebacks is pulley bearing failure due to excessive heat, vibration or improper belt tension. Belt slippage and even small amounts of misalignment can cause diminished system component output or even total component failure.



An essential best practice for a technician considering belt replacement or any other component within the accessory belt drive system is a diagnostic check of the tensioner. While the engine is running, with the air conditioning on, check the tensioner arm for excessive vibration. If the tensioner arm vibration can be seen with the naked eye, a new tensioner is needed.

With the engine off, also inspect the pulley surface and spin the pulley to check the bearing. Any unusual wear is a sign that replacement is needed. Remember, any system is only as good as its weakest link, and a tensioner is a very critical link in the accessory belt drive system.