

TROUBLE

the sidewalls could give an indication about the potential for early failure.

is the key indicator to a wide range of potential causes.

KEY INDICATOR

The extra demand on the drive system due to the many ancillary devices resulted in the need for more tensioners and idlers in the drive which, as with any other bearing device, wear out. Excessive noise is a good indicator of tensioner problems because a healthy tensioner does not make squeaks, rattles, chirps or churning noises.

If you have a squealing or noisy belt, the chances are that the noise is being produced from a misalignment of the belt in the drive system, due to a worn out tensioner or idler. A simple way to check this is to run the engine and spray the belt with a mist of water. If the noise subsides briefly and then returns, it is time to change the tensioner or idler. Always replace the belt at the same time. This is also the best time for a more exhaustive examination and overhaul of the system.

As the table clearly shows, excessive noise does not necessarily identify the tensioner as the source of any problems. In the examples shown, noise

VISUAL CHECKS AND SIGNS

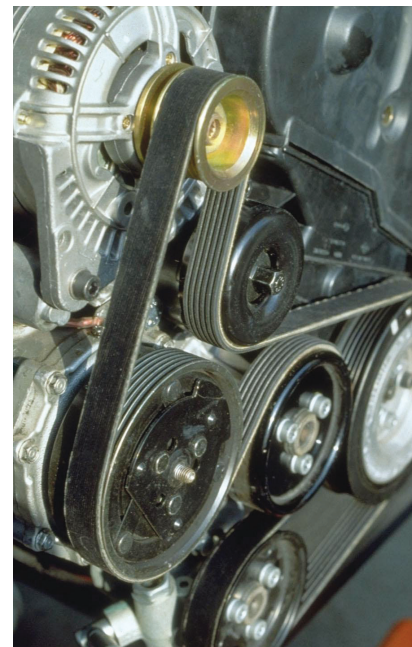
A multi-ribbed accessory drive belt will tolerate only 1° of misalignment before it begins to generate noise. Glazing or chafing on the sidewall may be a strong indication of misalignment. Cracks in the cord may be related to misalignment, but there are other possible causes (see table) and early failure may be likely.

ALIGNMENT

Alignment can be quickly checked with a straight edge, but it is less accurate than a specialist tool. Pulley condition is also critical to belt alignment and the performance of the accessory drive. There should be no chips, cracks or flat spots. If plastic pulleys are fitted, check that the flanges of the sidewalls are not cracked or broken. If the pulley is compromised in any way, the tensioner should always be changed as well.

PLAY TESTS

It's also important to check for play in the pulley arm. With the engine running, check for excessive movement or 'belt flutter' as it moves up and down.



INSPECTIONS – WHAT TO LOOK FOR:

- Belt cracks/damage/glazing.
- Signs of rust around the tensioner.
- Noise.
- Misalignment.
- Pulley wear, tear or arm movement.

Sometimes the wear is less obvious. With the engine off, rotating the pulley may indicate unwanted resistance, while a gentle lateral rock may reveal movement as a result of failure of the internal bushes. This, too, can cause misalignment.

CONCLUSION

The belts fitted to today's accessory drives have a much more demanding task. They run at higher speeds, have longer duty cycles, drive more components, operate in far more hostile environments and at a much higher level of tension than those fitted even five years ago. Their importance to the healthy performance of many on-board systems should not be ignored.

need to know more?

- For more information on Gates timing belts and tensioning equipment circle readerlink 087

CAUSE	EFFECT	SYMPTOM
Gravel penetration	Vibration/slipping	Noise
Constant high temperature	Cracks to overcord	Noise
Bearing failure	Misalignment	Noise
Low temperature	Tension loss	Noise
Slight misalignment	Wear to edge of cord	Noise
Severe misalignment	Rib cracks/glazed edge	Noise
Tension too low	Rib glazing/slipping	Noise
Tension too high	Pilling	Noise
Fluid/sand/dust penetration	Slipping	Noise
Apex interference	Slipping	Noise
Automatic tensioner	Slipping	Noise