



**Technical faxline:  
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# Powerful Reminders

## A watching brief

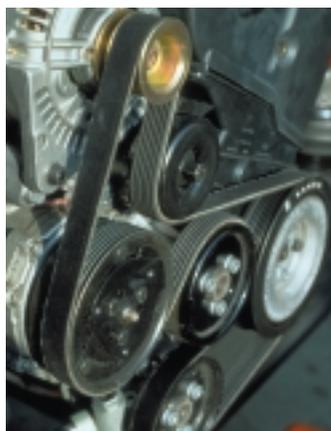
**M**ulti-ribbed belts are flatter and more flexible than regular V-belts. They can weave around smaller pulleys; turn several at the same time, transmitting power on the ribbed side as well as on the reverse. The serpentine drives employed to power alternators, water pumps, air conditioning systems and a host of on-board accessories must fit into smaller spaces inside the engine compartments. Consequently, multi-ribbed belts operate in an environment that has become increasingly hostile.

Statistics show that belt failures increase dramatically after the fourth year of service, but evidence of premature failure may materialise in many ways.

Gates has produced this quick reference of multi-rib belt wear indicators that if found, mean belt replacement is inevitable:

- **Broken belt.** Determine the cause before replacement.
- **Random cracking across the ribs.** Small yet visible cracks along the length of a rib or ribs.

**Since their first appearance in 1979, multi-ribbed belts have gradually replaced conventional V-belts in today's new cars because of the design and performance benefits. The evolution has led to a revolution in maintenance routines.**



- **Chunk-out.** Pieces or chunks of rubber material missing.
- **Pilling.** Belt material is sheared off from the ribs and builds up in the belt grooves.
- **Abrasion.** Back side of belt appears shiny or glazed. In advanced stages, the fabric becomes exposed.
- **Damaged outermost belt ribs.** Sidewalls of the belt may appear glazed or the edge-cord

may become frayed and ribs removed.

- **Uneven rib wear.** Damage to the side of the belt, a possible break in a tensile cord or jagged ribs.
- **Gravel penetration.** Small pinholes are visible on the back side of the belt.
- **Rib separation.** Belt rib begins to separate from the joined strands. If left unattended, the cover will often separate, causing the entire belt to unravel.
- **Oil contamination.** The belt surface is flaking, sticky or swollen.

**Note 1:**  
A multi-ribbed belt can ensure many miles of trouble-free performance when installed correctly. Installers must watch out for belt wear indicators whenever a vehicle enters the workshop.

## Replacement cycles

**A** four-year belt replacement interval is a good guide, but it's not precise. Idling time in traffic takes a major toll on belt life. Engines run hotter. Belts can break down much more rapidly in a car exposed to sustained periods of stop and go driving. Today's normal urban driving patterns constitute extreme operating conditions, exposing belts to excessive stress and wear.

A first indication that the belt is faulty might be a squeaking noise coming from the engine compartment. Noise is not a precise indicator. Problems are often caused by a malfunction in the drive and in such cases, replacing the belt will not be sufficient.

A thorough inspection of the pulleys, idlers and tensioners is important in order to find (and solve) the real cause of the problem. Gates recommends that new metal components should be installed whenever an auxiliary drive belt is replaced. Select the appropriate kit.

**Note 2:**  
The Gates Micro-V® kit contains a multi-ribbed belt and all the metal components (tensioners, idlers) necessary for a complete overhaul.

## Sounds like trouble

**C**ommon sources of belt noise are:

- low belt tension
  - contamination
  - belt vibration
- A screeching or squealing noise

when pulling away from rest normally indicates a lack of tension. Check belt tension and automatic tensioners.

A tapping or grinding noise is likely to be caused by a pebble embedded in the belt. A grinding sound can result from damaged bearings, which must be replaced, aligned and lubricated to eliminate the noise and further damage. Check for foreign objects.

Vibration and noise can develop over time as drive components such as pulley and spring tensioners wear out of tolerance, as bearings and brackets loosen, or as belts wear and stretch.

Always replace worn metal parts.



## OE quality range

**T**he latest air conditioning systems and the high output alternator drives found on most new cars mean that regular inspections and the timely replacement of multi-ribbed belts are now an essential part of routine maintenance.

However, belt manufacturers have already responded to the extra demands made by these technological innovations.

For example, Gates has worked closely with the car manufacturers to keep abreast of trends, developing its product ranges accordingly. The low-profile Micro-V® belts range from Gates is a perfect match for original equipment demands. It duplicates the OE fit, reducing noise, adding durability and crack resistance.

**Note 3:**  
Use the Technical faxline for range details.

