

A Question of Timing



It looks a lot like the belt that holds your pants up. It works in much the same way as a bicycle chain, except that its job is to link up various moving parts inside your engine to make them all work at the same time. For this reason, it's called a *timing belt*.

In the old days cars had a steel chain to do the same job and these chains tended to rattle as they grew old. Timing belts, on the other hand, are pretty well silent from the time they are first installed right up until the time they break without warning a few years later.

Timing belts are one of those things that work best in an engineering textbook – they're made of high-tech plastic, they're lighter than a steel timing chain, they tend to stretch less and, above all – they run silently. This was the big attraction for carmakers.

When they started breaking and wrecking peoples' engines, the carmakers said that there was no problem with the timing belts – the real problem, said the carmakers, was lack of maintenance – people weren't getting their cars serviced often enough.

Like most of the things that carmakers say, this is only partly true. The timing belts on some European models break long before their stated replacement time. Worse, although it's easy to talk about changing a timing belt as being 'maintenance', it can be a major job. On a few models you need to remove the entire engine.

Generally, the more modern the car, the more work is involved in replacing the belt. And it's not just the belt; the wheels that the belt runs around must generally be replaced as well. Then there's the ten-

sioner – a device that keeps a firm and even tension on a timing belt.

You can spend a thousand dollars or more on some cars, just on timing belt replacement. Most cars don't cost this much, but before you buy your next car, you'd better be damned sure that its timing belt doesn't need replacing. Unless someone else has replaced it already, you'll be broke if you replace it and even broke if you don't. If the service records for the car are not available, then you'll probably have to rely on the little sticker that the mechanic leaves inside the bonnet or around the driver's door. It will say when the belt was replaced. If there's no sticker then you must assume that the belt has never been replaced.

Some cars are worse than others: On some Toyotas the timing belt is good for 150,000km and even when it breaks it will do no damage, but it will instantly strand you wherever you may be, including the middle of a motorway on a wet winter's night. However, on many other Toyota engines timing belt breakage will cause major damage.

The engines that you have to be wary of are *interference engines*. If the timing belt breaks on an interference engine the engine valves will collide with the piston and bend or break. At the very least this means that the vehicle's cylinder head will need an expensive overhaul or replacement, but in a few cases timing belt breakage – especially at speed – can cause total engine destruction.

It's no fun to have any timing belt break because it will instantly strand you, but if it's a non-interference engine there'll be no damage done and you'll merely need to get your car towed to a garage for repair. On any other vehicle you're up for major repairs.

Here's a few general facts: the vast majority of recent European cars (including many rebadged as Holdens) use timing belts and most of these engines will be damaged if the belt breaks. Most modern diesel engines fitted to cars, utes & vans use timing belts and virtually all these engines will be damaged if the belt breaks. Most recent Daewoos, Daihatsus, Hondas, Isuzus, Mitsubishi's, Protons,

Subarus, Suzukis, Volkswagens & Volvos use interference engines. Most engines with four valves per cylinder are interference engines.

Where in doubt, assume that an engine will be damaged by timing belt breakage.

Some engine manufacturers are getting the message – few modern Nissan motors use timing belts – they use a timing chain system instead that in many cases outlasts the rest of the engine (there were problems with the earlier versions that appear to have been sorted out by now). However, there are still plenty of older Nissans with timing belts, so be careful.

If the vehicle you are looking at has done 100,000km and the seller (this includes dealers) cannot provide you with written evidence that the timing belt has been recently replaced, then you must assume that it needs replacing **right now** (unless the manufacturer says otherwise).

The seller should pay for all or most of this, and it should be discounted off the purchase price. Do not agree to a final price for the vehicle until you have a firm quote from a reputable garage for replacement of the timing belt, tensioner and the pulleys it runs on. Sometimes the water pump is involved in the timing belt tensioning system, and so needs to be replaced at the same time. This whole process may be very expensive, so be warned.

Dealers, by the way, will often agree to do work like this and then either not do it, or farm it out to some dodgy backstreet mechanic who will do the absolute minimum possible and with the cheapest parts. Don't fall for it. Insist that you get to choose where the work is done and always insist on receipts for the work. These receipts must include a list of both the parts fitted and their individual prices.

Once you own the car, do not put off getting the belt replaced. Remember, the damage a broken belt causes could exceed the purchase price of a cheap car. And lastly, read our equally depressing article, *Keeping it Cool*. That bargain car you are looking at might not be quite the bargain it seems

