



## Our Grumpy Old Mechanic underlines the benefits of regular maintenance...

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A very bent valve; the result of cam belt breakage in a 2008 Ford Mondeo...



Cam belt catastrophes and other (usually avoidable) horrors...

Our Grumpy Mechanic says what he thinks about ignored maintenance.

Every day I see the expensive results of vehicle maintenance being ignored. Notably these include engines that are clogged up internally because the oil and filter are not changed frequently enough, also written-off valves and cylinder heads because the cam (timing) belt has broken due to being run past its designated change period - and so on, and so on.

It seems that many motorists are unaware (or ignore the truth) that modern vehicles are far less tolerant of neglect than those of just a few years ago. In fact in many respects they are particularly fragile compared with their predecessors...

This is especially true of the engines. In short, if you want to avoid an expensive and always inconvenient breakdown, you need to have your car serviced frequently and regularly, and at the very least in accordance with the manufacturer's servicing schedules.

In terms of engine oil and filter changes, in almost every case it is beneficial to carry out the work at least twice as often as recommended by the car manufacturer. This ensures that the motor is always running with clean oil, in turn helping the mechanical components to survive for the long term, and to keep all systems (such as those that control variable valve timing set-ups) operating as they should, at optimum efficiency.

With cam (timing) belts, these **MUST** be renewed before the designated renewal time/mileage has elapsed, or the belt may well break. In many cases there is, quite simply, no margin for error. The belts are designed only to survive up to the designated change period, **NOT** beyond it, and in our workshop, we often see belts that haven't yet reached the age/mileage limit, but which are already suffering from cracking and other deterioration.

It is important also to appreciate that most cam belts have a change period spelt out in terms of both time **AND** mileage, so, for example, the change recommendation could be



something like, “Renew every five years/60,000 miles, whichever comes first”. It is imperative that the belt is renewed as the first of these limits approaches...

With most modern engines, if the belt breaks, the sudden loss of synchronicity between the camshaft(s) and crankshaft will result in contact between the valves and pistons. At the least this may damage/wreck the valves, at worst it can write-off the engine.

A case in point is a 2008 diesel-powered Ford Mondeo, towed into our workshop with a broken cam belt and with the valves having violently contacted the pistons as a result.



Drive teeth stripped from a Mondeo cam belt that had been overdue for a change.



In this vehicle the pistons survived, but the valves did not.

Inevitably, the bill for fixing it was hefty. It would have been far less expensive to have had the belt renewed when it was due...

In addition on this vehicle the engine oil was in a shocking state, so the system was flushed through and fresh oil plus a new filter was installed.

It is also worth considering renewal of all other components driven by or in the immediate vicinity of the cam belt, while the belt is off. I am thinking particularly of the cam belt tensioner assembly (renew regardless of whether the tensioner set-up appears to be in good condition) and the water pump. The pump may not be driven by the cam belt but often is located behind it, so can only be renewed with the belt taken off. Again it's best to renew a water pump located in this position at the same time as the cam belt. In view of the many hours often required to remove, re-fit and set-up a new cam belt, it makes sense to carry out all such renewal tasks at the same time, saving a lot of labour time and hence money.

As a general moan, why do people leave their engines alone until something actually breaks? It costs far more to sort out than to look after the motor. Do your engine - and your bank balance - a favour by having your car maintained diligently and often!