

CONTROL

inspection procedure is good engineering practice and it's about more than just following the manufacturer's recommendations concerning a particular timing belt. If that procedure determines that belts should not be crimped or twisted, specifies the type of replacement parts that should be used and that all the metal components in the drive system should be changed, the garage is halfway to creating both a standardised level of performance and an auditable trail in the event of a premature drive system failure."

With respect to drive systems, inspection and procedures must include the associated component parts with respect to:

- Signs of wear/leakage.
- Bearing failure.
- Ability to complete new duty cycle.
- Condition of drive covers (potential damage/ingress).
- Integrity of auxiliary drive system components.
- Integrity of crankshaft/camshaft pulleys etc.

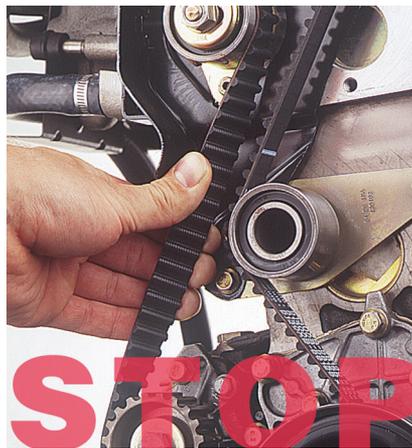
TOOLS, EQUIPMENT AND TRAINING

If standardisation is about the ability to reproduce quality, the tooling has to be correct. Perhaps



more importantly, the need to use them must be appreciated. In a straw poll of over 30 installers who attended a recent training session, few hands went up when they were asked if they always used a torque wrench when replacing tensioners.

"Several felt it only necessary to replace the metal parts if there was



clear evidence of wear. Moreover, there were differences of opinion between technicians from the same workshop. One or two were happy to set the tension of the timing belt according to 'feel'," says Iain Mitchell.

That latter is perhaps the most dangerous misconception of all. "It's a case of hope rather than judgement. Timing belt tension plays a crucial role in today's high performance engines. In the past, with shorter duty cycles and less complex drive system layouts, precise tension was less critical. Without installed tension accuracy, today's longer duty cycles, as stipulated by the vehicle manufacturer, cannot be guaranteed and premature belt failure is more likely." As such, the vehicle manufacturer sets the tension of the belt using a tool that can determine

the precise setting required, according to the known construction properties of the appropriate belt.

With respect to tools, in a quality control procedure, garage proprietors should stipulate that:

- Tensioners and pulleys are always fixed according to the recommended torque setting. For example, if the torque setting on the 'eccentric guide pulleys' specified in some GMV6 engines (eg 2.5, 2.8, and 3.0L) is incorrect, premature failure of the timing belt is inevitable.
- A suitable tool must be used to set the installed tension of timing belts fitted with a manual tensioner.

PROTECT AND SURVIVE

A quality control approach to timing belt replacements could mean the difference between profit and loss. Let's not forget the difference between a good and bad local reputation. A written inspection procedure is good engineering practice, acting as a helpful audit that prevents things from going wrong.

Access to appropriate tooling is an essential part of any quality control process. Some investment may be required. However, the thing that holds everything together is the necessary diagnostic training, which some suppliers can provide free of charge. It's up to the garage to arrange that through the motor factor.

need to know more?

- For more information on Gates timing belts and tensioning equipment circle readerlink 094