

Don't forget the **water pump**

Dayco discusses the importance of replacing the water pump along with timing belts and details the proper belt tensioning procedures for some Daewoo models.

In its lifetime, the average OE water pump will circulate literally millions of litres of coolant, so it is vital that when a unit requires replacement, a pump of matching OE quality is fitted. This is an area where there is no room for the factor, workshop or motorist to compromise.

In the same way, the need for the drive belt to be changed when the water pump is replaced cannot be

over stated. It is the responsibility of the workshop to ensure that this rule is followed because for a comparatively small cost the reassurance given by the fitting of a replacement makes the failure to do so a false economy.

One of the developments is that the water pump is often designed as an integral part of the timing system. This means that instead of being driven by

the auxiliary belt, which had been common, the water pump is driven by the timing belt. In some circumstances the water pump even doubles as a belt tensioner and it is the water pump itself that the technician adjusts to obtain the correct timing belt tension. Whatever the actual configuration, if the water pump is driven by the timing belt, then it is vital that a new water pump is fitted along with new tensioners, pulleys and idlers.

Daewoo 1.4 and 1.6 16v Belt Tensioning

Although perhaps not the most common of vehicles, there are still many Daewoo's travelling the length and breadth of the country, so they are not infrequent visitors to the service bays of the independent workshop.

Therefore, technicians need to be aware of one of the peculiarities that can affect a number of engines, including the 1.4 and 1.6 16v in the Aranos/Espero/Kalos/Lacetti/Lanos/Nexia/Nubira/Rezzo/Tacuma model range, when replacing the timing belt during a scheduled service.

On these engines, the timing belt tensioner is mounted alongside the water pump. In order to achieve the correct tension of the belt, the adjustment has to be made via the new water pump itself. Unfortunately, it is not uncommon for the replacement belt to be installed at the incorrect tension, because although the technician may have gone through the right procedure, they have undertaken the process on a hot engine. When the

engine is cold, the tension of the belt is too low, which means that during the warm up of the engine the belt will 'flap' in the drive. This can cause the pointer on the tensioner to make contact with the end stop and break. This will result in the failure of the belt, which could also lead to major engine damage.

It is therefore vital that timing belt replacement on this engine is undertaken when the engine is cold. Dayco's technical bulletin T10143EN, gives technicians some useful installation tips to prevent premature belt failure.

Tensioner Assembly and Tensioning Procedure

Dayco recommend fitting a full timing belt kit and water pump when undertaking a timing belt replacement and the KTBWP5591 is the kit for this application. The kit will ensure that the technician installs a new tensioner, idler and water pump along with a Dayco High Tenacity (HT) timing belt, which will guarantee the service life of its HT belts for two years.

Remember to operate on a cold engine

Make sure the timing notches on the camshaft pulleys and the crankshaft are correctly aligned (A, B and C on the accompanying illustration) and thread the timing belt anticlockwise, starting from the crankshaft pinion, making sure that the belt is properly tensioned.

Using the appropriate tool (J-42492 or KM-421-A), rotate the water pump clockwise to tension the belt. The belt tensioner indicator, in its release position, should rest against the stop on the right (shown in Fig. A).

Slightly tighten the water pump bolts and then rotate the crankshaft clockwise by two turns and make sure the timing notches (A, B and C) are still aligned.

Loosen the water pump bolts and rotate the water pump anticlockwise until the tension indicator is aligned with the matching indicator on the plate (see Fig. B).

Tighten the water pump bolts to a torque of 8-10 Nm and reassemble the other components in the reverse order of their disassembly.

Finally, tighten the crankshaft pulley bolt to a torque of 95Nm + 15°/30°.

