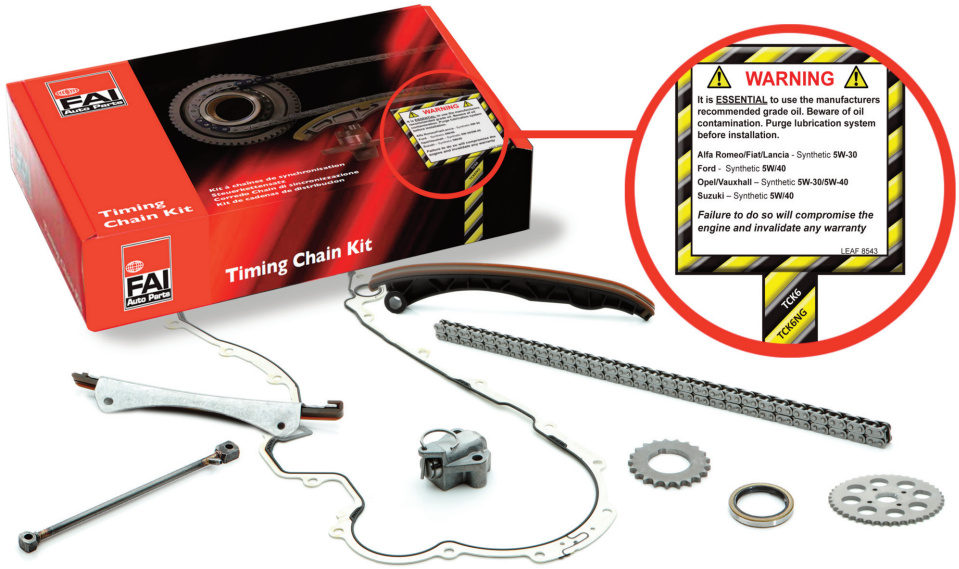
Don't get tangled up in chains

Timing chains have made a come back and are now common on new vehicles. While they are very strong and fit for purpose, they do require proper oil lubrication, as FAI Autoparts points out.

Timing chains have become the preferred choice for engine manufactures over timing belts, as they offer greater strength and reduced friction. Both of these factors enable engine designers to squeeze more power from smaller capacity engines, along with lower friction coefficients, resulting in more power, less heat and therefore less pollution.

However, as with any new technology, there is always a steep learning curve. Modern timing chain kits are no exception and it is vital to ensure the timing chain kit you are fitting works perfectly, for as long as possible.



FAI Timing Chain Kits provide everything you need to make a full repair, which saves you time, trouble and money. The precise specification for the oil to be used is right on the box.

The correct oil is vital

Modern timing chain kits are far more sophisticated than the ones used a few years ago, using powder metal gears, high velocity chains and thermo plastic tensioners (housing). They are subjected to far greater loads, whilst weighing much less.

For any engine to operate correctly, it must use the correct grade of oil, as modern oils are very complex structures, which are critical to an engine's performance and long life.

Replacing the old oil with an incorrect grade will most certainly cause failure. A timing chain relies on two things to keep working: first, lubrication, so that the metal parts do not make contact (at a molecular level) preventing seizure and incorrect tension, which in a modern engine is produced 99% of the time by a hydraulic tensioner applying pressure directly or via a tensioner rail onto one or more contact points on the chain. If this pressure is lost or reduced in any way, the chain will start to oscillate, creating fatigue in each metal link and pin of the chain, which will eventually cause the chain to break in one or more places. Before this stage, it is likely that you will get the customer back complaining of a rattling chain.

It is vital that the tensioner gets the correct volume and oil pressure from the engine's oil gallery. Without this, the tensioner will be unable to load the chain and failure will occur. If the engine manufacturer specified oil is not used, then the tensioner will not be able to maintain the correct pressure as the engine RPM increases. Secondly, all hydraulic tensioners receive their oil feed via an inlet port or valve, the diameters of which range from 1.5mm to 0.50mm, so if there is contamination in the oil (carbon, metal swarf etc.) the feed holes can become blocked very easily, starving the tensioner, which in turn will fail to load the timing chain. It is also important to change the oil filter, so that any contamination is not carried over into the new, clean oil.

To enable today's chain kit to survive, it must be fitted to a clean and uncontaminated environment. FAI also recommends that the engine lubrication system is flushed just before work is started to remove the old timing chain kit. This will remove the majority of contaminants that will have built up over the life of the engine and during installation the sump should be removed and inspected/cleaned, along with the oil pump and pick up pipe. Spending a little more time cleaning, in conjunction with using the correct oil and new oil filter, will ensure that the timing chain kit will perform optimally, as long as recommended servicing and oil changes are adhered to.

FAI is rolling out a program of technical information labels, specific to each popular timing chain kit offered in the FAI range. The label will give the exact oil specification needed for the kit, including grade e.g. 0W-30, composition e.g. synthetic/mineral, etc. and any relevant additional important information such as "low ash" for engines using DPF's.

FAI Timing Chain Kits

FAI Timing Chain Kits always supply every part you need to carry out a full repair, including gaskets, oil feed pipes, seals and special sealant where specified. The range includes money, time and space saving solutions, such as Kit TCK 47, which replaces 8 competitor part numbers for Ford Duratorq engines.

The FAI range covers all modern engine applications and is fully catalogued with a buyer's guide and pictorial references. A technical helpline is available to give you on the spot advice, should you need it.

For more information on the FAI timing Chain Kit range please visit www.faiauto.com.

FAI Auto Parts