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## Car Care Articles

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### It's All in the Timing

With automotive engines as with many aspects of daily life, timing is critical. One vehicle component often overlooked during routine maintenance is the engine timing belt. If it fails, the engine will stop and the car will coast to a stop. The lucky motorist will only have the inconvenience of being stranded on the side of the road until the car can be towed to a repair facility to have the timing belt replaced. On the other hand, the engine might suffer severe, if not catastrophic, damage to its internal components.

This potential disaster can be avoided easily and relatively inexpensively by replacing the timing belt within the required replacement interval.



Timing belts resemble an engine accessory serpentine belt in appearance, only they typically have square teeth on the inside surface. They usually are constructed of rubber reinforced with nylon. The timing belt transfers the rotation of the crankshaft to the camshaft. The rotating camshaft activates the valves, which provide air and fuel to the cylinders and expel combustion gases to the exhaust system.

The valves and pistons are constantly moving up and down at very high speeds. When the pistons are down, the valves are open; when the piston is at the top of its travel, the valves are closed. Some engines don't allow clearance between a valve at its lowest point and a piston at its highest. The timing belt, therefore, is the critical link to ensure that these components don't collide. If collision occurs, damage to the valves, pistons, cylinder head and cylinder walls can result. This can be an expensive repair.

Timing belts usually are protected from foreign objects by a cover, making visual inspection impossible.

Many domestic vehicles built within the last several years and the majority of imports are equipped with a timing belt. Other engines rely on a timing chain rather than a belt. Refer to your owner's manual or take your car to a repair facility if you are unsure. The owner's manual maintenance schedule is a source of timing belt replacement intervals, typically every 95,000 to 150,000 kilometres.

Timing belt replacement usually requires removal of the engine drive belt that operates the alternator, water pump, power steering pump and air conditioner. Consider replacing this belt, or multiple belts, when having a new timing belt installed.