Crankshaft Pulleys

Tips about change of Crankshaft Pulleys

For these reasons nowadays, the manufacturers choose to the crankshaft pulleys essentially with three different parts (image 1). Once the manufacturing process of the pulley is finished, it is extremely important that the pulley is perfectly equilibrated. The holes shown on the surface of the pulley note this fact. It is for these reasons that we must avoid to mount solid pulleys, manufactured from a metallic single piece, without the internal damper structure, which can be also found on the market. It is difficult to generalize about the number of driven kilometres in which it must be replaced, as every damper pulley is different due to the great variety of existing engines, with different cylinder numbers, elasticity of the associated pieces, and the use to which the engine has undergone, but generally is situated between 60,000 and 100,000 kilometres. However, it is very important its review and replacement mainly:

- If are detected fissures, lose or irregularities of the visible rubber.
- Excessive presence of oxide or clear contact signs on the slots external parts.
- Transmission noise perception. It is also highly recommended the together with the pulley, the replacement of the belt, and the rest of associated elements, as tensioners, bearings, etc. accordingly to the recommendations of the vehicle manufacturer, as well as the fixing screws of the pulley, always respecting the corresponding torque. Otherwise, you run the risk that one of the components is working badly and can generate a break from any of the other parties.

The crankshaft pulley is located in one of the extremes of the crankshaft, and his main function is to move the auxiliary elements of the engine, as for example, the alternator, assist steering pump, water pump, air conditioned compressor... through a V-belt known as poly V. Also, along with the flywheel, helps to absorb the crankshaft vibrations, caused by the power pulses generated by the pistons, and to correct the oscillations during its rotation.

Those vibrations can cause noise, an excessive weathering of the tensioners and bearings besides being very harmful to the V-belt work making it be subjected to constant load changes, fatiguing the rubber and even, due to the inertia of the auxiliary elements, can cause instant slips, wearing it quickly.

1. A steel core which is coupled to the crankshaft.
2. An internal rubber part, to absorb much of the crankshaft load pulse.
3. An external part with big inertia, with the channels for the belt.
Types of Damper Pulley

1. **Damper pulley, vibrations absorber:**

Composed of 2 elements, a mass to support the vibration acceleration and an energy dissipation element to absorb the vibration. Besides, the energy transferred from the piston to the crankshaft can cause up to 2 degrees of deviation on itself, and transfer this deviation to all the elements of the engine where an adequate synchronization is required, as the valve opening, synchronization of the camshaft, ignition timing, etc.

2. **Damper pulley, vibrations shock-torsional isolator:**

The high pressures derived of the combustion and low speed of working together with high moments of inertia of the auxiliary elements increase the problems in the belt transmission. This is why these types of pulleys are used, that by the inner soft elastomer, isolate the belt from the crankshaft vibrations, increasing the lifetime of the belt and the auxiliary elements.

3. **Damper pulley, viscous torsional absorber:**

The purpose of these kind of pulleys is to reduce at maximum the influence of the torsional vibrations developed in the crankshaft, so that the tensions of the material derived of these conditions remain within permissible limits. In this case, inside the pulley we found a viscous liquid in addition to the rubber elastomer.

"The damper pulley helps to absorb the crankshaft vibrations".

"Avoid mounting solid pulleys (not damper) on your vehicle".

"Check regularly the status of the crankshaft pulley".

Cautex has a wide range of crankshaft pulleys. Do not hesitate to check our product range in our website or our catalogue.

Cautex guarantees all the pulleys, taking charge of the repair if the fault is due to poor pulley.

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All the Cautex pulleys are manufactured accordingly to the quality standards required by the vehicle manufacturer.