

ENGINE TIMING AND ACCESSORY

EVIDENCES

A transverse tear across the belt.

MAJOR CAUSES OF TIMING AND ACCESSORY BELT FAILURES

WORN OR DAMAGED BELTS

EVIDENCE

• Material is worn and torn away from the belt and normally accumulates in around the engine and timing covers

TIMING



CAUSES

- Sticking of belt particles to the pulleys. This causes abnormal noise from the belt when the engine is operating.
- Misalignment of pulleys.
- · Worn or damaged pulleys.

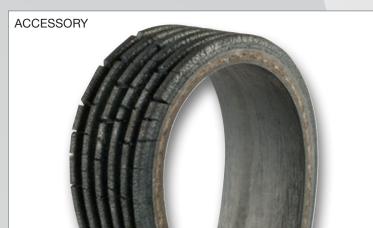
RECOMMEND

- Check the vehicle's cooling system is operating correctly.
- Check for wear or damage to the systems pulleys.
- Replace the belt and check the tensioner is tensioning correctly.
- The belt must be kept dry and free from grease or oil contamination.
- Closely follow the manufacturer's fitting instructions and guidelines.

CRACK S ON THE BELT

EVIDENCE

• Small visible cracks all over the belt.



CAUSES

• Over heating of the belt caused by friction.

CAUSES

- Excessive tension. Worn or damaged pulleys.
- High operating temperatures caused by friction or insufficient



- An over tightened belt causing it to stretch and crack.

TIMING

CAUSES

- Too low or too high working temperature.
- Ageing of the belt.
- Contact with a foreign element or a misalignment

RECOMMEND

- Replace the belt, check the length and the number of teeth are correct.
- Tension the belt to the manufacturer's recommended tensions.
- The use of an electronic tensiometer is sometimes needed to achieve the correct tension.
- Check other connected parts for any signs of heat damage.
- Check the engine for any signs of damage around the pulley and belt areas.
- Check the engine coolant levels.

DAMAGED TEETH ON THE BELT

EVIDENCE

Teeth being torn from the belt.



CAUSES

- Accelerated deterioration caused by heat or incorrect operation.
- Foreign objects such as nuts or bolts entering teeth of the belt.



CAUSES

- Teeth have detached from the belt.
- Partial or total seizure of a timing system component such as the water pump.
- Teeth are torn away from the belt frame whilst under-
- Liquid contamination such as oil or coolant.

RECOMMEND

- Replace the belt, check the length and the number of teeth are correct.
- Check for any oil or coolant leaks and repair.
- Closely follow the manufacturer's fitting instructions and guidelines.

- Fitting the kit using the incorrect tools
- fitting process.

• Replacing the belt and re-aligning all the pulleys.

• Check all the components of the auxiliary and timing systems.

• Closely follow the manufacturer's fitting instructions and guidelines.

• Damage to the back of the belt, normally small holes and fraying.

AN UNEVEN BREAK ACROSS THE BELT



CAUSE

• Debris entering the belt system due to damaged or missing covers.



CAUSES

- Excessive tension.
- An defective external component.
- Solid or liquid contamination.

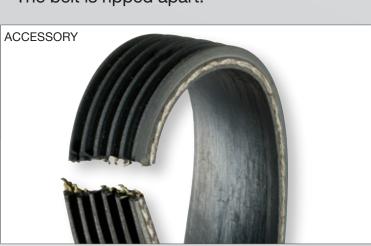
RECOMMEND

- Replace the belt, check the length and the number of teeth are correct.
- Check the engine for oil or coolant leaks and repair.
- Check all the systems pulleys for wear or damage.
- Closely follow the manufacturer's fitting instructions and guidelines.

A CLEAN BREAK IN THE BELT

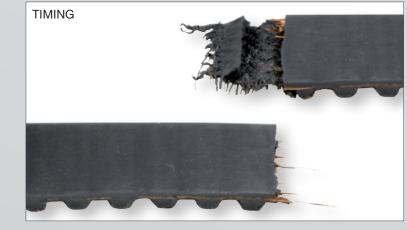
EVIDENCE

The belt is ripped apart.



CAUSES

- Foreign object stuck between the belt and the
- pulley(s).
- Excessive tension. Damage to the internal material of the belt (fiberglass)
- Incorrect tools such as screwdrivers being used whilst fitting the belt.



CAUSES

- Defective material.
- Incorrect tools such as screwdrivers being used whilst fitting the belt.
- The belt being folded before fitment or when in use.
- Solid or liquid contamination.

RECOMMEND

- Replace the belt, check the length and the number of teeth are correct.
- Check the engine for oil or coolant leaks and repair.
- Check for wear or damage on the pulleys.
- Closely follow the manufactures fitting instructions and guidelines.

MELTED BELT OR AN EXTERNAL COMPONENT PROBLEM

EVIDENCE

• The back of the belt may show signs of melting or excessive wear.



- The belt slipping over the tensioner, due to low tension on the belt when in operation.
- Defective over running alternator pulley (OAP).



CAUSES

- Excessive tension.
- External components seized or broken (defective water pump or seized pulley).

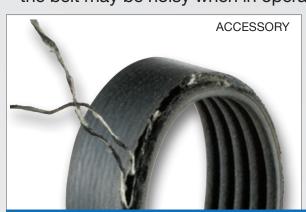
RECOMMEND

- Replace the belt and check all pulleys and tensioners are operating correctly.
- Check the tensioner is adjusted to the correct tension.
- Closely follow the manufacturer's fitting instructions and guidelines.

WEAR ON THE EDGES OF THE BELT

EVIDENCE

• Premature wear on the edge of the belt may expose the cords of the belt, the belt may be noisy when in operation.





CAUSES (ACCESSORY)

RECOMMEND

- such as screwdrivers.
- The belt moving on the pulleys during the

CAUSES (TIMING)

- Misalignment of the pulleys or tensioners.
- Contact with a foreign body such as outer engine covers.



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