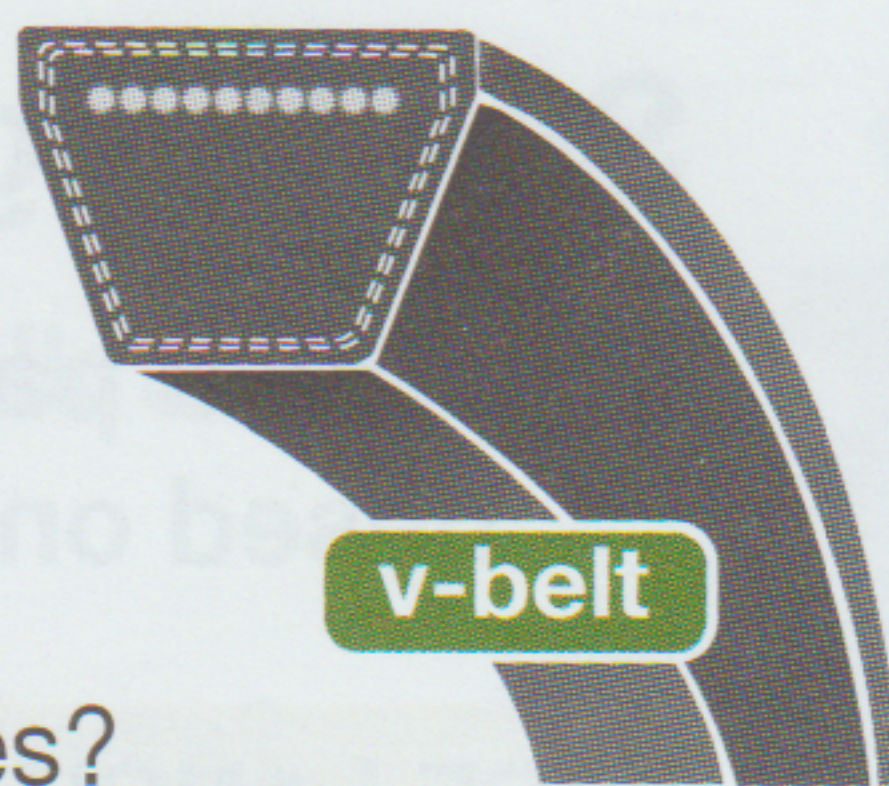


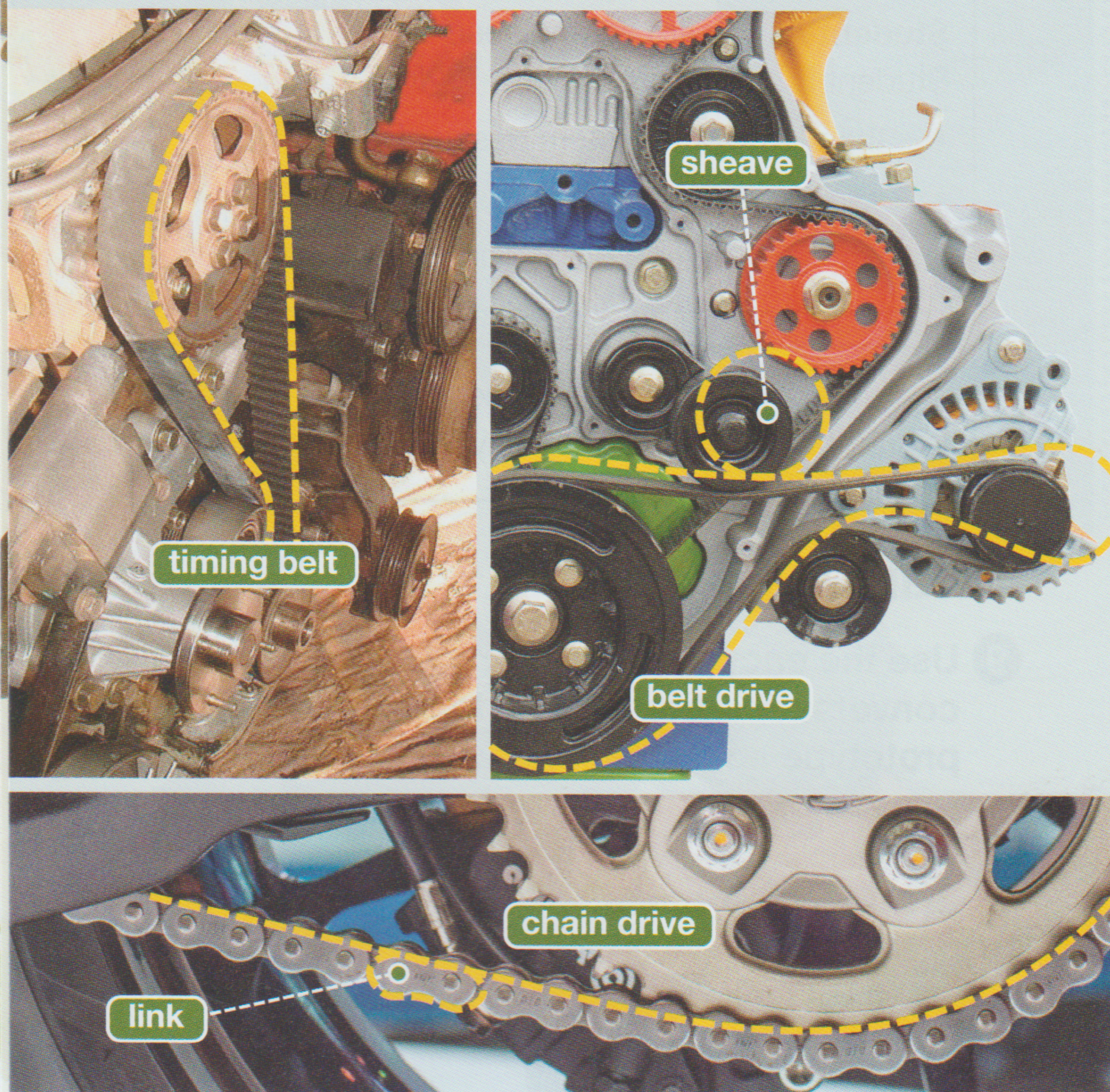
## Get ready!

- 1 Before you read the passage, talk about these questions.

- 1 What are some types of belt drives?
- 2 What do timing belts and chain drives have in common?



## Automotive Monthly



## Need Advice – Ask Rick!

Dear Rick,

I just bought a twelve-year-old car. Should I change the **timing belt** to avoid **slippage**?

Jamie, North Springfield

Dear Jamie,

Your timing belt already has **grooves** that prevent slippage. The grooves also ensure **synchronous rotation**. They work like the **links** on a **chain drive**. But unlike chain drives, timing belts are rubber. Eventually they wear out and break. Have a mechanic check the strength of your timing belt.

On the other hand, other **belt drives** can experience slippage. This occurs between the belt and the **sheave**. **V-belts** with shallow **wedge angles** are the most likely to slip. Check and re-tension your belt drives regularly.

Rick Wallace, Automotive Expert

## Reading

- 2 Read the advice column. Then, choose the correct answers.

- 1 What is the column mainly about?
  - A how to replace a timing belt in a car
  - B a comparison of belt and chain drives
  - C the importance of maintaining belt drives
  - D the pros and cons of synchronous rotation belts
- 2 What does the expert recommend to correct slippage?
  - A using v-belts with shallow wedge angles
  - B replacing belt drives with chain drives
  - C increasing friction between the belt and sheave
  - D adjusting belt tension regularly
- 3 Which is NOT a consequence of improper belt maintenance?
  - A widening of the wedge angle
  - B slippage between belt and sheave
  - C belt breakage
  - D loss of synchronous rotation

## Vocabulary

- 3 Match the words (1-7) with the definitions (A-G).

- |                   |                            |
|-------------------|----------------------------|
| 1 ___ link        | 5 ___ timing belt          |
| 2 ___ v-belt      | 6 ___ wedge angle          |
| 3 ___ sheave      | 7 ___ synchronous rotation |
| 4 ___ chain drive |                            |
- A a state in which input and output shafts move in perfect time
  - B a machine component that uses a metal chain to transmit power
  - C a grooved pulley that partners with a belt
  - D a drive with a belt that is wider along one edge
  - E a measurement of a belt drive's sheave angle
  - F a belt constructed with grooves to ensure that movement is timed correctly
  - G an individual segment of chain



**4 Write a word or phrase that is similar in meaning to the underlined part.**

- 1 A sheave is constructed with a(n) long, narrow indentation to hold the belt.  
\_ r \_ \_ v e
- 2 We installed a machine component that uses a flexible belt to transmit power.  
b e \_ \_ \_ r i \_ \_
- 3 Loose belts lead to gradual movement away from the original position.  
\_ \_ i \_ p a \_ e

**5 Listen and read the advice column again. Why do timing belts have grooves?**

## Listening

**6 Listen to a conversation between two engineers. Mark the following statements as true (T) or false (F).**

- 1 \_\_\_ The woman replaced a broken part.
- 2 \_\_\_ The maintenance problem damaged an engine.
- 3 \_\_\_ The man plans to perform further maintenance on a belt.

**7 Listen again and complete the conversation.**

**Engineer 1:** Hey, Jay. I just finished working on that **1** \_\_\_\_\_.

**Engineer 2:** Thanks, Beth. What was wrong?

**Engineer 1:** There was a lot of **2** \_\_\_\_\_. I re-tensioned the belt.

**Engineer 2:** I see. It was a **3** \_\_\_\_\_ - \_\_\_\_\_, right?

**Engineer 1:** Yeah. We should replace it soon. We don't want it to keep slipping on the **4** \_\_\_\_\_.

**Engineer 2:** Yeah, we don't want the engine to **5** \_\_\_\_\_, either. How long do you think it'll last?

**Engineer 1:** **6** \_\_\_\_\_ no longer than two months.

**Engineer 2:** I'll put it on the maintenance schedule.

## Speaking

**8 With a partner, act out the roles below based on Task 7. Then, switch roles.**

**USE LANGUAGE SUCH AS:**

*I just finished ...*

*We don't want ...*

*I'd say ...*

**Student A:** You are an engineer. Talk to Student B about:

- maintenance on an engine
- what parts need to be replaced or repaired
- how soon the additional maintenance should be performed

**Student B:** You are an engineer. Talk to Student A about maintenance on an engine.

## Writing

**9 Use the advice column and the conversation from Task 8 to fill out the maintenance schedule.**



### Engine Maintenance Schedule

Maintenance Date: \_\_\_\_\_

Part Name: \_\_\_\_\_

Describe the maintenance: \_\_\_\_\_

How soon is the maintenance needed? \_\_\_\_\_