2 Bearings

What kind of bearings do I need?

Rolling Contact

Rolling contact bearings use rollers to support loads. They have an **inner race** and an **outer race**. They accommodate different types of force and motion. Load-carrying capacity: LOW – MEDIUM

- **Ball bearings** use spherical rollers. They support **radial** and **axial** motion.
- **Straight roller bearings** use cylindrical rollers. They support radial motion.
- **Tapered roller bearings** use conical rollers. They support radial forces and moderate thrust forces.
- **Thrust roller bearings** use barrel-shaped rollers. They support thrust motion.

Journal

Journal bearings have no rolling parts. The shaft rotates inside a lubricated **sleeve** instead. Load-carrying capacity: HIGH

Get ready!

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

1 Why are bearings important?
2 What are some different types of bearings?

Reading

2 Read the poster. Then, mark the following statements as true (T) or false (F).

1 __ Rolling contact bearings have a lubricated sleeve.
2 __ A tapered roller bearing is a type of rolling contact bearing.
3 __ Journal bearings can carry a heavy load.

Vocabulary

3 Match the words or phrases (1-8) with the definitions (A-H).

1 __ ball bearing
2 __ thrust roller bearing
3 __ tapered roller bearing
4 __ straight roller bearing
5 __ axial
6 __ radial
7 __ journal bearing
8 __ rolling contact bearing

A a bearing that uses cone-shaped rollers
B a bearing that uses metal cylinders
C a bearing that uses a lubricated tube
D any bearing that uses rolling parts to support and direct motion
E a bearing that uses metal spheres
F a bearing that uses barrel-shaped rollers
G related to movement along an axis
H related to movement across an axis

4 **Read the sentence pairs. Choose which word or phrase best fits each blank.**

1 **inner race / outer race**

A The _____ rotates with the shaft.

B The _____ remains stationary relative to the shaft.

2 **sleeve / bearing**

A The blockage stopped the shaft from moving through the _____.

B The engineer needs a different type of _____ for radial motion.

5 🎧 **Listen and read the poster again. What type of bearing cannot accommodate radial motion?**

Listening

6 🎧 **Listen to a conversation between an engineer and an assistant. Choose the correct answers.**

1 What is the conversation mostly about?

A replacing different bearings

B oiling an old bearing

C repairing a broken bearing

D installing a particular bearing

2 What will the woman probably do next?

A install a thrust roller bearing

B repair the inner race of a ball bearing

C purchase bearings at the hardware store

D lubricate the sleeve of a journal bearing

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

Engineer: Vicki, could you **1** _____ _____ _____ _____?

Assistant: Sure, Paul. What is it?

Engineer: Could you please go to the hardware store? I need a couple of **2** _____.

Assistant: Of course. What kind do you need?

Engineer: I need two **3** _____ _____ _____.

Assistant: Okay. Didn't you break a **4** _____ _____ earlier?

Engineer: That's right, I almost forgot. I also need an **5** _____ _____ for a ball bearing.

Assistant: Got it. I'll **6** _____ _____ right now.

Speaking

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

USE LANGUAGE SUCH AS:

Could you please ...?

What kind of ...?

I need ...

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

- an errand you need him or her to run
- what hardware you need
- when you will need the hardware

Student B: You are an assistant. Talk to Student A about what hardware to buy.

Writing

9 **Use the poster and the conversation from Task 8 to fill out the expense report.**

Mason-Reynolds

Expense Report

Date: _____

Purchase made by: _____

- What did you purchase?

_____

_____

- Why did you purchase it?

_____

_____

Total Cost: _____