

## 1. Reading comprehension

### Text: Monitoring an Automated Production Line

In many modern factories, engineers **have improved** automated production lines to increase efficiency and reduce downtime. Over the past few years, automation teams **have installed** advanced sensors on each station of the assembly process. These sensors continuously monitor temperature, pressure, and vibration levels.

Recently, the maintenance team **has been observing** unusual vibration patterns on one of the robotic arms. The arm **has worked** normally for years, but in the last two weeks it **has been showing** signs of mechanical wear. Because of this, engineers **have been running** diagnostic routines every morning.

The new monitoring software **has already detected** several anomalies that were not visible before. As a result, the factory **has been improving** its predictive maintenance strategy to prevent unexpected failures.

## 2. Comprehension Questions

### A. Answer the questions

1. What improvements have engineers made to the production lines?
2. What have automation teams installed on the assembly stations?
3. What unusual issue has the maintenance team been observing?
4. For how long has the robotic arm been showing signs of wear?
5. What has the new monitoring software detected?

### B. True or False

1. Engineers have installed sensors only on the final station.
2. The robotic arm has been working normally for years.
3. The software has not detected any anomalies.
4. The factory has been improving its maintenance strategy.

## 3. Grammar Lesson

### Present Perfect

#### Form:

**have/has + past participle**

#### Uses:

- Experiences
- Actions that affect the present
- Actions that happened at an unspecified time
- Recently completed actions

**Examples:**

- Engineers **have upgraded** the PLC controllers.
- The system **has detected** several errors.

**Present Perfect Continuous****Form:****have/has + been + verb-ing****Uses:**

- Actions that started in the past and are still happening
- Actions that stopped recently but have present results
- Emphasis on duration

**Examples:**

- The robot **has been operating** without interruption for 10 hours.
- They **have been testing** a new control algorithm.

**4. Vocabulary**

Term (English)	French	Definition
<b>Sensor</b>	Capteur	Device that detects physical changes
<b>PLC (Programmable Logic Controller)</b>	Automate programmable	Controls industrial processes
<b>Diagnostic routine</b>	Routine de diagnostic	A sequence of tests run to find faults
<b>Predictive maintenance</b>	Maintenance prédictive	Maintenance based on predicting failures
<b>Vibration</b>	Vibration	Mechanical oscillation

**5. Grammar Exercises****A. Fill in the blanks (Present Perfect or Present Perfect Continuous)**

1. Engineers ..... (upgrade) the automation software recently.
2. The robot ..... (operate) continuously since last night.
3. We ..... (install) new safety sensors on the conveyor.
4. The system ..... (run) diagnostics for 30 minutes.
5. The operator ..... (notice) unusual temperature changes .

**B. Choose the correct option**

1. The motor (**has stopped / has been stopping**) unexpectedly.
2. They (**have tested / have been testing**) the new control algorithm all day.
3. The PLC (**has generated / has been generating**) error reports since morning.

**6. Translation Practice****A. English → French**

1. The engineers have installed a new automation module.
2. The robotic arm has been working without interruption.
3. The system has detected an overload in the motor.

**B. French → English**

1. Les techniciens ont amélioré le système de supervision.
2. L'équipe a testé un nouveau capteur intelligent.
3. La machine fonctionne depuis deux heures.

**7. Writing task**

Write a short paragraph (6–8 sentences) describing an automated system in your field.  
Use **both** Present Perfect and Present Perfect Continuous.

You may talk about:

- Robotic arm
- PLC-controlled process
- Conveyor belt
- Smart sensor system

Example starter:

"In our laboratory, the automation team has installed..."