Task Title: Millwright Maintenance Procedure

OALCF Cover Sheet – Practitioner Copy

Learner Name: _____

Date Started: _____

Date Completed: _____

Successful Completion: Yes ☐ No ☐

Goal Path:	Employment	■	Apprenticeship	■	
Secondary School	☐	Post Secondary	☐	Independence	☐

Task Description:

The learner will scan a document and follow written instructions to perform tasks related to using a procedure in a workplace.

Main Competency/Task Group/Level Indicator:

- Find and Use Information/Read continuous text/A1.2

Materials Required:

- Pen/pencil and paper

Learner Information

Millwrights follow a procedure to perform required maintenance in the workplace. This helps them to ensure the correct tools, measurements and safety procedures are followed.

Scan the **Millwright Maintenance Procedure: Changing and Inspecting Gears** instructions.

Millwright Maintenance Procedure: Changing and Inspecting Gears

Step 1: Safety Precautions

1. Power off the machine and follow lockout/tagout (LOTO) procedures to ensure safety.
2. Wear proper PPE (gloves, safety glasses, steel-toe boots).
3. Verify that all moving parts are fully stopped before proceeding.

Step 2: Remove the Gear Assembly

1. Use a 13mm wrench to remove the housing cover and expose the gears.
2. Note the orientation of the gears before removal (take a picture if necessary).
3. Use a gear puller to remove the gear carefully, avoiding damage to surrounding components.
4. Place the removed gear on a clean surface for inspection.

Step 3: Inspect the Gear

1. **Check for wear and damage:**
    - Look for pitting, cracks, broken teeth, or unusual wear patterns.
    - If damage is found, the gear must be replaced.
2. **Measure the gear thickness using a digital caliper:**
    - Compare the reading with the specification in the manual (e.g., 12.5 mm ± 0.1 mm).
    - If out of range, use a new gear.
3. **Check gear backlash (clearance between teeth) using a feeler gauge:**
    - Compare the measurement with the acceptable range (0.15 mm ± 0.05 mm).
    - If out of tolerance, adjust the gear positioning during installation.

Step 4: Install the New Gear

1. Clean the mounting surface using a degreaser and a clean cloth.
2. Apply a thin layer of lubricant to the shaft and gear teeth.
3. Position the new gear correctly, ensuring proper alignment with existing components.
4. Secure the gear with bolts and use a torque wrench to tighten according to specifications.

Step 5: Final Alignment and Testing

1. Use a dial indicator with a digital display to check gear runout (misalignment).
    - The reading must not exceed 0.02 mm.
    - If out of tolerance, adjust the gear position.
2. Manually rotate the gear to ensure smooth movement.
3. Reinstall the housing cover and secure it with the 13mm wrench.

Step 6: Documentation and Cleanup

1. Record the following in the online maintenance log:
    - Gear replacement details (measurements, clearances, torque settings).
    - Condition of the old gear (reason for replacement).
    - Any additional notes or issues encountered.
2. Remove tools and debris from the work area.
3. Remove lockout/tagout devices and power on the machine.
4. Observe the machine running to ensure proper gear function.

Work Sheet

Task 1: List two safety precautions to follow.

Answer:

Task 2: Which tool is used to remove the gear assembly?

Answer:

Task 3: The gear has pitting and a broken tooth. What should the millwright do?

Answer:

Task 4: The gear backlash clearance measures 0.22 mm. What should the millwright do?

Answer:

Task 5: In the Final Alignment and Testing what does the dial indicator measure?

Answer:

Task 6: List two items that must be recorded in the online maintenance log.

Answer:

_____

Answers

Task 1: List two safety precautions to follow.

Answer: Any two of the following are acceptable

- Power off the machine and follow lockout/tagout (LOTO) procedures to ensure safety.
- Wear proper PPE (gloves, safety glasses, steel-toe boots).
- Verify that all moving parts are fully stopped before proceeding.

Task 2: Which tool is used to remove the gear assembly?

Answer: A 13 mm wrench

Task 3: The gear has pitting and a broken tooth. What should the millwright do?

Answer: Replace the gear

Task 4: The gear backlash clearance measures 0.22 mm. What should the millwright do?

Answer: Adjust the gear positioning during installation

Task 5: In the Final Alignment and Testing what does the dial indicator measure?

Answer: Checks the gear runout or misalignment

Task 6: List two items that must be recorded in the online maintenance log.

Answer: Any two of the following are acceptable

- Gear replacement details (measurements, clearances, torque settings).
- Condition of the old gear (reason for replacement).
- Any additional notes or issues encountered.

Performance Descriptors

Levels	Performance Descriptors	Needs Work	Completes task with support from practitioner	Completes task independently
A1.2	Scans text to locate information			
	Locates multiple pieces of information in simple texts			
	Reads more complex texts to locate a single piece of information			
	Makes low-level inferences			

This task: Was successfully completed ☐ Needs to be tried again ☐

Learner Comments:

Instructor (print): _____

Learner (print): _____