Task Title: Millwright Maintenance Procedure

OALCF Cover Sheet – Learner 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:

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