

Drilling Process Step-by-Step Work Instruction

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Prepared By:

Approved By:

Department:

1. Purpose

To provide step-by-step instructions for carrying out the drilling process safely and efficiently.

2. Scope

This work instruction applies to the drilling process in machining operations for all relevant staff.

3. Tools & Materials

1. Drill press or drilling machine
2. Drill bits (as specified in drawing)
3. Workpiece
4. Clamps or vice
5. Personal Protective Equipment (PPE): safety glasses, gloves, ear protection
6. Cutting fluid (if required)
7. Measuring tools (caliper, ruler, gauge)

4. Step-by-Step Instructions

1. **Preparation:** Ensure the work area is clean and all required tools and materials are available.
2. **PPE:** Wear necessary personal protective equipment before beginning the process.
3. **Setup:** Install the appropriate drill bit securely in the machine chuck.
4. **Workpiece Positioning:** Secure the workpiece on the machine table using clamps or a vice.
5. **Marking:** Mark the drilling point(s) on the workpiece using a punch for accuracy.
6. **Speed & Feed:** Set the correct spindle speed and feed rate for the material and bit size.
7. **Drilling:** Align the drill bit with the marked point and drill the hole to the required depth. Apply cutting fluid if necessary.
8. **Withdraw Bit:** Retract the drill bit slowly once drilling is complete.
9. **Cleaning:** Remove swarf and clean the workpiece and surrounding area.
10. **Inspection:** Measure and verify hole diameter and depth as per the drawing or specification.

5. Safety Notes

1. Always wear safety glasses during the drilling process.
2. Do not leave the machine running unattended.
3. Ensure all guards and safety devices are in place before operation.

6. References

Relevant engineering drawings, safety guidelines, and manufacturer's manuals.

