SOP: Verification and Installation of Tooling and Fixtures

Purpose:

This SOP details the **verification and installation of tooling and fixtures**, encompassing the procedures for inspecting, validating, and installing tooling equipment and fixtures to ensure proper fit, function, and compliance with quality standards. It includes guidelines for pre-installation checks, alignment and calibration, secure mounting, and documentation of verification results. The objective is to maintain accuracy, safety, and efficiency in manufacturing processes by ensuring all tooling and fixtures are correctly installed and functioning as intended.

Scope:

This procedure applies to all personnel responsible for the verification and installation of tooling and fixtures within the manufacturing department.

Responsibilities:

- **Tooling Technician:** Responsible for verifying, installing, and documenting tooling/fixture status.
- **Quality Inspector:** Responsible for verifying compliance with quality standards post-installation.
- **Production Supervisor:** Responsible for ensuring all processes are followed and records maintained.

Definitions:

- **Tooling:** Manufacturing aids such as cutting tools, dies, fixtures, molds, etc.
- **Fixture:** A device used to hold a part in a fixed position during manufacturing or inspection.

Procedure:

1. **Pre-Installation Checks**
    - Inspect tooling/fixtures for visible damage, wear, or foreign materials.
    - Review documentation (drawings, part numbers, calibration certificates, etc.).
    - Verify the tooling/fixture matches the job requirements and specifications.

2. **Preparation of Work Area**
    - Ensure work area is clean and free from obstructions.
    - Gather all required tools, documentation, PPE, and calibration equipment.

3. **Verification and Inspection**
    - Check alignment marks, wear limits, and integrity of mounting points.
    - Use measurement tools to confirm critical dimensions.
    - Check identification marks and traceability numbers.

4. **Installation**
    - Position tooling/fixture according to setup instructions or drawings.
    - Securely mount using appropriate fasteners or clamps.
    - Confirm fixture/tooling is level, stable, and properly oriented.

5. **Alignment and Calibration**
    - Align tooling/fixture as per specified tolerances using gauges or other alignment equipment.
    - Calibrate movable or functional elements and document settings.

6. **Functional Check**
    - Perform dry run or test operation to confirm proper function without product or with designated test pieces.
    - Address any abnormal noises, resistance, or misalignments.

7. **Verification Documentation**
    - Complete installation and verification checklist.
    - Record serial numbers, inspection results, and calibrations performed.
    - Obtain sign-off from responsible personnel.

8. **Release for Production**

- Notify supervisor and quality assurance upon successful verification and installation.
- Verify that all documentation is correctly filed and accessible.

Records:

- Tooling/Fixture Installation Checklist
- Calibration Certificates
- Inspection and Verification Logs
- Nonconformance Reports (if applicable)

References:

- Work Instructions
- Tooling/Fixture Drawings
- Company Quality Manual
- Applicable Industry Standards

Revision History:

Revision	Date	Description	Approved By
1.0	2024-06-21	Initial release	[Name/Title]