



Manual Machinist:

Working as a manual machinist involves operating manual machine tools, such as lathes, milling machines, and drill presses, to produce precision parts and components. Here are the stages of performance for a manual machinist, along with their corresponding requirements:

1. Beginner/Apprentice: Pay Range: \$18.00-\$20.00

Education/Training: High school diploma or equivalent. Completion of a vocational training program or apprenticeship in machining is beneficial.

Skills/Requirements:

- Basic understanding of manual machining principles, tools, and equipment.
- Familiarity with common machine shop safety protocols and personal protective equipment (PPE).
- Ability to read and interpret basic machining blueprints and technical drawings.
- Basic knowledge of machine tool setup and operation.
- Understanding of basic cutting tools, speeds, feeds, and machining processes.
- Basic mathematical skills for measurements and calculations.
- Attention to detail and the ability to follow instructions accurately.

2. Intermediate/Journeyman: Pay Range: \$20.00-\$25.00

Education/Training: High school diploma or equivalent. Completion of a formal training program or apprenticeship, along with on-the-job experience.

Skills/Requirements:

- Proficiency in operating various manual machine tools, such as lathes, milling machines, and drill presses.
- Knowledge of advanced machining techniques, including turning, milling, drilling, and threading.
- Ability to interpret detailed machining blueprints and specifications.
- Experience in machine tool setup, including workpiece clamping and tooling selection.
- Familiarity with measuring tools, such as micrometers, calipers, and gauges.
- Understanding of cutting tool geometry and tool life management.
- Basic knowledge of materials and their machining characteristics.
- Ability to troubleshoot and resolve common machining issues.
- Strong attention to detail and the ability to ensure high-quality standards.



3. Advanced/Senior: Pay Range: \$25.00-\$30.00

Education/Training: High school diploma or equivalent. Advanced training or certification programs in machining or specialized areas may be advantageous.

Skills/Requirements:

- Expertise in operating a wide range of manual machine tools, including specialized models and attachments.
- Mastery of advanced machining techniques, such as contouring, taper turning, and complex milling operations.
- In-depth knowledge of advanced cutting tool selection, tool grinding, and optimization.
- Ability to read and interpret complex machining blueprints, geometric dimensioning and tolerancing (GD&T), and technical documentation.
- Experience with advanced machine tool setups, including fixture design and workholding solutions.
- Familiarity with advanced measurement techniques, such as coordinate measuring machines (CMM) or optical measurement systems.
- Understanding of advanced materials and their machining considerations.
- Ability to troubleshoot and resolve complex machining issues.
- Strong communication skills to coordinate with team members and provide guidance.

4. Expert/Master: Pay Range: \$30.00+

Education/Training: High school diploma or equivalent. Extensive years of experience and continuous professional development as a manual machinist.

Skills/Requirements:

- Mastery of all aspects of manual machining, including advanced techniques, machine tools, and materials.
- Deep understanding of machining principles, tolerances, and surface finishes.
- Expert knowledge of machining tooling, including custom tooling and specialty applications.
- Ability to interpret and apply complex machining blueprints and specifications.
- Experience in training and mentoring other manual machinists.
- Strong problem-solving skills to address complex machining challenges.
- Leadership qualities and the ability to contribute to process improvement initiatives.
- Reputation for consistently delivering high-quality machined parts.