

Occupations in Machine Tool

Precision Production Trades

> Machine Tool Cutter

> Machinist

> Machinery Mechanic

Machine Tool Facts

- The first machine tools, the bow lathe and bow drill, were hand-made and have been dated back to 1200 BC.
- Inventor James Watt's need for perfectly bored cylinders in the steam engine he was experimenting with led to the development of the first "true" machine tool, called a boring mill. This water-powered tool was developed by John Wilkinson.
- In 1918, over 101,000 women were employed with the railroad, performing labor-intensive duties. Fourteen women held jobs as coppersmiths, 370 were machinists, 35 were blacksmiths, six were boilermakers, and numerous others were sheet metal workers and pipefitters.
- In 1911, women were officially allowed to join the International Association of Machinists, having membership with equal rights.
- Rosie the Riveter is a cultural icon who represents American women who worked in factories during World War II. More than six million women helped build planes, bombs, tanks and other weapons.
- Throughout the last 150 years, as machine tools improved, so did the methods by which they were powered. Power sources have evolved from hand to foot, to animal, to water, to steam, to central electrical, and then to individual electrical power.
- Today, computer-aided machining technology enables engineers and machinists to create complex and intricate patterns and designs. Often the final result is one that would have been too complex to be calculated manually.

Break free of the traditions and barriers that limit your choices.

What's stopping you? Be different! Try something new!

Is a nontraditional career in your future?

Machine Tool

A NONTRADITIONAL CAREER PATH FOR WOMEN



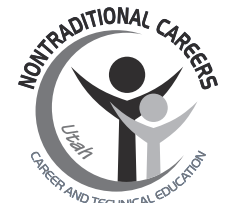
Talk to your school counselor
about a nontraditional career in STS.

Break free of the barriers that limit your career choices.

www.UtahCTE.org



UTAH STATE OFFICE OF EDUCATION
250 East 500 South P.O. Box 144200 Salt Lake City, UT 84114-4200
Larry K. Shumway, Ed.D., State Superintendent of Public Instruction
Mary Shumway, State Director of Career and Technical Education



SKILLED AND TECHNICAL SCIENCES EDUCATION

Nontraditional Careers

Did you know a nontraditional career is any occupation in which women or men comprise 25 percent or less of its total employment?

Women in nontraditional occupations earn more money than those in female-oriented fields.

Choosing a nontraditional career path can mean:

- > Greater job satisfaction.
- > Higher wages and better benefits.
- > Great advancement opportunities.
- > Economic self-sufficiency.
- > Broader job opportunities.
- > Freedom to pursue a career related to your interests and abilities.

BREAK with tradition and explore a nontraditional career!

Machine Tool as a Career

Machinists operate or attend to one type of cutting machine tool that has previously been set up. Types of cutting machine tools include sawing machines, grinding machines, lathe and turning machines, buffing and polishing machines, and drilling and boring machines.

Reading comprehension is an important skill to have for this career. The ability to read and understand written instructions, and then apply that knowledge in a hands-on manner, is key.

Career and Technical Education Pathways

High school is a great time to try out a wide range of Career Pathways by enrolling in Career and Technical Education (CTE) courses. As an added bonus, you will be developing work-related skills that can be put to immediate and profitable use.

CTE provides courses and Pathways consistent with industry training and certification, thus providing depth and meaning for both visual and hands-on learning and education that can be applied in today's job market.

Through participation in CTE, Skilled and Technical Sciences Education can guide you as you take courses in your chosen Pathway.

By taking an STS course, you will acquire essential technical and leadership skills, and learn how to properly use tools and equipment that will enable you to successfully work in your area of choice. You will also gain an important foundation of knowledge and skills necessary for continuing your education in STS.

Employment

In 2008, machinists held approximately 421,500 jobs in the United States.¹ Machinists work in manufacturing industries, making products such as motor vehicles and parts, aerospace products and parts, and other transportation equipment.

In Utah, an entry-level position for a machinist generally starts at an average hourly wage of \$11.90 or \$24,752 per year. Increases in salary are based upon training and experience.²

Working Conditions

Machinists wear protective equipment such as safety glasses to shield against bits of flying metal, and earplugs to dampen machinery noise. Machinists stand most of the day, and may need to lift moderately heavy objects. Conversely, computer numerically controlled (CNC) machine programmers work in offices that typically are near but separate from the shop floor. These work areas are usually clean, well lit, and free of machine noise.

6.9 percent of people employed as machinists are women.³

Outlook

Rising manufacturing productivity and foreign competition should limit employment growth. However, job opportunities will continue to be good, as employers continue to value the wide-ranging skills of machinists. Opportunities will also arise from the need to replace workers who retire or leave this large occupation permanently.

In Utah, the annual growth rate in this occupation is expected to be 2.4 percent through 2016, with employment totaling 5,150.²

UtahFutures

Log on to UtahFutures.org to learn more about a career as a machinist. From the home page, click on the "occupations" option to find an occupation that interests you and link to the description for that occupation. (Refer to the sample list of occupations on the back of this page.) Check out employment opportunities, working conditions, outlook, skills and abilities, and wages for your selected occupation.

Is a nontraditional career in your future?

¹ U.S. Bureau of Labor Statistics

² Utah Department of Workforce Services

³ Department of Labor, Women's Bureau, Nontraditional Occupations for Women in 2008