Assemblers and Fabricators

Summary

Pay

The median annual wage for assemblers and fabricators was $43,570 in May 2024.

Job Outlook

Overall employment of assemblers and fabricators is projected to show little or no change from 2023 to 2033.

Despite limited employment growth, about 209,800 openings for assemblers and fabricators are projected each year, on average, over the decade. Most of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

State & Area Data

Explore resources for employment and wages by state and area for assemblers and fabricators.

Similar Occupations

Compare the job duties, education, job growth, and pay of assemblers and fabricators with similar occupations.

More Information, Including Links to O*NET

Learn more about assemblers and fabricators by visiting additional resources, including O*NET, a source on key characteristics of workers and occupations.

What They Do ->

What Assemblers and Fabricators Do

Assemblers and fabricators conduct quality checks for faulty components or mistakes in the assembly process.

Assemblers and fabricators build finished products and the parts that go into them. They use handtools and machines to make vehicles, toys, electronic devices, and more.

Duties

Assemblers and fabricators typically do the following:

- Read and understand schematics and blueprints
- Position or align components and parts either manually or with hoists
- Use handtools or machines to assemble parts
- Conduct quality control checks
- Clean and maintain work area and equipment, including tools

Assemblers and fabricators need a range of knowledge and skills. For example, assemblers putting together complex machines must be able to read detailed schematics. After determining how parts should connect, they use handtools or power tools to trim, cut, and make other adjustments to fit components together. When the parts are properly aligned, they connect them with bolts and screws, or they weld or solder pieces together.

Assemblers look for faulty components and mistakes throughout the assembly process. Such assessments help to ensure quality by allowing assemblers to fix problems before defective products are made.

Modern manufacturing systems use robots, computers, and other technologies. These systems use teams of workers to produce entire products or components.

Assemblers and fabricators may also be involved in product development. Designers and engineers may consult manufacturing workers during the design stage to improve product reliability and manufacturing efficiency. Some experienced assemblers work with designers and engineers to build prototypes or test products.

Although most assemblers and fabricators are classified as team assemblers, others specialize in producing one type of product or in doing the same or similar tasks throughout the manufacturing process.

The following are examples of types of assemblers and fabricators:

Aircraft structure, surfaces, rigging, and systems assemblers fit, fasten, and install parts of airplanes, missiles, or space vehicles. These parts include the wings, landing gear, and heating and ventilating systems.

Coil winders, tapers, and finishers roll wire curs of electrical components used in electric and electronic products, including resistors, transformers, and electric motors. Using handtools, these workers also attach and trim coils or insulation.

Electrical and electronic equipment assemblers build products such as computers, electric motors, and sensing equipment. Unlike in industries with automated systems, much of the small-scale production of electronic devices for aircraft, military systems, and medical equipment must be done by hand. These workers use devices such as soldering irons.

Electromechanical equipment assemblers make and modify mechanical devices that run on electricity, such as household appliances, computer tomography scanners, and vending machines. These workers use tools such as rulers, rivet guns, and soldering irons.

Engine and machine assemblers construct and rebuild motors, turbines, and machines used in automobiles, construction and mining equipment, and power generators.

Fiberglass laminators and fabricators overlay fiberglass onto molds, forming protective surfaces for boat decks and hulls, golf cart bodies, and other products.

Structural metal fabricators and fitters cut, align, and fit together structural metal parts and may help weld or rivet the parts together.

Team assemblers rotate through different tasks on an assembly line, rather than specializing in a single task. Team members may decide how work is assigned and tasks are completed.

Timing device assemblers, adjusters, and calibrators manufacture or modify instruments that require precise measurement of time, such as clocks, watches, and chronometers.

<- Summary

Work Environment ->

Work Environment

Assemblers and fabricators work in plants and factories.

Assemblers and fabricators held about 2.0 million jobs in 2023. Employment in the detailed occupations that make up assemblers and fabricators was distributed as follows:

Miscellaneous assemblers and fabricators	1,520,800
Electrical, electronic, and electromechanical assemblers, except coil winders, tapers, and finishers	271,100
Structural metal fabricators and fitters	59,300
Engine and other machine assemblers	49,000
Aircraft structure, surfaces, rigging, and systems assemblers	31,400
Fiberglass laminators and fabricators	20,900
Coil winders, tapers, and finishers	12,100
Timing device assemblers and adjusters	400

The largest employers of assemblers and fabricators were as follows:

Transportation equipment manufacturing	25%
Temporary help services	11
Machinery manufacturing	10
Computer and electronic product manufacturing	8
Fabricated metal product manufacturing	8

Most assemblers and fabricators work in manufacturing plants, and working conditions vary by plant and by industry. Many physically difficult tasks, such as tightening massive bolts or moving heavy parts into position, have been automated or made easier through the use of power tools. Assembly work, however, may still involve long periods of standing, sitting, or working on ladders.

Injuries and Illnesses

Aircraft structure, surfaces, rigging, and systems assemblers have one of the highest rates of injuries and illnesses of all occupations. Injuries may result from incidents such as slips, falls, and overexertion. Workers reduce the risk of injury by following safety procedures and practices, such as wearing shoes with slip-resistant soles and using proper lifting technique.

Work Schedules

Most assemblers and fabricators work full time. Some assemblers and fabricators work in shifts, which may require evening, weekend, and night work.

<- What They Do

How to Become One ->

How to Become an Assembler or Fabricator

Assemblers and fabricators usually receive training in a specialty area.

The education and qualifications typically needed to enter these occupations vary by industry and employer. Although a high school diploma is enough for most jobs, experience and training are needed for advanced assembly work.

Education

Assemblers and fabricators typically need a high school diploma or equivalent to enter the occupation.

Training

Workers typically receive several months of on-the-job training, sometimes including employer-sponsored technical instruction.

Skilled assemblers and fabricators may need special training or an associate's degree, depending on the employer. For example, workers in electrical, electronic, and aircraft and motor vehicle products manufacturing typically need postsecondary education. Apprenticeship programs are also available.

Licenses, Certifications, and Registrations

The Fabricators & Manufacturers Association, International (FMA) offers certificates and training programs in fabrication, coil processing, and other related topics. Although not required, these credentials demonstrate competence and professionalism and may help a candidate advance in the occupation.

In addition, many employers, especially those in the aerospace and defense industries, require electrical and electronic assembly workers to have certifications in soldering. The Association Connecting Electronics Industries, also known as IPC, offers a number of certification programs related to electronic assembly and soldering.

Advancement

Experienced assemblers and fabricators may advance to become a supervisor or manager.

Important Qualities

Color vision. Assemblers and fabricators who make electrical and electronic products must distinguish different colors, because the wires they often work with are color coded.

Dexterity. Assemblers and fabricators should have a steady hand and good hand–eye coordination, as they must grasp, manipulate, and assemble parts and components that are often very small.

Mechanical skills. Assemblers and fabricators must have a working knowledge of basic machinery to use programmable motion-control devices, computers, and robots on the factory floor.

Physical stamina. Assemblers and fabricators must be able to stand for long periods and do repetitive tasks. Some assemblers, such as those in the aerospace industry, must frequently bend or climb ladders when assembling parts.

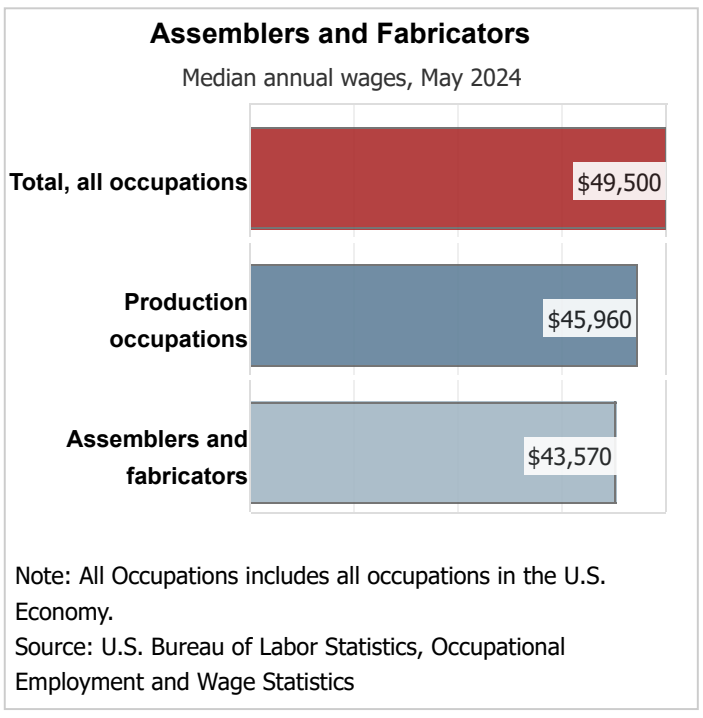
Physical strength. Assemblers and fabricators must be able to lift heavy components or pieces of machinery.

Technical skills. Assemblers and fabricators must understand technical manuals, blueprints, and schematics for manufacturing a range of products and machines.

<- Work Environment

Pay ->

Pay



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics

The median annual wage for assemblers and fabricators was $43,570 in May 2024. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than $32,270, and the highest 10 percent earned more than $63,490.

Median annual wages for assemblers and fabricators in May 2024 were as follows:

Aircraft structure, surfaces, rigging, and systems assemblers	$61,680
Engine and other machine assemblers	52,540
Structural metal fabricators and fitters	49,900
Coil winders, tapers, and finishers	47,260
Fiberglass laminators and fabricators	45,760
Electrical, electronic, and electromechanical assemblers, except coil winders, tapers, and finishers	44,040
Miscellaneous assemblers and fabricators	42,210
Timing device assemblers and adjusters	40,790

In May 2024, the median annual wages for assemblers and fabricators in the top industries in which they worked were as follows:

Transportation equipment manufacturing	$48,750

Machinery manufacturing	46,290
Fabricated metal product manufacturing	44,610
Computer and electronic product manufacturing	42,510
Temporary help services	36,370

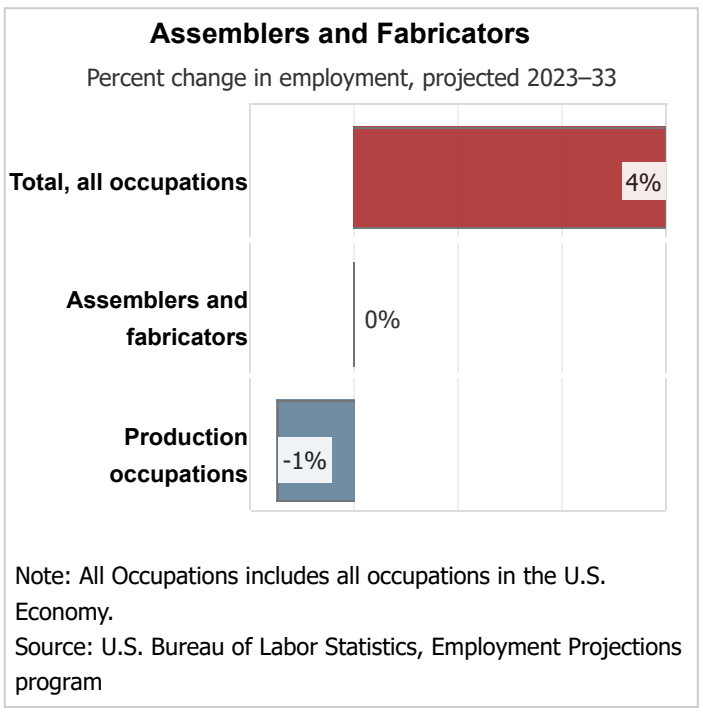
Wages vary by industry, geographic region, skill, education level, and complexity of the machinery operated.

Most assemblers and fabricators work full time, and some work evenings and weekends.

<- How to Become One

Job Outlook ->

Job Outlook



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

Overall employment of assemblers and fabricators is projected to show little or no change from 2023 to 2033.

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Employment

Projected employment of assemblers and fabricators varies by occupation (see table).

In general, employment of assemblers and fabricators is projected to decline or have limited growth because many manufacturing sectors are expected to become more efficient and able to produce more with fewer workers.

In most manufacturing industries, improved processes, tools, and automation will reduce job growth. Increasingly, new advances in robotics have enabled machinery to perform more complex and delicate tasks previously performed by workers. In addition, assemblers and fabricators are increasing efficiency by working alongside robots, also known as "collaborative robotics," which may reduce the demand for some assemblers and fabricators.

Changes in the cost of operations both in the United States and abroad may encourage some manufacturers to bring back production that was previously sent offshore. However, because new facilities in the United States likely will incorporate more automation technologies, they may require less labor overall and may require workers to have high-level skills.

Electrical, electronic, and electromechanical assemblers are employed in fast-growing manufacturing industries, such as those that produce electric vehicle (EV) batteries and semiconductors, and as a result, demand for these workers is expected to increase.

Employment projections data for assemblers and fabricators, 2023–33

Assemblers and fabricators

SOC Code:
—

Employment, 2023:
1,965,100

Projected Employment, 2033:
1,966,700

Change, 2023–33 (Percent):
0

Change, 2023–33 (Numeric):
1,700

Employment By Industry:
—

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Aircraft structure, surfaces, rigging, and systems assemblers

SOC Code:
51-2011

Employment, 2023:
31,400

Projected Employment, 2033:
26,300

Change, 2023–33 (Percent):
-16

Change, 2023–33 (Numeric):
-5,200

Employment By Industry:
Get data

Coil winders, tapers, and finishers

SOC Code:
51-2021

Employment, 2023:
12,100

Projected Employment, 2033:
10,900

Change, 2023–33 (Percent):
-9

Change, 2023–33 (Numeric):
-1,100

Employment By Industry:
Get data

Electrical, electronic, and electromechanical assemblers, except coil winders, tapers, and finishers

SOC Code:
51-2028

Employment, 2023:
271,100

Projected Employment, 2033:
290,600

Change, 2023–33 (Percent):
7

Change, 2023–33 (Numeric):
19,500

Employment By Industry:
Get data

Engine and other machine assemblers

SOC Code:
51-2031

Employment, 2023:
49,000

Projected Employment, 2033:
38,600

Change, 2023–33 (Percent):
-21

Change, 2023–33 (Numeric):
-10,400

Employment By Industry:
Get data

Structural metal fabricators and fitters

SOC Code:

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

51-2041

Employment, 2023:
59,300

Projected Employment, 2033:
50,300

Change, 2023–33 (Percent):
-15

Change, 2023–33 (Numeric):
-9,100

Employment By Industry:
Get data

Fiberglass laminators and fabricators

SOC Code:
51-2051

Employment, 2023:
20,900

Projected Employment, 2033:
21,800

Change, 2023–33 (Percent):
5

Change, 2023–33 (Numeric):
1,000

Employment By Industry:
Get data

Timing device assemblers and adjusters

SOC Code:
51-2061

Employment, 2023:
400

Projected Employment, 2033:
300

Change, 2023–33 (Percent):
-16

Change, 2023–33 (Numeric):
-100

Employment By Industry:
Get data

Miscellaneous assemblers and fabricators

SOC Code:
51-2090

Employment, 2023:
1,520,800

Projected Employment, 2033:
1,527,900

Change, 2023–33 (Percent):
0

Change, 2023–33 (Numeric):
7,000

Employment By Industry:
Get data

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

<- Pay

State & Area Data ->

State & Area Data

Occupational Employment and Wage Statistics (OEWS)

The Occupational Employment and Wage Statistics (OEWS) program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas. The link below goes to OEWS data maps for employment and wages by state and area. Use the dropdown boxes to select an occupation.

- Occupational Employment and Wage Statistics (OEWS) Profiles

Projections Central

Occupational employment projections are developed for all states by Labor Market Information (LMI) or individual state Employment Projections offices. All state projections data are available at www.projectionscentral.org. Information on this site allows projected employment growth for an occupation to be compared among states or to be compared within one state. In addition, states may produce projections for areas; there are links to each state's websites where these data may be retrieved.

CareerOneStop

CareerOneStop includes hundreds of occupational profiles with data available by state and metro area. There are links in the left-hand side menu to compare occupational employment by state and occupational wages by local area or metro area. There is also a salary info tool to search for wages by zip code.

<- Job Outlook

Similar Occupations ->

Similar Occupations

This table shows a list of occupations with job duties that are similar to those of assemblers and fabricators.

Boilermakers

Job Duties:
Boilermakers assemble, install, maintain, and repair boilers, closed vats, and other large vessels or containers that hold liquids and gases.

Entry-Level Education:
High school diploma or equivalent

2024 Median Pay:
$73,340

Calibration Technologists and Technicians

Job Duties:
Calibration technologists and technicians inspect, adjust, and test measurement devices against standards, such as those used in manufacturing, healthcare, and other industries.

Entry-Level Education:
Associate's degree

2024 Median Pay:
$65,040

Industrial Machinery Mechanics, Machinery Maintenance Workers, and Millwrights

Job Duties:
Industrial machinery mechanics, machinery maintenance workers, and millwrights install, maintain, and repair factory equipment and other industrial machinery.

Entry-Level Education:
High school diploma or equivalent

2024 Median Pay:
$63,510

Ironworkers

Job Duties:
Ironworkers install structural and reinforcing iron and steel to form and support buildings, bridges, and roads.

Entry-Level Education:
High school diploma or equivalent

2024 Median Pay:
$61,940

Metal and Plastic Machine Workers

Job Duties:
Metal and plastic machine workers set up and operate equipment that cuts, shapes, and forms metal and plastic materials or pieces.

Entry-Level Education:
See How to Become One

2024 Median Pay:
$46,800

Sheet Metal Workers

Job Duties:
Sheet metal workers fabricate or install products that are made from thin metal sheets.

Entry-Level Education:
High school diploma or equivalent

2024 Median Pay:

$60,850

Welders, Cutters, Solderers, and Brazers

Job Duties:
Welders, cutters, solderers, and brazers use hand-held or remotely controlled equipment to join, repair, or cut metal parts and products.

Entry-Level Education:
High school diploma or equivalent

2024 Median Pay:
$51,000

<- State & Area Data

More Info ->

Contacts for More Information

For more information about assemblers and fabricators, including certification, training, and professional development, visit

Fabricators & Manufacturers Association, International

For information about careers in manufacturing, visit

Nuts, Bolts & Thingamajigs

For information about certifications in electronics soldering, visit:

Association Connecting Electronics Industries

CareerOneStop

For a career video on aircraft structure, surfaces, rigging, and systems assemblers, visit:

Aircraft Structure, Surfaces, Rigging, and Systems Assemblers

For a career video on structural metal fabricators and fitters, visit

Structural Metal Fabricators and Fitters

O*NET

Aircraft Structure, Surfaces, Rigging, and Systems Assemblers

Assemblers and Fabricators, All Other

Coil Winders, Tapers, and Finishers

Electrical and Electronic Equipment Assemblers

Electromechanical Equipment Assemblers

Engine and Other Machine Assemblers

Fiberglass Laminators and Fabricators

Structural Metal Fabricators and Fitters

Team Assemblers

Timing Device Assemblers and Adjusters

<- Similar Occupations

SUGGESTED CITATION:

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Assemblers and Fabricators, at https://www.bls.gov/ooh/production/assemblers-and-fabricators.htm (visited *July 14, 2025*).

Last Modified Date: Friday, April 18, 2025