

# Heating, Air Conditioning, and Refrigeration Mechanics and Installers

SOC: 49-9021 • Career Profile Report

## ■ Key Facts

<b>\$59,810</b> Median Salary	<b>425,200</b> Employment	<b>+8.0%</b> Growth Rate
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## ■ Requirements & Salary Range

Education: Postsecondary

## ■ Automation Risk Assessment

**Low Risk** - 25.0% probability of being automated in the next 10-20 years.  
This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

## ■ Work-Life Balance

**8.5/10** - Excellent work-life balance

## ■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	8.8/10	Investigative	7.4/10
Artistic	4.4/10	Social	5.6/10
Enterprising	4.6/10	Conventional	6.4/10

## ■ Top Skills Required

Customer-service skills, Detail oriented, Math skills, Mechanical skills, Physical stamina, Physical strength, Problem-solving skills, Technology skills

### ✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

### ■ Challenges

- Burnout Risk
- Rapid Technological Change

## ■ What They Do

Heating, Air Conditioning, and Refrigeration Mechanics and Installers are skilled trades professionals who install, maintain, and repair **systems that control temperature, humidity, and air quality** in residential, commercial, and industrial buildings. Commonly known as HVAC technicians, they ensure that heating, cooling, and refrigeration systems operate safely, efficiently, and reliably—supporting comfort, health, and energy efficiency in everyday environments.

This career is well suited for individuals who enjoy hands-on technical work, problem-solving, and working with mechanical and electrical systems.

## What Do HVAC Mechanics and Installers Do?

HVAC professionals work on a wide range of climate-control systems throughout their lifecycle, from installation to troubleshooting and repair.

Common responsibilities include:

- Installing heating, cooling, and refrigeration systems
- Inspecting and testing system performance
- Diagnosing electrical, mechanical, or airflow problems
- Repairing or replacing faulty components
- Performing routine maintenance to prevent breakdowns
- Reading blueprints, wiring diagrams, and manuals
- Ensuring compliance with safety, building, and environmental codes

## Types of HVAC Professionals

This occupation includes several specializations:

- HVAC Installers: Focus on setting up new systems in homes or buildings.
- HVAC Service Technicians: Diagnose and repair existing systems.
- Refrigeration Mechanics: Work on commercial refrigeration and cooling systems.
- Heating Specialists: Install and maintain furnaces, boilers, and heat pumps.
- Commercial HVAC Technicians: Service large-scale building systems.

## Skills and Abilities Needed

HVAC mechanics and installers combine mechanical aptitude with technical precision.

### ***Core Professional Skills***

### ***Personal Qualities That Matter***

## Education and Training Pathway

Most HVAC professionals enter the field through technical training and hands-on experience:

- High School Diploma or Equivalent: Typical minimum requirement
- Technical or Trade School Programs: HVAC or refrigeration training
- Apprenticeships or On-the-Job Training: Supervised hands-on learning
- EPA Certification: Required to handle refrigerants
- State or Local Licensing (where applicable): Required in many regions
- Continuing Education: Updates on codes, systems, and technologies

## Where Do HVAC Mechanics and Installers Work?

HVAC professionals work across many settings:

- Residential Homes and Apartments
- Commercial Buildings and Offices
- Industrial Facilities and Factories
- Hospitals and Healthcare Facilities
- Schools and Universities
- Refrigeration and Climate-Control Service Companies

Work may be performed indoors, outdoors, or in mechanical spaces.

## How Much Do HVAC Mechanics and Installers Earn?

Earnings vary based on experience, certification, and specialization:

- Entry-Level Technicians: Typically earn hourly wages during training
- Experienced or Licensed Technicians: Often earn higher pay
- Specialized or Commercial Technicians: May earn more due to system complexity

Income may increase with overtime, emergency service calls, or self-employment.

## Is This Career Difficult?

This career is physically and technically demanding. HVAC professionals must diagnose complex systems, work in confined or elevated spaces, and respond to urgent repair needs. The challenge lies in combining technical accuracy, safety awareness, and customer expectations in time-sensitive situations.

## Who Should Consider Becoming an HVAC Mechanic or Installer?

This career may be a strong fit if you:

- Enjoy hands-on mechanical and technical work
- Like solving practical problems
- Are comfortable working in varied environments
- Prefer a skilled trade with steady demand
- Want a career that cannot be easily automated

## How to Prepare Early

- Study basic mechanics, physics, and electricity
- Learn safe tool use and troubleshooting techniques
- Explore vocational or technical training programs
- Gain experience through apprenticeships or helper roles
- Research local licensing and certification requirements

**Heating, air conditioning, and refrigeration mechanics and installers keep homes, businesses, and critical facilities comfortable and functional by maintaining the systems that regulate indoor environments year-round.**