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## Home Appliance Repairers

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### Significant Points

- Little or no change in employment is projected; however, excellent job opportunities are expected, particularly for those with formal training in appliance repair and electronics.
- Good customer service skills and a driver's license are essential.

### Nature of the Work

Home appliance repairers, more commonly referred to as home appliance repair technicians, install and repair home appliances such as refrigerators, dishwashers, washers and dryers, ranges, microwave ovens, and window air-conditioning units. This work is typically done on site. (Workers whose primary responsibility is the installation and repair of heating and central air-conditioning units are covered in a separate *Handbook* statement on heating, air-conditioning, and refrigeration mechanics and installers.) A small number of home appliance repair technicians service small appliances such as vacuum cleaners, small kitchen appliances, and microwaves that are portable and usually repaired in a central repair shop rather than in the home.

When installing major appliances such as refrigerators, washing machines, and cooking products, technicians may have to connect the appliances to a gas or water line. In these cases, once the connections are in place, they turn on the gas or water and check for leaks. When complete, they may show the customer how to work the appliance and answer customers' questions about the care and use of the appliance.

When problems with major home appliances occur, home appliance repair technicians will usually make a site visit to visually inspect the appliance and make the repair. To determine the cause of the failure, they will check for unusual noises, excessive vibration, leakage of fluid, or loose parts. Technicians disassemble the appliance to examine its internal parts for signs of wear or corrosion. They follow service manual diagnostic procedures and use testing devices such as ammeters, voltmeters, and wattmeters to check electrical systems for shorts and faulty connections.

After identifying problems, home appliance repair technicians replace or repair defective belts, motors, heating elements, switches, gears, or other items. They tighten, align, clean, and lubricate parts as necessary. Technicians use common handtools, including screwdrivers, wrenches, files, and pliers, as well as soldering guns and tools designed for specific appliances. Appliances with electronic parts often require new circuit boards or other electronic components.

When repairing refrigerators and window air-conditioners, repairers must take care to conserve, recover, and recycle chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants used in the cooling systems, as is required by law. Federal regulations also require that home appliance repair technicians document the capture and disposal of refrigerants.

In addition to making repairs, technicians keep records of parts used and hours worked, prepare bills, and collect payments. If an appliance is under warranty, a technician may need

to confer with the manufacturer of the appliance to recoup monetary claims for work performed.

**Work environment.** When they are fully qualified to work alone, home appliance repair technicians usually work with little or no direct supervision and spend much of the day on the road driving to and from appointments and emergency calls. Those who work on portable appliances generally work in service center repair shops. Although many home appliance repair technicians work a standard 40-hour week, some work weekends and early morning or evening shifts to cover hours as needed and some remain on call for emergencies. In summer, demand for repairs to refrigerators and window air conditioners go up and may cause additional work and overtime.

Technicians sometimes work in cramped and uncomfortable positions when they are replacing parts in hard-to-reach areas of appliances, but the jobs are generally not hazardous as long as workers exercise care and follow safety precautions to avoid electrical shocks and gas leaks, and use safety measures when lifting and moving large appliances.

### Training, Other Qualifications, and Advancement

Most entry-level workers in this profession enter without any specific training or experience and learn on the job, although employers prefer to hire those who have completed programs



*Most home appliance repairers enter the occupation with a high school diploma and little or no training repairing appliances.*

## Projections data from the National Employment Matrix

| Occupational Title             | SOC Code | Employment, 2008 | Projected Employment, 2018 | Change, 2008-2018 |         |
|--------------------------------|----------|------------------|----------------------------|-------------------|---------|
|                                |          |                  |                            | Number            | Percent |
| Home appliance repairers ..... | 49-9031  | 49,600           | 50,600                     | 1,100             | 2       |

(NOTE) Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

in electronics or appliance repair. A driver's license and good customer service skills are essential to work on appliances in customer's homes.

**Education and training.** Most home appliance repair technicians enter the occupation with a high school diploma or its equivalent and little training in repairing appliances. Most learn their jobs while working with more experienced workers and by attending in-house classes sponsored by the employer. Some appliance manufacturers and employers have formal training programs that include home study and shop classes, in which trainees work with demonstration appliances and other training equipment. Many technicians also receive supplemental instruction through 2- or 3-week seminars conducted by appliance manufacturers. Technicians authorized for warranty work by manufacturers are required to attend periodic training sessions. Training can last from several months to a few years.

In businesses that fix portable appliances in a repair shop, trainees work on a single type of appliance, such as a vacuum cleaner, until they master its repair. Then they move on to others, until they can work on all appliances repaired by the shop.

While on-the-job training is the most common method of training, employers prefer to hire workers that have attended high school or postsecondary vocational or technical programs in electronics or appliance repair. These programs can last 1 to 2 years and include courses in basic electricity and electronics as most home appliances contain electronic components. These programs can help reduce the amount of on-the-job training required for entry-level workers.

Most home appliance repair technicians will need to take periodic classes throughout their careers to keep their skills up to date and to be able to repair the latest home appliance models.

**Licensure.** The U.S. Environmental Protection Agency (EPA) has mandated that all repair technicians who buy or work with refrigerants pass a written examination to become certified in proper refrigerant handling. Exams are administered by EPA-approved organizations, such as trade schools, unions, and employer associations. There also are EPA-approved take-home certification exams. Although no formal training is required for certification, many of these organizations offer training programs designed to prepare workers for the certification examination.

**Certification and other qualifications.** A helpful manner with customers and good communication skills are essential for those who work in clients' homes. Technicians must be courteous and tactful. They must also be dependable. A driver's license with a clean driving record is also usually required to drive to customers' homes, and some employers may require a background check and drug test. Mechanical and electrical aptitudes are desirable. Those who are self-employed need good business and financial skills to maintain a business. Member-

ship in a trade association can help business owners learn from others in the field.

Home appliance repair technicians may demonstrate their competence by passing one of several certification examinations offered by various organizations. Although voluntary, such certifications can be helpful when seeking employment. The National Appliance Service Technician Certification (NASTeC), which is administered by the International Society of Certified Electronics Technicians (ISCET), requires technicians to pass a comprehensive examination that tests their competence in the diagnosis, repair, and maintenance of major home appliances. The Professional Service Association (PSA) administers a similar certification program based on skill competencies developed by the industry and updated annually. Those who pass the PSA examination can earn the Master Certified Appliance Professional (MCAP) designation.

**Advancement.** Technicians in large shops or service centers may be promoted to supervisor, assistant service manager, or service manager. Some technicians advance to managerial positions such as regional service manager or parts manager for appliance or tool manufacturers. Experienced technicians who have sufficient funds and knowledge of small-business management frequently open their own repair shops.

### Employment

Home appliance repair technicians are employed throughout the country, but a higher concentration of jobs can be found in more populated areas. Home appliance repair technicians held 49,600 jobs in 2008. About 32 percent of salaried technicians worked for retail trade establishments, mainly electronics and appliance stores. Another 21 percent worked in the personal and household goods repair and maintenance industry. About 27 percent of repairers were self-employed.

### Job Outlook

Little to no change in employment of home appliance repairers is projected. However, excellent job opportunities are projected, particularly for individuals with formal training in appliance repair and electronics.

**Employment change.** Employment of home appliance repairers will increase by 2 percent between 2008 and 2018, reflecting the difficulty of employers in finding qualified applicants. Although the number of home appliances in use is expected to increase with growth in the numbers of households, companies report difficulty in hiring repair technicians. In addition, the decision to repair an appliance often depends on the price to replace the appliance versus the cost to make the repairs. So while higher priced major appliances designed to have a long life are more likely to be repaired, small and cheaper appliances are increasingly being discarded rather than be repaired. With sales of high-end appliances growing, demand for

major appliance repair technicians should be strong into the future, but weaker for those specializing in small, portable appliances.

**Job prospects.** Job opportunities for home appliance repair technicians are expected to be excellent over the 2008-18 period, with job openings continuing to outnumber jobseekers. Companies report numerous unfilled vacancies and the expected retirement of many older technicians. Opportunities will be best in metropolitan areas. Individuals with formal training in appliance repair and electronics should have the best opportunities.

Jobs are expected to be increasingly concentrated in larger household goods repair services companies as stores increasingly outsource repair work to companies that specialize in maintenance and repair. Employment is relatively steady and workers are rarely laid off because demand for major appliance repair services is fairly constant.

### **Earnings**

Median hourly wages, including commissions, of home appliance repairers were \$16.30 in May 2008. The middle 50 percent earned between \$12.87 and \$20.92 an hour. The lowest 10 percent earned less than \$9.98, and the highest 10 percent earned more than \$25.92 an hour. In May 2008, median hourly wages of home appliance repairer technicians in the largest employing industries were \$15.05 in electronics and appliance stores and \$17.58 in personal and household goods repair and maintenance.

Earnings of home appliance repairer technicians vary with skill level, geographic location, and type of equipment repaired. Many repairers receive a commission along with their salary, therefore earnings increase with the number of jobs a repairer can complete in a day.

Many larger dealers, manufacturers, and service stores offer typical benefits such as health insurance coverage, sick leave, and retirement and pension programs. Some provide company vehicles.

### **Related Occupations**

Other workers who repair electrical and electronic equipment include:

- Coin, vending, and amusement machine servicers and repairers
- Electrical and electronics installers and repairers
- Electronic home entertainment equipment installers and repairers
- Heating, air-conditioning, and refrigeration mechanics and installers
- Small engine mechanics

### **Sources of Additional Information**

For general information on home appliance repair technicians and the Certified Appliance Professional program, contact:

► Professional Service Association, 71 Columbia St., Cohoes, NY 12047. Internet: <http://www.psaworld.com>

For information on the National Appliance Service Technician Certification program, contact:

► International Society of Certified Electronics Technicians, 3608 Pershing Ave., Fort Worth, TX 76107. Internet: <http://www.nastec.org>

For general information on home appliance repair technicians, contact:

► United Servicers Association, 1 Presidential Way, Suite 106, Woburn, MA 01801. Internet: <http://www.unitedservicers.com>

The Occupational Information Network (O\*NET) provides information on a wide range of occupational characteristics. Links to O\*NET appear at the end of the Internet version of this occupational statement, accessible at <http://www.bls.gov/ooh/ocos193.htm>