



## **What is Welding?**

### ***Did You Know?***

Welding has been called, “the best kept secret” in career planning. Welding is widely used in construction, manufacturing, and many other industries, making it a critical skill that will always be in demand. From the beginning of civilization, we have relied on the skills of welders to enrich our lives.

### ***History of Welding***

Depictions of ancient welders and tools are found in long-sealed Egyptian tombs. President Roosevelt, in a letter to Prime Minister Winston Churchill, boasts about the discovery of a new welding technique enabling America to build ships with a speed unequalled in the history of shipbuilding. See how discoveries and developments in welding processes and metallurgy led to the technological marvels that changed the world we live in today.

### ***What Is Welding, Anyway?***

- Welding is the joining of two or more materials through heat or heat and pressure, forming a bond between two pieces of metal.
- Steel melts at 2,800 degrees Fahrenheit.
- A popular form of welding, **Gas Metal Arc Welding (GMAW)**, uses a consumable wire electrode. GMAW is common in high-production manufacturing and construction. Welding a frame for a chopper would require this MIG welding.
- **Gas Tungsten Arc Welding (GTAW)** uses a non-consumable tungsten electrode to make high-precision welds. GTAW is common in the aerospace, nuclear, and food industries. It is also called TIG welding, (melting together high alloy thin materials, such as stainless steel and titanium) puts little heat into the material causing less distortion.
- **Shielded Metal Arc Welding (SMAW)** uses flux-covered electrodes. Often called “stick” or “stick-electrode” welding, SMAW is a frequent choice for repair and occasional welding.
- Still another welding method, **Resistance Welding**, uses electrical resistance and pressure to fuse metals, instead of an arc.

### ***Other Facts about Welding***

- Welding-related expenditures in American industry and construction were at least \$34.1 billion in the year 2000. These expenditures are equivalent to more than \$325 for every U.S. household.
- The shortage of qualified operators, technicians, and engineers in the field of welding is a potential threat to U.S. industry.

- The U.S. Department of Labor's *Occupational Outlook Handbook* says job prospects for welders through 2012 should be excellent, with employment expected to increase 10 to 20 percent.
- There is a projected labor shortage of 200,000 welding professionals by the year 2010, as baby boomers retire.

**\*\*For additional information on the welding industry, visit [www.aws.org](http://www.aws.org), or call Adrienne Zalkind, 800-443-9353, ext.416, or e-mail [Azalkind@aws.org](mailto:Azalkind@aws.org).**