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One of the most popular and common types of welding in use today is arc welding. Yet the average layman walking the street has little understanding of this welding process other seeing the blinding light flashing from a construction job site they may walking past at rush hour. Welding is basically just a fusion process for joining metals. The metals are simply melted together by intense heat and fuse as one piece. If done correctly, welding makes the joining of two pieces of metal with the same strength as single solid piece. A welding joint is superior to gluing because through the welding process, the metals are actually melted together instead using the bonding properties of glue to hold them together.

The key concept in welding is a heat source is needed in order to fuse the metal together. There are several methods of welding and arc welding is one of the most popular. The term arc welding comes from the fact that an electrical arc is created to produce intense heat. This arc is formed between the metal being worked on and an electrode connected to the arc welder. The electrode rod is moved along the joint and is melted by the electrical arc. The rod has two purposes. One is to help produce the arc and the other is it makes a filler material as it is melted.

At its heart, arc welding is about creating an electrical circuit. An arc welder needs an electrical power source that produces either AC or DC current. The metal piece you are attempting to weld becomes part of the electrical circuit by attaching a cable from the arc welder to metal. The other hot cable is attached to electrode that the welder is holding. An electrical arc is created between the metal work piece and the electrode when the electrode is held close to the metal. Now there is a complete electrical circuit between the arc welder and the metal. This process creates some pretty amazing temperatures. The tip of the arc can reach temperatures in excess of 6500Âº F. Now there is enough heat to fuse the metal pieces together and create a strong bond. To ignite the arc, the electrode must be pressed against the metal and then pulled away.

Besides creating heat, the arc produces a very bright light. This light is hazardous to the welder and those around the welding job site. You should not look directly into the arc without proper eye protection. However, the visible light is not the only danger. The arc gives of infrared and ultraviolet light that is invisible to the naked eye. This is why welders wear auto darkening welding helmets. These helmets will automatically darken when the arc is struck to shield the welders eyes from the bright visible and the lens filter is designed to keep out infrared and ultraviolet at all times whether the lens is darkened or not. Welders also put up welding blankets or shields to protect other people in the work area that may not have proper eye protection.

Despite these hazards arc welding is a safe and reliable method for fusing metal together and with some practice anyone can become competent enough for basic welding.

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Hiteshbhoi - About Author:
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