

Title:

Laser Machine Welding

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Summary:

Laser machine welding is the joining of two pieces of material, usually metal, but often these days plastics, using a laser beam. A laser is a single phase, or coherent beam of light often seen in science fiction movies, but the development of the laser beam and its application in laser machine welding allows for advancements in precision welding using this high-energy device, which creates heat when it strikes a surface. Laser machine welding is used for steam tracing and in...

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Article Body:

Laser machine welding is the joining of two pieces of material, usually metal, but often these days plastics, using a laser beam. A laser is a single phase, or coherent beam of light often seen in science fiction movies, but the development of the laser beam and its application in laser machine welding allows for advancements in precision welding using this high-energy device, which creates heat when it strikes a surface. Laser machine welding is used for steam tracing and inspection, for surface heat treating, cutting with heat and other precision applications.

The laser, which stands for light amplification by stimulated emission of radiation, emits photons in a narrow beam. Laser light usually in monochromatic, meaning that it emits light of a single wavelength. Common light emits incoherent light, which goes in all directions over the spectrum. The first working laser was developed by Hughes labs in 1960, but was descended from work done by Albert Einstein in 1916. However, the laser itself is such a recent development that the use of laser machine welding is a fairly recent technological innovation.

Lasers have found applications in many areas since their invention. Modern medicine utilizes lasers for surgery, having realized the ability to perform less invasive surgical procedures than in the past. Also the fine and precise nature of lasers has led surgeons to use them for such delicate operations as

eye surgery. In common practice many people today use laser pointers, especially in the classroom. Marksmen use laser sights on rifles. Computer users use laser printers for output rather than old-fashioned methods, and lasers are used for motion detection and security, among many dozens if not hundreds of other applications. Lasers are even used in children's toys, office photocopiers and in the devices used to lock and unlock car doors. As technology improved lasers worked their way into all aspects of life and it was only natural that applications of lasers to welding technology would occur. The end result of this has been the creation of the laser machine-welding specialty, taking its place next to Mig, Tig, Arc and other welding methods.

Uses of laser machine welding are becoming commonplace in the computer and consumer electronics industry, in space and aircraft technology and with defense contractors. Laser machine welding is often used because it can be much more precise than other welding methods. Laser machine welding is often used for micro welds of hyper small dimensions that conventional welding methods could never touch. Laser machine welding is often used in jewelry manufacturing, engraving, in dentistry, and in the tool and die industry where precision is demanded. Laser machine welding is on the cutting edge of technology, and welders trained to use laser machine welding are some of the brightest and most talented welders in the industry.

Laser machine welding has also found a home in the highly technical and precise welding needs of plastic welding. While plastic welding is often done with ultrasonic welders, many times laser machine welding is the preferred method.