

# ARTICLE 630

## ELECTRIC WELDERS

### Introduction to Article 630—Electric Welders

Electric welding equipment does its job either by creating an electric arc between two surfaces or by heating a rod that melts from over-current. Either way results in a hefty momentary current draw. Welding machines come in many shapes and sizes. On the smaller end of the scale are portable welding units used for manual welding, such as in a fabrication shop. At the larger end are robotic welding machines the size of a house used for making everything from automobile bodies to refrigerator panels. All of these must comply with Article 630.

The primary concern of this article is adequately sizing the conductors and circuit protection to handle this type of load. Fortunately for the design engineer and the field electrician, Article 630 requires certain information to be provided on the nameplate of the equipment. This article explains how to use that information to properly size conductors and circuit protection.

### 630.8 Ground-Fault Circuit-interrupter Protection for Personnel

GFCI protection makes yet another appearance in the workplace and is now required for receptacles used for hand tools and portable lighting.

### Analysis



**NEW**

This is a new section that requires all 125V, single-phase, 15A and 20A receptacles for hand tools or portable lighting equipment in areas where welders are operated to be GFCI protected. This rule does not require GFCI protection for the receptacle that supplies the welder, however requirements in 210.8 may.

### 630.8 Receptacle, GFCI Protection

GFCI protection is required for all 15A and 20A, 125V receptacles used for electrical hand tools or portable lighting equipment installed in work areas where welders are operated. ▶ [Figure 630-1](#)



▶ **Figure 630-1**