



## HOW TO WIRE FOR AN ELECTRIC WELDER

Electric arc welders are common home shop tools. One size, the 225 amp model, has become the standard of the industry. Even if you have made up your mind to buy a smaller amperage model, we would still recommend wiring the circuit to accommodate the larger amperage unit. The cost of doing so is just slightly more.

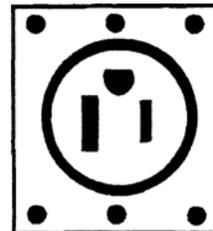


Most welders of the workshop "buzz box" type have a duty cycle which seldom exceeds 30%. The primary current required by this size AC transformer type welder is about 50 amps at 230 volts. We recommend wiring the circuit with #8 copper or #6 aluminum wire. One size smaller wire may be acceptable, but verification should be made before beginning the installation. Once you know the duty cycle and the primary current requirements of the welder, you can look to Article 630-11 of the National Electric Code for the multiplying factors by which the conductor size can be determined.

The circuit breaker that is most often used on welder installations is a double pole 60 amp size (in which case the feeder conductors must be sized accordingly) although the 50 amp size is usually more than adequate to serve the light-duty work for which most workshop units are used.

A disconnecting means is required at the welder. Most small AC transformer type welders have one built in that also doubles as an on-off switch. The connecting cord (pigtail) is usually provided with the welder.

Surface and flush mounted receptacles similar to those used for range outlets are available for welder receptacles. When the flush style receptacle is used, the best box to use is a 4" square, 2-device metal box with 3/4" knockouts (same box that is used for range receptacles). Standard 50 amp welder receptacles have a pattern that looks like this:



*For complete requirements for wiring for an electric welder, we refer you to Articles 630 or the NFPA National Electrical Code, especially Articles 630-11 and 630-12.*