

## Welding Helmets

When selecting a welding helmet, there are many options that one should consider before making a purchase. The following eZtip will help weigh these options and how they can affect the end user.

### Helmets can be either passive or auto-darkening.



**Passive helmets** have been around for decades, and most people are probably familiar with the classic 1950's Sci-fi movie robot, flip front style similar to the one pictured at right. While this tried and true style is still offered by many manufacturers, there are also newer styles work essentially the same way and offer benefits like a larger viewing area. Passive helmets generally use a shade 10 glass lens to protect the users eyes from IR and UV rays. The passive helmet is worn in the up position while the welder positions his equipment. Just before striking an arc, the user flips the helmet down over the eyes. While more economical, passive welding helmets can be difficult to use for inexperienced welders, and also require repeated lifting and lowering which can cause neck fatigue. Risk of arc flash exposure from mistimed lowering is also greater with this style of helmet.



**Auto-Darkening** helmets come in either fixed or variable shade. A fixed shade helmet will have approximately a #3 or #4 shade when not actively welding. When the helmet sensors detect an arc, the lens darkens to a shade #10, usually within 1/3,600 for basic entry level helmets, to 1/20,000 for professional grade helmets. If you use different welding processes or varying welding amperages, then a variable auto-darkening helmet may be for you. A variable shade helmet allows the user to adjust the final darkening shade during welding, usually from #9 through #13, for different welding processes or arc brightness.

### Other things to consider when shopping for a helmet are the lens reaction time, viewing size, number of sensors, and weight.

- Lens reaction time can vary from 1/3,600 to 1/20,000 of a second. If you spend all day welding, your eyes could experience significant eye fatigue from increased exposure to light from the welding arc. However for the casual or occasional welder, the slower reacting lens would offer sufficient protection to the user.
- Viewing size is a matter of personal preference, but with options generally ranging from 6 square inches up to 9 square inches, a larger viewing area may be more beneficial if one is frequently doing out-of-position welding.
- The number of sensors an auto-darkening helmet has can also influence how well it is able to react to an arc flash. While two is common and generally sufficient for hobby grade helmets, the professional welder would usually want at least 3-4 sensors to provide adequate coverage, particularly in out of position situations.
- Weight can also be an important factor in the selection of a helmet. A less expensive but heavier helmet is ok for weekend or occasional use, but could get very heavy if you had to wear it for a full days work.

In summary, the information above and the shade selection chart below should make it easier for you to select the proper helmet for your needs.



		Shade Selection Chart													
		0.5	2.5	10	20	40	80	125	175	225	275	350	450		
		1	5	15	30	60	100	150	200	250	300	400	500		
Stick					9	10	11	12	13						
MIG							10	11	12	13					
Aluminum MIG							10	11	12	13					
Flux Cored								10	11	12	13				
TIG				9	10	11	12	13							

Information sources include Miller Electric, W.W. Grainger



If you are still having difficulty choosing a Welding Helmet, please contact us at [askzoro@zoro.com](mailto:askzoro@zoro.com) or 855-289-9676

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