Employee Safety

How Advances in Welding Glove Technology Are Improving Comfort, Dexterity and Safety

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Welding safety gear is vital; even the smallest fragments of debris or sparks can lead to a serious injury. Here's a look at PIP USA products that keep you protected during welding operations.

Welding is a potentially dangerous business, presenting many possible hazards for workers.

A welder can be injured because he or she isn't properly protected, or hasn't worn the appropriate clothing for the job.

Protective welding gear usually includes ***auto-darkening helmets*** that shield against harmful bursts of light, while the personal protective equipment (PPE) used for welding covers the body completely and includes flame-retardant clothing and thick gloves.

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> Paul Sung
> PIP USA

The technology used in auto-darkening helmets has come a long way over the past decade with the introduction of innovations such as arc sensing to prevent arc flashes and improved protective shading.

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The Technology of Hand Protection

Other protective gear such as welding gloves have not developed as quickly, notes Paul Sung, welding product and sales manager at ***Protective Industrial Products***, or PIP, a supplier of hand protection and PPE based in Latham, New York.

Up until fairly recently, welding glove designs have been somewhat primitive, says Sung—they are, essentially, a few pieces of leather sewn together to produce something that's big, bulky and flat. But in more recent years, new "three-dimensional" designs have appeared and offer users a much-improved fit and greater dexterity when working with welding equipment, he adds.

This is most visible in the ***Caiman brand of gloves***, which PIP acquired in 2020. Sung says the glove brand offers hand protection that incorporates unique designs and patterns, "combining industry-leading features with an unmatched level of style, comfort and dexterity."

"With three-dimensional designs, you're able to incorporate certain features that enhance dexterity and tactile sensitivity, which are extremely vital in producing a proper weld," Sung says.

Sung draws a parallel with the work of a surgeon: "If you ask the surgeon to wear a ski glove and perform at a certain level, there's obviously going to be some difficultly there, and welding is no different," he says.

"We are trying to incorporate products that allow welders to be precise and perform at a level they've never been used to in the past because the product itself was archaic and really meant for one thing: protection. It never really addressed that whole dexterity and tactile sensitivity portion of the work," he adds.

What Is 3D Glove Design?

Caiman's Premium Goat Grain Wool Insulated Back MIG/Stick/Plasma welding gloves.

As opposed to gloves with a traditional construction—with a top and bottom section that are sewn together—gloves that incorporate a 3D design follow the natural curves and shapes of the hand. Such a glove should allow for a clenched hand but also address the movements of the hand, Sung says.

“It’s like buying a custom suit,” he says. “A tailor would take some measurements and he or she would cut in a manner that fits your body shape. We can’t make gloves with that much precision, but we can still address certain curves, shapes and angles.”

Caiman’s Kontour technology is utilized in all Caiman welding gloves and incorporates form-fitting 3D designs and patterns to maximize comfort, fit and performance. The designs mean the gloves conform to the natural curves and contours of the hand and provide proper finger alignment to achieve an unprecedented comfort and dexterity that no other welding gloves have offered before.

Caiman’s ***Premium Goat Grain Wool Insulated Back MIG/Stick/Plasma welding glove*** is a good example of a glove that uses technology that makes it more comfortable to wear, incorporating the following attributes:

- Caiman’s Kontour design, which conforms to the natural shape of the human hand and provides proper finger alignment
- Kontour Thumb design, which moves the glove’s seam away from the contact/wear area, increasing comfort
- Kontour Wrist, a patented wrist design that enhances comfort and safety
- Built using a supple yet durable premium genuine leather
- Lined with wool, the best natural insulator available
- Sewn with Kevlar for maximum seam strength
- Incorporates a carabiner for keeping the gloves together when they are not in use

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Improving Dexterity and Safety

While a welding glove is primarily designed to protect your hands and arms, the glove itself should also be comfortable and easy to wear. PPE that is not comfortable is less likely to be worn, leaving the worker more exposed to potential injury.

Comfortable PPE may be the key to improving worker safety and productivity, Sung says. Anyone who works with their hands will likely say they prefer not to wear anything when doing their work and only wear gloves to protect them from the elements, he notes.

“You naturally desire to have flexibility, comfort and dexterity, and that’s why we wear what we wear,” he says. But now if you throw in this safety element it becomes that much harder, and that’s what I think companies that truly try to innovate are addressing. There’s a desire to address this comfort component.”

Sung also notes that there’s a push in the PPE industry to produce cut-resistant gloves, which are meant to protect against sharp edges, commonplace in metal fabrication, or a tool breaking through the outer layer of a work glove, not only protecting the hand from the heat, sparks and spatters from welding, but also from cuts.

PIP is also looking to improve comfort for welders through its ***Boarhide protective clothing***, which is made of garment-grade, high-quality pigskin leather.

Pigskin leather offers unique qualities for demanding industrial environments because it has very tight and fine fibers that make it more resistant to punctures, cuts and heat than cowhide of equal weight, the material from which most welding garments are made.

“Cowhide is a heavy fabric,” Sung says, “and there is no elasticity or breathability, which is very important to welders. Imagine a welder in the South who is working in hot and humid conditions, no

air conditioning in the fabrication shop or on the line, which can mean a significant amount of perspiration loss."

"With the new fabric, we have addressed the issue of comfort, elasticity and breathability while providing just as much protection and safety as the heavy cowhide garments."

Which attributes are important to you when purchasing PPE for welding operations? What steps are you taking to avoid welding injuries? Share your thoughts and insights in the comments below.