

The Benefits of

# Toric Face Shields





Many industrial processes require safety equipment to provide a safe working environment for staff. However, existing options are not always the most comfortable or functional. Industries requiring PPE are ready for improved protection gear that sits, feels, and functions better. Designed to withstand severe industrial conditions while enhancing visibility and worker comfort, toric face shields represent a significant advance in face protection technology.

The unique curved design of toric face shields offers improved fit and comfort compared to traditional flat shields. This advantage is particularly beneficial for extended wear and reduces the potential for pressure points or fogging. Toric face shields are specifically designed to meet the demanding needs of industrial environments, providing superior protection against a variety of hazards such as electrical arc flash, radiant heat from molten metal, chemical splash, and welding arcs.

**It's important to note that not all face shields are created equal.** Some manufacturers offer lower-cost, general-purpose options, while others focus on creating high-performance shields specifically designed for industrial applications. **If you're looking for high-performance options, Paulson is the premier innovator of toric face shields.** As the first to market, we are proud to introduce the first full toric face shields for severe industrial applications that will more comfortably and effectively protect workers from severe industrial hazards and conditions.

## What Is a Toric Face Shield?

A toric shape is a curve formed from a torus intersected on its side by a plane. It is not a perfectly spherical curve; rather, a toric face shield is slightly oblong so that it conforms better to the shape of the user's face—and head when the shield is stowed.

## Advantages of Toric Face Shields Over Cylindrical Shields

Toric face shields offer several key advantages over traditional cylindrical designs. Generally, toric face shields offer superior protection, aesthetics, and comfort compared to cylindrical shields. The more comfortable fit and curved shape prevents particles or debris from entering around the edges while also reducing the need for readjustments and allowing for extended wear. The toric shape helps to reduce distortion and glare, leading to clearer vision. The low-profile, wrap-around shape conforms more closely to the user's face and is ideal for work while climbing or in confined spaces. While stowed, the shield's lower profile helps minimize the weight imbalance the worker might feel.

Ultimately, the toric shield's benefits lead to increased safety and a higher likelihood of compliance. Workers are more likely to wear their face shields if they are more comfortable, modern, and less bulky. Toric-shaped face shields help improve compliance among those who might not otherwise wear their face shield.



## Improving Worker Safety and Compliance With Modern Aesthetics

Traditional face shields can be bulky, uncomfortable, and obstruct vision. This can lead to worker resistance, reduced productivity, and ultimately, a higher risk of injuries. Toric face shields address these concerns by offering a new standard in aesthetics and user experience:

## Modern Design:

The sleek, curved design of the toric shield provides a more contemporary look compared to traditional flat shields. This enhances worker acceptance and fosters a more professional appearance.

## Improved Visibility:

The toric design, combined with high-optical-clarity materials, offers a wider field of view and superior visibility. This reduces worker strain and fatigue, leading to increased productivity.

## Enhanced Comfort:

The ergonomic design of the toric shield conforms to the user's face shape, minimizing pressure points and creating a comfortable, "non-existent feel." This encourages workers to wear the shield consistently, improving overall safety compliance.

By prioritizing aesthetics and user comfort, toric face shields promote a culture of safety. Workers are more likely to wear them consistently, leading to:

## Reduced Long-Term Costs:

Consistent use of face shields minimizes the risk of injuries, resulting in fewer worker compensation claims and associated costs.

## Improved Long-Term Compliance:

Increased worker acceptance translates to better adherence to safety regulations, reducing the risk of fines and penalties for non-compliance.

Toric face shields go beyond basic protection, offering a modern solution that promotes worker safety, well-being, and ultimately, a positive return on investment.





## Industry Applications for Toric Face Shields

### General Applications

Toric face shields offer a multi-layered defense for electrical arc flash workers and more, providing:



#### **Debris Protection:**

The shield protects the face from airborne particles reducing the risk of eye irritation and injuries.



#### **Impact Resistance:**

The shield can withstand impacts from objects like tools or falling materials, reducing the risk of facial injuries.



#### **UV Protection:**

Some toric shields offer UV protection, shielding the wearer from ultraviolet radiation. This can be helpful for outdoor workers who are exposed to sunlight for extended periods.

## Paulson's Toric Face Shield Advantages

Paulson is known around the world for manufacturing world-class arc flash face shields for electrical workers. Our new toric design takes this innovation to the next level, resulting in a face shield with a modern design, better visibility and enhanced worker comfort. Our toric arc flash shields feature a nanoparticle formulation to maximize optical transparency and protect the worker by absorbing the energy of the arc flash. The shield's light gray color helps improve the user's ability to see colors in all conditions. Paulson's toric shields provide a less bulky option for worker protection by conforming to the user's face shape and sloping downward to the user's chin, reducing dead space. This design contributes to a non-existent feel so that workers are more comfortable and, thus, more productive. With an ATPV (Arc Thermal Protection Value) range of 12-100 calories, Paulson's line of toric arc flash face shields helps electrical workers remain compliant with NFPA 70E while maximizing comfort and reducing worker fatigue.



In addition to protecting against electrical arc flash, our toric face shields also serve these applications:

Protection from grinding or welding

Chemical splash

Molten metal/heat reflection (steel mills, casting, glass blowing, etc.)

Impact protection

Cryogenic applications

# Features of Paulson's Toric Face Shield

Paulson's toric face shields offer many innovative features that make them stand out among other face shields on the market:

## **Integrated Chin Protector:**

Many arc flash or chemical splash hazards occur below the shield's center line. In these cases, arc flash energy, chemicals, or debris may flow up under the face shield. Therefore, our toric face shields feature an integrated chin protector, which is shaped and sized with ergonomics in mind. There's no need to order chin protector add-ons. The chin protector is also transparent, allowing for downward visibility and minimizing blind spots.

## **Weight-Compensating Bracket:**

With all of Paulson's toric face shields having a weight-compensating bracket, users enjoy greater wear comfort and a lower profile. It allows the face shield to conform to the user's face while deployed and head while stowed. The bracket also has a press-to-release feature that facilitates easy removal, making it great for dynamic applications where users need to be able to quickly and repeatedly apply and remove the shield. These applications may include electrical work, welding, and more.

## **Helmet Compatibility:**

Our weight-compensating face shields are designed to be compatible with most major hard hat and safety helmet brands. Our various shield models ensure protection with these helmet types for specific applications, such as arc flash, radiant heat, or welding protection.

## **Premium Coating System:**

A selection of our toric arc shields can utilize a strong anti-fog polyurethane coating on the interior to allow users better visibility while working. They also have an abrasion-resistant exterior coating that enhances durability in all working conditions.

## **Better Visibility:**

The curvature of the toric-shaped face shield can help reduce glare and distortion, allowing for clearer downward vision. The shape also allows for a wider peripheral view.

**Unique Venting System:**

Our premium toric arc flash face shields feature a unique venting system that allows fresh air to enter inside the face shield and warm moist air to rise and escape at the shield's top. Our beekeeper-style face shield features front and side vents.

**Greater Comfort:**

The greater visibility, wearability, workability, and freedom of movement afforded by toric face shields translate into better overall comfort for the wearer. This means they are more likely to wear their PPE and comply with the safety regulations in their industry.

## Work With Industry Leader Paulson Manufacturing

All arc flash shields must be ANSI Z87.1 certified as general industrial face/eye protection and meet the NFPA-70E standard for PPE. ASTM F2178 outlines the test method to ensure the face shield meets this NFPA standard.

At Paulson Manufacturing, we're a leading manufacturer of face and eye protection for first responders and industrial personnel. We follow all regulations and guidelines for high-quality safety equipment and maintain a rigorous quality control program. Our extensive in-house capabilities include:



Design/  
Engineering



Tooling



Plastic  
Injection  
Molding



CNC  
Machining



Lab  
Testing



Nanotechnology



ISO 9001  
Quality  
Management  
System



And  
more

With over 75 years of experience, we provide toric arc shields made in the USA using the highest quality materials. We specialize in offering reliable, convenient, accessible shielding solutions that optimize safety, quality, and comfort. [Contact us](#) to learn more about our PPE products.

# About Us

Paulson Manufacturing Corp. is the world's foremost authority on transparent face and eye protection for industrial workers and first responders. Our mission is to provide the benefits of protection and safety to our customers — our business' lifeline. We attain this mission by manufacturing the highest quality and most reliable safety protective gear in the industry. We seek our customers' trust, reliance and confidence. We want to be their first choice for the all-important task of protecting eyes and lives.

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