HOW THE EVOLUTION OF THE AUTOMOTIVE MANUFACTURING INDUSTRY IMPACTS PPE

Help protect your greatest asset

Honeywell

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SAFETY DRIVES AUTOMOTIVE MANUFACTURING SUCCESS

While the automotive industry is much less hazardous than it once was due to advanced technologies such as robotics that are improving ergonomics and reducing injuries from repetitive motions, risk hasn't been completely engineered out of processes. This makes safety initiatives critical to helping keep workers protected throughout production.

This whitepaper aims to provide an overview of the hazards workers face in automotive manufacturing, how the industry has evolved to become a safer environment and why manufacturers should provide their workers with high-quality Personal Protective Equipment (PPE) to help build a culture of safety.

THE EVOLUTION OF A TECHNOLOGY-DRIVEN INDUSTRY

The evolution of the automotive industry has been a wild ride. Since entering the market in the late 1800s, cars have been at the forefront of innovation. According to History.com, the 1901 Mercedes, designed by Wilhelm Maybach for Daimler Motoren Gesellschaft, is credited for being the first modern motorcar.[1]

However, in 1895, J. Frank and Charles Duryea of Springfield, Massachusetts, designed the first successful American gasoline automobile, then went on to win the first American car race in 1895. In the years following their victory, the first sale of an American-made gasoline car occurred.

What followed was a whirlwind of global innovation. From the introduction of the assembly line, which enabled manufacturers to produce more cars quicker, to the transition from steel to more efficient materials, automobiles and how we use them have changed at a rapid pace.[2]

Even into the 21st century, data collection, robotics and other advanced technologies have swept through modern manufacturing facilities. The introduction of these technologies in automotive manufacturing has helped take a traditionally dangerous work environment and shift it to the technologically advanced industry it is today.

HELPING PROTECT THE ENGINE OF THE OPERATION

Advanced technologies are being integrated at every stage of the production process in the automotive manufacturing industry – freeing up human workers to take on more complex and creative problem-solving work.

Futuristic robots and automation are designed to work alongside humans on the assembly line, taking over more hazardous tasks such as welding and painting, which helps improve productivity, streamline workflows and protect workers from potentially harmful repetitive motion tasks that can lead to injury.

AI-powered tools and IoT-enabled sensors also empower safety managers to collect, store and analyze data that can be used to make data-backed decisions that drive operational improvement. Even before the manufacturing process begins, teams can leverage innovations in 3D printing and digital twins to simulate processes and test new parts, designs or materials.

But despite the benefits of these technologies, great automotive leaders recognize the importance of the human touch and that their greatest differentiator will always lie within their people. Plant workers are the engine of an operation. They are the fuel that keeps automotive production running smoothly with their specialized skill sets and human touch.

That's why automotive manufacturing leaders must ensure every square foot of their production facility is safe and their workers are protected. It's not just about compliance or hitting numbers – it's about investing in their greatest asset. As the automotive manufacturing industry continues to evolve with changing environments and worker needs, ensuring the safety of all workers continues to be of utmost importance.

THE STATE OF SAFETY IN THE AUTOMOTIVE INDUSTRY

Workers in automotive manufacturing work alongside robotic machines to perform specialized jobs including forging, stamping, bending, forming, welding, machining and assembling the various components of a motor vehicle. These essential roles often expose them to common hazards such as hot or sharp objects, toxic chemicals, hazardous noise, slips, trips and falls as well as overexertion or sprains and strains from repetitive motion. Even with the introduction of robotics, keeping workers safe and preventing injuries is still a major concern for safety managers in automotive manufacturing, as the injury incidence rate for every 100 workers is double the rate in other industries.[3]

According to the Bureau of Labor Statistics, about half of the reported injuries and illnesses in motor vehicle manufacturing that resulted in days away from work in 2018 were musculoskeletal disorders from overexertion and bodily reaction.[4] Compared to private industries, workers in automotive manufacturing experience more than three times the rate of these cases (95.1 cases per 10,000 full-time workers) due to essential tasks that require repetitive motion.

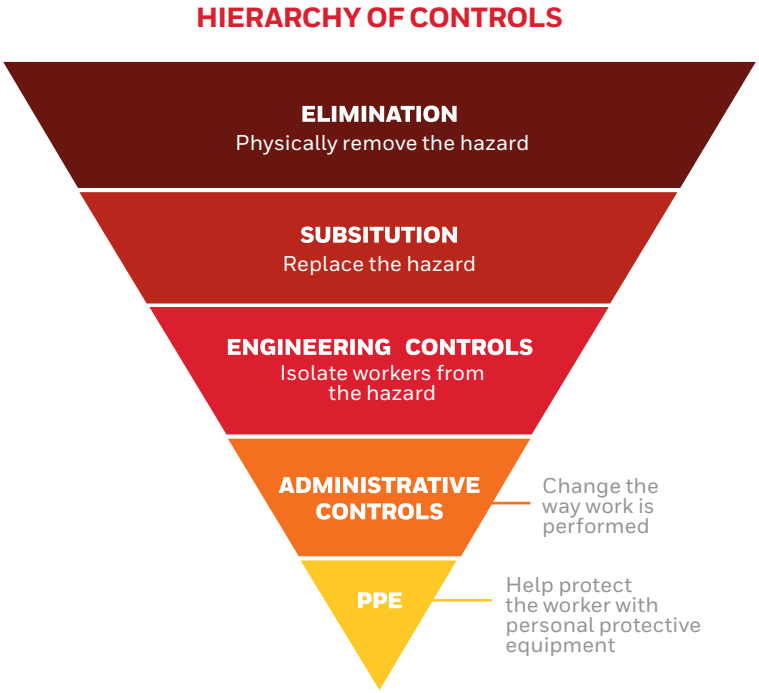
6.2%

INCIDENCE RATE IN AUTOMOTIVE MANUFACTURING INDUSTRY

The incidence rate (number of recorded cases out of 100 workers) in the automotive manufacturing industry is 6.2, compared to 3.3 in manufacturing overall and 3.0 for all industries.[5]

BUILD A CULTURE OF SAFETY IN YOUR FACILITY

Building a culture of safety starts with implementing a Hierarchy of Controls plan recommended by NIOSH to help prevent accidents before they happen by limiting workers' exposure to hazards.[6]



> **When all else fails, PPE *is* the last line of defense against injury, loss and death.**

As the hierarchy showcases, automotive manufacturers should take the necessary steps to eliminate or substitute hazards, isolate workers from the hazard using engineering controls or change the way people work using administrative controls.

OSHA recognizes the importance of PPE in manufacturing standards and outlines employer obligations, which are as follows:

- Performing a hazard assessment of the workplace to identify and control physical and health hazards
- Identifying and providing appropriate PPE for employees
- Training employees in the use and care of the PPE
- Maintaining PPE, including replacing worn or damaged PPE
- Periodically reviewing, updating, and evaluating the effectiveness of the PPE program[7]

NOT ALL PPE IS CREATED EQUAL

Accidents are bound to happen. That's why PPE is an essential investment for any automotive manufacturing facility and should be an integral part of your safety program.

Proactively investing in high quality, head-to-toe PPE that is designed for the challenges of automotive manufacturing is an important step toward helping protect your workers when and where they need it the most.

COMFORTABLE PPE HELPS ENSURE COMPLIANCE

To help protect workers, PPE must be worn properly. In automotive manufacturing, employees should be equipped with comfortable PPE solutions they will want to keep on for long shifts to help ensure compliance with OSHA safety standards and regulations. Uncomfortable and intrusive PPE may prompt workers to remove it, ultimately increasing the risk of injuries.

DEXTEROUS GLOVES MAKE HANDLING SMALL OBJECTS EASIER

Workers in the automotive manufacturing sector should be equipped with gloves that provide enhanced dexterity and a good grip as they handle nuts and bolts, adjust small parts and screws, attach cables, pull wires, assemble doors, place seats, etc. The proper gloves enable workers to effectively do their job while helping protect their hands from cut hazards.

SILICONE-FREE PPE HELPS PREVENT FLECKING

Traces of silicone can cause flecking when applying primers or paint to vehicles. Equipping workers with silicone-free gloves and respirators allow for the paint to be applied correctly the first time, helping to eliminate additional costs or delays in production schedules.

SMART PPE IS TRANSFORMING THE FUTURE OF WORKER SAFETY

Smart PPE is defined as wearable equipment that connects to the internet, delivers safety information, collects data, adjusts to conditions and warns of hazards. These solutions can help employers be proactive rather than reactive by analyzing data and putting new processes into place to prevent accidents before they happen.

Connected solutions are gaining momentum in the automotive manufacturing industry because they improve communication and provide better situational awareness. Depending on the function, the safety tool helps protect workers against the hazards of moving robots, which can be fatal. Plus, smart PPE can also increase safety for lone workers, regardless of their location as factories are often miles long.[8]

PPE THAT MATCHES TODAY'S INNOVATIVE PLANTS

Just as your workers are shaping the future of the automotive manufacturing industry, Honeywell is committed to innovating a safer future by designing head-to-toe PPE that mirrors today's innovative plants.

With 100+ years of industry experience and knowledge, we've evolved with the automotive industry to engineer high-quality head-to-toe safety solutions that help protect automotive manufacturing workers when and where they need it most.

We understand it may be challenging to find the correct PPE for your specific workplace applications. That's why we take a consultative approach to understanding your unique work environment and we tailor solutions that best fit your workers' needs. Just as your workers manufacture quality cars with keen attention to detail to help keep drivers safe, we use that same level of care in engineering our PPE to help keep workers safe.

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2. QAD, https://www.qad.com/blog/2019/12/the-biggest-milestones-in-the-history-of-automotive-manufacturing
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THE FUTURE IS WHAT WE MAKE IT

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