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A photograph of industrial machinery, likely a large metalworking or manufacturing machine, with a prominent cylindrical component in the foreground. The background shows a workshop environment with wooden paneling and various pipes and electrical conduits.

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SEE PAGE 3

**5 Tips to Solve Industrial  
Facility Workstation  
Space Constraints**

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FEATURED ARTICLE: MUSHIELD

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# THE Gateway MAGAZINE

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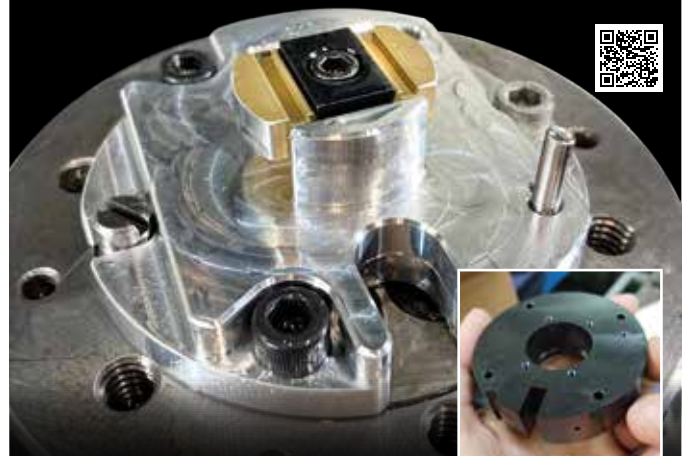
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## MUSHIELD FORGES AHEAD:

Revolutionizing Magnetic Shielding with Cutting-Edge Hydroforming Technology



**MuShield, a leading manufacturer of custom magnetic shielding solutions, has announced the acquisition of a state-of-the-art Triform 16-15-7DD hydroforming press. This strategic investment marks a significant leap forward in MuShield's production capabilities, allowing them to create intricate and high-precision hydroformed parts—which include magnetic shielding solutions—with unmatched efficiency.**



## Unveiling the Power of Hydroforming with the Triform 16-15-7DD

The Triform 16-15-7DD isn't just another piece of equipment; it represents a paradigm shift in metal forming technology. Unlike traditional stamping methods that rely on physical punches and dies, hydroforming utilizes the power of pressurized water. A sheet of metal is positioned over a precisely machined mold, and then high-pressure water (up to 15,000 PSI in this case) is forced into a chamber, pushing the metal into the desired shape.

*This innovative process offers a multitude of advantages over traditional methods:*

- **Unmatched Precision:** The water pressure distributes force evenly across the metal sheet, resulting in incredibly precise and consistent shapes. This is crucial for magnetic shielding applications where even slight deviations can compromise effectiveness.
- **Unveiling Complex Geometries:** Hydroforming allows for the creation of intricate shapes that would be difficult or impossible to achieve with traditional methods. This opens doors for designing highly customized magnetic shields for a wider range of applications.
- **Enhanced Strength and Consistency:** The hydroforming process creates a more uniform distribution of stress within the metal, leading to increased strength and overall part consistency. This translates to robust and reliable magnetic shields that can withstand demanding environments.]

## Streamlined Efficiency for Faster Turnarounds

MuShield prioritizes not only quality but also efficiency. Recognizing the value of time-saving features, they were particularly drawn to the press's dedicated tool change station. This dedicated space allows for rapid loading and unloading of tooling, minimizing downtime during production runs. Additionally, a movable cartridge-style lower chamber simplifies the process of switching between dies, further streamlining the production process. To elevate efficiency even further, the system incorporates a punch tool lift cylinder, ensuring even faster tool changes.

## Enhanced Integration and Recipe Management

Seamless integration with MuShield's existing infrastructure was another key consideration. The Triform 16-15-7DD comes equipped with a barcode reader, facilitating efficient recipe handling. This translates to quicker setup times and reduced potential for errors. Furthermore, Triform's user-friendly programming allows MuShield to store a staggering 10,000-part recipes. This extensive library ensures precise control over optimal forming pressures and desired positions throughout the draw process for every unique project.

## Investing in the Future

"The Triform 16-15-7DD has been on our radar for a long time," said Luke Grilli, VP of Sales and Marketing at MuShield. "This press represents a significant leap forward in our hydroforming capabilities. It not only solidifies our position as a leader in custom magnetic shielding solutions, but also ensures we have a reliable and powerful workhorse for the next two decades."

MuShield's commitment to continuous improvement through cutting-edge technology is a clear signal to the industry that they remain dedicated to providing their clients with the best possible magnetic shielding solutions.



▲ Pictured: MuShield Hydroform Machine

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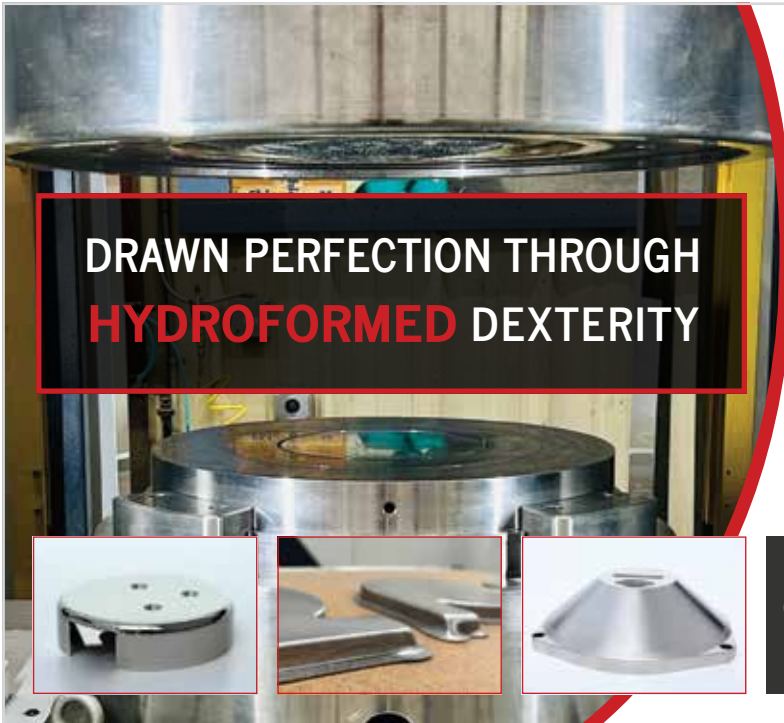
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## A Legacy of Innovation

MuShield's acquisition of the Triform press signifies their unwavering quest of remaining at the forefront of the magnetic shielding industry. Founded in 1989, the company boasts a rich history of innovation and expertise. They have established themselves as a trusted partner for companies and organizations across diverse sectors, including:

- **Electronics:** Shielding sensitive components in computers, smartphones, and other electronic devices from electromagnetic interference (EMI).
- **Healthcare:** Ensuring the safe operation of MRI machines and other medical equipment by deflecting external magnetic fields.
- **Aerospace:** Protecting delicate electronic systems in aircraft and satellites from the Earth's magnetic field and other environmental factors.
- **Defense:** Safeguarding sensitive military equipment from electromagnetic pulses (EMPs) that can disrupt or damage electronic systems.

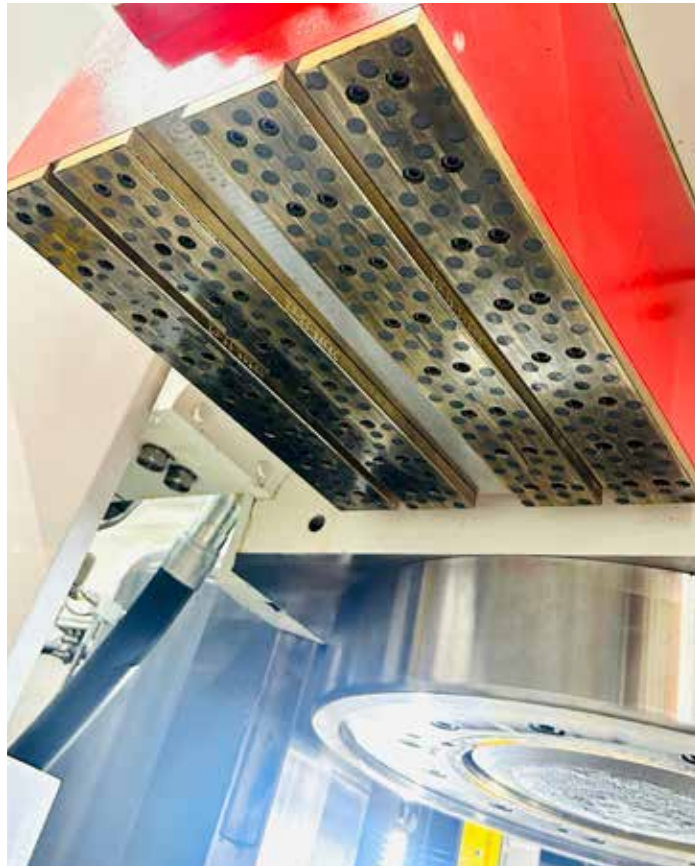


## Beyond the Hype: The Crucial Role of Magnetic Shielding

Magnetic fields, though invisible, are a powerful force in our world. While they have numerous beneficial applications, they can also pose significant challenges for sensitive electronic equipment. Magnetic shielding acts as a protective barrier, deflecting unwanted magnetic fields and ensuring the proper functioning of critical devices.

The importance of magnetic shielding extends far beyond the industries mentioned above.

Here are a few specific examples that showcase its diverse applications:



- **Ensuring Data Integrity:** Data storage devices, like hard drives and solid-state drives, are susceptible to data corruption when exposed to strong magnetic fields. Magnetic shielding safeguards these devices, ensuring the security and integrity of your valuable data.
- **Maintaining Research Accuracy:** Scientific research often relies on highly sensitive instruments that can be disrupted by stray magnetic fields. Magnetic shielding creates a controlled environment, allowing researchers to conduct accurate and reliable experiments.
- **Enhancing Medical Diagnostics:** Certain medical diagnostic tools, like magnetoencephalography (MEG) machines, rely on detecting weak magnetic fields generated by the brain. Shielding these machines from external magnetic interference is crucial for obtaining accurate diagnoses.

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## The Future is Shielded: MuShield's Vision and Beyond

The acquisition of the Triform press adds to MuShield's portfolio of proactively looking for ways to realize continuous improvement and their ongoing vision for the future of magnetic shielding. This technology paves the way for several exciting possibilities:

- **Reduced Lead Times:** Streamlined production processes enabled by the new press will translate to faster turnaround times for MuShield's clients.
- **Enhanced Design Flexibility:** The increased forming area and pressure capabilities allow for the design of more intricate and complex magnetic shielding solutions, opening doors for innovative advancements.
- **Cost-Effectiveness:** Streamlined production processes and reduced material waste contribute to overall cost-efficiency, potentially benefiting MuShield's customers.
- **A More Sustainable Future:** Minimized waste and efficient resource utilization contribute to a more environmentally responsible manufacturing process.

## Partnering with MuShield

MuShield's dedication to innovation and continuous improvement positions them not only to meet the growing demand for high-quality magnetic shielding solutions but also to push the boundaries of what's possible in this ever-evolving field. With a commitment to precision, efficiency, and sustainability, MuShield remains a trusted partner for companies and organizations requiring advanced magnetic shielding and hydroforming solutions.

To learn more about MuShield, visit their website at [www.MuShield.com](http://www.MuShield.com).



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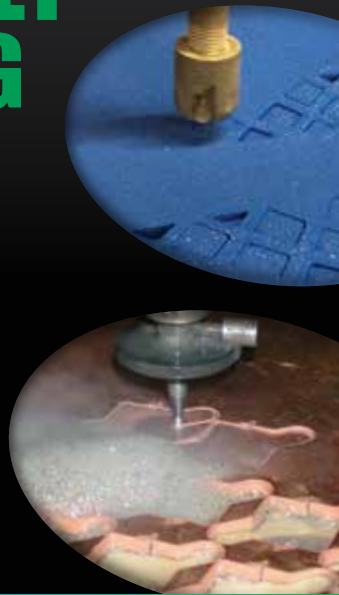
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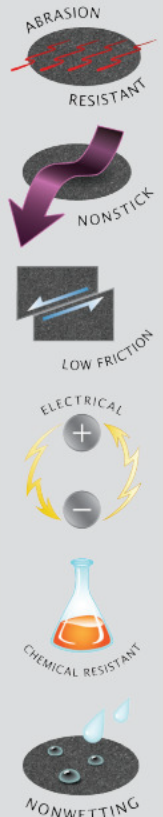
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## 5 TIPS TO SOLVE INDUSTRIAL FACILITY WORKSTATION SPACE CONSTRAINTS

***Innovative options for mounting, customization, and true mobility can help to maximize usable space and productivity in cramped facilities.***

Many industrial manufacturing facilities expand their capacity by retrofitting existing spaces. However, expansion can crowd existing facilities, leaving less room for critical computing platforms and key performance indicator (KPI) visualization displays. Without sufficient control equipment, current processes can be challenged to meet critical quality standards and productivity can lag.

Fortunately, a variety of innovative space-saving options are now available that can help industrial facilities make the most effective use of virtually every square inch of usable space for computing and data analytics platforms, including hallways, production areas, and cleanrooms.

Paul Shu of ARISTA Corporation, a leading provider of computing platforms and visualization display products for harsh industrial environments, offers five tips to manufacturers who need to maximize their use of space within constrained facilities.

The company's broad array of ruggedized products includes standard and custom solutions like thin clients, panel PCs, ruggedized touch displays, keyboard, video monitor, and mouse (KVM) solutions, as well as mobile and operator workstations.

**Tip 1 – Increase flexibility with a pendant arm mount**

When industrial operator workstations are required within tight confines, highly flexible stainless steel pendant arm designs can save a significant amount of space, according to Shu. With this option, the screen and connected keyboard are suspended by a pendant arm that is mounted to the wall. When needed, the user can extend, rotate, and swivel the workstation into the ideal position. When data entry is completed, the workstation can be pushed back against the wall, out of the way.

“Today, space efficient, pendant arm, 360° double-joint [single-screen] and triple-joint [dual-screen] designs make wall flush installation, folding, and workstation retraction easy tasks. The angle of the screen or keyboard in some models can be adjusted to accommodate operators’ various heights and specific requirements. This enables comfortable workstation operation over an extended period,” says Shu.

**Tip 2 – Take advantage of wall-recessed workstations in hallways**

When installing workstations in hallways or other space constrained areas, wall-recessed units are the perfect solution. According to Shu, 15, 17, 19, and 21.5-inch touchscreen displays can be fully recessed into a wall to allow greater clearance. There is even an option for a 55-inch large-format 4K display workstation with Quad View display so operators can visualize KPIs and take full control of the production data.

“Recessed workstation mounts should be utilized when hallways are employed for operational control while allowing maximum walking space,” says Shu.

The pendant arm can be utilized for a keyboard in hallways.

For use in tighter spaces, the company offers a wall-mount option, in which a hinged keyboard support stand with a sliding brace release from the wall. It folds back virtually level with the wall when not in use. A lockable utility tray that extends from the keyboard stand also enables the use of a full-size computer mouse and pad (viewable at <https://www.youtube.com/watch?v=ZPBaC7AcUjw&t=16s>).

Shu advises that a fanless cooling design should be implemented in wall-recessed models to ensure that the workstations operate stably and reliably. The compact design does not utilize bulky fans yet lowers the system’s operating temperature.





**Tip 3 – Install wall, pedestal, or ceiling mounts to suit specific space requirements**

Depending on the available space, wall, pedestal, and ceiling mounts can all play a role in better utilizing certain manufacturing facility configurations. Shu notes that wall mounts come in several types and configurations, including fixed and adjustable height.

Computing systems can be mounted to walls using a VESA Mounting Interface. With a floor-mounted pedestal mount, the workstation is situated on a compact platform supported by a stainless-steel column that occupies very little space. Ceiling mounts, as the name suggests, support the workstation and monitor from above, leaving the floor fully open for storage, production, or other uses.



**Tip 4 – Take advantage of mobile workstations in any available space**

Mobile workstations are increasingly popular in industrial manufacturing environments since the units can be used where needed and then moved out of the way. In addition, mobile workstations enable rapid and easy reorganization of the work environment and process flow for more flexible management.

“One mobile workstation can replace multiple fixed workstations, and there are no installation costs. Wireless connections allow for direct communication with manufacturing execution systems, electronic batch records (EBR), SOP, ERP, and other back-end systems,” says Shu.

To be truly mobile, ARISTA designed a wireless, portable system that operates on a heavy-duty lithium battery that allows the workstation to function seamlessly and uninterrupted while in motion. The battery can last for several shifts before requiring a recharge, enabling full non-stop mobile operation over a 24-hour period.

Wi-Fi capability is built into the workstations to allow for uninterrupted wireless communication in all corners of the factory or laboratory. In addition, most advanced industrial manufacturing facilities today have Wi-Fi-based system backbones connected to legacy subsystems, meaning the workstation can communicate directly with the facility’s server.

“With no cables to be disconnected, managed, and reconnected, and with no break in any live or critical

connections to re-establish, manufacturers can save time and significantly increase productivity,” says Shu.

The portable systems are completely enclosed and therefore fully compliant from a regulatory standpoint, which is essential for sensitive production environments. Eliminating the wires means removing integrity compromises and contamination caused by connecting and reconnecting systems to move the workstation. Each unit can do everything a stationary system can do while remaining mobile, which reduces both infrastructure cost and deployment complexity over a desk-based system.

### **Tip 5 – Custom solutions when all else fails**

When standard catalogue options are insufficient, custom solutions can be required to fit into tight spaces or hallways. To do this, the equipment must often be customized as to the size, inputs, communication connections, mounting, battery types, and other factors.

Although the leading process automation equipment providers offer computing solutions, the options are limited. In addition, they are not typically flexible enough to provide custom computing system component solutions since this is not their core competency.

“Most providers offer basic monitors and workstations, but if there are specific space constraints or other design changes, they are not able to create new solutions or make minor changes to existing products,” says Shu.

In contrast, ARISTA has serviced industrial manufacturers for more than ten years and developed a broad range of products during this time. The company has a strong track record and capability to customize products to meet necessary process specifications.

“If there are unique requirements due to space constraints, we meet with the manufacturer to fully understand the situation and design a solution,” says Shu. “In six to eight months, we can deliver the first articles for approval, and begin production of the equipment.”

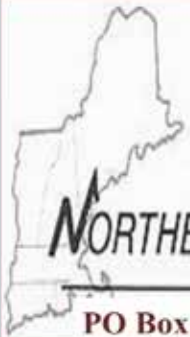
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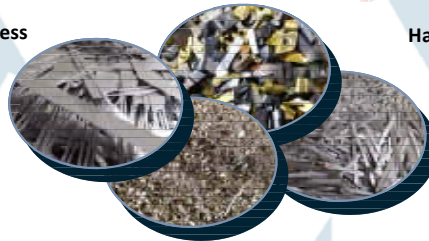
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