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Imponderables: If the #2 pencil is the most popular, why is it still #2?

HOBSON & MOTZER Inc.

DURHAM, CT

In the March 2019 issue of The Gateway, we ran a reprint article on Hobson & Motzer originally published 2007. It was a look back on this great Connecticut manufacturing company who has been a fixture in the state since opening in 1912. In this issue, we check-in on what Hobson & Motzer has been up to over the past decade or so. A lot has happened since 2007, but in the most simplest of terms - Growth!

A H Motzer and Son A E Motzer

Hobson & Motzer, Inc. remains a privately held manufacturer of precision metal components and assemblies; a vertically integrated, precision stamping, machining, and assembly company. By broad definition, or their "reason to exist" according to Hobson & Motzer President, Bruce Dworak is to Improve lives, Advance Technology, and Transform Metal. A sentiment engrained in every Hobson & Motzer employee. The company's primary market is the medical device industry, so the gravity of their work is well understood by all.

Founded in 1912, the company manufactures precision metal components and assemblies for advanced industries.

Original Plant C 1912

Core capabilities include: tool design and engineering, progressive die tooling, precision metal stamping, multi-axis high speed CNC machining, precision electro chemical machining (PECM), and assemblies. Because it is a vertically integrated company, it maintains control over every process and phase of production from start to finish. Secondary operations include deburring, machining, laser welding/cutting, pad printing, and more.

For over 100 years, Hobson & Motzer has embraced innovation and growth. They have consistently invested in new and advanced technology and expanded the business to meet customer's needs. To accommodate new

Laser Cutting Cell

Continues on page 7

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An old error is always more popular than a new truth. (German Proverb)

Bank 1 of Automated Multi-Axis CNC Cells

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production lines and several larger presses, a 25,000 sq. ft. addition was made to the Durham plant in 2011, an expansion they quickly out grew. In 2017, Hobson & Motzer opened a second manufacturing plant just miles away in Wallingford, CT creating more room for growth, but with a sharp focus on advanced manufacturing.

Hobson & Motzer has also stepped up its commitment to authentic LEAN manufacturing. Last year the company adopted the Shingo model for enterprise excellence. Their mission is to drive customer value through application of Shingo principles. By focusing on cultural enablers and enterprise alignment, typical lean tools (value stream mapping, Kanban, cellular work flow, 6S,

Continues on page 9

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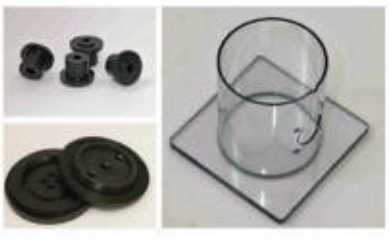

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If a man wants his dreams to come true, he must wake up. (Anonymous)

Bank 2 of Automated Multi-Axis CNC Cells

visual systems, and setup reduction) can be deployed in a strategic, sustainable fashion that will improve overall results and create value for customers. Hobson & Motzer is ISO 9001 and IATF 16949 certified, and are in the process of working toward ISO 13485 for medical devices. Quality is systemic and process driven at Hobson & Motzer.

Hobson & Motzer's precision metal stampings begin with high-quality Class-A progressive dies. All of their tooling and fixtures are designed in-house and built in a state of the art tool room that is staffed by a team of 50, including 27 journeyman tool and die makers. The tool room at Hobson & Motzer serves only their internal tool, die, and fixture needs for their stamping, machining, and assembly departments. This depth and experience enables the company to provide value early in a customer's product development process. Engineering and tool design offer design for manufacturability ideas to customers, ideas that facilitate cost-effective mass production, without compromising quality.

Their press room is home to more than 50 state-of-the-art power presses for stamping, coining, and coining wire. The range of presses include: straight side, servo, and knuckle presses allowing the company a broad range of capability and flexibility in its stamping operations. The entire pressroom is fully networked for systemic performance monitoring for down time, changeovers, and quality data to preventative maintenance scheduling (OEE). Each press is equipped with modern controls and electronic sensors, allowing them to run production consistently and safely at maximum speeds with minimum downtime.

Today, Hobson & Motzer has some of the most precise vertical CNC machines available with 3, 4, and full 5-Axis capability. Their expertise in machined components is complimented by a team of expert Applications Engineers with diverse backgrounds in the aerospace, automotive, and mold making industries. The equipment is high-end, robust, production ready, and versatile. This diversity provides great flexibility to apply the most suitable technology for each application. In high volume applications Hobson & Motzer also designs and builds, in-house, state of the art automated robotic controlled systems for maximum efficiency.

Continues on page 11

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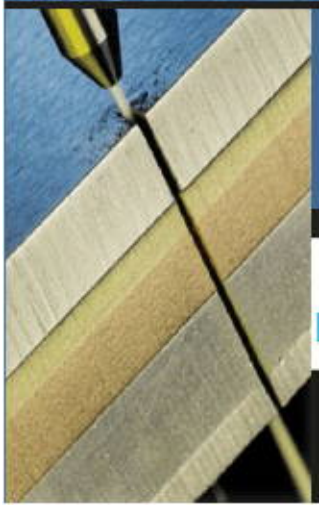

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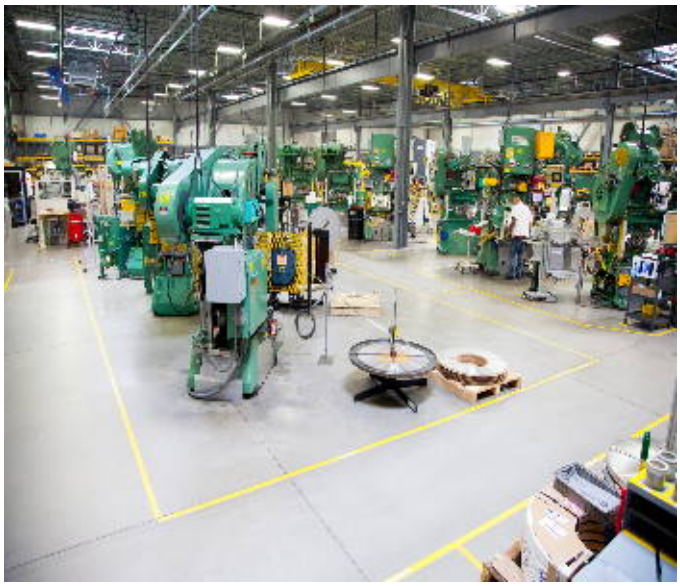

Stamping Pressroom

Hobson & Motzer invests in employees. The company is dedicated to employee safety, training, and development. Employee innovation is encouraged through an active employee idea system, as well as an employee engagement program. The company also has a longstanding, and very active, tool and die-makers apprenticeship program. This program has allowed Hobson & Motzer to develop talent from within, sustain and nurture this critical skill within their business.

Community outreach in education is an important value to the company. Hobson & Motzer supports a wide range of STEM initiatives (Science Technology Engineering Math, or as they see it: Manufacturing) through involvement with local technical high schools, colleges, and various trade organizations. In doing so, the company hopes to encourage young people to pursue a career in manufacturing, a vitally important concern for manufacturing in the United States.

DURHAM, CT

Continued on page 13

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WALLINGFORD, CT

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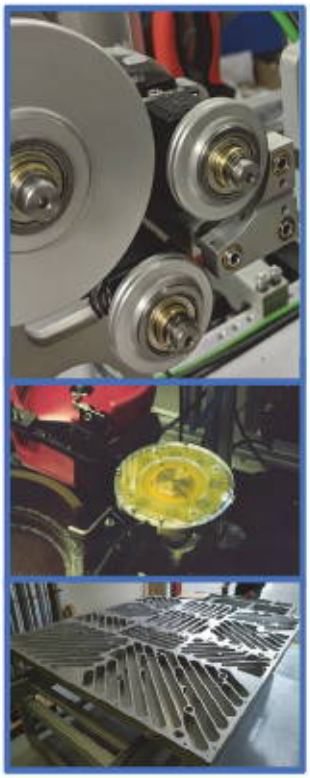

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PRESS RELEASE

Air Filtration In The Welding Shop

J. Ketcham

The cleanliness and quality of the air we breathe in the workplace is of paramount importance and can have a direct impact on health and longevity. We breathe that air for at least 8 hours a day and often longer. So for that period of time contamination in the air in that environment is being deposited in your lungs and respiratory tract. Think about that for a moment and you will realize the importance of proper air filtration.

Potential Health Issues Associated With Welding

Smoke and fumes generated from the welding process are made up of a complex mixture of various components that include sub micron particulate matter and gasses. In addition there may also be shielding gasses which are used in welding processes. Potential health issues can be the result. As an example, the welding of stainless steel can give off chromium and nickel which are components of stainless steel . Welding stainless steel converts the chromium in the stainless to hexavalent chrome. Hex chrome fumes are toxic. Other materials can result in potential health issues associated with the lungs, throat, kidneys, and nervous system to name a few. Smoke and fumes can also cause irritation to the nose, throat and eyes. More serious issues can include different forms of cancers. For health reasons, careful consideration should be given to proper air filtration in the welding environment and the air filtration systems in the welding shop should be well maintained with filters being changed on a regular basis.

Air Filtration for Welding

Broadly speaking, there are two forms of air filtration, source capture and ambient capture. Source capture is the pick-up of the contaminated air at the point of generation. Anytime we can source capture, especially when the contamination source is near the breathing zone, it is in our best interests to do so. Once that contaminated air escapes into the surrounding environment, it becomes more problematical, less efficient and more costly to deal with and it is at this point that we turn to ambient capture. Source capture typically involves the use of portable filtration systems with articulated pick-up arms. These work well when the welding work envelope area is about 36" x 36" or less. The downside of source capture is that the operator must keep the pickup hood relatively close to the work area. The pickup hood should be placed such that it draws the smoke and fumes away from the welders breathing zone and into the smoke collector.

Source Capture Collector

Ambient collection involves the placement of multiple units thorough out the shop. These units are designed and set up specifically for ambient air cleaning. They are typically hung from the ceiling or walls and are manufactured with an intake grill and exhaust grill. Some configurations may have more than one of each.

The number of ambient air cleaners required for a welding shop is determined based on its size. The size of the shop is calculated in cubic feet. The number of air cleaners required becomes a mathematical calculation and is the desired number of air changes per hour required to achieve the desired air cleanliness level. That level is attained when the number of air changes per hour is great enough to exceed the amount of contamination being generated.

As mentioned, anytime you can capture at the source you are generally better off doing so. However, source capture depends on the operator positioning the pickup hood correctly. If the operator has to move the hood repeatedly because of a large work envelope they may not move it at all; thus rendering the source capture ineffective. Ambient collection on the other hand eliminates this need and it also eliminates any ductwork, articulating arm and pickup hood. Ambient air cleaning does not however remove the contamination from the welders breathing zone. While the ambient air in the shop will be cleaner, the air in the work zone may not be at an acceptable cleanliness level. In the end, the best approach depending on the shop and the layout may well be a combination of both methods.

Source Capture Collector

Air Filters For Welding

Air filters used in the air cleaners are progressively staged. Adequate pre-filtration should be incorporated in the unit configuration to remove larger particulate contaminate. This results in the added benefit of extending the life of the more costly main or final air filter. The main filters should be MERV 15. Any minor odors can usually be taken care of with a carbon filter.

Ambient Air Cleaner in a Welding Shop

In a source capture unit, pre-filtration is usually accomplished using a 4" aluminum mesh pre filter. This is designed to remove the larger particles from the airstream. It also has the added benefit of acting as a spark arrester. In the ambient air collector, the pre-filter would normally be a 4" pleated MERV 8 filter. The main filter in a source capture unit is usually a Merv 15 which is designed to remove more than 95% of particulate .030 — 1.0 µm in size. The application, the material being welded and the byproducts produced should dictate the retention levels of the filters. Other retention levels are available, but it is best to use at least a MERV15. As the filter becomes clogged, the air flow will decrease and a gauge will indicate when the filter needs replacement. The filter, while it does represent an ongoing expense, should be replaced promptly. To delay in the replacement is counter productive to the clean air objective.

Maintaining healthy air quality in the work environment is in the best interests of all. In a healthy environment people tend to be more productive and the quality of the air we breathe can have a significant impact on health and longevity.

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The conventional view serves to protect us from the painful job of thinking.
(John Kenneth Galbraith, 1908-2006)

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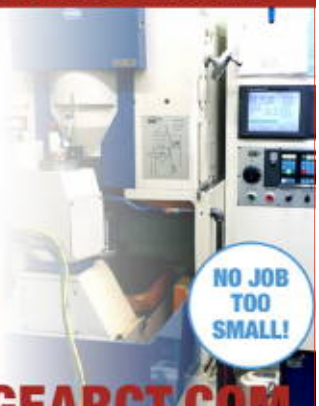

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