Oracle

ISME Strategy
Page 6

Fractory Article
Page 18

Bruderer Launches Two New Presses at Blechexpo
Page 27

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Journal of the Institute of Sheet Metal Engineering

FULL DETAILS WILL BE ON THE ISME WEBSITE AT THE END OF JANUARY

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The 2024 ISME Sheet Metal Technology Competition

FOR APPRENTICES & TRAINEES

Judgement Day to be held at:

AMADA UK Ltd
Spennells Valley Rd, Kidderminster DY10 1XS

On Thursday, 20th June 2024

Go to our new website for Competition Drawings and Entry Form
isme.org.uk

PRESIDENT'S NOTES

Hi All,

Welcome to the latest edition of the Oracle, I'm sure there is plenty of stimulating content to be found on the following pages. It would be nice to be able to provide an upbeat message on the economy for a change, but it seems the current indicators are stuck on flat-lining for the remainder of 2023 and only a modest improvement forecast for next year.

Regrettably the passage of time is not enhancing my knowledge and understanding of economic theory much, if at all. Movements in the country's Balance of Trade or Balance of Payments performance I could always grasp fairly instinctively, but the current trend of dependence on "GDP growth" as the most reliable indicator of the economic health of the nation leaves me truly perplexed. Especially when things like a reduction in Covid testing activity is seen as a negative factor in terms of its effect on economic growth – how does that work?

Oh well, I guess I'll have to take some comfort in the sage words of an old friend of mine,

"There are only two kinds of forecast – lucky, and wrong!"

Best Regards,

Alan Shaw - ISME President

CHAIRMAN'S COMMENTS

THERE IS ALWAYS A WAY AROUND AN ISSUE.

As we start another year, I wanted my opening comments to be directed to the ISME council and all of the members. I would like to thank each and everyone of you all for the support encouragement and assistance that I have received during my time as ISME Chairman.

I would also like to advise you all that even though I am retiring from the Chairman's role I will be shadowing our new Chairman during 2024. During this time. I will be available to fully support and assist wherever I can during the future as the new proposed program is rolled out to the in the coming months to the membership.

There will be some significant changes in the future as the institute rebrands, and makes itself much more visible to everyone as well as for the membership. As part of these changes ISME will be offering significant beneficial changes to both individuals and corporate members.

Finally, it gives me great pleasure to announce that the new ISME Chairman who will be formally taking the Chair on January 23rd 2024 is no other than Dr Mohamed Mohamed.

Barry Smith - ISME Chairman

CONTENTS

Page 2 ISME Skills Competition
Page 3 President's Notes & Chairman's Comments
Page 4 Principal Officers
Page 5 Secretary's Notes
Page 6 ISME Strategy
Page 8 Toolmakers of the Future
Page 9 ISME Social Media Report
Page 10 Bruderer's New Telford Factory and Showroom
Page 12 MPPS Expands Workforce With New Apprentice
Page 14 Endpoint Assessment for Sheet Metal Apprenticeships and Engineering Training
Page 15 ISME Attend MMMA Gala Dinner
Page 16 FloorStak Reaches For The Stars
Page 17 ISME 2024 Passive Sheet Metal Technology Competition
Page 18 Fractory Article
Page 19 QFS Article
Page 22 ISME Member News
Page 24 Impression Technologies - Process optimisation and robustness analysis for HFQ process
Page 26 Latest News from Impression Technologies & Ray Avery
Page 27 Bruderer at BlechExpo

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ISME MEMBERSHIPS

If you want to learn more about sheet metal and meet like minded people why not become an ISME member.

OUR MAIN AIMS:

- To promote the science and working of sheet metal.
- To provide opportunities for people to exchange ideas and information.
- To encourage the development of members.

CURRENT ANNUAL MEMBERSHIP SUBSCRIPTIONS ARE:

Company Membership	£300.00
Fellows Membership	£85.00
Individual Membership	£60.00
Corporate Individual	£40.00
Student Membership	£20.00

Full details and membership application forms are available on our website **www.isme.org.uk**
Or contact the ISME secretary at **ismesec@gmail.com**

SECRETARY'S NOTES

The Institute welcomes two new Company members.

Fractory

Fractory is a metal manufacturing business. Its online platform allows engineers to price and order metal parts. This can be for large-scale, series production or for one-off prototyping. An extensive supplier network means Fractory customers access best prices and lead times. Fractory handles the entire ordering and shipping process. Most orders can be made online – on the Fractory platform – directly from CAD files. But dedicated mechanical engineers are always available to help customers, especially for complex or high-value orders.

QFS MANUFACTURING

At QFS Manufacturing, we specialise in providing metallic prototype parts and metallic low to medium volume production parts. Our team of highly skilled employees and advanced machinery allow us to deliver exceptional operational performance and maintain the high-quality service standards our clients have come to expect from us. Our management team remains dedicated to prioritising this focus.

- Bill Pinfold

ISME STRATEGY

ISME'S VISION

We plan to be a world-recognised sheet metal /presswork engineering membership organisation for individual and corporate members

Promote the science driving developments in sheet metal working

Exchange ideas and information to help members with their product development

Develop and support engineers with sheet metal working skills to help solve future challenges

Encourage collaboration between industry, University and R&D to further the science and technology of sheet metal forming to maximise the impact of our members.

ISME ACTIVITIES

MEDIA

Website: Cases studies, success stories

Update events, and workshops. Webinars, oracle, training.

LinkedIn: live updates about website activities

TRAINING

Develop members and sheet metal working skills to help solve future challenges

Introduction of Sheet Metal Forming

Industrial Application of Sheet Metal Forming (cases studies)

Ensuring apprenticeships are developed to suit the sheet metal sector needs

ORACLE

Approaching advanced sheet metal techniques.

More Technical articles provided by Members and sheet metal machinery makers.

SUPPORTING MEMBERS

Exchange ideas and information to help members with their product development

VISITS & WORKSHOPS

Promote ISME to target new members providing the opportunity to meet, exchange ideas and innovate.

Supporting our members to develop their skills throughout their careers.

WEBINARS

Promote science-driving developments in sheet metal working both CAE and machinery

WHAT ISME CAN OFFER

A Learning Factory for Sheet Metal Engineering

INDUSTRY

- Collaboration with industry
- Real life projects
- Life-long learning
- Transfer of latest scientific research to industry
- Helping to cross the bridge from academia to mass production

GOVERNMENT

- Identification of industrial needs
- Defining of industrial strategy
- Spin-off and start up enterprises

UNIVERSITY

- Balance between engineering science and engineering practice
- New Curriculums and study programs

WHAT ARE THE BENEFITS OF BECOMING A MEMBER OF ISME?

- ISME experienced members are from a mixed portfolio of white goods, IT, automotive, aerospace, defence, rail, Leisure & construction
- Highlight contribution to UKPLC (Public limited company)
- Ensuring the Government support international sheet forming industry with the Institute voice being heard
- Supporting strong talent development & engineering apprenticeship
- Assisting deployment of new technologies – including assisting in finding financing for modernisation and upskilling

ISME IN 2024

This year we will again hold our renowned Skills Competition in June, giving young apprentices and trainees the chance to show their skills in a well-supported, fun and rewarding day. Our members have told us the skills competition is one of the few events that encourages and promotes deep understanding within apprentices of practical sheet forming skills. You can find out more here - https://isme.org.uk/isme-skills-competition-2024.

You can also look forward to our Oracle publications, which this year will have a mix of feature articles from industry and academia.

Our LinkedIn feed continues to grow and we now have around 930 followers.

Thank you for your continued membership. We welcome any feedback and are always looking for new ways to support the industry. Please do drop your ideas to us by contacting us through our website.

Dr. Mohamed Mohamed

TOOLMAKERS NEEDED FOR THE FUTURE OF THE SHEET METAL PRESSWORK SECTOR

The Sheet Metal Presswork Sector is gradually losing their skilled toolmakers though retirement, with the loss of experience, knowledge, and skills we need to maintain our ability to be UK self-sufficient in making our own tooling. The decline was started by the UK car OEM's over 25 years ago insisting that buying tooling from the far east was giving major cost benefits.

Don't get me wrong some of our excellent UK Contract Toolmakers back then did not really understand their costs especially when presented with a customer Quotation Analysis Form (QAF) to be completed.

We appear to have gradually stopped the decline and started to build our toolmaking skills base enabling our inhouse toolmaking and UK based contract toolmakers to be providing additional capacity. However, we still need to train more apprentice toolmakers to maintain and grow our UK resources towards self sufficiency in the UK.

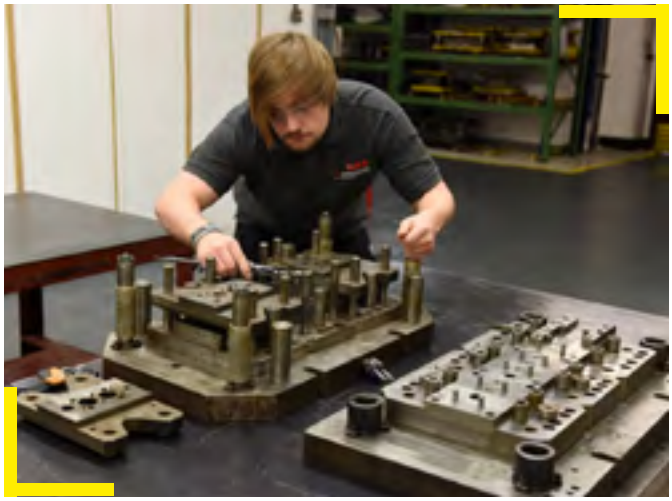
Toolmaking has changed dramatically over the last 50 years with less hand work skills such as accurate hand filing due to CNC machining advancements. The practical hand skills remain in machining and tool construction and of course de-snagging the tool to ensure it makes the component to the correct spec and volume.

First, we need to promote sheet metal presswork engineering as an interesting, exciting, skilful, career opportunity with a combination of practical and digital skills needed. We need to show the potential students what the job is and its career opportunities & benefits. At present it appears that career advisors in education are not promoting manufacturing skilled jobs especially through their lack of knowledge of the sheet metal presswork sector.

Presswork Company visits for the students is a must especially businesses allowing students work experience opportunities.

HOW DO WE RECOGNISE A POTENTIAL TOOLMAKER FOR EMPLOYMENT?

Gone are the days were Metalwork, Woodwork and Technical drawing is done at schools. We need to be able to recognise students not only their academic ability but also practical craft hand skills, with the ability to using hand tools, a person who has hands on ability with basic principles to producing mechanical items.



It is very difficult for Companies to employ the correct candidate making sure the basic skills are in place they require. This is where the local Training Providers & Colleges are needed as a pre- requisite to find the student on behalf of the employer who meets the basic needs to meet the apprenticeship on offer.

Adrian Nicklin ISME / CBM sheet Metal specialist

ISME DEVELOPMENTS DURING 2023 SOCIAL MEDIA CHANNEL ACTIVITY TO Q1 2024 REVIEW.

It is now nearly four years since ISME launched a second social media channel 'LinkedIn' adding to its existing Twitter Blogging Service. Development of LinkedIn is a continuous process, and I am very pleased to report that our new milestone is that LinkedIn media is breaking the 900 plus followers The initial slow start after launch when the channel was launched November 2020. The Covid pandemic leading up to 2023 with its restrictions of reducing follower trend is now well behind us., The continuous interest by ISME LinkedIn followers continues to grow along a similar positive growth curve in sheet metal manufacturing in spite of negative energy price pressures and skills shortages..ISME's higher social media activity during 2022 and 2023 is promoting healthy interest in its website and demographics of its LinkedIn news, events and members profiles. The encouraging news is that our social media channels have produce additional new members for the Institute over the past two years. New member recruitment remains a primary objective in the promotion of the benefits of being part of sheet metal engineering & its allied services sector. ISME's social media objectives remain generally unchanged leading up to 2025 will be to increase promotion of its members' by regular product manufacturing reviews, training ,skills development and marketing of member's product capability profiles

ISME's LinkedIn and Twitter accounts are being continually developed to capture a wider interest in sheet metal forming, with more emphasised targeting of new younger engineers and technicians to join the institute to enhance their career prospects, and to develop their skills in the science of metal forming technology. Our additional strategy for 2024 remains to focus interest in visual capabilities of LinkedIn channel to impact more widely sheet metal supply chains in the automotive and aerospace markets using a selected range of sheet metal forming video clips; advertising and educational postings. This should further help increase a wider awareness of metal forming technology and services. Another arm being to encourage more networking opportunities within the sheet metal community to attract technology leads in metal forming design. This feature should help ISME's LinkedIn followers & organisations interact with members to meet and discuss product development needs and market demands for metal formed parts and fabricated structures...

I am pleased to announce that since 2021 LinkedIn has been an important vehicle in generating followers to link directly to the ISME website. To further add to the social media service, newly synchronised news feeds of social events and skills training announcements will be developed to ensure up-to-date information is available for its members and followers to log into. https://www.linkedin.com/company/institute-of-sheet-metal-engineering. As a further illustration of how the ISME LinkedIn platform will further aid more reach-out to sheet forming allied service providers to link suppliers for example, equipment and consumables manufactures, environmental and H&S professionals. This feature is at the planning stage. More details will be made available in 2024

LINKEDIN DEMOGRAPHIC & INDUSTRY FOLLOWERS' SNAPSHOT:

LinkedIn Analytics snapshot as of mid-November 2023. 900+followers. Demographics: Top 3 locations-Taichung, Dartford, & Liverpool. Civil Engineering, & Industrial engineering manufacturing Company sizes: Very large (10k plus employees; Medium (1k-5k employees); Small (50-200 employees)

INDUSTRY

- Civil Engineering 11 (22.9%)
- Industrial Machinery Manufacturing 10 (20.8%)
- Sporting Goods Manufacturing 3 (6.3%)
- Mining 3 (6.3%)
- Advertising Services 3 (6.3%)
- Metalworking Machinery Manufacturing 3 (6.3%)
- Financial Services 2 (4.2%)
- Plastics Manufacturing 2 (4.2%)
- Commercial and Service Industry Machinery Manufacturing 2 (4.2%)
- IT Services and IT Consulting 1 (2.1%)

LOCATION:

- Taichung City, Taiwan 3 (6.3%)
- Dartford, United Kingdom 2 (4.2%)
- Liverpool, United Kingdom 2 (4.2%)
- Birmingham, United Kingdom 1 (2.1%)
- Bengaluru Area, India 1 (2.1%)
- Others 36 (75%)

COMPANY SIZE :

- Wolverhampton, United Kingdom 3 (6.3%)
- 10,000+ employees 12 (25%)
- 51-200 employees 8 (16.7%)
- 1-10 employees 5 (10.4%)
- 11-50 employees 4 (8.3%)
- 1001-5000 employees 3 (6.3%)
- Others 16 (33.3%)

The Media Editor and his team would welcome ISME members' ideas and suggestions to enlarge the range and scope of technical posts and company profiles .We would be pleased to receive news posts from all ISME members for posting the week prior to going to live press. These can be sent to ismemedia@gmail.com, or ismesec@gmail.com

My next LinkedIn review will be in 2024. Date to be advised

John Yarnall, Editor Social Media
Dan Cox, ISME Media Team - December 2023

MCPHILLIPS APPOINTED AS CONTRACTOR FOR BRUDERER UK'S NEW TELFORD FACTORY AND SHOWROOM

Construction work on a new 48,000 sq ft manufacturing facility in Telford is due to start shortly after Bruderer UK announced the approved contractor for the project.

The world's leading manufacturer of high-speed presses, which has been based in the UK for 55 years, has appointed local specialist McPhillips to lead on the build of its bespoke factory and showroom.

Creation of a dedicated competence centre - capable of servicing new and pre-owned machines as well as showcasing new models and turnkey solutions - will take eleven months to complete and will provide a 'gateway' building for the new Hortonwood West scheme.

The development is a real Shropshire affair, with Telford-based Cyril Orchard Group project managing and Design & Planning Associates in Oswestry providing the architectural drawings.

"We are really pleased to be working with three local experts in their respective fields, all of whom are all passionate about creating a world class new home for Bruderer in Telford," commented Adrian Haller, Managing Director of Bruderer UK.

"McPhillips is a proven contractor and we're looking forward to seeing groundworks start shortly, with the frame due to be up by early Spring and then fit out set to take place from June."

Bruderer UK has seen demand for its high-speed presses and full turnkey tooling/production solutions rise to record levels and this has driven the plan to relocate from Luton to a purpose-built factory and showroom in Shropshire.

The move will create four new jobs and the launch of a new apprenticeship programme to help future proof the workforce and industry talent of the future.

Bruderer CEO Reto Bruderer and Board Member Andreas Fischer flew in from Switzerland to join UK MD Adrian Haller for the 'ground breaking' ceremony held earlier this week.

Paul Inions, Managing Director of McPhillips, was also at the event and added his support:

"This is a major win for our business and brings yet another global manufacturer to Telford. Importantly, we are working with a client who wants to make a statement with the building, creating a facility and showroom that is pleasing on the eye, energy efficient and a fantastic place to work for its staff. We're going to make that dream come true."

For the first time in the UK, Bruderer customers will have a state-of-the-art demonstration centre to explore its latest high-speed presses and even set-up tooling projects to prove-out the effectiveness of the machine.

Training will also be completed on-site, and it is anticipated that several 'open houses' will be held to encourage young people to consider a career in the engineering and manufacturing industry.

Rob Orchard, Managing Director of Cyril Orchard Group, went on to add: "This project has been four years in the making, and I'm delighted that we are now finally at the stage where we will be helping make Bruderer's vision become a reality."

Design & Planning Associates' Gareth Edwards concluded: "The building will combine the latest construction materials with thermal management technology, including consideration to install photovoltaic panels and air source heat pumps to maximise energy efficiency.

"We've been able to overcome some complex issues to design a visually striking facility that gives Bruderer a new home they will be proud of."

For further information, please visit www.bruderer.co.uk or follow @brudereruk on twitter.

“”

‘OPEN HOUSES’ WILL BE HELD TO ENCOURAGE YOUNG PEOPLE TO CONSIDER A CAREER IN THE ENGINEERING AND MANUFACTURING INDUSTRY.

(l-r) Gareth Edwards (Design & Planning Associates), Chris Walker, Paul Inions (both McPhillips), Andreas Fischer (Board Member of Bruderer), Adrian Haller (Bruderer UK), Reto Bruderer (CEO of Bruderer), Ben Jones, Rob Orchard (both Cyril Orchard Group), Alec Sykes and Simon Walker (both McPhillips).

MPPS EXPANDS WORKFORCE WITH NEW APPRENTICE

Midland Power Press are a changing business and constantly working to keep up with the latest technology. When Sam approached us a part the way through his apprenticeship we were very impressed with his attitude and his engineering skills that he had already gained. He is very keen to become Multi-skilled and started with learning the currently machining facility and soon moved on to mechanical and pneumatic fitting.

Sam is very keen to learn from our other engineers and always has a question or a suggestion to help find a solution. He is completing his engineering apprenticeship with In-Comm Training.

We hope that Midland Power Press can progress with Sam and we wouldn't hesitate to take on another apprentice to support the growth of the business.

To find out more about MPPS please visit our website **mpps.co.uk** or follow us on social media.

KEEP YOUR BUSINESS RUNNING WITH MPPS' PROACTIVE MAINTENANCE STRATEGY

At MPPS we offer regular and routine servicing of presses and equipment to reduce the likelihood of failure leading to unplanned downtime.

BENEFITS OF A PLANNED MAINTENANCE CONTRACT:

- Reduced unplanned downtime
- Fewer breakdowns of presses & machines that are essential for production
- Improved reliability of presses & equipment
- Fewer expensive corrective & emergency repairs

Midland Power Press are working with current customers offering a turnkey solution for maintaining their critical machinery.

We are working to design bespoke maintenance reports and support to check all critical areas of machinery. Helping the life span of critical machinery.

CONTACT US

T: 0121 520 4320 E: ADMIN@MPPS.CO.UK W: MPPS.CO.UK

ENDPOINT ASSESSMENT FOR SHEET METAL APPRENTICESHIPS AND ENGINEERING TRAINING.

All apprentices in England are assessed at the end of their training to ensure they are competent in their occupation and can perform all the aspects of their role.

They are assessed to check the knowledge, skills and behaviours they have learned throughout their apprenticeship. This is called an end-point assessment.

End-point assessment is different for each apprenticeship.

The end-point assessment plan will outline the end-point assessment for each apprenticeship.

An end-point assessment usually includes:

- A practical assessment
- A project
- An interview and presentation
- Written or multiple-choice tests

Apprentices must complete an end-point assessment to demonstrate what they have learnt and that they can perform all aspects of their occupation.

The end-point assessment organisation must be independent from the training provider.

WHEN TO FIND AN END-POINT ASSESSMENT ORGANISATION

Find an end-point assessment organisation early on during the apprenticeship. This will give the employer and apprentice enough time to prepare for the assessment.

Employers can work with training providers to choose their end-point assessment organisation.

It is now a requirement for an EPA organisation to use an Independent Endpoint Assessor (IEA)

The government has introduced a requirement that all apprenticeships contain an end-point assessment (EPA). This is a holistic assessment of the Knowledge, Skills and Behaviour (KSBs) that have been learnt throughout the apprenticeship. The role of an IEA involves assessing apprentices, following the same pre-set standard, regardless of where they are undertaking their apprenticeship or who they are doing it with.

To maintain independence within the scope of an EPA means it is only possible to undertake end-point assessments of apprentices, with whom the IEA has no conflict of interest nor have anything to gain from the outcome of the assessment.

It is hoped that an IEA service will be available in 2024 for sheet metal Apprenticeships in conjunction with employers and EPA registered organisations.

For more information contact ISME by accessing the ISME website, or Bill Pinfold, ISME Sec and John Yarnall, ISME Social Media Editor.

For further information contact John at ismemedia@gmail.com

ISME ATTEND THE 2023 MMMA GALA DINNER

The Metalforming Machinery Makers Association

We were delighted to attend the MMMA Gala Dinner in 2023! We were thrilled with how the event turned out, and we can't wait for an even bigger and better event later this year.

"The gala dinner was a great success with nearly 150 industry people from the world of sheet metal, metal forming and fabrication in the room exchanging ideas, having fun and networking. The newly announced awards program for 2024 has been well received and we look forward to engaging and celebrating the individuals and industry achievements in 2024." - *Jas Rai, MMMA Marketing Co-ordinator*

"The Gala Dinner was a true testament to the power of our industry and a fantastic celebration. The MMMA and I were honoured to have awarded Pete Waterman the President's Award, and his inspiring speech on engineering and teamwork resonated with us all. Events such as this help us get together and Network and provide well-earned awards celebrating all that's good around our industry" - *Adrian Haller - MD of Bruderer UK and Chairman of the MMMA*

FloorStak®

BLACK COUNTRY FIRM REACHES FOR THE STARS

Darlaston pressings and Assemblies specialist, Regent Engineering, has won a prestigious contract to supply antenna components for the world's biggest international project in Astronomy. Known as the Square Kilometre Array (SKA) the project will consist of over 131,000 low-frequency wire antennas (each like a large TV antenna), in the desert of Western Australia.

Together with an installation of large dish antennas located in the Karoo desert in South Africa the two installations will cover the entire range of radio frequencies, from 50 MHz up to 25 GHz, with unprecedented sensitivity, resolution, and sky coverage. The SKA will transform our view of the Universe in a number of key science areas, including, seeing how the first galaxies emerged, searching for the signatures of life in the universe and the presence of organic and biological molecules. The SKAO consortium involved in the project has headquarters at Jodell Bank in Cheshire and is a joint effort involving 14 countries.

Regent's part of the €100m contract involves the supply of pressed metal components which form the main low frequency collecting components located at the of the top of the antenna assembly.

These high precision parts are stamped and formed, chemically cleaned, and then carefully packed for shipment to Italy for incorporation in the final antenna assembly, which is over 2 metres high and somewhat resembles a metal Christmas tree.

The first phase of production is now under way and will involve the supply of more than 250,000 components over the next two years, with a possible second phase of a similar size commencing in 2026.

ISME 2024 PASSIVE SHEET METAL TECHNOLOGY COMPETITION

Ever since Covid, ISME have failed to get the apprentice numbers to make a competitive competition. It appears the companies and training providers cannot afford the time to allow for test pieces to be made.

However, to help resolve the issue we are considering creating a partnership with ENGINEERING SKILLS COMPETITIONS (ESC) to help find and provide participants doing Level 2 / early Level 3 Fabricator sheet metal apprenticeships.

If the partnership goes ahead the test piece will be a tool caddy and if time allowed to the apprentice they can also enter the open class competition. The judgement day will be held at a suitable date in June.

Adrian Nicklin ISME Events

ISME WILL PROVIDE COMPETITION DETAILS AT THE END OF JANUARY VIA OUR WEBSITE: ISME.ORG.UK

FROM ITS MANCHESTER BASE AN ESTONIAN TECH BUSINESS TACKLES INEFFICIENCIES IN INDUSTRIAL PROCUREMENT

Fractory is one of Estonia's famed high-growth tech businesses, now headquartered in Manchester where a team of engineers operates out of the Bonded Warehouse in Enterprise City. This is very much the old heartlands of the Industrial Revolution, but these days it's home to creative and cutting-edge businesses. And Fractory is one of these, an online platform connecting engineers with production capacity. Fractory has automated the manufacturing procurement process so that engineers simply upload design files to get instant quotes and delivery times, with Fractory then navigating supply chains and taking responsibility for every aspect of the order.

Its co-founder and CEO, Martin Vares, was a frustrated engineer, frustrated that so much time was spent on procurement, buying metal parts really, when he felt strongly that engineers should be focussed on greater things. Martin, who is an advisory board member at Manchester Metropolitan University, believes strongly that automation leads to efficiencies. It frees up resources which can be directed at solving urgent and important problems, he says.

"Of course, there are some engineers who don't see procurement as a problem," he admits. "For them, it's just part of the job and they're happy to investigate suppliers, negotiate pricing, handle fulfilment. But increasingly engineers and engineering company purchasing managers are chasing cost and time savings. And cloud manufacturing, which is a convenient way to describe our solution, delivers those."

BENEFITS TO BUYERS

Just as consumers buy things instantly online, so manufacturers increasingly look to do the same, especially for series and project orders. Cloud manufacturing is certainly good for one-off orders, for prototyping, but it's when a project is large or complex that Fractory can offer the most benefits. That all the manufacturing methods a buyer might require can be accessed from a single source greatly simplifies workflows. And that each of the 120+ global suppliers are quality-checked and proven for reliability means the burden of auditing is removed. Instant pricing means budgeting is simplified too. And with shipping also handled by Fractory, the pains of procurement are eliminated or reduced.

BENEFITS TO SUPPLIERS

But not only does Fractory drive efficiency and improve productivity for manufacturers, it does the same for its supply partners who don't have to spend nearly as much time quoting, because Fractory's CNC and sheet metal costing is incredibly accurate, even allowing for different pricing from different suppliers. Small orders are pooled together for convenience and cost, unlocking capacity to increase profits. And after the onboarding process of becoming a Fractory partner, metal fabrication businesses don't need to constantly handle customer visits, those time-consuming inspections.

FUTURE BENEFITS

Cloud manufacturing is growing fast in a globally distributed manufacturing landscape. It simplifies things, removes complex tasks, frees engineers from the time-consuming work of traditional drawings and eliminates procurement and fulfilment hassles. A strong argument says that it will attract more people to engineering, younger people who are not attracted by outdated systems, digital natives who expect their work to be entirely plugged in.

For further information see www.fractory.com

MANUFACTURING

Introduction

QFS Manufacturing Ltd provides a comprehensive range of services from in-house design to cutting-edge simulation software, ensuring seamless integration and rapid delivery of high-quality components to our clients.

At QFS Manufacturing, we specialise in providing metallic prototype parts and metallic low to medium volume production parts. Our team of highly skilled employees and advanced machinery allow us to deliver exceptional operational performance and maintain the high-quality service standards our clients have come to expect from us. Our management team remains dedicated to prioritising this focus.

Our mission is to provide exceptional customer service by delivering cutting-edge design and low to medium volume production solutions to meet the diverse needs of our customers, regardless of complexity.

INVESTMENT INTO OUR EMPLOYEES

At QFS Manufacturing, we believe that investing in our employees is crucial to their development and to promote interdepartmental cross training, and to eliminate the one-man-one-job culture. We are proud to sponsor and provide training courses that enhance the skills of our workforce.

- Apprenticeships
- Open University
- Fanuc Teach Pendant Operator/Programming
- Amada Ventis Fibre Laser Training
- Amada Bending & Blanking Solution Training

CAPABILITIES

QFS Manufacturing offers a comprehensive and technologically advanced set of manufacturing capabilities. Our strengths lie in our diverse range of machinery, enabling us to handle a wide variety of materials and processes with precise control.

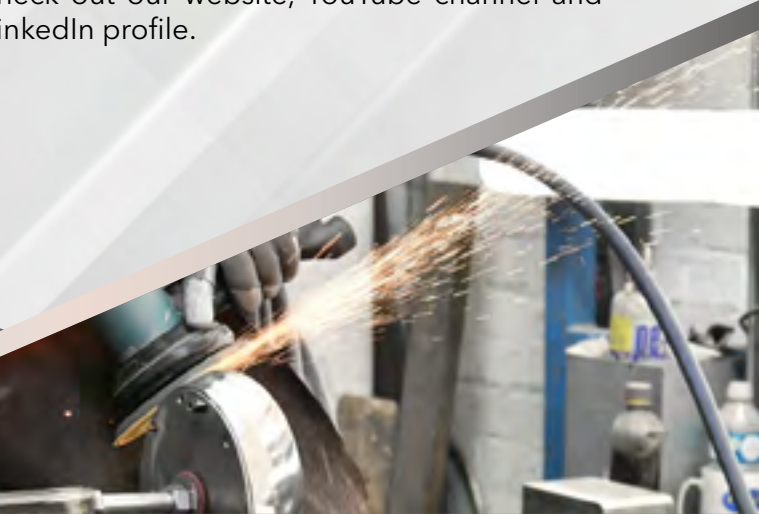
Our laser cutting capabilities are particularly noteworthy, with two Trumpf 5030 5-Axis Lasers and an Amada Ventis 3015 Fibre Laser in our fleet. These machines enable high-speed cutting and laser etching with incredible precision, handling materials up to 25mm thick in mild steel, 20mm in stainless steel, 18mm in aluminium, 10mm Brass and 8mm Copper.

In the field of Bending, Folding & Pressing, we operate multiple high-capacity hydraulic presses, including two Reha 600T , SMT 250T press and two Amada Hydraulic Press Brakes. These machines provide a working environment up to 3000mm in length and a capacity up to 600 tonnes, demonstrating our ability to handle large and heavy materials.

We now boast two automated work cells that include Mig Weld Fanuc R-2000iB 165F and Spot Weld Fanuc R-2000ub 165F Robots. These machines demonstrate our commitment to precision, speed, and consistency in welding operations.

Our machining capabilities include several CNC machines, with working envelopes up to 3.5m in length and 1.2m in width and height. Which is coupled with our inhouse tool design, development, and simulation capabilities are supported by CATIA VS, STP, IGES file format, and Autoform Simulation.

In summary, QFS Manufacturing brings a robust set of capabilities to the table, from precise and high-capacity machining to thorough quality inspection, all the way to logistics and delivery. We are equipped to handle a broad range of manufacturing requirements with precision, efficiency, and speed. For more information and insight into our activities we encourage to check out our website, YouTube channel and LinkedIn profile.



RECENT ACHIEVEMENTS

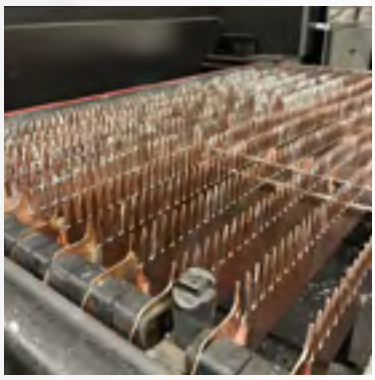
In recent months, QFS Manufacturing has achieved several significant milestones that underscore our commitment to superior quality, continuous improvement, and innovative engineering.

Our team recently completed an impressive 72-piece Cross Car Beam assembly. This complex assembly was comprised of three sizable sub-assemblies, a mix of flat and fold components, pressed components, and a wide range of machined components.

We've also celebrated the successful modification of a hood hinge variant and a carryover modified Rockshield. We've showcased the adaptability and versatility of our production capabilities, all while working on an intricate tube fabrication project, affectionately known as "Bunny Bars." Using bespoke aluminium extrusions and precision machined blocks, our talented team ensured the highest quality of this assembly with the help of our 5-Axis Laser and expert welding.

In our pursuit of continuous improvement, we've innovated by using 2.5mm Copper Slats in our Amada Ventis AJ 3015 laser. Copper offers excellent thermal conductivity, meaning it can absorb and dissipate heat more quickly than traditional materials. This change not only decreases wear and tear but extends the lifespan of our slats significantly, potentially up to two years.






AUTOMECHANIKA BIRMINGHAM 2025!

We're thrilled to share that QFS Manufacturing has reserved it's spot to exhibit at the prestigious Automechanika Birmingham 2025!

This marks a significant milestone for us as it will be the first time QFS will be participating in this world-renowned automotive trade fair. As we look ahead, we're excited about the opportunities this presents for our business growth, partnerships, and getting our products and solutions in front of a global audience.

automechanika
BIRMINGHAM

There's plenty of planning happening behind the scenes as we prepare for this incredible event. We're committed to ensuring that our participation at Automechanika will be memorable and valuable for all who visit our booth.

We look forward to connecting with industry professionals, sharing insights, and showcasing our innovative solutions.

@QFSManufacturingLtd

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Www.qfsmanufacturing.com

MEMBER NEWS

ISME MEMBER, PETER GRANT HAS INFORMED US OF HIS NEW CAREER WHICH COULD ASSIST MEMBERS

"I have come out of industry and back into consultancy with Pro Enviro Ltd a specialist energy engineering, carbon abatement and process optimisation consultancy established over 30 years ago. I have known them for 20 of those years and always used them for the specialist advice I did not have in house, and which many times was linked to access to funding. They have been the delivery partners to many of the West Midlands authorities. The latest programme for delivery across the region is fully funded by the UK Government and run by the West Midlands Combined Authority.

As an ISME member I would love to help any of the ISME membership register for this programme and carry out the assessments myself (and hopefully meet some old acquaintances). You will get tailored recommendations on how to reduce energy usage and costs and then be able to apply for a grant between £1,000 and £100,00 to implement energy efficiency recommendations.

Peter can be contacted via wmca.org.uk/BEAS for more information.

ASSET DISPOSAL SERVICES LTD IN HIGH DEMAND

This last quarter we have seen a significant ramp up in demand of good quality sheet metal processing equipment with highlights being the sale of a used laser cutting centre & a used Plasma cutter. Both machines purchased by end users, who will put the machines back to use at a fraction of the cost of equivalent new machinery.

Those purchases, clearly demonstrate a confidence by those companies who are prepared to move to the next stage in their development and the general outlook for the sector from where we are positioned appears very positive.

A LITTLE BIT ON ASSET DISPOSAL SERVICES LTD

Asset Disposal Services Limited are a leading UK selling agent of capital plant and machinery in the engineering, manufacturing and processing sectors.

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mtc Training IMPRESSION TECHNOLOGIES

COVENTRY-BASED MTC TRAINING APPRENTICE WINS NATIONAL AWARD

An MTC Training apprentice was named Lloyds Banking Group's SME Apprentice of the Year 2023 during a celebratory event that took place at Lloyds Bank's London office on 11th July 2023.

Mohammed Ismaeel beat stiff competition to bring home the prestigious trophy, which is awarded annually to a top achieving apprentice working for a business that is supported through Lloyds Bank's levy transfer scheme.

David Atkinson, Regional Director at Lloyds Bank explains:

"At Lloyds Bank, we know how important manufacturing is in driving the UK economy and we're passionate about empowering engineers of the future to kick-start rewarding careers that fulfil the needs of UK SMEs. This award is a great way to recognise and celebrate those who have taken the opportunity to earn while they learn. Mohammed is a standout example of what you can achieve through an apprenticeship, and we hope his story inspires others looking to start a career in engineering."

Following an unsuccessful experience with a different training provider, Mohammed worked tirelessly to achieve the results he needed to pursue an apprenticeship at MTC Training, the skills arm of the Manufacturing Technology Centre based in Coventry, which aims to close the skills gap and provide the next generation of engineering talent. He was thrilled to be recognised for his achievement and impact since starting his apprenticeship at MTC Training two years ago:

"I am delighted to have received the award for Lloyds Bank SME Apprentice of the Year Award. My Mum and I had an amazing day that will live long in the memory."

Having built a wealth of foundational skills including milling, turning and metrology during the first year of his apprenticeship at MTC Training, Mohammed is now gaining valuable industry experience at his workplace, Impression Technologies Ltd.

He added "Throughout my apprenticeship I have worked on my people skills, professional skills and sharpened my technical skills. I feel that starting my career in the development side of engineering has really given me an opportunity to develop and learn multiple processes on different types of machinery and equipment. I am hugely grateful for all the support I have received from Impression Technologies Ltd. and MTC Training."

Jonathan Watkins, CEO at Impression Technologies, has seen Mohammed's growth throughout his apprenticeship first-hand:

"Mohammed joined Impression Technologies at the age of 17 years old in 2019. I have had the privilege of watching him develop into a highly capable and resourceful technician, who is admired across our organisation. It was not an easy pathway for him, as he had to overcome an imposed change of training provider and effectively started his apprenticeship again; but despite this, through his positive attitude and commitment he flourished both at ITL, aided by guidance and training from the professionals at MTC Training. I extend my personal congratulations to both Mohammed and his support network and expect him to progress rapidly through to higher levels of responsibility."

Mohammed's Manager, Craig Edwards, Materials Evaluation Centre Manager said that Impression Technologies Ltd.'s ongoing partnership with MTC Training is an important part of developing new talent at the Coventry-based business:

"We greatly value our partnership with MTC in developing young talent through the apprenticeship scheme, and Mohammed's accolade is a fine example of just what can be achieved with the correct nurture, environment and attitude."

He added "We were all delighted to hear that Mohammed had won the Lloyds Bank SME Apprentice of the Year Award. He is a very popular member of our organisation and we believe that his infectious enthusiasm and thirst for knowledge will be the foundations for a fantastic career with Impression Technologies Ltd."

Matthew Bastock, Apprenticeship Programme Manager, applauded Mohammed for making the most of this opportunity, which positions him favourably as he enters the world of engineering:

"The sky's the limit for Mohammed now. He is a real apprentice ambassador for ITL and MTC Training, and his professionalism on his apprenticeship journey is to be admired. We are really looking forward to supporting and observing his career progress."

At MTC Training, apprentices have access to a wide range of state-of-the-art equipment, enrichment activities and industry-experienced trainers, which see them develop the knowledge and expertise required to build a career in an exciting, thriving and innovative environment.

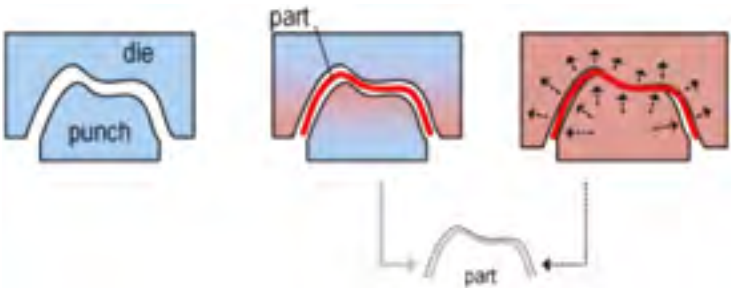
Dr Mohamed Mohamed

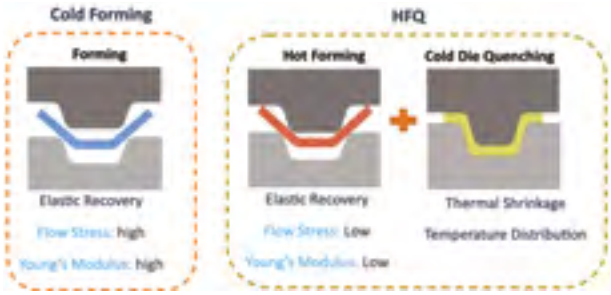
IMPRESSIONTECHNOLOGIES

PROCESS OPTIMISATION AND ROBUSTNESS ANALYSIS FOR HFQ PROCESS

The use of lightweight materials, such as aluminium alloys, is increasing significantly, particularly for automotive applications. Although aluminium alloys have many advantages compared to steel, their formability is lower at room temperature and when used for manufacturing complex shapes, particularly from sheet, poses limitations and creates additional design challenges [1]. To overcome the formability problem, particularly for high-strength aluminium alloys, hot stamping processes have been developed. For example, in the process of hot stamping and cold die quenching (HFQTM), an aluminium alloy is heated to its solution heat treatment temperature (or close to it) prior to forming stage. It is then press formed in cooled dies thereby being quenched rapidly to retain a super-saturated solid solution [2]. Springback is the main source of shape distortion and geometric tolerance non-compliance in cold sheet metal forming. This major drawback for cold forming is a phenomenon that occurs when the forming force applied to the blank is released. The deformed material tends to partially return to its original shape as an attempt to release the internal elastic residual stresses. At elevated temperatures, the material response becomes viscoplastic, i.e., rate dependent, whilst the process is inherently non-isothermal due to contact with cold tools and ambient air [1-2]. Moreover, the quenching phase is affected by mechanical boundary conditions applied through contact which is characterised by contact pressure distribution leading to non-uniform cooling and, hence, non-uniform thermal contraction [3]. The complex interactions between thermal and mechanical conditions can often lead to difficulties in the accurate simulation of the process leading to inaccuracies in the prediction of thermo-mechanical distortion. Without accurate distortion prediction, effective tool compensation is not possible. The finite element method has become an essential tool for process design and specification. Complex interrelations between the mechanical, thermal, and microstructural fields should be considered when implementing a realistic FE model for the hot stamping process to receive a more precise prediction of the resulting component properties [4]. For hot stamping, accurate process data and material card were input to a simulation environment such as AutoForm and used to design compensated tool faces, which will allow thermal mechanical distortion to be controlled.

The mechanical and geometrical properties of the part strongly depend on the tool's cooling performance. An even distribution of the contact pressure between tool and blank is key to a uniform cooling behaviour, and hence, a homogeneous micro structure of the formed part.

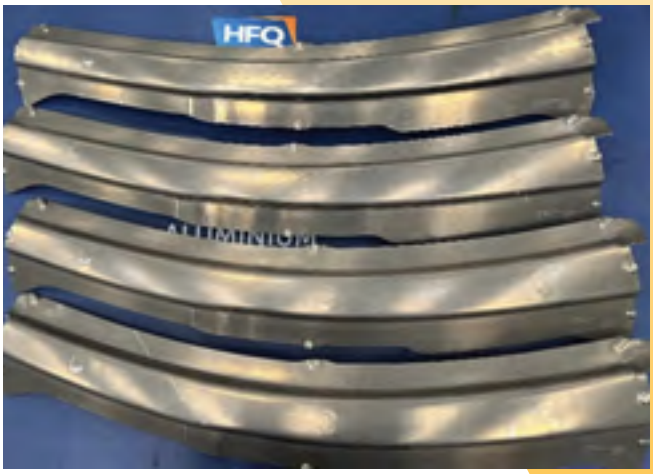


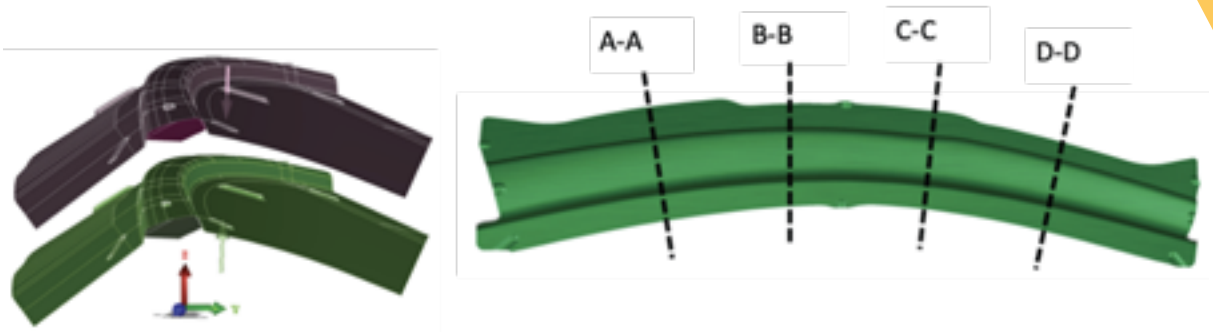


HFQ MODEL VALIDATION

The thermomechanical distortion is strongly influenced by the quenching stage and is assumed to be driven by the temperature gradients in the panel. This hypothesis is based on the uneven material shrinkage due to varying temperatures at different panel locations.

For an accurate and detailed comparison of shape distortion between the simulation and experiment (scanned panel), Figure 4 (right) shows the four sections (200 mm between sections) that have been cut to examine the agreement of the two parts at different locations within the parts. The overlay of the scan of the pressed part (solid shell line) with the top surface of the simulated part shows the deviation between the two surfaces. Figures 5, 6, 7 and 8 present the deviation (distance between the two surfaces) for the four conditions outlined in Table 1.





Comparing the simulated and pressed (scanned) parts reveals that a very good agreement between the simulation-predicted shape distortion and the actual part scan was achieved, as can be seen in Figure 4. The maximum and minimum deviations between the two surfaces are within ±1mm for all conditions.

Distance (mm) to Reference (pressed part).

This paper presented the validation of the dedicated simulation methodology established in AutoForm for the prediction of thermal mechanical distortion which may arise during HFQ forming of aluminium parts. The process parameters and material play a crucial role in controlling the thermal mechanical distortion for the automotive panels.

TAKE A SEAT AT AIRCRAFT INTERIORS EXPO

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020 3667 3593

A successful launch of our 100% recycled monocoque seat back at AIX 2023 in collaboration with Gen Phoenix and Doy Designs demonstrates what is possible when like minded contributors come together.

Using recycled sheet material from Gränges Group, our HFQ® Technology incorporates the desire for sustainability and a high strength to weight ratio.

Thank you again to everyone who visited our stand at AIX 2023. It was a pleasure to meet and discuss the opportunities available to the aerospace industry.

We have had a great response in exhibiting our services, receiving over a dozen new enquiries for seat backs and arm rests from leading aircraft seating manufacturers.

It was our pleasure to be demonstrating how HFQ® Technology can be used to create armrests and a monocoque seat back design.

RAY AVERY 1930-2023
A FRIEND INDEED TO ISME

RAY AVERY joined ISME in 1960, when working for Cincinnati Machine Tools in their drawing office. He worked for many different organisations including Joseph Rhodes, Ductile Engineering, Verson and retired while at Pearson Panke.

He was a great champion of the Institute and worked tirelessly and passionately to ensure that the Institute survived the challenging times of the 1980s and 1990s.

Ray was ISME Chairman from 1983-1984, again in 1996-1997 and held the position of ISME President from 1989-1993. He retired in the year 2000 and was made a Lifetime Honorary Member of ISME in recognition of his service, so he was still a member when he passed away on the 2nd November 2023. He was remarkably an ISME member for 63 years.

Ray loved his family and joined in with all the activities that this children became involved in. Notably, sailing and horses which he had a strong affinity with all his life. In his younger years, he was a keen cyclist riding for the Thornhill Juniors and breaking records still held today. He also played football and golf with fierce determination.

Ray suffered a stroke in 2010, which curtailed his active life. His loving wife Margaret became his carer, but eventually he was moved into a nursing home for the final two years of his life which despite his will to succeed he bore with dignity and gratitude towards his carers.

Ray is survived by his wife Margaret, three children Chris, Sue and Jane and his 5 grandchildren and 1 great-grandson. He will be sorely missed by his family.

BRUDERER
ONE NAME · A MULTITUDE OF POSSIBILITIES

BRUDERER LAUNCHES TWO NEW PRESSES AT BLECHEXPO

Andreas Fischer, Adrian Haller and Reto Bruderer

The world's leading manufacturer of high-speed presses has unveiled two new machines on day 1 of Blechexpo.

Bruderer, which is 80 years old in 2023, used the major industrial event to introduce the BSTA 710-220 and the BSTL 350-88, the latter designed to support customers involved in volume production of small and miniature components.

As a fixed-stroke press, the BSTL comes into its own for precision and continuity and uses up to 30% less energy when compared to older machine models.

Customers to Stand 6309 in Hall 6 were given a first look at the new technology that will help them remain competitive when tendering for mass production projects both in the UK and overseas.

They also saw how the press' control system can be accessed with different devices via a web browser, with remote state-of-the-art maintenance and the highest cyber security.

Adrian Haller, Managing Director of Bruderer UK, commented: "The BSTL is the latest innovation from Bruderer and comes complete with a new generation servo feed unit, which makes it the perfect press for customers involved in supplying electrification, communication and consumer electronics.

"Blechexpo is a great event to launch the machine at and we have received significant interest so far. Thanks to its streamlined functions, the press offers an extremely strong investment to performance ratio, and this has been dominating conversations to date."

The second launch is all about delivering more space for complex stamping tools with the BSTA 710-220 offering the longest bed length (2.2metres) of its machine type in the world.

With automatic stroke adjustment and various options such as different stroke lengths, shut heights and press force monitoring for example, the machine can be configured for individual customer requirements and is increasingly suitable for the emerging electrification world.

Precision engineering and the unique Bruderer lever system ensures that the press is a reliable, long-lasting investment.

Reto Bruderer, CEO of Bruderer, said: "The two launches are the perfect way to celebrate our 16th appearance at Blechexpo, one of the largest international events in our sector.

"The four days give us the perfect opportunity to showcase our latest innovation and the new technologies and turnkey solutions we are bringing to market. Our experts are on hand to discuss applications and we are looking forward to welcoming engineers and young apprentices from all over the world to our stand."

BSTL 350-88

Bruderer provides high-precision, high-performance stamping presses with press forces from 200 to 2500 kN for stamping and forming both simple and complex parts.

The company has just started construction on its new 48,000 sq ft factory and showroom in Telford, an ambitious move that will create jobs and help it meet record-levels of demand for its machinery and ancillary equipment.

For further information, please visit www.bruderer.co.uk or follow @brudereruk on Twitter.

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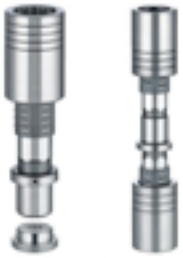

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