# METAL MATTERS

CONFEDERATION OF BRITISH METALFORMING




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*Front cover image courtesy of Forged Solutions Group*

# up and coming events

**Crowe & CBM R&D services webinar:**
16th June at 2pm to register please email Melinda.jean@thecbm.co.uk

**UK Metals Council:**
14th &15th September, NEC Birmingham

**Euroforge: Confair**
28th - 29th September 2021 Euskalduna Conference Center in Bilbao, Spain

**ICOSPA Congress 2022:**
19th - 21st October 2022, NMC, Birmingham

**Forge Fair 2021:**
North America's largest forging industry trade show.
26 - 28 October 2021. TCF Center, Detroit, Michigan.

**Advanced Engineering 2021 :**
3-4 November NEC Birmingham.

**Fastener Fair Stuttgart 2021:**
9th International Exhibition for the Fastener and Fixing Industry.
9 – 11 November 2021. Stuttgart Exhibition Grounds, Stuttgart, Germany.

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CBM CONFEDERATION OF BRITISH METALFORMING

# Government continues to miss the boat on supporting manufacturing

**We are not politically motivated at the CBM, whilst the headline might suggest otherwise, it's more a show of sheer frustration at this Government's inability to support Manufacturing. The Spring Statement at the end of March was another opportunity missed, with little or no support for manufacturing, especially on such a key issue as rising energy costs, which everyone is suffering from.**

To compound the issue the government keeps telling us about 'everything' they are doing to support manufacturing and our members. When in fact they are making things worse with bureaucratic meddling at ports causing added chaos to the supply chain both into and out of the country.

In a recent summary, I covered a trade update from the Institute of Export & International Trade, on the relationship between UK and Germany.

As we left the EU , they were our biggest trading partner, with the German market being prominent, so the following statement shows how far we are falling. "The figures reflect the gradual decoupling of the UK manufacturing economy from the EU single market", said Ulrich Hoppe, director-general of the German-British Chamber of Industry and Commerce. "From a German perspective, the UK is to some extent being taken out of EU supply chains . . . because it has become more complex and expensive [to trade with UK] and that has an effect on bilateral trade," he said. The UK fell to the bottom of Germany's top 10 trading partners for both exports and imports, and dropped to 13th place as a source of German imports in 2021.

This is not the only example, as we see the fallout from Steel Safeguarding not only impacting our members through tariff costs but also the additional cost through port delays, all caused by HMRC pedantic bureaucracy. The fallout for those who need to pass these costs on to customers, especially within the EU, will result in more orders lost as they will not renew contracts based on a self-imposed UK tax that is crippling downstream metal users.

Staying on the subject of Steel Safeguarding quotas, by the time you will be reading this article I will have met with the Secretary of State for International Trade, Anne-Marie Trevelyan, to put the case for CBM members forward for the removal of Safeguarding on categories that are impacting our members. We will have put a strong case forward to have this punitive and debilitating tax removed.

## Energy

We are fighting a forlorn battle on this front, with CBM members receiving no help whatsoever to the rising cost of energy and to rub salt into the wounds Energy Intensive businesses are getting even more government support than they already get. This is even though many CBM members are also high energy users, but as a sector we do not meet the required energy intensity threshold. We are all for supporting UK manufacturing, but not at the cost of the downstream users like us, this makes us extremely globally uncompetitive, and Government still want to recoup the monies from the exemptions they give and do this by increasing the green levies that we will pay on our gas and electricity bills. My

• Steve Morley, CBM President

frustration levels boil over at this point, those of you that know me will say I have a low boiling point!

However, for those of you who are big energy users it just doesn't make any sense. We will be reviewing the criteria and for those individual industries that qualify we will be mounting a challenge for this to be amended so that the threshold can be reconsidered for some of you to qualify. Please do write to your own MP about this situation. In the meantime we endeavour to get a seat on the Steel Council so that we can bring the input of the downstream industry.

## Minister for Manufacturing

On behalf of the CBM I have a signed an online petition for a dedicated Minister for Manufacturing, something which I have shared on LinkedIn. The need for a dedicated Minister has become abundantly clear to us after our dealings with different government departments over the past few years and more recent events, or should that be non-events, have highlighted it even more than ever. I would ask you all to visit the link below

and sign the petition in an effort to get a dedicated Minister for Manufacturing.

https://petion.parliament.uk/petitions/615294

**URGENT**

Many of our CBM members currently get Climate Change Levy rebates, some through a climate change agreement, some through Metallurgical Exemption and some via both. However, if the rebates do not continue post March 2025 then members would miss out on what amounts to a saving of £4m per year for those members who currently get the discount. It is obvious therefore that we do not want to lose this form of levy exemption. It is important therefore that we provide BEIS with evidence to show the Metalforming sector is still eligible and that CBM members are allowed to continue to claim CCL rebates post 2025.

You will have been sent a request by CBM asking for data from you to support this application to BEIS that we still qualify.

As you will know, if your company is part of the CBM's climate change levy rebate scheme, it ensures that discounts, often up to 100%, on the climate change levy tax that your company pays on its gas, electricity and LPG bills are rebated on your energy bills. Please can you respond with your data as a matter of urgency so that CBM can continue to fight for this exemption on behalf of our members.

We continue to see the issues I've covered in the past few editions still be prevalent across our membership and its testimony to all of you and your company's resilience that you're battling through each predicament on an almost daily basis with little respite. I commend you all for your efforts in what are very difficult times and assure that we at the CBM will continue to do all we can to support you.

**Steve Morley**
**President of the**
**Confederation of British Metalforming**

CONFEDERATION OF BRITISH METALFORMING

# The UK's only specialist manufacturers' organisation for experts in metalforming

**Why Join the CBM**

**You get valuable influence, business support, technical expertise and market insight as a CBM member.**

**Lobbying & Promotion**

Get your voice heard within Government and the wider manufacturing industry

- Benefit from our active lobbying support, which has played a key role as post-brexit trade negotiations accelerate and the Government makes crucial coronavirus decisions.
- We collaborate with the Department for Business, Energy & Industrial Strategy (BEIS) on a weekly basis, covering issues ranging from Rules of Origin, electricity prices, Steel Safeguarding, to name but a few.
- Our mission is to represent UK in those industry discussions – and help you access opportunities through collaboration with a broad stakeholder group.

**Compliance & Cost Management**

Save money through your CBM membership

- As a CBM member, you get access to a range of practical services that save money and make operations easier.
- Our accredited energy tax rebate service is a key benefit – it's saved members £4 million+ annually in Climate Change Levy.
- You can boost your savings with our cost-effective Streamlined Energy & Carbon Reporting compliance service and Energy Saving Opportunity Scheme assessments – as well as discounted meeting room hire, our free business support hotline and more.

**Marketing & Business Development Support**

- Build relationships and develop opportunities
- CBM members come from across the supply chain – and work across automotive, aerospace, rail, defence, energy and Construction. We help you build relationships with potential customers and partners.
- You can also use our platform to promote your business – in Metal Matters magazine, at industry events and among our growing social media audience. Our popular website directory and Buyers' Guide is a popular way to get noticed by supply chain managers.

**Technical Support**

Leverage expert knowledge of metalforming techniques

- Whether you have a problem or want advice on a new process, our sector specialists are here to help. With your CBM membership, technical support is quick and cost-effective.
- Over 130 years' experience with our Sector Specialists who cover Forging, Fastening, Press work and Sheet Metal

**Innovation & Knowledge Sharing**

Keep your business on the front foot

- CBM events give you opportunities to share knowledge and best practice. Thanks to member days, sector group meetings, monthly market reports and more, it's easy to learn about developments that will help your business.
- Through your membership, you also benefit from our established links with universities and innovation hubs like Warwick Manufacturing Group, Advanced Forming Research Centre, Imperial College and Advanced Manufacturing Research Centre.

**Training & Skills Development**

Fill skills gaps and boost retention

- We offer training opportunities for technical and non-technical roles, so you can fill gaps in your business.
- In response to CBM member feedback, level 6 Apprenticeship (degree level) programme was developed by the CBMs Trailblazer group.
- The level 6 Tool Process Design Engineer Apprenticeship was specifically created for the metal forming sector in recognition of increasing skills shortages. It is the only Apprenticeship that recognises the unique and specialist skills for this senior technical role.

**Health & Safety**

- Our popular Health & Safety Group meetings provide a vital forum for sharing successes and getting advice on overcoming challenges.
- You have access to our HSE helpline, as well as discounted private healthcare and occupational health services.

**NEW HR Support**

- Exclusive access to a CBM dedicated website
- Designated Client Relationship Manager
- Discounted rates for litigated matters in any Employment tribunal

CBM membership pays for itself thanks to the opportunities, access and cost management benefits you receive. Contact us to discuss your business needs and the best membership

**CONTACT CBM NOW ON**
**0121 601 6350 or**
**email Melinda.jean@thecbm.co.uk**

PROUD MEMBER OF CBM CONFEDERATION OF BRITISH METALFORMING

**t: 0121 601 6350 · e: info@thecbm.co.uk · www.thecbm.co.uk**
**Confederation of British Metalforming Centre · 47 Birmingham Road · West Bromwich · West Midlands B70 6PY**

# Exclusive CBM members' Service offering a helping hand with your HR

**Metal forming companies, like many businesses, face numerous challenges in 2022. Post-pandemic and post-Brexit, supply chain issues are on the up. Rising wage costs and hikes in energy bills are also causing headaches.**

That's why FBC Manby Bowdler has developed an exclusive service for CBM members - giving you some certainty over legal costs and guaranteeing the quality of service the award-winning law firm is renowned for.

FBC Manby Bowdler provides a range of legal services to businesses including HR and Employment, Commercial Property and Litigation advice. The exclusive deal offers a tiered service deal to CBM members, with different entry level points to cover different needs and budgets.

If you are a CBM member who would benefit from further HR support and would like to find out more about this exclusive offer from FBC Manby Bowdler please contact Julia.fitzsimmons@fbcmb.co.uk or call 01952 208420.

| | Standard | Standard+ | Enhanced |
|---|---|---|---|
| No. hours legal advice (of up to an hour) | 6 Hours | 10 Hours | Unlimited |
| Exclusive access to a CBM dedicated website | ✓ | ✓ | ✓ |
| Designated Client Relationship Manager | ✓ | ✓ | ✓ |
| Employment documentation, including Settlement Agreements and all Policies | 5% Discount | 10% Discount | Unlimited |
| Discounted rates for litigated matters in any Employment tribunal | 5% | 10% | 15% |
| Training events | 5% Discount | 10% Discount | Unlimited |
| No. free places per year on an FBCMB training event | ✗ | 1 | Unlimited |
| Insurance backed options available | ✓ | ✓ | ✓ |
| On-site / Online advice meetings | ✗ | ✗ | 1 Per Annum (up to 2 Hours) |
| | | MOST POPULAR | |

# Forged Solutions Group adds its weight to CBM's call for Government support on energy prices and steel quotas

**One of the UK's leading specialists in high integrity forgings is adding its voice to industry's call for greater support to offset escalating energy costs.**

Forged Solutions Group, which works with high profile clients in the aerospace, energy production, underground mining and off-highway vehicle sectors, is calling on Government to address rocketing gas and electricity prices by exploring potential subsidies or removing some of the tax burdens.

The company has decided to increase its membership of the Confederation of British Metalforming (CBM) to include all its five manufacturing sites in England and Wales and to ensure it has the strongest possible voice and access to MPs and Business Ministers.

President Ben McIvor is also keen to address the issue of steel quotas and the negative impact they are having on production flexibility and capacity to match increasing customer demand, with his own company securing more than $200m dollars of revenue since it became an independent group in 2019.

The Matlock headquartered manufacturer is keen to build on this growth and has already invested over £3m in new CNC machining capabilities and testing facilities, with a recruitment push also underway to take on 25 new staff.

"We are operating in a really strange environment at the moment, where opportunities are significant, but challenges – through no fault of our own – are equally as big," explained Ben, who oversaw the formation of Forged Solutions Group after the purchase of several sites from Doncasters and Arconic.

"The single biggest challenge for our business is energy. You simply could not have predicted what we are seeing at the moment and there are very few, if any, businesses who can sustain the meteoritic rises we're having to endure.

"Our consumption is very intensive and we are facing a significant increase in our energy cost rates compared to recent years. You can't pass all of this on to the end customer, so you are then found looking at alternative solutions and this is where I feel the Government really need to step up and offer possible solutions."

He went on to add: "Our Welsh site has always been part of the CBM and we have seen first-hand the difference the trade organisation can make. We wanted to give it our full support and will now be working with it to lobby the powers that be on all the critical issues for manufacturing."

Forged Solutions Group has enjoyed a new lease of life under the new ownership structure and being able to shape its own future has led to an increase in turnover despite the challenges of the pandemic.

A large part of the company's work is in aerospace, with its forgings used as shafts, rings and discs for engine parts, as well as finding their way into landing gear and structural components for the main body of aircraft.

"The nature of our business means we use a lot of different grades of steel and the quota system the Government has in place is also causing operational challenges, with the UK's allowed amount used up quickly, leading to us or our customer potentially having to pay tariffs," continued Ben.

FORGED SOLUTIONS GROUP

Continue on page 7

"In some instances, you simply can't buy the material domestically, so you have to import it. And this approach to regulation makes it a difficult trading environment."

The Confederation of British Metalforming, which represents more than 200 members producing fasteners, forgings and pressings, cold rolled and sheet metal products, has been in discussions with the Government for some time on the issue of energy and steel quotas.

It has been able to capture feedback from the shop-floor and galvanise industry support to provide a collective train of thought on these issues and is in regular contact with senior people from the Department for Business, Enterprise and Industrial Strategy (BEIS).

Geraldine Bolton, Chief Executive of the CBM, picked up the story: "Now is the time for our specific part of industry to stand up and start shouting about the challenges we are facing and having the entire Forged Solutions Group on board is great news for our efforts.

"Ben has significant experience of our sector and is well respected, so it will be vital to make sure his voice and first-hand thoughts are heard by people making decisions on new business support measures.

"The forgings it makes are used in some critical applications across the world, so we have to ensure we have a UK supply chain

in place to deliver the products and components we desperately need."

In addition to lobbying, Forging Solutions Group will look to use experts at the CBM to help it access the Climate Change Agreement scheme across all its five sites, which could deliver significant cost savings in the future.

For further information, please visit www.forgedsolutionsgroup.com or www.thecbm.co.uk



# CBM would like to welcome Ex-Pressed Steel Panels as new members

**At Ex-Pressed Steel Panels, we specialize in manufacturing a wide range of discontinued and unobtainable car classic car panels produced from 1950 upwards. We are based in the heart of Keighley, West Yorkshire.**

With our unique manufacturing process, we produce high-quality panels that are pressed and finished by our skilled craftsmen. With over 60 models covered, we can produce small runs of made-to-order classic car panels from almost any original panel and have them delivered all over the world. We cater for classic Fords, Volkswagen, BMW, Peugeot, BMC, Hillman and many more!

We have over 50 years of experience and a background in car restoration and been successful in manufacturing replica panels. We are a passionate team dedicated to producing the best pressed panels. We have the skills required to made great quality panels to exceptional standards. With 1000s of happy customers, satisfying our customers is our number one priority which is why we are continually learning and working to improve and develop new panels and production methods.

We are happy to be part of the Confederation of British Metal forming (CBM).

For more information.

Visit our website today https://www.steelpanels.co.uk/

Contact us 01535 632721

For enquiries: enquiries@steelpanels.co.uk

# CBM would like to welcome MetalForming and Materials Modelling Group, Imperial College London as new members

**The current Metal Forming and Materials Modelling Group (MFG) at Imperial College London was established in 2008 by Prof Jianguo Lin and Prof Daniel Balint, as Professor Lin moved to Imperial from the University of Birmingham.**

The current research areas include:

- Rolling, forging and extrusion for aerospace, automotive and building construction applications.
- Hot stamping for aluminium and boron steel panel components for lightweight structural components.
- Forming of extra-large aerospace/rail components & micro-size parts.
- Materials and process modelling for component, forming tool and process optimisations


At present, MFG is the largest research group in this kind in UK universities, consisting of 5 academics and 51 researchers, has been delivering the highest quality research, regarded as one of the world's top leading metal forming groups with an international reputation on developing new modelling theories, innovative metal forming technologies, and advanced experimental sciences in materials characterisation, and, provides innovative solutions for a wide range of industrial sectors, from materials and equipment suppliers, tier-1&2 companies to OEMs. MFG has 3 research centres and 2 joint research laboratories fully supported by industry. It has also established 3 spin-off companies based on the Group patented technologies and provides innovative solutions for lightweight vehicles, e.g., aircraft, passenger cars, buses, trains and ship, for energy saving and CO2 emission reductions. Particularly, the Group has developed HFQ® and Flextrude® Technologies (HFQ® is the Trademark registered by Impression Technologies Ltd, which is the sole company to commercialize the HFQ® technology developed at Imperial; Flextrude® is the Trademark registered by CurvEx Technology Ltd, which is the sole company to commercialize the Flextrude® technology developed at Imperial).

More details of the Group can be seen from: https://www.imperial.ac.uk/mechanical-engineering/research/mechanics-of-materials/materials-modelling/

Contact us for more information: x.xi@Imperial.ac.uk



# The CBM would like to welcome Hillfoot Steel as new members

HILLFOOT
Engineering Steel


**Sheffield-based Hillfoot Steel, established in 1923, is one of the UK's largest steel stockholders, supplying a wide range of carbon and alloy steel products to an equally wide range of manufacturers, including mining, power generation, construction, defence, motorsport, renewables and industrial engineering sectors.**

Hillfoot works in close partnership with its clients to ensure they meet their very precise needs as quickly and effectively as possible. It offers a range of value added services including processing, testing, exporting and supply-chain management, as well as metallurgical advice and product development.

As it comes to the end of its first century, Hillfoot is very much focused on adopting a sustainable approach to its next 100 years (and beyond), with a strong focus on reducing its carbon footprint wherever possible. This includes major investments in cutting technologies, smart logistics and paperless systems.

The company prides itself on its family-led approach to business, with a genuine commitment to looking after its staff, suppliers and customers, while also playing an active role in supporting the community in which it works, with charitable support for the Bluebell Wood Children's Hospice and sponsorship of the Sheffield Steelers ice hockey team.

Email salesenquiries@hillfoot.com www.hillfoot.com

# CBM would like to welcome Misati as new members

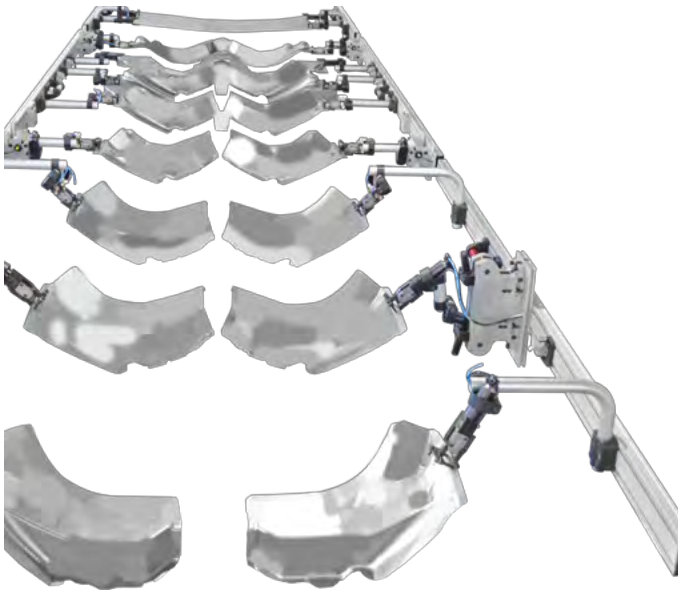
*Misati is a specialist and technological reference in the manufacture and distribution of high performance and high productivity Lightweight Transfer Systems.*

**Higher production, up to 35 strokes per minute: Thanks to our exclusive technopolymer components (up to 80% lighter), Misati's Lightweight Transfers can achieve the maximum profitability in stamping processes.**

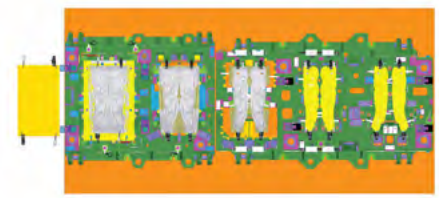
**Unique solutions:**
- Pincers for high accelerations.
- Pincers to fasten cantilever sheets (on one side only).
- Ultra-fast pincers.
- Pincers for high temperatures.
- Rotation of the sheet on the 3 axis.
- Separation and rotation of the sheets.
- Structures for small spaces.

**Sheet control free of incidents:**
- Verification of the entry of the sheet into the die using a high-speed camera.
- Maximum security with a double-sheet detection
- System, centring and guidance of the sheet.

**No set-up required:**
- Totally finished transfer with three-dimensional verification.
- Ready to work, no set-up required.
- Minimum press downtime guaranteed.
- Technical supervision and training to optimize your production.

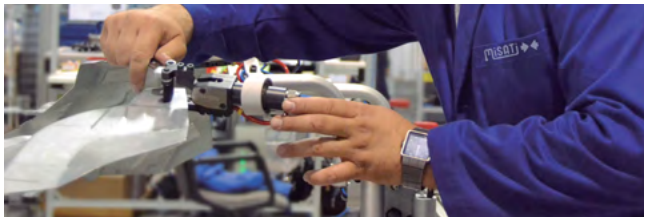


**Technical advice and design of the transfer:**
- Together with the offer, we provide a technical study with the structures and elements to be used.
- Improvement report of the die to guarantee the highest production of the transfer.
- We calculate the maximum number of strokes per minute (spm) of the system (press-die-transfer).



**We deliver the transfer ready to work:**
- We design the transfer to assemble and adjust it with the help of a robot.
- We deliver a set of Master Sheets to verify the geometry of your transfer at any time.

Savings thanks to self-assembly: We offer videos, handbooks, technical advice and training to enable our customers to carry out the assembly of their own transfer.



Contact us for more information and advice for your next transfer projects at *misati@misati.com*

# Sheffield based forging company honoured with a Queen's Award for Enterprise

**Sheffield based Forge and Metals Distributor, Special Quality Alloys Ltd is celebrating the announcement that they will be honoured with the coveted Queen's Award for Enterprise in the category of International Trade, the UK's highest accolade in recognising business excellence.**

Specifically, this Award for International Trade recognises a 3-year period of continuous growth for the company in its non-UK business. Successfully supplying 29 countries around the world, overseas sales grew by 87% which accounted for 44% of the company's total activity.

Established in 1986, Special Quality Alloys (SQA), part of the Special Steel Group of companies, is a family-owned business based in Sheffield, UK. A leading supplier of forgings, bar and machined components in nickel alloys, stainless, duplex, low alloy and carbon to demanding industries such as oil & gas, power generation and the emerging renewables markets.

With on-site capabilities including six open-die forging hammers and two ring rollers, they manufacture forged/rolled rings, blanks, shafts and boss-shapes. Group capabilities include heat treatment, testing and machining all within close proximity.

SQA Sales Director, Darren Pryce said, "This is a great achievement for the business and everyone at SQA, truly a team effort!"

"I must thank all our customers, suppliers and stakeholders for the continued interest and support. Over the years, I have been fortunate to travel and visit many of our international customers, I have been immensely proud to represent SQA selling a manufactured forged product which has been made in Sheffield"

SPECIAL QUALITY ALLOYS Ltd

This year, 226 Queen's Awards have been announced nationally for outstanding business achievement in the fields of International Trade, Innovation, Sustainable Development and Promoting Opportunity (through Social Mobility).

Now in its 56th year, the Queen's Awards for Enterprise are the most prestigious business awards in the country, with winning businesses able to use the esteemed Queen's Awards Emblem for the next five years.

Winners of The Queen's Awards are invited to attend a Reception at Buckingham Palace later this year hosted by HRH The Prince of Wales.

# Brooks Forgings utilise comprehensive range of in-house manufacturing processes to produce Heavy Duty and Specialised Torsion Bars.

**With several decades of experience and considerable investment in tooling and processes, Brooks Forgings has become the go to company for heavy duty and specialised torsion bar production in the UK.**

Typically found in locomotive, commercial, defence, and off-highway applications, torsion bars must be manufactured to tight tolerances, with optimum grain flow and compression only found with hot forging and hot bending techniques.

**Case Study**

A latest contract required the supply of 100 torsion bars from 76mm diameter 709M40 material.

Raw material of EU origin is purchased and checked against original 3.1 mill certificates and then sawn to the required developed length. Upset forging is used to gather and form the material to the desired shape at each end of the bar. Special bracing jigs are used to ensure each end of the bar is inline and square. The forging process also compresses and aligns the material grain flow to create strength around the key mounting areas.


The next stage is the hot bending process that uses a combination of specially designed temperature-controlled heating furnaces and force dissipating tooling as it is critical that the bends are consistent, have no deformation and are formed to the correct radius.

Once bending is complete, the torsion bars are sent for heat treatment. This requires the use of custom-made cradles that are designed to minimise movement during the heat treatment process. Additional inspection and quality checks include tensile testing, 100% crack detection and straightness analysis using our high precision Faro Gage arm (CMM).


The bars are then shot peened, and finish machined in-house to the required specification and tolerances. A full quality pack is supplied with the torsion bars that provides full batch traceability for each component.

If we can assist you with a current or future project, please do visit our website www.brooksforgings.co.uk, email us at sales@brooksforignngs.co.uk or call us on 01384 563356.

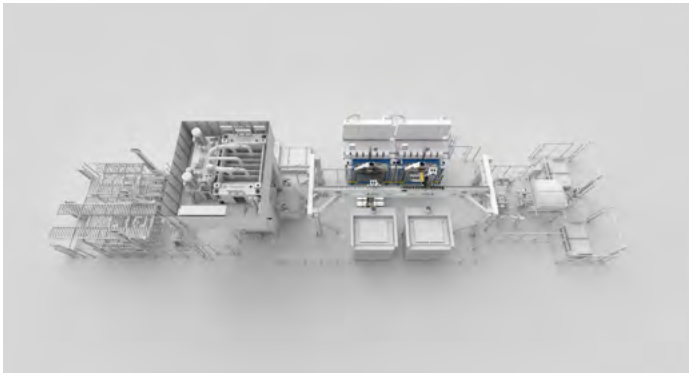
BROOKS FORGINGS
FORGING | MACHINING | FABRICATION

# Volvo Cars invests in new press hardening furnaces from AP&T

**Volvo Car Body Components in Olofström, Sweden, has ordered two new Multi-Layer Furnaces from AP&T for the production of press hardened automotive components. Replacing an existing furnace and adding a complementary one, will not only increase production capacity and flexibility, but also reduce maintenance requirements and energy consumption. Installation is planned for summer 2022.**

"The order is an important milestone that coincides with furnace systems now becoming a separate business area within AP&T. We are proud to have won the trust as a One Responsible Partner® to once again work closely with Volvo in Olofström. The production line runs pretty much round the clock, which poses extremely tough demands on the performance and availability of the equipment," says Krister Pettersson, Key Account Manager at AP&T.

For Volvo Car Body Components, the investment gives them a better platform to meet the need for press hardened sheet metal parts, that contribute to reduced weight and greater passenger safety in the event of an accident in the various Volvo car models.



*Volvo Cars in Olofström have ordered two new Multi-Layer Furnaces from AP&T. They will be integrated into one of the existing production lines for press hardening of car body components that AP&T installed in 2015.*

The new Multi-Layer Furnaces will be integrated into one of the existing press hardening lines that AP&T delivered to Volvo in Olofström in 2015/2016. AP&T was responsible for all integrated equipment in that order, except for the actual furnaces.

"The investment increases our furnace capacity, which offers the opportunity to manufacture larger volumes and gives us greater flexibility in production. We are also gaining a more energy efficient process at the same time, that contributes to more sustainable production," says Jonas Claesson, project manager and maintenance engineer at Volvo Cars Body Components.

The new furnaces, which are the third generation of Multi-Layer Furnaces from AP&T, have been further developed in a number of points compared to earlier versions.

"Our next generation of furnaces has a very stable design and are simple to maintain. For example, the heating elements can be replaced much more quickly now, which means shorter downtime that can free up many hours of valuable production time. The furnaces are also more energy efficient – they require lower installed output and have smaller heat losses," says Pär Mickos, Product Manager Furnace Systems at AP&T.

*The latest generation of Multi-Layer Furnaces from AP&T, have a stable design, low maintenance requirements, good energy efficiency and a minimal footprint.*

The multi-layer design also has obvious fundamental advantages compared with traditional roller hearth furnaces. The compact format has a much smaller footprint. And were the furnace to suffer operational interruptions, you do not have to stop production completely. As a rule, turning off one of the furnace layers is sufficient, and the other layers can continue to be used as normal. Each chamber is equipped with dew point control, which also ensures every sheet meets customer specifications.

As part of the preparatory work, the AP&T and Volvo teams have worked closely together to ensure that the new Multi-Layer Furnaces can be integrated with other equipment in an optimal way. To assure high availability, the order includes an extended warranty that has been able to be offered by including servicing.

"Cooperation with AP&T has worked really well. Naturally, it is an advantage to work with the same partner that developed and installed the actual production line. The new furnaces provide us with a secure solution that meets our needs in the future," says Claesson.

Read more about AP&T's press hardening offering at https://www.aptgroup.com/solutions/automotive/press-hardening

AP&T
AUTOMATION · PRESSES · TOOLING

# Back to Basics - Why Bolt Preload is Important!

**Author Dr Bill Eccles from www.boltscience.com**

**This is a new series where we are getting back to basics and looking at the importance of bolt preload. Over the last fifty years great improvements have been made by the fastener industry in improving the design and reliability of their products. However, no matter how well designed and made the fastener itself is, it cannot alone make the joint more reliable.**

Fastener selection based upon an understanding of the mechanics of how a threaded fastener sustains loading and the influence that tightening procedures can play is also needed. This article provides an introduction to the basics of bolted joints and the major factors involved in the design of such joints.

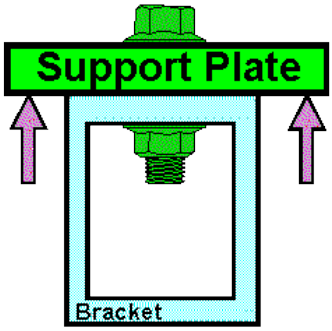



Figure 1A

It is not widely understood how a bolted joint carries a direct load. A fully tightened bolt can survive in an application that an untightened, or loose bolt, would fail in a matter of seconds. When a load is applied to a joint containing a tightened bolt it does not sustain the full effect of the load but usually only a small part of it.

This seems, at first sight, to be somewhat contrary to common sense. Figure 1A shows a bolt and nut securing a bracket to a support plate.

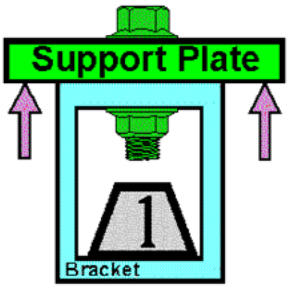



Figure 1B

With the nut loose on the bolt, if a weight of 1 unit is added to the bracket, as shown in figure 1B, then the force in the bolt shank will increase by 1. However, if the nut is now tightened and the weight applied, the force in the bolt shank will not increase by 1 but usually by only a small fraction of this amount. An understanding of why the bolt does not sustain the full effect of the applied load is fundamental to the subject.

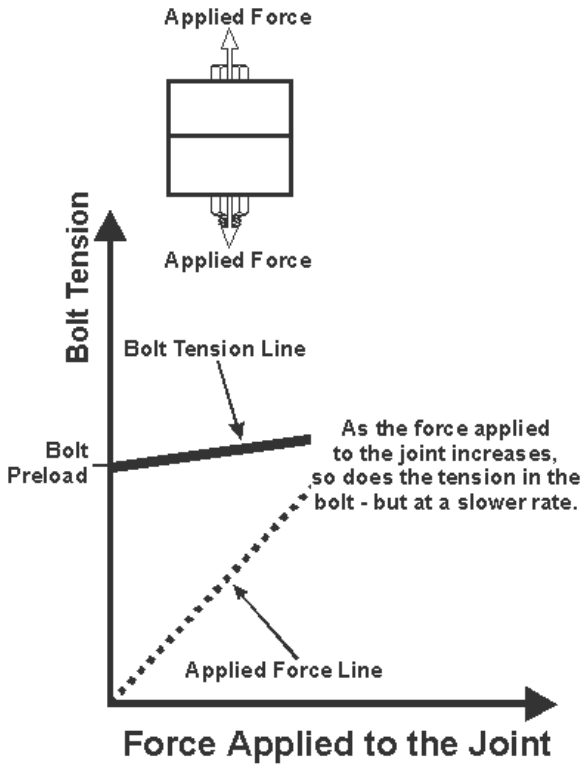
# The Joint Decompression Point - Why Bolt Preload is Important!

**Author Dr Bill Eccles from www.boltscience.com**

**The second part in a series where we are getting back to basics and looking at the importance of bolt preload.**

The most common reason why bolted joints fail is due to the bolt failing to provide sufficient preload to prevent the external applied forces overcoming the clamp force acting between the joint faces.

The slide below illustrates the joint decompression point. This is when the clamp force acting between the joint faces, that has been provided by the bolt's preload, has been educed to zero by the applied forces.

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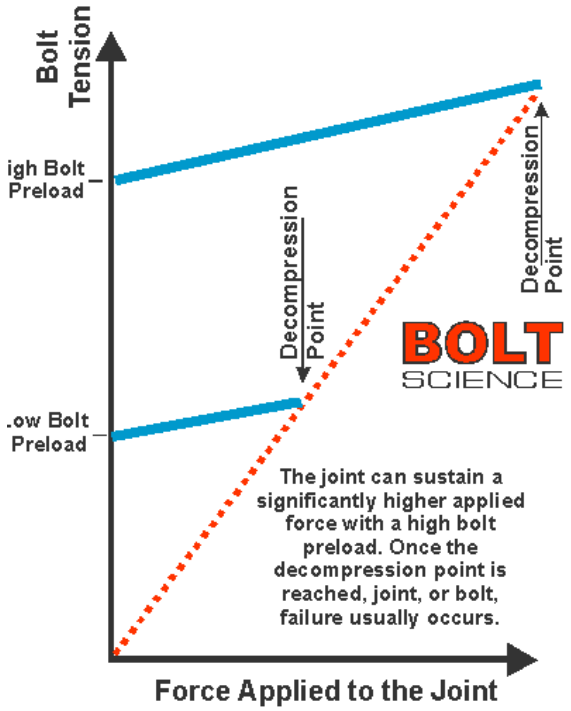
Once the joint faces have separated the bolt will be subjected
to bending forces and the joint faces to fretting. This will lead
to a loss of preload and the bolt subsequently failing by fatigue or other mechanism. This is why the decompression point is taken as a design failure criterion.
The importance of having a high preload can be illustrated by
using the decompression point. The image below illustrates this point.
As can be seen in the image to the right , a higher preload raises the decompression point. For this reason it is better to tighten a fastener up to close to its limit rather than only partially tightening it.




# WATERMILL-CT HOLDINGS LTD T/A COOPER TURNER BECK WINS A QUEEN'S AWARD FOR ENTERPRISE

**WATERMILL-CT HOLDINGS LTD T/A COOPER TURNER BECK are delighted to announce that the company has been honoured with a Queen's Award for Enterprise in the category of International Trade.**

The award, which is valid for the next five years, is in recognition of demonstrating continuous outstanding growth in international exports over the past several years. The Queen's Awards for Enterprise are the most prestigious business awards in the UK, recognising and celebrating business excellence across Britain.

Originally founded in 1876, Cooper & Turner are one of the world's leading manufacturers and distributors of high strength safety critical fasteners for the Wind, Construction, Tunnelling, Rail, Oil & Gas, OEM, Power Generation and Nuclear Power markets.

In 2017, with the promise of ever expanding fastener markets The Watermill Group, a strategy-driven private investment firm, completed the cross-border acquisition of Andaray (Holdings) Limited and its direct and indirect subsidiaries ("Cooper & Turner"),

Anthony Brown, CEO commented: "We are absolutely overjoyed with the news that **WATERMILL-CT HOLDINGS LTD T/A COOPER TURNER BECK** have won a Queen's Award for our sustained success in international trade! We're so grateful to our wonderful manufacturing sites and our amazing team for making all of this possible with their relentless passion, commitment, positivity, and hard work over the years. As a British brand with products that are manufactured in the UK, it's especially humbling to see how our highly progressive business concept, uncompromisingly ethical materials standards and relationship-driven business approach has resonated with customers in so many countries throughout the world."

Learn more about WATERMILL-CT HOLDINGS LTD T/A COOPER TURNER BECK: www.cooperturnerbeck.com

Cooper Turner Beck
Fasteners for Safety Critical Applications

THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2022

More information about the Queen's Award:

Established in 1965, the Queen's Awards for Enterprise are the most prestigious business awards in the UK, with winning businesses able to use the esteemed emblem for the next five years. Now in its 56th year, the Queen's Awards for Enterprise are the most prestigious business awards in the country, with winning businesses able to use the esteemed Queen's Awards Emblem for the next five years.

# Jump Starting Automotive Manufacturing

**Recent reports show that UK car production has fallen to its lowest output since 2009, with production down by 41%. The automotive sector ended 2021 on a high with general UK manufacturing on the rise but issues have surfaced that indicate that businesses are still working towards recovery.**

## Addressing Chip Shortages

The predominant obstacle car manufacturers have stumbled across is the global shortage of computer chips. This issue has been addressed across the world since 2020 and is a result of the need for semiconductors outweighing the supply. A snowball effect has been attributed to this shortage with factors such as Covid-19, trade issues and weather being highlighted.

There are signs however that the chip shortage will ease towards the end of 2022 with major producers such as South Korea receiving government assistance and the U.S seeking to build their own manufacturing plants. Although these solutions will take time, Sector leaders remain hopeful that with these efforts lead times will be reduced. However another recent issue is that the Ukrainian conflict has significantly reduced the supply of Neon gas used to etch chip boards. This will further exacerbate recovery for the automotive industry.

## Going Electric

More than a quarter of vehicles produced in February were electric vehicles, with the consumer need for EVs ever-increasing. The electric vehicle revolution has been supercharged by the Prime Minister as new homes, supermarkets, workplaces and more will be required to install electric vehicle charge points.

The government also announced the ban on petrol and diesel cars from 2030 as part of their green initiatives. With the increase in incentives and investment for electric vehicle use, it is predicted that this will attribute to growth in car production over the coming years.

## Preparing For Supply Chain Risks

Supply chains continue to be shrouded in a level of uncertainty, and this has remained a factor in declining car production. A multitude of parts within the production process is affected by this, including fasteners. Many UK businesses have begun to adapt their supply chain, moving to UK based suppliers or EU suppliers with UK operations.

As manufacturers begin to streamline their supply chain this could help towards improving overall production, and at the least help companies prepare for future crises. Here at Clevedon Fasteners, we are equipped to provide substantial supply chain service, find out more by getting in touch here.

## Get Advice From The Experts

We're committed to driving the growth of UK manufacturing, which is why we're proud to be recognised suppliers of cold-forged components and fasteners. Our services are delivered with exceptional customer service and technical competence is at the forefront of our operations. To find out how we can help your business contact our expert team today www.clevedon-fasteners.co.uk/contact-us

# Guide to increase the efficiency of a factory

**Operational efficiency is a crucial metric for the competitiveness of any industrial company. To improve it, projects must be implemented based on creating flow, eliminating muda (waste) and above all they must rely on an initial diagnosis.**
**As production is the place where value is effectively added to products, it is to be expected that the first step to take is to implement improvements in this area.**
**There are five tools that enable the simplification and optimisation of production processes.**

**2 times +**
was the increase in global trade involving manufactured goods between 2000 and 2017

**70%**
of consumers consider the personalisation of the products they buy important

**Implementing efficiency improvement projects is key to ensuring competitiveness**

## IMPROVEMENT PRINCIPLES

### THE CREATION OF FLOW

To **maximise the value delivered to the customer**, it is necessary to adopt a new paradigm and think about efficiency in a combined way: **flows and resources**.

To increase flow efficiency, the **current established production batches** and all material stop points should be questioned. You should also analyse **which operations can be integrated** and, where possible, think about transformation as being continuous and **without transport, waiting or inspection**.

By creating flow, **processing time is reduced**, and the added value of the process is therefore increased.

**Strategic decision**
*Key questions to determine how to improve flow in operations:*

1. **Who is the customer?**
2. **What is the flow unit?**
3. **What is value added for the flow unit?**


### THE ELIMINATION OF MUDA

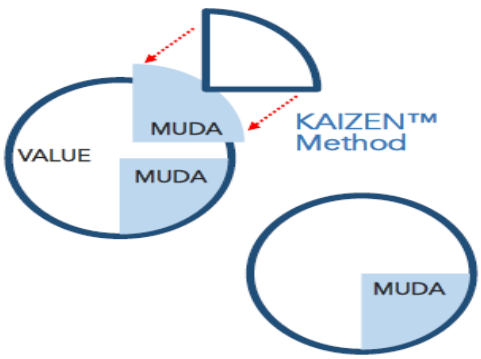
Added value activities (VA) are defined as all operations for which the customer is willing to pay for. **'Muda'** is the Japanese word meaning **waste** and represents all other activities that are not AV. These are divided into 7 types and are quickly identified along the value chain.

Combined with the concept of creating flow, reducing Muda in manufacturing operations is key to **achieving new levels of efficiency**.

**1 to 200**
is the ratio of **AV to Muda activities** in the best organisations

**7 Muda model**
*Model developed by Taichii Ohno at Toyota to improve the production process:*

1. **Overproduction**
2. **People waiting**
3. **Waiting for material (or information)**
4. **People movement**
5. **Material transport**
6. **Overprocessing**
7. **Errors and defects**



## THE INITIAL DIAGNOSIS

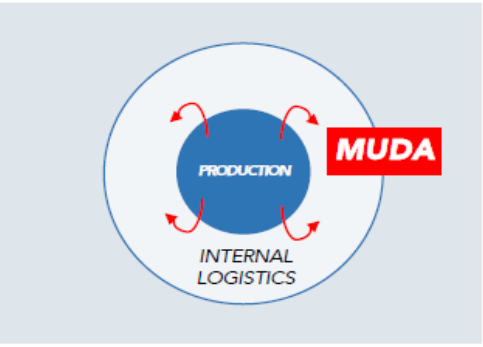
**Understanding and measuring the initial situation** is the first step in any operations improvement journey. This exercise should be done by a multidisciplinary team working in the field and basing the analysis on reliable and representative data.

The **initial assessment** ends with the **definition of the future vision** and the **detailed implementation schedule**. The **financial benefits of the solution** are also calculated, and the **necessary investments** are identified.

## HOW TO IMPLEMENT

CREATE FLOW IN PRODUCTION

Implementation should begin in the **productive areas** as this is the **core of the operation** and where value is effectively added to the product.




## 1) Layout and border of line redesign

Before starting the redesign of layouts, it is important to carry out a **product - quantity analysis** to understand the **distribution of the references** according to their demand and to choose the type of line for each group of products.

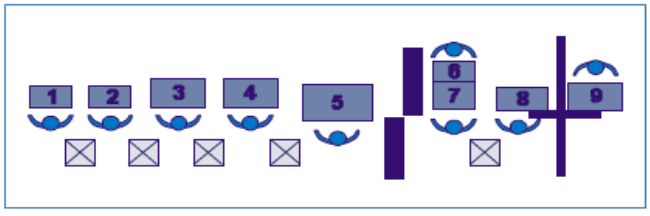
Then, the **cycle time of the line** is calculated, i.e. the time between the production of two complete products. To avoid overproduction, this calculation has to be based on the **takt time** which represents the **real market demand**. To sketch the first layout and distribution of tasks per post, it is necessary to **map all the steps** of the transformation process and group them into the number of posts required.

The border of the line is the area next to the line where **all the tools and components required for the operation** are located. It must be organised to minimise the Muda of movement of the operators.

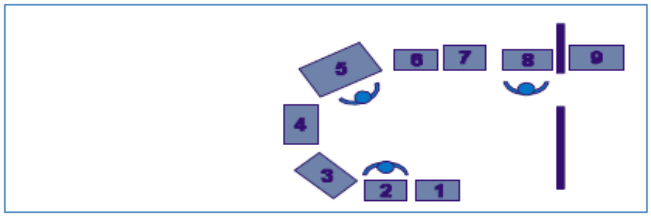
To optimise this border of line, large loads of pallets should be replaced by small containers or trolleys and front-loading, and FIFO shelving should be used.

| | Before | After | Results |
|---|---|---|---|
| Lead time | 50 min | 4 min | -90% |
| Operators | 9 | Flexible | --- |
| WIP | 80 units | 10 units | -90% |
| Area | 90 m² | 77 m² | -15% |
| Productivity | 128 pcs/ op/h | 167 pcs/ op/h | +30% |

LAYOUT **BEFORE** KAIZEN™




LAYOUT **AFTER** KAIZEN™



## 2) Task standardisation

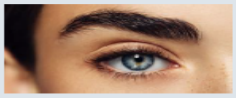
To improve task execution time, standard work can be implemented. Applicable to any process in the production area, it aims to **standardise the operations** performed at each workstation of a line.

When implementing this tool, it is important to **observe employee movements, materials waiting between operations** as well as **quality defects** and **rework**.

In the specific case of improving the tasks associated with changing references, the **SMED** (Single Minute Exchange of Die) methodology is the one to be used. By dividing the work into internal, which can only be done with the machine switched off, and external, which can be done with the machine switched on, non-productive time can be reduced, thereby **increasing the actual capacity** of the machine and enabling the **production of smaller series at lower cost**.

### 5 STANDARD WORK STEPS

**1. OBJECTIVES**
Definition of SMART goals

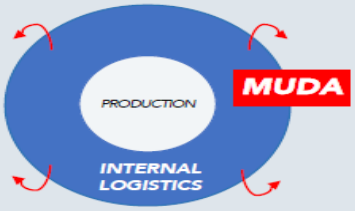


**2. STUDY**
Spaguetti diagrams, time measurement and Muda hunting

**3. IMPROVEMENT**
Implementation of improvement ideas

**4. STANDARDISATION**
Standardisation of work

**5. CONSOLIDATION**
Employee training and follow-up

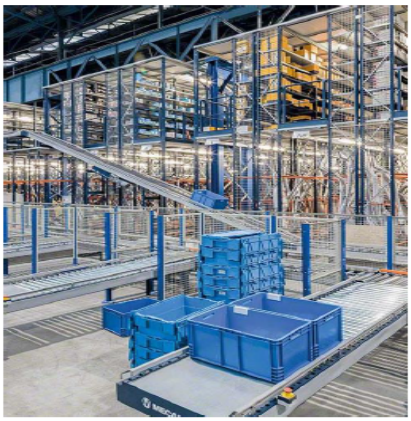




## 3) Pull planning

The pull planning strategy begins with the decision to produce references in MTS (make-to-stock) and in MTO (make-to-order). This decision is made according to the analysis of the characteristics of the demand for each reference, such as its delivery frequency, and the volume ordered.

The MTS references are organised into supermarkets of finished products which are sized based on real demand and on a safety coefficient to absorb variability. Each supermarket reference has an order point (stock level at which a new production order is triggered).

**The implementation of intermediate product supermarkets allows for increased customisation, reducing delivery times, and finished product stock levels.**



## 4) Improvement of logistics operations

To optimise internal logistics tasks, the Mizusumashi, a logistics train with a standardised route covering the entire production area, can be implemented. This operator supplies components, withdraws finished products, and transports all the information necessary for the production process, such as production orders.

# ADVANCED INCREMENTAL SHEET FORMING FOR LIGHT WEIGHTING

**Authors Ahmed Elsayed, Giribaskar Sivaswamy, Diego Gonzalez, Evgenia Yakushina**

The University of Strathclyde's Advanced Forming Research Centre (AFRC) – a specialist technology centre within the National Manufacturing Institute Scotland

## Incremental sheet forming

Incremental sheet forming (ISF) is a flexible and cost effective forming process which involves a localised deformation of the sheet metal induced by a rigid hemispherical tool, the movement of which is precisely controlled during the forming process. Different variants and improvements have been developed for ISF in the last decades, such as Single Point Incremental Forming (SPIF), Double Point Incremental Forming (DPIF), Laser Assisted ISF, Electrical resistance ISF and Friction ISF. SPIF and DPIF are the most commonly used technologies since they have a more straightforward setup and lower cost.

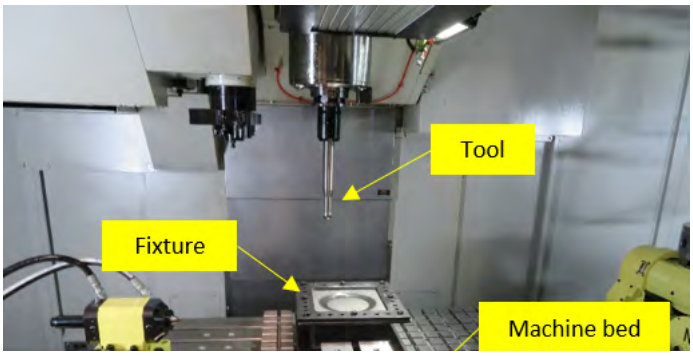



FIGURE 1 ISF (SPIF) SETUP AT AFRC

Different works can be found in the literature analysing the ISF process from a numeral point of view to understand the complex forming mechanisms occurring in the process. A material deformation model consisting of stretching, bending, compression, cyclic loading and shearing (in plane and through thickness) was confirmed experimentally and through FE (finite element) simulations. The main merit of ISF is the ability to form complex and/or deep shapes that exceed the normal strain limits obtained by Nakajima test (see Figure 2).

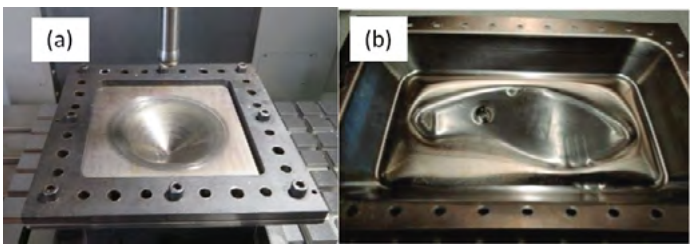



FIGURE 2 FORMING OF (A) TITANUM ALLOY AND (B) ALUMINUM ALLOY USING ISF

NMIS National Manufacturing Institute Scotland | Advanced Forming Research Centre University of Strathclyde

## ISF case study developed by the AFRC

The Advanced Forming Research Centre (AFRC) has investigated the die assisted DPIF process applied to the forming of AA7075 with a thickness of 1 mm via modelling, where commercial software PAM-STAMP has been used. The numerical work has been validated through experimental forming trials. GOM ARGUS analysis was carried out to compare the thickness distribution of the formed part with the outcomes of the simulation. Good agreement was observed between the FE simulation results and the scanned outputs.

## ISF process setup

In this investigation, a 3-axis CNC machine with a 25 mm diameter forming tooltip (hemispherical shape) was used. A rotational speed of 150 rpm was selected for the tool. The movements of the tool and the CNC bed were controlled by the CNC machine. A pitch value (size of the vertical step down of the forming tool per revolution) of 0.2 mm was chosen.

## FE model setup

The tools were considered as surface rigid bodies in the model (see Figure 3). Both the punch and the clamping are moving in the Z (depth) direction with the same velocity. The friction coefficient was assumed to be 0.08 for the contact between the punch and the blank since the continuous use of the lubrication during forming process.

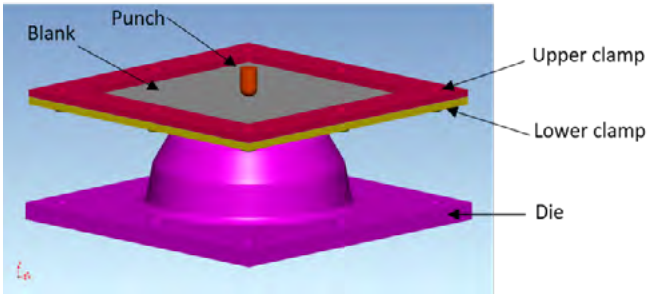



FIGURE 3 ISF - DIE ASSISTED FE MODEL SETUP

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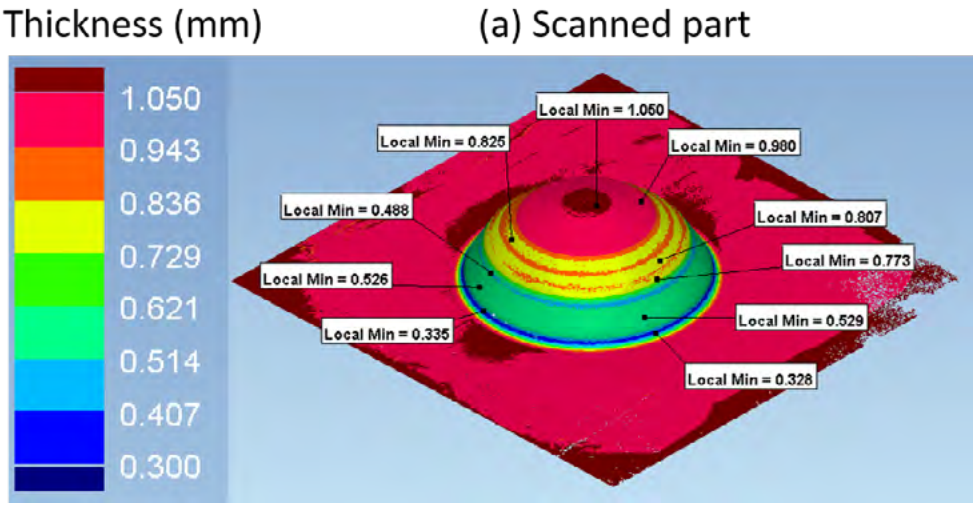
In order to define an accurate material model, the tensile tests were carried out at three directions to the rolling direction (0° RD, 45° RD and 90° RD). A Hollomon law was used to characterise the hardening of the material, and a Hill 90 plasticity model was employed for the AA7075 alloy in O condition.

Belytschko-Wong-Chiang fully integrated elements were used, with an initial element size of 20 mm. Automatic refinement of the mesh was allowed during the simulation, achieving a minimum element size of around 1.25 mm at the end of the simulation which should be below the initial thickness of the sheet.

## Results

### Thickness comparison

Figure 4 highlights the outcomes of the comparative analysis performed for the FE simulation results and the data generated for the scanned part with the same forming depth (102 mm). A minimum thickness value of 0.32 mm was found in the scanned part, whereas the FE part showed a value of 0.29 mm. As the reader can see in Figure 4, a good agreement can be observed between the two parts.



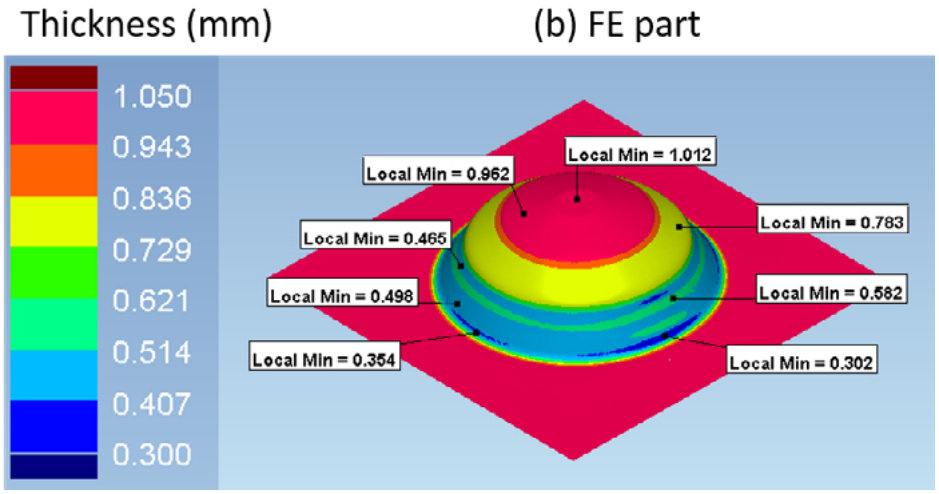




FIGURE 4 THICKNESS DISTRIBUTION OF (A) SCANNED PART, (B) FE PART

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The AFRC has investigated forming a wide range of Aluminium and Titanium alloys using ISF. The research confirmed the ability to form complex 3D shapes successfully at room temperature, maintaining low production cost, energy saving and shortening time to market. ISF could be used as a very flexible low volume manufacturing technology with a broad application in prototyping

## Advanced Forming Research Centre

Employing around 180 staff and working with over 350 manufacturing businesses, the University of Strathclyde's Advanced Forming Research Centre (AFRC) is a globally recognised centre of excellence in innovative manufacturing technologies, R&D, and metal forming and forging research.

At the heart of manufacturing research and development in Scotland for a decade, the AFRC is the only High Value Manufacturing Catapult centre in the country, one of only seven in the UK, and the foundation for the National Manufacturing Institute Scotland (NMIS) as one of two specialist technology centres within the NMIS Group.

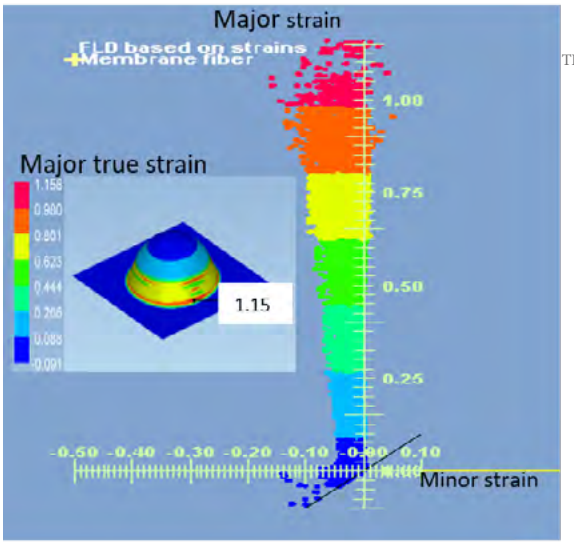


FIGURE 5 FLD DIAGRAM FOR THE SIMULATED FORMED PART WITH THE MAJOR STRAIN DISTRIBUTION

NMIS National Manufacturing Institute Scotland | Advanced Forming Research Centre University of Strathclyde

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# There is a place for nuclear energy, and here is why…

## Is nuclear energy with its carbon neutral waste an answer to our growing energy needs or an environmental disaster waiting to happen?

### What is nuclear energy?

Nuclear energy comes from the binding energy that is stored in the centre of an atom and holds it together. To release the energy, the atom must be split into smaller atoms. This process is called fission.

### Why nuclear power?

Nuclear power is known as the most reliable, low-carbon energy source currently available to the UK. Nuclear power is a clean and economical way of boiling water to make steam, which then turns turbines to produce electricity. There is an ongoing demand for electricity in the UK and nuclear power has enough positives to be part of the solution.

It is said that no other electricity source can match nuclear when it comes to efficiency and reliability. Nuclear power plants can continuously produce large-scale, around-the-clock electricity for months at a time, without disruption and climate damage. Whereas fossil fuels are still a significant source of energy in the UK and are extremely damaging to the environment.

### What are the benefits of nuclear power?

Nuclear power offers many benefits for the environment and is reliable and cost-effective. Though nuclear power stations may be considerably expensive to build, once built they have low maintenance costs and longevity.

Nuclear power can provide low carbon generation for years and years for businesses and domestic use, making it a useful investment. Unlike energy from wind turbines, nuclear power is consistent and does not depend on weather conditions to function.

Power plants do not burn any materials, so they produce no combustion by-products, making nuclear power one of the smallest carbon footprints. Whilst renewable energy such as solar and hydroelectric is a great for the environment, nuclear power has all the technology required to be used on a large scale.

Also, because they do not produce greenhouse gases, nuclear plants help protect air quality and alleviate climate change. It is estimated that since 1976, 64 gigatons of Co2 emissions have not been released into the atmosphere due to nuclear power.

### What is the downside to nuclear energy?

Whilst nuclear plants do not produce emissions whilst operational, carbon dioxide is released into the environment when new plants are built which ultimately contributes to pollution and needs to be considered as part of the overall environmental impact.

Another big downside is radioactive waste, which although minimal in volume can remain dangerously radioactive for many thousands of years and impact on the environment. However, if waste is removed and safely stored until a permanent disposal site or better still a recycling option becomes available, it can be a good solution for the both the economy and the environment.

### So how can nuclear play into our energy future?

Combined with renewable sources, nuclear power allows us to enjoy our energy needs without the impact on our environment that is coupled with fossil fuels. Nuclear energy might be the only way of dampening the effects of climate change and preventing a catastrophic man-made global warming.

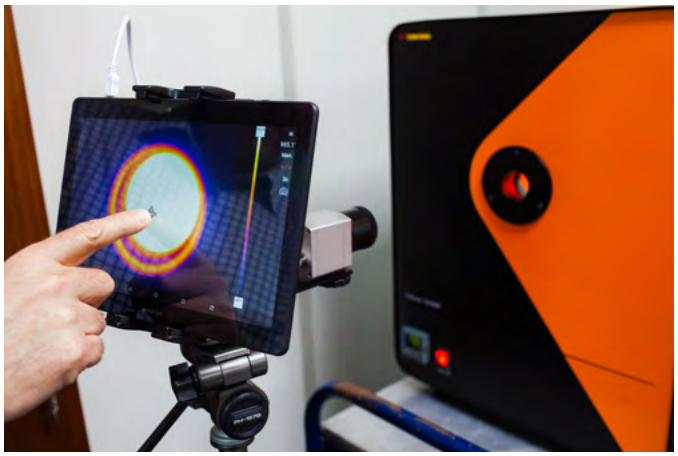
Written by Liam Conway, Head Of Sales at Control Energy Costs

# Temperature calibration

**Whatever industry you're in, if you're using temperature measuring equipment, then accuracy is critical. But when used over time, your equipment can lose accuracy, particularly as a result of extreme temperatures, humidity and general wear and tear. What's more, if you're working in a regulated environment, then the instruments you use may need to be periodically calibrated to ensure compliance with the relevant regulations.**

Temperature calibration is the process of comparing a reading on one piece of equipment, with that on another piece of equipment that has been calibrated to a known set of parameters. Most equipment will need to be calibrated on an ongoing basis during its lifetime to ensure it continues to be accurate.

Regular calibration of equipment also provides users with peace of mind and confidence in the results produced, monitored, and recorded.



### Traceable temperature calibration to ISO standards

We offer a traceable calibration service, and our calibration is carried out in accordance with our quality management accreditation ISO9001.

This industry standard means all measurements are traceable back to National Standards. Traceable calibration is an appropriate calibration for most applications.

### Our expertise

As temperature measurement specialists with our unique industry expertise, our temperature calibration services ensure the highest level of accuracy of your equipment as well as compliance with regulatory guidelines.

### Instrument calibration

We offer calibration in respect of a number of different instruments including:

### Probes

In many industries, even the slightest variance in the required temperature can adversely affect both the quality of a product and safety, particularly in the food and drink industry and in the production of certain materials. However, a number of operational conditions can affect the accuracy of probe measurements, for example, extremes of temperature, cycling temperature and knocks and damage. Regular calibration of temperature probes is therefore essential to ensure they remain accurate.

The recommended frequency of the calibration will vary depending on the amount and manner in which a probe is used, the industry you are operating in, and the operational conditions. We can calibrate temperature probes at temperatures between -30°C to +240 °C.

### Gauges

Although most modern gauges are extremely robust, they can suffer from wear and tear and that in turn can affect their accuracy over time. Periodic gauge calibration verifies and, if needed, restores accuracy, and ensures consistent measurements.

### Infrared cameras

Infrared cameras are factory calibrated to ensure precision and accuracy. However, like other equipment, over time, the electronic components age and the measurements they produce can start to drift. Other factors such as dust and dirt can also start to affect the equipment, but errors can be hard to detect. Therefore, an essential part of maintaining your infrared camera for both longevity and accuracy is ensuring it is periodically checked and recalibrated as necessary.

With particular expertise in the Optris range of infrared cameras, our infrared camera calibration can calibrate at temperatures of between 0 to 1200'c.

We can collect and return equipment as required.

For more information about our temperature calibration, please get in touch by calling: 01628 778688 or email sales@processparameters.co.uk

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Many companies have not realised the full extent of the R&D tax credits available to them, scan the QR code below to see if your business is eligible.

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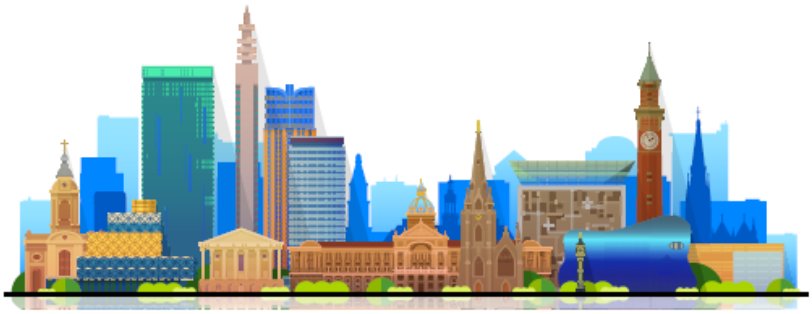

CONGRESS & EXHIBITIONS
OCTOBER 20TH 2022

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After 2 years of pandemic-related delay, the 20th ICOSPA Congress is back – on 20th October in Birmingham, UK!

Over the past 50 years, ICOSPA has represented over 12,300 companies from 6 countries – making it the global voice of our industry.

Steve Morley President ICOSPA

**Why attend the ICOSPA Congress**
• 100% sheet metal engineering focus – It's this year's most tailored event
• Valuable networking with global peers – More than 100 senior metalforming executives and business leaders from 6 countries will be there
• Thought-provoking sessions on the future of metalforming - Confirmed speaker and topics
**Francisco Riberas,** Executive Chairman of Gestamp Automocion - Global ecomony and the challenges facing manufacturing businesses into 2023
**Ian Harnett** Chairman of Tevva Electrical Trucks - Moving the world towards a better way of transporting everything for everybody
**Antonio Costa**, CEO of The Kaizen Insitute - Industry 4 innovation and building a digital transformation strategy

**The ICOSPA Congress is only held once every 3 years**

Don't miss this chance to share metalforming-specific knowledge, best practices and experiences at this critical time for our sector.

We look forward to seeing you there!

**For more information visit www.theicospa.com or email icospacongress@thecbm.co.uk**

# Three days of innovation, partnerships and excellence: Subcon is back for 2022!

**Subcon returns on the 7- 9 June 2022 to the NEC, Birmingham. Now in its 45th year, it remains the UK's premier event dedicated to subcontract manufacturing buyers, enabling them to source suppliers, benchmark capabilities, and form new manufacturing partnerships. At Subcon, find everything from product design, prototyping and development, contract and subcontract products and services through to machine tools, systems and equipment.**

This June, Subcon will once again be collocated with The Engineer Expo and Manufacturing Management Show, bringing together even more of the best suppliers, latest innovations and practical advice.

The Engineer Expo is the dedicated event for the advanced engineering community that drives manufacturing and design solutions. Curated by The Engineer, the show provides a unique platform for engineers to source the latest advanced engineering technology, products and services, enabling them to optimise production and process throughout the manufacturing cycle.

After the success in 2021, the very popular Manufacturing Management Show (MMS) is also back this year. From the team behind the industry leading Manufacturing Management magazine, MMS brings together everything manufacturers need to know about running a successful manufacturing site under one roof - from maintenance, materials handling, sustainability, skills, IT and health & safety.

**World-class solution providers: The exhibition**

Across the three show days the exhibition will deliver the contacts, connections and content that engineering and manufacturing businesses in the UK need to succeed. Visitors will be able to harness new innovations from over 200 world class suppliers to help increase capacity, optimise productivity and improve flexibility, whilst also driving down costs to stay competitive in a global market.

Subcon exhibitors span a massive range of manufacturing and engineering businesses, including assembly work, CNC machining, metal fabrication, 3D printing and many more. As this diversity of exhibitors shows, there will be huge opportunities to forge strategic partnerships and improve existing processes.

Exhibitors include:

**Axis Precision Eng. Components:**

Axis Precision Engineering Components Ltd. are a family owned company established over 30 years and based in Essex.

They supply machined components to customer specifications using 3, 4 , 5 Axis CNC Milling or CNC Turning. They supply to a wide range of sectors ranging from Oil & Gas - F1 – Aerospace, Packaging etc. We are ISO 9001-2015 accredited.

**Edmo Limited:**

Edmo Limited are a bespoke aluminium extrusion supplier. They are committed to exceptional quality at every stage of your project. Their complete range of extrusion and machining services is complimented with their Powder Coating and Assembly divisions. Delivered by a global network of specialists, keeping their prices competitive and their lead times short.

**Goodman Metal Works:**

Goodman Metalworks are a full-service metal fabrications solution provider. With clients in Aerospace, Recycling, Sub-sea and Quarrying they are well placed to serve your needs no matter how complex.

**WEC Group:**

WEC Group is one of the largest engineering & fabrication companies in the UK, providing fabrication, laser cutting, precision machining, waterjet cutting, powder coating and CCTV solutions for over 40 years. Based in Darwen, Lancashire, WEC Group are well-equipped to meet all of your manufacturing requirements.

**Shaping the future: Free conference sessions**

Visitors can also enjoy over 30 hours of free conference sessions lead by industry experts discussing the key issues and trends that are driving innovation and shaping the UK's industrial landscape in 2022: from the latest developments in key technology areas such as hydrogen mobility, electrification, and nuclear fusion to keynote insights on automation, finance and engineering skills.

Speakers confirmed this year include:

- Dave Short - Technology Director, BAE Systems: **Innovation in the defence sector**
- Ian Whiting – Commercial Director, UK Battery Industrialisation Centre: **Scaling up UK electric vehicle battery manufacture**
- Tony Langtry – Head of Mechanical Engineering, Tokamak Energy: **The engineering challenges of nuclear of fusion**
- Hugo Spowers – Founder, Riversimple: **Transforming mobility with hydrogen**
- Professor Ric Allot – Director of Business Development, STFC: **Industrial applications of Big Science.**
- Professor Chris Tuck – University of Nottingham: **Insight from the cutting edge of the UK additive manufacturing research community**.
- Nick Hawker, CEO and co-founder, **First Light Fusion on the commercial application of nuclear fusion**
- Martin Little, commercial director, **Rail Alliance on the overlooked opportunities within rail**

Jason Dante, event director for Subcon, points out that this wide range of opportunity and the chance to see so many diverse companies is no accident: "With Brexit, Covid-19 and the ongoing conflict in Ukraine, we are even more aware than ever of the pressures on UK engineering and manufacturing businesses, so we have crammed as much value into the event as we can. This year, alongside the Engineer Expo and Manufacturing Management Show theatre, we also have a brand new supply chain theatre that will bring together an expert line-up of speakers to talk about the biggest challenges and opportunities for the sector.

We also once again have ensured there will be ample networking opportunities available at the show, including the VIP buyers lounge, sponsored by Qimtek.

Plus, there will even be a couple of extra surprises in celebration of the Jubilee !We are incredibly excited to include so much new material and look forward to opening the doors at the NEC."

CBM are on stand B86

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**Leggett & Platt Components Europe Ltd** — **t: 01226 707 500**
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**Doerken MKS Systeme Gmbh and Co** — t: 00 49 233 0630
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**National Machinery UK Ltd** — t: 0121 222 5352
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**Phillips Screw Company** — t: 0754 081 1962
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**RLS Tooling** — t: 01543 271 808
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## Forging

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**Bharat Forge** — t: 01562 720 396
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**Carlo Salvi UK Ltd - Hatebur** — t: 01952 587 730
Shropshire TF7 4PF — www.carlosalvi.com

**Condat Ltd** — t: 01302 770 088
Doncaster, DN 10 6EZ — www.condat-lubricants.com

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**AP&T UK** — t: 00 45 762 53201
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**Dayton Progress Ltd** — t: 01926 484 192
Warwickshire CV8 1NP — www.daytonprogress.co.uk

**Dreher Automation** — t: 00 49 7454 881 640
Germany D-72172 — www.dreher.de

**EcoCooling Limited** — t: 07973 287 385
Suffolk IP28 6RE — www.ecocooling.org

**Highley Steel Ltd** — t: 01384 396 660
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**Institute of Sheet Metal Engineering** — t: 0789 149 9146
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Spain — www.misati.com

**Ryeland Toolmakers** — t: 01908 647 746
Buckinghamshire MK2 3JJ — www.ryelandtoolmakers.co.uk

**The Bifurcated & Tubular Rivet Company** — t: 01296 314 300
Buckinghamshire HP20 1DQ — www.bifandtub.co.uk

## Commercial

**Advanced Forming Research Centre** — t: 0141 534 5200
Renfrew PA4 9LJ — www.strath.ac.uk/afrc

**Altair Engineering** — t: 01926 468 600
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**Control Energy Costs Ltd** — t: 07501 221 728
Surrey CR5 1BN — www.cec.uk.com

**Crowe U.K. LLP** — t: 0121 543 1900
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West Midlands, WV4 8FB — www.fortressinterlocks.com

**Fuchs Lubricants (UK) Ltd** — t: 01782 203 700
Staffordshire ST1 5HU — www.fuchs.com/uk

**Gravity Risk Services** — t: 07510 695 335
Leicestershire LE7 1GP — www.gravityriskservices.co.uk

**NEW Hillfoot Steel Ltd** — t: 0114 250 3643
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**NEW Imperial College London** — t: 020 7589 5111
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**In-comm Training and Business Services Ltd** — t: 01922 457 686
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**Inspired Energy Plc** — t: 01772 689 250
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**Kumi Solutions** — t: 02746 350 360
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| **Powerstar** | **t: 0333 230 1327** |
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