

for EMC, EMP, HEMP & TEMPEST Protection

Issue 30

MPE PEOPLE

Major business awards celebrate MPE

MPE was honoured as winner in several categories at three major Business Awards ceremonies held in November and December in Liverpool, Knowsley and Manchester Read More >



Record-breaking advances to meet world demands

MPE's sales have increased by 30% since 2021 and by 90% since 2019. Key to this success in 2022 was the growth in MPE's EMP filter sales, particularly into the USA Read More >



MPE ACTIVITY & TECHNOLOGY

World's first certification for Mil-Std-1A filters

After testing at Jaxon Engineering in the USA, MPE is the world's first filter manufacturer to publish test certificates confirming compliance with Mil-Std-188-125-1A....Read More >



MPE is proud to attain UL certifications

Capacitors produced by MPE are now officially certified as compliant with UL requirements and its EMP filters as compliant with UL 1283 and CSA C22.2 no.8 standards Read More >



MPE DISTRIBUTORS

Annual awards honour distributor performance

In December MPE conducted its annual review of distributor performance, with Platinum status being awarded for the first time ever to one partner – Euromip in France Read More >



New direct trading strategy for the USA

As its filter sales to the USA are now far greater and more established, MPE has changed to a different model, to trade direct with its many integration clients there Read More >



MPE APPLICATIONS

Filters for Zeppelin mobile comms shelters

MPE's high-performance EMC filters were specified by Zeppelin for protecting power supplies to their military communications, radar and mobile datacentre shelters Read More >



Low-leakage filters for Thales naval radars

MPE's low-leakage TEMPEST power line filters are incorporated into Thales Smart-L multi-mission radar and NS100 and NS200 naval, air and surface surveillance radars Read More >



FAST FACTS ON MPE LTD

- Trading for over 98 years, MPE employs more than 60 people.
- MPE has designed and manufactured in excess of 10,000,000 high-performance protection filters and feedthrough capacitors across the last 30 years.
- Many products in continuous service for more than 25 years.
- MPE's portfolio spans over 20,000 custom designs.
- MPE is certified to the ISO 9001:2015 quality standard, and its products meet all applicable defence, safety and regulatory standards.





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The three Directors of MPE Ltd, David Seabury, Paul Currie and Marcus Wright, receive the Insider Media Ltd Award for Innovation in International Trade





Joe Bush, Editor of The Manufacturer magazine, presents Paul Currie with his Top 100 Leadership Award as one of The Manufacturer's Top 100 Alumni for 2022





Major business awards celebrate MPE

We reported in Issue 29 of the Company Bulletin that MPE had been declared as Finalists for three major business awards. Subsequently, at the Awards ceremonies held in November and December 2022, MPE is delighted to have been honoured as the winners in several categories.

Firstly came the prestigious Manufacturer MX Awards, with the Awards ceremony and gala dinner held in Exhibition Centre Liverpool at the Albert Dock. MPE had previously secured the Award for International Business at this event in 2019 and was a runner-up in the same category.

Alongside this, MPE Company Director Paul Currie received the Inspiring Leader award as one of the Top 100 Alumni for 2022, determined by the judging panel of The Manufacturer magazine.

The Manufacturer Top 100 program is a showcase of the best individuals within manufacturing and a celebration of their efforts in the sector. Nominated by their peers and evaluated by an expert panel, the Top 100 Alumni represent the very best of UK manufacturing industry. They are the people at the forefront of driving their companies forward and meeting the many current challenges.

Joe Bush, Editor of The Manufacturer, commented: "The people who make up this industry are quite simply amazing. They have thrived in their roles during a year that has seen even more challenging circumstances thrown at a sector already battling on several fronts – such as the skills shortage, supply chain disruption, sustainability and digital transformation. Huge congratulations to all those involved."

Next MPE attended the Knowsley Business Awards as a shortlisted Finalist within the Medium Business of the Year category, for companies with 50 to 250 employees. Whilst on this occasion MPE did not win, the gala event held in the Grand Marquee at Knowsley Safari Park was a massive celebration of business successes within the local area.

Closing out the Awards Finals was Insider Media Ltd's 2022 North-West International Trade Awards, where MPE was shortlisted as Finalist in both the International Company of the Year and Innovation in International Trade categories. The Insider awards are designed to showcase and reward the achievements of pioneers, innovators and global success stories within the North-West region. At the black tie Awards ceremony held in the iconic 5-star Lowry Hotel Manchester, MPE was named as proud winner of the Innovation in International Trade Award.

MPE Director Paul Currie commented "MPE is delighted to have won The Insider award for Innovation in International Trade. This is a great recognition of MPE's world-class distribution partner program and international business strategy and gives well-deserved acclaim to our company's talented team."

A full list of MPE's recent Awards successes can be found at www.mpe.co.uk/about-us/awards



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David Seabury - Managing Director, MPE Ltd

To be the number one choice for high performance EMC/EMP filter solutions E8.7m FY23 Turnover On Time Deliveries Product Product return level Highly skilled and passionate employees Highly skilled and passionate employees Average staff resenting investment in NPD Alman Average staff resenting investment in NPD Average staff resenting investment in NPD Alman Average staff resenting investment in NPD



Large HEMP filters in production and assembly



In August John Hughes joined the MPE team as Engineering Manager

Record-breaking advances to meet world demands

2023 represents MPE's 98th anniversary year and, on a personal note, my 25th anniversary of working with the company. During my tenure there have been years with many highs, but 2022 has been without doubt the most memorable and successful 12 months of trading in all my time at MPE.

Overall revenue realised in 2022 was at a record level, with sales revenue increasing by 30% from 2021 and by some 90% since 2019. Key to this success in 2022 was the growth in MPE's EMP filter sales, particularly into the USA, with this EMP product sector increasing by some 65% globally.

Through 2022 we continued of course to experience the lasting impacts of the Covid pandemic, most notably affecting supply chains around the globe. Manufacturers including MPE saw significant material cost and lead-time increases, which made 'on-time in-full' deliveries more and more challenging to attain.

However, with careful analysis, forecasting, planning and utilising MPE's deep and established supply chain relationships, MPE was able to maintain lead-times and was very proud to achieve a 97% on-time delivery (OTD) rate over the year.

The passion and determination of MPE's dedicated and experienced team were crucial in maintaining these lead-times and OTDs. Furthermore, in the 7th year of our apprentice scheme and employing apprentices at every level from NVQ through to degree, we continued to ensure that the next generation of manufacturing talent is nurtured. Then MPE made appointments to further improve its expertise and experience in key areas.

In February, after four years with MPE, Marcus Wright was promoted to Manufacturing Director. Manufacturing was further augmented in July when Pam Draper-Parr was appointed to lead MPE's materials and procurement department. August saw John Hughes join the team as Engineering Manager, and in October Engineering was further expanded when Thomas Chau joined our design engineering team.

MPE's company philosophy has always centred on the quality and reliability of its products. Accordingly, in the third quarter of 2022, MPE's quality team was strengthened by the addition of Rob Williams as Quality Manager in October and recruitment of Paula Venn in a new quality assurance role in November.

Our entire team now possesses a well-balanced blend of youth and new ideas alongside rich experience and, with generous employment terms and conditions and many opportunities to progress internally, MPE's average length of service for employees increased to 9.2 years by the end of the year.



MPE's Manufacturing Director Marcus Wright congratulates Pat Beach on her long service at the company







Low-leakage TEMPEST filter solutions from MPE are integral to the design of the new Royal Navy Type 26 frigate

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Of course, as naturally occurs, in 2022 we had to sadly say goodbye to some highly appreciated, long-serving personnel. Most notably, Pat Beach retired in December after 31 years of dedicated and unstinting service on our Manufacturing team.

Technology-wise, MPE continued its onward and upward trajectory of continuous development. Two new patents for MPE's novel varistor technology were granted in the USA and, in the last quarter of the year, MPE had new HEMP filter designs independently tested as compliant to the latest Mil-Std-188-125-1A.

Finally, as the year was closing, MPE was proud to achieve the first Underwriters Laboratories (UL) certification for its filter designs.

In 2022 I was delighted to see MPE and its team again recognised by our peers and the judging panels within our industry sectors. MPE company director Paul Currie received the Inspiring Leader award as one of the Top 100 Alumni for 2022, determined by the judging panel of The Manufacturer magazine. MPE was runner-up in the International Trade Award category at The Manufacturer awards and then warmly applauded as the outright winner of the Innovation in International Trade Award at Insider Media's North-West International Trade Awards. As always, such accolades represent a great testament to the efforts of the entire team at MPE.

In another first, following a tremendously successful year of activity, Euromip, MPE's distribution partner for France, rose to Platinum partner status for 2023. Now in the 7th year of our distributor partner program, this is the first time that any MPE distributor has been elevated to the top tier Platinum award, an indicator to show that Euromip and MPE are in great shape to further build their business in France in the time ahead.

Also looking forward, MPE secured its first significant project win from Australasia, with an EMC project for installation in New Zealand representing MPE's single largest project of the year. Since MPE is also due to deliver a large project order to Australia in early 2023 – and MPE solutions integral to the design of the new Type 26 frigate are being exported to Australia – MPE's business across that territory is really set to flourish in the near future.

To accommodate and sustain the significant growth we experienced in 2022 – and our anticipated further growth over this decade – we have also been busy expanding our manufacturing facilities. Substantial investments have been made in plant and machinery, whilst 2023 will see new painting and paint drying equipment brought on stream, as well as the relocation and rationalisation of other activities in manufacturing.

So, in summary, with record levels of business, new patents granted, new product ranges launched and our team expanded, not only was 2022 another record-breaking year, but MPE is certainly in the best possible position as we look forward to our centenary.



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A consignment of Mil-Std-188-125 MPE HEMP filters prior to shipment



Jaxon Engineering & Maintenance at Colorado Springs independently tested new HEMP filter designs, confirming their compliance with the latest standard Mil-Std-188-125-1A



From left to right, the testing team of MPE Design Engineer John Lindsay with Jim Youngman of Jaxon, at Jaxon's test facility in Colorado Springs

World's first certification for Mil-Std-1A filters

In Autumn 2022 MPE contracted experts Jaxon Engineering & Maintenance to conduct independent pulse current injection (PCI) testing of new MPE HEMP protection filters against the latest standard Mil-Std-188-125-1A published in July 2021. The testing was fulfilled at Jaxon's test facility in Colorado Springs.

Assisting throughout the period of testing was MPE Design Engineer John Lindsay, enabling a flexible approach to the testing program and maximising the use of the laboratory resource and time

Utilising MPE's immense filter design experience and innovative laboratory techniques and following several months of research and development completed at MPE in Liverpool, a ground-breaking new range of HEMP filter designs was created. After the fabrication and assembly of pre-production filters, PCI testing in the USA took place at Jaxon in November 2022.

Over one week several novel and proprietary filter designs from MPE not previously released to market were tested. In that timespan designs were also optimised to reduce size, weight and cost to the absolute minimum.

This comprehensive, rigorous testing once again demonstrated MPE's continued commitment to supplying the broadest and most innovative range of compliant filters to the company's client base, so as to meet the increasingly exacting requirements of evolving defence applications.

With these new HEMP filter designs passing well within the limits defined by Mil-Std-188-125-1A as applicable, the test results represent a resounding success and further testament to MPE's rigorous design philosophy and manufacturing processes.

PCI certificates for the units tested have been published on MPE's website and can be found at www.mpe.co.uk/downloads/test-certificates.

MPE is the first manufacturer in the world to have published such independent test certificates that confirm compliance with Mil-Std-188-125-1A.

Following this testing, MPE's 1A compliant HEMP filters have already captured widespread attention and been adopted for new projects, with those filter orders due to be fulfilled in 2023.

MPE will complete testing of further novel HEMP filter designs at Jaxon in the USA during March 2023, when full ranges of 1A compliant filters will then be released to market.







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Underwriters Laboratories



The world headquarters in Northbrook, Illinois, of the global safety science company UL



An array of high-current MPE HEMP filters with custom mountings incorporated into the RAF Fylingdales ballistic missile early warning system (BMEWS) in North Yorkshire



Development testing underway within the laboratory facilities at MPE in Liverpool

MPE is proud to attain UL certifications

Recognised globally and trusted by clients in more than 100 countries, Underwriters Laboratories (UL), now UL Solutions, are leaders in applied safety science and security. Their product testing and certification to world standards are globally recognised indicators of product compliance, safety and quality assurance.

Most applicable for many of MPE's high-performance EMC and EMP filter products – particularly for clients based in the USA and Canada – are the UL 1283 and CSA C22.2 no.8 standards for EMI filters. Whilst MPE has always ensured that its filter designs are tested using the test methods defined in these standards and meet or exceed the relevant performance and/or safety criteria stipulated in them, prior to 2022 MPE had not sought independent certification to corroborate this.

Following its very significant business growth in the USA and as part of its continuous product development program, in the summer of 2022 MPE contracted with UL to undertake testing of its proprietary capacitors and EMP filter designs.

Work commenced with UL conducting a full review of MPE's billsof-materials, drawings, relevant documentation and processes. On successful completion of this initial stage, capacitor samples were manufactured and submitted to UL's testing facility in Taiwan, whilst filter samples were manufactured and submitted to UL's testing facility in New Jersey, USA.

In Taiwan MPE capacitors underwent an extensive and rigorous testing program over a 12-week period. In New Jersey the experienced UL team fulfilled all necessary testing of filter samples, completed immediately before the 2022 Christmas break.

The successful conclusion of this testing now sees the proprietary capacitors manufactured by MPE certified as compliant with UL requirements and EMP filters produced by MPE certified as compliant with both UL 1283 and CSA C22.2 no.8 standards. Where required, the official UL certificates will be supplied by MPE.

Accordingly MPE's UL certifications are seals of approval universally recognised around the globe, reflecting the company's unwavering commitment to product safety and quality assurance.

In the coming months MPE plans to expand UL certification to its recently developed Mil-Std-188-125-1A filter ranges and also to its world-leading EMC filter ranges. So please watch this space!





Platinum Partner





Technical discussion between (left to right) Andreas Rudel – Sales Director and Yann Baillergeau – Technical Manager at MPE Platinum Partner Euromip's company offices and warehouse in Vélizy, 13km from the centre of Paris

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Annual awards honour distributor performance

In December 2022 MPE again conducted its annual review of territory distributor performance, with one particular distributor being awarded Platinum status for the first time since MPE launched its Partner Program in 2016.

Now in its seventh successful year, MPE's Partner Program is firmly established as an effective tool for measuring distributor performance against set criteria. The Program provides a clear view of the expectations MPE has of its Partners and, in return, the significant benefits and support offered by MPE Partner status. The MPE Partner Program is a tiered structure with four distinct levels – Bronze, Silver, Gold and Platinum. The scheme sets achievable individual goals for each Partner, whilst allowing MPE to apply a uniform approach to the assessment of new and existing Partners across all territories.

Since introducing the Partner Program in 2016, sales revenues via MPE's family of international distributors have continued to grow significantly, with distribution sales now accounting for more than 50% of MPE's overall revenues. Importantly, more and more information is being supplied on future projects and market developments, enabling MPE to target the most appropriate sectors and territories with its expertise and resources.

MPE's latest annual review saw Radiotechnika in Poland and SACA EU in Eastern Europe attain Bronze partner status, Electrade in Germany progress from Bronze to Silver, and Accelonix in The Netherlands advance from Bronze to Gold status. IMCA in Turkey and SACA UK retained their Gold partner status from the previous year. However, probably most impressive was the progression of Euromip in France to become a Platinum partner. This is the first time ever that MPE has awarded Platinum partner status to one of its distribution partners.

In addition to revenues from Euromip which increased significantly and exceeded set targets, Euromip worked toward and exceeded all of the other objectives and metrics laid down with MPE at the start of 2022. Euromip have a well-defined company strategy and a clear understanding of how the increase of business with MPE contributes towards this.

Throughout 2022 Euromip committed to MPE training for its team and engaged in joint visits with MPE to a number of existing and potential clients. Euromip also exhibited at Eurosatory 2022, the world-class biennial defence and security exhibition in Paris which attracted over 62,000 visitors from 150 countries.

Furthermore Euromip have established a strong marketing presence with their website and LinkedIn pages, both regularly featuring MPE. Finally and perhaps most importantly, Euromip have established an extensive base of clients for MPE's solutions and a credible and solid business forecast for the coming years.

Each Partner honoured in the annual Awards is able to display the Awards plaque at their company headquarters. The proud recipients are prominent too on the Distribution Partner pages of the MPE website www.mpe.co.uk/distributors. So, despite very challenging trading conditions the world over, looking forward into 2023, MPE's distribution network remains in excellent health.



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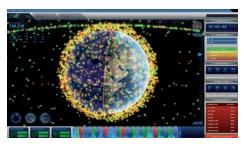
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Part of large HEMP filter order being shipped from MPE



The Tip'n'Tell® indicator label affixed to the shipping crate prior to despatch from MPE gives clear evidence of any mishandling en route.



MPE supplied custom high-current EMC protection filters with integral busbar for the United States Space Fence program. This state-of-the-art space radar system built by prime contractor Lockheed Martin tracks the increasing amount of space debris in Low Earth Orbit (LEO), in order to avoid potential collisions with satellites and the ISS.



MPE's HEMP protection filters are installed in a US Navy power plant on East Coast USA.

New direct trading strategy for the USA

Following a period of significant growth, in August 2022 MPE adopted a new strategy to address the requirements of the US market. For each of the major territories that it serves around the world, MPE utilises an approved distribution partner. This had been the case in the USA, where MPE had worked with distributor Technical Sales Solutions (TSS) for the last ten years.

However, as a micro business of few people and having no background within manufacturing, whilst TSS as a distributor has been well placed to support initial through to early adopter sales, MPE's US business is now of a much higher and established nature, outgrowing the levels that TSS can effectively support.

With this in mind and following feedback and requests from clients, MPE has therefore changed to a different model, to trade direct with its many integration clients across the United States.

MPE is proud of its long and well-established reputation and track record of HEMP filter sales in the USA, having supplied large quantities of Mil-Std-188-125 compliant filters for a decade to the US defence, space and aerospace, power and utilities markets. Now MPE's new direct trading strategy will ensure that clients receive the most responsive and improved levels of support.

Notably, pre-sales, technical requirements are addressed and quotations provided within a much shorter timeframe and, post-sales, payments are accepted in USD with credit card payment available. Importantly, MPE has collaborated with specialist freight forwarders to ensure smoother logistics and improved shipping timescales, with MPE solutions delivered duty paid (DDP) to site.

MPE has also introduced new techniques to ensure the integrity of all shipments, one example being Tip'n'Tell® indicator labels. Once such a label has been affixed to a packing case, that crate cannot be tipped without leaving evidence of mishandling.

Having changed over to the direct trading model in August 2022, the MPE team has undertaken four visits in support of existing and new programs. MPE Directors Paul Currie and David Seabury have spent time with clients based in Colorado, Florida, Kentucky, Maryland, New Jersey, Pennsylvania and Washington DC.

In addition, MPE's Engineering team has been working in the USA to assist in the successful testing of MPE's newly developed range of HEMP filters compliant to Mil-Std-188-125-1A. As detailed elsewhere in this Issue of the Company Bulletin, these designs are now independently certified, with test certificates available for download at: www.mpe.co.uk/downloads/test-certificates

MPE has already shipped several hundreds of filters direct to multiple US clients, some new to MPE. Designs are also underway for significant programs in the USA, all forecast for manufacture during the next year. Meanwhile MPE is due to fulfil its next client consultation visits across the Atlantic in early 2023.

So, to summarise the benefits to clients of the new MPE strategy for the United States – end-to-end processes are simplified with clients able to communicate direct with the original manufacturer; response times are greatly improved; and clients commonly realise cost reductions when procuring MPE products.



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Mobile datacentre with 32A MPE power line EMC filter installed



Close-up of the 32A MPE high-performance power line EMC filter in situ



Display of mobile custom-made shelters outside the Zeppelin Mobile Systeme headquarters at Meckenbeuren

Filters for Zeppelin mobile comms shelters

In 2022 Electrade, MPE's silver level distribution partner for Germany, supplied a significant quantity of MPE's power line EMC filters to Zeppelin Mobile Systeme GmbH (ZMS), renowned designers and manufacturers of mobile custom-made shelters.

ZMS, a subsidiary of the automotive and defence technology group Rheinmetall AG, is based at Meckenbeuren, near Friedrichshafen on Lake Constance in south-west Germany. This engineering company has been providing high-quality solutions for mobile workspaces to customers around the globe since 1999.

Central to ZMS's product portfolio are custom-made shelters. From classic telecommunication cabins in different sizes up to command posts, all of their shelters can be operated on the ground, as well as adapted to most carrier vehicles. In addition to being used purely as communication shelters, shelters are also deployed as ground control stations for state-of-the-art radar and UAV systems, or as command-and-control facilities to support air defence systems.

Following a rigorous and competitive selection process, MPE's high-performance filters were selected by ZMS for use on power supplies serving military communication, radar and mobile datacentre shelter applications.

Electrade were instrumental in ensuring that MPE's products were specified, with key factors being their well-established relationship with ZMS and their technical expertise and experience across the EMC sector. MPE's power line filters were insisted upon because of the company's unparalleled track record for on-time delivery and the superior quality of its range.

Most recently a number of MPE's EMC power line filters from 16A through to 100A were supplied to ZMS via Electrade for integration into shelters utilised as mobile datacentres. Looking ahead, with ZMS eager to expand their business in this market sector, Electrade and MPE expect to continue supplying these filters to ZMS throughout 2023, and indeed for some years beyond that.

Further details of MPE's silver level distribution partner Electrade can be found at www.electrade.com or by emailing dieter.muehlberger@electrade.com

For more information on MPE's comprehensive ranges of EMC filters, check out www.mpe.co.uk/category/installation-filters or contact MPE's technical team at sales@mpe.co.uk





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The Thales NS100 4D naval, air and surface surveillance radar



An MPE low-leakage TEMPEST power line filter for naval applications

Low-leakage filters for Thales naval radars

Working closely with Accelonix BV, MPE's Gold level distribution partner for The Netherlands based at Eindhoven. MPE has been supplying quantities of its innovative low-leakage marine filters to Thales Netherlands, a major facility which specialises in radar systems for the naval field.

Accordingly, back in 2020 MPE and Accelonix jointly visited that Thales Group subsidiary in the city of Hengelo, Overijssel. On the visit they made product and technology presentations to ten or more members of the Thales engineering team. That process led to concentrated question-and-answer sessions, during which detailed requirements were recorded for the applications under discussion.

Consequently MPE proposed a number of its catalogue lowleakage marine filters to meet all operational conditions, whilst developing a series of new variant designs to fulfil more specialised niche requirements.

The first-off units were supplied by MPE in late 2020. Filters from MPE's extensive catalogue range included two-line 16A and 63A filters and three-line 16A and 32A filters, alongside various custom variants. In total more than 200 units were manufactured and supplied by MPE.

MPE's low-leakage TEMPEST power line filters are now duly incorporated into world-leading Thales radar solutions such as their Smart-L multi-mission radar and NS100 and NS200 naval, air and surface surveillance radars. These provide highly advanced 4D surveillance capabilities for naval platforms.

MPE was selected by Thales as their filter solution provider because of its exemplary product performance, its unparalleled track record of supply, and its expertise in customisation and the development of new solutions. The other key factor was Accelonix's deep and trusted relationship with the Thales Group in The Netherlands.

Established in 1985, Accelonix has been MPE's distribution partner for The Netherlands since 2014. Having started out as a distributor of test and measurement solutions for EMC and RF, Accelonix has grown to become a market leader in that field. Now in the 2020s, the Accelonix product range also covers everything required for pre-compliance or full compliance testing - as well as including comprehensive filter and antenna solutions.

For more detailed information on MPE's range of high-performance, low-leakage, TEMPEST power line filters, please check out www.mpe.co.uk/products/low-leakage-tempest-power-filter-range

Alternatively, call MPE's expert technical team +44 [0]151 632 9100 or email sales@mpe.co.uk



