Official Show Preview 2012

Southern Manufacturing & Electronics Exhibition

INCORPORATING AUTOAERO HIGH PERFORMANCE ENGINEERING

FIVE, Farnborough, Hants
Wednesday 15th February & Thursday 16th February - 9.15am – 4.30pm

Show continues to defy Gravity

Last year saw the largest ever Southern Manufacturing and Electronics - over 500 exhibitors. An amazing achievement in the light of the prevailing economic climate. As far as the economic climate goes, things have not changed that much this year, which makes it all the more impressive that 2012 will see a further 20% growth with around 600 exhibitors forecast. Last year's record total was surpassed in November and this will be the third year on the trot that records have been smashed.

When this achievement is assessed in the light of the sagging performance of exhibition industry as a whole then it's even more startling. Across the board, exhibitions are down 30% plus in recent years. Some have disappeared completely. What makes this one different?

First and foremost, it delivers.

Long gone are the days when exhibitions where black holes to drop money into. Today, exhibition budgets are subject to the same scrutiny as any budget. It's all about return on investment.

This hard-nosed attitude is exemplified by the experience of one of last year's exhibitors highlighted in the story below. It came in totally unsolicited. This real-life experience underlines the most important thing of all. The show gets results.

Another factor that is important to many exhibitors is the concept of all exhibitors being on similar sized stands. There are no huge "Gin Palaces" The smaller SME doesn't feel overshadowed by the big international companies. It's very much a level playing field for all exhibitors.

The intense visitor marketing campaign appeals to many potential exhibitors. This exhibition preview, with 25,000 copies distributed to named individuals throughout the region, is just one aspect of that campaign.

If the exhibition presses the right buttons for exhibitors, that's only half the success story. It has to make the same positive impact on potential visitors. And it does so in spades.

For a start, most visitors to exhibitions begrudge paying £6 to £10 just to park their car. At Southern it's free. So is the catalogue - as long as you preregister. As well as saving you £10, the cover price of the catalogue, preregistration also dramatically speeds up entry to the show. No more information is required at the preregistration stage than registration at the door. It just saves you time and money.

Many visitors are drawn to the show by the two comprehensive seminar programmes running in parallel. One targets engineering and the other electronics. For both, an immense amount of research goes into identifying the topics that are currently at the forefront of engineer's minds. Once the topics are identified, the next problem is finding speakers who are recognised authorities in their field.

Just to prove the point, here's a few examples. The opening paper in the engineering sessions is titled *"Advanced materials and composites a world of opportunities"* There can't be anyone who is not considering the potential impact of composites on their business. On the electronic front *"CE marking for the electrical and electronics industry"* says it all. It's important to know your legal obligations and it can be expensive if you get it wrong. Check out the full seminar programme on page 5.

The Seminars are free, but be warned, they are hugely popular. Seats are allocated on first come, first served basis. So the advice is simple – book early.

For many visitors, a major attraction of the show is its diverse nature. It covers the design, production and quality control sectors for both the engineering and electronics industries. Visitors will find a massively varied mix of exhibitors that cross all boundaries. There is something for everyone, designers, production engineers, quality control, purchasing, and maintenance. Beyond the individual companies, the show straddles industrial sectors such as Aerospace, Electronics, Defence, Marine, Medical, Autosport, Process Industries and many more.

Mounting the largest show ever speaks volumes about the organiser's belief in the long-term future of manufacturing. The organisers have done their part. This has been mirrored by exhibitors who, just by being there, will have demonstrated their commitment to the region's manufacturing.

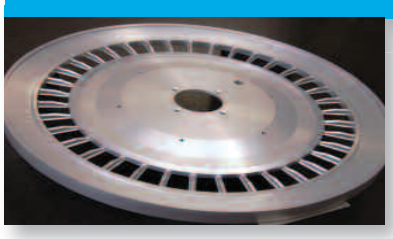
The only piece required to complete the jigsaw is you, the visitors. This is your unique opportunity to look past today's problems and focus on tomorrows solutions.

There can be little doubt that visiting an exhibition is the most cost-effective way of keeping abreast of technology. You can have face-to-face discussions with dozens of companies, any one of which could literally transform your business. Where else can you achieve so much in just half a day?

Secure Your *Free* Ticket Now

Southern Manufacturing And Electronics It's there for *You*

Late decision proved a winner



It was a last minute decision for **Inca Geometric** to attend last year's show. And, what a good decision it turned out to be. Major contracts were won. The show drew in some serious enquiries that lead to important orders, for example the building of test rigs for a heavy vehicle manufacturer.

That wasn't the end of it. Projects completed during 2011 included the test rig for truck braking systems, a planet hub assembly machine, the winning of an export machining contract for granite rings used in gaming equipment and the precision grinding of compressor rotors.

The company has also completed a contract for the stripping out and re-engineering of mechanical handling conveyors, elevators and walkway systems for a leading automotive company. So successful was this project, carried out within a two week window during a shutdown, it has led to a further contract secured for a similar operation during the Christmas shutdown.

The new business helped justify over £500,000 investment in new production equipment and CADCAM software, this in turn, has allowed further expansion of the subcontract precision machining, fabrication and assembly business. Exhibiting at Southern Manufacturing proved to be a life-changing decision.

Tickets to visit **The Southern Manufacturing & Electronics exhibition** or to attend the seminar programme are absolutely **free** so long as you are an Industry professional. But, if you pre-register now, there are extra benefits to be had. Not only will you be making sure that you avoid any queues at the entrance, but you'll also receive advance Exhibition news, be able to book your place on seminar sessions and will be guaranteed a **free** copy of the Exhibition Catalogue worth £10 on arrival.
Simply visit - www.industrysouth.co.uk. When doing so, **remember to book tickets for your colleagues** – with so much to do and see at the Show, it makes sense!

Book now! for seminar

The Seminar programme on Page 5 tackles some of the toughest issues facing all sectors of manufacturing industry today. Although places are free, they are limited by seating availability. All places are allocated on a first-come, first-served basis. So the advice is simple - book now!!

Visit www.industrysouth.co.uk now to register for free entry

Laser marking joined by high speed tube bending

As in previous years, **Trumpf** will focus on its laser marking technology. But this year will be plucking another arrow from its quiver with demonstrations of their Trubend technology. On show will be a machine designed for bending smaller parts. It is said to offer twice the productivity of alternative systems.

It is a modular design that can be supplied with various levels of automation right up to full robot load-unload of components and robot tool change. Off-line programming, with full 3D simulation, combine with the automatic tool changer to make the system ideal for small batch sizes. Rapid acceleration of both the beam and back gauge make an important contribution to the overall productivity.

The laser marking systems in the range are completely modular. Systems start with a simple plug and play work station right up to a fully automated station that can be integrated into a high volume production line.

The lasers are now used to mark anything from solar cells to apples, and ICs to aerospace components. The operating software makes it easy to import data such as logos, batch numbers and use by dates.

Two-mode measurement with touch probe

This year's show sees the UK debut for the world's first touch probe that combines digital and analogue technology from **Blum Novotest**. It is robust enough to be used in a machine tool environment. This approach promises fast detection of machining errors and a reduction in the measuring time for complex work pieces and contours.

This is achieved by high-precision digital measurement (in switch mode) and cyber speed scans in analogue mode. The device is all contained in a body just 25mm in diameter.

Alongside the new probe will be the Tool Monitoring Adaptive Control (TMAC) system. This protects CNC machine tools by providing valuable information regarding the cutting process. By measuring tool wear in real time, it protects the machine and reduces the production of scrap. The parameter monitored to detect tool wear is any increase in horsepower consumed as the cutting edge deteriorates.

Other products to be seen include tool setting probes, a 3D laser control system and an optoelectronic system that measures accurately in various directions.

Verifying PCB Test needs at design stage

As PCBs become more complex and densely packed, it becomes imperative that the requirements for testing are taken into account at the earliest possible stage of the design process. Traditionally this is a post-layout process that is addressed by loading the CAD file, then a mechanical analysis is performed in order to identify any physical restrictions for in-circuit or flying probe test.

However, by verifying the testability at all stages, the highest level of test quality can be ensured for the minimum cost. To satisfy this 'Design for Test' or DfT requirement, **Aster Technologies** will be demonstrating the software tool TestWay Express. This enables users to analyse the design to delivery workflow within a single tool.

At the schematic stage, factors that can be taken into consideration include optimise test probe placement, allocate test probes and recalculate test coverage following PCB layout. In addition, test programs and input lists can be generated as well as test models and fixture files.

Bubble wrap on demand

Bubble wrap is a wondrous packaging material, but my goodness does it take up a lot of space when you have to store rolls of it. That's where the sealed air system from **Lightning Packaging** comes into its own.

This system automatically inflates and dispenses the bubble packaging material only when it is needed. Up to the moment of use, the rolls remain tightly wound and compact.

The Barrier Bubble used in the film retains air longer than non-barrier polyethylene air cellular materials and out-performs other materials for cushioning and overall packaging protection. Just plug it in, load a roll of film and let it run, freeing up valuable warehouse space and saving time. As a dedicated operator is not required, the sensor keeps the portable bin filled for on-demand packaging.

There is also a Mini-Pak'R that's a desk top version. Alternatively it can be wall-mounted vertically so the bubble wrap is dispensed like a roller towel. It runs at 7.5 metres a minute and can make 5 different types of cushion.

Fan consumes 50% less power

With the current focus on energy saving, any fan that offers 10% increase in airflow and consumes 50% less power than its predecessors deserves a close look by any company involved in servers and telecommunications.

Vibration levels are reduced by 38% and the motor bodies are designed to conduct heat away from the sealed bearings, further contributing to enhanced product life. The sealed motors are EMC and EMI shielded and meet Class B requirements. The fans are designed to run 24/7.

According to **G English Electronics,** the UK distributor, two sizes are currently available both 28mm by 38 and 40 mm respectively. Larger sizes are in the pipeline.

Also in the company's product range will be found keypads, plastic mouldings, CCD cameras, cables & connectors as well as solenoids and other wound components.

New company offers total service from day one

There's a new kid on the electronics block. **AGS Electronics** has been formed to offer a comprehensive service to the electronics industry that encompasses all aspects of manufacture.

It starts with PCB design and board manufacture. This covers single and multi-layer boards as well as flexible boards. Boards can be supplied in prototype or medium volume batch sizes. Both surface mount and conventional population of boards follows next.

As a project progresses towards full box build and final test, it takes in metal fabrication and cable harness manufacture. Wiring ranges from simple earth straps and ribbon wiring to multi-cable harnesses.

Customers can 'pick and mix' from the services to suit their requirements and the company is geared up for prototype and small to medium batch sizes coupled with a rapid response.

Wraps come off 'first' in measuring system

The latest offering from **Vision Engineering** is a two-in-one measuring system that is claimed to be the first video measuring system that also incorporates a measuring microscope. This brings a number of significant advantages.

For a start, it enables fast measurements to be made using the video system. For the more difficult measurements, the microscope can be used. This means that complex parts can be inspected in a single setting using one operator.

This single set up brings the obvious benefit of saving operator time, but more importantly, all measurements are made from a single datum setting. Using the Swift Duo, as it is called, means that everything from simple single feature operations to complex multi-point video

edge detection measurements can be performed on one machine. A comprehensive array of video measurement tools are available.

The system is rugged enough to be equally at home in shop-floor or metrology lab environments. Alongside the new system will be seen the company's full range of optical and measuring systems including stereo microscopes.

Engineered solutions reap massive benefits

Engineered solutions for a wide range of dispensing problems are the speciality of **Liquid Control**. This is epitomised by an installation developed for Pipercross, a manufacturer specialising in air, oil and fuel filters for high performance competition cars and superbikes, as well as the more prosaic markets of buses, trucks and trains.

The fundamental requirement was to bond and seal the top and bottom mouldings of the units to the filter elements. This demanded an accurate mixing then dispensing of a two-component polyurethane resin into square or rectangular shaped mouldings. Too much resin and the filter performance is impaired by extrusion and capillary action of the resin into the filter element. Too little and the filter may leak and be rejected.

The solution proposed was to use a XY Cartesian robot in conjunction with a resin mixing and dispensing system. Immediately after assembly the filter is transferred to a temperature controlled carousel where the resin is cured.

What was the result? The system achieved a 40% increase in production rate. In addition, the rejection rate was slashed by 50%. If you're looking for a helping hand in addressing dispensing issues, you know where to go...

Where miniaturisation is a way of life

For over 50 years **Lee Products** have practised the fine art of miniaturisation of pneumatic and hydraulic components of all types. The products turn up in all sorts of applications from aerospace to industrial turbines; machine tools to Formula One and rally racing cars; in fact anywhere where weight and space are a consideration. There is also a wide range of electro-mechanically actuated valves for medical, instrumentation and ink jet applications.

Recent new products include a pressure relief valve that is ideally suited for low flow hydraulic applications. It is only 1.1 inches long and weighs 4.5 grams. A safety screen is incorporated at the inlet of the valve for protection.

Forward and reverse relief flow configurations can be specified and it is

available in a wide range of standard cracking pressures from 80 to 3600 psi. It is constructed entirely of stainless steel for durability and long life. Each valve is 100% tested and inspected to ensure reliable, consistent performance.

Another new series of valves are pressure compensated to provide constant flow rates over a wide range of pressure differentials up to 5,000 psi. Weight is just 32 gm with flow rates up to 5.0 gall/min. Graduate engineers are available to provide a full system design service.

Investment plus service powers growth

Investment in the latest production technology to ensure competitive prices is just one of the engines that powers growth at **Simtek EMS**. The other is a concept-to-delivery service that ranges from PCBs to boxed-for-delivery electronic products.

This approach has been so successful it has even clawed back work that had been taken offshore. Customers are now realising that offshore manufacturing is not suited to every company. Two key areas often overlooked are the assump-tion that lower labour costs will auto-matically boost profits and that equal productivity levels will be achieved.

As a result, many companies have found out that the net gain isn't nearly as large as anticipated, especially if their customers demand lower prices when they realise that product build has moved offshore.

Another consideration is the hidden costs associated with long distance engineering support and lead times. Check out if you think Simtek has turned the tide back to the UK.

Technology eliminates 'black art' of bending

One of the 'black arts' of sheet metal bending is determining the spring-back. That's how much you over-bend to finish up with the correct angle. This can even vary between different batches of the same material. That's why the bend angle indicator, on the **Amada** latest HD series of press brakes, is such an attractive proposition.

Not only does it measure the actual bend angle achieved, it automatically calculates any correction and feeds it back to the control system. This technology results in precisely the correct angle every time. The HD stands for Hybrid Drive; this combined electric/hydraulic system for axis drives consumes 50% less power and requires 60% less hydraulic oil.

Another factor that contributes to accuracy is the Automatic Reactive Beam system. Via the two main down stroking rams, this compensates for any deviation from absolute parallelism induced by uneven load along the beam.

There will be full details of the complete Amada range of sheet metal and plate working machines on the stand. This embraces CNC turret punches, laser cutting machines, power presses, automation systems – in fact everything you would expect from the world's largest machine tool maker.

Long term plans open up new markets

As it name implies, **Fife Fabrications** was primarily a subcontractor that specialised in fabricated parts. Not anymore. Following extensive investment, it has transformed itself into a company that provides a single source for major projects that call on many aspects of manufacturing technology.

This is underlined by the latest £400,000 investment last year in a CNC turning centre and a machining centre to add to already extensive metal cutting facilities. Other production resources include CNC punches, laser cutting, welding and fabrication, various finishing processes and assembly.

This is backed up by a full design service to cover concept-to-delivery projects. This level of comprehensive service already finds favour in such diverse industries as oil & gas, medical, nuclear and renewable energy sources.

A major aspect of the company's plans for strategic development is its close involvement with local schools to promote the concept of engineering and manufacturing as a worthy career path. It was involved with the "Fife Schools Enterprise Game" which encourages entrepreneurial skills. Pupils are introduced to the concepts of economic ideas such profit, risk, investment and customer relations. Can anyone get a copy???

Safety in numbers from a single source

Anyone would be forgiven for thinking that there is a contradiction in the headline, but that's exactly what you get with **MAN** or the Midlands Assembly Network. It is a consortium of 10 world class subcontractors with a combined turnover in excess of £60 million and a workforce around 650.

Together they offer technical expertise in mechanical and electrical and electronic engineering as well as PCBs, plastics, aluminium casting and photo-etched components. A central point of contact can 'pick and mix' from the available resources to establish the optimum solution to meet the contract specification at the lowest price.

Founded on its ability to offer a single source solution, MAN has enjoyed a record year attracting orders of more than £10m from numerous domestic and international customers in the automotive, aero, construction, electronics, medical and renewables fields.

Any OEM looking to off-load all the market research and administrative burden of placing orders for complex projects should visit this stand.

Ultrasonics at the heart of the product range

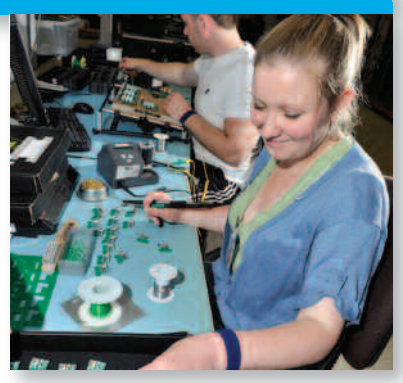
The varied applications of ultrasonics define products in the **Telsonic** range. For plastic welding, solutions available start with a hand held device that requires only a 240V power source and can deliver a 1,000 W output.

Next comes a range of benchtop, standalone ultrasonic welding machines. Alternatively, units can be incorporated into a bespoke design for a high-volume automated production line. Also there is a range of equipment aimed at the OEM machine builders. These take in actuators, generators, ultrasonic stacks (converters and boosters). Tooling can be designed for fully automated assembly machines.

Medical and other markets benefit from the Cut'n'Seal process that can handle non-fibrous, soft edges even with multi layered material. The technology is used in the manufacturing of all types of filters, hygiene and personal care products. Allied to this are all the bag and seal facilities that are used for anything from food products to engineering components.

Another important market for the company is ultrasonic cleaning machines. Self-contained benchtop cleaning tank systems will be seen in operation.

Being a manufacturer has its advantages



For other companies within the Group, **EMS Manufacturing** already produce a wide range of security and fire alarm systems. This it feels, gives it a strong position in the subcontract market which it has serviced for a number of years. For a start, to remain competitive, it has invested heavily in the latest production technology; including machines that can assemble PCBs at a rate of 42,000 components per hour with 190 feeders.

There is also extensive stock holding which subcontract customers can draw on as well as the obvious benefits of volume purchasing. The service embraces concept to delivery and can take in anything from single boards to completed products packed for delivery.

The 48 hour turnaround prototyping service offers either a hand build option or, to simulate the final production process, a fully automated build. The latter lends itself to a highly efficient transfer into full production, reducing time to market and helping establish the most economical build and test processes.

The 40,000 square foot factory employs the latest ordering and replenishment techniques, backed up by the control and traceability of a full ERP system.

Kiss goodbye to PCB solder stencils

If most PCB manufacturers were asked 'Would you like to eliminate waiting for stencils to be made and delivered before SMT production could commence?': the answer would probably contain a reference to Bears or the Pope!

That's the promise of solder jet printing being demonstrated by **Gemini Tec**. The process removes many of the constraints in producing high yield PCB assemblies suitable for complex SMT and BGA products. Solder paste is printed on demand in 3D to build up the correct volume of solder paste at different positions on the board. This allows optimum conditions to be achieved.

Corrections to paste levels can be made on the spot for all devices - without effecting production lead times. Solder jet printing is suitable for leadless, BGA and Package on Package technology.

The process particularly lends itself to rapid prototyping, medium volume production and high yield, high technology production. There are full CEM/EMS services.

What to wear?

Now that's a question that has troubled the minds of women throughout the ages, fortunately it's less of a problem when it comes to corporate and work wear. Clothing from over 40 manufacturers is featured in the **T King Associates** product range.

Over 3,500 products are to be found on the website. Usually some form of personalisation is required for company logos and even individual names. The site is worth visiting to check out the page Personalisation Methods. Here four different processes are highlighted. More importantly, the plus points and minus points of each process are listed. All embroidery is carried out in-house.

A range of corporate gifts are also available, these include memory sticks, pens, umbrellas, and electrical products. All of these can be marked with name and logos.

Cable glands that eliminate condensation

Cable glands for all situations are produced by **WISKA** including a range to prevent condensation in electrical enclosures or light fixtures. The gland incorporates a Gortex membrane that allows the units to breath therefore preventing condensation.

These can operate in the temperature range -40 to 100°C with intermittent temperatures up to 120°C. The microporous membrane is liquid-tight.

Simple cable entry devices that give sealing to IP 66/67 offer external fixing from one side using one hand without the use of any tooling. This can reduce fixing time by up to 80%. Also on show will be a junction box that offers a combination of threaded and pierceable membranes to give IP 66/67 sealing rating.

The company has extensive experience in maritime equipment including lighting, container sockets and explosive-proof lights, switches and junction boxes.

Load manipulators up to 2000kg

With a wide range to choose from, **Yaplex**, can supply balanced manipulators with maximum load capacities from 300 to 2,000 kg. At the bottom end of the scale is a manipulator with a jointed horizontal arm. This configuration results in a wide swept area where the load can be positioned to cover anywhere from close to the vertical column to full arm extension – useful for machine tool loading and unloading.

Vertical Balancers with capacities up to 2,000 kg can be supplied either for connecting below a crane hook or with either a column mounted swing jib arm, a double knuckle jointed arm or overhead mounted onto a gantry system.

Because of the method of construction, they allow loads to be offset from the vertical mast by as much as 500mm. This permits reaching into or under racking, lifting from enclosures, loading/unloading paint lines and loading presses.

The success of any installation rests on the design of end effectors and tooling. This is manufactured in the UK to ensure close liaison with the customer throughout development stage.

Best horses for courses a winning formula

The machine tools on the **XYZ Machine Tools** stand epitomise why the company has established itself as the UK's top selling distributor. It offers a product mix that satisfies the demands of the largest market sector – small to medium volume production.

They deliver cost effective machining solutions for prototype and low volume production. On the stand will be a bed mill and lathe fitted with the ProtoTRAK and ProTURN CNC/manual control systems respectively. These systems can be programmed by any skilled machinist without any CNC knowledge.

Programs are constructed in exactly the same ways a part would be machined and are built up on the screen via a plain English question and answer routine. The controls provide a seamless transition between manual machining and CNC and pave the way for conventional CNC.

For larger volumes and more complex components, the Siemens control can be specified for machining centres. This can be programmed using a similar conversational programming mode. Alternatively, conventional CNC programs can be produced off-line. For more complex parts, 4th and 5th axis control options are available.

Label printers for the shopfloor

Today's emphasis on reliable product identity and traceability, underlines the growing demand for accurate, durable product labelling systems. One of the best known for handheld systems is **Dymo** who will be showing their Rhino 4200 industrial unit. It features a 'favourites' key that provides single key access to commonly used labels and symbols. Customised designs can be saved.

This handheld unit features hot keys that make the job both fast and easy. It is easy to navigate around using the familiar QWERTY keyboard. One touch hot keys are used to create sort cuts and format special versions such as wire/cable wraps, bar codes, and module labels.

Print labels can be up to 19 mm wide in flexible nylon, polyester and vinyl. Where labels are likely to encounter adverse environments such as hydraulic fluids or cutting oils, it is important to take advice on material selection to ensure long term durability.

Printing can be directly onto heat shrink sleeves. Industrial labels can be supplied in easy-to-load cassettes. These can be a split back design for easy peeling and application. Thermal transfer printing means that labels will not smudge, smear or fade.

Ruggedized printers withstand harsh conditions

Thermal printers for mobile applications can be supplied by **Craft Data** with 2, 3 and 4 inch print widths. They have been designed to withstand a drop test of 1.5 m onto a hard floor without any additional casing. They also print at high speeds, the two smaller models at 80 mm/sec and the larger one only fractionally behind at 70 mm/sec.

All units communicate via a hardwire RS 232, a TTL connection, wirelessly using Bluetooth or LAN interface. There are options for integrated triple track magnetic card and smartcard readers making them ideal for POS applications.

All are sealed against water and dust and are supplied with a belt clip, mains charger and serial cable as standard.

Through-hole LED capacity boosted

PCB manufacturer **Wilson Process Systems** has particular expertise in the assembly of through-hole LEDs. This has resulted in ongoing contracts to the tune of 20 million LED placements annually. This has directly led to a capital investment programme that has boosted capacity to 30,000 components per hour.

Further investment has been made in additional premises to accommodate existing and new surface mount equipment, increasing capacity to over 150,000 component placements per hour as well as improving capabilities in terms of placement accuracy for fine-pitch devices. All types of surface mount LED packages are catered for including high power/high brightness LEDs onto a variety of exotic PCBs.

Other in-house facilities include true 3D automated optical inspection, two fully automated conformal coating lines, resin encapsulation, plus a full suite of conventional technology assembly machines. Hand assembly departments, electro-mechanical assembly as well as an array of ATE and full functional test equipment complete the picture.

Piloting through the legislative minefields

Like a ship needs a pilot to guide it into safe harbour, so many companies need a compliance consultancy to avoid all the minefields that have to be negotiated to achieve full compliance with EMC, LVD and other EU Directives. This 'pilot' role epitomises work undertaken by **METECC.**

The current European EMC directive forces companies to change their approach to EMC testing. The directive saw the role of competent bodies change radically. Emphasis on "Full Compliance Testing" faded away and more responsibility now rests on the manufacturers' self-certification process.

Inevitably this means that companies need to control their EMC documentation much more rigorously. Critically, companies must now create and maintain a comprehensive structured Technical File detailing every product they make including EMC and LVD test data.

EMC testing can be carried out at the company's purpose built anechoic chamber. Alternatively, there is also a mobile test suite which is ideal for fixed installations or equipment needing special services.

Laying down larger metal components

Metal additive layer manufacturing is not just another manufacturing process; it adds a whole new dimension to how parts can be designed and makes possible the impossible. Anyone who doubts this should visit the **3T** stand and prepare to be amazed at what can be achieved today.

While there, check out its latest acquisition, the largest machine yet with a working volume of 250 by 250 by 325mm. It has been installed at the bequest of customers in the medical, aerospace and autosport industries looking for larger parts made from aluminium.

This machine features a more powerful 400W laser. This has the potential to half build times and also introduce even finer detailing into the design of a part. Most metallic materials including titanium and nickel-chrome steel can be processed.

Acknowledging the advanced nature of the process, the company has launched a collaborative research and development phase into its customer relationship. Here, practical knowledge on the many benefits of the process can be integrated into the customers' design to reap the potential rewards.

Pioneer of high speed milling unveils latest breakthrough

If there is one name synomonous with high speed machining, it is **Matsuura**. Its latest development is a major breakthrough that combines high speed milling with additive layer laser metal sintering.

This hybrid machine combines a 400 W fibre laser that 'grow' a component from metal powder, then finish machine it with a 45,000 rev/min spindle. By changing the laser focus and power, varying densities of material including porous structures can be produced.

With this hybrid approach, internal features of the component can be finish machined and then sealed within the part, leaving no external access. These parts could not be manufactured using any conventional methodology of production.

On plastic injection moulds, 3D water channels can be produced with finished internal surfaces. The laser sintering ensures that there is no wasted material. It is claimed that this machine can lead to a 50% reduction in mould production times combined with a 50% cut in costs. The technology introduces the possibilities of making complex hollow designs such as turbo blade fans with fully machined interiors.

Organisation eases customer interface

As a subcontractor, **Responsive Engineering** is organised into four divisions, each operates autonomously which gives customers focused attention based on dedicated specialist skills. However, if a customer needs to draw on the resources of more than one division, there is still only one point of entry; the initial division in effect subcontracts the work internally. According to the company the customer gets the best of both worlds, specialist skills coupled with access to multi-disciplines.

The four divisions cover machining, welding & fabrication, cutting and pressing & assembly. The machining division has recently benefited from a £2 million investment which includes five-axis machining with a 3m bed. The welding division has recently moved into new premises and has considerable experience with welding high-hardness alloys, complex and high integrity fabrications.

Both laser cutting and water jet cutting is available. The division's claim to fame is that it installed the first water jet machine in the UK, so there is a wealth of accumulated experience. Both processes can handle sheet material up to 4m long.

The press division specialises in low-volume, high quality products and the maximum press capacity is 250 tonne.

Fastening systems for all occasions

Amongst the fastening systems on offer from **Titgemeyer** is the locknut design which incorporates a draw bolt that is pulled to form a permanent swaged connection. Once the appropriate load is reached the bolt snaps at a neck to leave a tamper-proof joint.

Where maximum security is required for removable fasteners, a range of fasteners with daisy pattern computer-generated drives can be supplied. Only the specially made matching key has the shape, hardness and toughness to remove the fasteners.

Applications cover everything from electronics access to wheel nuts. All key designs are individually registered to owners. Major users include telecommunications, oil & gas, utilities, military equipment and local authorities.

For fixing from one side only there is a range of blind rivets including designs with a large blind side footprint. For light loads click fasteners can be supplied.

Dual cameras find many applications

For the first time visitors to the **Optris** stand will see an online camera that combines both thermal images with visual images. This opens up many applications including those where currently CCD and thermal image cameras are used separately.

Examples include early fire detection in open spaces or on conveyor belts, where temperature monitoring of bulk materials is added. Within production processes visual and thermal documentation becomes a reality from a single source.

The thermal imaging displays infrared images with up to 96Hz (Images per second) with 160 by 120 pixels. Real time image recording takes place at up to 32Hz with pixels 640 by 480.

There are two modes of image display, monitoring mode and cross-fading mode. Monitoring display offers easy orientation of the point of measurement with separate display of both images. Cross-fading highlights critical temperatures through the overlaid display of the two images.

FREE SEMINARS SIGNPOST FUTURE OPPORTUNITIES

SEMINAR ROOM 1 - ENGINEERING

Wednesday 15th February

SESSION 1 9.45am

Advanced Materials and Composites a world of new opportunities. Hear how UK companies are manufacturing components from novel materials. Additive Layer Manufacturing brings greater design freedom, reduced time to market and less waste. Application examples in Aerospace, Formula 1 and Medical .
Neil Hopkinson Professor in Manufacturing Engineering and Martin Highett, Mercury Centre Sheffield

SESSION 2 10.50am

Designing for Commercial Success. Understanding the foundations of workable, marketable product innovation and design. Discover how to develop and design products that become commercial successes. From feasibility studies, market research, design and development (aesthetic, mechanical and electronic), through to finding a manufacturing route.
Alan Ward, Bang Creations.

SESSION 3 11.55am

Six Sigma - An innovative approach for both large and small companies Why Six Sigma is the next generation approach for process improvement across your company. Can it be adopted by SMEs? How does it differ from other techniques?
Sylvain Briand, Manufacturing Advisory Service (MAS) South East.

SESSION 4 1.00pm

CE Marking - An update to new legislative requirements How do companies keep abreast of change and demonstrate compliance? Learn how to remove the fear and ignorance and how to comply at minimum cost.
Mike Foster, CE Marking Association.

SESSION 5 2.05pm

In Defence of Quality. What quality management lessons can other manufacturing industries learn from defence? Ian McKay from BAE will look at how the defence industry manages complexity, maximises product quality and maintains sustainability in a changing world economy.
Ian McKay, Fellow of Chartered Quality Institute, BAE Systems

SESSION 6 3.10pm

Doing Business Abroad. Take the first steps towards international business growth and exporting. UK manufacturers are 30% more competitive against international rivals than 2 years ago. If you are ready to take the first steps to grow your business overseas, then this is for you. *Dermot Shean, UK Trade and Investment*

Thursday 16th February

SESSION 7 09.45am

Lean Lessons. How embracing Lean Thinking can increase your competitiveness, reduce waste, shorten lead times, reduce inventory and add real value for your customers.
Paul Jones, Manufacturing Advisory Service (MAS) South East.

SESSION 8 10.50am

How to succeed at New Product Development Got a great idea? How do you bring it to market and ensure its success? With an estimated 96% of new products failing, it is a business imperative that you sort "winners" from "losers" at an early stage.
Manufacturing Advisory Service (MAS) South East.

SESSION 9 11.55am

Supply Chain and SC21. How to get the best value from purchasing and supply chain improvement in the aerospace and defence industries. Increase your competitive edge and market share by developing collaborative relationships with your suppliers and customers.
Mike Harrison, Farnborough Aerospace Consortium.

SESSION 10 1.00pm

In Defence of Quality. What quality management lessons can other manufacturing industries learn from defence? Ian McKay from BAE will look at how the defence industry manages complexity, maximises product quality and maintains sustainability in a changing world economy
Ian McKay, Fellow of Chartered Quality Institute, BAE Systems.

SESSION 11 2.05pm

Advanced Materials and Composites a world of new opportunities. Case study examples of new revolutionary applications and processing techniques from Aerospace, Automotive, Military & Electronic technologies using multi functional materials.
Dr Alma Hodzic, Director of Composite Systems Innovation Centre

SESSION 12 3.10pm

Selling to the Energy sector. How to become a commissioned supplier. Insight into future new build projects, identifying tender and supply chain opportunities and an introduction to funding available through collaborative partnerships.
Dr Stephen Court, Operations Director, Nuclear Advanced Manufacturing Research Centre & EDF Energy speaker

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SEMINAR ROOM 2 - ELECTRONICS

Wednesday 15th February

SESSION 13 9.45am

How to Succeed at New Product Development Got a great idea? How do you bring it to market and ensure its success? With an estimated 96% of new products failing, it is a business imperative that you sort "winners" from "losers" at an early stage.s.
Grant Baker, Manufacturing Advisory Service (MAS) South East

SESSION 14 10.50am

Lean Systems Thinking - How I Tripled Output and Saved Money! Owen will explain, in his no-nonsense approach, how he managed transformation by going back to the basics of lean, as shown by the teachings of Edwards Deming and Tauchi Ohno. Capacity has increased by 265%, achieved with no increase in staff numbers.
Owen Buckwell, head of Portsmouth Housing

SESSION 15 11.55am

How to Innovate and make it work for your company. Identifying major facilitators and inhibitors of innovative solutions using the CLEAR IDEA approach to maximize the benefits for your organisation and enhance value for money. Case studies from multinational manufacturers to SMEs.
Dr Kamal Birdi, Institute of Work Psychology, University of Sheffield

SESSION 16 1.00pm

CE Marking for Electrical/Electronic Products. Using the "Harmonics and Flicker Generator" as a case study. This will particularly focus on meeting the EMC Directive and the LVD. The contents of technical files/documentation will be illustrated, an example DoC and user information discussed.
Chris Marshman, York EMC Services Ltd.

SESSION 17 2.05pm

Best Practice and World Class Manufacturing
How aiming towards best practice consolidates improvement activities bringing significant cost savings and productivity efficiencies. Hear from case studies about 10 manufacturers who demonstrate excellence in design, performance, process, quality and customer satisfaction.
Ailsa Kaye, Manufacturing Insights.

SESSION 18 3.10pm

Where Are All Those Customers?! The world we live in may be competitive, but itis full of opportunities. Finding and retaining customers is key to the success of manufacturing businesses. Joining in this interactive session will give you insight into developing your customer base.
Elaine Hickmott, Business Alchemist, EH Enterprises

Thursday 16th February

SESSION 19 9.45am

Where Are All Those Customers?! The world we live in may be competitive, but itis full of opportunities. Finding and retaining customers is key to the success of manufacturing businesses. Joining in this interactive session will give you insight into developing your customer base.
Elaine Hickmott, Business Alchemist, EH Enterprises

SESSION 20 10.45am

Selling to the Energy Sector. How to become a commissioned supplier. Insight into future new build projects, identifying tender and supply chain opportunities and an introduction to funding available through collaborative partnerships.
Dr Stephen Court, Operations Director, Nuclear Advanced Manufacturing Research Centre & EDF Energy speaker

SESSION 21 11.55pm

Six Sigma - An innovative approach for both large and small companies. Why Six Sigma is the next generation approach for process improvement across your company. Can it be adopted by SMEs? How does it differ from other techniques?
Sylvain Briand, Manufacturing Advisory Service (MAS) South East.

SESSION 22 1.00pm

Working towards an efficient factory. Despite Lean Manufacturing and other techniques, very few companies are truly efficient in their use of equipment and resources. This paper sets out to explore some ways of becoming more efficient.
Peter Grundy,The SMART Group

SESSION 23 2.05pm

CE Marking for Electrical/Electronic Products. Using the "Harmonics and Flicker Generator" as a case study. This will particularly focus on meeting the EMC Directive and the LVD. The contents of technical files/documentation will be illustrated, an example DoC and user information discussed.
Chris Marshman, York EMC Services Ltd

SESSION 24 3.10pm

The Healthcare Market - Applications of advanced engineering (including Additive Layer) Medical case studies and demonstrations of implants and maxio facialmanufacture. A look at the opportunities in this booming sector, partnerships and funding available. Including How to Supply to the "Assisted living and Tele-health technologies market". *Karen Booth, University of Sheffield Health Gateway*

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Note: all sessions may be subject to change without notice. The organisers accept no responsibility for the statements made in this preview, nor for any errors or omissions which may have occurred.

It's music to the ears of manufacturing industry to hear politicians of every persuasion banging on about the importance of manufacturing. For the first time in more than 30 years, industry and politicians are singing from the same song sheet. Quietly forgotten is all that rubbish about the post industrial revolution. Making things and adding value is back on the agenda. Surprise, surprise...exporting more and importing less is the best way to balance the books.

Politicians may extol but Southern shows how. Nowhere is this more true than the free seminars. The show organisers, working hand-in-hand with the region's Manufacturing Advisory Service (MAS-SE), have put together two programmes for 2012 that address the needs of the primary sectors, Engineering and Electronics. It also addresses new markets such as the booming Medical sector, which straddles both engineering and electronics.

No-one would claim that a one hour seminar will resolve any issue; but it can be that crucial first step. Take the presentation "*Doing Business Abroad*" in the Engineering sessions. This is targeted at those companies looking to take those difficult first steps into the export market. Remember, because of exchange rates and the like, UK companies are 30% more competitive today than two years ago. Exploit it while you can!!

Whether exporting or servicing the home market, being price-competitive is fundamental to success. "*Lean thinking*" examines how to tackle cost centres to offer better value to customers. With a frightening 96% of new products failing, the aptly titled "*How to succeed in new product development*" highlights how to ensure you're part of the 4%.

The Electronics Seminar is equally packed with thought-provoking issues. "*CE marking for electrical and electronics products*" addresses the EMC directives and the related LVD. Remember, CE marking is equally applicable to both UK manufacturers and importers of manufactured goods.

Finding and retaining new customers is key to the success of any business. "*Where are all those customers?*" addresses that most fundamental of questions. Another business development session is "*Selling to the energy sector*". This identifies tendering and supply chain opportunities as well as funding that may be available for collaborative partnerships.

A fast growing market sector is Medical. One paper, with the self-explanatory title "*The Healthcare Market and Applications of Advanced Engineering*" examines opportunities from additive layer manufacturing to implants and the tele-health technologies. Not to be missed by any marketing manager tasked with exploring new markets.

Many factors, such as management philosophies, are common to both sides of the divide; that's why Six Sigma and Lean Manufacturing are those topics covered in both the Engineering and Electronic Seminars. Places at the seminars are free. But, with so many topical sessions, it is certain that demand for places will be in high.

Seating is limited and allocated on a first-come, first-served basis, so the advice is simple, **book early for you and your colleagues by visiting the website www.industrysouth.co.uk or calling 01784 880 890.** All bookings will be confirmed in writing prior to the show.

Visit www.industrysouth.co.uk now to register for free entry

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U31	3T RPD Ltd
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U7	Aberlink Innovative Metrology
14	ABL Circuits Ltd
E55	AdoptSMT UK Ltd
Q24	Advanced Chemical Etching Ltd
E19	Advanced Rework Technology
G72	Aeroflex
T3	Aeroparts International Ltd
R13	Aerotech Ltd
H79	Aerotech Precision Manufacturing Ltd
K73	AGS Electronics Ltd
H48	Aish Technologies Ltd
E90	MJ Allen Group Of Companies
W61	Allport
N60e	Almic Engineering Co Ltd
L30	Alpha 3 Manufacturing Limited
Q36	AlphaCAM/EdgeCAM
Q24	Alucast Ltd
S24	AMADA
L19	Ambersil (CRC Industries UK Ltd)
S78	Amey Plastics Ltd
B49	Amfax Ltd
A49	Anglia
D25	Anglia Circuits Ltd
G43	Anixter Component Solutions
F60	AOI Systems Limited
F48	APEM Components Ltd
J49	Arcolectric Ltd
U12	Armstrong Precision Components Ltd
H49	Arrowvale Electronics
H2	ASK Technology Ltd
B24	Aspire Electronics Ltd
A55	Aster Technologies Ltd
Q49	ATA Engineering Processes
H73	Aurubis Ltd
M78	AutoAero
V49	Automa8 Limited
S65	Autoy Ltd
G91	Auvation
B37	AWS Electronics Group Ltd
D66	Axiom Manufacturing Services Ltd
Q12	Axis Precision Engineering Components Lt
B42	Baran Advanced Technologies (86) Ltd
Q24	Barkley Plastics Ltd
K54	Barlow Sheet Metal Ltd
Q67	Batten & Allen Ltd
U72	Beijer Electronics
C24	OF Bell Injection Moulding
N49	Bellurgan Precision
N60h	Bernstein Ltd
E84	BIG Kent
36	BLT Circuit Services Ltd
S31	Blum Novotest Ltd
K12	Blundell Production Equipment Ltd
U12	Bollhoff Fastenings Ltd
G97	Bondline Electronics Ltd
C37	Bopla Enclosures - Phoenix Mecano
N24	Brady Corporation Limited
Q24	C. Brandauer & Co Ltd
47	Bright Spark Precision Engineering Ltd
L25	Brighton Sheet Metal Ltd
G73	Briton EMS Ltd
V19	Bronkhorst UK Ltd
N72	Brownell Ltd
N18	Broxton Industries Limited
U66	Bryan James & Co Ltd
J49	Bulgin
M48	Byrne-Mech Ltd
T48	Bystronic UK Ltd
E97	Cable and Crimping Services Ltd
M7	Cablespeed
D90	Caltest Instruments Ltd
E13	Cambridge Circuit Company Ltd
B43	Campbell Collins Ltd
W49	Cannon Packing & Logistics Ltd
S79	CAP Productions Ltd
T2	Carl Zeiss Ltd
E78	Carona Reuter Industrial Ltd
G31	Cavotec UK Ltd
J60	Ceramic Substrates & Components Ltd
U42	Chartered Quality Institute
N2	China Outsourcing Ltd
U73	Cicorel
F84	Circatron Ltd
W48	Cirrus Laser Ltd
K37	Clarydon/Kasdon Electronics Ltd
17	Classic Components
J25	Clean Air Group
U60	Cleansing Service Group
Q73	Close Asset Finance Ltd
G24	CML Innovative Technologies Ltd
K13	Colmworth Electronics Ltd
E66	Columbus Precision Mouldings Ltd
K7	Component Force Ltd
R60	Compressed Air Centre Ltd
G42	Contour Electronics Limited
K1	Convert Ltd
Q1	Cotsworld Plastics Ltd
U78	Cove Industrial Enterprises Ltd
F7	Cox Wokingham Plastics Limited
V48	Craft Data Ltd
F54	CREFORM Technik GmbH
F73	CS-Electronics (UK) Ltd
H24	CSM Electronics Ltd
E49	CT Production Ltd
G85	C-Tech Electronics Ltd
W36	CTR Lasers
L2	Cupio/Yestech Europe
Q42	Currie & Warner Ltd
C36	Custom Interconnect Ltd (CIL)
F66	Cyntech/Yamaichi Components Ltd
S61	DAS Engineering Services Ltd
T72	Datron Technology Ltd
X30	Davall Gears Ltd
C61	Dayford Designs Ltd
C55	DCB Automation Ltd
M37	Design Packaging Group Ltd
G66	DGTronik Sp. z o.o.
J24	Diamond Electronics Ltd
C60	Distributed Micro Technology
N48	DJJ Precision Engineering Ltd
F78	DKL Metals Ltd
B21	DMS Technologies
S36	Dormer Tools Ltd
K2	Drallim Industries Ltd
Q6	DRN Engineering Ltd
T24	Duckworth & Kent (Reading) Ltd
L42	DVR Limited
F24	DYCONEX AG
S42	DYMO
L54	Dynamic-Ceramic Ltd
A48	Dy-Tech Ltd
M43	EAO Ltd
D60	Easby Electronics Ltd
T13	East Sussex County Council
E48	ebm - papst Ltd
D36	EC Electronics Ltd
E85	EC Supply Chain Solutions Ltd
K24	Ecopac UK Power Ltd
X55	Ecopare Ltd
K78	Ecotile LLP
H66	EDAC (Europe) Ltd
K31	EFD International Inc
L61	Electrobase RP Ltd
L6	Electrolube
B33	Electron Electronics
M72	Electronic Assembly Services Limited
A30	Electronics Yorkshire
J7	Elesa (UK) Ltd
N43	Gordon Ellis & Co
L48	Ellsworth Adhesives Ltd
E91	EMC Hire Ltd
U79	George Emmott (Pawsons) Ltd
B55	EMS Group
M78	Engineering Industries Association
K55	Entech (Poole) Ltd
P79	ES Technology Ltd
V67	Essex X-Ray & Medical Equipment Ltd
F3	ETEK Europe Ltd
M78	ETES - Regional Sales Office
B67	ETPS Ltd
K36	Eurobond Adhesives Ltd
M31	Eurocircuits
F1	European Springs & Pressings Ltd
L31	The Eurotech Group Plc
F67	Exception
M72	Express Circuits Group Ltd
C18	Fairview Electronics Limited
D42	Falcon PCB Group
H55	Falcon Precision Ltd
U30	Fanuc Robotics Europe
K6	Faro Technologies UK Ltd
R19	FB-Avak
H72	FCT UK Ltd
D48	Feller (UK) Ltd
Q13	Fibracon-Insoll Machined Plastics
L78	Fife Fabrications Ltd
A36	Finaway Limited
E25	Finder Plc
P24	Fine Line Engineering Ltd
H54	FineCal
Q2	Finishing Techniques Ltd
A42	First Electronics Ltd
H7	Fischer Connectors Ltd
M25	Flatfield Multi Print International BV
N61	Foam Techniques Ltd
U18	Focus Metals Ltd
E60	Freeway Electronics Ltd
S61	Fullerton (UK) Ltd/DAS Eng Services Ltd
Q24	FW Cables Ltd
M18	G English Electronics Ltd
D67	G&B Electronic Designs Ltd
K42	G&B Projects Company
X37	GA Engineering (Scotland) Ltd
P19	Gardner Denver Ltd
G85	GB Electronics (UK) Ltd
K48	Gem Cable Solutions Ltd
N78	Gemini Tec Ltd - 'G-TEC'
B25	Gen3 Systems Limited
S13	GGB UK
T30	The Robert Gibbs (Contracting) Co Ltd
S73	Gigant Industrial Products Ltd
B12	Goepel Electronics Ltd
E2	Gonfalon Design Ltd
Q25	Graphic Plc
K61	Graphic Art (Cambridge) Ltd
S6	GSM Graphic Arts
J72	GSM Valtech
J55	GTK UK Ltd
P67	Guhring Ltd
P78	Guy-Raymond Engineering Co Ltd
P60	HAAS Automation Ltd
G18	Habia Cable Ltd
K43	Hammond Electronics Limited
M49	Hansatech EMS Ltd
G19	Hansoft Technologies Ltd
B31	Haredata Electronics
R67	Harlech Tools
J73	Harting Ltd
J79	Heber Ltd
P49	Heidenhain GB Ltd
R24	Henkel Ltd - (Loctite)
S25	Henkel Ltd - (Loctite)
T36	HepcoMotion
N7	Hexagon Metrology Ltd
J66	Hirose Electric Europe B.V.
5	Holmes Circuit Designs Ltd
C3	Hothouse Product Development Partners
R3	HPC Gears Ltd
T79	HR GO Recruitment Ltd
F79	HTEC Limited
B18	Hursley EMC Services Ltd
W43	Hydromar Ltd
N73	i4innovation (Smartboxx) Ltd
K30	ICEE Managed Services Ltd
L60	Trotec Group t/a Identify Engraving
V7	IEC Ltd
H12	igus (UK) Ltd
E4	Impact Centre For Training and Staffing
H60	In2tec Ltd
Q66	Inca Geometric Ltd
E79	Incotest Testing Services
V42	Industrial Maintenance Services Ltd
G23	Industrial Electronic Wiring Ltd
M60	Industrial Plastic Fabrications Ltd
P12	Innotec Manufacturing Ltd
J42	Inro Turned Parts LLP
Q13	Insoll - Fibracon Machined Plastics
K49	Intafast Ltd
L31	Inverter Fusion Limited (IFL)
B36	IO Electronics Limited
J37	iPro Solutions Ltd
N67	ITC Ltd
H18	ITW Chemtronics
H18	ITW Contamination Control
T73	Ixthus Instrumentation Ltd
P2	J&J Engineering (Walsall) Ltd
L37	Jabil Ltd
D96	Jauch Quartz UK Ltd
W54	JD Neuhaus
115	RGC Jenkins & Co
R48	JK Lasers-Part of the GSI Group
M61	JL Float Limited
N66	John Parker & Son Limited
D7	Juki Automation Systems Ltd
N60f	Kabelschlepp Metool
D55	Kaisertech Limited
K37	Kasdon/Clarydon Electronics Ltd
J78	KD Feddersen UK Limited
C42	Kemtronics Ltd
G79	KENTech Electronic Production Ltd
E30	Key Production Equipment Ltd (KPE)
L73	Key-Tech Electronic Systems Ltd
58	Killyleagh Box Company Limited
S77	T King Associates Ltd
R7	KOTI-Dawson Ltd
F72	Labfax Ltd
M13	Laser Lines Ltd
L7	Laser Process Ltd
Q31	Laserite Ltd
G25	LCL Electronics Ltd
W42	Lee Products Ltd
P42	Lee Spring Limited
S19	Leeds Bronze Engineering Ltd
U13	Leemark Engineering (Hayes) Ltd
H37	Leoni Tailor-Made Cable Ltd
T67	LG Motion Limited
E73	LGG Charlesworth Ltd
B19	Lighthouse (UK) Ltd
G96	Lighthouse (UK) Ltd
M36	Lightning Packaging Supplies Ltd
Q24	Lightning Aerospace
B48	Link Print + Packaging Ltd
U48	Lipco Engineering Ltd
A61	Liquid Control Ltd
W31	LM Bearings Ltd
M42	Lohmann Technologies (UK) Ltd
P48	LPA Haswell Engineers Ltd
E6	LPKF Laser & Electronics Ltd
N36	LTS Envirosafe Ltd
G37	Lux Ratio Ltd
W30	Machine Building Systems Ltd
U67	Machinery Market
C31	Manu Online Ltd
U24	Mapra Technik Company
E18	Martec Ltd
R54	Matchmaker CNC
Q78	Matsuura Machinery Ltd
N37	The Membrane Keyboard Company Ltd
S30	Mercury Centre: University of Sheffield
M66	Metal Injection Mouldings Ltd
G48	Metcase Enclosures Ltd
L1	METECC
E54	Meter Mix Systems Ltd
Q79	Metrology Direct Ltd
U61	Metway Electrical Industries Ltd
H66	MH Connectors Ltd
S2	Micro Metalsmiths Ltd
M72	Micro Trax Designs Ltd
M67	MicroCare Europe bvba
V25	Micrometric Ltd
E1	Midas Components Ltd
F31	Midwinter Technology Ltd
S66	MiniTec UK Ltd
Q72	Mintdale Engineering
W72	MLPS
K60	MMG Magdev Limited
6	Montrose Group
L49	Moore International Ltd
J36	MRT Castings Ltd
J31	M-Tek (Assembly) Ltd
N19	Muffett Gears
A12	MYDATA Automation Ltd
D49	NCAB Group UK
P43	Nemco Metals Int Ltd
B30	Nexus (GB) Limited
V60	Nikken Kosakusho Europe Ltd
N6	Nikon Metrology
D72	Nitronica Ltd
T7	Non Ferrous Stockholders/Clal/Engravamet
U25	Nord-Lock Ltd
G30	North Devon Electronics Ltd
D4	Nutek (UK) Ltd
J27	O'Dell Rework Solutions Limited
J30	ODU Ltd
V55	Ogle Models and Prototypes Ltd
V13	OGP UK Ltd
B54	Steadlands/Ohmite Manufacturing Company
G54	OK International Ltd
G48	OKW Enclosures Ltd
T54	OPEN MIND Technologies UK Ltd
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A31	Optris GmbH
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F49	Orion Electrotech Ltd
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R36	PGT Ceewrite Ltd
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V43	Paragon Precision Products
N25	Paramount Precision Engineering Ltd
U43	PARK Precision Engineering Ltd
D54	PCB-POOL
R72	PCE Sheet Metal & Laser Profiling Svcs
V61	PDR (National Centre for Product Design
X42	Penhale Quantock Ltd
X37	Perfect Bore Manufacturing Ltd
L66	Permabond Engineering Adhesives Ltd
U55	Peter Day Precision Engineering Ltd
T6	Phase Vision Ltd
F30	Phoenix Contact Ltd
35	Phoenix Dynamics Ltd
C37	Phoenix Mecano Bopla Enclosures
N64	PhotoData/JD Photo-Tools
G90	Photronix Ltd
M66	PI Castings Ltd
E42	Pinnula Limited
H18	Plato
B61	PMTech Services Ltd
R25	PNJ Engineering Ltd
G67	Powerbox & Craftec Power Limited
Q24	PP Electrical Systems Ltd
H13	PPG Aerospace/SEMCO
C54	PPM Power
L79	PR2 Engineering Ltd
U1	Precision Technology Supplies Ltd
N12	Pre-Met Ltd
M78	Press Office
L36	Prestwick Circuits GPS Ltd
G78	Principle Engineering Ltd
H67	Printed Wiring Technologies Ltd
V54	Prodim International BV
V1	Product Assessment & Reliability Centre
F36	Propak Sheet Metal Ltd
D62	Protronix EMS Ltd
T60	PTG Workholding Ltd
E24	Pulse Electronics
S7	QED Design and Manufacture Ltd
H6	Qualitetch Components Ltd
Q36	Radan
J43	Radiometrix Ltd
E82	Raster Vision Ltd
E60	Rebound Electronics (UK) Ltd
R73	Recoil Ltd
T79	Recruitment Holdings Ltd
F25	Relec Electronics Ltd
Q48	Renishaw Plc
X43	Resource Engineering Projects
P6	Responsive Engineering Group
D84	RH Technical Industries Ltd
L12	Richco International Co Ltd
U19	Righton Ltd
P31	RNA Automation Ltd
F42	Robotas Technologies Ltd
S37	Rodmatic Ltd
R66	Roemheld UK Ltd
N55	ROFIN-Baasel (UK) Ltd
G48	Rolec Enclosures Ltd
L67	Rose Plastic UK Ltd
H1	Rowan Precision Ltd
M55	RS Components Ltd
G84	Ruston Technology Ltd
F90	Ryboc - The Purchasing Experts
S49	Santander Corporate Banking
P25	Sapa Profiles UK Ltd
M24	Sara/Loading Bay Specialists Ltd
M2	Scaglia Indeva Ltd
H36	Schurter Ltd
G61	Screencraft Limited
H54	Self Adhesive Supplies
G60	Selwyn Electronics Ltd
W82	Seminar Theatre/Reg No.1 Engineering
A22	Seminar Theatre/Reg No.2 Electronics
R12	Serious Engineering
G48	Serpac Enclosures
P61	SGS Carbide Tool (UK) Ltd
C19	Shane Consultants Limited
S30	Sheffield Engineering Gateway
J49	Sifam
N60g	Simpson Springs & Pressings
A53	Simtek EMS Limited
H61	Sinolec Components Ltd
C66	SJ Electronics Ltd
D24	Skilcom Ltd
M12	SMS Electronics Ltd
M12	SMS Product Services Ltd
Q24	SMT Developments Ltd
D78	Soabar Ltd
T37	Solar Laser Systems Ltd
P1	SouMac Assembly Services
J48	SOURCEWAYS
M78	Southern Electronics Exhibition
M78	Southern Manufacturing Exhibition
M54	Southern Springs & Pressings Ltd
L43	Spaceway South Limited
D19	Specialty Fasteners & Components Ltd
F37	Spirit Circuits Ltd
J18	Springmasters Ltd
P30	SSC Laser Cutting
H42	St Davids Assemblies Ltd
K25	Stadium Electronics
K25	Stadium Power
K66	Stevenson Grantech Ltd
62	Stickleback Manufacturing
E2	Sticklebacks Communications Ltd
P72	Stontronics Ltd
R18	Stop-Choc Ltd
S12	Sumac Precision Engineering Ltd
M73	Suspa UK Ltd
J12	Switchtec Limited
M19	Syntech Technologies
Q7	System Store Solutions Ltd
V79	T&G Engineering Co Ltd
P7	Tactiq Limited
R78	Target Fastenings Ltd
8	TDI Tremiver Ltd
F55	TDK-Lambda UK Ltd
Q19	Tecan Ltd
G54	Techcon Systems
S72	Techni Measure
Q43	Technifor/Propen UK
H18	Techspray
G48	TEKO Enclosures
J54	Telesis
C25	Telonic Instruments Ltd
V37	Telsonic UK Ltd
L18	Tenkay Electronics Ltd
N7	Tesa Technology UK Ltd
S1	tesa UK Ltd
L24	TF Automation
E72	Thames Gateway Manuf'g Centre Ltd
N13	Thinking Space Systems Ltd - Kanya
W67	Thormac Engineering
54	Tioga Ltd
T18	Titgemeyer (UK) Ltd
A1	Tml Precision Engineering Ltd
A37	Toby Electronics Ltd
D43	Torberry Connectors
R30	TPS-Fronius Ltd
R2	Transmission Development Co (GB) Ltd
F18	Trans-Tronic Ltd
F43	Treston Ltd
H78	Tricorn Systems Ltd
R6	Tridan Engineering Ltd
P36	TRUMPF Ltd
J2	Turner Electronics Limited
H30	TUV SUD Product Service
L31	TWM Technology
V66	Unison Ltd
E36	Unitemp Limited
N1	Universal Marking Systems Ltd
D30	University of Derby Corporate
R43	Valbruna UK Ltd
V30	Variohm Eurosensor Ltd
C67	ViaSat UK Limited
E12	Videojet Technologies Ltd
P13	Vision Engineering Ltd
A60	Visual UK Ltd
P13	VTech SMT Ltd
R79	Waldmann Lighting Ltd
N42	Wavemar Electronics Limited
12	WDS Component Parts Ltd
X36	Wedderburn Weighing Solutions
J6	Weedon Electronics
K18	Weidmuller Ltd
Q24	Westley Engineering Ltd
G36	Wilson Process Systems
K72	Wilson Tool International Ltd
T31	Wiska UK Ltd
S48	WNT (UK) Ltd
Q24	Wrekin Circuits Ltd
T12	Wrekin Sheetmetal Ltd
U36	WTI Fasteners Ltd
N30	Wurth Electronics UK Ltd
M30	Wurth Electronics UK Ltd
S67	Wyse Oil Ltd
121	Xpress Product Development Group Ltd
S60	XYZ Machine Tools Ltd
F66	Yamaichi/Cyntech Components Ltd
Q60	Yamazaki Mazak UK Ltd
R1	Yaplex Ltd
H43	York EMC Services Ltd
D13	Zeal Electronics Ltd
D5	Zen Production Equipment Ltd
R31	Zerust UK Ltd
X49	Zot Engineering Ltd

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10,000 sales emphasise growth of one-hit machining

At the show will be seen the latest generation of the **Yamazaki Mazak Integrex** multi-tasking CNC machine. Since its inception, over 10,000 have been sold around the world, emphasising how the concept of one-hit machining has come to dominate the production of complex components.

The machine is capable of completing all turning and machining operations to take raw material to a finished part in a single set-up on one machine. The main spindle is powered by a 22 kW motor which provides a maximum speed of 5,000 rev/min. The milling and drilling spindle has an increased output of 22 kW and has a 12,000 rev/min maximum speed for high speed metal removal.

Based on customer feedback, the machine features a larger viewing window

to monitor the machining processes. There is also a 19" display panel on the control system which is height-adjustable for ease of operation.

Anyone who doubts the benefits of one-hit machining should make sure they see the regular live cutting demonstrations. These multi-tasking machines can give subcontractors that critical edge when it comes to both delivery and cost.

Where specials cost no extra

A vast range of pillars and spacers are manufactured by **G&B Projects** which is reflected in extensive stockholding. Normal delivery in the UK is 3 - 4 working days, even for customised products, although, overnight delivery can be arranged for stock items.

With the standard products, length increments are in 5mm steps. The price for a custom length pillar will be the same as that for the nearest longer standard size. For instance, that means a 22.6mm pillar will cost no more than a 25mm pillar. Minimum order quantity remains at 100 units, as with standard stock. Thread sizes from M2.5 to M12 can be supplied as well as Imperial and US versions.

Standard off-the-shelf products come in round hexagon and micro specifications. Increased strength over wholly plastic parts is claimed for the solid nylon body versions which feature brass inserts. They offer

superior resistant to shock. All nylon pillars have excellent electrical insulation properties not attainable with wholly metal parts.

Also on show will be headed insulation bushes, screwlock assemblies and earthing bars. Again, the earthing bars can be customised.

ERP system in the clouds

An online ERP system has been designed by **Manu Online** for manufacturing companies or those in the materials supply business. It is a cloud-based system so the only user requirement is a browser and internet connection.

Because it is cloud-based, it can be accessed globally with the highest standard of data security. It is not necessary to install any server infrastructure or buy any software licenses. This makes it easy for manufacturers operating from multi-sites to work with real time data without any hardware or software implications.

Alongside wholly integrated features in sales, purchasing, production, warehousing and invoicing, the company offers advanced manufacturing and distribution features that will greatly benefit any company in the manufacturing sector. Existing users embrace electronics, metals and plastics ranging from small start-ups to high volume producers.

Visitors can benefit from a special show offer of two months free use to properly evaluate its performance. Now that's an offer you can't refuse!!

Growth leads to larger premises for electronics distributor

They must be doing something right at **Fairview Electronics** down in Dorset. Significant growth last year, when many companies were running to stand still, prompted a move to larger premises. The company has carved out a niche for itself by focusing on obsolete and long lead-time items, however, with the assistance of global suppliers it can offer most parts very competitively.

Factors like no minimum order level and extended schedule orders add to customer appeal. Also the fact that customers can check online the stock levels of the 60,000 plus items held is also appreciated. These can be scheduled or buffered to satisfy requirements.

All orders are packed using conducted, shielded or vacuum-sealed packaging where needed, so that parts arrive in perfect condition. All suppliers are monitored on a continuous basis to meet quality standards.

Experienced sourcing through global contacts results in full traceability to ISO 9001:2000 standards. This together with testing services from X-Ray to full functional testing will enable customers to purchase with complete confidence.

The UK's fastest prototype service

When it comes to producing PCB prototypes, speed is of the essence. That's why the claim by **Protronix EMS** that it's "The fastest gun in the West" is likely to raise a few eyebrows! Although, it has to be said the level of service on offer is impressive.

With the standard prototype service, boards can be competed in five days. But, when the stops are really pulled out this can be slashed to 24 hours. The clock starts ticking when the BOM and gerbers are received.

It is one of the few remaining CEM's offering the complete assembly of RoHS exempt products. It has dedicated lines for RoHS and non RoHS products. This has been essential for many customers who serve the military sector.

Also offered is cable and complete box assembly. Electronics can be built into small plastic enclosures through to complete sub rack systems and fully wired panels. This enables products to be shipped to stock, or direct to distributors taking all the production issues away from the customers' premises.

Over 500,000 parts made weekly

Any subcontractor manufacturing over half a million parts every week has got to be delivering a service a lot of people want. When it comes to turned parts, **Rodmatic** has laid out its stall to appeal to a wide range of customers.

Its factory houses 50 CNC sliding head turn-mill centres and multi-axis fixed head turn-mill centres. For the very high volume work, 38 multi-spindle automatic lathes are installed. More than 90% of output goes to the automotive, fluid power and medical markets.

The company has its own CADCAM stations and toolroom, which has EDM machines used to produce specialist form tools. With this sort of capacity, it can tackle anything from small batches to continuous production. Such a high volume of installed machines means that, even if one machine is dedicated to a single, or family of parts, continuous production can be ensured even in the event of machine breakdown.

It is willing to hold customised stock against call off as well as standard electrical and electronic components. Additional processes, such as heat treatment, grinding and plating, that may be required to supply finished components can be out-sourced locally.

Packing designed and tested on the screen

Using the latest solid modelling software enables **QED Design & Manufacture** to optimise protective packaging solutions. Simulations of drop-tests can verify designs and even negate the need to carry out physical tests.

Apart from the obvious cost benefits, this can also narrow the gap between design and production. In-house jig and tool facilities also hack away at the timescales. Tooling for one offs or batch sizes of 100,000 can be produced.

Plastic containers may be thermoformed, blow-moulded or rotationally moulded in a range of sizes and colours. Aluminium containers are available as

standard sizes or custom made tailored models.

Cases can include internal fittings such as support frames, engineered clamping or shock-mounted platforms. Foam inserts can be cut including QED's own self-skinned moulded foam.

IT solutions that model your business

A 'one size fits all' approach to IT business solutions is definitely not the approach taken by **Pinnula**. It firmly believes every business is unique and faces its own specialised issues. In marketing their IT solutions, they tailor their software to reflect customer practices rather than impose arbitrary standards.

A simple example, in Uniplan, its ERP package, a messaging service can be personalised so that any user can receive reminders, weekly, monthly or even hourly as an email, pop-up or part of the integrated Uniplan contact manager system.

The messaging service also lets users determine what they want to be told about, how they want to be informed; who else needs to know and what responses are available. For example, sales teams can be alerted when a request for a quote arrives, whilst production can tell if an operative does not clock on, so the spare machine can be allocated to someone else.

Other packages in the portfolio cover such areas as advanced scheduling, data analysis & business intelligence and security across the company's network, including mobile devices.

Plastic mouldings concept to production

Offering the full spectrum of services starting with concept and moulding tool design right through to production of injection mouldings puts **Amey Plastics** in a strong position to optimise all the processes along the line to achieve the most efficient design at the lowest unit cost.

Generally, the company specialises in low to medium volume production, although high volume output can be achieved with multi-cavity mould tools. Post moulding operations that can be specified take in machining, silkscreen & pad printing, hot foiling, ultrasonic welding and assembly services.

Over moulding and insert moulding can be incorporated into product designs

and these are the sort of issues settled at the project concept stage. The company takes pride in its range of capabilities that enable it to successfully manage all aspects of a project.

Customer parts can be held in stock for Kanban and just-in-time deliveries. And the company has its own transport. If you are looking for a one-stop-shop for all aspects of plastics mouldings; this is a stand worth stopping at.

Embedded power systems for demanding applications

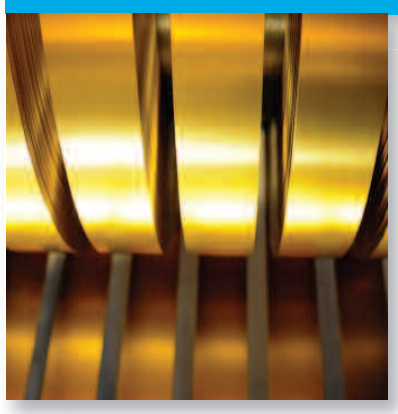
High efficiency power systems for aerospace, medical, defence, telecommunications and other demanding embedded applications are the core business of **Pulse Electronics**. It provides a custom build service, but also has a growing portfolio of standard rack mounted power supplies.

It will be showing its latest offering which is a range of 3U VPX power supply units which feature high reliability 'planar technology' modules that can be configured in a variety of ways. There is also health monitoring circuitry. Units within the range can deliver up to 300W which is claimed to be the highest power density units in production.

Its Contract Equipment Manufacturing service can cover all aspects from design to production including prototype development and test. This can be useful where obsolescence makes product sourcing and issue.

Environmental testing such as thermal cycling and humidity tests will be enhanced this year with the installation of an anechoic chamber for EMC testing. The company will be in a strong position to offer 'What if' EMC analyses ahead of formal certification.

Copper strip acquisition strengthens market position



Aurubis, Europe's largest copper producer, strengthened its position in the world market with the acquisition of Netherlands-based Luvata's Rolled Products Division. This moved adds about one billion Euros to Aurubis turnover and significantly enhances its offer for finished products such as sheet, strips and plate made from copper and copper alloy.

Luvata produces about 1,600 tonne of such materials annually. Visitors to the show, who are extensive users of these materials, will be able to assess the impact such a dramatic move will have in the marketplace.

For example, the average mid-range car contains around 25kg of copper based materials and this is rising with the growing sophistication of control and powered systems. Hybrid cars are a whole new ball game.

The electronics & electrical industries are extensive users of high grade copper covering everything from motors and generators to PCBs and solenoids. Copper cathodes are another market that demands high grade materials. Even the smallest amounts in the ppm range of selenium, bismuth or antimony can have a significant adverse impact on the conductivity.

Graphic user interface enhanced

A new graphic user interface has been introduced for the JTAG/Boundry Scan test process available from **Goepel Electronics**. This new level for graphical project development tools assists and guides the user without restricting the available functionality of the software.

Intuitive system controls guide first-time users safely through the project development flow and improve their productivity. The flexible design provides support for various access technologies such as boundary scan, processor emulation test, chip-embedded instruments, in-system programming and core-assisted programming.

Boundary scan tests within the circuit detects structural fault locations by setting thousands of test points, even under BGAs, - with only four test bus lines.

Special IC architecture and the test bus connections among each chip are preconditions for the use of Boundary Scan. But, if they are met, it becomes possible to test particular components, test the connections among the ICs on the board and finally test the function of complete boards under operating conditions.

Electronics distributor expands product range

At the show **Aspire Electronics** will be taking the wraps off three new additions to its product range, which join an already extensive offering. These will include a range of PCB mounted DC-DC converters with capacities from 1w to 300w. These are available as modular versions for surface mount or through hole PCBs

Also new will be high voltage X and Y class capacitors with an operating temperature range of -40oC to +100oC. Now relays and terminal blocks from the IMO range are held in stock.

Parts can be cross-referenced with other manufacturers part numbers and samples provided.

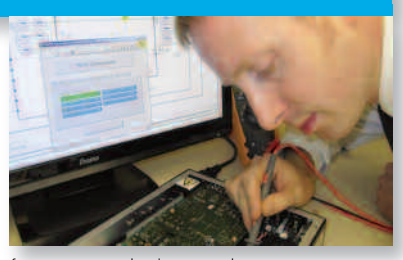
In all, components from over 60 worldwide manufacturers can be supplied. Parts not currently in stock can be sourced from around the world and supplied with full batch traceability on all parts and provide "Certificates of Conformity" if required.

UK electronics company beats off offshore manufacturing

A full spectrum electronics service is offered by **Briton EMS** which starts at design and ends with complete assemblies tested and boxed ready to ship. It specialises in small to medium volume, high value products. This is epitomised by a recent £1 million plus order for complete build of data units.

It is a complex product with over 1,500 components. After involvement in test and development, the company procured all the parts, produced and populated the circuit boards and set up a manufacturing cell to guarantee the customer, MPEC, received fully working and configured products.

MPEC gave serious consideration to manufacturing offshore but concluded that in terms of value for money and total cost of ownership, using a UK manufacturer was its best option.



There are no hidden costs, no unwarranted expenses and no time delays, language barriers, quality or currency concerns. All big advantages of sourcing from the UK.

In addition, other benefits included flexibility, lower costs and speedier time to market – without the burden of advanced payments, relatively high minimum orders and complex shipping arrangements. That makes it UK 1 Offshore 0. Yes!!!

Machine tools for all production scales

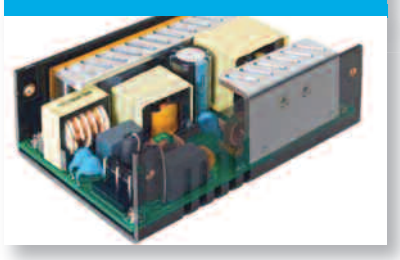
The four machine tools on the **HAAS** stand divide into two groups targeted at the production sector and the toolroom & prototype markets respectively. Both the groups feature a turning and milling machine. For the production sector there is a high speed vertical machining centre and a new lathe; while for the toolroom and prototype production there is a milling machine and a lathe, both equipped with conversational programming.

The production machining centre features a 12,000 rev/min spindle and rapid traverse rates of 35m/min. Tool changer time is 1.6 sec. The control system on the machine is designed by HAAS and has many features not found elsewhere. A wide range of options allow users to match very specific requirements.

The new lathe has been designed for heavy duty cutting and to this end, there is an optional two speed gearbox to enhance torque available. It also incorporates an exceptionally rigid bed and structure. There is a 254mm chuck capacity and a maximum turned length of 600mm.

Both toolroom machines feature the HAAS conversational programming system which simplifies programming so that even one-offs can be machined economically. Part programs are built-up via a question and answer routine that automatically calculates speeds and feeds. Programs may be stored for future use.

Low voltage power supplies and batteries



A full range of AC/DC and DC/DC power supplies and batteries to suit just about any application are available from **Haredata Electronics**. This includes units with certification for medical applications.

All standard case sizes and pin configurations are offered. In addition, there are open frame power supplies up to 350W with a mean time between failures of 200,000 hours to conform with the rigorous demands of applications like medical units.

Battery packs can be supplied plain or customised with colour printed logos and part numbers. Chargers take in inductive charging, cradles and USB connections. There is also a full range LED solutions with constant current drivers up to 1,000mA together with non-regulated isolators up to 93% efficiency.

Vehicle power supplies and chargers embrace NCd through to LiFePO4. Assembly in the UK is complemented by standard and bespoke stock holding for flexible draw down.

New development slashes CNC lathe changeover time

To reduce the amount of downtime when changing over between chuck and mandrel workholding on a CNC lathe, **PTG Workholding** will be showing its latest development. This is a mandrel that locates on the surface of the chuck.

It is operated via the drawbar of the lathe without removing the chuck or making any adjustments to the drawtube. The system offers improved productivity by slashing downtime.

Working in conjunction with an aero engine supplier, the company recently produced its largest ever mandrel. This was a device with a segmented and profiled sleeve which had a working diameter of 653mm. Minimum performance requirements were stringent.

Concentricity on the working diameter had to be less than 0.050mm with repeatability when expanded within 0.035mm. The expansion of the mandrel from relaxed to working diameter was 6mm.

Other successful applications include using mandrels as the 'end-of-arm' tooling for pick and place devices used to load heavy components into machine tools.

New threaded insert design overcomes major drawback

The classic design of the HeliCoil threaded insert has a tang that is used to fix the insert; this tang has to be broken off and removed during assembly. This assembly process can present issues in electrical components where a tang that is not retrieved may cause a short circuit and subsequent damage.

Not anymore. **Bollhoff Armstrong** will be showing a new tangfree design of wire thread insert that eliminates this problem. Rather than a tang, it has a driving notch at both ends of the insert. This symmetrical design also eliminates any problems of incorrect orientation during assembly, particularly important during automated assembly.

The insert tool has a spring-loaded pawl that engages with the notch and allows it to be installed into the threaded hole. To allow the tangless product to be installed, the inserts have a slightly reduced diameter first coil.

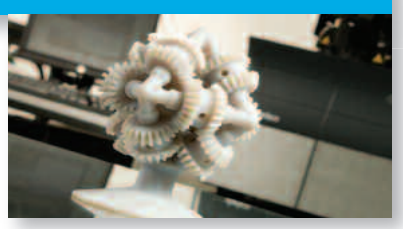
If you're involved in assembly, it's got to be worth checking out.

Affordable 3D printer for design office

How rapid prototyping has developed. In a few short years it's gone from the realm of a specialist outside bureau with expensive equipment, to an affordable 3D printer that can stand in the design office next to the CAD station.

The opportunities this opens up to slash development times are endless. And, as everyone is aware, time-to-market is probably the most significant single factor in determining the profitability of a project – all other things being equal.

ON the **Objet Printer Solutions** stand – OPS – will be a machine with a small footprint that makes it ideal for the office. The benefits of printing a prototype, making a few modifications and printing



the Mk2 version in a couple of hours cannot be over estimated.

3D printing frees the designer's mind to create designs impossible to produce by any other process; even assemblies with moving parts are possible. Another important factor of recent years is the range of materials that can be processed from hard plastics with a mirror finish to soft rubber-like materials.

Lubricant supplier emphasises "green credentials"

The benefits of a wide range of industrial lubricants will be highlighted on the **Wyse Oil** stand. There will be an emphasis on metalcutting fluids and coolants. Like many sectors, the company will be emphasising the green credentials of its products.

For example, one of its recent developments is a range of water-mix cutting and grinding fluids that ensure that between 40 and 75% of the additives used in the formulations are renewable.

When neat cutting oil is preferable, then there is a range of cutting oils that incorporate ester based biodegradable synthetics. These deliver the "green credentials" without any compromise in performance.

A new range of industrial wash solutions include "safe" solvents for degreasing as well as aqueous cleaners and vapour degreasers. Special greases take in formulations for machine tool high-speed bearings. High temperature greases satisfy the special demands of the heat treatment industry.

Fast delivery for moulding tools

Under its Rapid Injection Tooling scheme, **Xpress Product Development** can deliver complex plastics injection moulding tools in just 5 to 11 days. Complexity of tool design is not scarified for speedy production, tools can incorporate over moulding and core & cavity inserts.

All tooling design and machine programming start with 3D CAD data. To speed the build, standardised modular mould bases are used and the mould tools are built up on the bases. The maximum part size is 1700 by 200 by 70 mm.

Typically, tool life is 1,000 to 100,000 components. Undercuts, both internal and external are created using hand-loaded inserts. Core and cavity inserts can be made from aluminium or steel. Polished or textured surfaces can be specified.

As well as standard thermoplastics, engineering plastics such as glass-filled and high temperature resins can be specified. The tool room is equipped with the latest in CNC machining centres with high speed spindles. Both wire cut and sinker EDM machines are installed.

Bearings plus all sorts of retainer devices

Thin wall section bearings up to 330 mm diameter are stocked by **IEC**. At the other end of the scale, miniature bearings can be supplied. Specialist items include deep groove ball bearings in angular contact, duplex and super-duplex styles. In addition, bespoke designs can be produced to satisfy specific demands.

These are complemented by various types of sealing rings, disc springs and locking systems. Safety washers are designed for applications that are subject to high levels of vibration where conventional spring washers would not be applicable. Sizes up to M36 can be supplied and they are extensively used in the rail industry.

Conical load washers are at home where high tensile loads are encountered

and thermal factors may be an issue. Again, extensively used in the rail industry with applications taking in bogeys, wheel sets and carriage to chassis connections..

Laminar sealing rings evolved from piston rings and are used as a non-contact seal on a rotating joint such as a shaft and housing. They prevent egress of gases or the ingress of contaminants. Sizes up to 1.3m are produced and temperatures up to 500°C can be tolerated.

Encoders and bearings go together

By specialising in two markets, miniature bearings and encoders, **Principle Engineering** can offer users a vast fund of knowledge and expertise within those parameters. Solutions embrace applications from model gas turbine jet engines to the finest optical focus mechanisms, from food processing machinery to production control equipment in mining and steel manufacture.

Miniature bearings start at 1mm bore with a 3mm outside diameter and a width of 1mm up to 50mm outside diameter. Also they can be specified to cope with high or low temperatures, in environments such as salt, chemicals, food, even blood. Or operate in a vacuum, handle radiation or at high speeds and withstand high vibrations. Some units can even pass through a steriliser.

You get the picture; the company will find solutions for the most challenging environments. The same applies to the encoders. These can be shaft, through-hole or blind hole with sizes from 6mm shaft and 38mm outside diameter upwards.

Again, a wide range of harsh environments and levels of measurement precision are catered for. Incremental or absolute versions are in the portfolio so just about any form of automation, measurement or monitoring is possible.

Free prototype enclosure on offer

Smartboxx, a division of **i4innovation,** designs and manufactures bespoke enclosures, panels and housings from flat sheet plastic and composite materials. It serves a diverse customer base in industries such as sensors, telemetry and solar energy. It claims to provide a cost effective alternative to the injection moulded process. The custom design technology can be utilised for low quantity requirements through to high volume production.

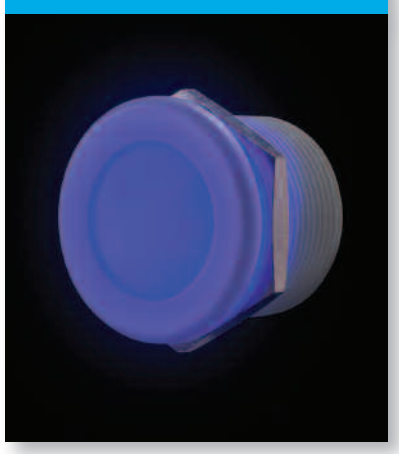
Any visitor looking to put these claims to the test should take advantage of the exceptional promotional offer running during the show. The company will develop a fully functional prototype that exactly matches the specification agreed - free of charge.

The custom design process completely eliminates the problems associated with mould tooling, such as the considerable capital outlay, long lead times and the high degree of inflexibility.

The cost of designing, developing and prototyping a custom designed enclosure is marginal in comparison to that of an injection moulded equivalent.

Any modification requirements that occur during the course of the production run can be rapidly and easily accommodated. This enables the customer to 'future-proof' his product design by responding promptly to changing market demands.

Keyboards and switches without any moving parts



The common denominator between over 400 products in the **Baran Advanced Technologies** range of keyboards, switches and keypads is that they all employ piezo ceramic technology and therefore contain no moving parts.

This means all products are rugged, sealed, tamper and vandal proof solid state devices featuring unprecedented levels of durability and reliability. Products have been successfully tested for 50 million cycles including vibration and impact tests.

The non-mechanical, fully electronic switch technology allows for perfect adaptation to retrofitting and easily interfaces with existing systems. The module concept enables prototypes to be produced in an extremely short time with negligible tooling costs.

These units operate in temperatures from -40 to +120°C with humidity up to 100%. In fact, they still work when submerged. Anyone with kit that is supposed to function in tough environments should give this exhibitor the onceover.

Enclosures can be customised

Bopla Enclosures, part of the Phoenix Mecano Group offer, as standard, over 25,000 enclosures and membrane keypads which means the chances of finding an off-the-shelf solution are high.

The enclosures can be supplied bare or fully customised with machining, silk screen printing, RFI shielding, membrane keypads and assembled with PCBs to the customers' specification.

Some customers want a special enclosure to emphasise the unique design aspects of their equipment. This can be developed with step by step dialogue with customers covering all aspects from materials and internals to functionality and aesthetic appeal.

On all enclosures ingress protection up to IP65 is standard; optionally this level can be raised to IP69. Materials used are predominantly ABS and polycarbonate.

Connectors for demanding environments

As well as standard products, **Martec** also designs and manufactures customised hermetic connectors to satisfy specific needs. It specialises in providing solutions that can cope with harsh and demanding environments. Cable assemblies incorporating the connectors can also be provided.

The connectors meet the most stringent standards for military, aerospace, automotive, marine, medical and offshore applications. Martec is a 'concept to supply' company often providing alternative solutions to conventional connectors, particularly where space is a problem, with value engineering to optimise interconnection.

For applications subject to extreme conditions such as very high temperature, cryogenic or high currents, ceramic feedthroughs are the ultimate high quality

solution, being designed to operate in temperatures as high as 1100°C.

The custom design philosophy enables low volume - even one offs - solutions to match existing or new specialist mounting requirements. Ceramic feedthroughs are available with housings and pin contacts in a variety of materials.

Handy reminders on website

A vast range of plastic, rubber and foam parts are stocked by **Component Force**. In addition, locks hinges, latches and handles are part of the range. A comprehensive array of castors is also found in the portfolio.

Many of the plastic components are bungs, stops and caps used when paint spraying to protect the internals and threads of parts. These are complemented by a selection of masking products.

The marketing strategy revolved around comprehensive brochures and a website where thousands of products can be found. These can be supplied in different colours for a coding system.

The website features an Amazon-like "Customers who bought this also bought..." This can be a useful prompt when ordering.

Vacuum formed plastics

All aspects of vacuum forming, from design through tooling to final production, are the speciality of **FB AVAK**. It has the capacity to undertake both low and high volume batch sizes. Plastic sheets up to 2,000 by 1,200mm can be vacuum formed to a maximum draw down depth of 500mm.

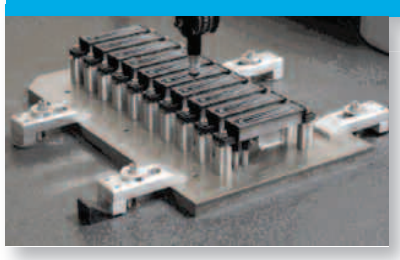
The in-house pattern shop is equipped with both 3 and 5-axis machining centres enabling it to manufacture the most complex tooling. CAD files can be imported from the customer or created with design input from the company.

Designs can be reverse-engineered from a sample or pattern using one of two different methods. There is a scanner that can reproduce 3D polygon mesh data and

a Micro Scribe arm that can produce an edge curve.

At the CAD stage, the company can input it, forming expertise on such practical requirements such as draft angles to ensure prototypes are produced that are right first time.

Cost savings of 40 to 50% Promised



When it comes to electronic and mechanical assemblies, **iPRO Solutions** offer a total supply chain management service which it claims has generated cost downs of 40 to 50% for some existing customers. The portfolio of services takes in injection mouldings, PCBs, electronic components, enclosures, machined components and assembly.

The company has headquarters in the UK with offices manned by its own staff in Malaysia and China. It is vendor neutral and implements an individual supply chain strategy to match each customer's needs.

There is a UK logistics hub where components and assemblies can be held on consignment for next day delivery. Various payment options are available including payment on consumption with on-line stock availability monitoring systems.

A recent investment includes a £100K clean room assembly area for a key customer. Here thousands of assemblies a year, are produced to 20 micron tolerances. This epitomises the overriding objective of becoming an extension to each customer's operational resources rather than just another supplier.

Cutting service tackles broad spectrum of materials

Using a combination of water jet cutting and fibre laser cutting **ICEE** can handle virtually any material up to 230mm thick. The service starts with simply cutting blanks right up to full design and manufacture of bespoke enclosures. To this end, CNC press brakes, guillotines and welding are also available.

With water jet cutting, the lack of heat is a major benefit as it eliminates any heat affected zone. The maximum thickness that can be cut is 230mm; this allows material to be stacked and cut to reduce cost per part. Reflection can be a problem when laser cutting polished material, not so with water jet cutting.

The range of materials that can be cut is impressive; all metals, plastics including composites, stone & marble, armour plate and bullet-proof glass. Even cardboard and foam can be processed.

Plate and sheets up to 4,000 by 2,000mm can be handled.

Fibre laser cutting is faster than CO_2 and can process a wider range of materials. Installed capacity is up to 12mm in mild steel, 8mm in aluminium and 6mm in stainless steel. To complete the picture, a range of finishing processes including plating and powder coating can be specified.

Subcontractor enhances laser capacity

At the show **Byrne-Mech** will launch the latest addition to its plant, an Amada laser with a cutting capacity of 22mm in steel. This has greatly enhanced its capabilities as a subcontract sheet metal fabricator.

Prior to this move it specialised in the fabrication of aluminium, steel and stainless steel up to 6mm. New doors will be opened following this investment. The company offers a design and build service that encompasses electro-mechanical assemblies, cable and harness manufacture. Alternatively, it can accept CAD files from any 3D CAD packages.

All painted parts are finished in the in-house powder painting plant. Other finishes that can be provided include electro-plating, clear chem, linishing, passivation and stainless steel polishing.

Working with the aerospace industry means that the company already has in place all the appropriate systems for quality control and full traceability. Other sectors served take in automotive, medical, utilities and telecoms.

Europe's largest power supply distributor

With sales offices in 11 countries, **Craftec** is Europe's largest supplier of power conversion solutions. Its portfolio of standards products covers the power range 1 watt to 50 kilowatts.

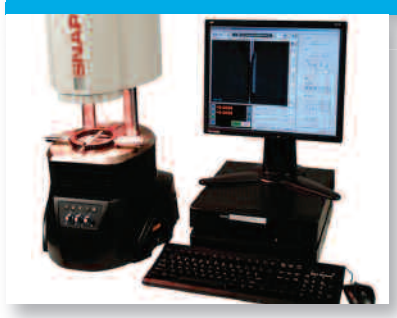
It includes open frame and enclosed models, configurable modular power supplies, rack mounted bulk power units and dc/dc bricks. Many of the world's leading manufacturers are found within its catalogues. Many units conform to standard medical and industrial specifications.

Part of the **Powerbox Group**, the manufacturing arm, also called Powerbox, has extensive experience in designing and

manufacturing power conversion products for the electronics industry.

Key markets such as medical, marine, avionics, rail and broadcasting are targeted with a comprehensive range of standard products. Customised solutions are created at several worldwide manufacturing plants. The development centres are selected depending on the product specification.

Just about the easiest inspection ever



2D component inspection cannot come any easier than placing a part on a table, any orientation, no fixtures, then pressing a button. That's exactly what's promised with the SNAP digital inspection system introduced by **OGP**. It's described as 'Walk-up' inspection because that's all an operator does.

Typical components can be measured in 2 seconds; even a complex part with 12 critical features was completed in just 8 seconds. It can measure anything within its 78mm field of view. Image processing can zoom in on any part of the field of view to isolate and measure small details with up to 50 nanometer resolution — all without moving the part.

With backlight, square-on top light, and an 8-sector programmable ring light, it's easy to find the perfect lighting combination for any part. 2D metrology software provides a full range of feature measurements with no limit on the number of points or measurement steps in a routine.

Also on show will be the Flash 200 which incorporates multi-sensor capabilities. Components can be measured with non-contact video, white light sensors, laser or traditional touch probes. The system is hardened for shop floor environments.

Engineering plastics for all

High performance engineering thermoplastics that can withstand temperatures up to 400°C can be formulated by **K D Feddersen** who offer a mix of standard materials and tailor made products to resolve specific problems.

A regime of intensive material testing at the development and production stage ensures performance parameters are met. A full consultancy service can see an engineer working on-site at the customer's premises. This service embraces every-thing from material selection to the finished part.

When engineering plastics are being considered as a replacement for metal,

the company can draw on a wealth of experience to optimise the solution. This can take on board environmental issues such as high UV, corrosive atmosphere or temperature as well as addressing production requirements.

An extensive archive of application data sheets is available so that users can benefit from the experience of others.

Modular system for racking and materials handling

A modular system for racking, roller conveyors and transport trolleys will be seen on the **CREFORM** stand. It has its roots in developments in Japan over 40 years ago. Within a short space of time it was used extensively in the automotive industry in both Japan and the USA, later spreading to Europe and is now manufactured in Germany.

The reasons for its enduring appeal are not difficult to see. It is extremely flexible and units can be built very quickly, modified in the light of changing needs, then knocked down and reused at the end of the life of a particular application.

The heart of the system is a series of pipes and joint systems that can be assembled into 3D structures with simple tools. With the modular system, it is possible to design equipment to manage the material flow in almost every area of the manufacturing process: from raw material to just-in-time transport of supplies. Even workbenches can be built.

To simplify introduction of the system, starter kits can be supplied that contain the most popular pipes and connectors. Anyone who loved Meccano as a kid will be completely at home with this.

United we stand

Following a heads of agreement for a joint venture to design, develop then manufacture electronic products, two companies will be sharing a stand at the show. Providing the manufacturing muscle will be **C-Tech Electronics**, while bringing to the table the design expertise will be **GB Electronics**.

GBE has been producing new designs for 25 years and its expertise takes in embedded systems and firmware design. It also focuses on medical products. In addition to creating new designs it also specialises in optimising existing designs for cost-effective production or identifying an alternative approach in the case of component obsolescence.

C-Tech provides a comprehensive range of build services starting with PCBs, right through to full box-build including sourcing all the internals and packaging. In the UK, particular emphasis is placed on small to medium batch sizes, JIT and Kanban. For high volume production, there is an international division with offices in China.

To cement the joint venture, a team of seven design engineers from GBE spent time at C-Tech to look at embedded electronics designs with the goal of reducing project lead-times and costs.

Finding the right handling solution

Industrial manipulators are found in more and more applications as awareness of the lifting limitations imposed by Health and Safety regulations become virtually universal. One popular solution is the electronic "zero gravity" manipulator from **Scaglia INDEVA**. These are available in various sizes up to a maximum lift of 320kg.

The balancing of the load is automatic. This makes them ideal for applications where the load changes during the work cycle such as filling or emptying a drum or container. The load remains balanced throughout the operation.

The manipulator itself is only half the solution. Just as important is the "End-of-arm" tooling that grips the load. These can be mechanical, magnetic or vacuum. Mechanical tooling can range from a simple hook to a counter-balanced fixture that lifts a product, say a lorry wheel,

in one plane then rotates it through 90° to another.

This is the great strength of the company; it has thousands of its devices in the field. It has designed literally thousands of end-of-arm solutions for handling products from paper reels to motorbikes, multiple cases to automotive engines. There's a high probability something has already been created to tackle your pressing handling problem.

Environmentally sealed connectors

A new range of high power connectors which are environmentally sealed to IP 68 will be found on the **Torberry Connectors** stand. These offer an almost unlimited combination of power and signal for both DC and AC applications.

Power per pole can vary from 1 amp to 310 amps at up to 1,000 volt. Unlike more traditional and expensive circular configurations, a wide range of differing shell sizes can be supplied to match customer specification.

The connectors are ideal for solar, wind and other green applications such as electrical vehicle charging. The operating temperature range is -40°C to +105°C. A wide range of other industries benefit from the advantages of these connectors,

for example petrochemical, factory automation and off-road vehicles.

First break-Last break' earth options can be specified as well as sequential mating. The unit can withstand a high number of mating cycles and a wide range of wire sizes can be accommodated. Field assembly is straight forward.

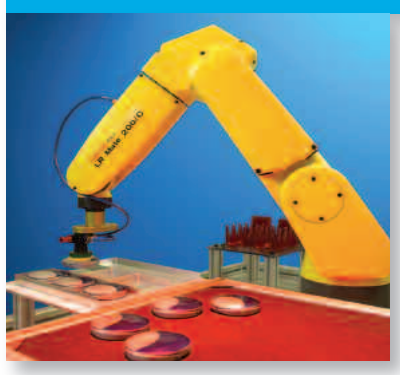
Larger plastic parts from 'across the water'

At the show, the wraps will be coming off a new UK sales office for **Thormac Engineering**. It has installed the largest injection moulding machine in the Republic of Ireland with a 2,700 tonne clamping force. In all it has 17 machines.

The latest in moulding technology is employed. For example, nitrogen gas injection is used for complex components. The gas is injected during the moulding cycle, either through the sprue or directly into the mould tool. At a controlled high pressure this can overcome sink marks or introduce a cavity without the requirement of a core. Other benefits can be summerised as reductions in material requirements, cycle times and wear on moulds; all coupled with improved component quality.

As well as conventional high volume moulding tools, the company specialises in low to medium volume production using aluminium tooling. Currently silicone mouldings are also produced and the company is expanding into thermo-set plastics.

Now robots deliver early promise



About 20 years ago, Robots promised to deliver on all sorts of fronts, but when you pinned any supplier down they had to concede that 80% percent of applications were spot welding and paint spraying in the automotive industry. It's worth visiting the **Fanuc Robotics** stand to see how dramatically things have changed and that early promise is now being delivered across the board.

A number of factors have contributed to the turnaround. Probably one of the most significant is the tumbling costs off computing power. Take vision systems; over 20 years ago they opened the door to picking randomly placed products on a conveyor and packing them into boxes.

There were two major problems; the vision systems required buckets of horrendously expensive computing power and the robots available at the time were not best suited to the job. How things have changed. Today's integrated systems are highly efficient, and more important, economically viable

Today, that story can be repeated across dozens of applications outside the automotive industry, medical, materials handling, machine loading, processing, welding cells, food processing, pharmaceutical - and, probably your industry as well.

Over 1,000 quality engineers trained annually

Who better to turn to for focused training than the professional body that helps set the standards? That's probably why the **Chartered Quality Institute** [CQI] trains over 1,000 professionals a year.

Training courses cover all key areas. Final choice rests on the delegates' current requirements and pre-knowledge. For example, taking an auditing course is often a popular first learning event for those getting involved in quality management. However, having an understanding of effective supplier relationships may be a useful first step for those involved in the supply chain.

The CQI offers in-company training, delivering the listed public courses as well as bespoke courses to suit individual companies' requirements. These cover all business and industry sectors.

Courses can be tailored to meet specific needs with special advice on matching the right course to the organizations' need. A pre-training consultation helps set the agenda.

Existing management systems can be incorporated into the training. On-site courses, with no hotel or travel bills, can prove to be a cost effective way of training a number of employees.

Simplified five-axis programming

The growth in one-hit machining has led to a corresponding interest in five-axis programming. **Open Mind**, the CAM software company, will be showing the latest version of its software hyperMILL. It incorporates some new features to simplify and reduce programming time while offering improved productivity at the machine.

The software implements intelligent macros where users can save predefined rules and conditions for every stage of the machining process. It automatically assigns and adjusts the job steps to the corresponding geometry based on these rules. These depend on geometry information such as diameter, depth, open or closed pockets.

Further automation support is provided by Application Programming Interfaces – APIs. These can create applications that control the generation of complete NC programs.

A new shape off-set roughing and finishing function offers a strategy for five-axis machining surfaces with a uniform off-set. The programming technique is simple, yet it results in better surface finish by avoiding the formation of 'steps' that often occur with Z-level roughing approaches.

Vibration and shock protection

As a manufacturer of advanced vibration and shock protection equipment, **Stop-Choc** can design systems that cater for everything from delicate medical and measuring equipment to battle tanks and loads weighing several hundreds of tonnes.

The automotive sector features prominently in its user base where applications embrace engine and gearbox mountings. Its production capabilities range from prototype and small batches right up to high volume production for the auto industry.

In-house analysis software with six degrees of freedom is employed to build models of any system and predict the level

of protection, equipment displacements during shock exposure and address potential issues due to space limitations or design constraints.

Other products that are marketed include light-weight avionics racking, illuminated display and control panels for aircraft cockpit simulators and a range of lightweight aluminium transit cases.

The last bastion for manual work

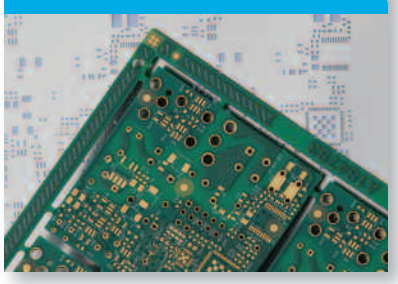
Automation can be found in all aspects of high volume manufacturing. With CNC machining, it is well entrenched in producing components in low and medium batch sizes. The last bastion for manual dominated work is low and medium volume assembly.

The first steps towards tackling this last critical sector will be seen on the **RNA Automation** stand where its specialist handling vision-guided robot will be seen. In this instance, it will be working with a bowl feeder.

The system is designed for high speed sorting, assembly and packing of light components. The system on show could be fitted with stainless steel conveyors and tracks, making it ideal for the food and pharmaceutical industries.

While this is hardly low volume, nevertheless the potential for handling families of parts in an assembly situation is there. The vision system negates the need for precise fixturing. Obviously full automation in low volume assembly is still a long way away but one or two operations as part of an assembly cycle is a good starter. Come on you assembly engineers, think about it.

PCBs 30% price drop



The prices for 4-layer prototype and small series PCBs from **Eurocircuits** have been dropped by 30%. And that's not the end of the good news; standard delivery is now seven days rather than ten.

During the last 18 months the company has invested heavily in its plants in Germany and Hungary boosting capacity by around 50%. Turnover, in turn has increased by 40%. The benefits of these moves are now trickling down to customers.

At the same time, ordering, especially for first time customers, has been simplified. Price calculations for all pooling services and options can be made on the open-to-all price calculator on the website. Prices can be stored in a shopping basket and orders placed without the need for upfront credit card payments.

As well as manufacturing PCBs and stencils, a production quality bench top solder paste and reflow oven is offered. These will be featured on the stand. Together with other services, these add up to a 75% reduction in prototype assembly times. Visitors will be able to get live prices on the stand.

Going the extra mile for customers

SMS Electronics offer an outstanding PCB manufacturing service. But its offer goes way beyond making boards. In conjunction with a sister company, it can provide a cradle to grave service.

Post delivery, the full lifecycle support includes repair and refurbishment, second user systems and even extends to product disposal at end of useful life. This will strictly conform with the WEEE legislative requirements.

Current production includes building very complex high density boards. Customers can rest assured that whatever device or packaging system is specified it is well within the company's experience.

This is possible because there is a programme of continuous investment in leading edge production technology.

Machine build of even prototype and low volume batch sizes ensures consistent production quality even at day one. Complete system build is also part of the portfolio with direct shipment to the end user if required.

Eliminate unintentional unplugging

Everyone has pulled the wrong plug out at some stage and watch with horror as the screen goes blank. Annoying, but not catastrophic. But there're many situations in industry where it could be catastrophic. It is to address such issues that **Schurter** will be showing the V-lok system for IEC-appliance connectors.

The locking system can be used for 10amp and 16amp power inlets and connectors. At the heart of the system is a pin in the socket that interlocks with a notch on the plug to prevent unintentional pulling out of the power cable.

The lock is released by pressing on a bright yellow lever. The extraction force is a minimum of 200N. An advantage of the system is that there is no need for a

specific socket system or retaining device that has to be adapted and built-in.

Typical applications are medical devices, laboratory instruments, telecom & IT devices, radio & TV studios and power distribution systems.

Marking on the move

Sometimes when dealing with bulky or difficult to handle parts, it makes more sense to take the marking equipment to the components rather than the other way around. That's why **Universal Marking Systems** has introduced a new portable cart for its range of dot-matrix marking equipment.

The system is battery powered and independent of any external source which makes it ideal for outdoor marking applications. The system can operate without recharging for one full shift. Materials with hardness up to 62 Rockwell C scale can be processed.

Designed for the company's hand held dot markers, the cart features easy access to the controls and marking gun. The chassis is robust and foam filled tyres eliminate flat tyre problems.

Two markers can be accommodated, one with a 60 by 25mm window, the other with a 125 by 25mm window; programming is simple using the integrated software.

More than 700 million items held in stock

With more than 700 million components in stock from 500,000 product lines, **Anglia's** claim to be the UK's largest independent distributor of semiconductor, optoelectronic, interconnect, passive and electromechanical components seems about right!

These are just the items held in the UK ready for same day dispatch; there is also a bespoke sourcing service. The stock is a mix of leading electronic component brands and smaller niche companies that specialise in particular technologies.

Stock may be dedicated to specific customers and held in stock against call-off. There is a free reeling service that caters for lower volume of components for prototypes and small batches. This comes with full traceability The service is not restricted to 180mm reels; reels up to

330mm wide with tape width up to 56mm can be supplied.

For LED lights, the company now offers full colour and brightness bin traceability across its range of lighting-class LED's. This gives customers much greater control over appearance than is provided by the manufacturers as standard.

Some of the key industries served by the show

Pharmaceutical Medical Marine Autosport Electronics Engineering Defence Aerospace

Fabricator develops niche market

Sheet metal fabricator **J&J Engineering** has developed a niche market to supply major supermarket chains with over a quarter of a million shelving units. Everyone knows there are no tougher negotiators than the supermarkets. That's why the company plans to direct some of the efficiencies this has engendered into the wider engineering markets.

It brings to the table over 20 power presses in the 20 to 250 tonne size range. In addition it has its own toolroom and tool design capacity. The toolroom also plays an important role in maintaining production schedules when emergency tool repairs are required.

MIG TIG and stud welding is available for fabrication. There are also tube bending facilities.

As part of guaranteeing on time delivery, the company also operates its own transport. If you want to tap into the same efficiencies that impressed the supermarkets, you know where to go.

A wide range of subcontract options

PGT Ceewrite offers a wide range of subcontract machining services that meet with aerospace and MoD approvals. These are complemented by Nad Cap approved heat treatment and sub-assembly services.

On the shop floor can be seen single and twin spindle CNC lathes as well as five axis machining centres and mill/turn centres. Grinding is well represented with CNC cylindrical and CNC internal and external grinders. Other processes on tap include EDM wire erosion and super finishing.

A suite of CAD and CAM software is available and production planning uses the latest in ERP packages. Great emphasis is placed on the front end engineering activity to allow the smooth transition of products into manufacture. The Quality Management

System ensures that all processes from enquiry to dispatch are correctly controlled and maintained.

Other markets served by the company include motorsport, nuclear and oil & gas. In fact anywhere that high standards of accuracy coupled with 100% reliability are considered essential.

DIRECTIONS TO FARNBOROUGH

BY ROAD...

From the M3 take junction 4 and follow the A331 to Farnborough. The Show will be clearly sign-posted on all roads approaching the venue. CAR PARKING IS PLENTIFUL and FREE.

BY RAIL...

Farnborough North Camp is the nearest station but Farnborough Main and Aldershot stations are also close by. For train timetable information call National Rail Enquiries on 0845 7484950. A complimentary coach shuttle service will operate from both North Camp and Farnborough Main stations.

LOCAL ACCOMMODATION...

For discounted local hotel accommodation call Expotel on 020 7372 2001 and quote SMANU012.

Resin and adhesive mixing in all volumes

Metering and mixing systems for processing single and multi-component resins, adhesives and sealants are manufactured by **Meter Mix Systems**. It has developed a range of standard machines that can process shot sizes from microdots up to multiple litres per minute.

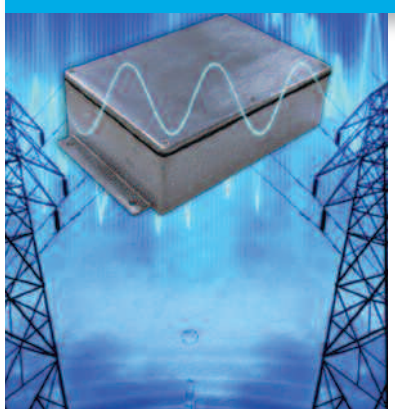
Materials that can be processed include polyurethanes, epoxies, silicones and methacrylates. The company has comprehensive test facilities to evaluate new applications of resin-based products. All machines are rigorously tested prior to shipment and on-site commissioning.

Also manufactured is a range of vacuum degassing chambers and automated robot applicator systems, including fully programmable XYZ coordinate platforms. There is also the capability to design and manufacture

specialist equipment to process unusual resin applications.

Diverse markets are served including aerospace, automotive and medical. The growing applications for composites are taking the company into many new fields ranging from electronics to structural glazing.

Enclosures are waterproof and EMI/RFI shielded



The latest enclosures from **DEM Manufacturing (Alpha 3)** can cope with the toughest environments encountered in marine, food processing wash-down, military and transport applications. The units sealed to 1P68 and manufactured from aluminium have been upgraded to now offer enhanced EMI and RFI protection.

When using a conductive enclosure, the EMI/RFI screening achieved can be significantly impaired when using a non-conductive sealing mechanism. The company has designed an EMI/RFI seal which maintains conductivity between the lid and box. This is essential to eliminate high frequency radiated emissions.

This therefore allows EMI and RFI screening properties to be unaffected, whilst maintaining a watertight seal at depths of up to 5 metres for 1 hour (IP68). This makes the enclosure ideal for use in high humidity, underwater applications and applications subjected to heavy spray.

There is also a range of polycarbonate enclosures that seal to IP65. In addition, the company distributes power products which reduce harmonic distortion and include harmonic filters, line load reactors, sine wave filters, dc link chokes and dV/dT filters.

All aspects of AOI for PCBs

AOI, or Automated Optical Inspection to us lesser mortals, defines the core business of **DCB Automation**. Depending on levels of PCB production, standalone, magazine fed or inline systems can be supplied.

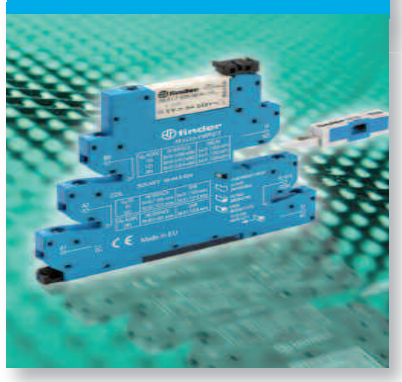
The company claims that the operating software at the heart of the system is both easy to learn and quick to programme. This has obvious implications on the viability of usage for small batches. The complete software suite provides off-line programming and inspection, re-work. In addition, there is first-off inspection, comparator mode and management reporting statistics.

Options take in camera up-grades to 10 or 15 micron resolution, enhanced conformal coating inspection, laser co-planarity and height inspection. There is also improved colour lighting for detailed solder analysis for features such as poor flow, bridges and balling. These options may be standard on top of range machines.

Electronics as an industry has more

than its fair share of jargon words and acronyms that are incomprehensible except to the inner circle. That's why the company offers a 12 page booklet that provides a short cut to understanding the basic principles of AOI and factors that have to be considered. That's got to be worth the bookshelf space.

Wide choice of relays, timers and switches



As Europe's largest independent manufacturer of relays, timers and switches **Finder** presents visitors with a massive choice of alternative designs.

The electro-mechanical and solid state relay range includes sub-miniature PCB types for signal and power switching, plug-in general purpose relays, rail mounting relay interface modules and heavy duty chassis mounting devices with Faston connectors.

A comprehensive range of timers, comprising 35mm rail mounting, plug-in and modular types are available with single or multi-functions, multi-voltage and multi-time ranges. In addition, surge protection devices for type 1, 2 & 3 areas as well as those for photovoltaic (PV) installations form part of the product portfolio, together with energy meters and phase, voltage and current monitoring relays.

Also manufactured is a wide range of sockets for PCB, chassis and rail mounting, together with plug-in indication and suppression modules to support its relay and timer products.

Cable manufacturer serves many markets

The manufacture of a wide range of cable assemblies, electrical connectors, PCBAs and flexible circuits is the niche market for **Contour Electronics**. The industrial sectors that draw on this expertise are diverse and take in medical, instrumentation, military and many consumer products.

In the UK, the company has facilities for prototyping, fast turnaround small batch cable assemblies and box build. All high volume work is sourced off-shore. Before any assembly moves off shore, its design and method of production are verified in the UK to ensure a seamless transfer.

In the UK it has installed a new class 10,000 clean room facility. This ensures that the high standards demanded by medical applications such as patient monitoring systems and therapeutic systems are adhered to.

All the Far East manufacturing facilities are certified to ISO 9001.

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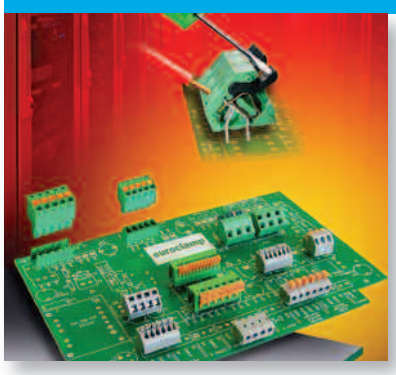


With over seven thousand product lines held ex-stock, **Switchtec** is a major supplier of electro-mechanical, electrical and electronic components. Its reputation rests on exceptional levels of customer service. Any order received before 5pm can be delivered anywhere in the UK the next day.

Product lines include PCB terminal blocks & support systems, switching components including relays, contactors, isolators and pushbuttons. To meet a growing demand for photovoltaic components it also stocks audible and visual alarms, electronic timers and sensors.

The company can be a valuable source of information, its sales engineers are regularly updated on the products in its portfolio. Based around the UK, they can provide valuable on-site advice to assist any project development.

Electronics power and test equipment

Power sources and electronics test equipment will be found on the **PPM Power** stand. It can supply high voltage and pulsed power components. New at the show will be a range of high voltage diodes, rectifier assemblies and high voltage DC-DC converters.

Also being launched is the Typhoon which is described as a 'Laboratory in a box'. It is offered as a solution for the development, test and validation of control hardware and firmware. It delivers a flexible real time environment to speed up development of power electronics control systems.

There will be a bi-directional DC-DC converter. Offering either 25A or 75A current handling, it provides a flexible power electronic block capable of interfacing super capacitors, motor drives, PV arrays or any DC source or load that operates at less than 60V.

Intelligent Fibre Optic Link (FOL) Systems allow the user to transmit electrical signals out of an area of high electromagnetic field strength over optical fibre. For example, the output from a field sensor in an EMC test chamber may be transmitted to a spectrum analyser.

Electronic hardware and software concept to delivery

Control systems, product monitoring and video systems are just a few of the application areas where **Raster Vision** has steered a project from concept to delivery, taking in all the development and production phases on the way.

The service has proved particularly attractive to manufacturers of primarily mechanical products that require development of state of the art electronic controls or monitoring systems. All too often, such companies cannot justify permanent in-house resources to undertake such projects because the requirement represents a temporary peak.

Projects already undertaken include tyre monitoring for earthmoving vehicles, video overlay for inspection and surveillance systems and calibration & test for pick and place feeder devices.

The service also appeals to manufacturers with products where the electronic element is getting long in the tooth and not benefitting from the speed and reduced cost of today's components. The company can convert through-hole boards to surface mount, thus reducing the size of the board and possibly of the end product, while saving on manufacturing costs. Often this sort of development is triggered by existing components becoming obsolete and no longer available.

Measuring large scale 3D spaces

Measuring large 2D areas and 3D spaces such as the curvature of a ship's deck, or staircases are typical of the tasks that can be performed by a digital measuring system from **Prodim**. The system lends itself to reverse engineering and restoration work.

For example, the 3D version can be used in the renovation of boat covers. The 2D version is ideal for recording large floor areas and doorways. The basic principles are very simple, all measurements are made with a wire that extends from a measuring head.

The measuring head can be rotated in every direction. At the end of the wire is a metal measuring pen. With the measuring pen relevant points are marked. These points are directly translated into a DXF CAD file.

Measurements can be taken in horizontal, vertical or inclined planes. The digital drawing can be the starting point for plots or establishing a design from a model. The system is extremely robust with examples still in use after 20 years.

Flexible construction system leads to easy design

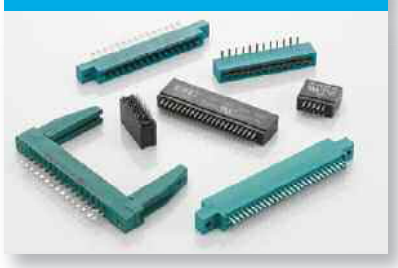
The range of structural products that can be built from extruded aluminium sections is virtually endless. Test rigs, machine guards, assembly conveyors, partition walls, work stations, so the list goes on.

As **Thinking Space Systems** will be demonstrating, to be successful a system must offer a wide range of sections to suit the many varied requirements. This must be matched by a comprehensive selection of accessories and connectors so that alternative sections may be used in different parts of the design.

This is exactly what visitors will see. Sections from 20 to 200mm can be supplied. Both square and rectangular sections are available as well as round tubes. The wide selection of connectors permits round and square sections to be mixed to achieve the optimum design.

There is a design service that will create the appropriate structure with all the necessary components cut to length. This is backed up by an on-site assembly service. Alternatively, users can buy standard lengths and connectors to create their own designs.

All aspects of electronic connections



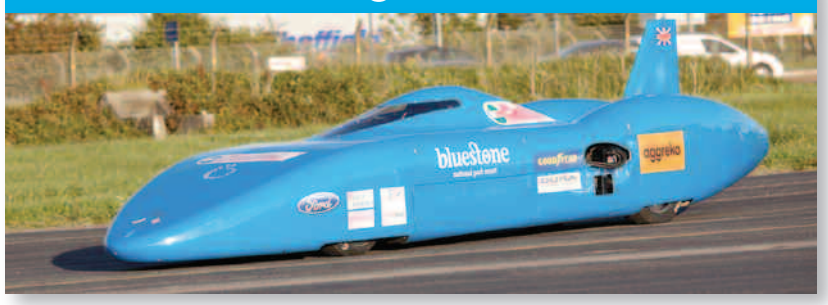
All facets of electronic connections are to be found in the portfolio of **EDAC Group** which manufactures in China with customer-oriented design centres around the world. Most products are available as PCB or panel mounts or incorporated into cable assemblies.

Within the extensive range can be found press fit and edge card connectors together with high performance rectangular multi-pins, USB and water-proof connectors to IP 67. Customised designs can be produced.

These can vary from a slight modification to an existing design to radically new connectors. The company recognises that many customers cannot order customised designs in the hundreds of thousands, and therefore offers a service to amalgamate design requirements from around the world to produce a solution that is economically viable for all.

To this end it can draw on the extensive tooling and moulds already available and use them in new combinations to achieve the desired results. Also on the stand will be representatives of MH Connectors following the acquisition of that business just over 12 months ago.

Bluebird goes electric



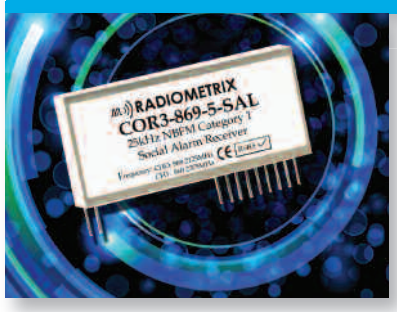
Bluebird is a name synonymous for a 100 years with land and water speed records. The latest target is the 500mph barrier for electric vehicles. Bearing in mind the current focus on reducing fossil fuel consumption, this is a particularly apposite record to tackle. Playing an important role in this attempt is **Phase Vision,** the large-scale measurement specialist.

Its white light scanners employ sine wave technology. This projects a series of light stripes onto the object and uses an integral camera to develop a complete representation based on millions of points, to an accuracy of a few microns, in just a few seconds – far more rapidly than would be achieved with a laser scanner or co-ordinate measuring machine.

The equipment is specifically designed to deliver rapid virtual representations of large and complex objects – the Bluebird electric vehicle measures 21ft. It creates a densely populated point cloud containing many millions of points which is directly compatible with all major CAD software. This enables tasks such as finite element analysis and reverse engineering to be performed with ease.

As a reverse engineering project, a number of other historic Bluebird cars and boats will be scanned to create a digital archive that could be used to produce precision scale models.

Multi-channel receiver for alarm applications



The latest multi-channel receiver from **Radiometrix** can be applied to anything from machine tool remote monitoring to high end nurse-call systems. It is the first in a range of Category 1 compliant radio receiver modules.

It is available on the licence-exempt European sub-band for Social Alarms and also custom frequencies. The 32 channel unit offers superior sensitivity and interference rejection. Conforming to Category 1 standards is mandatory in Europe for short range communication devices and social alarms.

When paired with a new power transmitter, a wireless data link with a range of over 500m can easily be achieved. The new range of Category 1 offers developers flexibility through consistent pinouts compatible with existing SIL radio packages.

Various levels of multi-channel operation are possible; parallel, serial channel selection, package link for telemetry or encoder/decoder for tele-command and custom firmware. With its compact dimensions of 57 by 26 by 9mm coupled with low power requirements, it is ideally suited to many industrial applications.

Can't fill that post?

Having difficulty filling a position, finding exactly the right person? Don't feel recruitment agencies have the essential expertise? Perhaps you would feel different about an agency that specialises in Engineering recruitment.

That's exactly what's on offer with **Orion Electrotech**, a recruitment agency that focuses on a number of technical markets including electronics, automation, aerospace, medical and telecommunications. It can supply both permanent and contract personnel.

Many of its recruitment consultants are drawn from the various specialist sectors it serves. This means they can better screen applicants for even the most complex of skill sets to an extremely high level. Represented amongst existing clients are small family businesses to multi-national blue chip companies and just about everything in between.

It could be an efficient way to short-circuit that laborious recruitment process. Then again, it could be an opportunity to benchmark your own skills and market worth!!

The world's first mixed domain oscilloscope

Visitors to the **SJ Electronics** stand will see the world's first mixed domain oscilloscope. This gives engineers the capability of capturing time-correlated analogue, digital and RF signals for a complete system view, in order to rapidly solve complicated design issues.

Signals can be captured across four analogue, 16 digital and 1 RF channel. The RF input frequency range extends up to 6 GHz, thus providing 'capture bandwidth' of I GHz at all centre frequencies.

This is 100 times wider than typical spectrum analysers. The mixed domain capabilities provide the tools to speed up every stage of debugging designs.

At the other end of the scale, there will be an entry level oscilloscope that provides true sensitivity of 1mV/div combined with low intrinsic noise levels and exceptionally large memory capture of up to 2Mpts. Two and four channel versions can be supplied.

Next generation 3D scanner makes debut

Centre stage on the **Faro** stand will be the multi-sensor Focus3D which is a high-speed 3D laser scanner for detailed measurement and documentation. It uses laser technology to produce incredibly detailed three-dimensional images of complex environments and geometries in only a few minutes.

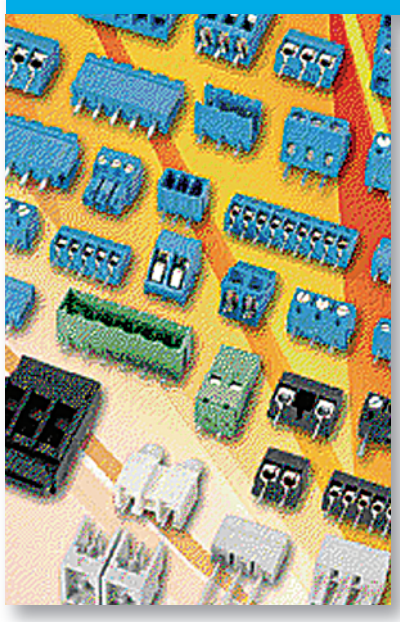
Its range is up to 120m with an accuracy of the level sensor, which together with auto-registration, results in up to 50% savings of scan and processing time compared to conventional laser scanners. A virtual copy of reality in millimetre-accuracy at a blazing speed of nearly one million measurement points per second can be created and documented.

Also new for the FaroArm and ScanArm is CAM2 software that provides non-contact capability to collect cloud point data for reverse engineering, rapid prototyping and analysis. It delivers a solution that brings together traditional probing, scanning and cloud point capture

in the one package.

Another new development, Live Colour Scan permits rapid inspection of free form parts with the ScanArm. It highlights any deviations from the CAD during the scanning process to immediately identify any inconsistencies.

Where to find all sorts of connectors



With more than 20,000 products from simple terminal blocks to surface mount PCB connectors and transformers to choose from, it's highly likely that you will find what you're looking for in the **Metway** range of electrical, electronic and electro-mechanical connectors.

If per chance you don't; the company offers a bespoke design and manufacture service which takes in cutting, assembly and marking. Own brand products can be supplied with all the appropriate bar coding and product identification. There is also a kitting service that supplies all the components to complete an assembly in sets.

At the exhibition the focus will be on PCB connectors for both THR and SMT technology. It is claimed that the range includes the only surface mount terminal blocks that offer true mains connection. To complement this, there is a range of PCB transformers in standard and special variants.

There is also a wiring division that produces pre-manufactured wiring systems for lighting and small power for electrical installation in commercial environments. Over recent years, the government has been keen to promote the idea of offsite fabrication within the construction industry. Issues of Health & Safety, increasing costs and skills shortages are the driving forces behind this move.

PCB production equipment to match UK needs

All the equipment required to manufacture PCBs is marketed by **Blundell Production Equipment**. It is fair to say that many PCB subcontractors in the UK focus on low to medium volume batch sizes with the bulk of very high volume work being placed off-shore. This is reflected in the portfolio of principals the company has carefully selected.

Great emphasis is placed on maximising flexibility and ease of changeover between batches in order drive down the costs for producing smaller batch sizes of PCBs. This philosophy is epitomised by the range of SMT placement machines that can be configured with head variants to handle standard SMT, odd forms, dispense and flux transfer heads to make them extremely flexible when mounting components.

In addition, the range of feeder bank and optional tray handling configurations allows very fast product change-over. Feeder banks can be specified with directly interchangeable removal tray handlers. This provides the user with complete flexibility to configure the line to suit varying day to day production requirements.

This approach is mirrored throughout the complete product range that takes in reflow soldering, pick & place, screen printing and inspection equipment. Prototyping requirements are also catered for.

LEDs power sources to meet growing demand

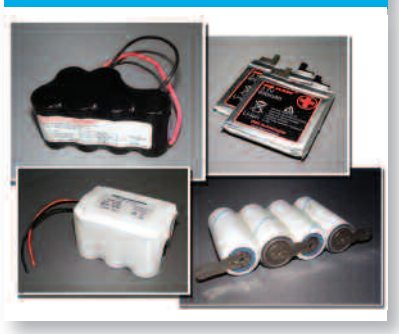
Because of their high efficiencies, LEDs have grown from simple indicators to a light source in their own right. **Stontronics** have charted the growth and been a major supplier in the LED market. At the show, it will be launching a new range of LED drivers available as constant current, constant voltage or dimmable versions.

Most LED Bulbs require a constant current DC output set at 350,700 or 1050 mA. The attraction of the new range of drivers is that they are fully encapsulated to IP 67 level of waterproofing. In addition, there are constant voltage drivers specifically designed for the LED Market.

As a leading distributor of power supplies the company will also be showing adaptors, transformers, power conversion products and affiliated items. In its distribution centre, over £500,000 of stock is held against specific customer call-off.

The standard range includes plugtop, desktop and open frame power supplies. There is also a R & D facility for bespoke PSU design.

Battery and charging systems galore



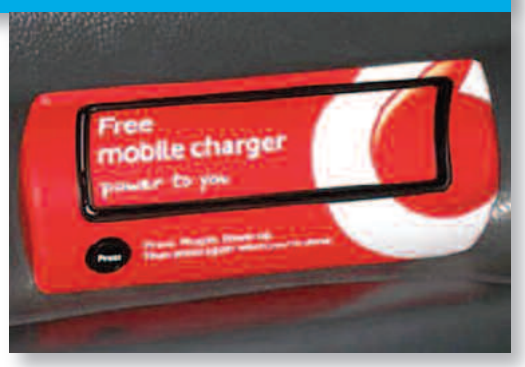
Batteries are to be found in so many different products and applications. That's why there is an enormous range to be found on the **DMS Technologies** stand. All these standard products are backed up by a customised design and manufacture service.

There is an equally wide range of chargers that include military chargers, that for maximum field flexibility, can work with AC input from 90 to 264V or DC input from 10 to 30V. For use by the military and vehicle recovery organisations, there is a range of portable engine start systems.

Customised systems can be developed to cope with extreme conditions such as extreme temperature, dust and waterproofing for high humidity. Charging systems can also be customised for requirements such as rapid charge. The in-house test facilities can cater for all the differing requirements.

Mention batteries, and inevitably at some stage the issue of disposal will come up. There is a full battery disposal scheme on offer that fully complies with WEEE and other relevant regulations.

Good design delivers successful products



There can't be many of us who have set off on a trip only to realise that the phone charger is sitting at home. Well if you're visiting London and are likely to take a cab, then help is at hand.

Today it is possible to recharge phones in the back of 500 black cabs...well not black anymore. As part of a £1 million advertising campaign, Vodaphone has kitted out the cabs with chargers...and a very colourful Union Jack exterior.

The charger, originally developed by **Hothouse Design**, has been redesigned with new features to meet Vodaphone's specific needs. As well as handling the creative and technical aspects, the company also managed the project looking after refurbishment and upgrading of the units including fitting in the cabs to meet the tight launch schedule.

This is typical of work undertaken which ranges from a new enclosure for motion controllers to an award winning design for high precision radiography units. The companies 'magic touch' has been applied to consumer and industrial products. It transforms a functional design into something that is also aesthetically pleasing. After all, who wants to buy a product that looks like a bag of nails??

Second factory enhances electronics service

Electronic product build capabilities have been dramatically enhanced by **Custom Interconnect** with the acquisition of a second factory that incorporates some specialised manufacturing facilities.

Now complex opto-electronic assemblies which involve the precise mounting of lenses, optical filters and other glassware can be undertaken in a dedicated clean room environment. The facility incorporates its own bonded material stores, finished goods storage and product despatch areas. There is a flexible open plan assembly area with fully compliant anti-static flooring throughout.

Back at the original factory, investment has continued apace with the installation of a board cleaning system that boasts one of the most cost efficient and waste friendly systems available. It requires no plumbing at all for waste fluids, a feature that has proved very attractive.

A Contaminometer used for cleanliness testing and measurement of Ionic contamination levels was also acquired. It was deemed of paramount importance to ensure that levels of cleanliness were constantly being monitored and process improvements optimised.

Absolute measurements for the shopfloor

Amongst the array of measuring technology and CNC control systems to be found on the **Heidenhain** stand will be the new Acanto length gauge, which combines the benefits of incremental optical measurement with absolute measured values. It is a compact unit that is sealed to IP65 making it ideal for a wide variety of shopfloor applications.

Currently two sizes are available, 12 and 30mm. Positions are physically encoded on a glass scale with a resolution of 23Nm. Linear accuracy over the full measuring length is ±2 micron. The new gauges avoid the temperature sensitivity and non-linear behaviour of inductive systems.

To simplify installation and handling, versions are available with either an axial or radial pluggable cable connection. The plunger is either moved pneumatically or as a spring-loaded version. A ceramic-polymer sliding guide ensures low-friction, low-wear plunger operation and a long service life of around five million cycles.

Mounted by shank (8mm diameter) clamping, Acanto transmits position information via an EnDat 2.2 serial interface. This permits simple transmission of position data and additional information for the higher-level applications.

A total electronics service

A design and build service from **Wavemar** covers all aspects of electronic production as well as project management to steer an outline concept through all the stages to completion. An important part of the service for existing designs, is identifying alternative components when a board incorporates a difficult-to-source or obsolete component.

Also, current production is monitored for components that may on the way to becoming obsolete and components can be stocked against future demand or alternatives identified long before it becomes a crisis situation.

It is this level of customer care that appeals to many in the low to medium volume market which defines its customer base. This is a market sector that also demands rapid turnaround on prototypes and flexible production capabilities.

The service extends into a full repair facility that embraces modification to equipment, to take on board design upgrades where applicable. This covers everything from PCBs to full box build.

Steel stockholder holds over 40,000 tonnes

With over 25 steel processing machines on site and 40,000 tonnes of stock, **John Parker & Sons Ltd** claims to be the largest single site stockist in the UK. The machines installed include laser cutting up to 20mm thick.

Larger plate up to 80mm thick can be handled on a multi-function machine that incorporates cutting, milling, drilling counter-boring, and helical thread cutting. Water jet cutting is also available alongside shot blasting and priming. Aluminium and non-ferrous materials can also be supplied.

The website plays an important role in achieving rapid, reliable delivery. Customers can establish their part numbers in the system. Steel ordered online is 10% cheaper than the sales office.

There is also a new 12 acre dockside facility for distribution of structural steel at the lowest possible price. This £20 million development houses processing machinery for plasma cutting, cropping and notching as well as complete first stage fabrication. Direct-from-dock is said to offer the lowest possible structural steel prices.

Design, tooling and moulding for plastic parts

LGG Charlesworth sets out its stall with one objective in mind, to be recognised as a single source supplier for all aspects of plastic technology. It starts with design; the company sets great store on getting involved with a projects as soon as possible.

Early involvement means it can bring to the table its vast expertise in mould tool design, which can only lead to better quality components at cost effective prices. When producing prototype and small batch sizes, soft tooling can be produced using 3D CAD/CAM.

Material selection is another area where its expertise can be employed to advantage. Both injection and compression mouldings can be supplied. The company has over 30 injection moulding machines and nearly 10 compression moulders.

Secondary operations include ultrasonic welding, leak detection, printing and packaging. It supplies both automotive and aerospace industries and the even more demanding medical sector.

Models for all occasions

Models from electronic equipment to full scale aircraft are produced by **Ogle**. Applications range from verifying the design and aesthetics of a mobile phone to creating the most ergonomic interior for aircraft, both in the cockpit and passenger seating area.

Other important sectors serviced include medical, automotive and defence. For example, medical projects range from prototype instruments for orthopaedic surgery to large scale blood analysers.

Alongside traditional model making skills are employed the latest technologies such as laser sintering for additive layer manufacturing. Stereolithography is used to produce models in a variety of photopolymer materials.

Major automotive projects include the models for the Jaguar C-X75 concept car. Another model that attracted international acclaim was the ash detector developed in conjunction with easyJet to detect volcano ash. This forward looking device will prevent unnecessary costly airport shut downs by allowing the aircraft to fly around the ash clouds just as forward looking weather radar does with storm clouds.

May the force be measured

Force and torque measurement in a tough environment is just one aspect of the range of sensors and measurement systems marketed by **Ixthus**. It offers designs for load cells, clevis pins and bolts that will meet any exacting requirements.

Patented strain gauge technology enables space saving force measurement transducers to be directly embedded into customers' components. The durable down-hole strain gauge technique provides an elegant load measurement solution. The technology can measure forces as low as 100N, while design miniaturisation also means they can be built into even smaller areas of just 3mm diameter and with a length of only 100mm.

The company also provides sensors for vibration, temperature, weight and non-contact position measurement. It can also design, install, commission and calibrate sensors and transducers to address any specific application. Custom designed specialist components can be sourced as well as standard products.

An important aspect of the service is calibration and routine maintenance to ensure life time accuracy. All the instrumentation to display and record the data is also part of the package.

Many new products for 2012

The latest catalogue for electrical & electronic component and cable supplier **Anixter Component Solutions** contains a host of new products for 2012. These include terminal blocks, fuse holders, DIN rail enclosures, indicators and push buttons.

For offices, warehouses and large public buildings there is a new range of energy saving switches and sensors that are designed to significantly reduce energy bills. There is also a new range of stainless steel fasteners with many sizes and head styles such as pan, countersunk, slotted and button available from stock.

Most of the accessories associated with cables are ex-stock including grommets, cable ties, and crimp terminals. Cable protection can be provided by conduit systems, double insulated bushing and armoured bushing.

Also on display will be aluminium enclosures, silicone & rubber potting compounds, insulators and liquid-tight fittings. 3D CAD files are available for many of the components. These can be downloaded to incorporate into an assembly.

View waste as an asset

Waste is a by-product of just about every manufacturing process. Viewing waste as a potential asset can make a positive contribution to the bottom line. **Cleansing Service Group** adopts a Total Waste Management approach that can mitigate the final cost by balancing revenues from recycling and reuse against disposal costs.

This approach reduces the volume of waste going to landfill which is good for the planet as well as good for the bottom line. The service delivers a waste management solution to handle every type of waste product, including dry waste, liquid waste and hazardous waste materials.

Site surveys are used to gain a good understanding of how your business works and the level and nature of the waste it produces. Services can then be tailored around specific needs. This can include collection of dry waste for recycling. Liquid waste can be collected and rendered safe for disposal.

Emergency response to liquid spills is offered on a 24/7 basis. Also, appropriate spillage kits can be recommended to cope with minor spillages of a whole range of materials.

Laser marking - a foot in both camps

Having a foot in both the subcontract laser marking camp and the supply of laser marking equipment puts **ES Technology** in a strong position when it talks to new customers. The customer can start using the subcontract service; this enables the technology to be evaluated over a period of time.

Then, as confidence builds up or the throughput increases, the transition to installing equipment for in-house production can be seamless at a rate governed by the customer. Standard turnaround for subcontract marking is one week, although an express service can reduce this to within 48 hours.

The laser equipment can be supplied as standalone machines for general marking tasks. It is easy to program so that small batches can be accommodated. Programs can be stored off-line for repeat batches.

For high volume work, bespoke installations can be designed where the laser is automatically fed by linear or rotary part handling systems. Alternatively, the laser can be incorporated as a marking station into a larger assembly machine.

Small pressbrake added to range

The only thing small about the pressbrake to be seen on the **Bystronic** stand is the size. Everything else in terms of specification and performance is huge. It has an exceptionally small footprint. The bed length of 1650mm is the same as the between frames distance.

The backstop has a 600mm travel and the beam has maximum bending force of 50 tonne. It is equipped with the Cybelec 60 CNC control system. The machine comes complete with Euro upper tools and quick to change lower dies. Laser guards are fitted at the front of the machine.

Full details of the range of waterjet cutting machines will be available; these can process material from 0.1 to 200mm thick. They can cut all metals as well as plastics, composites, concrete and paper. Laser cutting is also part of the portfolio. Both types of machine can be equipped with highest levels of materials handling automation to ensure extended periods of unmanned operation.

The automation extends to storage of both raw materials and finished components. This takes on board full integration with production planning and data flow.

British designed laser systems go on show

British designed and manufactured low cost CO2 laser systems for both cutting and engraving will be featured on the **CTR Lasers** stand. In the range can be found desktop engraving lasers with 30W capacity to larger cutting lasers with up to 180W capacity.

Larger machines can feature a table that pulls out horizontally from under the laser head to provide maximum access for loading and unloading. Depending on the material to be cut, fume extraction options can be specified.

To assist set up, a red dot pointer can be specified. This is fitted when the machine is commissioned before installation. The red dot pointer will shine a small red light down through the lens of the laser machine and show you exactly where the laser will fire.

A specialist machine for laser cutting vinyl for signage can also be supplied. These cutting machines also have a plotting option, to allow your vinyl machine to plot or draw lines on paper.

Design to volume production

Three times winner of Metalworking Production awards, **Broxton** has been described by judges as "...punching above its weight with a customer focused, highly efficient sheet metal subcontract service."

Its award-winning status rests on three main planks; a programme of continuous investment, maintaining accreditation for the highest levels of quality control and last but not least investment in training at all levels.

All this pulls together in its cradle to grave service which starts with 3D CAD modelling. Steps towards volume production take in prototyping and tooling design. An important aspect of the service is project management with an engineer taking overall responsibility for each project. All materials and bought-in requirements are logged into the company's production control system.

Work undertaken ranges from just enclosure production to fully fitted out cabinets and other assemblies. The sheet metal fabrication is complemented by CNC turning and milling facilities.

Protecting the environment doesn't cost more

The Health & Safety range of engineering adhesives from **Loctite** are "Hazard Label" free products. These cover the lion's share of applications. Equally important for the users, the environment-friendly products are available at no extra cost.

Visitors will also see a broad selection of anaerobic, cyanoacrylate instant adhesives and epoxies, all formulated to fulfil the most demanding of applications in the field of general bonding, thread locking, thread sealing, retaining and gasketing.

There will be demonstrations on the stand of MacroMelt, a low pressure over-moulding system for delicate parts. Give-away USB sticks which have been loaded with technical data will be over-moulded whilst visitors wait.

MacroMelt is ideal for electronics assembly as it only requires low pressure to create the moulding, so fragile elements are in no danger of being damaged by the process. The resultant adhesion creates an effective seal. Short setting time and low cost tooling means the technology is perfectly suited to either small batch or volume production.

A wide range of plastic fasteners

Like many companies supplying fasteners, **Amberlea Plastics** can supply a wide range of standard products ex-stock. Similarly, they offer a bespoke design and manu-facturing service to solve specific design problems. One thing they bring to the table that's a bit different is that they can often propose bespoke solutions that can be made in relatively low volumes and without incurring special tooling costs.

This is made possible by the innovative design of modular tooling that is used to manufacture its product range. This takes in fir tree fasteners, canoe clips and ratchet fasteners. Other related products include cable fasteners, plastic hinges and moulded feet.

The company offers quotations within 24 hours and depending on volumes, special colours can be supplied at no extra cost. Free samples of standard products can be provided. A wide range of plastic and rubber materials can be specified with flammability ratings from V2 to V0.

A line-side delivery service can be offered throughout the South of England.

Where exactly what you want is standard

Three factors contribute to **Treston** being in a position to offer what are virtually customised workstations at standard product prices. The first is the modular design of the work benches, drawers, storage, racking and shelves. The second is the choice within each category; the possible permutations are endless.

The final factor is the wide range of accessories that can be added. These include tool racks, lighting, LED lit magnifying task lights, document stands, adjustable shelves, storage bins, so the list goes on. Electro static discharge protection can also be specified.

There is an equally wide choice in storage systems. To maximise floor space utilisation, storage systems can be mounted on turntables. Bins are available in different sizes with options for internal dividers and a labelling system.

The website offers some extremely useful general articles on different factors to be considered for Ergonomic design. Although it must be said that personally "Ergonomics and an Aging Workforce" was bit too close to home!!

R & D centre tackles composite machining issues

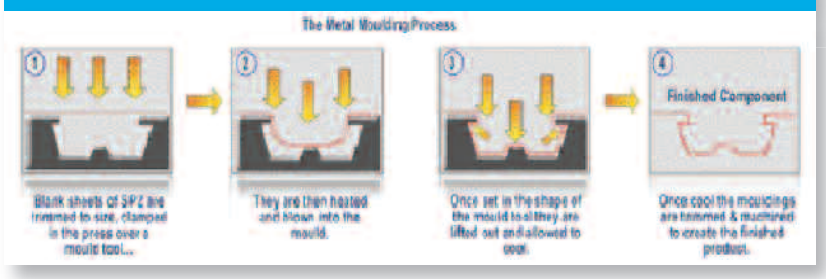
The market for composite tooling is growing at a phenomenal rate. New generation aircraft like the Boeing Dreamliner and Airbus 350 XWB are well over 50% composite. Similar levels of growth are to be found in performance cars, boats, wind turbines and even wheel chairs for the disabled.

Such growth inevitably creates new problems as each new design brings with it a whole new raft of production issues to be addressed – particularly in tooling. That's why **Dormer Tools** has established a Research Centre to resolve these problems.

The first tangible result for the Centre is a new brochure that details hand-held and CNC tooling applications. This takes in carbide and PCD drills, reamers, countersinks and end mills.

The centre is geared up to fast-track customer specific problems to improve tooling life, productivity and that most crucial of yardsticks - cost per part. The final solution can involve standard tooling or specials. A reconditioning and regrinding facility completes the picture.

Making the impossible designs



It's not often you hear about a process that presents so many opportunities. But, how would you like a material that's stronger than plastic, more accurate than welding, can produce impossible designs, employs low tooling costs, is seamless & airtight, offers good EMC shielding and to top it all is inexpensive even in small batches?

If you ticked any of the boxes above, then you should be considering the SPZ Metal Moulding process that will be featured on the **Entech (Poole)** stand. The SPZ stands for Super Plastic Zinc, which is currently used to produce components from 30 to 600mm square with material thickness from 0.8 to 3.0mm.

The finished components often look similar to a pressing, but only the female side of the die-set is required. This not only makes it cheaper but also eliminates the time consuming fitting of a conventional die-set. Most significant of all, unlike a pressing, the top edge of the tool can have an inward return. For designers, this can be an invaluable location feature.

The process starts by trimming a blank that is clamped in a press over a mould tool. The blank is then heated and "blown" into the tool including under the inward returns. Once set in shape, the still-flexible blank is lifted out, then allowed to cool. Finally the cooled moulding is trimmed and machined to create the finished component. Bet you want to find out more!!

Protecting your investment

Protecting your brand or product design is serious business, as any winemaker who has ever crossed swords with the Appellation Control district of Champagne will tell you. Anyone who invests hundreds of thousands of pounds worth of research and development to bring a new idea to market wants to make sure they reap the benefits – all the benefits.

Yet for many manufacturers the possibility looms large that all this money and energy will be wasted because the product is not properly protected, be it by patents or copyright design. One exhibitor who knows this all too well is **RGC Jenkins & Co** a firm of UK and European patent and trade mark attorneys and certified patent, trade mark and design litigators.

The company has experience in manufacturing, electronics, telecoms, aviation, pharmaceuticals & meditech as well as consumer goods. All aspects of Intellectual Property (IP) protection are covered including the maintenance and enforcement of IP assets both in the UK and internationally.

If you're currently in the throes of a major development, it won't hurt to have a chat with them. At the show, the egg timer is not running!!

It's all in the name

It's nice when a company name tells you exactly what it does. That's definitely true of **Expense Reduction Analyst** that offers a cost reduction service that embraces many facets of business activities.

The company tackles key aspects of manufacturing costs including logistics, packaging, speciality chemicals & gases, waste & recycling facilities and energy management. The attraction of cost reduction initiatives is that the benefits go straight to the bottom line.

Over 100 different cost areas have been identified and savings averaging 20% have been achieved across the board. When addressing some of the more complex cost areas such as insurance, business rates, bank fees, communications and logistics, specialists with first-hand experience within the relevant sectors are assigned. This means the analysts are aware not only of 'true cost prices' but also the optimum route to securing the best deal.

Remember, cut costs by £1,000 and it translates into £1,000 increased profit. To equal this, most companies would require a £10,000 increase in sales. In these tough times, that's quite an incentive to tackle cost centres.

Toolmaking heritage gives press shop the edge

With over 50 years under the belt as a designer and manufacturer of precision press tools, **Westley Engineering** see this as making it a strong contender when it comes to supplying pressed parts.

It highlights this capability with the example of a project undertaken for a leading truck manufacturer. An electric bracket had been modified many times over the years. It finished up as a three-part welded assembly. Six press tools were required to produce the parts and, with the additional welded assembly operation, it had become a bottleneck.

The solution developed was to redesign the assembly as a single part produced automatically using a progression tool. The end result was a single part that cost only a third of the previous parts plus the elimination of the welding operation. This all added up to an annual saving of £20,000 for the customer.

The expertise on offer can be applied to existing tooling to improve productivity or modify it to produce better components. The company is equipped with presses up to 160 tonne capacity. Additional operations that can be carried out include riveting, studding, robotic welding and assembly.

Test specialist makes major investment

The capabilities of independent test specialist **3C Test** have been significantly enhanced with the installation of a new rolling road which will allow EMC testing of vehicles for the automotive industry.

In addition, the system is capable of controlling all four rollers independently whilst measuring braking system pressures at each wheel. Data logging can be carried out on all the process variables at 20ms intervals.

EMC services include 'pre-compliance testing' which can lead to significant cost savings. It has proved to be a cost effective way of ironing out potential problems before the required full compliance testing and subsequent final certification. An early diagnosis of potential EMC problems can reduce manufacturing costs and failures in the field.

EMC Testing services are offered from 20Hz-26.5GHz for Emissions and field strengths up to 600V/m. In the cases where the equipment is fixed, physically large or a site needs assessment, in- situ testing can be carried out. Typical applications include power supplies, substations & switchgear, cranes & earthmoving equipment, and railway signalling & trackside equipment.

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