What is your
PRODUCTIVITY POTENTIAL?

Stories From Our Customers

intertronics

adhesives, coatings, sealants & equipment
for your manufacturing and technology applications

Coatings Expertise Set to Automate the Aerospace Industry

“The final result dispenses to an accuracy of 100µm, offers the client a significant labour saving and increases throughput.”

Company:	Astech Projects Ltd
Industry:	Aerospace & Defense
Product Categories:	Dispensing, UV Light Curing, Temporary Masking

CASE STUDY

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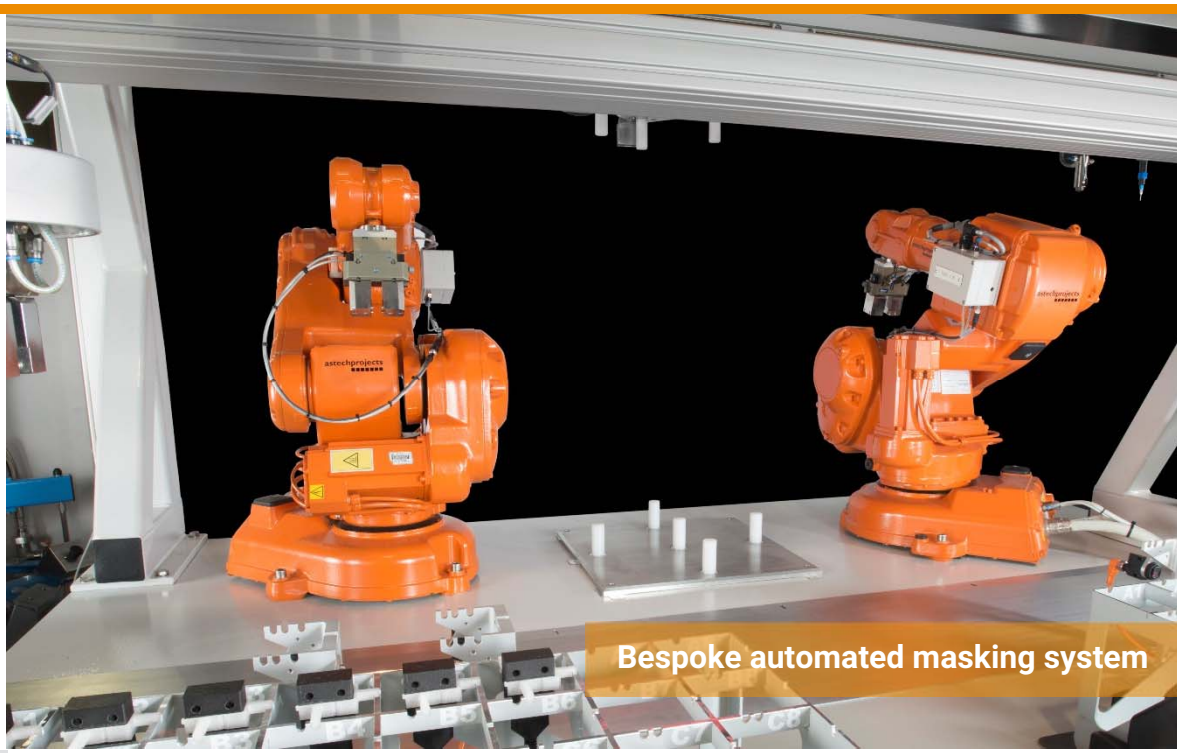
Preeflow eco-PEN450
Volumetric dispensing system

Dymax 717-R
SpeedMask masking resin



Bespoke automated masking system

Our customer

Astech Projects

Customer benefits

- Increased throughput
- Improved accuracy
- Superior masking quality
- Flexibility for future proofing

Coatings expertise set to automate the aerospace industry

Astech Projects, part of Schauenburg International group of companies, is a supplier of robotics and automation solutions to the advanced manufacturing and regulated industries. The company builds systems from concept to completion on a custom basis, turning its hand to any application not currently available in the market.

“A leading UK aerospace company commissioned Astech Projects to build a bespoke Automated Masking System to mask complex areas of aircraft components in order to avoid precious metal coverage during the manufacturing process,” explained Craig Hamilton, business development manager at Astech Projects. “The system was required to have the capability to mask 14 component variants, while offering the functionality to add additional variants in the future.

“While masking and coating is a common application, automating it is not,” continued Hamilton. “Astech aimed to increase throughput, accuracy and masking quality by building the bespoke automated system, benefiting from the expertise of adhesive and coating specialist, Intertronics.”

Dymax 717-R SpeedMask would effectively protect the precious metal during the manufacturing process and was therefore an appropriate choice.

“Once the masking resin had been selected, we worked with Astech Projects to establish the success of the preeflow eco-PEN450 as a dispensing mechanism,” explained Matthew Baseley, Senior Internal Technical Sales at Intertronics. “The system was chosen because of its high accuracy — it gives a value greater than ±1%, 99% of the time. “The system also has no fluctuation in the volume of resin dispensed with any change in viscosity.”

So that the curing process could be fully automated with a high throughput, Intertronics also supplied the appropriate curing equipment including high-intensity UV lamps. “This enables the resin to be cured quickly, in the range of 20 to 30 seconds,” said Matthew.

Astech Projects was able to complete two further proof of concepts projects at their Cheshire facility, using Intertronic’s dispensing and curing equipment available as part of their customer trial service. To support Astech, Intertronics’ Baseley and Paul Whitehead visited the facility. Once the solution was tested and proven to be successful, Astech purchased the required coating, curing and dispensing equipment from Intertronics.

The fully-automated system incorporates a 3-axis Cartesian robot and two 6-axis robots working in synchrony according to one robot program. It also includes a high-definition vision system, masking dispensing system and UV curing station. On a batch-by-batch basis, the system can correctly identify and orientate 14 types of part against the preeflow eco-PEN450, which accurately dispenses the Dymax 717-R SpeedMask product. The part is then taken to a curing chamber, where it is illuminated with high intensity UV. Once the process is complete, the component is returned to its original input location. The process repeats itself until the entire batch of components has been processed.

“The main drivers behind the project were to accurately and repeatably mask the component,” said Baseley. “The final result dispenses to an accuracy of 100µm, a great achievement. Astech Projects’ bespoke system offers the client a significant labour saving and increases throughput with the client now channelling 60% of its components through the system.”

“There is great potential in the market for Astech to build automated systems for masking and coating applications,” explained Hamilton. “For example, medical devices, electronics and aerospace industries regularly use a masking process. We are now looking at other applications with the same client and its parent company, as well as with Intertronics.

“Intertronics is an extremely knowledgeable company, providing Astech with vital coatings expertise. They were a great partner for this project and we look forward to working together in the future,” concluded Hamilton.

Preeflow eco-PEN450

- Genuine volumetric meter, mix and dispense dosing
- Viscosity independent
- Suck back effect
- Easy to clean
- Controllable dosing flow

Applications include: Electronics packaging, SMD/SMT, semiconductor, LCD/LED/OLED and medical

DYMAX 717-R SpeedMask Resin

- Apply and cure in seconds
- Reduce labour, rework and scrap
- Easy to automate
- Environmentally and worker friendly
- Metallurgically neutral

Applications include: Temporary masking for acid stripping, anodising, chemical milling, plating

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preeflow eco-DUO Volumetric Adhesive Dispensing Helps Ensure Integrity of Life-Saving Medical Device

“We estimate our return on investment to be in the region of £2,000 a month.”

Company:	BPR Medical
Industry:	Medical Devices
Product Categories:	Dispensing

CASE STUDY

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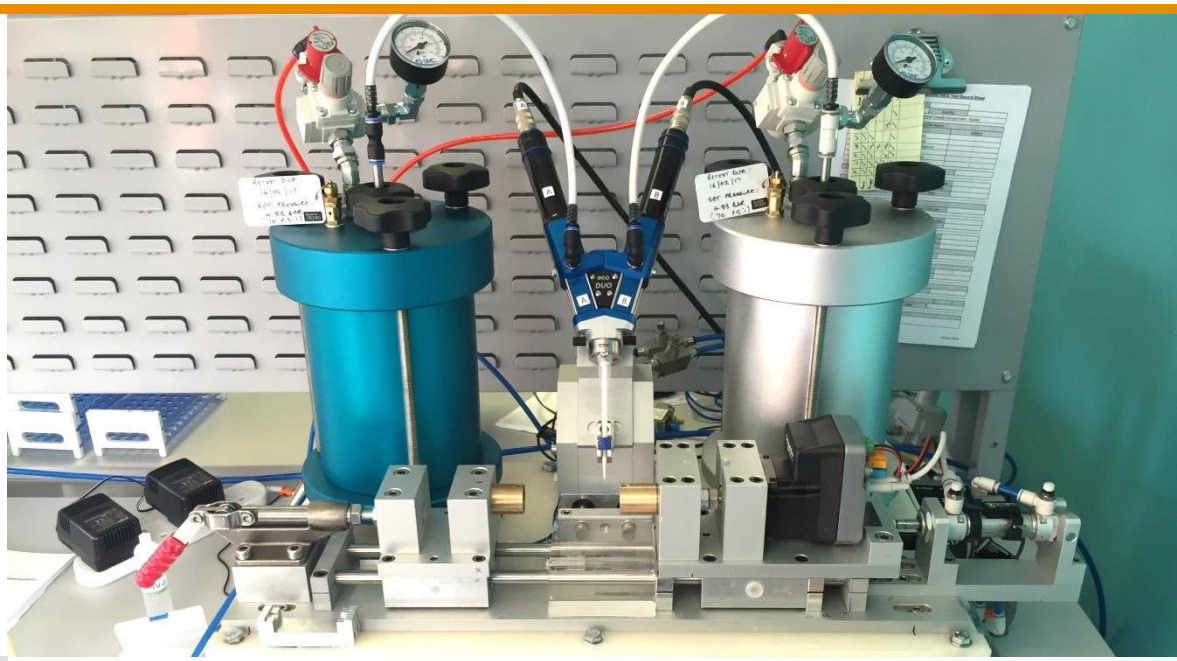
preeflow
eco-DUO 450
Volumetric mixing and dispensing system



Our customer

BPR Medical

Customer benefits

- Confidence of consistently high quality
- Increased productivity
- Decreased operating costs
- Time savings pre, during & post-operation
- Reduced material usage
- Reduced reject rates
- De-skilled assembly process
- Aesthetically superior products

preeflow eco-DUO volumetric adhesive dispensing helps ensure integrity of life-saving medical device

BPR Medical, based in Mansfield, Nottingham, is a perfect example of a small British company which combines expertise, creativity and entrepreneurialism to design, develop and manufacture world-beating products. The company's latest success story is the Bidirectional Firesafe™ Cannula Valve, used for in-home medical oxygen supplies to extinguish fires which can occur in the line between the concentrator and the user's mask or nasal cannula. Such fires can occur if the line comes into contact with ambient flame – such as a candle – or more commonly if the patient is a smoker.

The valve acts as a thermal fuse whereby the oxygen supply is cut off when a fusible component softens as a result of the heat from an approaching fire in the oxygen delivery tube. Integrity of operation is vital and could literally represent the difference between life and death.

BPR had chosen a two-part epoxy to bond both halves of the valve's body, and needed a dispensing solution that would ensure deposition of a precise, repeatable volume of the adhesive, metered and mixed in the correct ratio, on to a cylindrical assembly. The resulting bond integrity would help meet conformance for CE marking under European Medical Device Directive.

Technical Director Ben Johnson's team evaluated a number of possibilities, including premixing and dispensing via a pinch tube valve. This yielded inconsistent results due to changes in viscosity which begin to occur naturally as soon as epoxy is mixed, exacerbated by temperature fluctuations. It also required an unacceptable amount of set-up and clean up time.

(continued on next page)

Having determined that volumetric technology would provide a better solution, BPR contacted Intertronics and two other vendors to arrange equipment demonstrations. Trials using the selected epoxy were conducted in a wide ambient temperature range. Rigorous pull, flexural and other testing of the assembled valve, revealed that the **preeflow eco-DUO precision metering, mixing and dispensing system** suggested by Intertronics was the correct solution. It offers ±1% dosing accuracy, >99% repeatability and can dispense volume flows of 0.2 to 32ml per minute, with a minimum volume of 0.01ml. The preeflow positive displacement technology means that the volume dispensed is not affected by viscosity changes in the material.

The **preeflow eco-DUO** was selected, not only on the basis of the eco-DUO meeting BPR's needs, but because of the lower total cost of ownership and promise of superior initial and ongoing support from Intertronics. The system operates an automatic purge at the end of the shift, eliminating the need for cleaning down. Control is via a preeflow plug 'n' mix interface and stored settings ensure consistency and repeatability, and eliminate daily set-up time. Thanks to preeflow's accuracy, the volume of epoxy applied has been reduced to 0.05 g from the pinch tube valve's 0.06 g.

Ben Johnson and Product Development Programme Manager Mike Brudenell worked with Intertronics to configure the dispenser into its bespoke manufacturing jig, into which the two populated halves of the Firesafe valve body are manually loaded prior to being rotated whilst epoxy is applied. Each of the 20,000 units per month produced at the time of writing is non-destructively tested, whilst regular samples are subject to a three-point flexural test.

Ben Johnson commented:

> *"We had to go through a number of stringent processes to ensure the integrity of the bonding of the two body halves. An essential part of this was how the two-part epoxy adhesive was applied: to ensure a highly accurate, repeatable dose on a rotating jig, but also to maintain the correct dispense volume regardless of viscosity changes caused by temperature. After evaluating a number of options, we chose the eco-DUO from Intertronics as it provided the best results for both of these criteria."*

He continued:

> *"Intertronics helped us choose a volumetric dispensing solution that was the best one for our needs. We've been very impressed with their expertise; they're responsive and always on hand to support us with any queries or technical support we might need. The way they've helped us to integrate and set up the system means that we always achieve a consistently high level of process capability.*
>
> *"Not only that, but we estimate our return on investment to be in the region of £2,000 a month."*

preeflow eco-DUO

- Genuine volumetric meter, mix and dispense dosing
- Viscosity independent results
- Easy to program and control

Applications include: Electronics packaging; SMD/SMT; Semiconductor; LCD/LED/OLED; Medical; Biological chemistry; Laboratory; Photovoltaic; Optics and photonics

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CEM Increases Competitiveness With Dispensing Robot

“The robot is quicker than manual operations. This is a measurable factor in being price competitive with offshore manufacturing. We observed lower unit costs and improved quality straight away.”

Company:	CT Production
Industry:	Electronics
Product Categories:	Dispensing

CASE STUDY

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FIS F4200N
Benchtop
dispensing robot

Our customer

CT Production

Customer benefits

- Straightforward to program
- Allows UK manufacturing to contend with offshore competitors
- Fits into flow line assembly
- High standard repeatable application
- Reduces errors and rejects
- Continuous production process

CEM increases competitiveness with dispensing robot

Contract electronics manufacturer CT Production contacted us when they needed to expand their dispensing robot capability for a low-energy lighting product.

Explained Alan Trevarton, Managing Director of CT Production:

> *"It is company strategy to compete with offshore manufacturing by lowering costs using robotics – compared with manual operatives, the benefits are greater flexibility, continuous working, reduced mess and clean up, plus enhanced consistency and quality. In the highly competitive arena of small to medium production runs, we see this as crucial to achieving positive outcomes for UK based manufacturers. Consequently we were interested in the* ***Fisnar F4200N Dispensing Robot*** *for its mix of price, performance and flexibility which exactly met our criteria. This was backed up by a highly successful onsite demonstration with ex-stock supply from Intertronics which enabled us to get straight on with the job, with lower unit costs and improved quality straight away."*

CT Production are a CEM with varying requirements and a variety of other robotic equipment. In this case, they needed a compatible unit to fit in with their flow line assembly – the **Fisnar F4200N Dispensing Robot** offered exactly that as a compact and economically priced benchtop robot. Designed for manufacturing, medical and laboratory environments requiring a streamlined, robust and easily maintained machine, the F4200N is intended to support most light dispensing applications that require a high performance standard with considerable repetition.

(continued on next page)

At CT Production, the F4200N is used for lighting products with end caps which need to be sealed. The machine enables controlled dispensing of customer-specified RTV sealant in the right amount in the right place using a needle which dispenses a “gasket” of sealant, building up a couple of layers on the Z axis to achieve an internal tube within the cap. This was found to be quicker than manual application while reducing errors and rejects. The F4200N handles a dispensing area of 200mm x 200mm x 50mm and is capable of storing up to 100 difference programs. This enables processing a jig holding approximately 10 caps at a time.

Alan Trevarton commented:

> *“Our view is that the F4200N is straightforward to program, is reliable and effective and so is good value for money. We have already identified other areas such as application of heat transfer adhesive to bond aluminium PCB substrates to heatsinks. It is also quicker than manual operations and we have set up the process to fit in with adhesive setting times. This is a measurable factor in being price competitive with offshore manufacturing and so retaining work that would otherwise have gone overseas. The UK is becoming much more competitive with more people these days realising that they can produce in 1000’s in the UK rather than the very large quantities suited to the Far East. By use of machines such as the F4200N, we are able to offer greater flexibility, lower carriage costs, shorter supply chain, shorter lead times and an ability to discuss products and requirements face to face – plus we can increase output quickly without an additional labour commitment.”*

Our Product Specialist David Peat describes the Fisnar F4200N:

> *“It uses step-by-step intuitive instructions to simplify job creation tasks, allowing a program to be entered and running in minutes. A 16-channel I/O interface provides for communication with external devices for secondary applications and multiple dispensing equipment components. We find that programming is simple with easy to follow English language instructions. Commands are followed and responses entered by a teach pendant. An LCD display prompts the user for a data input and once confirmed, automatically displays the next instruction. By this method, a programme can be created quickly and simply.”*

FIS F4200N dispensing robot

- Dots, lines, arcs and circles
- Resolution 0.001mm/axis
- Continuous path motion and point to point
- Step and repeat copy functions
- Automatic offset calculations
- Quick “fluid purge” button
- No computer skills required
- 100 programs, 4,000 points per program
- Software tip alignment routine for quick program offsets when changing dispensing tips
- USB connector allows system updates and program interchange between robots

Applications include: Adhesives, coatings, gaskets, potting, filling and shielding

Contact us for more information on our Robotics

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UV Adhesive Cures Time Problem for Brandon Medical

“This simple solution saved us a considerable amount of time in the production process.”

Company:	Brandon Medical
Industry:	Medical Devices
Product Categories:	Adhesive, UV Light Curing

CASE STUDY

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Dymax 3225-T-SC
See-Cure technology
UV curing adhesive

Quasar® eLite operating theatre lamp

Our customer

Brandon Medical Ltd

Customer benefits

- Saves time in the production process
- Dispensing and cure can be checked visually
- Correct amount of adhesive dispensed in the bond line
- Adhesive is adequately cured every time
- Less heat introduced into the polycarbonate modules compared with broad spectrum lamps

UV adhesive cures time problem for Brandon Medical

Extended curing times for adhesives can often create a bottleneck in the production process which can interrupt work flow. This was exactly the problem experienced by Brandon Medical Ltd.

Technical Director Nigel Davill explained:

> *"We had a problem bonding three polycarbonate lenses together to make the large front lens of our Quasar® eLite operating theatre lamp. The two-part epoxy we were using had an extended fixture time, so we were looking for an adhesive which allowed us to handle and position the parts easily with an unlimited open time, and then to cure quickly using UV light. The problem with this approach was that, although the parts to be bonded are visually clear, the material has UV absorbing properties – so getting the right amount of light curing energy to the joint appeared to be tricky. Fortunately, Matt Baseley and his colleagues at Intertronics came up with a simple solution that very successfully resolved things and saved us a considerable amount of time in the production process."*

Matt Baseley expanded on the Intertronics solution:

> *"Our **Dymax 3225-T-SC** is highly suited to this application – it is a single part UV/visible light curing adhesive which bonds to polycarbonate and many other plastics. It is readily dispensed, in this case using a benchtop robot, and typically cures in a few seconds. It has a colour change feature – this Dymax SeeCure® product goes from blue to*

(continued on next page)

clear when fully cured, so that dispensing and cure can be checked visually. Brandon Medical can have reassurance of the correct adhesive amount in the bond line and adequate cure."

A small Phoseon LED UV curing lamp with a 50x20mm emitting window was also supplied, allowing it to be mounted on the robot which dispensed the adhesive. Its 395nm high intensity output overcame the UV absorbance of the polycarbonate, providing enough light curing energy to give Brandon Medical fast cure, with less heat introduced into the polycarbonate modules compared with broad spectrum lamps.

We're loving the outcomes from this story – a happy customer and a great example of our ability to deliver turnkey projects integrating materials and equipment, exemplifying our value proposition.

Dymax 3225-T-SC

- Adhesives appear blue when dispensed and become clear when fully cured
- Flexible
- Multi-substrate adhesion
- Recommended for bonding PMMA (acrylic), polycarbonate (PC), poly vinyl chloride (PVC), polyamide (PA), polyurethane (PU)
- Medium viscosity

Applications include: Appliance assembly, plastics assembly, plastics lamination, metal-to-plastic bonding.

Contact us for more information on our UV and Visible Light Curing Adhesives
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Improving Masking Process for Electroless Nickel Plating in Aerospace and Defense Applications

“The ability to mask complex shapes in one application and cure quickly on demand has reduced work in progress, improved quality and increased throughput.”

Company:	Landing Gear Manufacturer
Industry:	Aerospace
Product Categories:	Temporary Masking, UV Light Curing

CASE STUDY

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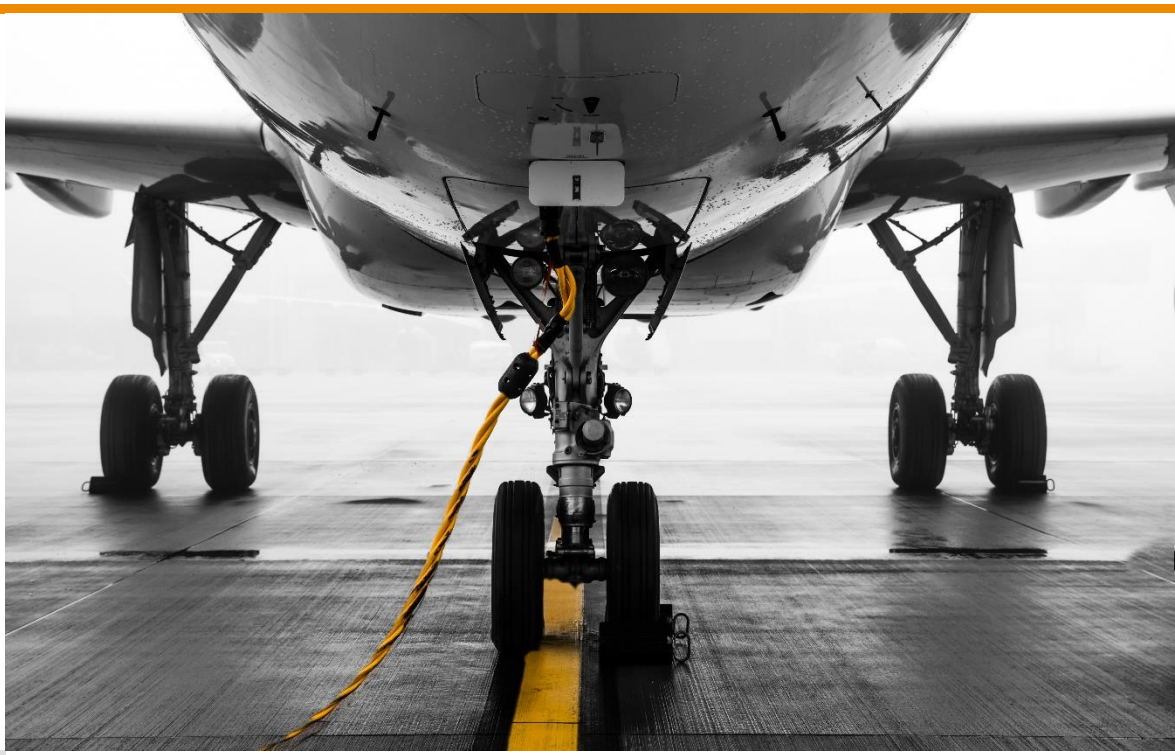
Dymax SpeedMask®
UV curing temporary masking liquid

Dymax BlueWave® 200
UV curing system



Improving masking process for electroless nickel plating in Aerospace and Defense applications

Customer

Aerospace landing gear and actuation manufacturer

Customer benefits

- Process time reduction to under 45 minutes
- Improved part quality
- Reduced scrap and rework

An international company specialising in manufacturing and repairing landing gear and actuation systems for the aerospace market was looking for efficiencies in their electroless nickel plating process. Their target was to automate the masking process and increase throughput.

The customer's original process involved applying 2-3 coats of lacquer-based temporary mask to achieve the necessary thickness prior to the electroless nickel plating of landing gear components. The customer's manual brush application time of the lacquer temporary mask was 45 minutes per coating (between 1.5 and 2.5 hours per component). Air-drying the parts also added a minimum of 8 hours to their production time. The customer ran production one shift per day; the masking (application and drying) process took up to 3 days (72 hours). Inconsistencies in the manual brush masking application caused rework and a scrap rate of 10%.

Following a meeting with the customer to review their process and understand their needs, the Dymax team selected a UV-curing masking liquid and light curing equipment that addressed the customer's needs. They proposed Dymax SpeedMask® 7601 temporary mask, to be applied with a spray valve system and cured with the Dymax BlueWave® 200 UV curing system. The SpeedMask changes colour from pink to yellow-green upon proper curing, providing straight-forward visual quality control assistance.

By adopting the Dymax masking process, the customer was able to considerably reduce cycle times to less than 45 minutes. In addition, the spray application

continued on next page

improved part quality, and consistency and reliability of the SpeedMask helped to reduce scrap and rework.

Paul Whitehead, Strategic Accounts Manager at Intertronics, said:

> "Many of our aerospace and defence customers have found that Dymax Speedmask® materials, as a replacement for tapes, waxes and lacquers, offer the ability to mask complex shapes in one application and cure quickly on demand. This in turn has reduced work in progress, improved quality and increased throughput."

Dymax SpeedMask UV Curing Temporary Masking Liquid

- Apply and cure in seconds
- Reduce labour, rework and scrap
- Easy to automate
- Environmentally and worker friendly
- Metallurgically neutral
- Minimal capital investment
- Major OEM approvals

Applications include: Masking for acid stripping, anodising, chemical milling, and plating. Dymax advanced technology SpeedMask UV resins, curing lamps and accessories simplify regulatory compliance, and bring efficiency and cost reduction to new parts manufacturing, overhaul and repair, turbine and metal finishing, as well as orthopaedic implant, surgical instrument and medical device component processing. Clean burn-off grades and peelable and water soluble masks are available.

Dymax BlueWave 200 UV Curing System

- More than 17,000 mW/cm² initial intensity – for fast, reliable cures
- Patented intensity adjustment feature – giving you full control
- Easy-to-read, back-lit front panel LCD display with enhanced unit status and notification displays
- Improved user interface for easier operation
- Up to 2,000 hours useful bulb life, 2,000 hours bulb warranty
- Integral shutter with digital timer
- Foot pedal or PLC integration
- Proprietary "Cool Blue™" filter virtually eliminates lightguide degradation
- Wide range of lightguides available (liquid/fibre, single/multi-pole, various lengths)
- Bulb changes in less than one minute
- Universal power input operates worldwide
- Controlled power-up sequence ensures correct intensity is achieved before use
- Smooth front panel surface that is easy to clean, suitable for cleanroom use

Applications include: UV curing of adhesives, coatings, encapsulants, and masking liquids

Contact us for more information on our temporary masking materials and UV curing equipment
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Automated Dispensing Helps Security Manufacturer Increase Throughput and Quality

“Making sure that the silicone is consistently applied is a critical component in our production process. With increased demand, moving from a manual process to an automated one has allowed us to get a lot more through production.”

Company:	GJD Manufacturing
Industry:	Lighting & Instrumentation
Product Categories:	Dispensing

CASE STUDY

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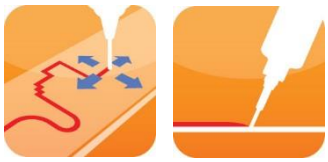
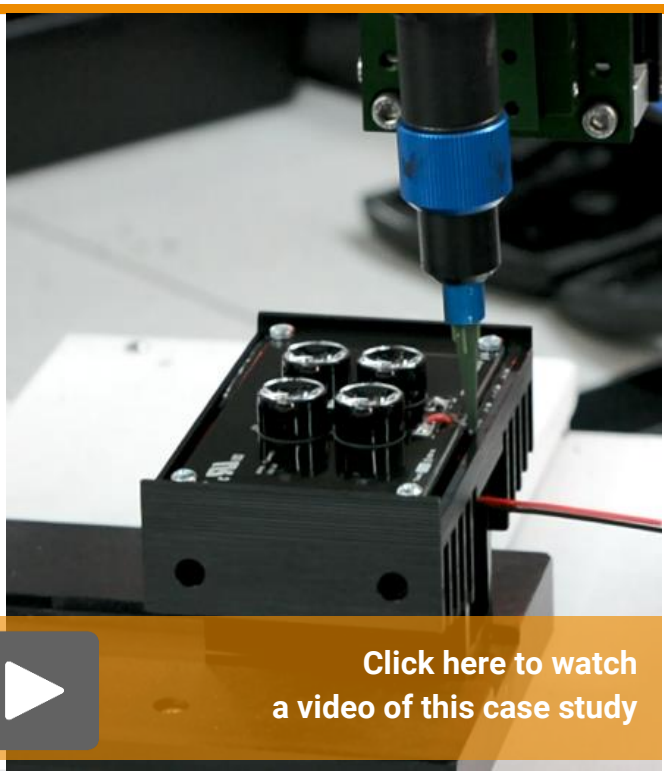
Fisnar
Dispensing robot

preeflow® eco-PEN 600
Precision volumetric dosing pump

flowplus^{16}
Inline fluid sensor





Our customer

GJD Manufacturing

Customer benefits

- Confidence in accurate and repeatable adhesive dispensing
- Higher production throughput
- Maintains IP66 rating
- Reduced material usage
- Improved operator safety/comfort
- Aesthetically superior products
- Increased competitiveness

Automated dispensing helps security manufacturer increase throughput and quality

GJD designs, produces and sells intruder detection products at its factory and head office in Heywood, Greater Manchester.

One of GJD's main products is its line of white-light and infra-red LED illuminators, marketed principally under the company's Clarius® brand. Used principally in security applications, they also find other uses, including broadcast production. High performance and optimum reliability are essential when considering that many installations are subjected to rigorous weather conditions. All products in the range are IP66 rated and UL Listed.

Constantly driving for product and process improvements, Operations Director John Hale was seeking a way to improve the way that the plastic lens was bonded to the extruded aluminium housing. Previously, a silicone had been applied manually from a 310ml cartridge. This was a time-consuming, ergonomically unsatisfactory process, which also resulted in material waste and clean-ups. Operators' inclination was to apply excessive silicone to ensure an effective seal, but this was oozing out on both the outside and inside of the assembly when the lens was applied. John's initiative coincided with an approach from a multinational company to manufacture selected products for global distribution.

Concluding that an automated dispensing solution would provide the best solution, John visited Intertronics' Technology Centre to carry out dispensing trials with GJD's assemblies. This resulted in the purchase of a **Fisnar Dispensing Robot** with a pneumatic dispensing valve, fed from the cartridge. The robot and valve combination led to substantially improved efficiency. After 14 months, in the interest of better repeatability, accuracy and production rates, it was decided to further upgrade to the **preeflow eco-PEN 600** precision volumetric, positive displacement dispensing pump, which delivered even more accurate volumes. *(continued on next page)*

The eco-PEN offers ±1% dosing accuracy, >99% repeatability and can dispense volume flows of 1.4ml to 16ml per minute. Four months later, a second, similar system with upgraded robot was purchased and installed for a new product line, as well as providing a back-up for the original system. The **Fisnar robot** combines precision positioning, simple step-by-step programming and compact footprint.

The original and subsequent installations were carried out by Intertronics, who also supplied and integrated the dispensing controllers and requisite tooling and bracketry. Both systems are fitted with **preeflow flowplus[16]** compact inline fluid pressure sensors, providing continuous flow monitoring for guaranteed process assurance.

John Hale said:

> *"It has really helped with consistency: we know we're going to get the same amount of silicone dispensed and that the product is going to be correct every time.*
>
> *"Our Illuminators carry a five-year warranty, so they have to be able to stand the test of time. Making sure that the silicone is consistently applied is a critical component in our production process. Also, with increased demand, moving from a manual process to an automated one has allowed us to get a lot more through production.*
>
> *"I'm very happy with the equipment, the way it works and the way it has been integrated into our processes."*

Commenting on Intertronics as a partner, John continued:

> *"One of the things that impressed us has been the support we've received. Any investment you make, once you've made that decision, there's an element of hope that the support will be there, and I can say it certainly has been with Intertronics.*
>
> *"We've worked with the Intertronics team to develop the equipment to meet our needs further than when it first arrived and I've found that it's never too much trouble. Any of our guys can pick the phone up – they'll try to diagnose over the phone, otherwise it won't be too long until they're on site. For anyone in manufacturing, that level of support is critical to keeping things moving. We wouldn't have bought an additional system if we hadn't been happy with the support we'd received."*

John also estimates that material savings in the order of 30% have been achieved since the introduction of automation.

Click here to watch a video of this case study

Fisnar Dispensing Robots

- Perform continuous path and point-to-point motion
- Dispense dots, lines, arcs and circles
- Quick 'Fluid Purge' button
- 100 programs, 400,000 points memory capacity, 4000 points per program
- Improve productivity and throughput

Applications include: Form-in-place gaskets, adhesives, potting and filling materials, coatings, gaskets, and shielding.

preeflow® eco-PEN 600 flowplus[16] inline sensor

- Precision, process stable dosing for repeatable results
- Reduced stress on material
- Wide control and application range
- Controlled reverse flow and clean product break
- Continuous flow rate monitoring
- Process assurance to monitor quality

Applications include: Electronics packaging, SMD/SMT, semiconductor, LCD/LED, medical, biological chemistry, laboratory, photovoltaic, optics and photonics.

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Automated Sealant Dispensing Proves a Winner for Innovative Golfing Product

“We have managed to increase production four-fold and enjoyed faster manufacturing time, reduced labour costs, and a consistently high-quality result with no defects or wasted material.”

Company:	Shot Scope
Industry:	Wearable Technology
Product Categories:	Dispensing, Sealing

CASE STUDY

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adhesives, coatings, sealants & equipment
for your manufacturing and technology applications

Fisnar F5200N.1
Dispensing robot

Fisnar 790HP-LF
High pressure dispensing valve

Fisnar SL101N
Digital liquid dispenser

Our customer

Shot Scope Technologies

Customer benefits

- Quote to delivery in two weeks
- Complete system set-up and configured on-site, ready to use
- Consistent, high-quality dispensing
- Zero defects
- No wasted material
- Faster manufacturing time
- Reduced labour costs

Automated sealant dispensing proves a winner for innovative golfing product

Shot Scope Technologies, based in Edinburgh, designs and manufactures innovative wearable technology which helps both professional and amateur golfers to improve their game. A keen golfer with a background in electronics design, CEO David Hunter set up the company in 2014 to develop the golf wearable, which collects and analyses over 100 key statistics from each round played, identifying shots, club used and GPS information. The data can then be easily uploaded to any smartphone or tablet (via an app) or computer.

David's team was looking for an effective way to seal the back of the device to the main body. Apart from the obvious need to prevent the ingress of water and dirt, it was also necessary to deal with humidity: playing in the sunshine of the Costa del Sol on one day followed by a round on a damp Scottish course the next could result in misting on the inside of the display screen. Stamping or printing a pre-formed gasket was considered, but thought too challenging owing to the thin 0.5mm gasket width. Manual dispensing of a silicone sealant was also rejected as being too tricky to get an accurate and tidy application.

Both David and subcontract manufacturer Greenfold Systems' Ian Kennedy were well aware of the benefits of automation, and contacted two potential suppliers.

Having discussed Shot Scope's requirements, Intertronics recommended a cost-effective combination consisting of an F5200N.1 gantry robot, 790HP-LF high pressure dispensing valve controlled by a SL101N digital liquid dispenser, and 310ml dispensing cartridge holder for the material feed – all manufactured by its partner Fisnar. This setup applies a single part RTV silicone, non-corrosive and suitable for electronics applications, which is supplied by Intertronics to Greenfold. The precisely applied silicone bead seals the unit.

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David recalls the specification and buying process:

> *"It seemed like a good solution and was within our budget. Intertronics understood what we were looking for, and sent us a couple of videos of applications similar to our own, together with some samples of dispensed liquid form-in-place gaskets."*

He adds:

> *"We declined the offer of a face-to-face demonstration as we were happy that the setup would do what we needed and that Intertronics would have the expertise to set the whole thing up."*

The curvature of the back of the wristband demanded robotic movement in the x, y and z axes. The equipment was purchased by Shot Scope, delivered to Greenfold Systems and set up quickly and easily by Intertronics' Paul Whitehead. Six backs are placed in a jig and the sealant is applied in under a minute, prior to hand-assembly to the unit's body.

Once the dispenser, valve and robot had been set up and working for a short time, Paul returned to refine the movement path and increase the speed.

Shot Scope's initial run was 1,250 units and they have increased production to 5,000 devices per quarter at the time of writing.

David has been impressed with both Intertronics as a supplier and indeed, the entire process:

> *"The service has been excellent, from getting to know our requirements to the short time taken to program the machine and show us a good sample, then investing the time in improving the process itself."*

He summarises the main benefits of the system as faster manufacturing time, reduced labour costs, a consistently high-quality result with no defects or wasted material.

Paul, a keen golfer himself, enjoyed working on this project:

> *"With Shot Scope, the combination of GPS and live performance tracking in one wearable package is a great aid to lowering one's handicap."*

Fisnar Dispensing Robots

- Perform continuous path and point-to-point motion
- Dispense dots, lines, arcs and circles
- Quick 'Fluid Purge' button
- 100 programs, 400,000 points memory capacity, 4000 points per program
- Improve productivity and throughput

Applications include: Form-in-place gaskets, adhesives, potting and filling materials, coatings, gaskets, and shielding

Fisnar 790HP-LF High Pressure Dispensing Valve

- Spool valve" design
- Pneumatically controlled
- High pressure fluid input up to 2500psi
- Suck-back eliminates post-dispense dripping

Applications include: Very high viscosity fluids, epoxies, UV adhesives, pastes, grease, silicones, sealants, RTVs

Contact us for more information on our Dispensing Equipment
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Mixing Silicones for Facial and Other Prosthetics

“It has allowed us to quickly produce homogenous silicone in large quantities that is free of air, transforming a time consuming, physical task into an automated effortless one.”

Company:	University Hospital Coventry
Industry:	Medical
Product Categories:	Mixing

CASE STUDY

intertronics
adhesives, coatings, sealants & equipment
for your manufacturing and technology applications

THINKY ARE-250
Mixing and degassing machine

Our customer

University Hospital Coventry

Customer benefits

- Shortened and simplified mixing process
- More reliable mixing
- Suitable for small quantities
- Consistent homogeneity

Mixing silicones for facial and other prosthetics

The manufacture of a medical prosthetic device for a patient's face or similar area is a highly skilled job; each one is unique, and needs to be handled with great sensitivity, as both functional and cosmetic considerations are involved. It may require careful mixing and colour matching of a silicone moulding compound, with no air entrapment, to ensure appearance and consistency of structure. Jim Dimond, Consultant Clinical Maxillofacial Prosthetist at University Hospital Coventry, explained how the **Thinky ARE-250** from Intertronics helped the hospital move from a lengthy, manual process requiring a skilled technician, to a short, reliable and automatic mixing process.

Originally, mixing at the hospital was carried out by hand using a palette knife in two stages – mixing and then flattening on a flat glass plate to squeeze out the air. This was arduous – especially for larger quantities required for hands, breasts, facial and other components – issues equally applicable to other silicone applications such as theatrical masks, plaster casting, special effects, model engineering, animatronics, life casting and pattern making. The manual procedure was laborious and very time consuming, as it generally required use of fillers for changing consistency, and small quantities of intense colour pigment being mixed with clear silicones to suit the individual patient.

Seeking a more efficient method of mixing the compound and other components, Jim contacted Product Specialist David Peat at Intertronics for a demonstration of the Thinky ARE-250 non-contact planetary mixer. The Thinky process, by means of both rotation and revolution of the material, mixes and degasses at the same time. The constituents are simply measured into a container which goes straight into the machine, saving time whilst reducing material waste and clean-ups.

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The Thinky solution was excellent for small quantities and also worked particularly well with their system of pre-preparing large batches of colour coded silicone - which was especially arduous and time consuming. The Thinky ARE-250 was found to easily process even highly viscous material, and once programmed ensured a thoroughly mixed, bubble-free compound to the required consistency for every batch without further intervention.

Jim commented:

> *"I have been doing this work for about 12 years and for the past 12 months have used the Thinky a great deal. It has allowed us to quickly produce homogenous silicone in large quantities that is free of air, transforming a time consuming, physical task into an automated effortless one."*

THINKY ARE-250 Mixer

- Fast mixing
- Degas and remove bubbles at the same time
- Mix in your product container
- Non-invasive
- From low viscosity to semi-solid materials
- Dry particle mixing
- Syringe degassing
- No cleaning between batches
- Consistent quality with all digital controls
- Multi-step mixing
- Hands-free processing

Applications include: To formulate and mix adhesives, sealants, moulding compounds, lubricants, slurries, coatings, inks, paints, abrasives, bio chemicals, cements, medical compounds, cosmetics/personal care materials, detergents, conductive pastes, dental materials, foods, construction materials or any other materials which are hard to mix, hard to degas, or hard to wet.

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What is your PRODUCTIVITY POTENTIAL?

Let's talk about the possibilities for your application

Get in touch with our product specialists to discuss your requirements and how we can help:

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