

Laboratory Products Focus

LABS EXAMINE BENEFITS OF DESIGN

Judith Gaskell

Mention the word design and you'll probably think of trendy gadgets, cars and expensive toys for the home. But what about the instruments you or your colleagues are using everyday? Have you noticed that products that might once have been ugly black boxes are starting to feature smooth, ergonomic lines and stylish colours?

If you have, you may be wondering why there needs to be a design element for a product that is seemingly all about function.

"Until very recently design played little or no part the development of lab equipment, but we're seeing more and more lab equipment companies coming to us wanting a design that will help them stand out from the competition," says Bruce Hutchison of industrial design company DesignEdge: "In the past, lab equipment was usually developed with little emphasis on ergonomics and aesthetics. Many products were made entirely of sheet metal and designed with limited understanding of manufacturing methods or user needs. This often led to products that worked well technically, but were big, ugly, expensive and didn't work ergonomically"

So can design really do more than make a product look better in the lab? Yes, says Bruce Hutchison. If you pick up a product and immediately know how to use it, that's because the design has made it intuitive to do so. If a product's comfortable to handle that's because it's been designed to be ergonomic. And it may surprise people to know that design can also save money, such as through choice of materials or production processes. The wrong design on the other hand can be costly, difficult to manufacture and turn away potential customers who may choose a competitor's product instead."

Offering a product that the user is comfortable with is key to its success says Roger Lee-Smith of Genevac, experts in solvent evaporation technology: "The user wants a product that they can get to grips with quickly, that is easy to use each time they require it and, above all, has a low frustration level."

People are also increasingly wanting to be surrounded by products that are aesthetically pleasing. Design is in every part of our lives, it's on the national curriculum, it comes into every product we choose as consumers, so it is inevitably making its presence felt in other markets, such as technical products. For manufacturers it offers a way to compete and really make their product stand out from the crowd, as Roger Lee-Smith explains: "We have always tried to put a lot of emphasis on aesthetic design. If a product's eye-catching people are going to notice it and want to know more. And if two products are good in every other aspect the buyer is going to choose the one that's more aesthetically pleasing. It's also good for company morale, with staff feeling proud of the products they produce, market or sell."



Figure 1. Eyecatching Design at Genevac

So how do designers go about creating these designs? Although the lab sector's move towards more interesting design is following the lead of consumer products, the actual process of creating the design is very different. The finished design needs to be a compromise between something that is practical and affordable and something that is unique and stylish as Bruce Hutchison explains: "We can't just create eye-catching looks that will have great appeal but won't allow the product to do its job. Unlike consumer products, each one tends to be unique and there are a huge number of technical and safety issues we have to bear in mind. In addition the products usually have very complex internal workings that need to be considered. The challenge is to design a good-looking, functional product

that still maintains all the efficiency and precision expected of a scientific piece of equipment. We achieve this by working closely with our clients and listening to feedback from potential or existing users."

Most companies that go to outside designers are looking for a design that emphasises what's new and unique about their product. They are excited about their new development and want this to be shown to the world. Just surrounding the internal mechanisms with a cheap box isn't going to achieve this.



Figure 2. The Renishaw Dental Scanner (Incise™)

This was the case when Renishaw launched incise™, its contact dental scanner. "We wanted a design that brought attention grabbing aesthetics to the product," says Bryan Austin, General Manager of Renishaw's dental products division. But the product still had to fit in with the design of the complex internal working structure and be appropriate to the medical market and the environments it would be used in. What resulted was a moulded construction that achieves a sculptural look using a unique split line feature that wraps around the product in a continuous flowing line. "Customers found it appealing and eye catching and its design became quite a talking point," says Bryan Austin.

It was a realisation that the environment in which its products were being used was becoming more and more design conscious that encouraged Tinsley Medical Instruments to look again at the design of its ophthalmic products. Says the company's Adrian Church:

"Good design is now a lot more important to opticians, due to the competition. It's now good to have nice looking equipment to let customers know that you provide a quality service."

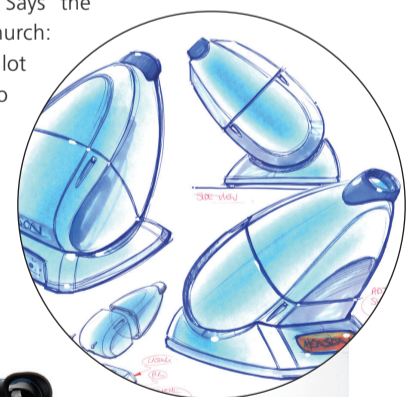


Figure 3. The Henson 7000 from Tinsley for Glaucoma testing.

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"This encouraged the company to bring in DesignEdge for the design of its field analyser instrument to detect and monitor Glaucoma conditions, the Henson 7000. The goal was to move away from the more "boxy" styles that would previously have been acceptable.

"Our equipment now fits in nicely with the other equipment that opticians have in their practice. It's been very well received in the industry. In fact so much so that we are now looking to modify other products using the techniques we have learnt. I really believe it is the best union of form and function."

While these companies looked for new design for new products, others are looking to design to update existing products in response to demand for products that are more visually striking and easier to use. Uson, producers of leak detection and leak testing equipment, recently redesigned its Sprint leak tester in response to user feedback about

improving the interface, to incorporate new technology and features and also to improve the look to gain an edge over with the competition. Says Martin Bryant, the company's Director of Sales and Marketing: "Design is important for differentiation. Customers associate good design with companies that provide high quality products. This does not necessarily mean complicated, but does mean a product which is functional, easy to use and delivers the benefits most valued by the customer." DesignEdge took on the challenge with the aim of transforming the original design. By introducing plastic moulding they were immediately able to give the product a more up to date style, as well as reduce weight, bulk and cost.

Working closely with Uson, DesignEdge were able to introduce

a larger, clearer new screen and place the controls in ergonomically sound positions in an intuitive, user-centered design. Extra buttons and connectors were incorporated in a moulded, front-mounted rubber keypad, which greatly reduced manufacturing costs and made for simple assembly. Colours were kept clean, fresh and neutral, but with bright colours used on the buttons to help make the interface clear and also to tie-in with the Uson company logo colours of red and green.

Adds Martin Bryant: "We have produced a product which very much maintains the core attractions of the tester while bringing it up to date. The new design brings modern features such as USB connectivity and colour graphics screen to a tried and trusted product. Customers seem excited about the new Sprint iQ and we have already received orders for it sight unseen."

And while many within the laboratory sector have been keen to embrace a move towards more aesthetically pleasing design, for others it's a slower process as Bruce Hutchison explains: "Sometimes companies that have never used industrial design consultants before can be unsure what to expect from us. We always relish the challenge of surprising and delighting new customers, showing them we're not just felt-tip fairies, but that we have a great deal of expertise in mechanical design and manufacturing processes. As an outsider one of your greatest strengths is that you can think differently and approach problems from other angles. We tend to find that although the occasional client can be initially skeptical, once we present our concepts to them, it can be refreshing and inspiring for them to see new design



Figure 4. Before and after shots of the Uson Sprint IQ.

possibilities they may not have come up with themselves. We always aim to exceed expectations."

And for those using the lab equipment every day having products that look good as well as function well gives them some kudos, as Geneva's Roger Lee-Smith explains: "We sell some very high value products and when people buy them they want something that looks good in the lab and will be noticed by others."

So while laboratory equipment might not have (or need to have) the design credentials of an iPod, design is certainly playing an increasingly important part in this sector for both manufacturers and users. If products are easier to get to grips with, more comfortable to use and look good there can be little argument that the lab is better by design.

Flexible New Controlled Lab Reactor System

The new ReactoMate from **Asynt** is a competitively priced laboratory reaction system that is available in convenient standard configurations or can be fully customised to meet customers' specific requirements.

Announcing the new product, Asynt MD Martyn Fordham said: "We became aware of a real need for a CLR (Controlled Lab Reactor) system with the flexibility to meet users' specific needs, but at a sensible price. Using the 35 years combined experience in the Asynt technical team and our access to the best technologies in laboratory synthesis, we have put together a highly competent yet competitively priced package that will handle all reaction volumes from 10ml to 30 litres under precisely controlled conditions"

ReactoMate displays all the key features desirable in a CLR – precise control of reaction variables, a powerful direct drive overhead stirrer, excellent visibility (the outer vacuum jacket option prevents ice formation at sub-ambient temperatures), quick release fittings for convenient vessel change, and the ability to operate under vacuum or an inert atmosphere. Comprehensive data logging facilities are also available for reaction variables.

Circle no. 40



New Products at Society of Biomolecular Screening Meeting

Thermo Fisher Scientific, Inc has announced the launch of new products at the Society of Biomolecular Screening Meeting. Among the new products are: The Thermo Scientific Matrix PlateMate 2x3, a 6-position automated liquid handler - perfect for a wide range of applications: plate pooling, 96 to 384 and 384 to 1536 plate reformatting, genomic, cell-based, and IC50/EC50. Easily integrated into larger robotic systems, the PlateMate 2x3 features a volume range of 0.1uL -300 µl.

Thermo Scientific Matrix 12 ml ScrewTop, is a large volume 2D barcoded storage tubes in a standard footprint rack of 24 tubes. Ideal for storing larger volumes, including clinical, tissue, and any liquid or solid samples, the globally unique, permanent 2D barcode ensures secure tracking and storage.

Thermo Scientific Matrix glass 2D barcoded storage tubes, the ideal solution for samples in DMSO, chlorinated solvents and other harsh chemicals when used with our SilicoSeals. Pair them with our SeptraSeals and DuraSeals in applications where newly-synthesised compounds need to be dried-down and subsequently resolubilised by hand or via automation. Permanent 2D barcode ensures secure tracking and storage.

Circle no. 39



Level Sensing Probes Ensure Smooth Processing

For automatic control in analytical instruments, **Diba's** Conductive Level Sensing Probes monitor liquid quantity, notifying system software when processing fluid bottles have reached full or empty states. In addition to allowing instrument software to detect and react to system status, Diba's fluoropolymer lined aspirate and dispense probes provide an inert, consistent fluid path with no possibility of leaks from tip to pump.

Diba's Level Sensing Probes accurately monitor sample levels in cuvettes, as well as waste, reagent, and buffer solutions, providing analytical instrument software the information needed to direct system changes. Depending on the application, information from the probes can be used by the system to automatically stop processing until reagent or buffer solution is replenished or a waste bottle is emptied. The compact probes require only a simple electrical connection and have no moving parts to fail, resulting in more reliable operation when compared to the bulky float switches traditionally used for level sensing.

The inner diameter of Diba's stainless steel probe can be lined with PTFE or FEP fluoropolymer tubing to create a single inert fluid path, eliminating the possibility of unwanted chemical interaction and the potential introduction of air along the entire length of the tube. The design reduces carryover and improves wash capabilities, retaining the necessary flow characteristics for efficient system performance.

Circle no. 41

