Project Portfolio

Date: 2023 Rev.1

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Introduction

An Independent Designer since October 1999,

with Over thirty years experience in design and development.

Previously employed by UNILEVER as Design Manager from 1988 – 1999.

working on and managing international design teams to take projects from concept to production.

Experienced in product, special purpose machinery and injection mould tooling design and development, project planning, management and budget control with a good working knowledge of production engineering in both high and low volume markets.

Experienced within the following market sectors:

- Packaging (Structural and Flexible)
- Pharmaceutical (Product and SPM)
- Cryogenics
- Currency Recognition (Bills)
- Medical (Product)
- Laboratory Systems
- Lighting (Product)
- Marine
- Consumer Products
- Industrial Products
- Automotive (SPM)

Introduction

An experienced user of 3D CAD and CAD system management since 1992, including Euclid and AutoCAD.

Also an experienced user of Microsoft and Adobe applications, and an enthusiastic good-humoured team player.

Now specialising in the use of SolidWorks, purchased after completion of training in September 1998. Currently running the latest version of SolidWorks (all versions since 1998 also available), which can be made available for use.

I can take your product and packaging ideas from "napkin sketches" to concepts then on to manufactured items.

I can resolve all aesthetic and engineering requirements and liaise with manufacturers to achieve a final design that captures the original design intent – having distilled it, making it easy and economical to manufacture.

I have experienced many manufacturing process' including tool making, injection moulding, extrusion, rotational moulding, blow moulding (including stretch blow), carton manufacture, vacuum forming, glass bottles/jars and all manner of downstream assembly and packaging process' such as labelling, filling lines and flow wrapping.

Alongside this I have a comprehensive network of associates and technology partners including close links with universities, research establishments, OEM's and manufacturers who can be called upon should further expertise be required.

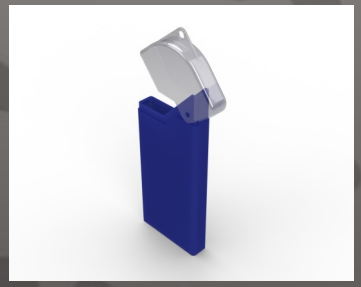
Fast Moving Consumer Goods

Insulated Cup For a Microwaveable Hot Beverage (2009-2010)

Commissioned to design an insulated cup for microwaveable hot beverages, The key features of the design were to reduce the complexity of the current design but still allowing processing on the existing filling line.

Combined Spoon and Straw for Thick Shakes (2009)

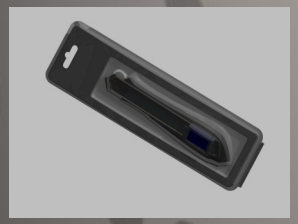
Commissioned to design a combined spoon and straw to enable the consumption of thick shakes via the straw element and the consumption of candy additions via the spoon element.
The product is constructed of 3 parts that are stored in the lid of the shake and are snapped together by the user.



Design of 3 packaging options for SDS Hammer drill bits (2007)

Commissioned to produce 3 options to package the above drill bits – either as a number of same size drill bits or a selection of sizes from 4mm to 10mm dia.

Fast Moving Consumer Goods



Clam shell pack for a craft knife & Spare Blades (2007)

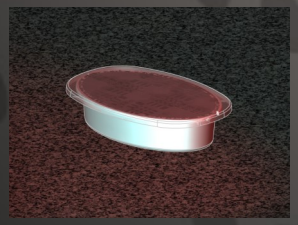
Commissioned to design and detail for manufacture a number of vacuum formed packs of clamshell design for a craft knife and 3 variants of spare blade packs.

Foil Trays for Chill/Cook Food Use (2007-2017)

Commissioned to design, detail & render a family of aluminium foil trays for chill/cook food use. The trays are designed to be as strong – if not stronger than existing trays on the market – but through clever design and rib geometry they use less aluminium.

Ariel Excel Gel Packaging Concepts (2006)

Commissioned to Produce conceptual 3D models of a range of 5 concepts with 4 size variant bottles per range, including a number of closure/dosing options. The "favourite" concept was then selected for further development By the client.



Design & Detailing of 5 Concepts for Dairy Spread Packaging (2006)

Commissioned to Design & fully detail 5 product concepts. The concepts are being manufactured (Rapid prototypes/rapid tooling) for user acceptance trials. One concept will then be selected for further development.

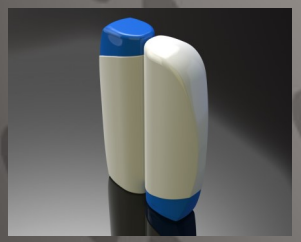
Conceptual Design & Detailing of 4 vessels for dispensing a liquid spread. (2006)

Commissioned to Design & fully detail 4 product concepts. The concepts are being manufactured (Rapid prototypes/rapid tooling) for user acceptance trials. One concept will then be selected for further development.

Fast Moving Consumer Goods

Jar & Closure For A Pressurised Alcoholic Beverage (2006)

Commissioned to take the conceptual 3D models of the Jar & Closure System and fully define the designs to enable the parts to be manufactured using the injection moulding process.



Head and Shoulders Shampoo and Conditioner Bottles (2009)

Commissioned to take the conceptual 3D models of the Shampoo and Conditioner bottles and closures and fully define the designs to enable the parts to be manufactured using the injection and blow moulding process'.

SMIRNOFF Vodka Bottle Concepts (2004)

Commissioned to Design & fully detail 3 product concepts to refresh the current bottle design. The concepts must be associated with the current brand identity but the styling should bring the branding up to date.

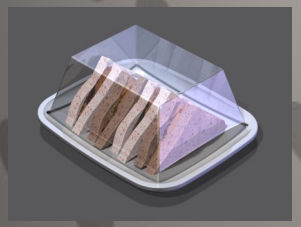
SCHWEPPES Fruit Juice Bottles (2004)

Produce conceptual 3D models of a range of fruit juice bottles with 3 size variants.

SCHWEPPES Mixer Bottles (2003)

Produce a conceptual 3D model of a 1 litre Mixer bottles and closure. The closure should be designed so as to double as a spirit measure.

Fast Moving Consumer Goods



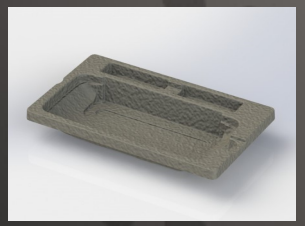
Sandwich Plate and Cover (2007)

Commissioned to Produce a conceptual 3D model of a sandwich plate and cover for Marks and Spencer.

Note: Sandwiches also modelled in SolidWorks.

75cl Wine Bottle (2012)

Commissioned to Produce conceptual 3D models of a range of Wine Bottles with size and shape Variants for 50 and 75 cl volumes.

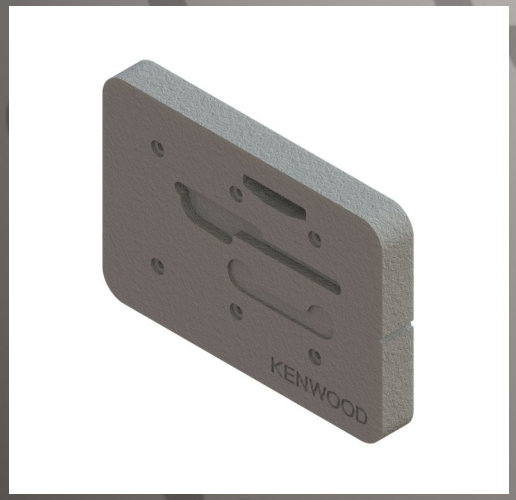


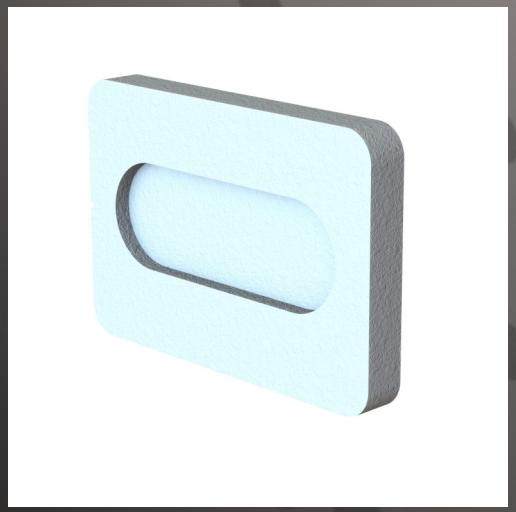
Pulp Tray Packaging For BT Hub 4 (2012)

Commissioned to take the 3D model of the BT Hub 4 and generate a 3D model & 2D detail Drawing for the pulp tray packaging.

Pulp Tray Packaging For BT Hub 4.5 (2012)

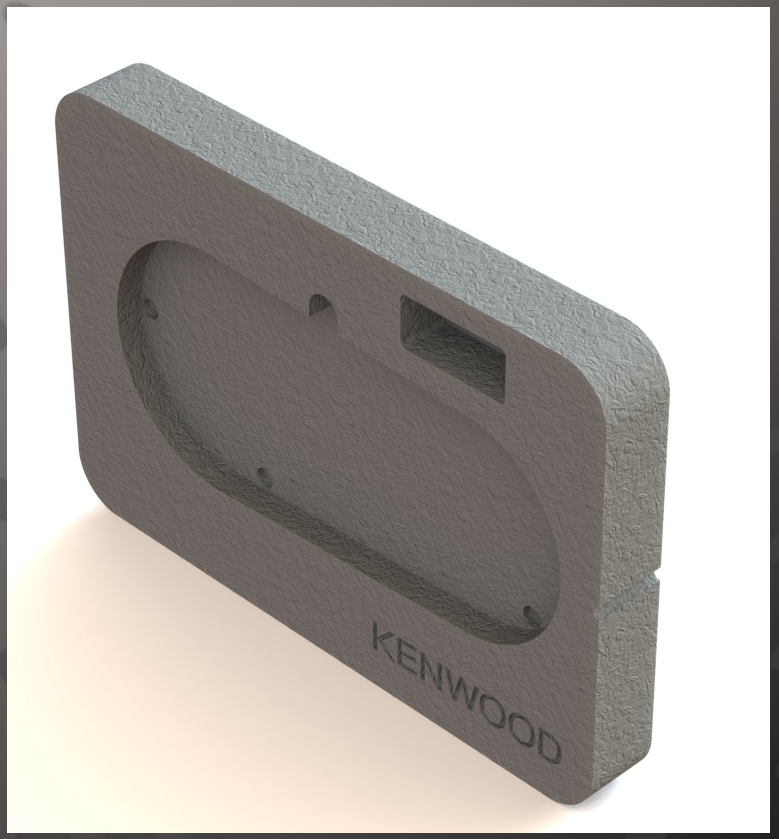
Commissioned to take the 3D model of the BT Hub 4.5 and generate a 3D model & 2D detail Drawing for the pulp tray packaging.



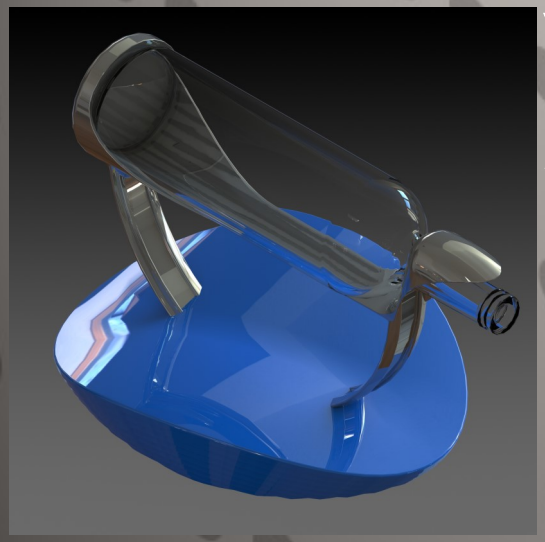


Foam Packaging For Food Mixer (2013)

Commissioned to Design and 3D model Top and Bottom Foam packaging and generate a 3D model & 2D detail Drawing for the pulp tray packaging.

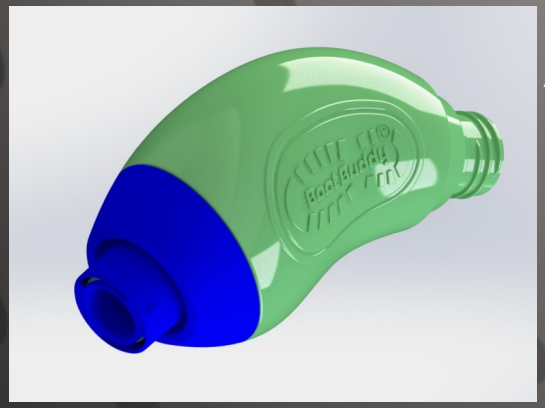


Fast Moving Consumer Goods



Vodka Pourer (2013)

Commissioned to produce a Conceptual Design for a Vodka pourer to suit a 4.5 litre bottle. The pourer is based upon sketches provided by the client.



Boot Buddy (2014)

As seen on Dragon's Den–Commissioned to produce an improved method of attaching the "Blue" End Cap as the current method is difficult and time consuming.

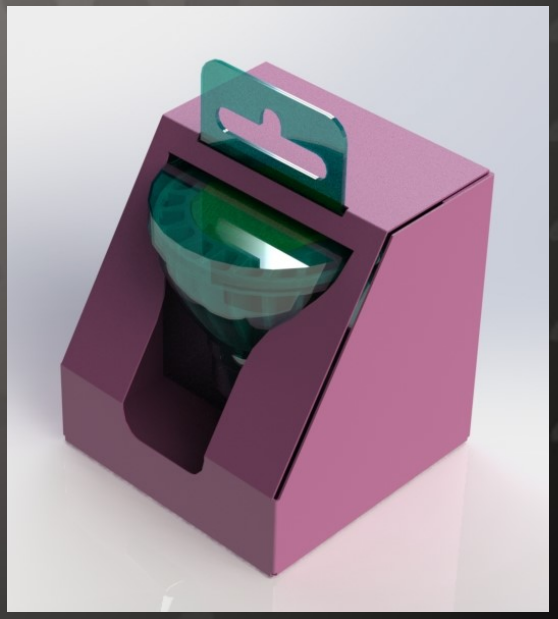
Blister Packaging For Air Freshener (2013)

Commissioned to Design and 3D model Blister packaging For An Air Freshener

Fast Moving Consumer Goods

Blister Packaging For LED Bulbs (2014)

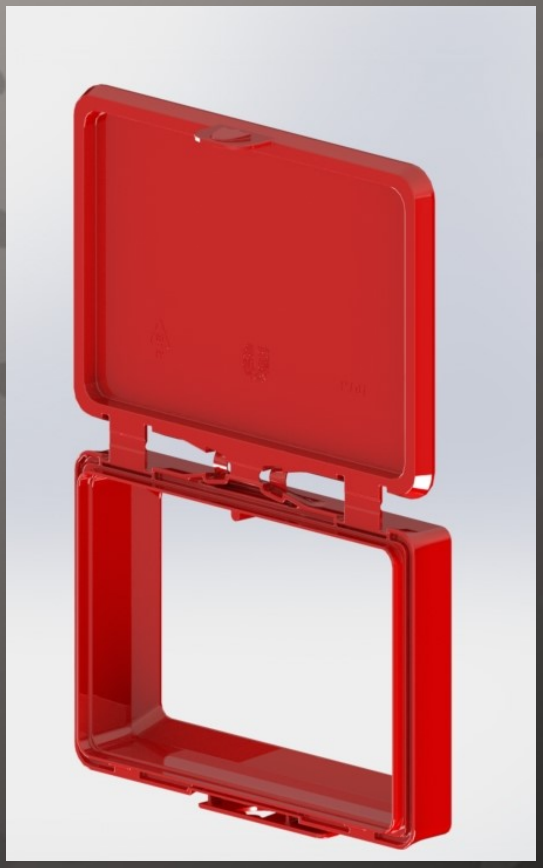
Commissioned to Design and 3D model packaging For A Range of Lightbulbs



Fast Moving Consumer Goods

Red Label Tea Closure With Living Hinge

Commissioned to design a new closure for the 250g and 500g Red Label Tea packaging.



AVON 100ml Naturals and 100ml footworks bottles (2016)

Commissioned by the client to manage the re-tooling of the bottles and the subsequent production, filling and capping by alternative suppliers.

The project included the scrutinization of the current product specification, manufacturing process, testing process, filling and packing processes to ensure the re-tooled products were as good, if not better than the ones they were replacing.

Fast Moving Consumer Goods

Sauce Bottle With Integral dosing Lid (2016)

Commissioned by the client to design a reuseable plastic bottle with dosing lid for the preparation of cooking sauces.

Jeyes Hygiene Ensign Scout Tub Vacuum Cleaner (1989)

To design a small tub vacuum cleaner. The machine should be:

- Light & easy to carry with a recessed carrying handle
- Use standard/common parts where possible
- Have a built in thermal overload
- Be able to be used with or without paper or cloth dust bags
- Manufactured & assembled in house.
- Utilise CINPRES technology to reduce manufacturing costs

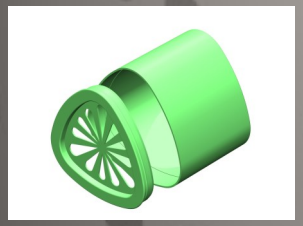
Project Budget: £50,000.00

Responsible for:

- The design & development of the product.
- The manufacture & testing of engineering prototypes & models
- The determination of product specifications & operating parameters.
- Initial product costings.

Notes:

By using some parts from the SCOUT project & where possible parts from the SDV MK1 the machine was produced in house & on the same production line. The use of common parts not only resulted in less SKU's & fewer service spares parts, but also in more flexibility allowing production to switch between models & versions almost instantly.



Unilever Leverfresh Gel Air Freshener (1991)

To redesign the current gel air freshener container in order to maintain supply as the existing cheap looking hand cream pot is to be deleted from the suppliers product range. This gives the opportunity to reduce the selling price by £0.05 per unit & increase sales through:

- Improved shelf appeal
- Easier "stackability" on shelf to maximise shelf space
- Greater attractiveness to end users
- Improved Security
- Improved fragrance.

Project Budget: £26,000.00

Role: Technical Expert responsible for:-

- The evaluation of the prototype parts & translation of the conceptual designs into production.
- The definition of material specifications to meet the requirements of the project brief.
- Ensuring all 3rd party sourced tooling, materials, suppliers & components meet the companies requirements

The new gel pots are now selling successfully, the unique hidden "locking bayonet" feature is proving very successful in reducing thefts from public buildings & hotels. Ensuring all 3rd party sourced tooling, materials, suppliers & components meet the companies requirements.

Hygiene & Personal Care

Unilever Leverline Range (1992)

A range of products that have been developed by Lever Industrial (Maarssen) in conjunction with a leading Dutch design consultant. The system will be marketed under the Leverline brand name & will include the following products:

- Liquid Soap Dispenser
- Hand Drier (Hot Air, 230V)
- Air freshener (battery operated)

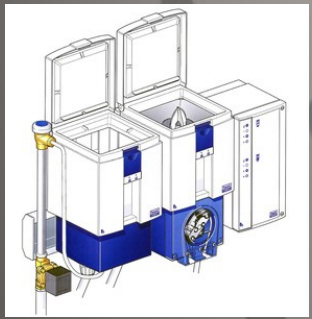
Role :

UK Project Leader (Design) Responsible for the local management of the design & development phases of the international project to ensure that marketing briefs, specifications, time-scales & capital expenditure budgets are met.

- To evaluate the prototype parts & translate the conceptual designs into full working drawings.
- To define material specifications to meet the requirements of the project brief.
- To source all tooling, materials & components.
- To set up an in house production facility to manufacture & distribute the products.

Notes:

The initial product styling for the Leverline range was conceived by colleagues in Holland with the aid of design consultants Ninaber Peters & Krouwl of Leiden. The subsequent tasks of integrating bespoke electronics & designing the components for manufacture, production, assembly & fitness for purpose were handed over to the High Wycombe design team.



Unilever Compac MWW Dosing System (1993–1995)

To progress from the "concept" stage through the "detail" stage to production a dispensing system that has been developed by Lever Industrial (Maarssen) in conjunction with a leading Dutch design consultant. The function of the dispenser is to automatically dose detergent & rinse aid into industrial mechanical dish washing machines. The role of the UK design team is to:

- Evaluate the prototype parts & translate the conceptual designs into full working drawings.
- Define material specifications to meet the requirements of the project brief
- Source all tooling, materials & components.
- To set up an in-house production facility to manufacture & distribute the products.

Project Budget: £100,000.00

Notes:

The initial product styling for the Leverline range was conceived by colleagues in Holland with the aid of design consultants Ninaber Peters & Krouwl of Leiden. The subsequent tasks of integrating bespoke electronics & designing the components for manufacture, production, assembly & fitness for purpose were handed over to the High Wycombe design team.

Unilever Taski Single Disk Floor Cleaning Machines (1996–1998)

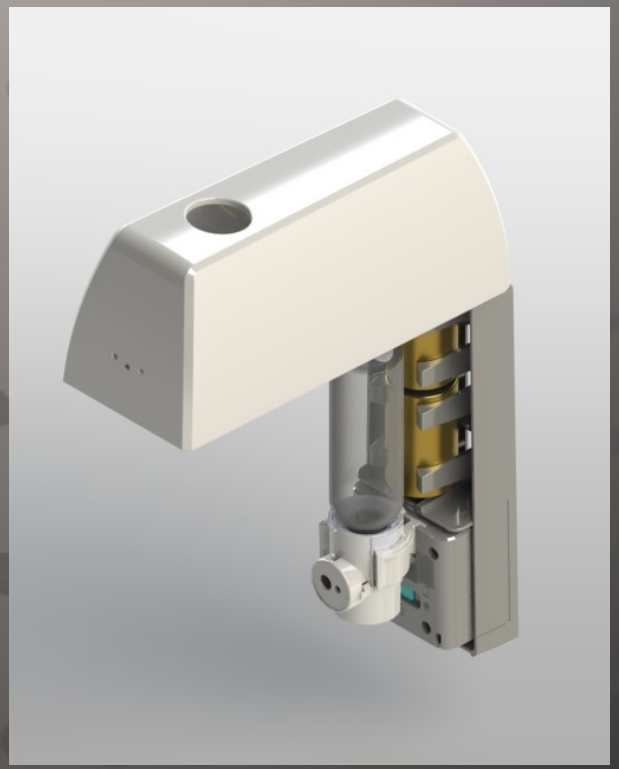
To design & develop a range of single disc floor cleaning machines which are an evolution of the current products. The new products must establish a strong corporate identity or "family image" which will support their progressive introduction over the next six years, the key elements of the design philosophy being:

- Eye catching futuristic image
- Corporate identifiable range with "family look"
- Low profile simple 'soft line' styling
- Integrated modular construction of machine & accessories
- Commonality of major components
- Use of lightweight plastic components
- Incorporation of new component & manufacturing technologies where appropriate
- Enhancement of cost competitiveness, incorporation of new USPs
- Maintenance of traditional perception of good reliability
- Designed for 3 year warranty

At the end of 1996 the High Wycombe Innovation Centre for machines was closed resulting in all design & development work being transferred to Switzerland. The concept stage of this project had been completed & prototypes of some of the variants produced using rapid prototyping techniques.

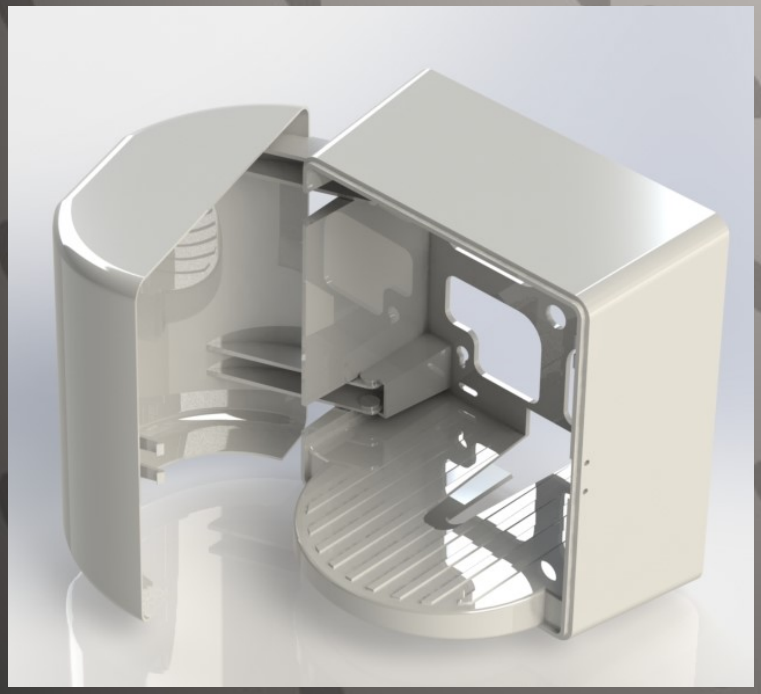
Atrium Solo 2 Air freshener (2011-2012)

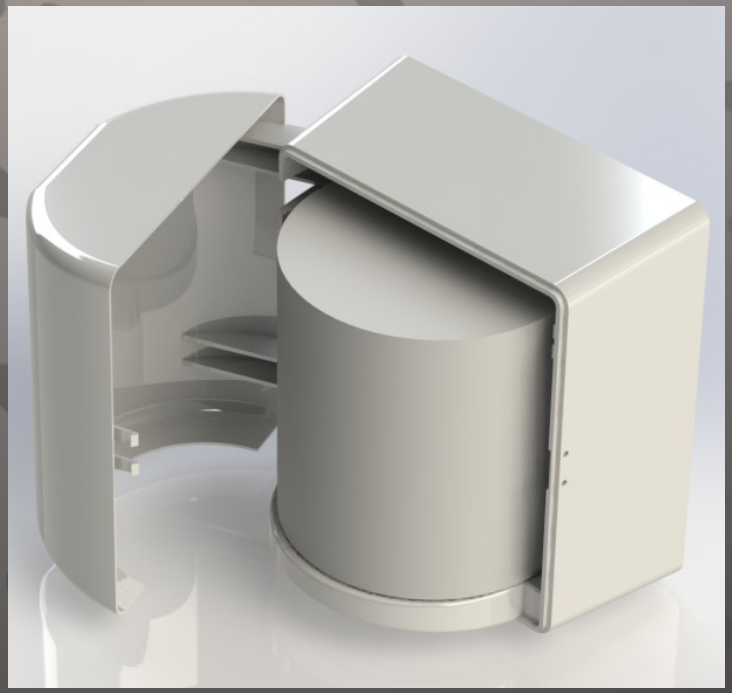
Commissioned to design from scratch a battery powered air freshener incorporating the patented Atrium electrostatic dispensing technology.

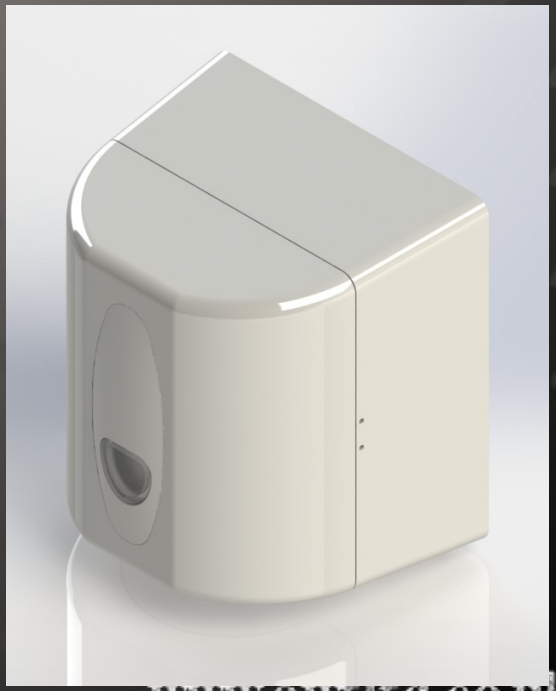


Jumbo Roll Paper Dispenser (2013)

Commissioned to Design and 3D model a Paper Dispenser for Hand towels







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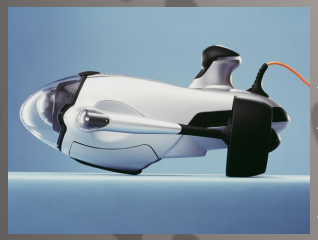
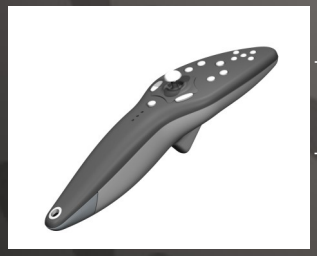


H2EYE SPYFISH–FISH (2000 - 2001)

A MEMBER OF THE DESIGN TEAM TO DESIGN OF A REMOTE OCEANIC VEHICLE (ROV) AND ASSOCIATED EQUIPMENT FOR LEISURE AND LIGHT INDUSTRIAL USAGE.

THE ROV IS DESIGNED TO DIVE TO DEPTHS OF UP TO 150 METRES. THE SYSTEM INCLUDES: ROV, CABLE WINDER, BATTERY CHARGER, LAPTOP AND REMOTE CONTROL. ALL SYSTEM MODULES ARE PROOFED TO A MINIMUM OF IP68.

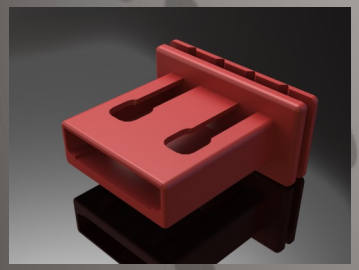
THE SPYFISH SYSTEM IS AN STV (SUBMARINE TELEVISION VEHICLE) INTENDED FOR LEISURE USE. IT CONTAINS A NUMBER OF COMPONENTS WHICH CONNECT TOGETHER IN A PROPRIETARY MANNER. STANDARD INTERFACES ARE SUPPLIED FOR TV OUTPUT AND PC CONNECTION AS SPECIFIED.



H2EYE SPYFISH–HAND CONTROLLER (2000 - 2001)

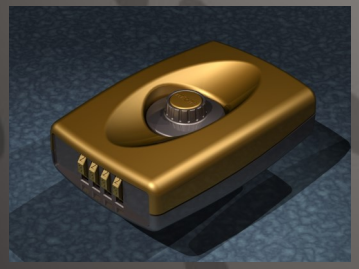
TASKED TO TAKE THE CONCEPTUAL 3D CAD MODEL OF THE REMOTE CONTROL DEVICE FOR SPYFISH AND PRODUCE PARTS AND SUB ASSEMBLIES IN READINESS FOR TOOLING AND MANUFACTURE.

Security



Datatite USB Security device (2007)

Commissioned to design, detail and produce rapid prototypes of a USB security device in accordance with the clients patent pending concept.



Key Store (2004)

Commissioned to take the original concept of the security device and produce fully detailed and Styled 3D CAD models for the production of prototype parts for user acceptance trials.

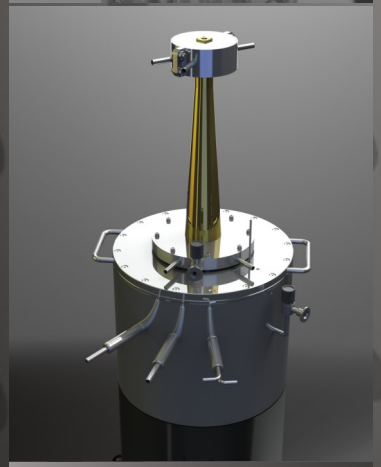
Security Camera Styling (2004)

Commissioned to re-style the clients existing product and deliver fully detailed designs for the production of prototype parts for field trials.

Medical, Pharmaceutical & Scientific

Haemo-Dialysis Cartridge (2009)

Commissioned to design a Dialysis Cartridge for a Portable Kidney Dialysis Machine based upon the clients current technology and prototypes.

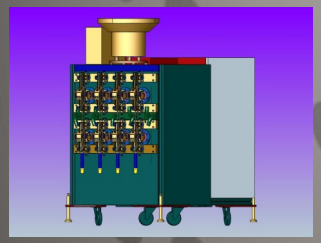


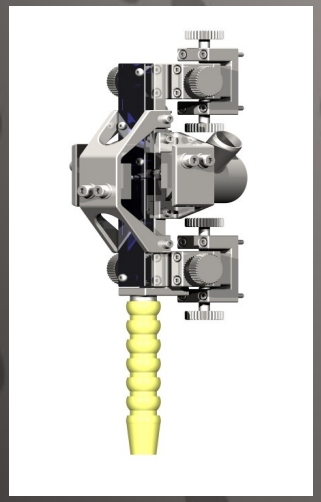
Cryogenic Test Equipment (2006)

Design and fully detail for manufacture cryogenic equipment for testing tessellating terahertz radar absorbing materials.

Filtered Water Dispensing Unit For Laboratory Use (2005)

Commissioned to take the conceptual prototype and create production ready part and assembly drawings and a fully detailed BOM in readiness for volume manufacture.





Diffcore SPM (2001 – 2002)

Commissioned to design four special purpose pharmaceutical machines to FDA regulatory requirements for use in a sterile manufacturing environment and complying to GMP requirements and proofed to a minimum of IP65.

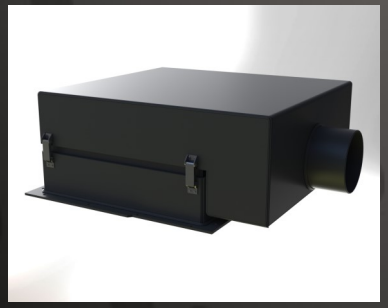
In essence each machine will be identical in operation, however, each machine must be designed to operate in disparate geographical areas.

Each tablet is coated in a non soluble barrier material of 0.1mm thickness.

Each tablet is to have the coating removed in a specific area on both sides to allow controlled release of the drug.

When each tablet is "drilled" to remove the coating it is important that the depth of the hole is controlled to within 0.01mm to ensure that a minimum amount of active ingredient is lost and thus dust and wastage is kept to a manageable level.

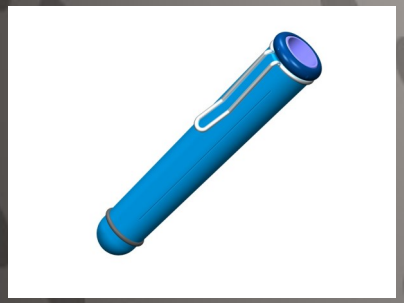
Each machine is to be capable of processing a minimum of 100,000 tablets per hour.



Design and Detail Filter Systems for two sizes of Biological Safety Cabinet (2005)

Commissioned to produce 3D designs and 2D details for the manufacture by fabrication of the above products.

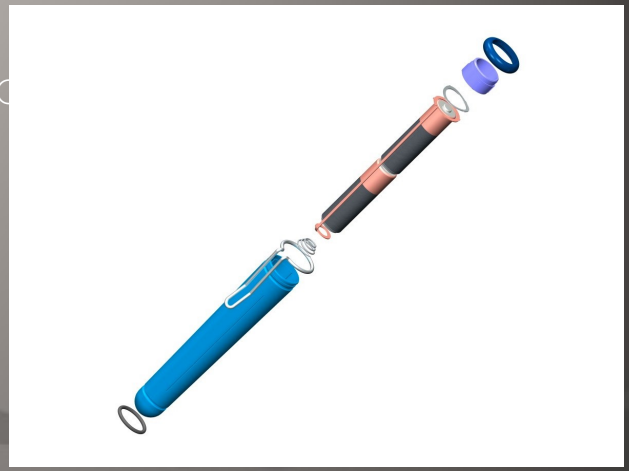
Medical, Pharmaceutical & Scientific

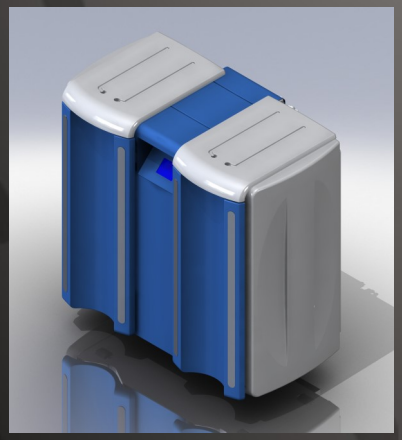


Keeler Ophthalmoscope body (2000)

Commissioned to Design and develop a low co
Ophthalmoscope body for use "in the field".

- The product should be self powered
- Able to accept all existing "heads"
- Robust and durable





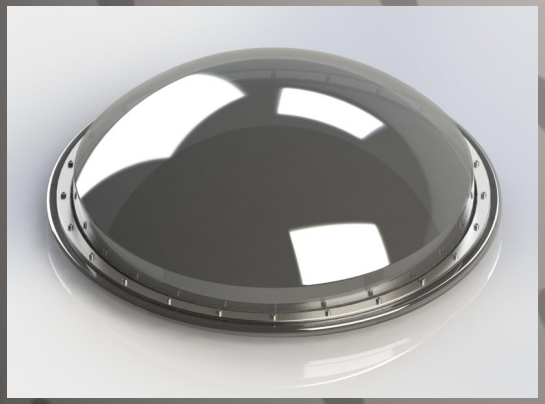
A Range Of Water Purification Units To Purify 60–125 Litres Per Hour(2010)

Commissioned to take the conceptual prototype and create a range of 4 variants.

All 4 variants were fully detailed ready for manufacture. All parts sub-assemblies and assemblies were modelled in 3D with fully detailed drawings and a fully detailed BOM.

All assembly data was integrated in the sub-assembly, assembly and General Arrangement drawings.

Medical, Pharmaceutical & Scientific



Radome (2017)

Commissioned to produce "a rough guide to manufacturing feasibility and order of magnitude cost for 1 item, and batches of 10 items".

Following the completion of the "Project Definition" document some assumptions had to be made in order to complete the study, namely:

- 4 possible methods of manufacture would be investigated;
- Rotational(Roto)-moulding,
- Vacuum(Vac)-Forming,
- GRP

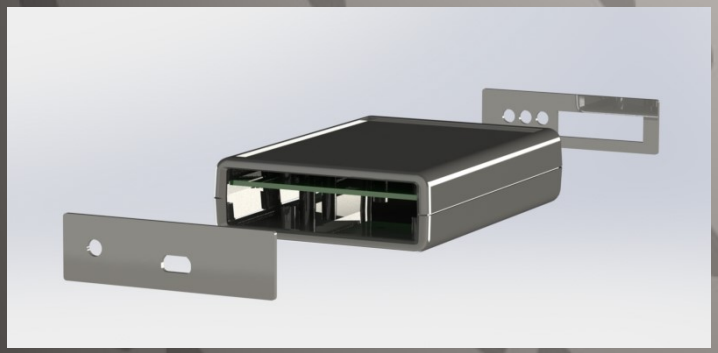
Part files (3D and 2D CAD) for each method have been generated:

- Roto-Moulded
- Half wave
- GRP; Thin Wall High Dielectric
- PU; Quarter Wave
- Vac-Formed; Low Dielectric

Additional Part files (3D and 2D CAD) have been generated to establish a possible sealing arrangement and mounting arrangement to the vehicle. This includes additional bespoke metal and rubber parts - as well as off the shelf fasteners. Resistance to any specific chemicals was not indicated – so only resistance to general chemicals used in vehicle cleaning were considered. Resistance to any specific forces was not indicated – so only resistance to general impacts from road debris would be considered.

FOCUS:

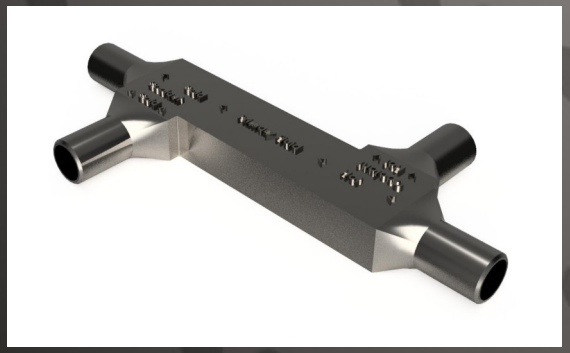
This report will concentrate mainly on the design and manufacturing feasibility for the RADOME, and although important, the additional parts can be classified as general mechanical engineering parts – and as such do not require any special treatment.



Enclosure End panels (2018)

Commissioned to design bespoke flat end panels to retro fit into an "off the shelf" electrical enclosure.

Also commissioned to produce 10–off each part by 3D printing in ABS



Heat Exchanger (2020)

Commissioned to Design a Cross Flow Heat Exchanger and to supply 2D drawings and part specifications so Parts can be manufactured.

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HOZELOCK MK2 HOSE END FITTINGS RANGE (1986)

DESIGN A NEW RANGE OF HOSE END FITTINGS TO REPLACE THE EXISTING RANGE, THE NEW RANGE WILL INCLUDE: HOSE CONNECTOR, WATER STOP, HOSE MENDER, SPRAY NOZZLE, DOUBLE SPIGOT, TAP CONNECTORS (BSP & NPT).

RESPONSIBLE FOR THE DESIGN & DEVELOPMENT OF THE PRODUCTS, THE MANUFACTURE & TESTING OF ENGINEERING PROTOTYPES & MODELS, THE DETERMINATION OF PRODUCT SPECIFICATIONS & OPERATING PARAMETERS, INITIAL PRODUCT COSTINGS.

THE NEW DESIGN HOSE CONNECTOR CONTAINS NO METAL PARTS & LESS PARTS THAN IT'S PREDECESSOR, SNAP FITS MAKE IT QUICK & EASY TO ASSEMBLE.

HOZELOCK 3 WAY VALVE FOR GARDEN USE (1987)

DESIGN & DEVELOP A 3 WAY VALVE FOR GARDEN USE, THE PRODUCT MUST BE STYLED TO COMPLIMENT THE EXISTING "TAP END" FITTINGS IN THE RANGE, BE COST EFFECTIVE & ERGONOMICALLY PLEASING IN ORDER TO COMPETE AGAINST COMPETITORS PRODUCTS.

PROJECT BUDGET: £30,000.00

RESPONSIBLE FOR:

- THE DESIGN & DEVELOPMENT OF THE PRODUCT.
- THE MANUFACTURE & TESTING OF ENGINEERING PROTOTYPES & MODELS
- THE DETERMINATION OF PRODUCT SPECIFICATIONS & OPERATING PARAMETERS.
- INITIAL PRODUCT COSTINGS.

THE DESIGN MADE USE OF "PLATE VALVE" TECHNOLOGY & IS DESIGNED TO OPERATE AT PRESSURES UP TO 10 BAR AT AMBIENT TEMPERATURES. A SIGNIFICANT ISSUE THAT HAD TO BE OVERCOME WAS THE PROBLEM OF THE VALVE PLATE WELDING TO THE VALVE BODY WHEN THE CAP & BODY WERE ASSEMBLED, THIS WAS OVERCOME BY MANUFACTURING THE VALVE BODY IN ABS & THE VALVE PLATE IN FILLED PP, WHEN THE PARTS WERE ASSEMBLED THE WELDING OPERATION CAUSED THE PP FILLER TO MIGRATE TO THE SURFACE THUS NEGATING THE WELD AT THIS POINT.

Hozelock Modular Pond Pump and Filter System (1988)

To design & develop a range of pond pumps & filters which are an evolution of the current "CASCADE" range of products. The new products must establish a strong corporate identity or "family image" the key elements of the design philosophy being:

- Eye catching futuristic image
- Corporate identifiable range with "family look"
- Simple 'soft line' styling
- Integrated modular construction of pumps & accessories
- Commonality of major components
- Use of lightweight plastic components
- Incorporation of new component & manufacturing technologies where appropriate
- Enhancement of cost competitiveness
- Incorporation of new USPs
- Maintenance of traditional perception of good reliability

Project Budget: £40,000.00

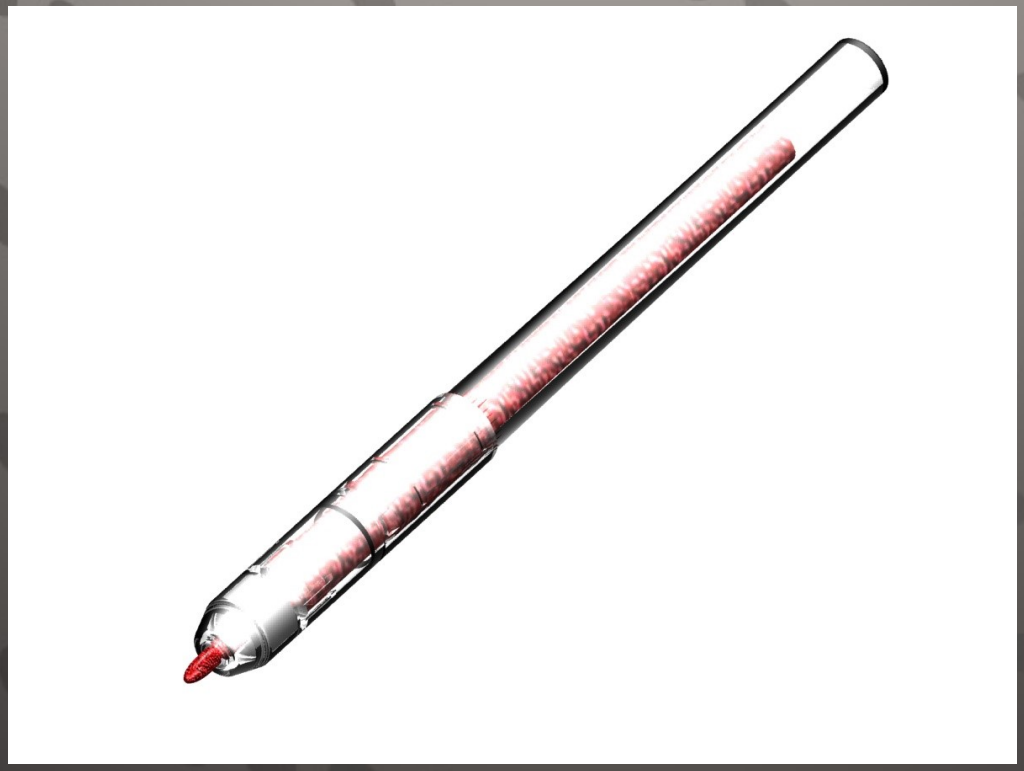
Responsible for: Product styling, The design & development of the product, The manufacture & testing of engineering prototypes & models, The determination of product specifications & operating parameters, Initial product costings.

The project was completed to the "finalise design" stage when I left the company. The products are now being marketed.

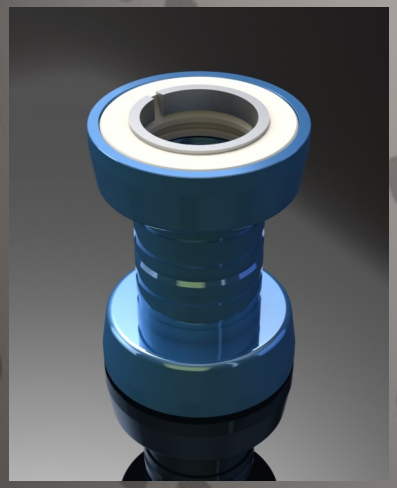
Design & Detail Design A New Fibre Tip Pen (Mike Devine). (2009)

Commissioned to design a revolutionary new type of fibre tip pen for kids.

Mike Devine is an inventor who has come up with a unique pen concept, it is my remit to engineer the design and produce fully detailed drawings and Stereo lithographic parts so the client can demonstrate the pen to prospective licensees.



Leisure

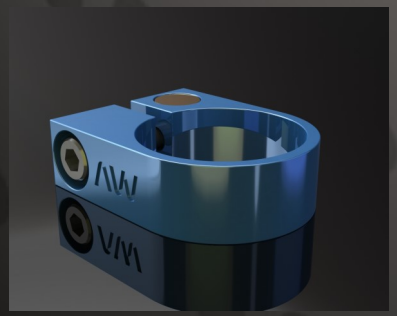


Bicycle Headset (2009)

Commissioned to design the part and produce 3D CAD models so the client can demonstrate his product to prospective investors with a view to taking the parts through to production when financial backers are in place.

Bicycle Quick Release (2009)

Commissioned to design the part and produce 3D CAD models so the client can demonstrate his product to prospective investors with a view to taking the parts through to production when financial backers are in place.



Bicycle Seat post Clamp (2009)

Commissioned to design the part and produce 3D CAD models so the client can demonstrate his product to prospective investors with a view to taking the parts through to production when financial backers are in place.

Energy Drink Wrist Band (2011–2012)

Commissioned to design from artists sketches a strap that holds a disposable energy drink "bottle" and produce 3D CAD models so the client can demonstrate his product to prospective investors with a view to taking the parts through to production when financial backers are in place.

The drink is intended for active people with Diabetes–such as swimmers.

Leisure

Bath Toy (2013)

Commissioned to Model in 3D CAD from conceptual sketches the 2 variants of the product so working pre-production prototypes can be manufactured.

Leisure

Table (2013)

Commissioned to Design a Table to the clients specification, including:

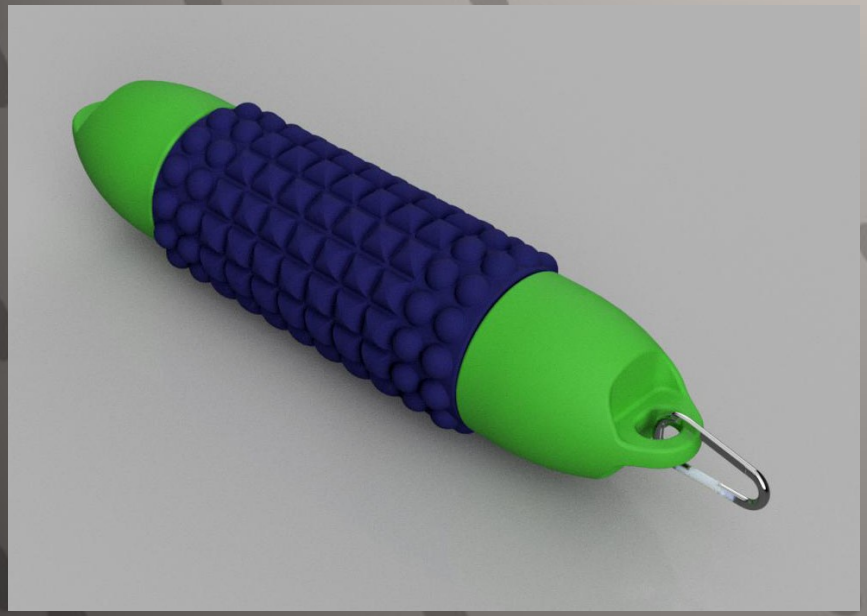
- Variable sized hole in table top
- Adjustable height legs
- Mirror with rotating feature
- Spring loaded pedal feature
- Able to carry 80 kg load

And to supply 2D drawings and part specifications so pre-production prototypes can be manufactured.

Fire Pit (2020)

Commissioned to Design a range of 5 Fire Pits to the clients specification, including:

- Grill Tray
- Log Store
- Sizes from 600mm x 600mm to 1200mm x 1200mm
- And to supply 2D drawings and part specifications so production Parts can be manufactured.

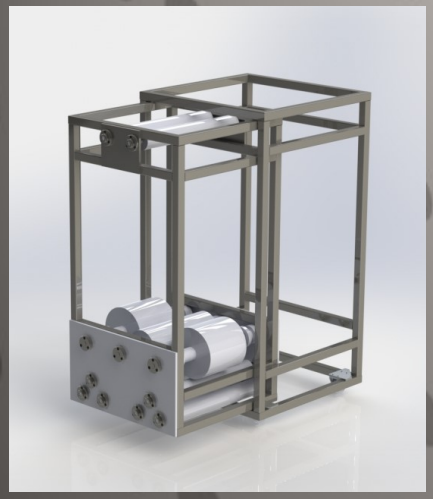


Exercise Roller Plus (2021)

Commissioned to Design an Exercise Roller with integral storage for additional Items including:

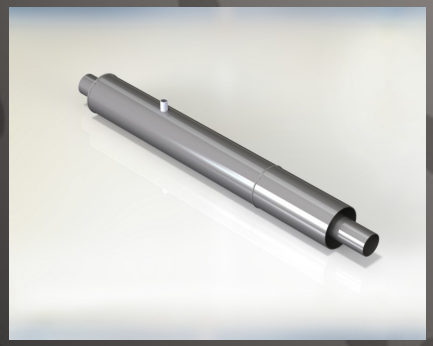
- 2 x Sliders
- Skipping Rope
- Mat
- Provision to be made for additional Items in future versions
- And to supply 2D drawings and part specifications so prototype parts can be manufactured.

Industrial/OEM



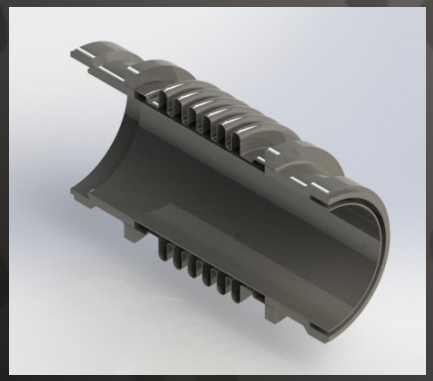
P21: Sliding Frame For Fabric winder In A Vacuum deposition Chamber (2011)

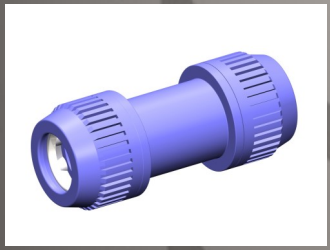
Commissioned to carry out the conceptual design of a special purpose machine to allow processing of continuous rolls of fabric in P21's existing 2m x 1m x 1m VACUUM chamber.



TCL: Cryogenic Parts and Assemblies (2007)

Commissioned to produce standardised 3D parametric models for a number of company specific assemblies, then use said assemblies to produce a cryogenic piping installation from given data.





Paragon Plastics: Push-Fit Pipe Jointing System For 15mm Domestic Hot & Cold Water (1982)

Project Brief:

To develop an economical, simple push fit joint for use with Copper, Polybutylene & PVCc pipes. The styling should be neat & slim line. The joint should be able to be removable/reusable without special tools. The joint should be capable of being included in the following fitting configurations: Coupler, Double Socket. Elbow, 45^0 Double Socket. Elbow, 90^0 Double Socket. Elbow, 90^0 Double Socket. Equal Tee, Triple Socket. End Cap.

Notes:

The project was completed, the result was a fully developed joint that was ready for productionising into the range of fittings as detailed above.

Market research at the time showed that professional plumbers preferred using Copper pipes & soldered joints & that DIY users did not have the confidence to trust plastic components. These sensitivities resulted in the project being shelved until the use of plastics in place of traditional materials was accepted. The product is now on the market.

Paragon Plastics: 90mm–180mm Push-Fit Pipe Jointing System For Potable Water (1985)

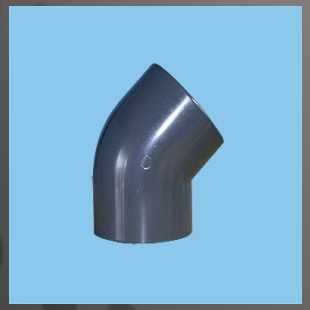
Project Brief:

To develop an economical, simple push fit joint for use with Copper, Polybutylene & PVCc pipes. The styling should be neat & slim line.

The joint should be able to be removable/reusable without special tools. The joint should be capable of being included in the following fitting configurations: Coupler, Double Socket. Elbow, 45^0 Double Socket. Elbow, 90^0 Double Socket. Elbow, 90^0 Double Socket. Equal Tee, Triple Socket. End Cap.

Notes:

When paragon Plastics was bought by Polypipe the "Push-Fast" range of products was licensed to a "competitor", subsequently Polypipe-Paragon have remarketed the range under their own flag.



PARAGON PLASTICS: 1/2" – 4" AND 20MM – 110MM SOCKET FUSION WELD PRESSURE PIPE FITTINGS (2009).

TO DESIGN A RANGE OF SOCKET FUSION FITTINGS TO COMPLY WITH THE RELEVANT BRITISH, DIN & OTHER INTERNATIONAL STANDARDS.

THE DESIGN SHOULD BE ADAPTABLE FOR THE PRODUCTION OF PARTS IN PP (BOTH METRIC & IMPERIAL SIZES), PVCU, ABS & PE.

THE RANGE OF PRODUCTS WILL INCLUDE:

- STRAIGHT COUPLER
- 45^0 ELBOW
- 90^0 ELBOW
- 90^0 SWEPT BEND
- 90^0 TEE
- STUB FLANGE
- FULL FACE FLANGE
- LONG REDUCER
- END CAP

PROJECT BUDGET: £50,000.00

RESPONSIBLE FOR:

- THE DESIGN & DEVELOPMENT OF THE PRODUCTS.
- THE MANUFACTURE & TESTING OF ENGINEERING PROTOTYPES & MODELS
- THE DETERMINATION OF PRODUCT SPECIFICATIONS & OPERATING PARAMETERS.
- INITIAL PRODUCT COSTINGS.

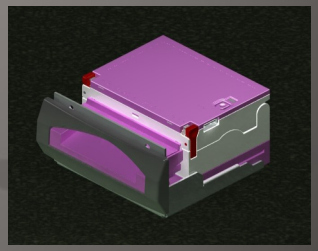
Industrial/OEM

Detail Design of a Modular Currency Recognition System (2005)

Commissioned to make ready for production and create fully detailed 2D drawings for all parts including primary and secondary packaging.

Concept & Detail Design of a Modular Currency Recognition System (2005–2006)

Commissioned to produce concept designs for approval, then detail selected design for SLA parts to be produced prior to productionisation by the client.



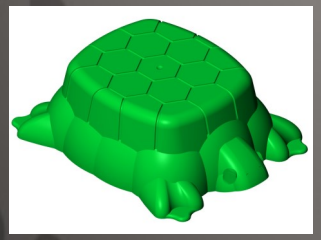
Detail Design Of 3 Shoe Hangers (2005)

Take the Concept Model of each of 3 Shoe Hanger Variants and produce parts suitable for Open/Shut Tooling. Parts to include: draft analysis, parting face analysis, split line detail, gate position, ejector pin positions and advice on mouldability.

Industrial/OEM

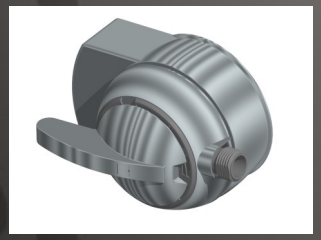
Design of outdoor floodlighting products (2002)

Commissioned to take the conceptual prototype and create production ready part and assembly drawings and a fully detailed BOM in readiness for volume manufacture.



Detail Design of a "Turtle" Step Stool (2002)

Commissioned to take the conceptual model and create production ready part and fully detailed drawing in readiness for tooling manufacture.

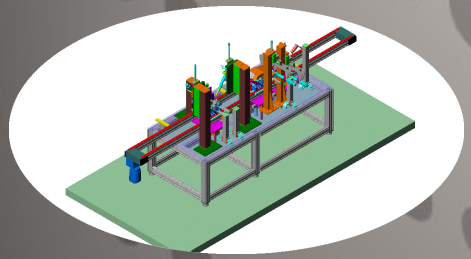


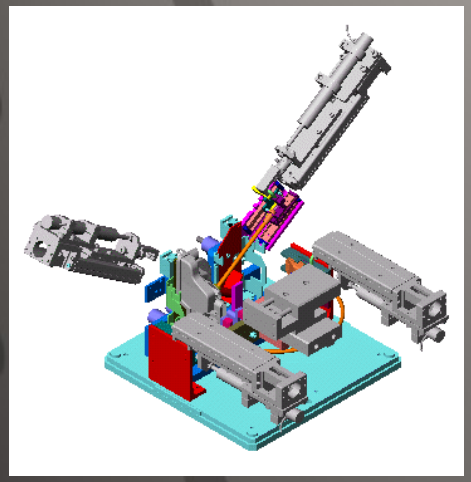
Thermostatic Shower Valve (2000)

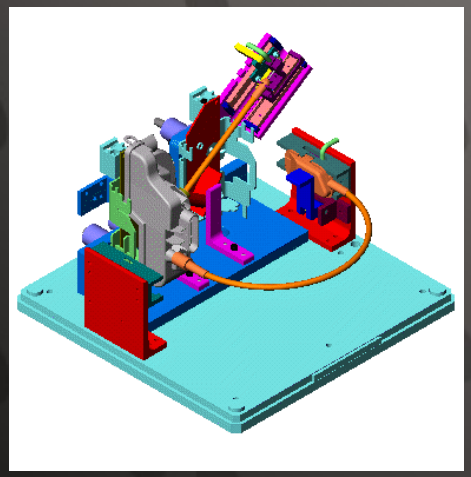
Commissioned to take the conceptual prototype and create production ready parts and assembly drawings a fully detailed BOM and operating instructions in readiness for volume manufacture.

Parts For Coffee Machine (2002)

Commissioned to take the conceptual prototype and create production ready parts and assembly drawings in readiness for volume manufacture.



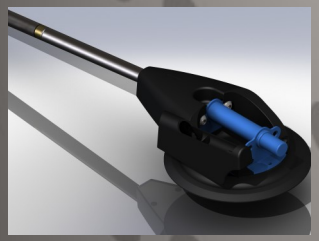




RENAULT DOOR LOCK ASSEMBLY AND TEST SPM (1999)

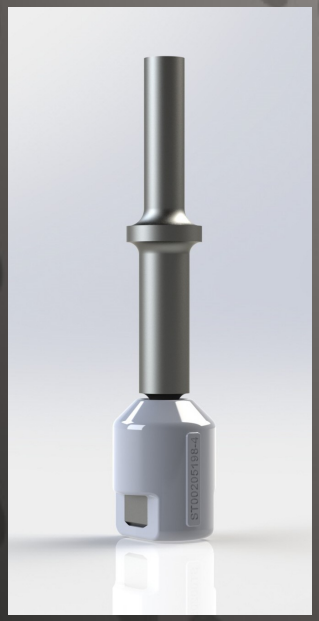
COMMISSIONED TO DESIGN A SPECIAL PURPOSE MACHINERY FOR THE ASSEMBLY AND TESTING OF AUTOMOTIVE DOOR LOCKS FOR THE "NEXT GENERATION" OF RENAULT CARS.

Industrial/OEM



One Man Windshield Installation Tool (2010/11)

Commissioned to take the conceptual model and create production ready part and fully detailed drawing in readiness for tooling manufacture.



Boot For Airbus Riveting Tool(2012)

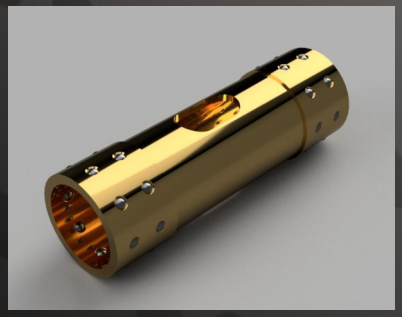
Problem: When assembling the Carbon Fibre wing panels the nut driver will jump out of it's location and damage the carbon fibre panel which would then have to be replaced.

Solution: A rubber Boot to hold the nut driver captive—hence eliminating the problem.

Industrial/OEM

200 Litre Grit Box (2012)

Commissioned to take an artists 2D sketch and create 3D parts, assemblies and fully detailed drawings in readiness for manufacture.



Precision Ball Slide (2019)

Commissioned to design a precision ball slide for 4mm diameter probe.

Sleeve matl: brass

Ball Matl.: stainless steel

Industrial/OEM

Clog Sole Design (2013)

My client is a manufacturer of hand made clogs, he has made a device to automatically machine the clog soles. I was commissioned to produce a 3D Generic clog sole model and then generate a SolidWorks Design Table for the range of adult sizes.

Free Standing Frame Design (2013)

My client is an Artist who commissioned me to design a free standing frame system to display a range of screens. The screens come in a range of sizes and can lock together in any combination of sizes.

The image shows a frame with clear glass screens, however, the client was in the process of creating a number of bespoke screen designs for clients I was commissioned to produce 3D CAD models and 2D Detail Drawings for manufacture.

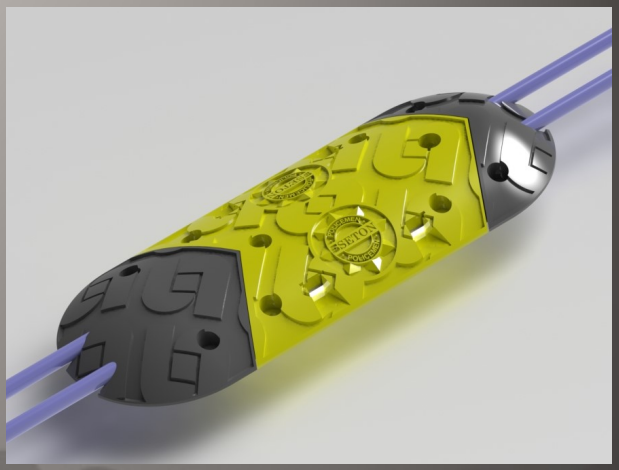
Industrial/OEM

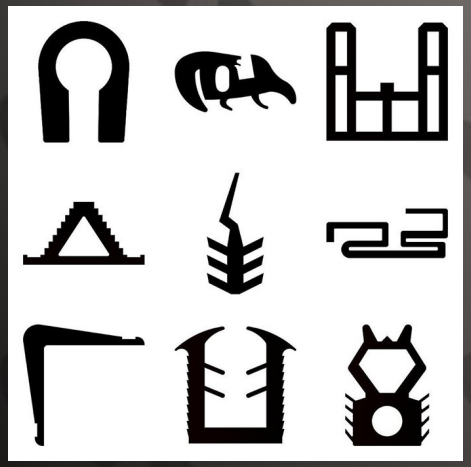
Sleeping policemen (2017)

Commissioned to refresh and re-design my client's current 5mph and 10 mph speed bump products.

The new version would include a revolutionary Rail mounting system to reduce lateral drag from vehicles virtually eliminating the bumps being ripped from the road surface..

Right Hand Image shows conceptual design, left Hand Image shows production model





2D to 3D Conversion (2019)

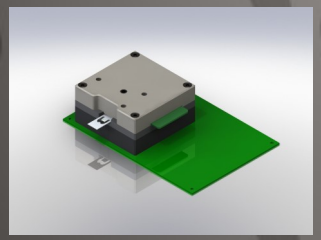
Commissioned to convert around 2500 .dwg Seal variants into 3D solid models and to deliver:

- A 2D .pdf file for each part
- A 3D Solid model

Prototypes

Tails Cocktails (2010)

Commissioned to take the conceptual model and create production ready part and fully detailed drawing in readiness for prototype tooling manufacture.

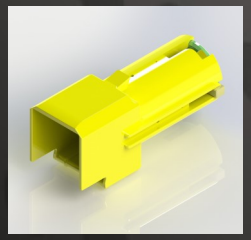


Prototype Blood Testing Device (2011)

Commissioned to take the current electronics design and create a prototype device to test "proof of principal" To create 3D parts, assemblies and fully detailed drawings in readiness for manufacture.

Prototype Bottle Cap (2012)

Commissioned to take the conceptual model and create production ready part and fully detailed drawing in readiness for tooling manufacture.



Prototype Delayed Action Mechanism (2012)

Commissioned to design from scratch a mechanism that could be retro fitted into the companies self injection devices to indicate that the syringe had fully emptied. And to deliver 3D models and fully detailed drawing in readiness for prototype manufacture.

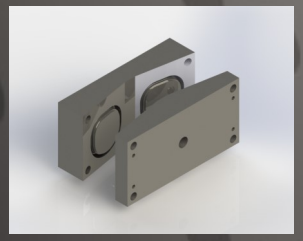
Prototypes

Prototype 20ml Dose Cap(2012)

Commissioned to take the conceptual model and create production ready part and fully detailed drawing in readiness for prototype tooling manufacture.

Prototype Air Freshener(2012)

Commissioned to take the conceptual model and create production ready parts and fully detailed drawing in readiness for prototype tooling manufacture.



Prototype Injection Mould tool(2012)

Commissioned to take the conceptual model and create fully detailed core and Cavity data in readiness for prototype tooling manufacture.

Prototype Air Freshener(2012)

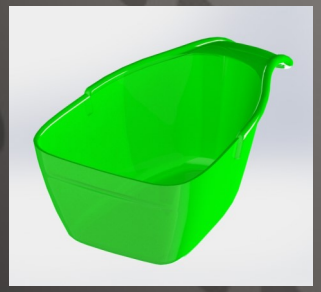
Commissioned to take the conceptual model and create production ready parts and fully detailed drawing in readiness for prototype tooling manufacture.

Prototypes

Headphones (2013)

The client designs and manufactures bespoke audio technology (such as noise reduction) for OEM headphone manufacturers. Currently they demonstrate their technology by fitting it to "off the shelf" headphones manufactured by a well known brand.

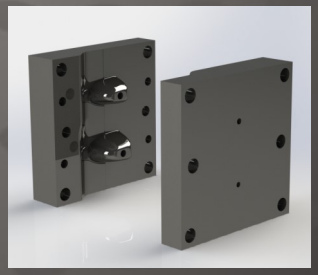
It is the intention of the client to produce an "own brand" product– initially to demonstrate their technology to prospective customers, however, they may, in the future decide to market a range of technologically advanced headphones of their own.

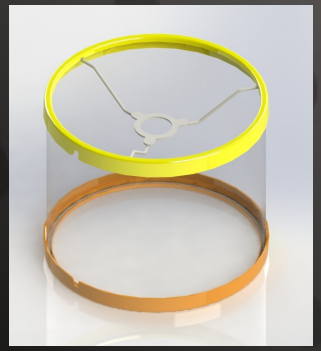


Unilever Detergent Scoop (2014)

Commissioned to design two scoops with 24ml and 34ml capacity for dosing detergent powder.

Also commissioned to design prototype injection mould tool to produce parts.





Lampshade (2015)

Commissioned to design a lampshade that has an integral feature to allow a number of different "slides" to be inserted, for example a unicorn pattern for a girl's room, a Robot pattern for a boy's room, etc.

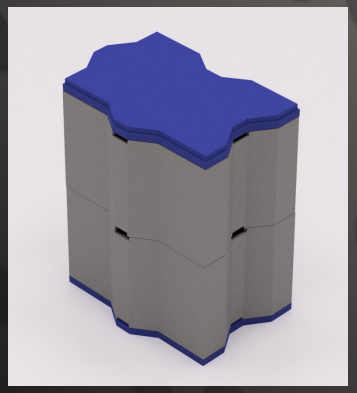
Prototypes

Air freshener (2017)

The client has designed this product and commissioned tooling to produce prototype mouldings. However, the product does not function as expected. It was our remit to evaluate the design and make adjustments to enable the product to perform as it should.

Bottle development (2017

Commissioned to develop a bottle with a wave form feature around it's circumference..



Stackable Foundation system For Garden Buildings (2021)

Commissioned to design a Foundation System For Garden Buildings:

- Must be stackable
- must have common Lid/Base
- And to supply 2D drawings and part specifications so production Parts can be manufactured.

Urban Farm (2016)

The Urban Farming Company is a social enterprise with a passion for innovation, the environment and food sovereignty. They apply the key principles of sustainable development to create balanced growing systems that protect natural ecosystems, support local communities, educates our children and nourishes families.

This project is their first foray into desktop growing.

We were commissioned to take the client's Sketches and generate 3D CAD Models and then Manufacture prototypes by 3D printing the parts In-House.

Option 1.

A system that would allow optimal growth via computer aided control of lighting, heating , watering and nutrition. From a bespoke seed pod (Green part) and deliver video feedback via a smart phone, tablet etc..

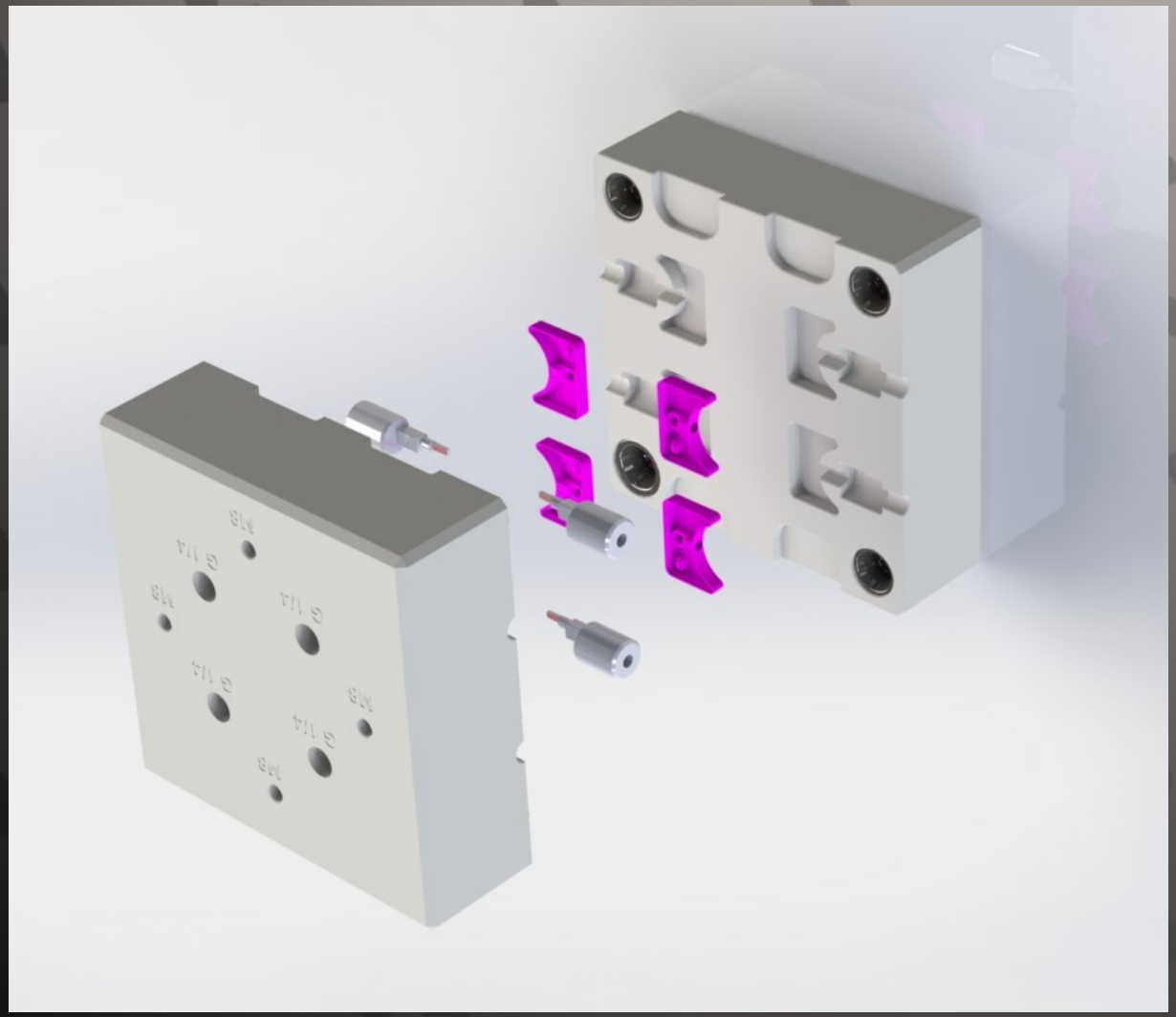
Option 2.

A "lite" option that could clip onto a standard plant pot and deliver video feedback to a smart phone, tablet etc.

Watering, lighting, heasting and nutrition would be administered manually.

Medical Valve (2018)

Commissioned to design prototype tooling to produce a medical Valve



A SELECTION OF CLIENTS I HAVE WORKED WITH DIRECTLY OR INDIRECTLY.