



Benefits of Co-ordinated Equipment Supply from Starkstrom

Product Range Overview

Starkstrom manufacture and supply the widest range of equipment used within the high end clinical health care environment, more than any other individual medical equipment supplier within the UK. One obvious benefit is the help and support this contributes to UK economy (local in terms of jobs and national for our trade balance) especially in times of general European austerity. The other of course is the wide pool of knowledge and experience we can offer to design consultants and end users alike.

Our current product range includes the following with other new exciting product developments in the pipeline.

- **Medical Gas Pendants** – UK manufactured - wide range of solutions to provide the efficient and safe delivery of gases and electrical services for critical care areas such as ITU, CCU, HDU NICU etc, as well as operating theatres, endoscopic suites, catheter labs etc.
- **Theatre Control Panels** – UK manufactured - widest range of solutions including the latest touch screen technologies (eTCP), membrane technology (wTCP), traditional stainless solution (sTCP) and Hybrid panels incorporating PACS screens.
- **Operating Lights & Cameras** – manufactured in Germany, the widest range of technologies available – Halogen & Gas Discharge single bulb reflector technology (best & proven) / LED cluster with lens optics technology (superior to single LED with lens optics) and single LEDs with reflector technology (unique to Starkstrom). All available with latest state of the art high definition video cameras and dedicated TFT monitor arms.
- **Battery Back Up Units** – UK manufactured – compatible with our range of operating lights incorporating additional new features including active monitoring of mains and battery voltages, battery temp, charge and discharge currents, and ability to perform a remote test via Modbus from eTCP or REMOS (Jan 2011)).
- **Examination & Minor Operating Lights** – wide range of lux level solutions available as well as bespoke fittings to allow fixation to walls, ceilings, medi-rail etc suitable for various care areas.
- **Isolated Power Systems** – UK manufactured - with smallest footprint and most economical to run in full compliance with the latest standards, including 17th Edition.
- **Uninterruptible Power Supply & External Maintenance by Pass Panels**– wide range including traditional and modular solutions and UK manufactured EMB suitable for Stand Alone, N+1 and 2N+1 solutions, with and without Castell type interlocks. Also with advanced 'URIC' for ultimate flexibility in remote alarming and BMS interfacing.
- **MEIGaN Earthing Ancillary Products** – UK manufactured – range encompasses clean earth blue sockets / various earth reference bars (ERB) including Op Theatre ERB's / Multi-Patient area ERB's / High Current ERB's / Imaging Room ERB's / equipotential earth sockets / insulation washers etc.
- **PACS & X Ray Viewers** – UK manufactured – available as a built in the wall integrated solution to overcome infection control issues and create more space in the operating theatre and also available as a mobile solution to provide greater flexibility between theatres.
- **AV Solutions** – specifically designed to meet individual requirements using state of the art broadcast techniques to achieve total integration with existing equipment with superior imaging and communications. With industry standard control systems we can collaborate and integrate with all devices/image sources within the theatre.
- **Operating Tables** – a premium specification operating table manufactured in Finland. The table is fully electro-hydraulic with a high patient weight capacity (350Kg), ideal for bariatric surgery and configurable for any other surgical discipline.
- **Laser Interlocking Solutions** - including power socket and in-use sign control, door access control, emergency stopping, shutter control and access override keypads.
- **Room In Use Signs** – UK manufactured - bespoke solutions to suit most applications.
- **Ultra Clean Ventilated Canopies** – UK manufactured – ability to supply and integrate leading brands to complete any theatre equipment package i.e. Howorth Air Technology or Medical Air Technology systems.



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Commercial, Risk & Environment

There are several commercial benefits to consider, couple this with the reduced risk to the contractor / customer and the environmental considerations there are many pluses in using a single source equipment supplier, such as;

- Ability for the customer to negotiate a competitive price overall for a larger order value.
- Reduced number of equipment sub-contracts to be raised, each requiring additional paperwork and individual management by customer hence lower administration costs.
- Fewer deliveries hence lower delivery costs, as many first fix items can be delivered in a single consignment, as well as reduced impact on the environment i.e. Lower Carbon footprint as “transport miles” will be less (UK to UK rather than Europe/China to the UK for example).
- Better co-ordinated second fix installation works as each item can be more easily programmed to be installed in the correct chronological order thus reducing the number of chargeable abortive trips to site.
- Less exposure to Sterling: Euro exchange rate compared to majority of others suppliers, with therefore reduced risk of corporate financial issues over turbulent times.
- Risk of any equipment interface problems not being resolved in a timely fashion is drastically reduced as is probability of them occurring.
- Lower commissioning costs as certain commissioning works can be co-ordinated to run consecutively utilising existing site validation engineers.
- Lower administration costs – procurement streamlined with far fewer interfaces / single performance bonds / health & safety documentation collation / co-ordinated method statements / comprehensive O&M manuals / CE marked products etc

Project Management

There are also multiple benefits for project management from both a supplier and customer perspective when considering a single equipment package. Some of these include;

- Single company liaison – simpler lines of communication, opportunity to build strong personal relationships, obviously this is not as easy to achieve when the customer needs to liaise with multiple suppliers many of whom are not familiar with each another’s products.
- Speed of response to technical queries – Starkstrom design engineers are all based in our UK head office and are not reliant upon forwarding said queries to European original equipment manufacturers.
- Co-ordination - removes the need for the customer to co-ordinate many free issue items of equipment from various suppliers for incorporation into the theatre control panels, pendants etc.
- Fewer staged deliveries – many first fix and second fix items can be delivered to site in single shipments designed to meet carnage / hoist dates.
- Responsibility – the onus is on single supplier to ensure smooth project management of interfaces between equipment i.e. flag black holes / grey areas at an early stage.

Commissioning & Validation

There are significant benefits in co-ordinating commissioning on site when employing single supplier, it is far simpler and quicker to resolve issues when time really is of the essence and L&A damages loom. It removes necessity for the customer to mediate between suppliers to resolve issues between different suppliers who tend to claim it’s not their responsibility and blame other parties for incompatibility issues, incorrect cabling etc.



Technical Considerations

Starkstrom has had many years experience of manufacturing equipment and project managing multiple equipment installations and hence offer clear, consultative advice at the design stage whilst understanding the customer's requirements thus reducing the impact of misunderstandings and many common held assumptions.

Nearly all of the products detailed above either relate to one another from a mechanical fix, electrical wiring & product alarm communication point of view and it's quite easy to recognise the benefits a single source knowledgeable supplier can offer the contractor / customer. Some the areas that regularly cause delays, additional hidden costs etc are highlighted below;

- Layout of theatre equipment, so as to best avoid clashing of architectural systems, impact on mobile devices such as C arms, X Ray, Endoscopic stacks etc.
- Compensating for low ceiling installations.
- Relationship between operating lights and UCV canopy, for e.g. light stem must be made to measure, and be in place before canopy first fix, light heads designed for optimal UCV air flow, remote control of lights from outside of the clean zone, positioning of temperature and humidity sensors etc.
- Relationship between pendants and UCV – integral pendants or media / service bridges making best use of space available, specially designed pendant with extended down tubes to avoid pendant consoles clashing with UCV infill panels when pendants are required to carry equipment such as endoscopic cameras, light source, shavers etc.
- Relationship between pendants and IPS – two circuits required, engraved IPS referenced clean earth blue sockets, EES, earthing to MEIGaN (insulation washers) 6mm earths, separate earths, brown-brown conductors, etc
- Relationship between pendants and AV solutions – additional wires ways and containment for data / additional monitors / special cut outs for video outlets and 3rd party integrated endoscopic solutions etc.
- Relationship between UPS and IPS – design philosophy N+1 etc, correct loads after power factor taken into account, optimal layouts for space saving, combined EMBs, combined alarming, providing additional breakers with IPS cabinets to allow UPS backed alarms panels, general lighting, theatre control panels, fridges etc.
- Relationship between Theatre Control Panel and UCV/IPS/UPS/Op Lights/BBU – alarm wiring, serial communications, dimming controls, synchronised master and slave clocks etc.
- Relationship between Theatre Control Panel and laser interlocking, reducing the number of additional wall mounted control centres etc.
- Relationship between Theatre Control Panel and switching 'room in use' signage, activating laser/x ray sockets and dimming general light fittings etc
- Relationship between ERB and MEIGaN earthing and all other items of equipment, best practice, and pre prepared wired products with removable earth links etc.

Future Proofing

- REMOS – Remote Monitoring System: Ability to connect any item of equipment, even non Starkstrom supplied equipment, to a central data hub, allowing Starkstrom Engineers to be notified of any issue, any time of the day or night, any day of the year. Also providing the ability for a Starkstrom Engineer to connect to the equipment from a remote location, diagnose faults, advise corrective action and modify software or settings as required.
- Audio Visual – Preparation of operating lights to accept integrated video cameras at a later date, including running cables to video outlets within the theatre walls or on medical gas pendants.
- Touch Screen Theatre Control Panel – flexibility to accommodate future changes to the theatre's functionality such as retrofitting UCV canopies, upgrading to a fully integrated theatre etc.



After Sales & Maintenance

- Maintain over 95% of our installed equipment base.
- Ability to service and maintain other supplier's products, so no barrier to introducing new suppliers to site.
- Large service department, national coverage, local support from highly trained in-house service engineers.
- REMOS – once the benefits are realised for Starkstrom's products the ability to roll out this service to remotely monitor other critical applications such as blood banks, controlled drug fridges etc.
- 24Hr Technical Support Line permanently manned by Starkstrom's most experienced design and site engineering staff.