Hyperbaric Tunnelling Systems

For more than 30 years, SMP has been actively involved in the design and manufacture of fully certified Decompression Chambers, Hyperbaric Chambers Systems and Manlock Chambers which are installed within the pressure boundary of Tunnel Boring Machine (TBM) structures.

SMP specialise in the manufacture of Transfer Under Pressure (TUP) Chamber Systems and TBM Shuttle Transfer Chambers, for the safe movement of personnel under pressure from a TBM man-lock to a dedicated decompression facility or hyperbaric living habitat on the worksite. This becomes especially important for deeper rated tunnelling projects where Intermediate or High Pressure Compressed Air (HPCA) intervention is required at the head of the TBM. This can be either Non-Sat exposure or Saturation techniques for pressures exceeding 5 bar(g).

SMP have the in-house capability to supply complete turnkey packages from the initial design concepts through to installation and final commissioning of Airlocks / Manlocks, Transfer Shuttles, Decompression Chambers, Medical Facilities Chambers and Hyperbaric Living Habitats, including all Auxiliary Machinery, Life Support Control Equipment and complete Saturation Living habitats.

SMP provide a full spares backup, including onsite service for all the systems we supply.

System Packaging and Installation

The life support control panels, decompression chambers, compressors, chilled water closed loop cooling systems and all other ancillary components required to operate the system are built into containers to facilitate standard gauge transportation to the tunnelling site. The containerised systems offer effortless on-site handling, enhanced protection of materials, life support equipment and comprehensive organisation of the control facilities for all hyperbaric intervention activities. The system interconnections and integration will be delivered and, if requested, installed and facilitated by SMP expert engineering personnel.

Adaptability

Tunnelling systems have various dimensions and specifications depending on the project requirements. This also influences the design of the decompression chambers/hyperbaric systems needed for the intervention activities. SMP believe it is essential that the hyperbaric equipment supplier understands the technical and operational parameters during the early stages, in order to cooperate closely with the contractor, operator and TBM supplier.

SMP will ensure maximum flexibility in order to design and develop the required custom-built system for the client. Working in this way ensures our customers receive the most suitable solutions and optimum system design with a nailed on delivery schedule that answer all the needs of their project requirements.

Quality

SMP's designs and in-house manufacture used in its systems allows for complete internal QA control, with a British Standards Institute Audited Quality Management System to ISO 9001, giving our customer the confidence of proven service and quality.

In order to oversee and control the planning of the project, a dedicated SMP Project Manager will ensure the logistical and production process runs smoothly and to the required specifications for each project with regular contract reviews and direct client contact.

Certification and Regulations

With regard to various international regulations and customer specifications, all SMP equipment is built in compliance with the requirements of international certification authorities, such as LR, ASME. Surveyor inspections during essential stages of the design and manufacturing process are a standard procedure for SMP projects.

Services and Support

Customers receive comprehensive instruction, operation and maintenance manuals detailing how to operate and maintain the SMP systems, when they are delivered. SMP In-house or on-site training can also be provided for operators.

SMP can provide customers with spares for routine maintenance and provide engineers onsite to carry out re-certification, testing or system maintenance if required during project.

Remember we are only a phone call away for full technical support.
SMP Ltd

SMP Ltd has the skills and capability to design, build and deliver the best quality hyperbaric equipment. Our growing product range has been tried and tested by other industry leaders, with all our in-house manufactured products designed to meet IMCA and ADC standards and as a result are exported worldwide.

- British Design & Build
- Over 30 yrs in the Making
- A Family Work Ethic with Global Presence
- Exporting to More than 85 Countries
- Comprehensive Skill-sets for Manufacturing and R&D
- Key people with Real-life Hyperbaric Experience

SMP design and build TBM Personnel Transfer Shuttles Chamber (TSC). These are used for transferring compressed air workers/divers from the manlocks of the TBM pressurised cutting head to the designated main decompression complex.

The Shuttle is designed to accommodate 2 men in the entry lock and 6 men in the main lock. The Life Support System is designed to provide two hours of onboard life support when it is disconnected from the TBM or decompression complex. The chamber is installed in a crash proof exostructure with interconnecting chamber mating clamp mounted on the end of the structure. The units are mounted on wheels so that they can be transported on conventional rails easily during a working transit period.

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