

Hydrovane works with Blackpool Transport to upgrade heritage trams

Hydrovane’s Transit division has supported Blackpool Transport Services Ltd with the design and installation of replacement Air Supply Modules (ASM) to support upgrades to the world’s oldest electric street tramway.

Dating back to 1884, the tramway connects the North and South Shores in Blackpool, Lancashire and is an iconic part of the town’s attractions. By the turn of the century it was clear that modernisation was needed, and impending legislation on accessibility meant that traditional high-floor trams could not continue in service.

In 2009, work began on the tramway infrastructure to bring it up to modern light rail standard.

Benefits-at-a-glance

- High flow rate of the ASM ensures that only one compressor is required per vehicle
- Simple installation – minimal disruption to vehicles’ heritage features
- Reduced service costs
- Reliable supply of high-quality, dry air



Application Details

As part of the upgrades to the tramway, ten heritage double-deck trams have been retained and modified to supplement new, low-floor vehicles and to provide open-top and illuminated journeys along the track.

Modifications to the heritage vehicles include the replacement of braking systems and the installation of pneumatic doors to ensure they comply with the latest accessibility requirements.

Ten ASMs from Hydrovane Transit, each featuring a 504 based compressor, provide high quality air at 10bar (147psi) for the operation of the tram systems.

The high flow rate of the ASM means that only one unit is required per vehicle. The distribution of the air is managed by a multi-system protection valve and a pressure switch, this arrangement prioritises the 7bar (100psi) air supply to

Customer
Blackpool Transport Services Ltd

Location
Blackpool, England

Application
Tram systems

Products
10 x bespoke Air Supply Modules (ASM) providing air at 10bar

Customer Benefit
Improved efficiency / lower service costs



The bespoke design of the ASM was the ideal solution to our compressed air requirements. The new compressors are smaller, more lightweight and maintenance friendly than the original units, providing a more efficient operation and reduced service costs.



John Houghton, team leader, tram engineering department at Blackpool Transport Services.

the tram braking system over the 10bar (147psi) required to control the pneumatic doors.

Quality and reliability is of particular importance in the braking system to prevent damage to valves and other components. Any air pressure failures could result in the deployment of the trams' emergency braking system.

The compressor is a modified version of Hydrovane's industrial unit, and is designed with features such as external filtration to ease servicing and improve suitability for use in extreme conditions.

Rather than traditional, large and heavy DC motors, the ASM is driven by a more lightweight, reliable and versatile AC motor powered by an inverter pre-programmed ready for service.

Inclusion of Hydrovane's own twin canister dryer ensures the supply of dry air, as any moisture in the system could lead to

problems further down stream including reduced lubrication, corrosion and freezing.

Ease of installation

As the compressors were to be located under the floor of each tram, and due to the importance of maintaining the heritage features of each vehicle, it was vital to make installation as simple as possible.

Hydrovane therefore designed each ASM to be easily installed below a service hatch in the floor of each vehicle. Each package supplied by Hydrovane was complete with all of the equipment required for the installation, from the compressor itself through to hoses, air reservoirs and fittings.

John Houghton, team leader in the tram engineering department at Blackpool Transport Services explains: "The decision to choose Hydrovane was based on its engineering expertise, which has been consistently demonstrated throughout this project.

"The bespoke design of the ASM was the ideal solution to our compressed air requirements. The new compressors are smaller, more lightweight and maintenance friendly than the original units, providing a more efficient operation and reduced service costs.

"We've developed a good working relationship with Hydrovane. Its engineers are easy to deal with and are always willing to lend a helping hand."

To date, seven of the heritage trams have been modified, with a further three due for completion in early 2012.