

Bode door drive system a success in series production

Transport company confirms sharp decline in maintenance with CADS

It has been well-known for some time that Bode sets standards, as the bus company's lifting spindle drive has proved itself millions of times over worldwide, and has been doing so since 1968. A few years ago, the door system manufacturer set out to herald in a new era with the Compact All-round Drive System (CADS). Bode has succeeded in this, now that the system has been in series production for two years, and has gained extensive experience from its continuous use. Vestische Straßenbahnen GmbH, for instance, reported eight times less maintenance work on their buses with the new drive system.

Gebr. Bode GmbH & Co. KG in Kassel is the market leader in bus door systems. Its new CADS product, with its purely electrical drive system integrated in the column, was launched at IAA in September 2010. Initially developed solely for urban buses with inward-folding doors, the system is now available for all other types of buses – from manoeuvrable minibuses to high-grade coaches with outward-folding doors.

Following its launch, Bode initially tested the system with Kasseler Verkehrs- AG and the Länstrafiken bus company in Örebro in Central Sweden. The system was first tested in Kassel on a three-door articulated bus used on scheduled bus services. The client commented at the time: "Following a few minor adjustments needed at the start, the Bode door drive system is now working perfectly. And there was more: The test vehicle equipped with the system now appears fewer times in our daily operating reports than the average of our entire bus fleet."

The test deployment in Sweden was more demanding in climatic terms. William Kadic, Works Manager of the Neoman branch, charged by Länstrafiken with the maintenance of buses, stated; "Incredibly there was not a single fault with the doors from the date on which we started using the new door system in the winter month of January 2010 in temperatures of -20° to -28°C over two months through to the summer time with temperatures of +30°C."

Following the close cooperation of these two companies with Bode and the extensive testing in everyday operation, a large number of other bus companies have now converted to the high-tech product. Practical experience was gained from the most diverse vehicles operated by MVG Munich (Solaris Solo, articulated buses and new trailer buses), Rheinbahn Düsseldorf (Solaris Solobuses), BVG Berlin (MAN double-deckers), Vestische Herten (MAN and Solaris Hybrid) and by Havelbus Potsdam (TEMSA vehicles).

Regionalbus Augsburg GmbH has also been testing the Kassel door system for the past two years in its daily scheduled services. Mr Wilhelm Kraus, RBA's Workshop Manager, is persuaded by the system, as it has been used without a single failure since the start of the test.

The joint verdict? CADS operates completely reliably and failure-free.

Comprehensive data from use in Vestische Straßenbahnen GmbH buses

Six doors in a Solaris vehicle and two doors in a MAN bus with a total of 16 CADS door drives have been available for measurements at Vestische Straßenbahnen GmbH since 2012. The low energy consumption of around 15 W (0.7 A) paid for itself with a total of 693,000 door movements (open/close). The company summarises that there have been no significant faults. According to users, the diagnostic system has proved to be practical and comprehensive. As the door system works independently of the weather, there is no longer any need for conversion work for summer and winter operation.

Bus operators and manufacturers are happy about improved space and time

The doors are extremely simple and precise to adjust. The doors need virtually no adjustment during operation, thanks to their self-regulation in conjunction with the Bode control system. The self-learning doors automatically adjust to changing end positions, meaning that time-consuming and costly readjustments are now a thing of the past. And as the CADS incorporates no pneumatic systems, there are no problems caused by dirty or moist air in the pneumatic systems. These advantages are especially beneficial for bus operators.

Bus manufacturers, in turn, benefit as well as there is no need to install pneumatic pipes. Thanks to its modular design with fewer components, only a few electrical cables have to be plugged in when installing the system in manufacturing. The system learns the end positions at a push of a button, eliminating time-consuming readjustments before initial use. All in all, with CADS there are fewer complaints by customers to bus manufacturers, as fewer moving parts need to be installed and faults with potentiometers or valves are now a thing of the past.

However, despite the fact that there are extensive benefits with new CADS, there is so little to be seen of it. The entire purely electrical drive system is completely integrated into the rotating column and needs no more room than the diameter of the column itself, leaving the roof rounding completely clear. The CADS for inward-folding doors weighs 8 kg less than the electrical drive systems used to date. That is not the only factor that has had an impact on consumption costs: the Swedes are interested in monitoring to what extent fuel consumption is reduced, as no energy is needed for compressed air.

CADS can be viewed on the Bode stand at Busworld 2013.

Gebr. Bode GmbH & Co. KG was founded in 1968 and develops, designs and builds all door systems itself. The company sets global standards and, with its services it is a reliable partner to industry and transport operators. The doors for the German market are assembled at the company's Kassel site. With its subsidiaries and affiliated companies, Bode is also represented in Poland, Turkey, the UK, China, South Korea and the United States and is a member of the Munich-based "Schaltbau" group.