Pfaff Verkehrstechnik

Pfaff Verkehrstechnik Has Successfully Completed a Major Contract for the New Metro Lima Depot in Peru

Underfloor lifting system for heavy trains with up to seven carriages and a length of 120m

Greater efficiency and shorter vehicle dwell time in the depot: Pfaff Verkehrstechnik, a member of CMCO Columbus McKinnon Corporation, has been commissioned by Hitachi STS, an Italian general contractor in the railway and local rail transport sector, to supply the plant components for workshop equipment for the new Santa Anita depot of Metro Lima in Peru.

The entire equipment, which Pfaff Verkehrstechnik has provided and now installed together with SIM IMPEX, includes an underfloor lifting system as well as bogie lifting stands, axle lifting systems (underfloor), mobile lifting jacks, manual turntables, lifting and turning equipment for bogie frames, auxiliary bogies and transport devices in large quantities. The installation is now complete, and the plant will start operating this year.

Efficiently Maintain Long Trains with High Capacity

Metro Lima is the only urban means of transport in Peru that does not contribute to air pollution because it uses electrical energy from hydroelectric power stations. With the opening of the northern section of line 1 in 2014, the metro, which is predominantly an elevated line, reaches a length of 34.6km with 26 stations. There are plans to expand the rail network to up to five lines, the second line is currently under construction.

Currently, six-carriage MB-300 trains from the Italian rolling stock vehicle manufacturer AnsaldoBreda are in service, as well as several Metropolis multiple units from the French manufacturer Alstom. It is a

fast metro with high capacity: the trains are 107m long, which has to be taken into account in the plant engineering at the new Santa Anita depot.

The new underfloor lifting system from Pfaff Verkehrstechnik is designed for heavy trains of up to 280 tonnes with up to seven carriages and a total length of 120m. The synchronisation of the wheel lifting platforms is controlled by the PLC control within a narrow tolerance range of +/- 5mm, i.e. over the entire 120m length, the maximum height deviation of the lifting platforms is only 10mm. Their cantilever design ensures that the removed bogies can be pushed underneath the lifted train for separate maintenance.

Separating the Bogies from the Carriage Body

12 auxiliary bogies with a load capacity of 20 tonnes ensure that the underfloor lifting system is not blocked for long by a lifted vehicle. After the bogies of the carriages have been dismantled, the carriage bodies are placed on the auxiliary bogies and pushed with them into a separate storage area. This means that the lifting stand is immediately ready for another vehicle. Mobile lifting jacks from Pfaff Verkehrstechnik, each with a load capacity of 15 tonnes, are used at the Santa Anita depot to lift individual uncoupled carriages for maintenance.

Several manual turntables with a diameter of 3200mm have also been installed in the depot to move bogies weighing up to eight tonnes between the hall areas. Maintenance and repair work

Pfaff Verkehrstechnik has successfully completed a major contract for the new Metro Lima depot in Peru, which includes mobile lifting jacks for lifting individual uncoupled carriages

on the bogies is carried out with underfloor bogie lifting stands from Pfaff Verkehrstechnik, which bring the bogies into the best ergonomic position up to a maximum lifting height of 1600mm.

A lifting and turning system consisting of two lifting jacks with a crossbeam can turn the bogies, which are fixed by means of a clamping system, and rotate them to any desired position at the desired lifting height so that inspection work on the bogie frame can be carried out comfortably. In the service area, two underfloor axle racks (hydraulic lifting tables for loads up to two tonnes) raise individual axles to the desired working height.

Remote Commissioning

The Berlin-based company SIM IMPEX – a Pfaff Verkehrstechnik sales partner that promotes sustainable mobility with innovative transport systems, especially in Latin America – was responsible for installing the systems. In the local markets, teams of specialised professionals ensure technical support and customer assistance during the installation process.

The installation and commissioning, which had to be carried out remotely due to the prevailing Covid-19 regulations, presented a major challenge for SIM IMPEX and Pfaff Verkehrstechnik as the main supplier of the state-of-the-art facility, which now ensures more efficient maintenance and repair of entire metro trains, individual carriages, the bogies, axles, windows and doors.

Maintenance and repair work on the bogies is carried out with underfloor bogie lifting stands

In the service area, hydraulic lifting tables lift loads of up to two tonnes (underfloor axle racks)

For more information on Pfaff Verkehrstechnik and their products, see:

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