

The Contact Mechanism of Multi-segment Pantograph Head and Compensation Method for Lift Force

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In developing a pantograph of a high-speed train, reducing aerodynamic noise from the pantograph is one of the most important subjects. For reducing this noise, suitable configuration of the pantograph head, which has a smooth cross section profile, is proposed. However, the pantograph head with a smooth cross section profile and the conventional support system of the contact strip sometimes wrecks an undesirable lift force characteristic. Therefore, authors are developing multi-segment pantograph head, which have a new support system for avoiding the abnormality of the lift force characteristic. Furthermore, in order to stabilize the lift characteristic at high speeds due to wear of the contact strip and so on, authors are also developing a method to actively control method of the lift by some pressure on the pantograph head surface and the working height of the pantograph. This paper describes the validation result of the multi-segment pantograph head and lift control method by bench test and wind tunnel test.