

Mechanism of the Mechanical Pneumatic Steering System and Its Effect of Reducing Lateral Force

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The authors have developed a steering system for a bolster-less bogie named “Mechanical Pneumatic Steering System” that is mainly composed of three mechanical gadgets: the steering actuator, the pneumatic valve, and the bogie angle sensing device. In this paper, we report the function and mechanism of these gadgets, and among them, we explain the bogie angle sensing device in more detail. Then the paper shows the results of the bench test to evaluate the performance of the sensing device. Finally, it presents the results of the running test on the test track using a bogie equipped with the mechanical pneumatic steering system and its effect of reducing lateral force.