

Investigation of Causes of Breakage of Front Rod L-shaped Fitting and Maintenance Methods to Prevent It

Shunsuke SHIOMI Sohei SHIGEMORI Yoshikazu OSHIMI

Breakage of front-rods caused by environmental conditions around turnouts and point machines has been an issue in maintaining signalling equipment. This study first investigated the relationship between environmental conditions and strain in front rods through field surveys and measurement tests. Secondly, this study conducted a stress analysis of front rods using a FEM. The results identified the locations of stress concentration in front rods and clarified how the extension adjustment condition affects stress. Using these findings, precautions for maintenance work on turnouts and point machines were proposed to prevent breakage of front-rods.