

FIBA:-Failure indication & Brake Application

Air spring used in the Secondary suspension of EMU, DEMU coaches tend to fail. Hence a mechanism is required to inform the failure of the spring to the driver so that the speed can be regulated to a safe speed or auto actuation of braking to a reasonable limit to avoid damage to the coach and prevent an accident.

Working principle:

Pressure differential system:-System consists of a valve to sense the pressure of compressed air in each bellow of the bogie constantly and initiate normal brake application when the difference in pressure between the bellow in that bogie becomes more than $1.7 \pm 0.15 - 0.05 \text{ kg/cm}^2$. FIBA should apply brake in the complete train and should provide whistling sound as well as red indication through indicator provided with FIBA device.

Absolute pressure system : -System consists of a valve to sense the pressure of compressed air in each bellow of the bogie constantly and initiate normal brake application when the pressure in any or both air spring bellow of concerned bogie drop to $1 \pm 0.1 \text{ kg/cm}^2$. FIBA should apply brake in the complete train and should provide whistling sound as well as red indication through indicator provided with FIBA device.

Dual System: - system follows both pressure differential system as well as absolute pressure system. In loaded condition it follows Pressure differential system whereas in tare condition it follows Absolute pressure system. The system consists of valves to sense the pressure of compressed air in each bellow of the bogie constantly as well as differential pressure between both bellow of concerned bogie. Normal brake application is initiated whenever pressure in any or both air spring bellows of concerned bogie drop to $1 \pm 0.1 \text{ kg/cm}^2$ OR whenever the pressure difference between both air spring bellows become more than $1.7 (+0.15, -0.05 \text{ kg/cm}^2)$. Due to bellow burst or spring failure. FIBA should apply break in the complete train and should provide whistling sound as well as red indication through indicator provided with FIBA device.