

ELECTRONIC WEDGE BRAKE SYSTEM

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ABSTRACT

Electronic wedge brake system (EWB) is the foundation to achieve the future vehicle chassis safety. The EWB is a self-reinforcement system that can reduce the actuation forces, and result a more efficient brake compared to existing conventional brake system that supported by 12V vehicle electrical systems. The basic mechanism idea that applied in EWB is using a wedge to supply frictional force between the brake pad and brake disk to rest the vehicle. Thus, EWB can eliminate some mechanical parts such as hydraulic system to reduce the primary mass of the brake system.

When the driver engages the brake pedal, the EWB system electronically transmits the activation signal to the interconnected brake modules. After the brake activation signal is received, the DC electric motor will actuates a wedge mechanism to move the wedge into the required position according to the sensor feedback values. These will cause the brake pad to be pressed against the brake disk. Furthermore, in electronic control system the precious and accurate microprocessor and sensors must be implement in order to achieved the reliability and efficiently.