

FABRICATION OF INTELLIGENT REVERSE BRAKING SYSTEM

ABSTRACT

The aim is to design and develop a control system based on intelligent electronically controlled automotive braking system is called “INTELLIGENT REVERSE BRAKING SYSTEM”. Sensor Operated Pneumatic Brake consists of IR transmitter and Receiver circuit, Control Unit, Pneumatic breaking system. The IR sensor is used to detect the obstacle. There is any obstacle in the path, the IR sensor senses the obstacle and giving the control signal to the breaking system. The pneumatic breaking system is used to brake the system. So basically here the car brakes on its own by determining the distance from the object.

The IR TRANSMITTER circuit is to transmit the Infra-Red rays. If any obstacle is there in a path, the Infra-Red rays reflected. This reflected Infra-Red rays are received by the receiver circuit is called “IR RECEIVER”. The IR receiver circuit receives the reflected IR rays and giving the control signal to the control circuit. The control circuit is used to activate the solenoid valve.

If the solenoid valve is activated, the compressed air passes to the Single Acting Pneumatic Cylinder. The compressed air activate the pneumatic cylinder and moves the piston rod. If the piston moves forward, then the breaking arrangement activated. The breaking arrangement is used to break the wheel gradually or suddenly due to the piston movement. The breaking speed is varied by adjusting the valve is called “FLOW CONTROL VALVE”. The compressed air flow through the Polyurethane tube to the flow control valve. The flow control valve is connected to the solenoid valve.

Braking is nothing but bringing a moving vehicle or moving body to a stop. Nowadays safety is an important feature in the automotive industry. The intelligent braking system is the next step to automation. Presently cars have the alarm system where when the car gets too close to an object an alarm is triggered which warns the driver about an object close by. But this feature has produced lot of problems and are prone to human error. We have enhanced the facility by using the same system but we have altered it so that the car brakes automatically when an obstacles close by. The aim is to design and develop a control system based on intelligent electronically controlled automotive braking system.