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ijirset@gmail.com

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Passenger Emergency Alarm Valve (PEAV)

Mrs. R Anjana Devi¹, Bala Subramaniam², Karthikeyan V³, Dhinesh N⁴, Kabilan V⁵

Assistant Professor, Department of Electronics and Communication Engineering, Adhiyamaan College of Engineering, Krishnagiri, Tamil Nadu, India.¹

Industry Supervisor, Department of Electronics and Communication Engineering, Adhiyamaan College of Engineering, Krishnagiri, Tamil Nadu, India.²

U.G Scholars, Department of Electronics and Communication Engineering, Adhiyamaan College of Engineering, Krishnagiri, Tamil Nadu, India.^{3,4,5}

ABSTRACT: When the alarm chain is force, the gas pressure from the Brake pipe is ventilated out through the choke provided within the rider emergency alarm valve. because of the fulminant come by gas pressure from the brake pipe within the system, the flowing indicator within the Locomotive deflects from its traditional position and conjointly provides hooting signal. By this, the driving force involves realize the come by BP within the formation and he applies the brakes to prevent the train. It consists of a elastic device hollow piston fitted with a check valve at all-time low. it's conjointly got a bearing chamber at all-time low of the piston and a brake pipe chamber at the highest of the piston.

KEYWORDS: Alarm chain, air pressure, hooting signal, piston.

I. INTRODUCTION

Passenger Emergency warning device is provided on the coaches to be used by movement passengers just in case of emergency. The train is stopped by actuation the chain. antecedental 2 traveller Emergency Alarm Signal Devices were provided on the coaches that are situate date it there facet of 1 finish wall of the coach. Now only 1 PEASD is fitted on the tip wall of the coach. traveller emergency warning device consists of 2 components:

1. traveller Emergency Alarm Signal Device (PEASD).
2. traveller Emergency Alarm Valve (PEAV).

These 2 parts together provide a sign by reducing BP pressure to the balmy pilot and Guard that some traveller is in ought to stop the train. The indication is transmitted from the coach within the type of reduction in BP in BP Gauge once the traveller pulls the chain

II. EXISTING METHOD

There is no current technology which is used to stop the train by the passenger Only this Passenger emergency alarm valve works by the air pressure the release on air that locks the break in the wheel.

Disadvantage:

Alarm valve (PEAV) specially on pulling the pressure rod of PEASD and it does not show any brake. Pressure reduction effect.

III. PROPOSED METHOD

Apply a voltage of one hundred ten V DC to the circuit of the indicating lamp of the PEAV. Pull the in-operation hook of the signal device and observe that the atmospheric pressure starts discharge from each the PEASD and also the PEAV from their exhaust ports unceasingly. The lamp ought to glow. The gauge ought to stabilize at Associate in Nursing intermediate reading to balance between the recess and also the exhaust rate of flow of the compressed gas. Reset the signal device with the resetting key and note. The discharge of atmospheric pressure from the exhaust of the signal device ought to stop. It ought to conjointly stop from the exhaust of the PEAV and also the indication lamp ought to turn out. The gauge and may begin increase to five.0 kg/ cm². currently once more check for escape everywhere the alarm valve, particularly at the exhaust port. No escape is permissible. shut cock and pull the in-operation hook of the signal device. Wait until gauge browse zero. Disconnect the alarm valve from the take a look at stand and wipe out all soap suds from the device. shut all open ports with appropriate closure plugs until any article of furniture on the coach.

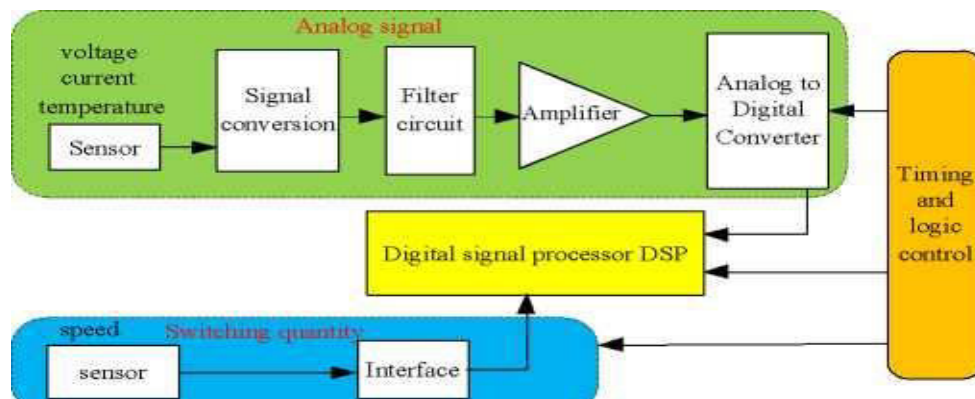


Fig.01: Circuit diagram of speed sensor

IV. DESIGN DIAGRAM

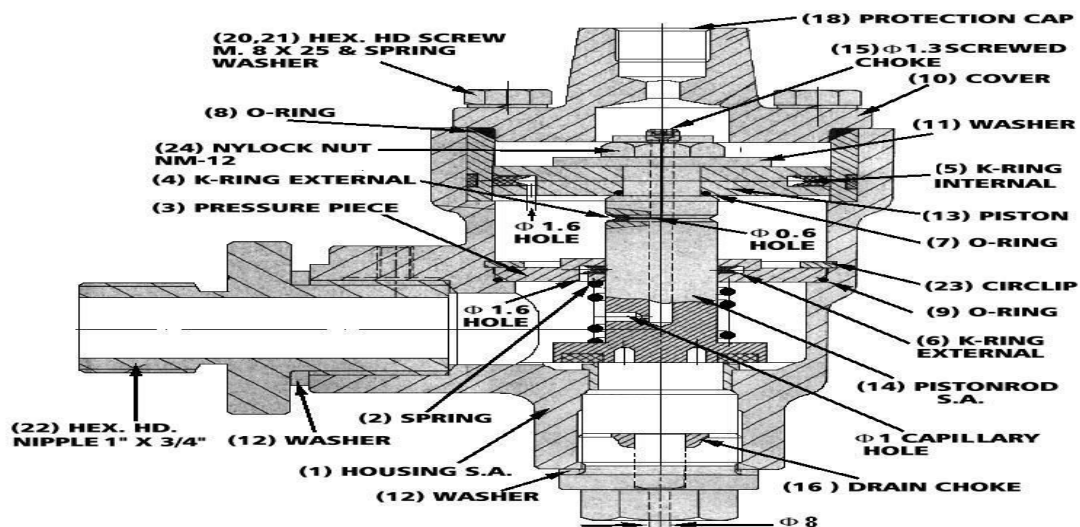
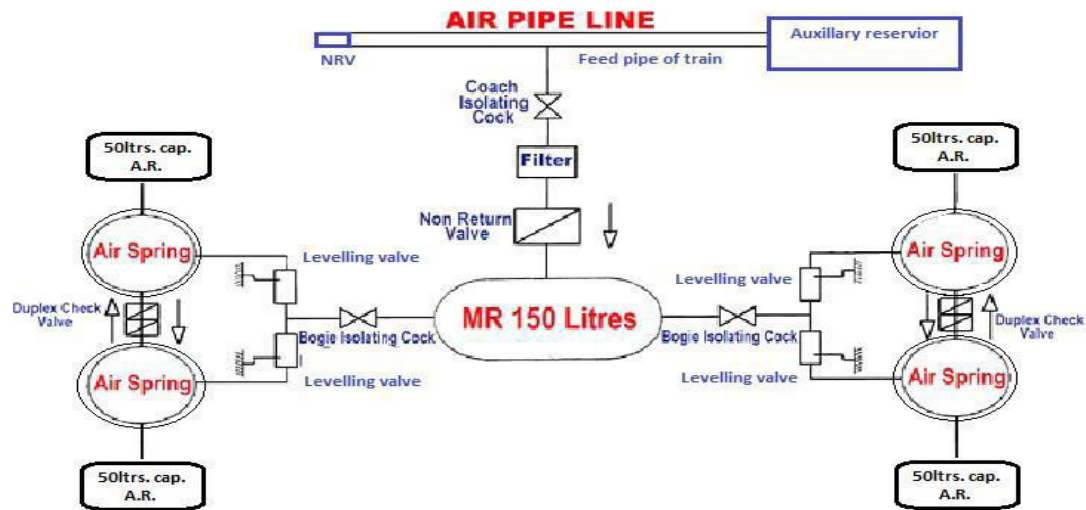


Fig.02. Valve design diagram

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SCHEMATIC DIAGRAM OF AIR SUSPENSION EQUIPMENTS

V. FLOW CHART

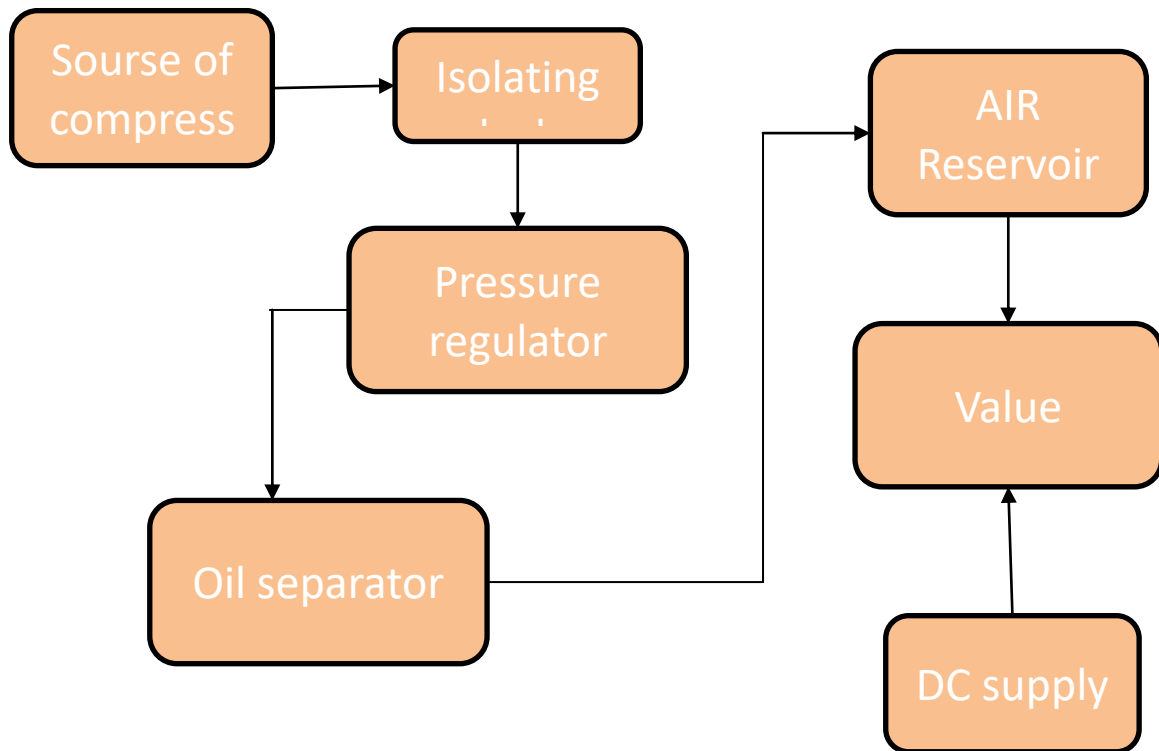


Fig.03.PEAV flow diagram

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V. WORKING PRINCIPLE

During charging the brake pipe chamber and also the management chamber of PEAV are charged with five.0 Kg/Cm², the management chamber is charged through the restricted passage. The air that obtainable is out there is on the market is obtainable is accessible is offered} at the brake pipe chamber at the highest of the piston is additionally created available at the highest of the pilot valve of PEASD. throughout charging the spring-loaded check valve closes the passage between main brake pipe and also the exhaust of PEAV. once the chain is force by the traveller, the pilot valve in PEASD is raised 1st. The air from brake pipe chamber of PEAV is then free through the exhaust ports of PEASD and successively, brings the pressure at the highest of the piston to zero instantly. thanks to the existence of management pressure at all-time low of the piston, the hollow piston gets raised, that successively connects the most brake pipe with the exhaust to expend the air from main brake pipe to initiate brake application

VI. RESULT

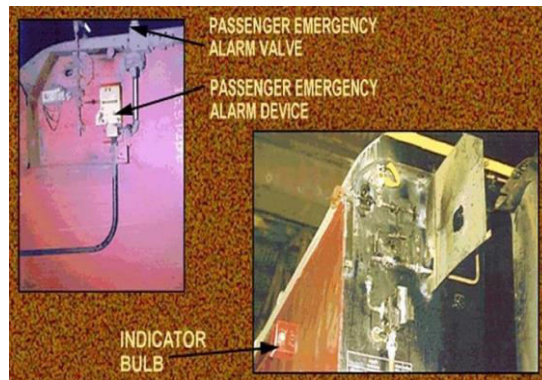


Fig.03. Passenger emergency alarm device

By the passenger emergency alarm valve the air pressure get release through exhauster and the break are get locked and the train get to stop slowly

VII. LITERATURE SURVEY

1. S. Sawadisavi J. Edwards, E. Resend, J. Hart, C. Barkan, and N Ahuja, "Development of a machine vision system for review of railroad," in Proc. Amer. Railway Eng. Maintenance manner Assoc. Annu. 2012

Railroad engineering practices and Federal Railroad Administration (FRA) laws need track to be inspected for physical defects at such that intervals, which can be as typically as double per week. Most of those inspections square measure conducted visually by railroad inspectors and embrace detective work defects about the ballast section, ties, fasteners, rail, and special track work. Enhancements to the present manual review method square measure attainable exploitation machine-vision technology, that consists of recording digital pictures of track components of interest and analyzing them exploitation special algorithms to spot defects or their symptoms.

2. M. Singh, S. Singh, J. Jaiswal, and J. Hemp shall, "Autonomous rail track review exploitation vision based mostly system," in Proc. IEEE Int. Conf. Comput. Intel. motherland Secure. Pers. Safety, 2009

A pc vision system, consisting of field-acquired video and ulterior analysis, might improve the potency of the present ways. Such a system is prototyped, and therefore the following challenges square measure addressed: the detection,

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segmentation, and defect assessment of track elements whose look vary across completely different tracks and therefore the identification and review of special track areas like track turnouts. AN algorithmic rule that utilizes the periodic manner within which track elements repeat in AN review video is developed. Spectral estimation and signal-processing ways square measure want to offer strong detection of the sporadically occurring track elements. Results square measure incontestable on field nonheritable pictures and video.

3. R. Clark, S. Singh, and C. Heist, "Ultrasonic characterization of defects in rails," Insight, vol. 44, no. 6, pp. 341–347, 2002

This project presents a time period VIS for distinct surface defects of rail heads. VIS includes the Image Acquisition system (IAS) and therefore the image analysis system. IAS acquires grey rail pictures for the surface of a rail head, and therefore the latter processes rail pictures and detects attainable defects. This paper proposes the native Normalization (LN) methodology to boost the excellence between defects and background in an exceedingly rail image, considering illumination difference and therefore the variation of reflection property of rail surfaces. VIS initial acquires a rail image by the image acquisition system, and then, it cuts the sub image of rail. Track by the track extraction algorithmic rule. Then, VIS enhances the distinction of the rail image. At last, VIS detects defects exploitation the defect localization supported projection profile (DLBP), that identifies attainable defects exploitation the projection profile of the mean intensity over every longitudinal (or transversal) line. this is often strong to noise and extremely quick. The planned LN methodology and DLBP algorithmic rule square measure higher than the connected well-established approaches. the space of the crack may also be found supported sure assumption.

4. A.H. Cribbens, "Solid-state interlocking (SSI): AN integrated electronic signaling system for inject railways", IEE proceedings, 2012

SSI utilizes a 2-out-of-3 redundancy design, whereby all safety-critical functions square measure performed in 3 separate process lanes and therefore the results voted upon. AN SSI interlocking cubicle includes 3 Interlocking Processors or Multi Processor Modules (MPMs), 2 Panel Processors and a medical specialty Processor (DMPM). AN SSI system will care for 2 MPMs within the event of the failure of 1. It doesn't would like the DMPM to perform as AN interlocking, as this drives the technician's terminal solely.

5. G. Tarnai, "Safety verification for train control communications", IEEE journal on hand-picked areas in communications, vol. sac-4, no. I, 2012

In this project we have a tendency to introduced the integration of railway track measure system. In our planned system it's wont to discover the railway crack. This project consists of IR detector& hearth sensor. The IR detector is employed to discover the crack and furthermore as distances, hearth sensors used to discover the hearth accidents. to speak the received info, we have a tendency to build use of a GSM electronic equipment. The GSM module is being used to send the current latitude And line of longitude information to therelevant authority as anSMS. The importance of this project is applicable each day & night time detection method applicable each day & night time detection method.

V. CONCLUSION

ACP (alarm chain pulling) conjointly causes a little lever to be discharged close to the emergency valve (usually mounted close to one finish of the coach), that doesn't retract to its traditional position even once the chain is discharged. this enables the motive force (or guard) to seek out enter that coach the ACP really occurred. once the coach is isolated, the lever must be manually reset. till this is often done, the lamp and buzzer within the locomotive

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cab square measure unendingly activated. An electrical fuse controls the lamp and alarm within the locomotive cab; in cases wherever defective instrumentation causes the lamp and bell to travel off, the motive force will disable them by putting the MCB (miniature circuit breaker) within the "Off" position. Despite the apparent safety hazards, generally this is often resorted to by drivers once driving trains through sections wherever spurious ACP incidents square measure quite common.

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BIOGRAPHY



Mrs. R. Anjana Devi,
Assistant Professor,
Engineering Department,
Adhiyamaan College of Engineering,
Anna University.



Karthikeyan V,
Bachelor of Engineering,
Adhiyamaan College of Engineering,
Anna University.



Kabilan V,
Bachelor of Engineering,
Adhiyamaan College of Engineering,
Anna University.



Dhinesh N,
Bachelor of Engineering,
Adhiyamaan College of Engineering,
Anna University.



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