

a. AUTOMATIC DV TESTING SYSTEM

During the inspection of General Manager / SC Railway to Carriage Workshop, Lallaguda on 08.12.2015 the Automated DV Testing System was inaugurated which is a unique testing system designed and developed at Carriage Workshop/Lallaguda.

The Automated DV Testing System is developed to overcome the human errors and laborious working for testing the Distributor Valves. The existing system of Manual DV testing requires high skilled operators to perform the test on the various types of Distributor valves as each type of Distributor valve have different testing parameters.

Hence a fully Automated DV Testing System is developed, which can eliminate all the above drawbacks. The Automated DV Testing System is developed based on Micro Controller along with PC system which will perform all the test procedures sequentially as per the make and type of Distributor Valve. During the testing process the result of each test parameter will be displayed on the screen as well as the data is logged on to a database on server system.

This fully Automated DV Testing System needs only fitment of DV thereafter all the prescribed test procedures will be carried out by the computer wherein human intervention is totally avoided.

The database testing results of each Distributor Valve logged on Server can be used for generating managerial information and data retrieval etc. Various reports can be generated from the database for the critical analysis and to improve maintenance practice and correction/remedial measures. A sample test report generated is enclosed.

Distributor Valve Test Report

DocNo:	01	R/ABS/Testing of DV		Ref: WI/ABS/01
RevNo:	00	Effective Date:	01/09/2015	Page1of 1

DV No. & LGDNo.		Make&Type		Mfg. Year	Date received	Repair Type	Operator & Date Tested	
11060087	1542	SIL	C3W	2011	9/12/2015	New	Abdulla	09/12/2015

S No	Nature of test		Permissible limits	Observation
1	Chargingtime: ControlReservoir	C3W	260+/-20 sec	265
		KE	160+/-10 sec	
	Aux. Reservoir	C3W	270+/-30 sec	290
		KE	170+/-10 sec	
		Application Time	3-5sec	3

2	Full Service Application	ReleaseTime	15- 20sec	15
		Max.Brake Cy. Pressure	3.8+/- 0.1 kg/cm ²	3.8
3	Re-Feeding Test	BC pressure	>3kg/cm ²	3.7
4	Over Charge Protection (BPto6 kg/cm ² for 10sec)	CRpressure should not increase more than 0.1kg/cm ² within 10sec.		5
5	Endurance Test	BC pressure should be >3kg/cm ² for each cycle		3.8
6	Graduated Application	Gradual increase of BC pressure with decrease ofBP		Pass
7	Graduated Release	Gradual decrease of BC pressure with increase of BP		Pass
8	Sensitivity Test	BC pressure		Pass
9	In-Sensitivity Test	BC pressure		Pass
10	Emergency Application Brake	Max. Brake Cy. Pressure	3.8+/- 0.1 kg/cm ²	3.8
		Br. Application Time	3-5sec	4
		Br. Release Time	15- 20sec	15
11	Manual Release of Brakes : Manually Pull QRV			

Photographs of the innovation:

