

## DISTRIBUTOR VALVE TEST RIG



The system is designed to test the performance of the Distributor valve. Distributor Valve works on Pressure difference in the Brake Pipe. The system is consisting Brake Pipe, Auxiliary Reservoir, Brake Cylinder and Control Reservoir.

## **The DV Test Rig Test the following Parameters one by one :**

1. Charging Time of AR & CR
2. Leakage Test
3. Brake Application Time
  - i. In Full Service Application
  - ii. In Emergency Application
4. Brake Releasing Time
  - i. In Full Service Application
  - ii. In Emergency Application
5. Max. Brake Cylinder Pressure
  - i. In Full Service Application
  - ii. In Emergency Application
6. Sensitivity
7. Insensitivity
8. Graduated Application
9. Graduated Release
10. Re-feeding Test
11. Availability of BP pressure
12. Overcharge Protection Test
13. Quick Release Valve Test

The System can be used to test the Distributor Valve for Coach and Wagon (Loaded or Empty)

The stroke Length of the Brake Cylinder can be adjustable manually from machine according to the diameter of Brake Cylinder.

The system works on a predefined Test Sequence with an option to test the particular test.

## System Specifications

Medium	=	Air
Pressure Rating	=	10 Kg/cm <sup>2</sup>
Air supply Pressure Range	=	8-10 Kg/cm <sup>2</sup>
Flow Rate	=	2400 LPM
Temperature Range	=	Ambient

## 5. Working Of The System:

The System is consisting dual working mode i.e. Automatic and A9 operated mode.

In Automatic mode the Test will be perform according to the predefined sequence automatically and also with an option for a particular test according to the requirement.

In manual mode the test will be done with A9 (Drivers Brake) and Toggles Switch.

**Mode Selection-** The mode selection can be done with the Mode Selector with an option-

- 1- Automatic Mode.**
- 2- A9 Operating Mode.**

**Automatic Mode-**This mode is consist of two mode one Automatic with the Computer and other Manual with the Toggle Switches. These modes can be selected from the Manual Control Panel Selector Switch.

**Auto Mode with Computer had an option-**

- 1- **Auto**-In this mode the Test will be perform according to the predefined
  - a. Sequence automatically.
- 2- **Manual**-In this mode the Test will be performing according to the requirement.

**A9 Operating Mode-** In this mode all the Test can be done with the A9 Drivers Brake.

## REPORTS(Sample)

To show the report open the file

**D:\IR DV Test Bench\Software\Info\Reports\Year\Month\Date\Text report**

**Report 1-** This is the first Page of Tabular or Text Report as shown below-

<u>Performance Test Result of Distributor Valve</u>				
<small>(R\ABL\DV Testing\02)</small>				
DV Housing Number	NEOMETRIX	Date of DV testing	21-JAN-2019	
Make	KBI - KE (KEO)	Type of DV	KNORR	
POH Number	NEOMETRIX	Plant Number	A1721/1	
POH by	SERVICE64	Tested by	SERVICE64	
Shift	Day Shift			

  

S. No	Test of DV	Specified Value	W1_BOXN _ BCN _ BTPN Acquired Values	Results
1	<b>Charging Time(in second)</b>			
	AR Pressure filling time from 0 to 4.8 kg/cm <sup>2</sup>	60 – 120	Test Aborted	AR Test Result
	CR Pressure filling time from 0 to 4.8 kg/cm <sup>2</sup>	160 – 210	Test Aborted	CR Test Result
2	<b>Leakage Test</b>			
	(a) Full Service Application	No Leakage	Test Aborted	FSA Test Result
	(b) Emergency Application	No Leakage	Test Aborted	EA Test Result
	(c) Release	No Leakage	Test Aborted	FSA-R Test Result
3	<b>Break Application Time (in Second) for BC pressure filling from 0 kg/cm<sup>2</sup> to 3.6 kg/cm<sup>2</sup></b>			
	(a) Full Service Application	18-30	Test Aborted	BA_FSA Test Result
	(b) Emergency Application	18-30	Test Aborted	BA_EA Test Result
4	<b>Break Release Time (in Second) for BC pressure draining from 3.8 kg/cm<sup>2</sup> to 0.4 kg/cm<sup>2</sup></b>			
	(a) Full Service Application	45-60	Test Aborted	BR_FSA Test Result
	(b) Emergency Application	45-60	Test Aborted	BR_EA Test Result
5	<b>Maximum Pressure in B.C (3.8±0.1 kg/cm<sup>2</sup>)</b>			
	(a) Full Service Application	3.7-3.9		MP_FSA Test Result
	(b) Emergency Application	3.7-3.9		MP_EA Test Result
6	<b>Sensitivity Test</b>			
	Response of brake when 0.6kg/cm <sup>2</sup> pressure drop in 6 seconds after BP pressure isolated from MR	Brake should apply within 6 sec	Test Aborted in Test Aborted	Sensitivity Result

**Report 2-** This is the second Page of Tabular or Text Report-

S. No	Test of DV	Specified Value	W1_BOXN _ BCN _ BTPN Acquired Values		Results
8	<b>Re-feeding Test</b>	Re-feeding should be available	Test Aborted		Re-feeding Result
	To check the availability of Re-feeding in DV when BC pressure is slowly reduce in condition of full Service application.				
9	<b>Graduated Application</b>  BP pressure drop 5.0 to 3.4 Kg/cm <sup>2</sup> in seven steps of 0.2 Kg/cm <sup>2</sup> (4.8,4.6,4.4,4.2,4.0,3.8 & 3.6) BC pressure in kg/cm <sup>2</sup>		BP	BC	GA Result
			FAIL	TEST ABORTED	
			FAIL	TEST ABORTED	
			TEST ABORTED	TEST ABORTED	
			TEST ABORTED	TEST ABORTED	
			TEST ABORTED	TEST ABORTED	
			TEST ABORTED	TEST ABORTED	
			TEST ABORTED	TEST ABORTED	
			TEST ABORTED	TEST ABORTED	
			TEST ABORTED	TEST ABORTED	
10	<b>Graduated Release</b>  BP pressure increase 3.4 to 5.0 Kg/cm <sup>2</sup> in seven steps of 0.2 Kg/cm <sup>2</sup> (3.6,3.8,4.0,4.2,4.4,4.6 & 4.8) BC pressure in kg/cm <sup>2</sup>		BP	BC	GR Result
			TEST ABORTED IN TEST ABORTED	GR_1	
			TEST ABORTED	GR_2	
			TEST ABORTED	GR_3	
			FAIL	GR_4	
			FAIL	GR_5	
			TEST ABORTED	GR_6	
			TEST ABORTED	GR_7	
			TEST ABORTED	GR_7	
			TEST ABORTED	GR_7	
11	<b>Availability of BP Pressure</b>	4.85 kg/cm <sup>2</sup> (approx.)	BP Value		BP Result
	To show BP pressure in kg/cm <sup>2</sup> after drop out BC pressure up to 0.4kg/cm <sup>2</sup>				
12	<b>Over Charge Protection Test</b>	CR should not increase for 25 seconds	OCP Value		OCP Result
	To overcharge BP pressure up to 6.0kg/cm <sup>2</sup> in full service application				

# 10. The Graphical Report (Sample)

Charging Time - AR Test

