

## **Specifications for Single Wagon Testing Rig. (SWTR)**

### **Specification No.:Mech./M&P/2900/GM/13**

#### **(A) IMPORTANT NOTICE**

(i) Tenderer are required to give comments/compliance against each clause and sub clause on the following Technical Specifications. Comments should be specific and to the point and precise information should be given wherever asked for. Deviations, if any, should be clearly indicated with details and proper justification.

(ii) The bidder will quote only for the same make of sub-assemblies and equipment wherever specified. Other makes of sub-systems will normally not be acceptable.

(iii) Unless stated latest alterations/ revisions of specifications/ standards/drawings shall be applicable. In respect of safety standards and environmental standards relevant to the machine, it is mandatory for the machine manufacturer to ensure compliance with international (CE/ISO/ DIN/JIS) / National standards (IS) wherever applicable in their offer.

(iv) In case of non-compliance of these instructions, Offers are likely to be ignored.

(v) Tenderer must offer and quote the price of all the specified concomitant accessories, as these are considered essential for commissioning and utilization of the machine. Offers received without prices of any of the specified concomitant accessories will be considered as incomplete and shall be liable for rejection.

#### **(B) OPERATING ENVIRONMENT**

(i) The machines are required to work in tropical conditions, i.e. Maximum variation of ambient temperature would be from 0-50°C with maximum humidity of 98%.

(ii) The electrical equipment should be tropicalized and other sub-assemblies of the machine should be suitably designed to function efficiently under tropical conditions.

(iii) The bidder should clearly indicate the features/sub-assemblies provided in the electrical, mechanical and electronic systems to function effectively under the above operating conditions.

1. **Description and Scope of Supply** :- Scope of Supply covers supply, Design and manufacturing of testing Rig as per drawing No: RCF/MECH/SWTR/01 MH required to test during emergency brake application and release, sensitivity and insensitivity testing in Air brake section in furnishing shop at Rail Coach Factory, Kapurthala.

2. **General Details**:- Single Wagon Testing Rig consist of following parts:-

Sr. No.	Description	Quantity in No.	Remarks
2.1	C-1 TO C-7 Isolating cock R1x2" BS-5351	07	Make: Audco, L&T or Legris, Three piece design and should be of heavy duty.
2.2	Check Valve R1X2"	01	Flowjet/Leader/Zoloto and should be of heavy duty.
2.3	Pressure Reducing Valve	01	Festo/ Legries and should be of heavy duty.
2.4	4" Pressure gauge for FP	01	SS-304 Body&spindle dial 4" Pressure 14 Kg/cm <sup>2</sup> with calibration on 0.1 Kg/cm <sup>2</sup> .
2.5	4" Pressure gauge for BP	01	SS-304 Body&spindle dial 4" Pressure 14 Kg/cm <sup>2</sup> with calibration on 0.1 Kg/cm <sup>2</sup> .
2.6	Drivers brake Valve 1 KBT 94 ECF8/2000	01	Escort make
2.7	Air Reservoir 40 lit. IS:2825	01	As per IS.
2.8	Flexible Hose BP3/4"X2.5 mtr length	01	SAE 100 R1 Working Pressure 105 Bar, Bursting Pressure Twice the Working Pressure, Make Dunlop/Gates. and should be of heavy duty.

<b>2.9</b>	BP Coupling Head 967722	01	Escort
<b>2.1</b>	Flexible Hose FP ¾"X2.5 mtr. Length	01	SAE 100 R1 Working Pressure 105 Bar, Bursting Pressure twice the W.P. Make Dunlop/Gates and should be of heavy duty.
<b>2.11</b>	FP Coupling Head 967728	01	Escort
<b>2.12</b>	Heavy Duty G.I. Pipe 2mtr. Long with ½"x3/8 adaptor	02	SAE 100 R1 Working Pressure 105 Bar, Bursting Pressure twice the W.P. Make Dunlop/Gates.
<b>2.13</b>	Wheel Mounted on shaft & Bearing Size 8"	02	Shaft EN8, Bearing NBC/SKF/FAG
<b>2.14</b>	Sensitivity (choke size)	1	1.3 mm Approx.
<b>2.15</b>	Insensitivity (choke size)	1	0.8 mm Approx.

3. **Main Characteristic:-** Layout should be as per drawing No: RCF/MECH/SWTR/01 MH(enclosed).Pressure Vessel should be as per 1S:2825. The maximum pressure of vessel 7kg/cm<sup>2</sup> and to be tested as mentioned in 1S: 2825.
4. **Deviation:-** Any deviation from given drawing, should be mentioned by the contractor.
5. **Installation, Commissioning and Proving Test:-** Tenderer shall arrange installation, commissioning and proving test of SWTR at Rail Coach Factory, Kapurthala with in 20 days after receipt of store in good condition.
6. **Inspection:-** Inspection will be carried out by consignee and Shop User at firms premises before supply of material to Rail Coach Factory, Kapurthala.
7. **Payment:-** 90% payment will be made after receiving of material in good condition and accountal as per purchase order/specification at Rail Coach Factory, Kapurthala Balance 10% payment will be released after successful installation, Commissioning and prove out at RCF site.
8. **Warranty:-**Warranty of store will be as per IRS conditions of contract.

**Note:** - 1. Choke size to be decided by trial and error method to suit the required flow rate as per 02-ABR-94 Approximate Chock size sensitivity 1.3 mm and insensitivity is 0.8 mm.

2. Pressure gauge should be 0 to 14 kg/cm<sup>2</sup> with calibration 0.1 kg/cm<sup>2</sup>.

3. Testing certificate of pressure vessel (Air reservoir should be submitted with supply).

## **9. TECHNICAL LITERATURE:**

**9.1** One copy of the printed illustrative catalogue showing features of the machine and its elements must be enclosed with each copy of the bid.

**9.2** The successful bidder will have to furnish, 04 copies of spare parts catalogue (giving the part list number of each component and assembly drawings), maintenance manual, trouble shooting guide & operation manual of the machine to the consignee directly. Bidders should provide a list of literature, which they will supply along with the machine. The technical literature shall be provided for complete machine.

**9.2.1** Part list of machine components should have following information.

I OEM part no.

II Make

III Quantity on machine.

## **10. SPARES:**

List of recommended spares required for normal maintenance to cover complete range of Mechanical, Pneumatic and Electrical equipments including controls, on double shift working basis should be furnished. A complete catalogue giving the part list number of each component and assembly drawings shall also be provided with each machine in duplicate.

## **SPECIAL FEATURES:**

The bidder should clearly indicate the special features incorporated in the machine, if any, and also the advantages of the special features.

## **11.0 DEVIATIONS:**

- 11.1** The tenderer should certify that the machine offered fully meets with the specifications. Various design features incorporated in the machine to fulfill different technical requirements shall be fully explained in the offer. However, minor deviations from these specifications which do not affect or in any way interfere with the stipulated performance standards or would result in improved safety/reliability or would reduce recurring maintenance/operating cost of the machine, can be considered for acceptance. The tenderer in such eventuality, shall clearly indicate details of these deviations and their implications.
- 11.2** The tenderer in such eventuality shall clearly indicate the details of these deviations and their implications as per the following format:

S. No.	Clause/Item	Brief Description	Deviation	Justification For Deviation
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**12.0 INSPECTION OF EQUIPMENT AND TESTING:**

- 12.1** Manufacturer must have suitable facilities at their works for carrying out various performance tests on the machine/sub-systems. The tenderer should clearly confirm that all the facilities exist and shall be made available to the inspecting authority.
- 12.2** A sample inspection chart for inspecting the equipment should be supplied along with the bid. The inspection charts should indicate all the tests that are carried out during the machine manufacture and also the tests to be offered to inspection agency. For each test, standard acceptable range/limit of values should also be indicated.
- 12.3** The tenderer will submit Quality Assurance Plan being followed at the manufacturer's works for ensuring quality of the product offered in general and of fabrication of the structures.
- 12.4** Inspection of equipment and testing at manufacturer's works.
- 12.4.1** Authorized inspection agency will carry out capability test at manufacturers premises.
- 12.5** **Prove out at consignee's premises:**  
The consignee shall watch the performance of machine for a period of

one month (each working day having 2 shifts of 8 hours) before the final proving test certificate is issued.

<b>PREPARED BY</b>	<b>CHECKED BY</b>	<b>APPROVED BY</b>

22.07.2015

16.07.2015