

ISO 9001:2015	Document No: TM/HM/6/518	Version No:0.0	Date effective:
Specification of Conical shock absorber for VPR Machine (Part No. 90.23.00.100)			



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SPECIFICATION NO. TM/HM/6/518
SPECIFICATION OF CONICAL SHOCK ABSORBER FOR VPR MACHINE
(PART NO. 90.23.00.100)

FINAL DRAFT

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1.0 Scope: This specification covers the dimensional, functional and material requirements with testing criteria of the Conical shock absorber for VPR machine. This specification may be treated as provisional subject to modifications based on service performance.

2.0 Reference documents: Following documents have been referred to in this specification. Full sets of relevant drawings and the referred codes/specifications, duly incorporating the up-dated corrections/amendments, shall be available for reference at manufacturer's works.

- i) IS: 3400 of 1977.Method of test for vulcanized Rubbers
- ii) IS:2062 - 1992 - Steel for general engineering purposes – specification.
- iii) IS:77-1976 - Linseed oil for paints – specification.
- iii) RDSO Drg. No.- RDSO/TM/08/22 Conical shock absorber.

3.0 Functional requirement: Conical shock absorber is used to resist the machine vibration to supported components. All surfaces meant for machining shall be finished as mentioned in the drawing no. RDSO/TM/08/22.

4.0 Dimension & Tolerance: Dimensions and tolerances of the conical shock absorber shall be as mentioned in RDSO drawing no. RDSO/TM/08/22

5.0 Material:

5.1 The conical shock absorber shall be made with MS plate, natural rubber & high tensile steel (HTS) (bolt & nut).

5.2 Conical plate shall be made from Steel of Grade A or B (Mild Steel) conforming to IS:2062-1992 having minimum tensile strength 410 MPa i.e. 410 N/mm² with minimum percentage elongation of 23.

5.3 Bolt shall be of HTS make Unbrako, TVS or LPS only as per quantity required.

5.4 The Rubber compound shall be based on the natural rubber compounded suitably so as to meet the physical characteristics of the rubber as stipulated under para 6.

6.0 Physical characteristics of the Natural Rubber:

6.1 Hardness (shore 'A') : 58 to 65

6.2 Tensile strength (kg/cm²) : 175 minimum

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- 6.3 Elongation at break (%) : 400 minimum
6.4 Change after aging at 70⁰ Centigrade for 70 to 72 hours
6.4.1 Hardness (shore 'A') : - 0 to 3
6.4.2 Tensile strength : -15% to 10%
6.4.3 Elongation break : -15 to 10%

7.0 Bond strength between rubbers to metal: When 25 mm wide strip of rubber is cut from the finished product and tested by dead load method at an angle 180 degree, the values of separation shall be maximum 25 mm at a load of 5 Kg in one minute.

8.0 Manufacturing Process: Conical shock absorber shall be made by rubber moulding process.

9.0 Marking: Month and year of manufacture and manufacturer's code / identification shall be engraved / embossed on the non-functioning surface of the Conical shock absorber.

10.0 Inspection and Acceptance Criteria:

- i) Each components offered by manufacturer shall be checked visually for their surface finish, freedom from defects like porosity, cracks, improper edges etc.
- ii) The component found suitable after visual inspection, shall be checked for their dimensions as per relevant drawing.
- iii) Random sampling shall be done and three samples from each lot of maximum 500 pads shall be taken for testing. Two samples will be tested for the physical characteristics of the rubber material & one for the physical characteristics in normal condition vide para 6.4.1 to 6.4.3. Test method applied shall be as per IS: 3400 of 1977 and shall conform to the characteristics as stipulated in para 6.0.
- iv) The third sample be tested for determining the bond strength between rubber to metal and shall conform to the parameter mentioned under para 7. Care shall be taken during sample preparation, so that full thickness of rubber is cut by a sample tool. During testing the metal to be held by the jaw, and load shall be applied on the rubber strip. For holding rubber & metal at least 25 mm of length shall be separated manually.
- v) Supplier shall produce the certificate that the raw material use for manufacturing of the components conform to the specified materials as mentioned in para 5.0.
- vi) Any deviations in the test result from the requirement of the specification and drawing shall be the cause of rejection.

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11.0 Packing and Protection: The exposed mild steel portions of the component shall be protected with one coat of boiled linseed oil to IS: 77-1976. Linseed oil for paints or any other rust preventive compound. Each component shall be packed in card board case.

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