सत्यमेव जयते

RESEARCH DESIGNS AND STANDARDS ORGANISATION
Manak Nagar, Lucknow-226011

Track Machine and Monitoring Directorate

SPECIFICATION NO.TM/HM/6/556

SPECIFICATION OF PISTON ROD COMPLETE OF BOGIE TENSION CYLINDER FOR UNIMAT (PART NO. HZ10.080.036.0210.2)

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1.0 Scope: This specification covers the dimensional, functional and material requirements with testing criteria of the Piston Rod Complete of Bogie tension cylinder for Unimat. 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 updated corrections/amendments, shall be available for reference at manufacturer's works.

i) BS: 970 Part II Specification of direct hardening alloy steel.
ii) IS:77-1976 - Linseed oil for paints - specification.
iii) RDSO Drg. No. RDSO/TM/06/24 Piston Rod Complete of Bogie Tension cylinder for Unimat.

3.0 Functional requirement: It is provided in the bogie tension cylinder for holding machine frame in Unimat machine. It shall be capable to transmit force exerted by piston. All surfaces meant for machining shall be finished as mentioned in the drawing no. RDSO/TM/06/24.

4.0 Dimension & Tolerance: Dimensions and tolerances of the Piston Rod complete shall be as mentioned in RDSO drawing no. RDSO/TM/06/24.

5.0 Material: The Piston Rod & Piston shall be made of steel grade 817M40 (EN24) conforming to BS: 970 Part- II Specification of direct hardening alloy steel.

6.0 Manufacturing Process: Piston Rod complete shall be made by closed die forging only under belt drop forged hammer of adequate capacity capable of delivering minimum energy or force required for deformation during closed die forging of piston rod. Forging shall be machined to get final shape.

7.0 Heat treatment: Heat treatment of each Piston Rod shall be done by induction hardening to achieve case hardening of 30-35 HRC upto 1.25 mm depth.

8.0 Chromium plating: Hard chrome plating of 0.07-0.10 mm shall be done to provide hard, corrosion resistant surface of each component.

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

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. Machined surface shall be checked by any suitable pneumatic or electronic equipment.

ii) The component found suitable after visual inspection, shall be checked for their dimensions as per relevant drawing.

iii) Supplier shall produce the certificate that the raw material used for manufacturing of the component conforms to steel grade 817M40 (EN24) of BS: 970 Part- II as mentioned in Para 5.0.

iv) Minimum one or 2% of sample randomly picked up from each lot of consignment shall be checked for their hardness and hard chrome plating as per para no.7.0 & 8.0.

v) Minimum one no or 2 % sample of the component randomly picked up out of each lot of consignment and shall be subjected to chemical composition test. The consignee shall test the material for chemical composition at his laboratory or get the material tested in a reputed (NABL accredited or accredited by other international body like APLAC, MRA, ILAC etc) laboratory having proper facilities for testing. Before sending the samples for testing, the same shall be duly sealed and secret coding shall be done.

vi) Any deviations in the test result from the requirement of the specification and drawing shall be the cause of rejection.

11.0 Packing and Protection: Each component shall be protected with one coat of boiled linseed oil conforming to IS:77-1976 (linseed oil for paint) and shall be packed in card board case.

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