

ISO 9001:2008	Document No: TM/HM/6/161 Rev- 2	Version No: 2.0	Date effective: 21/05/18
Specification of Connecting Rod Bolt for Tamping Arm of Tamping Unit Center Bore and Nut with Washer of CSM (Part no.2E31.04)			



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SPECIFICATION NO. TM/HM/6/161 REV-2

**SPECIFICATION OF CONNECTING ROD BOLT FOR TAMPING ARM OF
TAMPING UNIT CENTER BORE AND NUT WITH WASHER OF CSM
(Part no. 2E31.04)**

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Prepared By:	Issued By:	

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- 1.0 Scope:** This specification covers the dimensional, functional and material requirements with testing criteria of Bolt for Tamping Arm Center Bore and Nut. 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) BS: 970 & BS:970 Part II Specification of carbon manganese steel and direct hardening alloy steel.
 - ii) IS:77-1976 - Linseed oil for paints - specification.
 - iii) RDSO Drg. No. TM/0425 REV-2 Bolt for Tamping Arm Center Bore and Nut.
- 3.0 Functional requirement:** Bolt for tamping arm is provided in the tamping bank to hold the tamping arm. Tamping arms move about it. It shall be capable to resist impact load of tamping bank and squeezing pressure coming on tamping arm through it. All surfaces meant for machining shall be finished as mentioned in the drawing no. TM/ 0425 REV-2.
- 4.0 Dimension & Tolerance:** Dimensions and tolerances of the Bolt for Tamping Arm Center Bore and Nut shall be as mentioned in RDSO drawing no. TM/ 0425 REV-2.
- 5.0 Material:** The Bolt for Tamping Arm Center Bore shall be made from Steel of Grade 709 M 40 (EN-19) and nut shall be made of Grade 080M40 (EN-8) conforming to BS:970 Part-II and BS:970 Specification of direct hardening alloy steel and carbon manganese steel respectively.
- 6.0 Manufacturing Process:** Bolt for Tamping Arm Center Bore 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 guide rod. Forging shall be machined to get final shape.
- 7.0 Heat treatment:** Heat treatment of each component shall be done by induction hardening process to achieve case hardening of 57-60 HRC upto 1.00 mm depth.

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8.0 Marking: Month and year of manufacture and manufacturer's code / identification shall be engraved / embossed on the non-functional surface of Bolt for Tamping Arm Center Bore and Nut.

9.0 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) Minimum one or 2% of sample randomly picked up from each lot of consignment shall be checked for their hardness as per Para no.7.0.
- iv) Supplier shall produce the certificate that the raw material used for manufacturing of the Bolt for Tamping Arm Center Bore, Nut & washer conforms to the Grade 709 M 40 (EN-19) and 080M40 (EN-8) respectively of BS:970 Part II & BS:970 as mentioned in Para 5.0.
- v) Minimum one no or 2 % sample of the Bolt for Tamping Arm Center Bore, Nut & washer 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 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.

10. 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 cardboard case.

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