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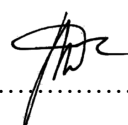
INFRASTRUCTURE ENGINEERING

ELECTRICAL DEPARTMENT SPECIFICATION

SPECIFICATION FOR HYDRAULIC BOLT TENSIONER

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Transnet Freight Rail - Infrastructure

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1. Scope

This specification stipulates Transnet Freight Rail's requirements for the supply and delivery of Hydraulic Bolt Tensioner. The equipment must be durable, reliable, and capable of operating under high-pressure conditions while ensuring safety and ease of use.

2. Tenderers

Tenderers shall indicate compliance or non-compliance with the specification. To elaborate their reason for non-compliance of a clause a separate sheet may be used to clarify the extent of non-compliance to specific clause.

3. Operating Conditions

Equipment to be supplied against this specification shall be suitable for satisfactory operation under the following conditions

3.1. Atmospheric condition

- 3.1.1. Altitude : 0 – 1800m above sea level
- 3.1.2. Ambient Temperature : -10 ° C to 40° C
- 3.1.3. Relative Humidity : As high as 90 percent
- 3.1.4. Ambient Storage Temperature : -10° C to 50° C

3.2. Performance Requirements

- 3.2.1. The hydraulic bolt tensioner must be capable of applying high axial load for accurate bolt elongation
- 3.2.2. It shall provide uniform and simultaneous tensioning across multiple bolts when used with a multi-port system
- 3.2.3. The equipment shall allow for precise pressure control to achieve the desired tensioning force.
- 3.2.4. The equipment shall be operated with minimum effort and reduce manual torque requirements.

4. Technical Requirements

4.1 Pressure and Load Capacity

- 4.1.1 The hydraulic bolt tensioner shall operate at pressures of up to 2000 bar
- 4.1.2 It shall be capable of handling various bolt sizes and grades according to industry standards.

4.2 Hydraulic System

- 4.2.1 The hydraulic pump shall be an air-operated hydrostatic pump.
- 4.2.2 The hydraulic bolt tensioner shall feature a pressure gauge for real time pressure monitoring
- 4.2.3 The hydraulic bolt tensioner shall have dual outlet connections to allow simultaneous operation of multiple tensioners
- 4.2.4 The equipment shall feature an air relief valve to protect against over-pressurization.

4.3 Material and Construction

- 4.3.1 The equipment shall be constructed from high-grade steel, ensuring superior strength, durability, and reliability for railway environment.
- 4.3.2 The equipment shall be coated with a lead-free paint finish, applied following a thorough chemical cleaning process

5. General Requirements

- 5.1 The tensioner shall include a built-in safety mechanism to prevent overloading
- 5.2 The tensioner shall comply with CE standards and other relevant industry regulations
- 5.3 Sufficient training must be provided to all operators of the clamps
- 5.4 The manuals will be provided on the day of the delivery of the clamps
- 5.5 The calibration certificate must be submitted during delivery of the equipment.