

**MANUFACTURE, SUPPLY, DELIVERY,
INSTALLATION, TESTING AND
COMMISSIONING OF A NEW
INDUSTRIAL VACUUM PUMP AND
PIPING IN BAYHEAD WAGONS**

**BAYHEAD WAGONS DEPOT, CRANE
ROAD, BAYHEAD**

REFERENCE No: FAI_DBN_SPEC_061

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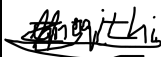
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Signature of Bidder/s: _____

Date: _____

Document Authorities

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Signature of Bidder/s: _____

Date: _____

1. INTRODUCTION

This specification is for the:

#	TASK	REQUIRED
1.	Installation	✓
2.	Documentation	✓
3.	Testing	✓
4.	Training	✓
5.	Commissioning	✓

of the specified:

#	ITEM	REQUIRED
a.	Technical specification outlines the supply, delivery, installation and commissioning of a new industrial vacuum pump and pipe work in Bayhead Wagons.	✓
b.	Submission of tender closing documents.	✓

2. SITE INSPECTION

- 2.1. All prospective contractors shall be required to undertake a compulsory site inspection to fully acquaint themselves with all aspects involved.
- 2.2. Arrangements to visit the site and confirmation of the date and time of the site inspection shall be made with Transnet Engineering Contract Manager.
- 2.3. The site inspection certificate shall be completed and countersigned by the Contract Manager on the day of the visit and must be submitted with the tender documents.

3. INFORMATION REQUIRED

- 3.1 Offers will not be considered unless full particulars and sufficient literature are provided at the tendering stage to enable Transnet Engineering Technical Officers the opportunity to assess each technical offer properly.
- 3.2 Should there be insufficient space for furnishing full details; contractors shall provide the additional details in their covering letter. The additional details shall be numbered in accordance with the applicable clause specified in the specification.

Signature of Bidder/s: _____

Date: _____

3.3 As prospective contractors are experts in their field, they are obliged to identify any shortcomings, such as omissions or sub-standard requirements, to the completeness of this specification. These must be brought to the attention of Transnet Engineering at tender stage.

4. TECHNICAL REQUIREMENTS

The following regulation and codes must be complied with: -

- BS466 and BS2573 – Design and Manufacture
- ISO 9001: 2015 Quality Management System
- The Occupational Health and Safety Act – Act 85 of 1993, Regulation No. 18 for power driven Machinery.

Except where otherwise provided for in the specification, all equipment offered will comply with the requirements of the relevant standard specifications of the SABS, if published, otherwise with the relevant standard of the British Standards Institution in force at the time of tendering.

Where equipment offered complies with the recognized standards of the country of manufacture and not specifically with the standards required by this specification, such equipment will be considered at the discretion of Management. In this case, tenders shall state fully all respects in which the equipment departs from the standard laid down in this specification.

The successful tender will at the conclusion of the installation provide a document along the lines “that the installation complies with national/international requirements and that all selected /designed items are compliant with Act 85 of 1995 and SABS practices applicable to the installation.

The equipment has been commissioned/ calibrated and employees as specified have been trained and found competent to operate the plant.”

- 4.1 Except where otherwise provided for in the specification, all equipment offered will comply with the requirements of the relevant standard specifications of the SABS, if published, otherwise with the relevant standard of the British Standards Institution in force at the time of tendering.
- 4.2 Where equipment offered complies with the recognized standards of the country of manufacture and not specifically with the standards required by this specification, such equipment will be considered at the discretion of Management. In this case, tenders shall state fully all respects in which the equipment departs from the standard laid down in this specification.
- 4.3 The successful tender will at the conclusion of the installation provide a document along the lines “that the installation complies with national/international requirements and that all selected /designed items are compliant with Act 85 of 1995 and SABS practices applicable to the installation. The equipment has been commissioned/ calibrated and employees as specified have been trained and found competent to operate the plant.”

Signature of Bidder/s: _____

Date: _____

5. TECHNICAL SPECIFICATION

This technical specification outlines the supply, delivery, installation and commissioning of a new industrial vacuum pump in Bayhead Wagons.

The service provider shall design, manufacture, supply, test and commission the following equipment:

(a). Scope of work for the supply of a vacuum pump

- Vacuum pump Unit: Heavy duty, continuous -duty vacuum pump with corrosion resistant internals.
- Drive Mechanism: High-efficiency, IP55-rated electric motor mounted on a common structural steel baseplate.
- Accessories: Inlet/outlet isolation valves, a vacuum relief valve, a suction strainer, non-return valves, and an exhaust silencer.
- Electricals: Local control panel, overload protection, and emergency stop.

(b). Operating & Performance Specifications

- Capacity: Design to handle a minimum suction volume of 10 – 3500 cubic meter per hour at the required operating pressure.
- Ultimate Vacuum: Capable of achieving an ultimate working vacuum of 200 – 900 mbar.
- Process Conditions: Suitable for handling the specific water vapors.
- Working Fluid (Water): Continuous sealing of water supply designed for 50 Hz / 380V – 415V local power grids.

(c). Mechanical Installation Requirements

- Foundation: use the existing pump skid
- Piping Connection: Pipe diameters on the suction and discharge shall be at least equal to the pump's flange sizes.
- All pipelines shall be thoroughly cleaned to remove welding slag or debris before connection.
- Connect the new pump system to the existing pipeline and ensure they can operate independently.
- Alignment: Drive couplings must be laser-aligned to within manufacturer tolerances (typically ≤ 0.05 mm) prior to startup.
- Environment: Designed for indoor installation with adequate ventilation to prevent overheating.

(d). Electrical & Control Specifications

- **Motor Specs:** 3-phase, 380-420V, 50Hz, 22kW depending on the supplied vacuum pump.
- **Grounding:** Securely and adequately ground the motor and frame for protection against electrical shock
- **Instrumentation:** Pressure transducers, temperature sensors, and a local vacuum gauge to monitor system health.

(e). Testing and Commissioning

- Site Acceptance Testing (SAT): Conducted on-site to verify vibration levels, bearing temperatures, ultimate vacuum, and power consumption.
- Documentation: The contractor shall provide As-Built drawings, a detailed Operations & Maintenance (O&M) manual, and material certificates.

Signature of Bidder/s: _____

Date: _____

6. GENERAL REQUIREMENTS

Operation will be in the following conditions:

Altitude	Sea level
Ambient temperature	0°C to 45°C
Relative humidity	50% to 100%
Atmosphere	Heavy saline

6.1 Tenderers shall indicate clause-by-clause either that they comply in every respect with the specific requirements.

7. GENERAL

7.1 The successful tenderer will be subjected to a workshop inspection by Transnet Engineering team, to ensure that the facilities are to the satisfaction of the Transnet Engineering team in terms of the quality control and equipment capabilities for manufacturing such type of equipment.

7.2 The tenderers shall guarantee that the rating and size etc. of the equipment offered, will be adequate to perform the duties required.

8. SITE ESTABLISHMENT

8.1 The contractor shall be solely responsible for safety of his staff and for providing security to safeguard his works and material on site, until such a time.

8.2 The contractor shall be required to attend site meetings when convened by the Project Leader controlling the contract.

8.3 The contractor will be responsible for any damages caused by his staff to the building and civil works on site.

9. PENALTY CLAUSES

9.1 Due to the criticality of this crane, penalties will be levied for late deliveries and installations.

Signature of Bidder/s: _____

Date: _____