



**DESIGN, BUILD, SUPPLY, INSTALL AND COMMISSION THE ELECTRICAL CONTROL SYSTEMS FOR 2 X ADIRA GUILLOTINES (ADIRA SHEAR MODEL:GVS-2080 and ADIRA SHEAR MODEL:GHS-1330 MEO079503), TO MAKE THEM WORK AS PER ORIGINAL DESIGNS.**

**DURBAN MAIN CENTRE, 311 SOLOMON MAHLANGU DRIVE, ROSSBURGH.**

**REFERENCE No: OPS\_WAG\_DBN\_ESR\_SPEC\_236**

**Revision 0**

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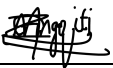
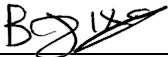


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## DOCUMENT AUTHORITIES

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| Department Affected | Wagons Manufacturing   |
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## 1. INTRODUCTION / SCOPE of Work

This specification is for the:

| #  | TASK              | REQUIRED |
|----|-------------------|----------|
| 1  | Design            |          |
| 2  | Manufacture       |          |
| 3  | Assess foundation |          |
| 4  | Survey            |          |
| 5  | Supply            | ✓        |
| 6  | Delivery          | ✓        |
| 7  | Documentation     | ✓        |
| 8  | Testing           | ✓        |
| 9  | Calibration       |          |
| 10 | Training          | ✓        |
| 11 | Commissioning     | ✓        |

Of the specified:

| # | ITEM   | REQUIRED |
|---|--|----------|
| 1 | Design, build, supply, install and commission the electrical control systems for 2 X Adira Guillotines (Adira shear model:GVS-2080 and Adira shear model:GHS-1330 MEO079503), to make them work as per original designs. |          |
| 2 | Training for 10 Transnet Engineering personnel on how to use the supplied equipment.   |          |
| 3 | Submission of project completion 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 Prospective Contractors will complete the relevant questionnaire in full and must indicate whether their offer complies with each item of the specification.

- 3.3 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.
- 3.4 As prospective contractors are considered to be 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 with alternatives to address these shortcomings. However, each offer shall be quoted for separately.

#### 4. TECHNICAL REQUIREMENTS

The following regulation and codes must be complied with:-

- **The Occupational Health and Safety Act – Act 85 of 1993.**

- 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.”

#### 5. SPECIFIC REQUIREMENTS

**Any person with the intention of tendering shall ensure that the information below is complied with.**

##### 5.1 Operating Environment

- Indoors – workshop environment.

## 5.2 Design

| <u>Item no.</u> | <p style="text-align: center;"><u>Requirements</u></p> <p style="text-align: center;"><b>This specification covers the minimum requirements.</b></p>  | <p style="text-align: center;"><u>Compliance</u></p> <p style="text-align: center;">Write “YES” or tick “✓” (if complying ) or Write “NO” (if not complying).</p> |
|-----------------|---|---|
| 5.2.1           | <p>Design, build, supply, install and Commission electrical control system on the Adira guillotine tom make the machine work as per original design.</p> <p>The 2 guillotines (ADIRA SHEAR MODEL:GVS-2080 and ADIRA SHEAR MODEL:GHS-1330 MEO079503) were flooded during heavy rains. They shall be repaired to work according to their original design.</p>   |   |
| 5.2.2           | <p>Some spares and /or systems may be obsolete and shall need replacement by spares and /or systems equivalent or superior to original designs.</p> <p>The successful contractor shall supply and install parts and /or systems equivalent or superior to original designs.</p>   |   |
| 5.2.3           | <p>The following needs to be complied with.</p> <p>Control system Siemens S7-1200 or S7-1500 PLC Control HMI with capacitive touch screen.</p> <p>The control system must operate the machine in a safe manner as per the original design and operate the positioning of the backstop and when it is safe to cut the material.</p> <p>All electrical items must be selected with local distribution partners which need to be supplied in case Transnet needs to source spares.</p> <p>Electrical Schematics in 3 hardcopies and 1 PDF copy to be supplied.</p> <p>Operating manual in 3 hardcopies and 1 PDF copy to be supplied.</p> <p>Maintenance Manual in 3 hardcopies and 1 PDF copy to be supplied.</p> <p>PLC Program in soft copy to be supplied.</p> <p>HMI program in soft copy to be supplied.</p> <p>Drive parameters to be supplied in 3 hardcopies and 1 PDF copy to be supplied.</p> <p>Hydraulic Drawings in 3 hardcopies and 1 PDF copy to be supplied.</p> <p>All wiring and components to be labelled as per drawings.</p> |   |

### 5.3 Supply and delivery

- The equipment shall be supplied and delivered at Transnet Engineering, 311 Solomon Mahlangu Drive, Rossburgh.

### 5.4 Spares

- The tenderers shall indicate the availability and required lead times for the spares considered to be critical for the successful operation of the equipment.
- The successful tenderer shall supply Transnet Engineering with three sets blown out diagrams and schematics of the complete machine as well as detailed copies of the list of critical spares for equipment including original equipment manufacturer ( OEM ) numbers.
- The successful tenderer shall provide TE with acceptable proof that spares can be easily and speedily procured for the equipment within 7 working days through agents locally.

### 5.5 Calibration

- Service and calibration plan for 24 months shall be included in this contract.
- No equipment will be accepted by TE without the satisfaction of the conditions above.

### 5.6 Completion / handover

- A testing period of 1 month (744 hours for 24/7 shifts and 248 hours for 8 hour shifts).
- No equipment will be accepted by TE without the satisfaction of the conditions above.

### 5.7 Warranty

- The warranty shall be 2 years.
- A maintenance contract for the warranty period shall be included in the quoted price and shall involve the training of TE employees.
- The contractor shall undertake to repair all faults due to bad workmanship and/or faulty materials during a period of 24 months, calculated from the date that the completed plant installation is accepted by TE.
- Any latent defects that become apparent during the warranty period shall be rectified to the satisfaction of TE at the cost of the supplier.
- The supplier shall agree to replace at his/her cost any defective items discovered within the guaranteed period.

**Note:** All work to be completed in each respect by suitably qualified person.

## 6. OTHER INFORMATION RELATED TO THE SCOPE

- 6.1 This specification states the minimum requirements relating to the work and in no way absolves the contractor from responsibility for sound engineering practice. Any omissions or sub-standard requirements of this specification must be brought to the attention of Transnet Engineering at tender stage and optional prices for addressing such omissions must be provided.
- 6.2 Any matter relating to this work, which requires a decision from Transnet Engineering shall be presented to the Project Manager in charge.
- 6.3 All offers shall be completed in every respect with this specification. Only completed tenders shall be considered
- 6.4 The Technical Officer reserves the right to have the proposal checked independently by a third party.

6.5 Tenders must allow for monthly progress and clarification meetings on site initially and after commissioning for defect meetings when required. A meeting will be held after issuing of the tender to establish the exact scope and magnitude of the contract. No tender will be considered unless it has this Certificate signed by the Engineer or his representative.

## 7. HEALTH AND SAFETY REQUIREMENTS

7.1 All equipment whether detailed in this specification or not shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 as amended and all other applicable legislation including specific set of regulations and local authority bylaws where applicable.

7.2 All the necessary safety equipment such as guards over rotating equipment shall be supplied and the equipment shall comply fully with all the requirements of the South African Occupational Health and Safety Act, Act 85 of 1993 and all other applicable legislation including specific set of regulations and local authority bylaws where applicable.

## 8. SPECIALIST SUB-CONTRACTORS

8.1 Only specialist sub-contractors who have previously successfully completed work of the type and extent specified in this document should be engaged. The tenderer shall provide the technical officer with sufficient proof of having suitable experience regarding the design and manufacturing of similar equipment. To this end, complete and detailed reference list shall be submitted with the tender. Reference list shall include addresses as well as contact person who may be visited for inspection of the equipment during the adjudication period.

8.2 The tender shall submit a complete list of proposed sub-contractors and suppliers of major components with his tender.

8.3 The tenderer shall be prepared to commit themselves in writing to the technical officer with an adequate, experienced and stable project team for the duration of the contract.

8.4 Transnet Engineering will not consider any Tenderer's offer that, in the sole opinion of Transnet Engineering, does not have adequate experience in the design and manufacture of such equipment.

8.5 Contractors shall do the installation simultaneously with other contractors on-site busy with other work and shall plan work that it integrates with other work performed.

## 9. EQUIPMENT

9.1 The required items shall be complete in all respects.

9.2 Tenderers shall supply a list of all materials proposed as well as the addresses of the local support companies.

## 10. 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 |

## 11. DEFINITIONS AND ABBREVIATIONS

**CLIENT** Transnet Engineering Durban

**TECHNICAL OFFICER:** Project Manager, Transnet Engineering Durban

**CONTRACTOR** Contractor appointed under this specification document

## 12. GENERAL

- 12.1 The successful tenderer will be subjected to a workshop inspection by Transnet Engineering, to ensure that the facilities are to the satisfaction of the Transnet Engineering in terms of the quality control and equipment capabilities for manufacturing such type of equipment.
- 12.2 The tenderers shall guarantee that the rating and size etc. of the equipment offered, will be adequate to perform the duties required.

## 13. SITE ESTABLISHMENT

- 13.1 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.
- 13.2 The contractor shall be required to attend site meetings when convened by the Project Leader controlling the contract.
- 13.3 The contractor will be responsible for any damages caused by his staff to the building and civil works on site.

## 14. PENALTY CLAUSES

- 14.1 Due to the criticality of this project, penalties will be levied for late deliveries.