

BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI-620 014

Fuel Systems/PE(FB)



Title Sheet

Specification for

MOVABLE SCISSORS LIFT

Specification No.: **MHS-HEQ/MSL**

Revision No.: 00

Rev. No.	Rev. Date	Clause	Description	Chd. & Appd.
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	Name	Signature	Date
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1.0 INTENT

The *Scissors Lift* is intended for use in maintenance works by positioning personnel, along with their necessary tools and materials, at working locations.

Capacity requirements (SWL): Minimum **230 Kg** unrestricted payload in all working conditions (this includes 2 persons) to the maximum height and/or to the maximum outreach.

2.0 SCOPE

The following specifications represent the requirements for the supply of the **Scissors Lift**: design, fabrication, transportation, supply, test, maintenance and warranty.

Scissors Lift shall include the complete machine including the platform, lifting mechanism, attachments, chassis or vehicle as applicable.

The *Scissors Lift* – Design calculation, stability criteria, construction safety, examination and testing shall confirm to the latest International codes /standards as applicable. In case of use of IS standards, the bidder should provide equivalent International standards for purchaser's review.

3.0 MAIN OPERATIONAL AND TECHNICAL DEMANDS

3.1 Operational features

The *Scissors Lift* shall have the following features in addition to the technical details specified in Annexure-I (Data Sheet):

3.1.1 Reach specifications

- a) Platform height minimum 8 Metre
- b) Platform size (area) minimum $2 m^2$

3.1.2 Chassis

The *Scissors Lift* shall be having 4 wheels (suitable for rough terrain) and shall be able to be manually moved around to the desired location. It shall have provision to steer and shall have stabilizers for operating at the desired location. It shall have manual pulling lever and also towing provision so that the equipment can be towed by a vehicle.

3.1.3 Functional features

- a) Self -levelling platform having anti slip property.
- b) The platform shall have handrails around.
- c) The platform shall have provision for easy entry of people.
- d) There shall be an efficient mechanism for raising & lowering the scissors lift platform with less effort from the operator (Hydraulic / Battery Operated).
- e) There shall be necessary locking arrangement envisaged for prevention of vertical as well as horizontal movement during use of the Equipment.



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3.2 Capacity board and number

Capacity boards showing the SWL of the SCISSORS LIFT and other identification data, such as serial number and port number, shall be mounted on both sides of the SCISSORS LIFT.

3.3 Additional accessories

All necessary accessories and special tools for safe working and maintenance will be provided according to the International regulations and standards.

4.0 DESIGN CRITERIA

4.1 General

The SCISSORS LIFT shall conform to the relevant latest International standards for Mobile Elevating Work Platform (SCISSORS LIFT). Vendor to mention the same during the proposal stage itself.

In case of any difference between standard/code demands and this specification, the contents of the standard shall prevail.

The structure, mechanical system, hydraulic system, etc. shall be sized and designed for operation in ambient temperature range of 12°C to 37°C and relative humidity of 60 to 100%.

4.2 Paint system and corrosion protection

The paint system shall be suitable to withstand weather conditions & sun radiation. The supplier shall use materials to minimize corrosion and subsequent maintenance as a result of corrosion.

5.0 GENERAL INSTRUCTION

The listed capacities, dimensions and ratings are only indicative. The supplier shall propose his standard equipment to be as near as possible to the listed capacities, dimensions and ratings. The supplier shall submit with his proposal detailed specifications for the SCISSORS LIFT. The manufacturer shall provide with his proposal a list of all standard equipment that is not included in the proposal price.

6.0 QUALITY ASSURANCE AND QUALITY CONTROL (QA & QC)

6.1 Quality Control

The supplier must include in the supply a proven quality control and quality assurance system that will ensure the quality of the SCISSORS LIFT. The quality control system must follow ISO 9001 guidelines.

6.2 Quality assurance

The supplier shall be responsible for providing the necessary Quality Assurance and Quality Control procedures, maintaining continual surveillance and inspection activities during the entire periods of the Fabrication and Testing. Inspections report and tests to be provided to the BHEL during the fabrication period and before shipment of the SCISSORS LIFT.



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Test and inspection reports shall be furnished for at least:

- a) Hydraulic motors/pumps, pack and cylinders.
- b) Brakes.
- c) Safety devices.

7.0 TECHNICAL DOCUMENTATION

The following technical manuals shall be provided. Total of two (2) hard copies and one (1) copy on magnetic media (USB memory stick or CD-ROM) shall be provided **sixty (60) days** after issue of purchase order.

Items No. 7.1 till 7.7 shall be provided also with the proposal only in English language:

- 7.1 Operation manual in English.
- 7.2 Safety instruction in English.
- 7.3 Maintenance manual in English.
- 7.4 Repair and overhaul manual.
- 7.5 Complete and comprehensive Parts Catalogue (including pictures if applicable) manufacturer P/N and OEM P/N.
- 7.6 Maintenance/repair manuals and parts catalogue for other repairable components if were not included in the SCISSORS LIFT manual.

Note: The above listed documents can be combined & supplied as Operation & Maintenance (O&M) Manual.

- 7.7 Supplier shall submit a quoted (including prices) recommended spare parts list. The list should be cover all spare parts consumption for 3 years operation, based on 500 working hours and shall include at least the following Information: Manufacturer P/N, description, quantity required.

8.0 DOCUMENTS TO BE FURNISHED WITH THE PROPOSAL

- 8.1 Product literature and drawings in support of the offer shall be submitted with the quotation to evaluate the offer.
- 8.2 Scissors Lift technical specification.
- 8.3 Scissors Lift general arrangement drawing.
- 8.4 The supplier shall return a copy of this specification and note at the end of each paragraph if the offered equipment complies or not with this specification with supplier sign and seal.
- 8.5 Operation manual.
- 8.6 Safety instruction.
- 8.7 Maintenance manual.
- 8.8 Parts Catalogue with detailed Bill of material (BOM) and weight particulars.
- 8.9 Recommended spare parts list.



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9.0 DOCUMENTS TO BE FURNISHED AFTER AWARD OF CONTRACT

- 9.1 Packaging procedure detailing the list of components shall be despatched individually with identification and with details of preservation and storage.
- 9.2 Scissors Lift - Data sheet including drawings and design information shall be submitted to get approval from End user/owner of the boiler.

9.3 SCISSORS LIFT - CERTIFICATES

- 9.3.a Test certificates shall be furnished before despatch of components.
- 9.3.b Test certificate for the following shall be furnished.
 - I. Material test certificate for all the major components.
 - II. Shop test certificates for safety devices.
 - III. Performance TC for the intended duty conditions.
 - IV. Quality Control/Inspection documents generated during the stages of inspection, performance inspection, and final inspection.
- 9.4 **Warranty certificate** shall be furnished by the vendor.
- 9.5 Operation & Maintenance (O & M) Manual
 - 9.5.1 O & M manuals should be submitted to BHEL/Tiruchirappalli prior to despatch of the equipment in digital format.

10.0 INSPECTION

- 10.1 All test certificates shall be furnished for buyer's reference and records. The SCISSORS LIFT equipment shall, on its completion and before being placed in service, be subjected to inspection by BHEL inspector or BHEL nominated inspection authority during manufacture/testing stages, to determine that the assembly conforms to applicable requirements.
- 10.2 SCISSORS LIFT Equipment shall be inspected and tested as per approved quality plan. The certificates and documents generated during inspection of above shall be furnished to BHEL.

11.0 FINAL TESTS AND ACCEPTANCE

The **Mobile Elevating Working platform** (SCISSORS LIFT) shall be tested at the supplier premises and in the site together with BHEL's representative to demonstrate conformance to the specification and functioning. The following tests shall be performed:

- 11.1 Checking and repairing of voyage damages.
- 11.2 Visual test and Complete equipment check-up.
- 11.3 Load test according to latest revisions of International Standard for SCISSORS LIFT.
- 11.4 Certification test by an authorized inspector according to International Standard for SCISSORS LIFT. A corresponding certificate shall be provided.
- 11.5 Functional test.

Acceptance certificate will be issued after successful completion of the acceptance tests and submission of all relevant documentation.



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12.0 WARRANTY

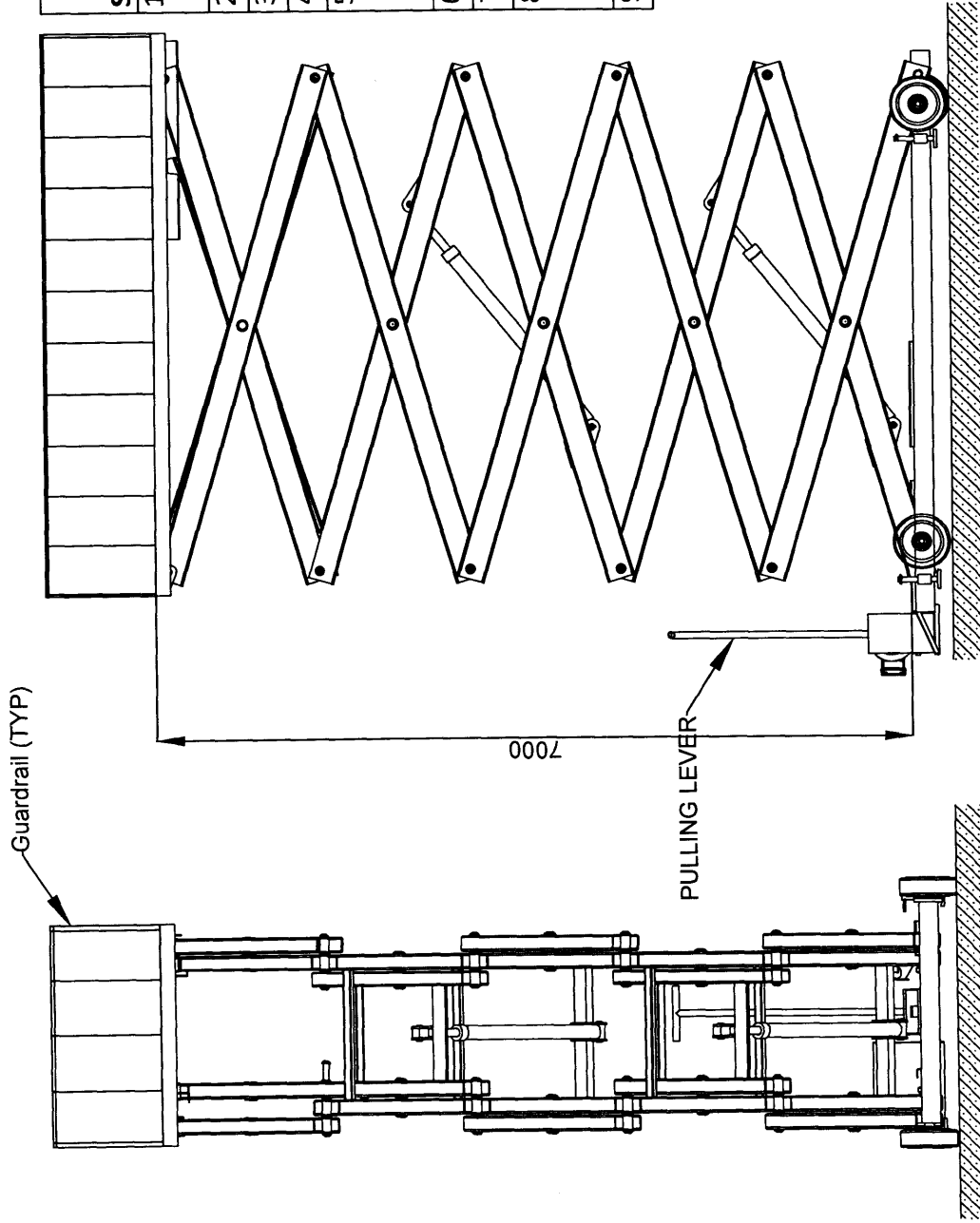
12.1 Warranty Period

The warranty period shall be twenty-four months (24) from the issuance date of the acceptance certificate. This warranty includes structural electrical, hydraulic and mechanical defects, fatigue failure etc.

12.2 Warranty claims

In case of a failure during the warranty periods, BHEL/End Customer shall issue a corresponding Warranty Claim stating the nature of the failure, the demands for repair etc. The obligation of the contractor with regard to the Warranty jobs and claims shall include parts and labour. If emergency work is needed, or if the contractor fails to perform satisfactory, the site will carry out the repair work and the contractor shall reimburse all corresponding costs to the End Customer.





Sl.No	Item	Data
1	Name of the equipment	Maintenance Platform With Scissors lift
2	Capacity	Min. 230 Kg
3	Platform Size	Min. 2 m2
4	Type	Mobile Towable
5	Lifting Mechanism	Scissors Lift (Hydraulic/Battery Operated)
6	No. of Wheels	4
7	Working Height	Min. 8 Mtr
8	Safety accessories	1. Chequered Platform 2. With guardrail 3. With Stabilizers
9	Towing Hook	Provided