Design, Fabrication, Supply, Installation & Commissioning of Scissor Lift for ITMT Building

at

CREST, Hosakote

Indian Institute of Astrophysics

Bangalore

October 2017

1. Introduction

The required scissor lift as per the technical specifications (Annexure-1) mentioned in the RFP will be installed I-TMT building at CREST campus of IIA, Hosakote, Bangalore. The detailed view of the I-TMT building where the scissor lift will be installed is as shown in annexure-2.

2. Type of Scissor Lift

Electro- Hydro operated scissor lift

3. Service condition

Ambient Temperature & Relative Humidity : 4 Deg C(Min)- 50 Deg C(Max) & up to 95% RH

4. Scope of Supply

Scope of work: Design, Fabrication, Supply, Installation, Commissioning, packing, forwarding, transportation to I-TMT site, unloading, furnishing of final drawings and manuals ,handling at site, erection, commissioning, performance demonstration and performance acceptance etc. of 5000kg capacity electro hydro operated scissor lift (AS PER THE TECHNICAL SPECIFICATIONS), to make the system complete in all respects & as per the tender document.

Annexure 1

5. Technical Specifications

1. Capacity of the Lift table : 5000 kg Capacity

2. Maximum Height : 2000mm from the ground level

3. Minimum Height : Ground level

4. Platform size : 3000 x 3000 mm

5. Safety railing height of platform: At all four sides with the standard height

6. Number of scissors in the table: 3

7.Material Of scissor : Mild steel structures. Vendor to specify the scissor material and dimensions to be used

8.Base structure : Mild steel structures. Vendor to specify the structure material and dimensions to be used

9.Mechanical Jacks : Mechanical jacks to fix the lift table to the ground to be provided

10.Hand bar to pull the ladder : Suitable hand bar to be provided

11.Lifting : Electro hydro control - Electrically operated through push buttons and platform is to be lifted by hydraulic cylinders.

12. Hydraulic unit : Hydraulic unit shall consist of 2 numbers of inclined hydraulic cylinders with internal honed pipe having hard chrome plated piston and hard chrome plated piston rod with power pack unit.

13. The power pack shall consists of

a. Hydraulic tank - capacity shall be specified by the vendor

b. Gear pump

c. Electric motor with suitable capacity

d. Electrically operated solenoid valve

e.manifold block

f. Flow control valve

g. Pressure gauge

h. Pressure relief valve

i. Suction filters

j. Pilot operated check valve

k. Required high quality hoses of suitable size

l. Any other fittings and accessories required for the operation of the power pack

14. Electrical System : The continuous running powe pack unit shall have motor of suitable capacity, starter with suitable length cables.

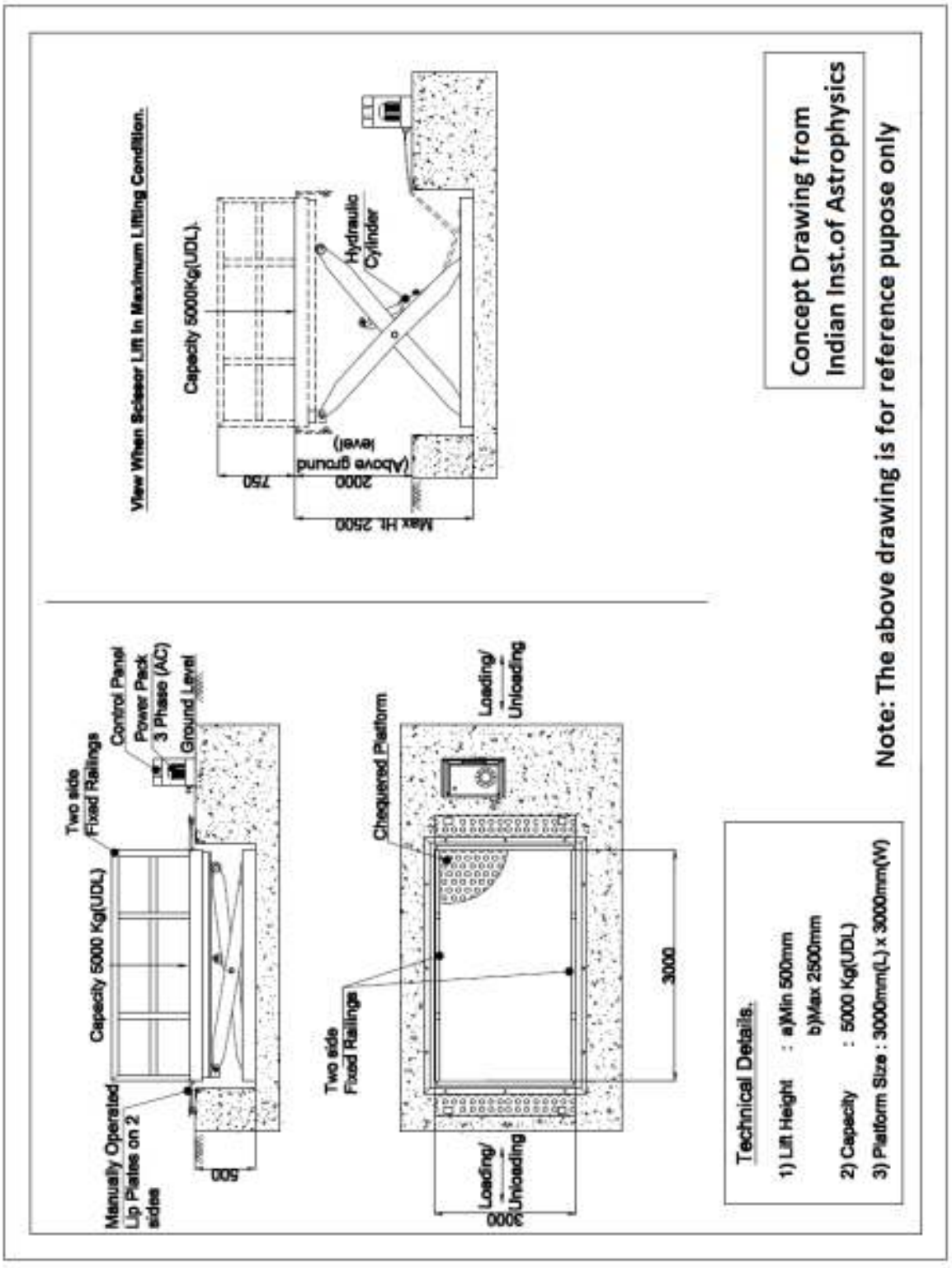
The cylinder unit shall be provided with limit switch and push button control with panel board. The electric panel shall have starter contactors, MCB's, push buttons, limit switches and terminal strip.

The control panel/cabinet is to be mounted in the power pack at the ground level.

16. Controls : UP, DOWN and Emergency stop to be controlled through push buttons provided outside the plat form. The lift shall stop automatically when the platform reaching the desired floor level by actuation of pre adjusted levelling limit switches.

17.Lip plates : Lip plates shall be provided at all four sides.

18. Concept Drawing(Reference purpose only)



18. General Terms:

a. All the hydraulic components shall be Rextroth/Vickers/Parker/any other ISO 9001 certified company make which are acceptable to IIA.

b. The electric motor shall be BB/Kirloskar/Siemens/Cromton/NGEF/Astom/Bharath Bijlee

c. The supplier shall provide the complete hydraulic circuit of power pack with bill of materials giving specifications and make of the components used along with the offer.

d. Catalogue/GA drawings of the hydraulic scissor lift table is to be submitted along with the offer.

e. The hydraulic scissor lift table will be tested (Proof load test) and inspected by IIA at suppliers works before dispatch.

f. Warranty shall be for a period of 1 year from the date of commissioning or 18 months from the date of supply.

g. Delivery period shall be clearly indicated by the supplier. Preferably it shall be two months from the purchase order.

h. Required spares to maintain the system for the minimum period of 3 years shall be quoted .

6. Submittals along with the offer

Vendor must submit the following documents, without which, their bid will not be considered.

- **Details covering all the technical specifications motioned in annexure -1**
- **Company documents like**
  - **a.. Registration Certificates.**
  - **b. Factory License.**
  - **c. Purchase Order Copies of similar scissor lifts along with the commissioning Certificates & Performance Certificates.**
  - **d. Appreciation Letters from the Clients.**
  - **e. ISO Certificate**

- **Design details & Detailed calculations**
- **Catalogue/GA drawings**
- **Wiring and control schematic and detail diagrams.**
- **Electrical requirements.**
- **Civil requirements**
- **Outline of the dimensions of the equipment.**
- **Equipment and component layout.**
- **Details of equipment and controls.**
- **Installation details.**
- **Manufacturers name and catalogue number of any equipment number to be furnished**
- **Critical spare list for minimum period of 3 years**
- **Compliance to the points mentioned in annexure-2**

Note: A detailed QAP, drawings documentation and calculation for obtaining necessary approval should be submitted to purchaser before taking up scissor lift fabrication.

Annexure-2

7. Inspection, Commissioning, Testing And General Requirements

1. All the mechanical and electrical equipment will be tested as per relevant Indian standard/IS standard at premises of manufacturer as well as at I-TMT Building.

2. The scissor lift shall be inspected and tested during different stages of its manufacture, starting from raw-materials till the completion of the scissor lift ,

by IIA representatives at the supplier's works. However, IIA or it's authorized representative is free to enquire any further checks also, if it so desires.

3. The scissor lift will be tested for no load, full load and 25% overload for lifting at manufacturer premises as part of Factory Acceptance test. Same will be again repeated at I-TMT building after commissioning.

4. Satisfactory operation of each control switch, contactor, limit switches and other control and protective device

5. Satisfactory operation of all motors, brakes, resistors etc.,

6. Dimensional inspection as per the standards

7. All the parameters for testing components of scissor lift shall be accordance with relevant IS/ISO standards.

8. Spares & AMC

1. **Service spares to be quoted separately for three years of maintenance.**
2. **AMC charges to be quoted separately for three years.**

9. Training

Technical training for IIA employees for operation and maintenance should be arranged at I-TMT premises. Training shall be given by experts who are having full knowledge about design, manufacturing, erection & commissioning of scissor lift.

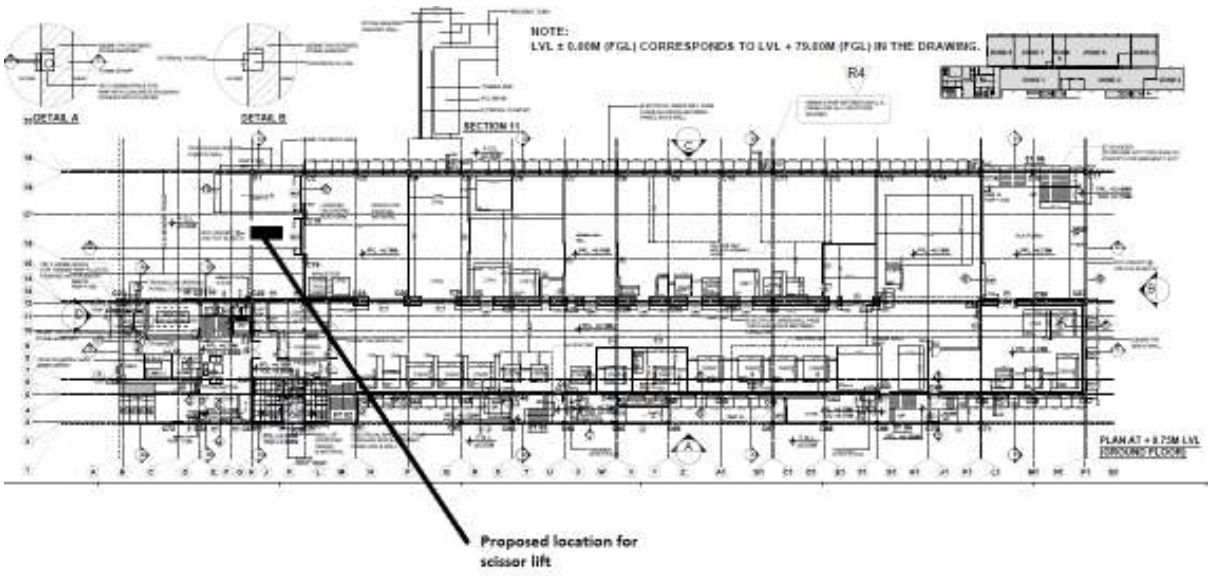
10. Guarantee

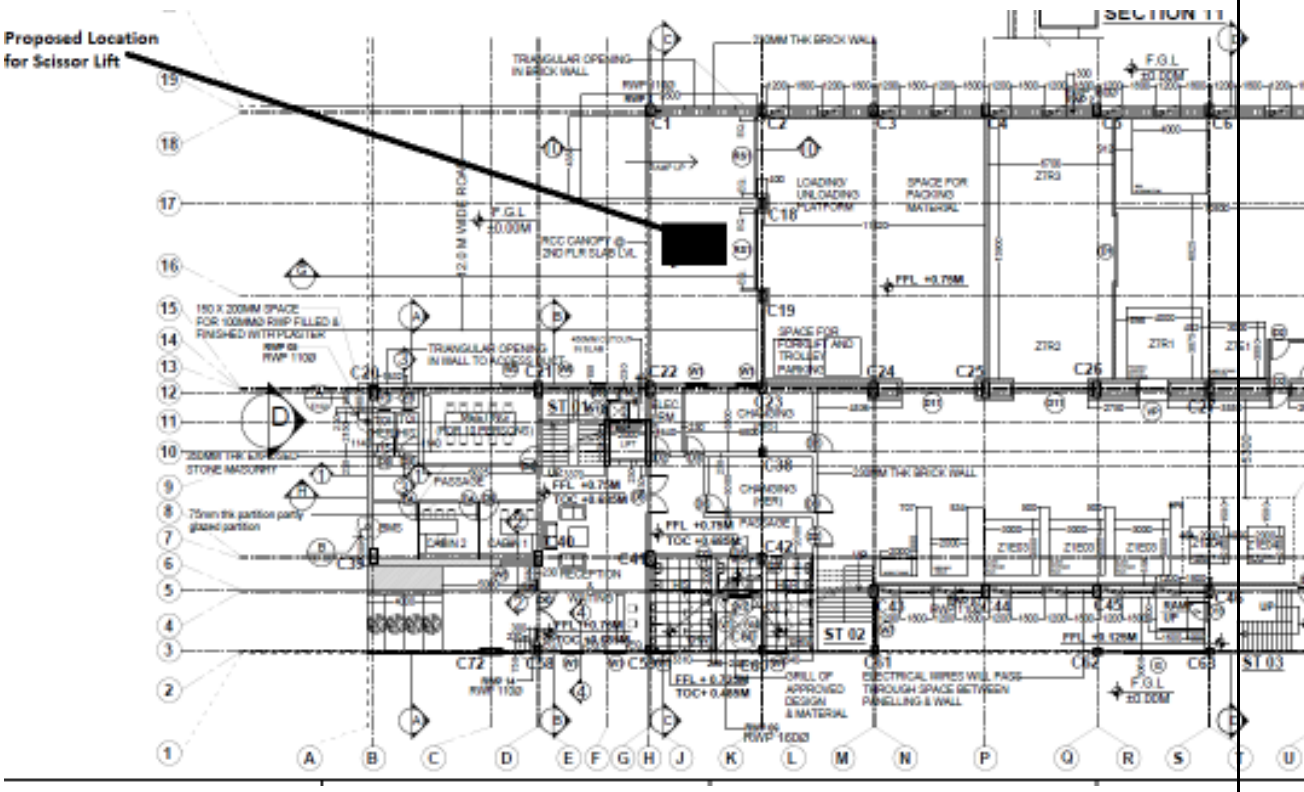
The supplier shall guarantee for free replacement, repair, and of parts found faulty or defective material, bad workmanship and efficient performance of scissor lift for designed loading. One year period (excluding shutdown period due to faults) from the date of acceptance after successful installation and commissioning .The supplier shall have to provide service for faults and replace damage material free of cost during guarantee period.

11. Note to the Vendor

1. The following Drawing of I-TMT building are provided with the tender where the scissor lift would be installed. Proposed location has been shown in the following drawing. PDF version of the samne drawing is also attached with the tender.

4139 AR E 102 GROUND & FIRST FLOOR PLAN R4 (1).pdf





2. Power supply would be provided at one Point. The vendor needs to provide us the details of specific power requirement.

3. Materials should be offered strictly conforming to the specifications within acceptable tolerance level given in specifications / drawings given in tender document. Deviations, if any, should be clearly indicated by the bidder in their bid. The supplier should also indicate the Make/Type number of the materials offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation.

4. Any fittings or accessories which may not be specifically mentioned in the Specifications or Particulars but which are usual or necessary for proper and efficient functioning of the Stores as per the specifications of the tender shall be supplied by the Contractor without extra charge to the Purchaser; the Stores supplied shall be complete in all respects.

5. IIA has the right to ask for the minor modifications at any stage even after the design is mutually agreed. As from the date, the Stores shall be in accordance with the specifications, patterns and drawings so altered, which the contractor is bound to comply with. In the event of such alteration involving a revision in the cost, or in the delivery period, the same shall be

discussed and mutually agreed to, taking into account the unit rates of similar items in the Contract. In case of disagreement, the decision of IIA, in the cost or the delivery period, shall be final and conclusive.

6. **Minor modifications / Additional Scope of Work:** Minor modifications /additional scope of work to the tune of 2% of the total contract value shall be carried out by the contractor without any extra cost to IIA.

7. **Subletting or Assignment of Contract:** The Contractor shall not sublet, transfer or assign the Contract or any part thereof or bills or any other benefits, accruing there from or under the contract without the prior written consent of IIA (All Subcontractors are required to be appraised and approved by IIA before placement of orders by the Contractor/Supplier). However, such consent shall not be unreasonably withheld by IIA, if such stores are not normally manufactured by the Contractor, such assignment or subletting shall not relive the Contractor from any contractual obligation or responsibility under the Contract.

   Any breach of this condition shall entitle IIA to cancel the Contract or any part thereof and to purchase from other sources at the risk and cost of the Contractor and shall recover from the Contractor damages arising from such cancellations.

   In case the Contractor sublets, transfers or assigns any part of the Contract with the prior written consent of the Purchaser, all payments to the Sub-Contractor shall be the responsibility of the Contractor and any requests from such sub-Contractor shall not be entertained by IIA.

8. **Past performance:** In case the past performance of the tenderer is not found to be satisfactory with regard to quality, delivery, warranty obligation and non-fulfilment of terms and conditions of the contract, their offer is liable to be rejected by IIA.

9. Primarily the scissor lift will be used to handle delicate optics. Hence designer should consider the best quality materials with required factor of safety with maximum possible compactness. Design should reflect the delicate handling of these optics. Fast movements, jerks etc are not permitted during any lifting/movement. These scissor lifts will be used just outside the clean rooms. It should not become the source of contamination to the facility like particulate or molecular. Care shall be taken while deciding the secondary process like painting etc.,

10. Bidder should be a manufacturer and should have ISO Certificate and satisfactory evidence to show that they are licensed manufacturer, has adequate plant and manufacturing capacity and has a quality assurance programme. Copy of valid ISO certificate and manufacturing licence issued by the competent authority & company profile should be submitted as a proof.

11. Bidders should have prior work experience of similar kind of work and must have supplied and commissioned at least 1 scissor lift of 5 ton capacity or more in the past three years (2014--2017) and such scissor lift is presently working satisfactorily for more than one year after commissioning. Copies of Purchase order with technical details along with work completion/installation certificate/performance certificate should be submitted as a proof.

12. Bidders should have in house or access to test facility of this type of scissor lift. List of test facilities available with bidders is to be furnished.

13. Vendor may visit the project site to evaluate site requirements after obtaining prior permission from IIA.

14. Vendor shall arrange required lifting equipments, tools etc required during the installation. Transportation from factory to site is in vendor scope.

15. Vendor shall take responsibility of material stores at site.

16. Vendor shall provide safety devices (helmets, safety belts, gloves etc.) for personnel carrying out installation as per the safety standards.

17. Vendor shall give the schedule for Procurement of raw materials, Testing, manufacturing, Assembly, Factory acceptance test, transportation to site, installation& commissioning at site, etc.,

18. The bidder is required to submit all supporting documents as proof for the compliance. Bids received without valid documents and/or incomplete and irrelevant documents are likely to be rejected.

19. IIA’s decision to consider as to whether a vendor has met with the eligibility criteria or not is final.

20. The Equipment should be completely designed and made as per the relevant I.S/ISO Specifications.