

**Additional Terms and Conditions for Bidders (including Pre-Qualification requirements)****ATC for “Hydraulically operated lifting & swiveling platform”.****Additional Terms and conditions:**

<b>S. No</b>	<b>Description of requirement</b>	<b>Document to be attached</b>
1	Bidder should submit a self-declaration stating that, “Offered item is same as per enquiry and there is no deviation”.	Self-declaration on letterhead of firm.
2	Data Sheet / Drawings / Catalogues of the product (s) offered in the bid, are to be uploaded along with the bid documents. Buyers can match and verify the Data Sheet with the product specifications offered. In case of any unexplained mismatch of technical parameters, the bid is liable for rejection	Data Sheet / Drawings / Catalogues of the product (s)
3	In case Bidder is not be OEM but its Reseller then bidder to submit valid authorisation certificate from OEM with the bid.	Authorisation certificate
4	<b>Registration / Empanelment Requirement:</b> Contract shall be awarded to only such bidder or their OEM (in case of reseller), who are approved by ICF/RDSO/Indian Railways for the <b>Hydraulically operated lifting &amp; swiveling platform</b> for DETC (Diesel Electric Tower Car) application on the date of bid opening to qualify for this tender.	Supporting document of approval.

SPECIFICATION NO. : ICF/ELEC/OHE/001  
NO. OF PAGES : 12+1+2 +1+3

Specification for Hydraulically Operated Lifting  
Swivelling Platform for  
Diesel Electric Tower Cars

ISSUED BY

INTEGRAL COACH FACTORY, CHENNAI – 38

CORRECTION SLIP NO.	00	01	02	03	04	00
REVISION	00	00	00	00	00	01
PREPARED BY :	MRK SSE/D/E7-0	MRK SSE/D/E7-0	MRK SSE/D/E7-0	MRK SSE/D/E7-0	MRK SSE/D/E7-0	JDV SSE/D/E9-0
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APPROVED BY :	BGM DY.CEE/D	BGM DY.CEE/D	BGM DY.CEE/D	BGM DY.CEE/D	BGM DY.CEE/D	CDE/E
DATE :	SEP-93 (Revalidated) 30.09.99	10-08-94 (Revalidated) 30.09.99	07-06-99 (Revalidated) 30.09.99	26.06.2000	08.06.2002	19.05.2016

CORRECTION SLIP NO.	01	02	03	04		
REVISION	01	01	01	01		
PREPARED BY :	SAK SSE/D/E9-0	SAK SSE/D/E9-0	SAK SSE/D/E9-0	SAK SSE/D/E9-0		
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DATE :	12.06.2017	12.06.2017	05.07.2017	28.05.2019		

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### 1. FOREWORD:

Motor driven hydraulic lifting & swivelling platform is proposed to be fitted in Diesel Electric Tower Cars for inspection, repair and maintenance of overhead equipment in various zones of Indian railways.

### 2. SCOPE:

2.1. This specification covers the technical requirement for manufacture, construction, performance, commissioning and testing of Hydraulic operated lifting and swivelling platform for 8 Wheeler OHE Inspection Car.

2.1.1. The platform is working on system voltage of 415Volts, 3 Phase, 50 Hz AC supply supplied by a Diesel Alternator set provided inside the OHE car.

### 3. STANDARDS:

3.1. The manufacturer shall follow the respective Indian Standards for the manufacture of the equipment:

3.1.1. IS 325 (latest) – AC motors  
IS 4722 (latest) – Rotating machines  
RDSO Specification No.: ELRS/SPEC/ELC/0019 (latest) – Electron Beam irradiated thin walled cables.

### 4. SCOPE OF SUPPLY:

- (i) Lifting arrangement booms.
- (ii) Motor driven hydraulic unit.
- (iii) Swivelling arrangement with motor.
- (iv) Lifting platform with locking safety hand rails.
- (v) Electrical control panel and remote operating push button control station with trailing cable.
- (vi) Set of maintenance tools in a kit.
- (vii) Maintenance Manual.

#### Note:-

- Installation will be done by ICF, however in the event of any problem faced by ICF during installation, the contractor shall arrange to depute competent personnel to assist ICF at short notice.

		
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- After completion of installation, commissioning has to be done by the contractor by their expenses at ICF in a stipulated time and the contractor shall be responsible for demonstrating the satisfactory working of the lifting platform on the coach after commissioning.

## 5. SERVICE CONDITIONS:

5.1. The lifting platform shall operate satisfactorily under the following service conditions:

SN	PARAMETER	DETAILS
5.1.1	Ambient	minus 10°C to +55°C
5.1.2	Train speed	110 Kmph
5.1.3	Humidity	Up to 100% during rainy season
5.1.4	Altitude	Max 1000 metres above sea level
5.1.5	Atmosphere	Very dusty atmosphere with dust of composite brake block shoe. Seasonal heavy snowfall and fog is expected in service.
5.1.6	Rainfall	Very heavy in certain areas, ranging from 1750mm to 6250mm of 120 days / annum.
5.1.7	Vibration	The equipment, system and their mounting arrangement shall be designed to withstand satisfactorily the vibration and shocks encountered in service as specified below: (a) Maximum vertical acceleration : 3.0 g (b) Maximum lateral acceleration : 3.0 g. (c) Maximum longitudinal acceleration : 5.0 g. (‘g’ being the value of acceleration due to gravity)
		The vibrations are sinusoidal form, the frequency ‘f’ lies between 1Hz and 100 Hz and their amplitude ‘a’ expressed in mm is given as a function of ‘f’ by the equation:  $a = 25/f$ for values of “f” between 1 Hz and 10 Hz $a = 250/f^2$ for values of “f” between 10 Hz and 50 Hz. For reference IEC: 60077 / IEC: 60571 to be followed.

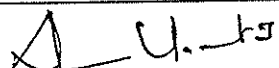

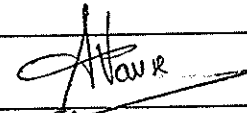
		
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## 6. CONSTRUCTION:

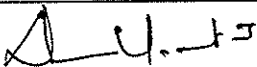

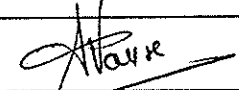
- 6.1. The high and low raise platform mounted on the unit shall be operated by hydraulic cylinders with 2 boom arrangement.
  - 6.1.1. The telescopic boom section should be manufactured from tested quality steel produced by main producers like SAIL, TISCO, JINDAL.
  - 6.1.2. Manufacturer's test certificate shall be produced for the plates for ensuring superior quality.
  - 6.1.3. The plates for manufacturing, shall be tested at the Govt. recognised laboratories only.
  - 6.1.4. The inner boom shall be fitted with oil impregnated nylon bearings of reputed make. Details of type and make shall be submitted in the offer.
- 6.2. For maintaining controlled safe speeds for raising and lowering, restrictors may be incorporated within the hydraulic system controls at the base of the king post.
- 6.3. For slewing action a separate motor with worm reduction gear unit shall be provided below the lifting platform. The motor shall be of IP 65 as per IEC 60529 protected to meet the weather conditions.
  - 6.3.1. A pinion arrangement shall be provided for the motor to mesh with the gear ring for slewing the platform.
- 6.4. The hydraulic cylinders shall be precision honed for efficient operation and long life. All the piston rods shall be hard chrome plated (minimum thickness of 25 micron) for corrosion resistance.
  - 6.4.1. Hydraulic cylinder barrels shall be manufactured from cold drawn seamless tubes of quality ST52BK (DIN standard) or of STKM 13 C (JIS Standard).
  - 6.4.2. Manufacturer's test certificate shall be produced for the barrels for ensuring superior quality.
  - 6.4.3. The seamless tubes shall undergo tests for hydro static pressure, eddy current, ultrasonic testing, technical and physical testing at Govt. recognised laboratories.
  - 6.4.4. Hydraulic cylinder seals shall be of imported make to ensure long and reliable service life of at least three years. The seals shall be procured from either of the one of Busak Shamban, Parker, NOK, Hallite, Kastas and SKF.
  - 6.4.5. The surface finish of the ID of the cylinder barrel honed, should be RA less than 0.4 micron.
  - 6.4.6. The piston rod shall be produced from CK45/EN9 steel duly normalised.
  - 6.4.7. The piston rod should be ground to surface finish of RA 0.4 or less and shall be coated with hard chrome plating to a thickness of 25 microns on radius.
  - 6.4.8. Ample bearing should be provided in the hydraulic cylinder piston and ceiling bush and the bearing shall be manufactured from RG7 as per DIN standards. Alternatively

		
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phosphor bronze or resin bonded canvass imported from Bushak Shamban, Macrotech, IKO (Japan) & LG (Germany).

- 6.5 Arrangement shall be available for easy operation of the platform to either side at 90 degree to the centre of the axis.
- 6.6 Electrically operated push button station shall be available in the platform for lowering, raising, slewing and stopping.
- 6.7 The push button station shall be handy and housed in an insulated housing; the required operation can be made by pressing the designated push buttons. On release of push buttons the respective function ceases.
- 6.8 Arrangement for mounting the cylinders inside the coach shall be provided at the base of the unit. The hardware used shall be from TVS/UNBRAKO. The hardware shall form part of the scope of supply of the supplier.
- 6.9 The movement of the platform or slewing operation shall be stopped if the power supply to the system fails or interrupted.
- 6.9.1. The slewing ring gear and the pinion should be produced from CK45 or equivalent steel and shall be heat treated to hardness 250 Brinnell Hardness.
- 6.10 There shall be arrangement for manual operation of hydraulic pump as well as platform for raise or low and slewing operations. The arrangement shall be operable with minimum efforts.
- 6.10.1. The hydraulic pumps should be from reputed sources like Dowty, Rexroth, Vickers and Boss.
- 6.10.2. Hydraulic circuit shall contain suction strainer and return line filter of adequate size.
- 6.10.3. All hydraulic valves, pilot check valves, relief valves shall be of M/s Atos, Bosch, Rexroth, Polyhydone, Hydrolin & Bucher.
- 6.11 The platform base shall be provided with aluminium or steel chequered plates for avoiding slippage on account of water or oil spillage.
- 6.11.1. Top platform basket shall be manufactured from square tubes of M/s Tata Steel, Jindal, Zenith etc, since the load on the highly stressed structure is 600 kg.
- 6.12 Foldable type hand rails shall be provided on all sides of the platform for safety.
- 6.12.1 When in operation a KEY PIN arrangement will lock the safety hand rails into the base pillars or square pegs for the platform.
- 6.12.2 All the iron members and hand rails shall be properly cleaned & applied with one coat of red oxide zinc chromate primer to IS: 2074 (latest) to a DFT of minimum 20 microns and painted with smoke grey paint of minimum 60 microns.

		
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- 6.13 In the event of failure of hydraulic unit, the platform shall be held in position.
- 6.14 There shall be electrical interlock to arrest the movement of the platform by stopping the motor operation. The protection shall be on both sides of operation at 90 degree to the centre of axis.
- 6.15 The power and control cables shall be meeting the requirement specified in RDSO Specification No.: ELRS/SPEC/ELC/0019 (latest) and the current ratings are taken care for the higher ambient conditions.
- 6.15.1 All electrical items like contactor fuses, thermal relay, and overload relay shall be from reputed makes of L&T, Siemens, Bharat Cutler Hammer, ABB & Schneider.
- 6.16 The cables shall be protected with the fire retardant polyamide flexible hoses having fire property to meet UL 94-V0 grade.
- 6.17 The cylinder when operated for lower or down position, shall operate without jerk to rest at home. Counterweights may be provided for jerk free operation.
- 6.18 Provision shall be made by providing a 3 pin plug (Ray rool type) for connection of 230 volts, ac, 50 Hz, 250 watts Mv lamp for working on the platform during night.
- 6.19 Proper earthing arrangement shall be done for all the electrical circuit and earthing studs shall be provided for earthing.
- 6.20 All the cable connection between the equipments shall be through a terminal board (FRP) for easy maintenance purpose.
- 6.21 Good engineering practice shall be followed in the manufacture of the platform and the sub-assemblies.
- 6.21.1 The welding shall be neat. The burrs and slags shall be removed and ground properly. Two coats of red oxide primer paint shall be applied on all the metal parts.
- 6.21.2. All the sharp corners of metal sheets shall be rounded off or chamfered wherever applicable.

## 7. TECHNICAL REQUIREMENT:

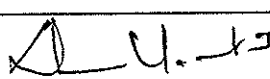

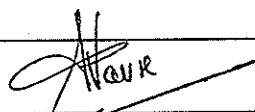
- 7.1 Basic outer Boom/Support for platform : 350 mm square
- 7.2 Total collapsed height of platform (from coach floor): 2962 mm
- 7.3 Maximum platform height (from rail level) : 6242 mm
- 7.4 Basket size length : 5700 mm
- 7.5 Basket size breadth : 1500 mm

		
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- 7.6 Maximum Overhang from centre : 4200 mm
- 7.7 Maximum Pay Load (carrying capacity) : 600 kg.
- 7.8 Power required for lifting : not less than 3 HP
- 7.9 Power required for Swivelling : 1.0 HP
- 7.10 Rotation of the platform : 90° on either side of the centre Line
- 7.11 Time taken for 0° to 90° movement : Shall be within 36 seconds
- 7.12 Lifting time to max. Height of 6242 mm : 45 sec.
- 7.13 Lockdown height of platform above rail level : 4242 mm
- 7.14 Height of platform above rail level in fully elevated position : 6242 +25mm /-0mm
- 7.15 Height of collapsible railing above platform : 800mm
- 7.16 The platform shall be operable manually during power failure.
- 7.17 A pilot operated non-return check valve shall be provided to hold the platform in position when hydraulic system fails.
- 7.18 In the hydraulic circuit, there shall be provision of hand lever for hydraulic pump to lift the platform in the event of disconnection of electrical supply.
- 7.19 All the operation of the platform shall be interlocked with start push button provided in the controller handle.
- 7.20 A stop button shall be provided near the equipment and platform controller handle to stop any operation of the platform.
- 7.21 Suitable indication lights are to be provided in the equipment panel.
- 7.22 The motors for hydraulic pump, slewing operation shall be liberally rated.
- 7.23 There should be protections/indications against low pressure which should be interlocked with the electrical operation.
- 7.24 For overview of the lifting platform, refer drawing indicated at Annexure-I.

		
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## 8. INSPECTION TESTS

### 8.1. TYPE TESTS:

Type tests shall be carried out on one unit per order, manufactured by the prospective supplier in the presence of representative from RDSO/ICF, to establish the conformity of the product with the specification, the following shall constitute the type tests for the lifting platform.

- 8.1.1 Visual examination
- 8.1.2 Dimensional verification
- 8.1.3 Operational tests
  - 8.1.3.1. Raising and lowering of platform
  - 8.1.3.2 Rotational range of platform
  - 8.1.3.3 Railings
- 8.1.4. Load capacity test
- 8.1.5. High voltage test
- 8.1.6. Insulation resistance measurement tests
- 8.1.7. Safety checks
- 8.1.8. General tests/certificates

### 8.2 ROUTINE TESTS:

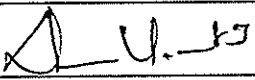
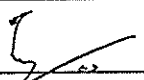
The following tests shall be conducted on all the units offered:

- 8.2.1 Visual examination and dimensional verification tests.
- 8.2.2 Operational tests
- 8.2.3 Insulation resistance measurement tests
- 8.2.4 Safety checks

## 9. TESTS

### 9.1. VISUAL EXAMINATION:

Examine the swivelling platform, hydraulic unit and other sub-assemblies for manufacturing defects, quality of workmanship and any other abnormality.

		
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## 9.2. DIMENSIONAL VERIFICATION:

- 9.2.1. I. Measure all the dimensions as per the requirement of the specification/drawing.
- ii. Record all the value
- iii. Check the dimensions are within the specified limits including the tolerance as shown in the drawing.

## 9.3. OPERATIONAL TESTS:

- 9.3.1. Raising and lowering of the platform.
  - i. The platform shall not take more than 45 seconds to achieve maximum elevated height of 4962 mm from coach floor level and 6242 mm from rail level.
  - ii. The performance shall be checked for ten operations.
  - iii. The time taken in no case shall exceed the specified limit while performance is checked for ten operations.
- 9.3.2. Rotational range of platform:
  - i. The platform shall be rotated towards both sides, alternatively five to ten operations each side.
  - ii. The angle of rotation shall not fall below 90 degree.
  - iii. The above test shall be conducted with and without load.
- 9.3.3. Railings:
  - i) Examine the railings for folding and unfolding operations.
  - ii) The operation shall be smooth
  - iii) The folding and unfolding shall not cause any obstructions.

## 9.4 LOAD CAPACITY TEST:

- 9.4.1. Place 600 kg weight at the extreme end of the swivelling and lifting platform
- 9.4.2. Performance shall be checked as indicated in clause 9.3.1 & 9.3.2.
- 9.4.3. This load capacity test shall be tested when the system voltage to the motor circuit is 415Volts, 3 phase, 50 Hz and also at 394 volts, 3 phase, 50 Hz.
- 9.4.4. The above load test shall be done with and without load.

		
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#### 9.5. HIGH VOLTAGE TEST:

This test shall be tested as indicated in IS 325.

Note: If the motor is already type tested the type test certificate shall be submitted.

#### 9.6 SAFETY CHECKS:

- 9.6.1. Check that the platform shall not come down either on hydraulic system failure or electrical failure.
- 9.6.2. With a load of 600 kg at a height of 6242mm, the hose pipe from hydraulic pump to cylinder shall be disconnected.
  - 9.6.2.1. The platform shall not come down.
  - 9.6.2.2. Check the operation of the Pilot operated non-return valve.
- 9.6.3. Raise the platform at a height of 6242 mm with 600 kg load.
  - 9.6.3.1. Disconnect the Electrical circuits.
  - 9.6.3.2. Operate the hand lever provided with the hydraulic pump
  - 9.6.3.3. The platform shall be brought home with ease.
- 9.6.4. Place a load of 600 kg on the platform
  - 9.6.4.1. The platform shall not be raised or lowered from the platform controls unknowingly, if the platform is occupied. Reliable interlock arrangement shall be provided to ensure this safety feature.

#### 9.7. GENERAL TESTS/CERTIFICATES:

- 9.7.1. All hydraulic lines shall be checked for any leakage.
- 9.7.2. Electrically operated magnet valves for hydraulics shall be checked for its performance.
- 9.7.3. The motors used in the manufacture of lifting platform and hydraulic pump shall be type tested at the manufacturer's works. The type test certificates and reports shall be submitted.
- 9.7.4. Type test certificates of hydraulic pump shall be submitted.

		
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**10. MARKING:**

10.1 The unit shall have the name plate details as follows:

- Name of the manufacturer and address
- Type and Serial No.
- Month and year of manufacture
- Electrical and hydraulic circuits with terminal markings
- Rated input voltage and operation range
- Nominal input voltage, current and power
- Frequency
- Rated output power
- Bearing details.
- Grease and Lubricating oil type and quantity.
- Weight of the equipment.

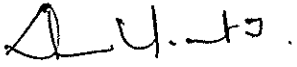

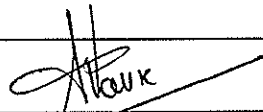
**11. GUARANTEE:**

The equipment and sub-assemblies shall be guaranteed for satisfactory performance for a period of 18 months from the date of commissioning or 24 months from the date of supply whichever is earlier.

**12. APPROVAL BY RDSO/ICF:**

12.1. The tenderer shall submit the offer in duplicate for the following information:

- Clause wise comments and if any deviations from the specification shall be highlighted. Any clause not commented upon would be deemed to have been acceptable.
- Sufficient information on machinery, testing facilities, quality control system etc. to prove that the tenderer's works have adequate facilities to manufacture, test and supply.
- Name and addresses of manufacturer and supplier of main items, sub-assemblies and raw materials etc.

		
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iv) Design data's including structural design detail determination of hydraulic pressure i.e. pay load and raising time.

- 12.2. The drawings shall be got approved from ICF, before commencement of manufacturing the prototype.
- 12.3. For inspection, one no. of ordered quantity shall be offered for type testing by RDSO/ICF representative.
- 12.4. The bulk/series production of the above platform shall commence only after the approval of the prototype unit or one type tested unit. The constructional and performance improvements if found necessary during inspection shall be duly incorporated in series production to improve the quality and reliability of the product.
- 12.5. The manufacturer/tender shall provide all the testing facilities to the inspecting official.

**13.0. SPARES AND MAINTENANCE MANUAL:**

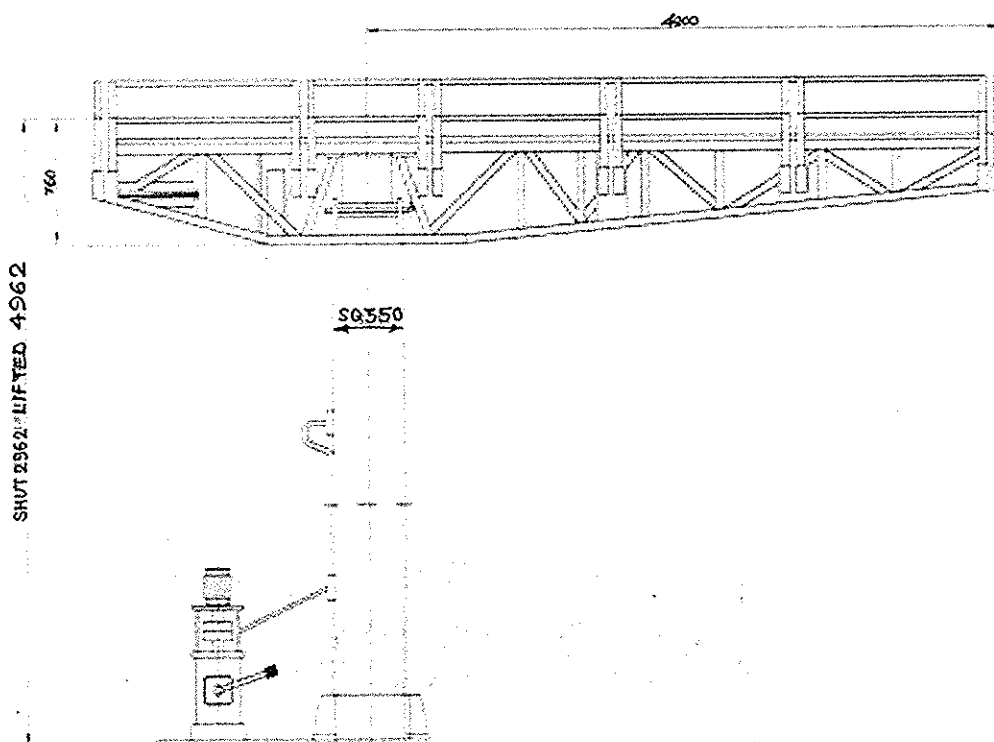
- 13.1. Necessary list of spares for satisfactory maintenance of the equipment for a period of two years shall be supplied and separately quoted for item-wise.
- 13.2. Recommended grade and manufacture code for the hydraulic pump oil, lubricating grease or oil with the quantity shall be listed and submitted.
- 13.3. Maintenance manuals for installation and maintenance of the platform shall be supplied.
- 13.4. One maintenance manual shall be supplied for each ordered quantity.
- 13.5. The maintenance manual shall contain all the details like limits, precautions, overhauling details, monthly, quarterly and annual maintenance instructions. The manual shall be prepared as per IRS Specification IRS E-51.

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**ANNEXURE - I**

- |  |   |
|--|---|
| 1) Basic outer Boom/Support for platform                             | : 350 mm square                         |
| 2) Total collapsed height of platform (from coach floor):            | 2962 mm                                 |
| 3) Maximum platform height (from rail level)                         | : 6242 mm +25mm /-0mm                   |
| 4) Basket size length  | : 5700 mm                               |
| 5) Basket size breadth   | : 1500 mm                               |
| 6) Maximum Overhang from centre                                      | : 4200 mm                               |
| 7) Maximum Pay Load (carrying capacity)                              | : 600 kg.                               |
| 8) Power required for lifting  | : not less than 3 HP                    |
| 9) Power required for Swivelling                                     | : 1.0 HP                                |
| 10) Rotation of the platform   | : 90° on either side of the centre Line |
| 11) Time taken for 0° to 90° movement                                | : Shall be within 36 seconds            |
| 12) Lifting time to max. Height of 6242 mm                           | : 45 sec.                               |
| 13) Lockdown height of platform above rail level                     | : 4242 mm                               |
| 14) Height of platform above rail level<br>(Fully elevated position) | : 6242 +25mm /-0mm                      |
| 15) Height of collapsible railing above platform                     | : 800mm                                 |
| 16) Motor Specification  | : IS:325 (Latest)                       |

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INTEGRAL COACH FACTORY, CHENNAI: 38	ICF/ELEC/OHE/001 REV.NO:01 CS-01 DATE: 12.06.2017
Sub: Specification for hydraulically operated lifting swivelling platform for Diesel Electric Tower cars	Page 1 of 1

**CORRECTION SLIP NO :1 TO SPECIFICATION ICF/ELEC/OHE/001 REV.NO.01**

Clause 6.6 shall be read as follows.

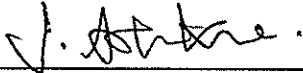

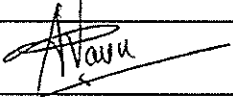
- 6.6 Electrically operated push button station shall be available in the platform for lowering, raising, slewing and stopping. In addition, two emergency stop switches with IP 67 enclosure shall be provided on each side of the platform to bring the OHE Car to an emergency halt. Wirings shall be done by supplier with SS flexible metallic conduit.

Clause 6.18 shall be read as follows.

- 6.18 Four numbers of 3 pin plug and socket with 10A MCB (Ray rool type) along with IP 67 enclosure for connection of 110 volts, ac, MV/LED lamp for working on the platform during night to be provided, these shall be placed at each corner of basket of the platform. Wiring using SS flexible metallic conduits for these sockets upto junction box shall be in scope of supplier.

Clause 13.6 added.

- 13.6 The cables shall be neatly dressed using flexible cable tray/insulated rope and rested on the coach roof while lifting and lowering of platform.

		
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INTEGRAL COACH FACTORY, CHENNAI: 38	ICF/ELEC/OHE/001 REV.NO:01 CS: 02 DATE: 12.06.2017
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**CORRECTION SLIP NO :2 TO SPECIFICATION ICF/ELEC/OHE/001 REV.NO.01****(APPLICABLE ONLY FOR HIGH RISE OHE)**

Clause 7 shall be read as follows.

**7. TECHNICAL REQUIREMENT:**

- 7.3 Maximum platform height (from rail level) : 8010 mm
- 7.12 Lifting time to max. Height of 8010 mm : 45 to 75 sec.
- 7.14 Height of platform above rail level in fully elevated position : 8010 +25mm /-0mm

7.24 For overview of the lifting platform, refer drawing indicated at Annexure-II.

Remaining in Clause 7 all are same.

		
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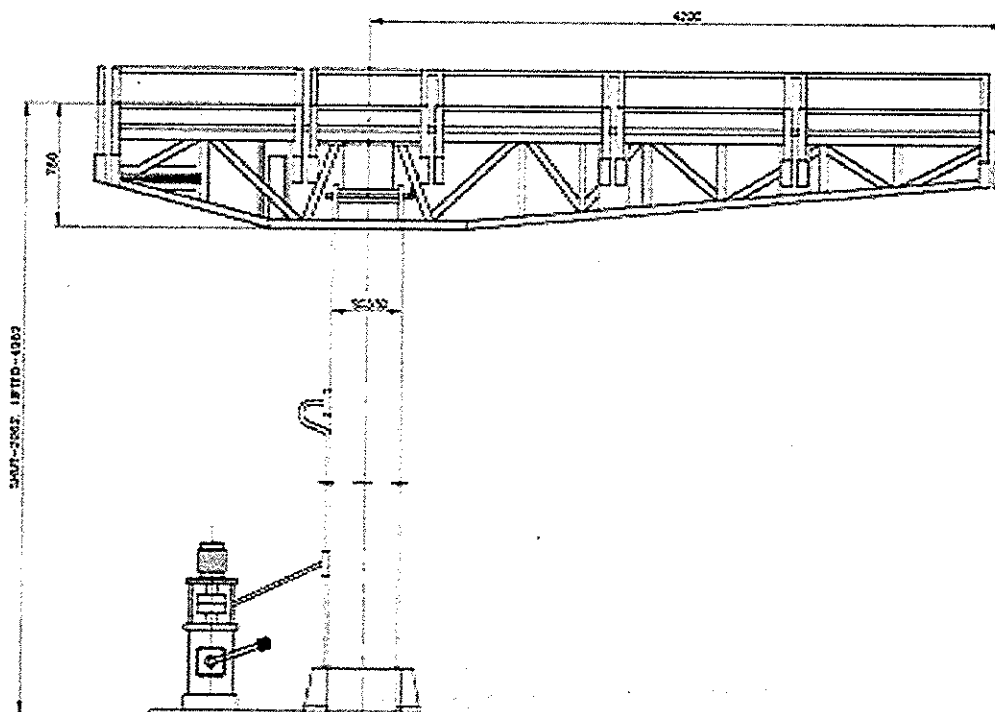


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INTEGRAL COACH FACTORY, CHENNAI: 38	ICF/ELEC/OHE/001 REV.NO:01 CS: 02 DATE: 12.06.2017
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CORRECTION SLIP NO :2 TO SPECIFICATION ICF/ELEC/OHE/001 REV.NO.01

(APPLICABLE ONLY FOR HIGH RISE OHE)

ANNEXURE -II

- |  |   |
|--|---|
| 1) Basic outer Boom/Support for platform                             | : 350 mm square                         |
| 2) Total collapsed height of platform (from coach floor):            | : 2962 mm                               |
| 3) Maximum platform height (from rail level)                         | : 8010 mm +25mm /-0mm                   |
| 4) Basket size length  | : 5700 mm                               |
| 5) Basket size breadth   | : 1500 mm                               |
| 6) Maximum Overhang from centre                                      | : 4200 mm                               |
| 7) Maximum Pay Load (carrying capacity)                              | : 600 kg.                               |
| 8) Power required for lifting  | : not less than 3 HP                    |
| 9) Power required for Swivelling                                     | : 1.0 HP                                |
| 10) Rotation of the platform   | : 90° on either side of the centre Line |
| 11) Time taken for 0° to 90° movement                                | : Shall be within 36 seconds            |
| 12) Lifting time to max. Height of 8010 mm                           | : 45 to 75 sec.                         |
| 13) Lockdown height of platform above rail level                     | : 4242 mm                               |
| 14) Height of platform above rail level<br>(Fully elevated position) | : 8010 +25mm /-0mm                      |
| 15) Height of collapsible railing above platform                     | : 800mm                                 |
| 16) Motor Specification  | : IS:325 (Latest)                       |

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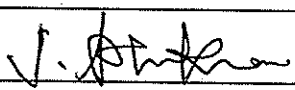
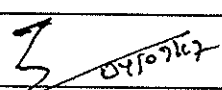

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INTEGRAL COACH FACTORY, CHENNAI: 38	ICF/ELEC/OHE/001 REV.NO:01 CS-03 DATE: 04.07.2017
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## CORRECTION SLIP NO :03 TO ICF SPECIFICATION ICF/ELEC/OHE/001 REV.NO.01

Clause 6.22 added.

- 6.22 The Swivelling of lifting platform shall operate without jerk for which Variable Frequency Drive (VFD) of standard make shall be provided which shall be accommodated inside the electrical control panel. Type and make of VFD to be used shall have prior approval of ICF.

		
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INTEGRAL COACH FACTORY, CHENNAI: 38	ICF/ELEC/OHE/001 REV.NO: 01 CS: 04 DATE: 28.05.2019
Sub: Specification for hydraulically operated lifting swivelling platform for Diesel Electric Tower cars	Page 1 of 3

**CORRECTION SLIP No. 04 TO SPECIFICATION No. ICF/ELEC/OHE/001, REV. 01**

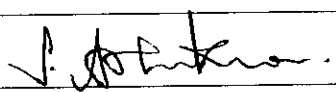
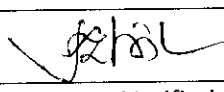
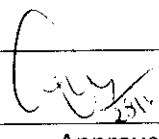
The following clauses shall be read as follows,

- 7.2 Total collapsed height of platform (from coach floor) :  $2962 \pm 4$  mm
- 7.4 Basket size length :  $5700 \pm 5$  mm
- 7.5 Basket size breadth :  $1500 \pm 3$  mm
- 7.13 Lockdown height of platform above rail level :  $4242 \pm 5$  mm
- 7.15 Height of collapsible railing above platform :  $800 \pm 2$  mm

Clause 9.8 added.

**9.8 INSULATION RESISTANCE MEASUREMENT TEST**

Insulation resistance of Motors shall not be less than 100 MΩ with 1000V,DC Meggar in all weather conditions.

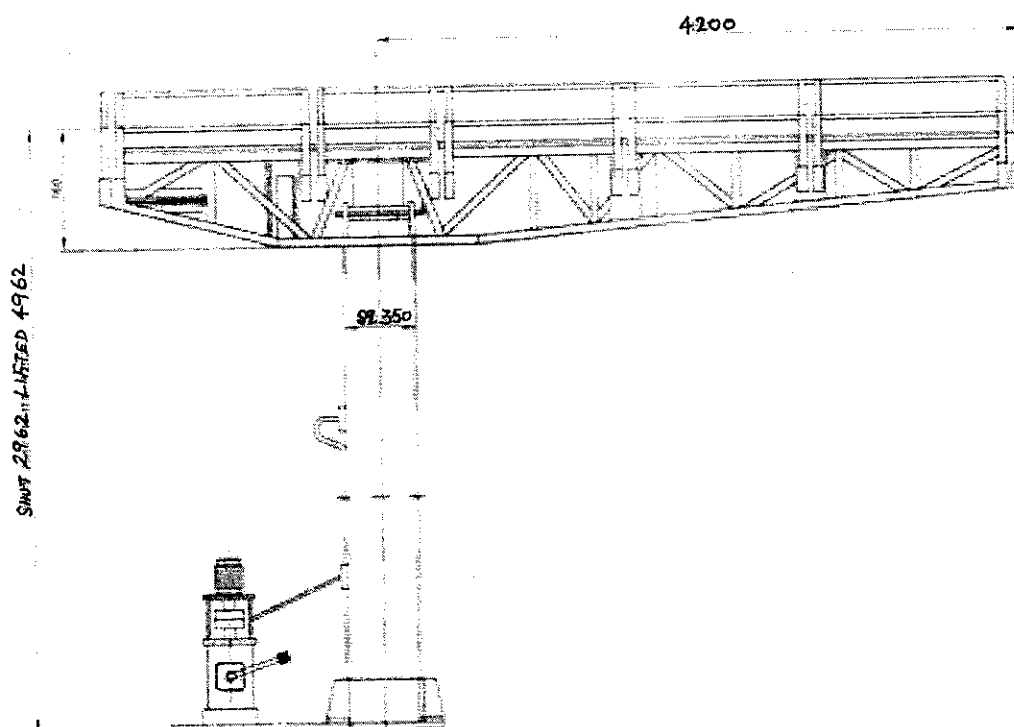
		
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INTEGRAL COACH FACTORY, CHENNAI: 38	ICF/ELEC/OHE/001 REV.NO: 01 CS: 04 DATE: 28.05.2019
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**CORRECTION SLIP NO :4 TO SPECIFICATION ICF/ELEC/OHE/001 REV.NO.01**

**ANNEXURE-I SHALL BE READ AS FOLLOWS**

**ANNEXURE-I**



- |  |   |
|--|---|
| 1) Basic outer Boom/Support for platform                             | : 350 mm square                         |
| 2) Total collapsed height of platform (from coach floor):            | : 2962 ± 4mm                            |
| 3) Maximum platform height (from rail level)                         | : 6242 mm+25mm /-0mm                    |
| 4) Basket size length  | : 5700 ± 5mm                            |
| 5) Basket size breadth   | : 1500 ± 3mm                            |
| 6) Maximum Overhang from centre                                      | : 4200 mm                               |
| 7) Maximum Pay Load (carrying capacity)                              | : 600 kg.                               |
| 8) Power required for lifting  | : not less than 3 HP                    |
| 9) Power required for Swivelling                                     | : 1.0 HP                                |
| 10) Rotation of the platform   | : 90° on either side of the centre Line |
| 11) Time taken for 0° to 90° movement                                | : Shall be within 36 seconds            |
| 12) Lifting time to max. Height of 6242 mm                           | : 45 sec.                               |
| 13) Lockdown height of platform above rail level                     | : 4242 ± 5mm                            |
| 14) Height of platform above rail level<br>(Fully elevated position) | : 6242 +25mm /-0mm                      |
| 15) Height of collapsible railing above platform                     | : 800 ± 2mm                             |
| 16) Motor Specification  | : IS:325 (Latest)                       |

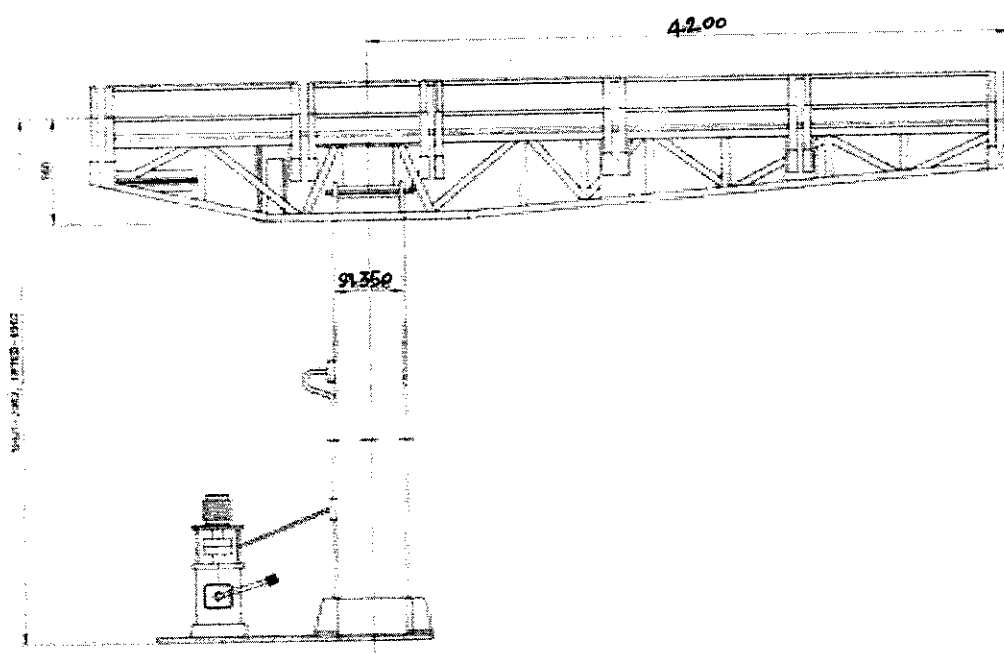
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INTEGRAL COACH FACTORY, CHENNAI: 38	ICF/ELEC/OHE/001 REV.NO: 01 CS: 04 DATE: 28.05.2019
Sub: Specification for hydraulically operated lifting swivelling platform for Diesel Electric Tower cars	Page 3 of 3

**CORRECTION SLIP NO :4 TO SPECIFICATION ICF/ELEC/OHE/001 REV.NO.01**  
**ANNEXURE-II SHALL BE FOLLOWED AS SHOWN BELOW IN PLACE OF ANNEXURE-II**  
**IN CORRECTION SLIP NO :2**

**ANNEXURE-II**

(APPLICABLE ONLY FOR HIGH RISE OHE)



- |  |   |
|--|---|
| 1) Basic outer Boom/Support for platform                             | : 350 mm square                         |
| 2) Total collapsed height of platform (from coach floor):            | : 2962 ± 4mm                            |
| 3) Maximum platform height (from rail level)                         | : 8010 mm+25mm /-0mm                    |
| 4) Basket size length  | : 5700 ± 5mm                            |
| 5) Basket size breadth   | : 1500 ± 3mm                            |
| 6) Maximum Overhang from centre                                      | : 4200 mm                               |
| 7) Maximum Pay Load (carrying capacity)                              | : 600 kg.                               |
| 8) Power required for lifting  | : not less than 3 HP                    |
| 9) Power required for Swivelling                                     | : 1.0 HP                                |
| 10) Rotation of the platform   | : 90° on either side of the centre Line |
| 11) Time taken for 0° to 90° movement                                | : Shall be within 36 seconds            |
| 12) Lifting time to max. Height of 8010 mm                           | : 45 to 75 sec.                         |
| 13) Lockdown height of platform above rail level                     | : 4242 ± 5mm                            |
| 14) Height of platform above rail level<br>(Fully elevated position) | : 8010 +25mm /-0mm                      |
| 15) Height of collapsible railing above platform                     | : 800 ± 2mm                             |
| 16) Motor Specification  | : IS:325 (Latest)                       |

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