



Modern Coach Factory Raebareli  
आधुनिक रेल डिब्बा कारखाना, रायबरेली

DOC NO.: MCF/RBL/QMF 8002  
REV NO: 01  
DATE: 17.04.2018

ROLLING STOCK CERTIFICATE

Rolling Stock Certificate No.: MCF/RBL/QC/RSC/2020-21/434

|      |        |           |          |                  |             |
|------|--------|-----------|----------|------------------|-------------|
| RLY  | NWR    | COACH NO  | 204615/C | DATE OF DISPATCH | 5-Sep-20    |
| Type | LWLRRM | Shell No. | 20H016   | DISPATCH TO      | SSE/C&W/All |
|      |        |           |          | FUR.NO.          | LPC-328     |

1. Railway Board's Order No. : 2019/M(C)/142/2 Dated: -13-06-2019
2. Tare Weight of Coach : 53.2 Tones
3. Carrying Capacity : (a) Seating: NIL (b) Sleeping: NIL (c) Luggage: 3.9 tones

4. Special feature:

A- Choke of 5/6 mm in DV side replace with 9 mm in both type (KBI & Faiv.) letter no. MC/LHB/Brake, DT. 27.09.18

5. SHELL LEADING DIMENSIONS:

| S NO | DESCRIPTION  | DIMENSION (MM)   |
|------|--|------------------|
| 1    | Maximum length over body                             | 23700            |
| 2    | Maximum width over body                              | 3240             |
| 3    | Maximum height from Rail Level                       | 4039             |
| 4    | CBC height/Buffer height from Rail level 1105 +0/-10 | NPP/PP 1100/1105 |

6. TRACEABILITY OF SHELL ITEMS:

| S NO | ITEM                  | MAKE/SUPPLIER     | SERIAL NO            |
|------|-----------------------|-------------------|----------------------|
| 1    | Under frame           | Front PP END      | M/S-RAIL TECH KXH 27 |
|      |                       | Part NPP END      | M/S-RAIL TECH KXH 27 |
|      |                       | Complete          | M/S-RAIL TECH KXH 27 |
| 2    | Lav. side wall        | M/S-COMPETENT JUC | LAV.1 LAV.2          |
|      |                       | M/S-COMPETENT JUC | LAV.3 LAV.4          |
| 3    | Side wall             | LH SIDE           | MCFRBL-V4U-LKO 49    |
|      |                       | RH SIDE           | MCFRBL-V4U-LKO 49    |
| 4    | End wall              | PP END            | M/S-DTL PUNE         |
|      |                       | NPP END           | MCFRBL(PUSKAR)       |
| 5    | Roof                  | M/S-INDIRA        | 41                   |
| 6    | Centre Buffer Coupler | M/S-FRONTIER      | NPP/PP 36P1 08P1     |
| 7    | Buffer                | M/S-RANEKA.       | NPP/PP 20H016 N.A    |

7. AIR BRAKE TEST REPORT:

| S NO | ITEM                                      | DESCRIPTION  | SPEC. VALUE                           | OBSERVED               |
|------|---|--|---------------------------------------|------------------------|
| 1    | Full brake application                    | Reduce pressure of BP from 5.0 to 3.4 kg/cm <sup>2</sup> . | 6 – 10 sec.                           | 6 sec.                 |
|      |   | Max. pressure in BC  | 3.0 ±0.15 kg/cm <sup>2</sup> .        | 3.0 kg/cm <sup>2</sup> |
|      |   | All Brake are applied                                      | OK                                    | OK                     |
| 2    | Insensitivity                             | Exhaust BP @ 0.3 kg/cm <sup>2</sup> /min.                  | No brake application                  | OK                     |
| 3    | Sensitivity                               | Exhaust BP @ 0.1 kg/cm <sup>2</sup> /Sec, after 06 Sec.    | Brake must apply                      | OK                     |
| 4    | Handbrake(Parking brake)for generator car | 1.Apply hand brake   | 1.Hand Bk. Indicator should be red    | OK                     |
|      |   | 2.Release hand brake                                       | 2. Hand Bk. indicator should be green | OK                     |

8 FIRE TESTING:

| S NO | ITEM          | DESCRIPTION     | SPEC. VALUE   | OBSERVED VALUE |
|------|---------------|-----------------|---|----------------|
|      | generator car | Smoke detection | 1.controller should display smoke in zone 1,2<br>2.strobe light & hooter should activate      | OK             |
|      |               | Heat detection  | 1.controller should display smoke/heat in zone 1,2<br>2 strobe light & hooter should activate | OK             |

9. PAINTING DETAILS:

| S NO | DESCRIPTION | TYPE OF PAINT | MAKE    | APPLICATION BY MCF/ CONTRACTOR (SUPPLY & APPLY) | AVERAGE GLOSS VALUE | DATE OF COMPLETION |
|------|-------------|---------------|---------|---|---------------------|--------------------|
| 1    | Paint       | P.U           | VIBGYOR | M/S-VIBGYOR (S&A)                               | 90/89               | 14-Jul-20          |
| 2    | Insulation  |               |         | Satisfactory                                    |                     |                    |

*Rajma*  
12/11/2020  
SSE/QC/MCF/RBL

वरिष्ठ अनुष्ठानिक अभियंता  
गुणवत्ता विभाग  
रेडिओ कार, रायबरेली (लालगंज)





MODERN COACH FACTORY, RAEBARELI

DOC NO.: MCF/RBL/QMF 8002

REV NO.: 01

DATE: 16.05.2016

आधुनिक रेल डिब्बा कारखाना, रायबरेली

## ROLLING STOCK CERTIFICATE

Rolling Stock Certificate No.: MCF/RBL/QC/RSC/2020-21/434

|     |   |   |   |           |   |   |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |   |
|-----|---|---|---|-----------|---|---|---|---|---|---|---|---|---|------------------|---|---|---|---|---|---|---|---|
| RLY | N | W | R | Coach No. | 2 | 0 | 4 | 6 | 1 | 5 | / | C | - | DATE OF DISPATCH | 0 | 5 | 0 | 9 | 2 | 0 | 2 | 0 |
|-----|---|---|---|-----------|---|---|---|---|---|---|---|---|---|------------------|---|---|---|---|---|---|---|---|

|          |             |      |   |   |   |   |   |   |           |   |   |   |    |   |         |         |
|----------|-------------|------|---|---|---|---|---|---|-----------|---|---|---|----|---|---------|---------|
| DISPATCH | SSE/C&W/AII | Type | L | W | L | R | R | M | Shell No. | 2 | 0 | H | 01 | 6 | FUR .NO | LPC-328 |
|----------|-------------|------|---|---|---|---|---|---|-----------|---|---|---|----|---|---------|---------|

## 9. DETAIL OF BOGIES:

| ITEMS         | NPP Side               |                        |                        |                        | PP Side                |                        |                        |                        |
|---------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Bogie No      | 200332                 |                        |                        |                        | 200331                 |                        |                        |                        |
| Bogie Type    | FIAT                   |                        |                        |                        | FIAT                   |                        |                        |                        |
| Frame no.     | VS-2139                |                        |                        |                        | SECPL-108              |                        |                        |                        |
| Bolster no.   | AMIT-41                |                        |                        |                        | AMIT-46                |                        |                        |                        |
| Axle No       | 20 Y - 8069 RWF        |                        | 20 Y-8163 RWF          |                        | 20 Y-6403 RWF          |                        | 20Y-5701 RWF           |                        |
| Wheel Dia     | 917.79                 | 917.72                 | 917.67                 | 917.64                 | 917.77                 | 917.72                 | 917.77                 | 917.72                 |
| Wheel Disc No | TZ 12-19<br>92003-9WG3 | TZ 12-19<br>94938-9WM5 | TZ 12-19<br>89111-9WK0 | TZ 07-19<br>70774-9RN4 | TZ 07-19<br>70355-9RL8 | TZ 07-19<br>70356-9RL8 | TZ 12-19<br>89115-9WK0 | TZ 07-19<br>70359-9RL8 |
| R B Nos.      | 12-19 38521            | 12-19 38469            | 12-19 39411            | 12-19 40600            | 12-19 38434            | 12-19 37824            | 12-19 39313            | 12-19 39694            |
| CTRB Make     | TIMKEN                 |                        | TIMKEN                 |                        | TIMKEN                 |                        | TIMKEN                 |                        |

## 10. SECONDARY SUSPENSION LOAD DEFLECTION VALUES :-

| DESCRIPTION                      | Bogie NPP side              |                         |                             |                          | Bogie PP side          |                           |                       |                           |
|----------------------------------|-----------------------------|-------------------------|-----------------------------|--------------------------|------------------------|---------------------------|-----------------------|---------------------------|
|                                  | Secondary 1                 |                         | Secondary 2                 |                          | Secondary 1            |                           | Secondary 2           |                           |
|                                  | Outer                       | Inner                   | Outer                       | Inner                    | Outer                  | Inner                     | Outer                 | Inner                     |
| Make & Nos.                      | CMFSK08-19-<br>7145-059-218 | CMGBD02-20<br>F17-774-8 | CMFSK08-19-<br>7145-059-230 | CMGBD02-<br>20F17-774-36 | CMAFJ08-19-<br>7146-25 | CMGBD08-19-F15-<br>395-82 | CMAFJ08-19-<br>7146-7 | CMGBD08-19-<br>F15-395-92 |
| Compressed Ht. at<br>Tested Load | 509                         | 470                     | 510                         | 471                      | 512                    | 468                       | 510                   | 465                       |
| Alignment<br>deviation (mm)      | 8                           | 21                      | 9                           | 20                       | 15                     | 11                        | 15                    | 13                        |

## 11. TRACEABILITY OF BOGIE ITEMS :-

| S. NO | ITEM                       | MAKE/<br>SUPPLIER | SERIAL NO.   |  |
|-------|----------------------------|-------------------|--|--|
|       |                            |                   | NPP SIDE   | PP SIDE  |
| 1.    | Yaw Damper                 | IAI               | 294545,301542  | 294184,294120  |
| 2.    | Primary outer Spring       | CMGBD             | 12-19-F05-402-(44,19,511,38)   | 01-20 7142--(59,41,26,43)  |
| 3.    | Primary Inner Spring       | CMAFJ             | 01-20-7143-(736,738,742,748)   | 01-20 7143-(265,230,744,266)   |
| 4.    | Primary Damper             | IAI               | 02-20 (310446,301340,321373,310314)  | 02-20 (310520,309984,309936,309764)  |
| 5.    | Secondary Damper           | KNORR             | 04-19(06772,04715)   | 02-19(17235,17248)   |
| 6.    | Lateral Damper             | KONI              | 03-19 00201  | 03-2019 00244  |
| 7.    | Brake Cylinder             | KBI               | D(0082,0127)K29,C(0194,0531)K29  | D(00871,00098)K29,(3519440597,3520101015,)   |
| 8.    | Brake Caliper              | KBI               | C(3595,1989,1994,3619)-29  | C(3596,3620)-29,(3519460600,3521000501)  |
| 9.    | Brake Disc                 | KBI               | 24217801 0010-06/20,24217796 0073-06/20<br>24226793 0075-27/20,24226793 0074-27/20 | 24226793 0060-26/20,24226793 0056-36/20<br>24226794 0033-26/20,24226793 0055-26/20 |
| 10.   | Ball Joint Control Arm     | GMT               |  |  |
| 11.   | Lateral Bump Stop          | GMT               |  |  |
| 12.   | Traction Centre make       | SF                |  |  |
| 13.   | Traction lever make        | JJ                |  |  |
| 14.   | Ball joint traction lever  | GMT               |  |  |
| 15.   | Ball joint traction centre | GMT               |  |  |
| 16.   | Secondary Rubber Pad       | PRAG              |  |  |
| 17.   | Rubber Spring              | GMT               |  |  |
| 18.   | Anti roll bar Make         | EMSON             |  |  |
| 19.   | Roll Link make             | SF +GMT           |  |  |
| 20.   | Fork make                  | RNG               |  |  |
| 21.   | Control Arm Upper          | KUMAR             | 1552,D1306,N1194,D1588   | D2213,D1470,D2814,D1961  |
| 22.   | Control Arm Lower          | KUMAR             | 958,D2608,N1368,D1062  | D2408,N2168,D3254,D396   |
| 23.   | Phonic Wheel               | KBI               | K07-20   | K01-20   |

Signature of SSE/Bogie/QC







Modern Coach Factory Raebareli  
आधुनिक रेल डिब्बा कारखाना, रायबरेली

DOC NO.: MCF/RBL/QMF 8002  
REV NO: 01  
DATE: 17.04.2018

ROLLING STOCK CERTIFICATE  
Rolling Stock Certificate No.: MCF/RBL/QC/RSC/2020-21/434

|      |        |           |          |                  |             |
|------|--------|-----------|----------|------------------|-------------|
| RLY  | NWR    | COACH NO  | 204615/C | DATE OF DISPATCH | 5-Sep-20    |
| Type | LWLRRM | Shell No. | 20H016   | DISPATCH TO      | SSE/C&W/All |
|      |        |           |          | FUR.NO.          | LPC-328     |

13. TRACEABILITY OF FURNISHING ITEMS:

| S NO | ITEM   | MAKE/SUPPLIER                        | SERIAL NO(NPP/PP) |
|------|--|--------------------------------------|-------------------|
| 1    | Air Brake Module                                   | M/S-KBI                              | 0526 18/20        |
| 2    | Distribution valve                                 | M/S-KBI                              | 2020D10997        |
| 3    | Hand Brake Equipment                               | M/S-PLASTO POWER                     |                   |
| 4    | FIBA   | NIL                                  |                   |
| 5    | Floor board  | M/S-TWPL MUMBAI                      |                   |
| 6    | AL. Chequer Plate/Sheet                            | M/S-RAIL TECH KXH                    |                   |
| 7    | PVC  | M/S-RESPONSIVE POLYFILM GZB          |                   |
| 8    | UIC Vestibule (NPPE)                               | M/S-SUNCEAST KOLKATA                 |                   |
| 9    | Foot Step  | M/S- SUPER SPARKS FARIDABAD          |                   |
| 10   | Gangway bridge mounting (NPPE)                     | M/S-MMW KXH                          |                   |
| 11   | Body Side Window                                   | M/S- SHATABDI SAFETY GLASS, VADODARA |                   |
| 12   | Roof Ceiling                                       | M/S-RAIL EXPERTS JUC                 |                   |
| 13   | Lavatory/hopper Window                             | M/S- SHATABDI SAFETY GLASS, VADODARA |                   |
| 14   | Automatic smoke & heat Detection with alarm System | M/S-SANROK                           |                   |
| 15   | Generator Room Ceiling                             | M/S-RAIL TECH                        |                   |
| 16   | Hatch Door   | M/S-RAIL TECH KXH                    |                   |
| 17   | AC Trough  | M/S-CMT VADODARA                     |                   |
| 18   | RMPU   | M/S-INTEC GURGAON                    |                   |
| 19   | Luggage Sliding Door                               | M/S-GANESH MOHALI                    |                   |
| 20   | Body Side Doors                                    | M/S- SAVARN INFRATEL                 |                   |
| 21   | Vestibule Door(NPPE)                               | M/S- JBM INDUSTRIES, FARIDABAD       |                   |
| 22   | Crew/Gen. Room Door                                | M/S- JBM INDUSTRIES, FARIDABAD       |                   |
| 23   | Crew/Guard Room Door                               | M/S- JBM INDUSTRIES, FARIDABAD       |                   |
| 24   | Bio Tank (01 No Lav.)                              | M/S-RAIL FAB KXH                     |                   |
| 25   | Auxiliary Water Tank(1x30l)                        | M/S-OASIS                            |                   |
| 26   | Under Slung Water Tank (1x450L)                    | M/S-OASIS                            |                   |
| 27   | Fuel Tank (2x1540 L)                               | M/S-P.D.STEEL                        |                   |
| 28   | Health Faucet                                      | NA                                   |                   |
| 29   | Lotah Filler Tap                                   | M/S- KAPCO VALVES JUC                |                   |
| 30   | Bib cock   | M/S-AGMECO PVT.LTD                   |                   |
| 31   | Lavatory Doors                                     | M/S-KALSI LDH                        |                   |
| 32   | Seat & Berth                                       | M/S-OVPL MUMBAI                      |                   |
| 33   | Luggage Rack                                       | M/S-RAIL FAB KXH                     |                   |
| 34   | Folding Table                                      | M/S-RAIL EXPERT LTD JUC              |                   |
| 35   | Venturi grill                                      | NIL                                  |                   |
| 36   | RFID   | NIL                                  |                   |

*R. R. Mehta*  
12/11/2020

SSE/QC/MCF/RBL

वरिष्ठ अनुष्ठानिक अधिकारी  
गुणवत्ता विभाग  
रेडिओका, रायबरेली (लालगंज)





|    |   | <b>Modern Coach Factory Raebareli</b><br><b>आधुनिक रेल डिब्बा कारखाना, रायबरेली</b>                                |  | DOC NO.: MCF/RBL/QMF 8002<br>REV NO: 01<br>DATE: 17.04.2018  |             |
|--|---|--|--|--|-------------|
| ROLLING STOCK CERTIFICATE<br>Rolling Stock Certificate No.: MCF/RBL/QC/RSC/2020-21/434   |   |  |  |  |             |
| RLY  | NWR   | COACH NO   | 204615/C   | DATE OF DISPATCH   | 5-Sep-20    |
| Type   | LWLRRM  | Shell No.  | 20H016   | DISPATCH TO  | SSE/C&W/All |
|  |   | FUR.NO.  | LPC-328  |  |             |
| 14. MODIFICATION (IF ANY) : NIL  |   |  |  |  |             |
| 15. DEVIATION (IF ANY) : NIL   |   |  |  |  |             |
| 16. ITEM FITTED ON THE COACH ON TRIAL : NIL  |   |  |  |  |             |
| S NO   | ITEM PARTICULARS  | PURPOSE  | REPORT   | REFERENCE &  |             |
|  |   |  | Frequency  | PERIOD OF TRIAL  |             |
|  |   |  |  |  |             |
| 16. WARRANTY:  |   |  |  |  |             |
| S NO   | COMPONENTS  | WARRANTY   |  |  |             |
| 1  | Brake Pad, wheels, flushing valves, push gravity cocks, moldings, window glasses, mirrors, curtain clutch wire etc. ( items which are consumable in nature) | NIL  |  |  |             |
| 2  | Other coach furnishing sub assemblies(bought out items)   | 24 months from the date of dispatch of coach OR 30months from the date of supply of material whichever is earlier. |  |  |             |
| NOTE:  |   |  |  |  |             |
| 1. This warranty covers free supply of parts which wear out and fails within warranty period of normal service.  |   |  |  |  |             |
| 2. This doesn't covers faults arising out of accident, non standard maintenance practices, abnormal use or mishandling, vandal activity, arson & deficient/pilferage etc.  |   |  |  |  |             |
| 3. This doesn't cover any consequential liabilities or damages/loss incurred by anybody; furthermore, it shall in no case extend to repayment, return of the coach or replacement of complete coach.   |   |  |  |  |             |
| 4. Whether a defective part is to be replaced or repaired shall be at the discretion of MCF/RBL.   |   |  |  |  |             |
| 5. For any complain/ suggestion please Mail at qualityrcfbl@gmail.com  |   |  |  |  |             |
| 6. Painting on supply & apply contract :- supply of material and application shall be warranted for a period of three years from   |   |  |  |  |             |
| Application for any manufacturing /Application as per clause -4, para- V of RDSO specification no .M&C/PCN/100/2013-Given below  |   |  |  |  |             |
| S.No   | Time period   | Gloss Retention<br>(initial gloss >85 unit at 60°)   | Colour Retention rating on 0-10 scale<br>(initial rating of painted panels/coach or ISC/RAL shade card shall be taken as 10) | Adherence of paints (with each other and with substrate )<br>Cross-cut tape adhesion test as per ASTM D:3359/97(or latest) |             |
| 1  | After 1 year  | 80% of initial gloss   | 7  | 5B   |             |
| 2  | After 2 year  | 70% of initial gloss   | 6  | 5B   |             |
| 3  | After 3 year  | 60% of initial gloss   | 5  | 4B   |             |
| If any imperfection is noticed or any defect arises during the warranty -period due to improper material used or due to bad workmanship, the contractor shall be bounded to set right the defect/ imperfection on free of cost basis at the base depot of the coach. |   |  |  |  |             |
| <br>12/11/2020<br>SSE/QC/MCF/RBL  |   | <br>SME/AME/QC/MCF/RBL          |  | <br>Dy.CQM/MCF/RBL                    |             |

चरि०अनु० अभियंता  
गुणवत्ता विभाग  
रे०डि०का०, रायबरेली (लालगंज)

Assistant Mechanical Engineer / Quality-1  
आधुनिक रेल डिब्बा कारखाना, रायबरेली  
Modern Coach Factory, Raebareli

Modern Coach Factory, Raebareli





Modern Coach Factory Raebareli  
आधुनिक रेल डिब्बा कारखाना, रायबरेली

DOC NO.: MCF/RBL/QEF/8001

REV NO: 01


DATE:10.01.2020

PAGE 1 OF 6

FOR ELECTRICAL ITEMS

ROLLING STOCK CERTIFICATE OF LHB POWER CAR  
ELECTRICAL TEST CERTIFICATE FOR LHB POWER CAR

| ELECTRICAL TEST CERTIFICATE FOR LHB POWER CAR |  |        |                |                   |             |          |
|---|--|--------|----------------|-------------------|-------------|----------|
| TYPE COACH                                    |  | LWLRRM |                | SHELL/COACH NO    |             | 204615/C |
| RAILWAY                                       |  | NWR    | ELECT.FIT DATE | 03-09-2020        | MCF FUR. NO | LPC-328  |
| Sr no   | Description of tests   |        |                |                   |             | Remarks  |
| 1.0   | REFERENCE SPECIFICATION : L 446  |        |                |                   |             |          |
| 1.1   | AIR CONDITIONING TEST : ELPS/TP/AC 01.   |        |                |                   |             |          |
| 2.0   | INSULATION RESISTANCE : Setting of insulation monitoring relay at 30K ohms as per TD 111 of M/s LHB.   |        |                |                   |             |          |
|   | Observed status : HEALTHY  |        |                |                   |             |          |
| 3.0   | AIR DELIVERY MEASUREMENT   |        |                | OBSERVED VALUE    |             | OK       |
| 3.1   | Fresh Air  |        |                | 14.58 Cub mtr/min |             | OK       |
| 3.2   | Return Air   |        |                | 29.91 Cub mtr/min |             | OK       |
| 3.3   | Exhaust Air  |        |                | NIL Cub mtr/min   |             | OK       |
| 3.4   | Conditioned Air  |        |                | 63.46 Cub mtr/min |             | OK       |
| 4.0   | <b>PRE COOLING TEST: Max 01 hr.</b><br>Time taken to pre cool from 45 deg centigrade to 24/22 deg C during OFF LOAD condition<br><br>PP Side : <b>20.4°C</b> |        |                |                   |             | OK       |
| 5.0   | <b>PULL DOWN TEST: Max 02 hrs.</b><br>Time taken to pull down from 45 deg C to 24/22 deg C during FULL LOAD condition.<br><br><b>Not done</b>                |        |                |                   |             | ----     |

  
Senior Section Engineer  
Quality control / Electrical  
Modern Coach Factory Raebareli





Modern Coach Factory Raebareli  
आधुनिक रेल डिब्बा कारखाना, रायबरेली

DOC NO.: MCF/RBL/QEF/8001

REV NO: 01

DATE:10.01.2020


PAGE 2 OF 6

**FOR ELECTRICAL ITEMS**

ROLLING STOCK CERTIFICATE OF LHB POWER CAR  
ELECTRICAL TEST CERTIFICATE FOR LHB POWER CAR

| Sr no | Description of test                     | Remarks |
|-------|---|---------|
| 6.0   | HUMIDITY CONTROL                        | OK      |
| 7.0   | PUMP EQUIPMENTS                         | OK      |
| 8.0   | WORKING OF EXHAUST FAN                  | OK      |
| 9.0   | LIGHT                                   | OK      |
| 10.0  | PUBLIC ADDRESSING SYSTEM ( PAS )        | OK      |
| 11.0  | WHEEL SLIDE PROTECTION SYSTEM ( WSP )   | OK      |
| 12.0  | WORKING OF 60KVA TRANSFORMERS           | OK      |
| 13.0  | WORKING OF RBC/EBC.                     | OK      |
| 14.0  | SAFETY :                                | --      |
| 14.1  | OHP                                     | OK      |
| 14.2  | ROTARY 07 SET POINTS (NORMAL CONDITION) | OK      |
| 14.3  | LP/HP GAUGE & TRIPPING                  | OK      |
| 14.4  | HYGROSTAT & SENSORS.                    | OK      |
| 14.5  | CONTROL CIRCUIT                         | OK      |
| 14.6  | POWER CIRCUIT                           | OK      |
| 14.7  | AEL,FEL & FOL RELAY                     | OK      |
| 14.8  | UVR/OVR                                 | OK      |
| 15.0  | HOG CONTROL CIRCUIT                     | OK      |
| 16.0  | FEEDER CONTACTORS & HOG CONTACTORS.     | OK      |
| 17.0  | BUS COUPLER                             | OK      |
| 18.0  | SAFETY LOOP                             | OK      |
| 19.0  | SMOKE TEST                              | OK      |
| 20.0  | REFRIGERANT USED                        | OK      |

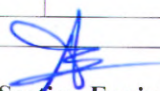
Senior Section Engineer  
Quality control / Electrical  
Modern Coach Factory Raebareli

|   |   |                           |
|---|---|---------------------------|
|  | <b>Modern Coach Factory Raebareli</b><br><b>आधुनिक रेल डिब्बा कारखाना, रायबरेली</b> | DOC NO.: MCF/RBL/QEF/8001 |
|   |   | REV NO: 01                |
|   |   | DATE:10.01.2020           |

PAGE 3 OF 6

ROLLING STOCK CERTIFICATE OF LHB POWER CAR

| Sr no | Description   | Drg/Spec no.  | Quantity per Coach |
|-------|---|---|--------------------|
| 01.   | Provision of Terminal connector complete.<br>Make: <b>M/S INDIAN TELEPHONE &amp; ELECT.</b>   | As per EDML-033, Rev.-<br>D,MCF/RBL-Corr-2 or latest.                       | <b>01 set</b>      |
| 02.   | 70AH/110V,54 Cells,02V each ,maintenance free pure lead acid tin monoblock ,battery set with 09 modules 12V each. , factory pre charged.<br>Make : <b>HBL</b> Lug date : <b>11/19</b> | EDTS 129,Rev nil  | <b>01 set</b>      |
| 03.   | SET OF BATTERY FOR DA (A & B)<br>(A)Make: <b>CELTEK</b> Lug date: <b>05/20</b><br>(B) Make: <b>CELTEK</b> Lug date: <b>05/20</b>  |   | <b>02 sets</b>     |
| 04.   | Battery box for LHB coaches.<br>Make: <b>HITECH</b>   | As per drg. No.<br>1 10113.0.76.700.005 w/o item<br>5,22 ,23 ,26 & 27.ALT C | <b>01</b>          |
| 05.   | 500KVA/750V/03Ph DIESEL ALTERNATOR set, complete with Power & Control panel.  | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A                             | <b>02 set</b>      |
| 06.   | Switch Board Cabinet<br>For 2 X 500 KVA DA set control.<br>Make : <b>ISG</b><br>Sr no: <b>PCP-MCF-20-03-0008</b>  | As per spec no. EDTS 103, Rev.-<br>D,Amd-7,Corr-1(HOG Compliant)<br>-01 no  | <b>01</b>          |
| 07.   | Switch Board Cabinet<br>(Power Panel)<br>Make : <b>MV</b><br>Sr no: <b>20010066</b>   | As per spec no.<br>RDSO/PE/SPEC/AC/0184-<br>2015(REV.0)                     | <b>01</b>          |
| 08.   | Alternator "A"<br>Make: <b>STAMFORD</b> Sr no : <b>N20E 226195</b>  | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A                             | <b>01</b>          |
| 09.   | Diesel Engine "A"<br>Make: <b>CUMMINS</b> Sr no : <b>25451768</b>   | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A                             | <b>01</b>          |
| 10.   | Control panel for Ventilator Fan Motor for Diesel Engine "A"<br>Make: <b>SYSTEMS</b><br>Sr no: <b>SSPC/EDTS110/T1/0819/25</b>   | As per spec no.<br>EDTS 110,Rev- nil  | <b>01</b>          |
| 11.   | Ventilator Fan Motor for Diesel Engine "A"<br>Make: <b>ABB</b> Sr no.1: <b>1696469</b><br>Make: <b>ABB</b> Sr.no.2: <b>1697798</b>  | As per spec no<br>EDTS -102 REV-D,PART -A                                   | <b>02</b>          |
| 12.   | Control Panel for Radiator Fan Motor for Diesel Engine -A<br>Make : <b>BHASIN</b><br>Sr no : <b>01208306/1</b>  | As per spec no.<br>EDTS 104, Rev 'A'  | <b>01</b>          |
| 13.   | Radiator Fan Motor for Diesel Engine -A<br>Make: <b>ABB</b> Sr no : <b>3G1J19150001707797</b>   | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A                             | <b>01</b>          |

  
**Senior Section Engineer**  
**Quality control / Electrical**  
**Modern Coach Factory Raebareli**




|   |   |                           |
|---|---|---------------------------|
|  | <b>Modern Coach Factory Raebareli</b><br><b>आधुनिक रेल डिब्बा कारखाना, रायबरेली</b> | DOC NO.: MCF/RBL/QEF/8001 |
|   |   | REV NO: 01                |
|   |   | DATE:10.01.2020           |

PAGE 4 OF 6

ROLLING STOCK CERTIFICATE OF LHB POWER CAR

| Sr no | Description  | Drg/Spec no.   | Quantity per Coach |
|-------|--|--|--------------------|
| 14.   | Alternator "B"<br>Make: <b>STAMFORD</b><br>Sr no : <b>N18L 490627</b>  | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A  | <b>01</b>          |
| 15.   | Diesel Engine "B"<br>Make: <b>CUMMINS</b><br>Sr no : <b>25453926</b>   | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A  | <b>01</b>          |
| 16.   | Control panel for Ventilator Fan Motor for Diesel Engine "B".<br>Make : <b>SYSTEMS</b><br>Sr no : <b>SSPC/EDTS110/T1/0819/24</b>   | As per spec no.<br>EDTS 110,Rev nil,AM-1.  | <b>01</b>          |
| 17.   | Ventilator Fan Motor for Diesel Engine "B"<br>Make: <b>ABB</b> Sr no.1: <b>1696435</b><br>Make: <b>ABB</b> Sr no.2: <b>1700034</b>   | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A  | <b>01</b>          |
| 18.   | Control Panel for Radiator Fan Motor for Diesel Engine "B"<br>Make: <b>BHASIN</b> Sr no : <b>01208306/2</b>  | As per spec no.<br>EDTS 114, Rev.-B  | <b>01</b>          |
| 19.   | Radiator Fan Motor for Diesel Engine "B"<br>Make: <b>ABB</b> Sr no : <b>3G1J19300001743125</b>   | As per spec no.<br>EDTS 102, Rev'D' AM-4,PART-A  | <b>01</b>          |
| 20.   | 24V DC starter Battery Charger for 500KVA DA set.<br>Make: <b>WAVES</b><br>Sr.no.: <b>WSBCL 191349</b>   | As per Spec no. 106 Rev.- Nil,AM-1 or latest.  | <b>01</b>          |
| 21.   | Starter Battery Charging Control Panel (S-40)<br>Make : <b>SYSTEMS</b><br>Sr no: <b>SSPC/EDTS116/MCF/0189/24</b>   | As per spec no.<br>EDTS 116,Rev nil  | <b>01</b>          |
| 22.   | Feeder Junction box.<br>Make: <b>LEC</b>   | As per EDML-021,Rev.-L.  | <b>01 set</b>      |
| 23.   | Provision of Single Inlet Radial Blower, 415V/03Ph/185W/ 1045 Cub mtr/hr discharge from S1 & S2 & Lavatory.<br>Make: <b>INTEG</b>  | As per EDTS 331,Corr-3,Type-II. Cat. no. 64D180BD,Rev nil.   | <b>01</b>          |
| 24.   | Battery fuse box +ve<br>Make : <b>RICHMOND ENTERPRISES</b>   | As per LW 71001,Alt-G  | <b>01</b>          |
| 25.   | Battery fuse box -ve<br>Make : <b>RICHMOND ENTERPRISES</b>   | As per LW 71002,Alt-G  | <b>01</b>          |
| 26.   | IVC dummy Socket assembly<br>Make: <b>S.INTERNATIONALS</b>   | As per Drg. No. LW71302,Alt-nil  | <b>03</b>          |
| 27.   | Provision of 60KVA TFR<br>Make: <b>VIMAL</b><br>Sr no: <b>1.VTC-R-3089-LHB-4366</b><br>Make: <b>WAVES</b><br>Sr no: <b>A. W60KF20161</b><br>Make: <b>VIMAL</b><br>Sr no: <b>B. VTC-R-3089-LHB-4192</b> | As per spec no.<br>RDSO/PE/SPEC/AC/0080-2007,Rev.-1 with RCF/KXH Corr. 1 & 2.<br>1.for panel<br>2.for Rad. Motor A<br>3.for Rad. Motor B | <b>03</b>          |

  
**Senior Section Engineer**  
**Quality control / Electrical**  
**Modern Coach Factory Raebareli**





Modern Coach Factory Raebareli  
आधुनिक रेल डिब्बा कारखाना, रायबरेली

DOC NO.: MCF/RBL/QEF/8001

REV NO: 01

DATE:10.01.2020

PAGE 5 OF 6

ROLLING STOCK CERTIFICATE OF LHB POWER CAR

| Sr no | Description  | Drg/Spec no.   | Quantity per Coach |
|-------|--|--|--------------------|
| 28.   | Regulated battery charger(RBC CUM EBC)<br>Make : <b>WAVES</b><br>Sr no: <b>W4K5G 201847</b>  | RDSO/PE/SPEC/AC/0183<br>(REV '1' )   | <b>01</b>          |
| 29.   | Capacitor Bank.<br>Make : <b>NEC</b><br>Sr no : <b>2019100727</b>  | As Per EDML 130,Type-II,Rev.-1,Cor-3   | <b>01</b>          |
| 30.   | Mounting of Pump equipment with pump box.  | As per drg no. 1.10113.0.30.100.001, Alt'a'  | <b>ok</b>          |
| 31.   | Provision of Pump equipment with PLC controller & pump box<br>Make: <b>KIND</b><br>Pump assly Sr. no: <b>ASY/0108</b><br>Pump 1 Sr.no.: <b>20070305</b><br>Pump 2 Sr.no.: <b>20070306</b><br>P/Contrl.: <b>20070134-KIND</b> | As per spec no. EDTS 186<br>Rev.-A,AM-2,Corr-2 or latest.                          | <b>01 Set</b>      |
| 32.   | Provision & mounting of Doorway/<br>Gangway light<br>Make : <b>DR AUTO</b>   | RDSO/PE/SPEC/TL/0091-2016,REV-01,<br>TYPE-N<br>& Drg no. LW 76099                  | <b>20</b>          |
| 33.   | Provision of Lavatory Light Fitting assembly.<br>Make: <b>CMT</b>  | RDSO/PE/SPEC/TL/0091-2016,REV-01,<br>TYPE-D<br>As per drg no.<br>LW 76001,Alt nil. | <b>01</b>          |
| 34.   | Provision of Cable Jacket ,Size Nominal width 25mm ,Length -1000 mm  | As per drg no. EDTS 0138,Rev-<br>nil,Corr.-1<br>Item 9                             | <b>ok</b>          |
| 35.   | Provision of PACIL Assly.<br>Make: <b>DR AUTO</b>  | As per drg no.<br>LW 76005,Alt nil.  | <b>02</b>          |
| 36.   | Railway carriage Fan 400mm Sweep, 110V DC with crash worthy features.<br>Make: <b>SARIA IND.</b>   | As per RDSO/PE/SPEC/TL/0021-<br>2005,Rev-3,AM-1 or latest.                         | <b>01</b>          |
| 37.   | Provision of Cable Binders.  | As per CC76129 or as approved of<br>OEM by MCF/RCF .                               | <b>ok</b>          |
| 38.   | Provision of Razor socket.<br>Make: <b>SSK</b>   | As per cat no<br>EDML 047 ,Rev nil.  | <b>01</b>          |
| 39.   | Provision of Smoke Detector Unit.<br>Make: <b>AGNI</b><br>Sr no: <b>1155</b>   | As per spec<br>EDTS 087,Rev'B',Cor-1   | <b>01 Set</b>      |
| 40.   | Provision of Tail light LED Type with flashing unit and VHF charging socket.<br>Make: <b>DEW COMPANY</b>   | As per EDTS 215,AM-1.Drg. No.73200<br>alt c  | <b>01 Set</b>      |
| 41.   | Switch plate assembly<br>Make: <b>SSK</b>  | As per EDML-045,Corr-I(pl. no.<br>33640180)  | <b>01</b>          |

Senior Section Engineer  
Quality control / Electrical  
Modern Coach Factory Raebareli





Modern Coach Factory Raebareli  
आधुनिक रेल डिब्बा कारखाना, रायबरेली

DOC NO.: MCF/RBL/QEF/8001

REV NO: 01

DATE:10.01.2020

PAGE 6 OF 6

ROLLING STOCK CERTIFICATE OF LHB POWER CAR

| Sr no | Description  | Drg/Spec no.   | Quantity per Coach |
|-------|--|--|--------------------|
| 42.   | Mounting of inter Vehicle coupler  | As per drg no 1.10113.0.74.000.001 Alt nil.                                | ok                 |
| 43.   | Provision of High Capacity Inter – Vehicular Coupler Unit(ZS Coupling) (500 A,750 V,3 ph,50 Hz).Make:<br>1.(NPP): <b>S.INTERNATIONALS</b><br>2.(PP): <b>S.INTERNATIONALS</b> | As per Spec. no. RDSO/PE/SPEC/AC/0177(Rev.-0)-2013 with annexure-A,B.      | 01 Set             |
| 44.   | Provision of External supply Socket 125A/415V/IP67/5-Pole (3Ph+1N+1E) complete with pilot contacts.<br>Make: <b>MV</b>   | As per 1948036 /UIB4125-6.   | 02                 |
| 45.   | Provision of Wheel Set Earthing Equipment. Make<br>NPP : <b>PRIME ELECT.</b><br>PP : <b>PRIME ELECT.</b>   | As per spec no. EDTS 101 ,Rev.-C,AM-1,Corr-6.                              | 01 Set             |
| 46.   | Public addressing System<br>Make: <b>AHUJA</b>   | EDTS -173,Rev-B or latest  | 01 Set             |
| 47.   | Provision of Anti Skid Disk Brake System.(WSP)<br>Make : <b>KNORR</b><br>Sr no : <b>0119426714</b>   | As per MDTs 077,Rev.-2<br>M/s"FAIVELEY"<br>or "Knorr Bremse", or "ESCORTS" | 01 Set             |
| 48.   | Roof mounted AC Package unit<br>Make : <b>AMIT ENGG.</b><br>PP: <b>4499 L</b><br>CPU No: <b>AE 20.02.420-AMIT</b>  | RDSO/PE/SPEC/AC/0061 2005,REV-1,TYPE-1                                     | 01                 |

|                               |                            |
|-------------------------------|----------------------------|
|                               |                            |
| <b>SSE/EL/QC</b>              | <b>AWM(ELECT.)/MCF/RBL</b> |
| <b>वरिष्ठ अनुभाग अभियन्ता</b> | <b>SEE(P)/MCF/RBL</b>      |

सुणवत्ता नियंत्रण  
आ०रे०डि०का०/लालगंज/रायबरेली  
S.S.E./Elect-QC/M.C.F./LLJ/RBL

स० कार्य प्रबन्धक/विद्युत  
आ०रे०डि०का०/रायबरेली  
A.W.M./Electrical/MCF/RBL