

SCOPE OF WORK OF CONTRACT

Subject: - AMC of Axle Mounted Disc Brake System (AMDBS) M/s SONA BLW PRECISION FORGING LIMITED make formally known as M/s Escorts make fitted in LHB coaches for 02 year at Mechanical Workshop, Gorakhpur.

1. AMC work for Axle mounted disc brake system of LHB coaches shall be carried out as per *RDSO Specification No.: RDSO/2011/CG-04 Rev3 (or the latest Revision)*, *RCF Document No.: MDTs-160 REV.1 (or the latest revision)* and *IRCAMTECH Railway manuals* over N.E. Railway. Overhauling/ Testing of Axle mounted Disc Brake System (WSP) shall be carried out as per RDSO's *Letter No. MC/WH/SHL dated-12.10.2009* (or the latest instructions).
2. AMC will cover the Overhauling of Axle Mounted Disc Brake system completely. Dismantling of wheel set and changing the Hub of Brake Disc is not part of AMC contract.
3. Under AMC the Contractor shall provide all necessary support to the authorized Railways Representative for data download, its analysis and failure investigation.
4. AMC of Axle Mounted Disc Brake System shall cover the overhauling of
 - A. Air Brake System of Coach (This will include air brake system in coach with WSP as well as bogie mounted air brake equipment)
 - (i) Contract includes replacement (condition based), testing & refitting of WSP component-dump valves, dump valve connectors, speed sensors, junction boxes and connected electric & Pneumatic cables.
 - B. Related Components of Passenger Emergency Alarm Signal devices.

5. Scope

Whenever any LHB coach due for any Air Brake schedule arrive at Mechanical Workshop Gorakhpur, the same shall be offered to the contractor to attend the due Air Brake schedule. Mechanical Workshop Gorakhpur shall maintain the record of the schedule attended for that particular coach along with all the repairs / modifications / replacements done. The coaches not covered under manufacturer's warranty for Brake Systems only shall be offered to attend the Air Brake schedule in this AMC. The Contractor should also confirm the same before carrying out the maintenance. The manufacturer has to provide the warranty of Axle Mounted Disc Brake Systems for trouble free service of 12 months of overhauled/POH item from date of supply and 24 months of condition-based items from date of supply. Maintenance activities of the Air Brake system of the nominated coaches shall commence only after completion of the above- mentioned warranty period.

This contract covers the AMC of Brake system of LHB coaches manufactured by the production units of Indian Railways i.e. RCF/Kapurthala, ICF/Chennai, and MCF/Raebareli.

The contractor shall conduct the following at Mechanical Workshop Gorakhpur as per shop schedule due.

- a. 3-yearly Air Brake maintenance shop schedules of LHB coaches designated for overhaul. This will include the complete repair, overhauling/ replacement, testing, and re-fitment of components.
- b. During 3-yearly Air Brake maintenance shop schedules, the air brake equipment mounted on the bogies should also be checked for any defect and deficiency and in case of any defect, the same should be attended by the contractor. Necessary spares for the replacement of any defective components shall be accounted for from the condition-based spares.
- c. 6 yearly overhaul of Brake Cylinder & Brake Caliper of Air Brake system of LHB coaches. Similarly, as mentioned in clause (b) the required changes in airbrake system and WSP system to be carried out.
- d. Some of the coaches may originally be fitted with components of more than one Brake System manufacturer where the onboard brake system is of one make (Primary) and brake components mounted on the Bogie are of another make (Secondary) or vice- versa. During Shop Schedule of such coaches, contractor may be asked to correct such dissimilarity of components to ensure uniformity

and to help avoid difficulties in maintaining the coach on line. Further details mentioned in *Clause 15* in Scope of Work.

In addition to above, all breakdown maintenance calls as required by Railway shall be attended by the contractor.

Railways shall provide access for the overhaul of the Alarm Chain Pull Box (by contractor). However, Contractor should also inform about his plan to overhaul the same, in advance to the railways.

Special Condition: -Items changed during repair/maintenance/warranty period should be reliable/genuine and as per standard of OEM's and part no. Necessary documentary evidence in support of items having been purchased from OEM or his authorized dealer shall be produced by tenderer.

6. A joint inspection of the Brake system to be covered under the contract shall be carried out by nominated official by the Railway and contractor to record the deficiencies if any in the brake system before start of work. The replacement cost of such deficiencies shall be borne by the Railway.
7. **Place of work:** The contract is applicable for overhaul, maintenance & repairs (schedules) to brake system fitted on LHB coaches allotted in **Mechanical Workshop Gorakhpur**.
8. **Engineer-in charge & Inspection:** Subjected work 3rd & 6th yearly Air Brake maintenance shop schedules are to be carried out at Mechanical Workshop Gorakhpur. Nominated representative of Engineer in-charge (EIC) of the concerned unit will be the representative of Engineer in-charge for subject work. The Contractor is advised to contact the Engineer in-charge or his representative for inspection purpose. The inspection shall be carried out by the Inspection Authorities as given in the following table.

Unit	Place	Engineer In charge (EIC)	Representative of Engineer In charge (Site-in-charge)	Inspection	Activity
Mechanical Workshop GKP	GORAKHPUR	DY.CME/WORKS	Authorized/ Nominated Representative of EIC	Authorized/ Nominated Representative of EIC	SS II & SS III of AMDBS

9. **Quantity:** The coaches shall be offered having Air Brake schedules due as quantity mentioned below. The contracted quantity can be increased / decreased as per provisions of the contract. Other terms and conditions shall remain same.

Activity	Type of Coach	Unit	Period	Total
SS-II (M36) Schedule (Air Brake, WSP systems)	EOG	399	Two Year	399
SS-II (M36) Schedule (Air Brake, WSP systems)	PC	39		39
SS-III (M72) Schedule (Brake Cylinders & Brake Clippers)	EOG	195		195
SS-III (M72) Schedule (Brake Cylinders & Brake Clippers)	PC	22		22

Account of various 'Condition-based spares' replaced/consumed during AMC period should be maintained to enable the department to review the contract of the AMC.

10. **Completion Period:** The work is to be executed for a period of 24 months from the date of issue of LOA.
11. **Working Period:** The Shop Schedule of the Bogies is carried out in the Workshop in 2-3 days and SS-II/ SS-III takes 20 days or more. A monthly plan chalked out by concerned authorized Railway

representative shall be intimated to the contractor one month in advance. In addition to this a tentative plan for 3 months shall also be provided. The contractor should ensure that the work pertaining to them is completed before the coach / bogie is released from the Workshop. Thus, there should be no detention to the coach / unit on account of the contractor. The work has to be carried out by the contractor in close coordination with the Railways since various activities are inter-dependent. Further, the contractor should also maintain close liaison with the Railways to keep a close watch on the number of coaches arrived / due to arrive and ensure that work is completed timely. The contractor may maintain sufficient number of unit exchange spares to minimize maintenance time.

However, the Disassembling and service/ testing of parts should be done within Two (02) working days of intimation. Re-assembling, testing and commissioning of the system should be done within 01 (One) working day, total 03 days are given for completion of one coach for SS-II Schedule and additional 02 more days i.e. total 05 days are given for completion of one coach for SS-II & SS-III Schedule. On an average 03 coaches shall be offered at a time. However, quantity of offered coaches may increase or decrease according to the arising of coaches. Any delays on account of breakdown of the facilities which are beyond the scope of the contractor power failures/etc. shall be exempted.

- 12. Guarantee / Warranty Period:** The contractor shall give guarantee / warrantee of 12 months of overhauled/POH item from date of supply and 24 months of condition-based items from date of supply. However, the AMC does not cover the failure due to external circumstances such as fire, accident, explosion, theft and act of God.

If any defect/failure noticed during the warranty period, contractor will rectify the defect/ failure free of cost, during the warranty period and to & fro transportation charges will be borne by the contractor & Railway will not pay any additional amount in this regard. The breakdown repair of the equipment under guarantee/warranty period shall be carried out by the contractor's Service Engineer at the Platform/ Washing line/ Shed/ Workshop/ Depot at the base station or within 20 KM of the base Station within 24 Hrs. of communication for the same and within 48 Hrs. for location beyond 20 Km from base station. As per feasibility the contractor should coordinate with their teams near the breakdown location to get the repairs done after receipt of advice from the EIC. Railway shall have full liberty to get rectification done from Railway Workshop or outside agencies and in such cases the rectification charges shall be recovered from the security deposit/ final/ outstanding bills of contractor with the Railway or other Zonal Railways.

- 13.** The details of the must change kit for LHB EOG/PC coaches are as per Annexures. The details of the SS-II (M36) Schedule must change kit for LHB EOG & PC Coaches are as per Annexure - A & Annexure - B respectively and for the SS-III (M72) Schedule (brake caliper and brake cylinder) must change kit for LHB EOG & PC Coaches is as per Annexure-C, Annexure-D respectively.
- 14.** List of Items to be changed on Condition Basis are mentioned in Annexure-E. The rates for condition basis item are inclusive of Packing and Freight Charges. GST as applicable is mentioned separately. No separate Packing and Freight Charges shall be paid for any materials.

If any condition base item is available with Railways, in such a case the contractor has to utilize such items first during the AMC as and when the need arises. However, no payment for those Railway supplied items shall be made to the contractor.

Only rates shall be finalized for the condition basis items. No quantities are being contracted upon for the condition basis items. Payment shall be made on actual basis. The contractor is advised to quote "at par" for the condition-based spares against the lump-sum amount as indicated in the tender schedule.

The list is not exhaustive. Other items may also be included in the offer, as the tenderer being OEM of the Air Brake system. The rate of payment of those items shall be as per the LAR for those available with the Railways.

- 15.** Some of the coaches may originally be fitted with components of more than one Brake System manufacturer where the on-board brake system is of one make (Primary) and brake components

mounted on the Bogie are of another make (Secondary) or vice- versa. During Shop Schedule of such coaches, contractor may be asked to correct such dissimilarity of components to ensure uniformity and to help avoid difficulties in maintaining the coach on line. While attending such coaches, the released brake system components should be carefully removed and handed over to the concerned *authorized Railway representative* of the workshop. The replacement material for the bogie brake component of correct make shall be provided by Railway. If such material is not available with Railway, the firm shall provide the material which shall be treated as condition basis material. *The maintenance schedule for such coaches shall be treated based on whichever schedule is due and paid as such. In such cases, the joint note for such condition base parts has to be prepared and signed immediately on fitment of parts. Zonal Railway to provide forecast and reasonable lead time for such cases. For material planning Railways has to inform details in the LOA/ contract as per Scope of Work of Contract.*
(Ref – RDSO Letter No: MC/LHB/Brake Dated: 11/09/2012)

16. Work Schedule: The contractor has to commence the AMC work within **30 days** from the date of issue of Letter of Acceptance (LOA). However, contractor may be asked to commence the work in lesser time if required by the Railway.

- i. The contractor shall attend the Shop Schedules at Mechanical Workshop Gorakhpur after intimation by the EIC or his authorized representative.
- ii. If the equipment needs repairs after overhauling by the firm due to failure of any item covered under AMC then the Contractor shall provide standby equipment at their cost so that the coach is not detained on account of repair. The defective equipment will have to be handed over to the Contractor for repair on returnable basis.
- iii. Items to be changed on Condition Basis will be dealt on case to case. After joint inspection, the items for replacement will be provided by Railway (if available) or otherwise the Contractor will provide the same and Railway will pay additionally (as per schedule of rates) for these items.

17. The rejected or defective components will be handed over to the concerned EIC or his authorized representative. All parts/components/spares replaced by OEM during AMC should be handed over to Railways.

18. Execution of the Contract:

I. S.S.E. concerned of Mechanical Workshop Gorakhpur-

- a. He will intimate the firm by Telephone/Telex/Fax/E-mail/SMS or through Site Order Register mentioning the coach no. and location along with the time of call and shall maintain register of such calls for reference.
- b. He will maintain records of the coach numbers/AB Equipment and system covered under this AMC.
- c. He has to check any mismatch of components of different make in the Air Brake system and record the same. Mismatch of different make in system causes difficulty in maintenance. Identification of such mismatch is combined responsibility of concerned authorized Railway representative /Inspection/workshop of workshop and contractor.
- d. He will inform in advance to the contractor the arising shop or any changes in schedule of coaches so that the contractor can plan his work accordingly.
- e. In case any units or parts required to be taken outside for repair by Contractor, necessary documents for the same will be provided by authorized/nominated representative.

II. Inspection: The nominated representatives for 100% check i.e. SSE and 20% test check i.e. AWM for work shall be clearly specified with their name and specimen signature.

SSE/Inspection/workshop is responsible to carry out the Joint Inspection of the coaches under AMC along with SSE/workshop and nominated representative of the contractor.

The joint notes need to be signed between Railways & Contractor on the same day of attention of the coach.

- III. All the spares i.e. must change items as well as condition basis items shall be inspected by the OEM and test certificates from OEM shall be provided along with the dispatch documents.
- IV. If any item is repaired at contractor's place, then contractor's own work test / inspection certificate (Factory I/C) shall be submitted with the dispatch documents. It should be ensured by the contractor that no delay occurs on account of transportation and he also has to ensure that the part/component is not damaged or degraded during the transportation.

19. Responsibilities of Parties: Following are the responsibilities of Railways and Contractor.

A. Mechanical Workshop Gorakhpur

- i. The Railway authority shall permit the contractor to work on the breakdown or defective brake system fitted on the LHB coaches. Railway may nominate the official for supervision of work.
- ii. The Railway shall issue the necessary permission letter to the contractor's working staff/service engineer for their entry in Railway premises along with company photo identity card verified by Railway authority. The contractor should also arrange the Police Verification of its workers, if demanded by the Railways.
- iii. The necessary space with lock & key facility for storage and electricity, compressed air and water supply, lighting, EOT Crane & Fork lift (Whenever Required) will be provided free of cost as required for coach maintenance at the nearest possible point of the nominated site. The contractor may fabricate its own storage box for keeping his material. However, the security of the material shall be contractor's responsibility.
- iv. The Railway shall permit the contractor's staff to work on breakdown or defective brake system fitted on the LHB coaches.
- v. The joint notes need to be signed between Railways & Contractor on the same day of attention of the coach.
- vi. Railway shall maintain the details of the coaches covered under AMC for the reference of both parties.
- vii. Gate Passes shall be provided by Railway as and when required.

B. Contractor:

- i. The Contractor shall depute the service engineer to attend the breakdown of coaches.
- ii. The facilities will include tooling required for dismantling, servicing, testing and assembling of various parts of the brake system. Facilities/tools shall be decided by OEM.
- iii. The contractor shall keep all the necessary tools, testing equipment/spare parts sub-assemblies and consumables in the ready stock in the places so as to meet the normal requirement of Working Period. However, tools / spare parts / subassemblies at the suitable place to ensure smooth execution of job as per the contract will be decided by contractor.
- iv. All the works including checks shall be carried out on the stabled coach in Workshop wherever feasible.
- v. The service engineer shall report within 04 (four) hours after receipt of breakdown call during the working hours at nominated workshop. On all gazette holidays (of Government of India) and Sundays after receipt of breakdown call, the service engineers shall report within 04

(four) hours during the working hours next day.

- vi. If the equipment needs workshop repairs, the cost of bringing the same to the Workshop or Contractors place shall be borne by the contractor. Under such circumstances the contractor shall provide a standby arrangement of equipment and the same shall be fitted by the contractor at his cost, so that the coach is not detained on account of repairs etc. Contractor shall take reasonable time for repairing the defect. In case, the contractor requires items to be repaired at their works then the contractor shall submit indemnity bond against the same. However, in case standby replacement is provided before taking the equipment to OEM's factory, in that case indemnity bond will not be required.

In case the equipment is overhauled / repaired at OEMs Works and any condition-based parts are required to be replaced apart from the Must change kit, those condition-based parts will be replaced based on OEM's shall be returned back to the MWS/GKP. Condition based parts replaced at OEM's works shall be invoiced/billed separately.

- vii. In the event of award of contract, safety of all the men and equipment of the contractor shall be the contractor's responsibility and for this purpose they shall keep close watch on all movements/operations, etc. During working at workshop contractor should ensure that all men working under his authority should wear personal protective equipment of requisite standards at all time. However, authorized Railway representative will also ensure wearing of PPE kit.
- viii. In case of any loss/damage occurring to the contractor men/machinery, the Railway shall not be responsible in any way.
- ix. The contractor shall ensure that all employees/persons engaged/authorized by him for carrying the work, behave properly with Railway Officers and staff. In the event of any misbehavior reported by the officers concerned of Railway, the contractor shall immediately withdraw such employee/person from the work.
- x. The firm shall post required number of service engineers for maintenance work at Mechanical Workshop Gorakhpur (As per Tender Document/GCC).
- xi. The contractor shall ensure that all employees/persons engaged/authorized by him for carrying the work should work taking adequate safety measures. While working they should ensure their work is not causing any hazard to coworkers as well as to railway personnel working nearby. Any hazardous material/equipment/spare should not be left unattended on coach or on floor of work area.
- xii. Contactor should assign the work to his staff in such a way that the activities should not interfere with the railway personnel sharing the same work area. Railway will also cooperate and coordinate with contractor in this matter.
- xiii. Brake cylinder and Calipers are part of Air Brake system and fitted on Bogies and attended for Air Brake shop schedule after every 6 years. After attention of the SS-III schedule of Brake cylinders and calipers, firm should provide an Identification Tag at proper place on the Bogie / Air Brake system mentioning the date of attention of the schedule & AMC No. Care should be taken that the Identification Tag should be easily readable and should long last for at least 6 years.
- xiv. Contractor has to abide by all statutory acts, laws & rules as per scope and place of work.
- xv. In case any such condition base item changes which are mentioned in must change kit, contractor will provide the overhauling kit of that particular item to concern authorized Railway representative.
- xvi. To ensure Uniform & wearing of Personal Protective Equipment's (PPEs).
- xvii. The contractor can bring new/overhauled items for use as unit exchange instead of the kits but the payment shall be done for the kits only as per the schedule of rates. It should also be ensured that no material dumping is done and material for 3-month consumption only should be brought at one time.
- xviii. The contractor will execute the work without affecting the Railway working and in consultation

with nominated representative. The contractor's staff & supervisor will report to the nominated railway supervisor at the time of commencement of work every day.

20. Fire safety compliance in workshop premises (wherever applicable): -

- I. The contractor must conduct a fire risk assessment before starting any work involving heat, flammable materials, or electrical tools, taking into consideration the watch time for any hot work.
- II. All the engaged workforce should be well versed with the use of fire-fighting equipment like extinguishers, fire balls, sand buckets etc. and shall have complete information about the placement/location of their availability for prompt usage at the time of need.
- III. Storage and use of flammable items in use of contract (paints, diesel, LPG, oxygen-acetylene) must be in designated, ventilated areas only.
- IV. The contractor must ensure use of fire-resistant PPE and deploy a trained fire watcher during welding, cutting, or grinding, wherever required.
- V. All temporary electrical connections must be taken only by certified electricians and removed after job completion. No cut wires will be allowed.
- VI. Strict No Smoking compliance in all workshop areas and near flammable storage zones.
- VII. Contractor staff must participate in fire drills, maintain good housekeeping, and ensure that cotton waste/oily rags are disposed of in metal bins.
- VIII. Hot work must not start without a valid hot work permit, and the fire watcher must stay 30 minutes after completion of work.
- IX. The contractor must keep updated records of PPE issue and hot work permits.
- X. Non-compliance with fire safety instructions may result in work stoppage or penalty, as decided by the railway. Damage if any to railway property due to lapse of fire safety by contractor will be recovered from contractor as decided by railway.

21. The activities to be included during AMC of AMDBS shall be:

- I. Dismantling & assembling hose connections (Coach to trolley), speed sensor connections & in power car flexi cable connections also (In SS II or SS III).
- II. Identification of damages of failure.
- III. Identification of parts to be replaced.
- IV. Disassembling of parts to be replaced from coach.
- V. Replacement of must change item (in SS II & SS III)
- VI. Service and testing.
- VII. Static testing and commissioning of system on the coach.

22. Validity of Contract: The above contract shall be valid up to 02 year (Two year) from the issue date of LOA.

23. Penalty clause:

- I. In case, a coach is delayed in workshop on account of contractor after allowed time period of each schedule due to delay in work or breakdown or any other reason, penalty of Rs 500/- per 06 hours is acceptable. The total penalty shall not exceed 05% of labour cost of that coach for applicable schedule.
- II. The contractor shall carry out all the breakdown maintenance timely (within 48 hours of reporting of breakdown), failing to which the contractor is liable for penalty of Rs. 2000/- per day for every delay or part thereof in attending the breakdown calls. A period of less than half an hour will not be considered as delay. The total penalty shall not exceed 05% of labour cost of that coach.
- III. A penalty of Rs. 100/- will be imposed per instance per person if the Contractor's staff and supervisors are not found in Uniform & PPEs kit.
- IV. Contractor shall start the work within 30 days after issuing LOA, otherwise a penalty of 1000/- per day shall be imposed on contractor.
- V. If any violation of any terms and conditions of contract (like safety lapse, poor workmanship etc.) other than those mentioned above, a penalty of Rs 3000/- per occasion can be imposed on the contractor by CWM or Dy CME/Works.

24. Bills and Payment: Bills for work done under this contract shall be prepared in triplicate by the Contractor on or before 7th day of each month in respect of the work done during the preceding month for each unit separately. He should submit these bills to respective units Railway Representative, who will certify the work mentioned in the bills. Further, these bills to be submitted to the Bill Passing In-charges of the respective units (shown in below table) and when passed, payment shall be made by their associate finance. Payment shall be made to the Contractor through NEFT Scheme only.

Unit	Bill Passing In charge	Allocation
Mechanical Workshop, Gorakhpur	DY.CME/Works	WMS 20721203

100% payment of must change items for 3-yearly schedule and 6-yearly schedules, must change kits, will be done immediate by Railways on receipt of material and work test certificate. The payment for must change kits will be as mentioned in the annexures.

Alternatively, the contractor can bring new/overhauled items for use as unit exchange instead of the kits but the payment shall be done for the kits only as per the schedule of rates. It should also be ensured that no material dumping is done and material for 3-month consumption only should be brought at one time.

100% Payment (inclusive of Taxes & Duties) to be released for labour charges as per Joint Inspection report with Railways on monthly basis.

Similarly, the list of condition-based spares should be brought by the contractor in Workshops for which payment shall be made as per the rate schedule of condition-based spares immediately on receipt at Workshop. The actual quantities can be varied as per the advice of the concerned Workshop. Payment for those items shall also be done immediate by Railways on receipt of material and work test certificate. Regular recoupment of the items consumed should be done by the contractor.

However, it may be ensured that all such materials for which payment is claimed after supply should be handed over to the Railways and all such materials shall remain in Railway's lock and key custody. The same shall be handed over to the contractor as and when required.

ANNEXURE: A

MUST CHANGE KIT SUMMARY FOR EOG COACH BRAKE PANEL VALVES - SS-II(M36)						
S. No	Component Description	Component Drawing No	POH KIT No	POH KIT Description	EOG COACHES	
					QTY-Standard Panel Rev-0	QTY-Modified Panel Rev-1
1	AIR FILTER	3EB5655	1J112010521	POH KIT FOR AIR FILTER	1	✕
2	BP FILTER ASSY	1J112010126	1J112010521	POH KIT FOR AIR FILTER	✕	1
3	FP FILTER ASSY	1J112010125	1J112010521	POH KIT FOR AIR FILTER	✕	1
4	CHECK VALVE	4EB 5664	1J112010522	POH KIT FOR CHECK VALVE ASSEMBLY	1	1
5	DISTRIBUTOR VALVE KE1IPKSL	3EB 6621	1J9990000001000	MUST CHANGE KIT FOR LHB DISTRIBUTOR VALVE	1	1
6	MANIFOLD-ISOLATING COCK WITH VENT	2EB7921C	1J112010554	POH KIT FOR MANIFOLD ISOLATING COCK WITH VENT	1	✕
7	MANIFOLD-ISOLATING COCK W/O VENT	2EB7922/2	1J112010555	POH KIT FOR MANIFOLD AC/NAC ISOLATING COCK WITHOUT VENT	1	✕
8	ISOLATING COCK WITH VENT	4EB10913/1 or 4EB10913/3	1J112010514	POH KIT OF ISOLATING COCK WITH VENT	✕	2
9	ISOLATING COCK W/O VENT	4EB10913/2 or 4EB10913/4	1J112010515	POH KIT OF ISOLATING COCK WITHOUT VENT	✕	2
10	PRESSURE SWITCH	3EB 8146	1B1160106500	POH KIT PRESSURE SWITCH BRACKET	1	1
11	TEST FITTING -K1E	4EB5681	1J112010520	POH KIT FOR TEST FITTING K1E	4	4
12	HOUSING CHECK VALVE AC/NAC	3EB11064	1J112010512	POH KIT FOR CHECK VALVE AC/NAC	✕	1

MUST CHANGE KIT SUMMARY OTHER BRAKE COMPONENTS OF EOG COACHES - SS-II(M36)						
S. No	Component Description	Component Drawing No	POH KIT No	POH KIT Description	EOG COACHES	
					QTY-Standard Panel Rev-0	QTY-Modified Panel Rev-1
1	EMERGENCY BRAKE ACCELERATOR	1EB6367	1J112010523	POH KIT FOR EBA	1	1
2	DUMP VALVE	2EB 8341	1J112010474	POH KIT FOR DUMP VALVE	4	4
3	SINGLE BRAKE INDICATOR	2EB 6615	1J112010517	POH KIT OF SINGLE BRAKE INDICATOR	4	4
4	PASSENGER EMERGENCY BRAKE VALVE (LHB)	2KB3683/A	1J112010518	POH KIT OF PASSENGER EMERGENCY BRAKE VALVE	1	1
5	FLEXIBLE HOSE FOR BOGIE (650 MM)	1J112000031	-	-	4	4
6	BRAKE HOSE WITH HIGH	3EB9942	-	-	8	8

	PR. CIMPING AND END FITTING					
7	ANGLE COCK BP	2KB 4024	-	-	2	2
8	ANGLE COCK FP	2KB 4024	-	-	2	2
9	AIR BRAKE HOSE COUPLING FOR FEED PIPE	WD-81027-S/1	-	-	2	2
10	AIR BRAKE HOSE COUPLING FOR BRAKE PIPE	RDSO/SK-73547 ITEM 1 TO 7	-	-	2	2

ANNEXURE: B

MUST CHANGE KIT SUMMARY FOR POWER CAR COACH BRAKE PANEL VALVES - SS-II(M36)						
S. No	Component Description	Component Drawing No	POH KIT No	POH KIT Description	POWER CAR COACHES	
					QTY- Standard Panel Rev-0	QTY- Modified Panel Rev-1
1	AIR FILTER	3EB5655	1J112010521	POH KIT FOR AIR FILTER	1	×
2	BP FILTER ASSY	1J112010126	1J112010521	POH KIT FOR AIR FILTER	×	1
3	FP FILTER ASSY	1J112010125	1J112010521	POH KIT FOR AIR FILTER	×	1
4	CHECK VALVE	4EB 5664	1J112010522	POH KIT FOR CHECK VALVE ASSEMBLY	1	1
5	DISTRIBUTOR VALVE KE1iPKSL	3EB 6621	1J9990000001000	MUST CHANGE KIT FOR LHB DISTRIBUTOR VALVE	1	1
6	MANIFOLD-ISOLATING COCK WITH VENT	2EB7921C	1J112010554	POH KIT FOR MANIFOLD ISOLATING COCK WITH VENT	1	×
7	MANIFOLD-ISOLATING COCK W/O VENT	2EB7922/1	1J112010549	POH KIT FOR MANIFOLD-ISOLATING COCK WITHOUT VENT	1	×
8	ISOLATING COCK WITH VENT	4EB10913/1 or 4EB10913/3	1J112010514	POH KIT OF ISOLATING COCK WITH VENT	×	2
9	ISOLATING COCK W/O VENT	4EB10913/2 or 4EB10913/4	1J112010515	POH KIT OF ISOLATING COCK WITHOUT VENT	×	2
10	PRESSURE SWITCH	3EB 8146	1B1160106500	POH KIT PRESSURE SWITCH BRACKET	1	1
11	TEST FITTING - K1E	4EB5681	1J112010520	POH KIT FOR TEST FITTING K1E	4	4
12	HOUSING CHECK VALVE POWER CAR	3EB10979	1J112010513	POH KIT FOR COMBINED CHECK VALVE POWER CAR	×	1

MUST CHANGE KIT SUMMARY OTHER BRAKE COMPONENTS OF POWER CAR COACH - SS-II(M36)						
S. No	Component Description	Component Drawing No	POH KIT No	POH KIT Description	POWER CAR COACHES	
					QTY-Standard Panel Rev-0	QTY-Modified Panel Rev-1
1	EMERGENCY BRAKE ACCELERATOR	1EB6367	1J112010523	POH KIT FOR EBA	1	1
2	DUMP VALVE	2EB 8341	1J112010474	POH KIT FOR DUMP VALVE	4	4
3	SINGLE BRAKE INDICATOR	2EB 6615	1J112010517	POH KIT OF SINGLE BRAKE INDICATOR	6	6
4	ROLLER LEVER VALVE	3EB9505	1J112010519	POH KIT OF ROLLER LEVER VALVE	1	1
5	FLEXIBLE HOSE FOR BOGIE (650 MM)	1J112000031	-	-	4	4
6	BRAKE HOSE WITH HIGH PR. CIMPING AND END FITTING	3EB9942	-	-	8	8
7	ANGLE COCK BP	2KB 4024	-	-	2	2
8	ANGLE COCK FP	2KB 4024	-	-	2	2
9	AIR BRAKE HOSE COUPLING FOR FEED PIPE	WD-81027-S/1	-	-	2	2
10	AIR BRAKE HOSE COUPLING FOR BRAKE PIPE	RDSO/SK-73547 ITEM 1 TO 7	-	-	2	2

MUST CHANGE KIT DETAILS FOR BRAKE PANEL VALVES - SS-II(M36)			
POH KIT FOR AIR FILTER(3EB5655) - 1J112010521			
S.NO	Description	Qty/Unit	Drawing No.
1	FILTER ELEMENT	1	4EB 5666
2	O-RING	1	4EB5652
3	O-RING	2	4EB5654
4	COMPRESSION SPRING	1	4EB 5667
5	INTERNAL CIRCLIP 42 X 1.75 N IS: 3075 (PART 2) SS-420	1	IS:3075-2

POH KIT FOR BP FILTER ASSY (1J112010126) - 1J112010521			
S.NO	Description	Qty/Unit	Drawing No.
1	FILTER ELEMENT	1	4EB 5666
2	O-RING	1	4EB5652
3	O-RING	2	4EB5654
4	COMPRESSION SPRING	1	4EB 5667
5	INTERNAL CIRCLIP 42 X 1.75 N IS: 3075 (PART 2) SS-420	1	IS:3075-2

POH KIT FOR FP FILTER ASSY (1J112010125) - 1J112010521

S.NO	Description	Qty/Unit	Drawing No.
1	FILTER ELEMENT	1	4EB 5666
2	O-RING	1	4EB5652
3	O-RING	2	4EB5654
4	COMPRESSION SPRING	1	4EB 5667
5	INTERNAL CIRCLIP 42 X 1.75 N IS: 3075 (PART 2) SS-420	1	IS:3075-2

POH KIT FOR CHECK VALVE ASSEMBLY (4EB 5664)-1J112010522

S.NO	Description	Qty/Unit	Drawing No.
1	COMPRESSON SPRING	1	4EB5660
2	O-RING 32X1.5	1	4EB5662
3	O-RING FOR CHECK VALVE	3	4EB 5656

POH KIT FOR DISTRIBUTOR VALVE (3EB 6621)-1J9990000001000

S.NO	Description	Qty/Unit	Drawing No.
1	MESH (FILTER)	1	4A95867
2	SEALING RING	1	4A27763/13
3	VALVE PLATE	1	4B58167
4	O RING	1	4A27763/14
5	DIAPHRAGM	1	4B67908
6	SEAL (GASKET)	1	3B67907
7	GROOVED RING	2	4A18294/8
8	SEAL(GASKET)	1	4A30826
9	SEALING RING	1	4A27763/12
10	CUP DIAPHRAGM	1	4A26918
11	VALVE HEAD	3	4A30509
12	GROOVED RING	4	4A18294/17
13	FLAT SEALING RING	1	4A31340/1
14	FLAT SEALING RING	1	4A31340/9
15	SEALING RING ID14*2.6MM	1	4A27763/15
16	SEALING RING ID26*3MM	1	4A27763/16
17	FLAT SEALING RING	3	4A31340/3
18	GROOVED RING	2	4A18294/5
19	CONTROL SLEEVE	1	4B58159
20	K RING	1	N894/06.8
21	SUPPORTING RING	1	4A88407
22	VALVE PLATE	1	4B58168
23	TOOTHED RING	1	4A86235/2
24	TOOTHED RING	1	4A86235/2
25	VALVE HEAD	1	4A31334
26	CUP DIAPHRAGM	1	3A30507
27	FINE FILTER S/A	1	4A30540
28	FLAT SEALING RING	1	4A31340/2
29	GASKET(SEAL)	1	3B69999
30	EXHAUST PLUG ISS.01	5	4KB4103
31	FINE FILTER	5	4B62338
32	SEALING RING	2	4A27763/9
33	EXTERNAL CIRCLIP 8X.8	1	IS:3075-1
34	CUP DIAPHRAGM	1	4A30487
35	K RING	1	4B53653

36	EXTERNAL CIRCLIP 5X.6	1	IS:3075-1
37	GROOVED RING	1	4A18294/39
38	SEALING RING 10*13.5 MM	1	DIN7603
39	FLAT SEALING RING	1	4A31340/8
40	VALVE ROD	1	3B64806
41	SEALING CAP	1	4B25854
42	FLAT SEALING RING	1	4A31340/12
43	SEAL	1	4A31653
44	FLAT SEALING RING	1	4A31340/7
45	VALVE PIN (VALVE TAPPET)	1	3B64808
46	SEALING RING	6	4A27763/10
47	SEAL	1	3B28281
48	O-RING	1	4KB4007
49	FILTER	1	4KB4009
50	SPLIT PIN 3.2*63	1	DIN94
51	FLAT SEALING RING	1	4A31340/10
52	VALVE STEM GUIDE	1	4B67759
53	PROTECTION CAP	1	4A68108
54	GROOVED RING	1	4A18294/18
55	STRAINER(FILTER)	1	4B22845
56	CUP DIAPHRAGM	1	4A38362
57	RADIAL RETAINING RING	1	DIN6799-10
58	SEALING RING	1	3B 58852/4
59	VALVE SEAL	1	3B58852/6
60	O-RING	1	4A27763/17
61	PRESSURE PIECE	1	4EB9580
62	O-RING	1	4A49275
63	WASHER (0.3 THK) HDBD	1	4B 35232
64	WASHER (0.5 THK) Hdbd	1	4B 94217
65	WASHER (0.2 THK) Hdbd	1	4B 50166
66	COMPRESSION SPRING FOR HDBD PLV AT 3 KG/CM2	1	4B59802B
67	SPRING PLATE	1	4B 39032
68	VALVE HEAD (HDBD)	1	3C 60759
69	WASHER (Hdbd)	1	4B 46770
70	INSERT (Hdbd)	1	3B 58854
71	COVER (Hdbd)	1	4B 35237
72	K-RING(Hdbd)	1	4EB 8587
73	O-RING	1	4C60760
74	BUSH (Hdbd)	1	4B 39034
75	DIAPHRAGM	1	4B35235
76	VALVE SEAL	1	3B58852/2
77	INTERNAL CIRCLIP 15 X 1.0 N IS: 3075 (PART 2) SS-420	4	IS:3075-2
78	INTERNAL CIRCLIP 25 X 1.2 N IS: 3075 (PART 2) SS-420	1	IS:3075-2
79	EXTERNAL CIRCLIP 20 X 1.2 N IS: 3075 (PART 1) SS-420	1	IS:3075-1
80	EXTERNAL CIRCLIP 5 X 0.6 N IS: 3075 (PART 1) SS-420	1	IS:3075-1
81	EXTERNAL CIRCLIP 8 X 0.8 N IS: 3075 (PART 1) SS-420	1	IS:3075-1
82	QRV HANDLE (MODIFIED)	1	4KB4453
83	SPLIT PIN DIA 1.5x15	1	IS:549
84	PIN (FOR QRV HANDEL)	1	4KB3459
85	WASHER 5X10	1	IS:2016

POH KIT FOR MANIFOLD ISOLATING COCK WITH VENT(2EB7921C)-1J112010554

S.NO	Description	Qty/Unit	Drawing No.
1	O-RING 18X3.5	6	4EB 9420/9
2	O-RING	2	4EB5642
3	O-RING	2	4A40125/20
4	COMPRESSION SPRING	2	4EB 5644
5	SEALING INSERT	4	4EB 5646
6	O-RING	2	4EB5648
7	O-RING	4	4EB5649
8	COMPRESSION SPRING	2	4EB 5651
9	O-RING	2	4EB5652
10	INTERNAL CIRCLIP 42 X 1.75 N IS: 3075 (PART 2) SS-420	2	IS:3075-2
11	INT. CIRCLIP-NORMAL DUTY-B37 X 1.5	2	DIN 472

POH KIT FOR MANIFOLD ISOLATING COCK W/O VENT(2EB7922/1)-1J112010549

S.NO	Description	Qty/Unit	Drawing No.
1	O-RING 13X3.5	6	4EB 9420/10
2	EXTERNAL CIRCLIP A10 X 1 MM (C-60/C-80/EN42) ZINC FLAKE /IMMERSION COATING 8-12 MICRON THICK	2	IS:3075-1
3	O-RING	2	4EB 5632
4	BALL SEAL	4	4EB 5623
5	COMPRESSION SPRING	2	4EB 5628
6	INTERNAL CIRCLIP 35 X 1.5 N IS: 3075 (PART 2) SS-420	4	IS:3075-2
7	INTERNAL CIRCLIP 26X1.2 (SS-420)	2	IS:3075-2
8	O-RING	2	4EB 5631
9	O-RING 32X1.5	4	4EB5662
10	O-RING	2	4EB 7493
11	VALVE HEAD	2	4EB5659
12	COMPRESSON SPRING	2	4EB5660
13	FILTER ELEMENT	1	4EB 5666
14	COMPRESSION SPRING	1	4EB 5667
15	O-RING	1	4EB5652
16	INTERNAL CIRCLIP 42 X 1.75 N IS: 3075 (PART 2) SS-420	1	IS:3075-2
17	O-RING (23x3.5)	1	4EP 6267/6

POH KIT FOR MANIFOLD ISOLATING COCK W/O VENT(2EB7922/2)-1J112010555

S.NO	Description	Qty/Unit	Drawing No.
1	O-RING 13X3.5	4	4EB 9420/10
2	EXTERNAL CIRCLIP A10 X 1 MM (C-60/C-80/EN42) ZINC FLAKE /IMMERSION COATING 8-12 MICRON THICK	2	IS:3075-1
3	O-RING	2	4EB 5632
4	BALL SEAL	4	4EB 5623
5	COMPRESSION SPRING	2	4EB 5628
6	INTERNAL CIRCLIP 35 X 1.5 N IS: 3075 (PART 2) SS-420	4	IS:3075-2
7	O-RING	2	4EB 5631
8	O-RING 32X1.5	4	4EB5662
9	O-RING	2	4EB 7493
10	VALVE HEAD	2	4EB5659
11	COMPRESSON SPRING	2	4EB5660
12	FILTER ELEMENT	1	4EB 5666
13	COMPRESSION SPRING	1	4EB 5667
14	O-RING	1	4EB5652
15	INTERNAL CIRCLIP 42 X 1.75 N IS: 3075 (PART 2) SS-420	1	IS:3075-2

16	O-RING (23x3.5)	1	4EP 6267/6
17	O-RING (52x3.5)	1	4EP 6267/4
18	INTERNAL CIRCLIP 26X1.2 (SS-420)	2	IS:3075-2

POH KIT OF ISOLATING COCK WITH VENT(4EB10913/3)-1J112010514

S.NO	Description	Qty/Unit	Drawing No.
1	EXTERNAL CIRCLIP A10 X 1 MM (C-60/C-80/EN42)	1	IS:3075-1
2	O-RING	1	4EB 5632
3	COMPRESSION SPRING	1	4EB 5628
4	INTERNAL CIRCLIP 35 X 1.5 N IS: 3075 (PART 2) SS-420	1	IS:3075-2
5	O-RING	1	4EB 5631
6	O-RING 32X1.5	1	4EB5662
7	O-RING	1	4EB 7493
8	INTERNAL CIRCLIP 26X1.2 (SS-420)	1	IS:3075-2
9	O-RING 10 x 2.5	2	4A40125/7
10	O-RING 23 X 1.5	1	1J112010033

POH KIT OF ISOLATING COCK WITHOUT VENT(4EB10913/4)-1J112010515

S.NO	Description	Qty/Unit	Drawing No.
1	O-RING	1	4EB 5632
2	COMPRESSION SPRING	1	4EB 5628
3	INTERNAL CIRCLIP 35 X 1.5 N IS: 3075 (PART 2) SS-420	1	IS:3075-2
4	O-RING	1	4EB 5631
5	O-RING 32X1.5	1	4EB5662
6	O-RING	1	4EB 7493
7	INTERNAL CIRCLIP 26X1.2 (SS-420)	1	IS:3075-2
8	O-RING 10 x 2.5	2	4A40125/7
9	EXTERNAL CIRCLIP A10 X 1 MM (C-60/C-80/EN42) ZINC FLAKE /IMMERSION COATING 8-12 MICRON THICK	1	IS:3075-1

POH KIT OF PRESSURE SWITCH BRACKET (3EB 8146)-1B1160106500

S.NO	Description	Qty/Unit	Drawing No.
1	O-RING 18 X 3.5	1	4EB 9420/9

POH KIT FOR TEST FITTING K1E(4EB5681)-1J112010520

S.NO	Description	Qty / Unit	Drawing No.
1	COMPRESSION SPRING	1	4A30485/9
2	VALVE HEAD	1	4EB 5671
3	CIRCLIP B14 (SS-420)	1	IS:3075-2
4	O-RING	1	4EB5678
5	O-RING	1	4EB5676

POH KIT FOR COMBINED CHECK VALVE POWER CAR(3EB10979)-1J112010513

S.NO	Description	Qty / Unit	Drawing No.
1	O-RING 10 x 2.5	3	4A40125/7
2	COMPRESSON SPRING	2	4EB5660
3	O-RING 32X1.5	2	4EB5662
4	VALVE HEAD	2	4EB5659
5	INTERNAL CIRCLIP 35 X 1.5 N IS: 3075 (PART 2) SS-420	2	IS:3075-2

POH KIT FOR CHECK VALVE AC/NAC(3EB11064)-1J112010512

S.NO	Description	Qty / Unit	Drawing No.
1	COMPRESSON SPRING	1	4EB5660
2	O-RING 32X1.5	1	4EB5662
3	O-RING 10 x 2.5	2	4A40125/7
4	VALVE HEAD	1	4EB5659
5	INTERNAL CIRCLIP 35 X 1.5 N IS: 3075 (PART 2) SS-420	1	IS:3075-2

MUST CHANGE KIT DETAILS OTHER BRAKE COMPONENTS - SS-II(M36)/SS-III (M72)**POH KIT FOR EBA (1EB6367)-1J112010523**

S.NO	Description	Qty / Unit	Drawing No.
1	VALVE HEAD	1	4EB 6373
2	VALVE TAPPET VULCANIZED	1	4A30530
3	VALVE HEAD	1	4EB 6359
4	SUPPORT PIECE	1	4EB 6377
5	COMPRESSION SPRING	1	4EB 6372
6	FILTER	1	4EB 6361
7	COMPRESSION SPRING	1	4EB6846A
8	SEALING RING	1	3B 62784/3
9	O-RING	1	4A27763/17
10	CUP DIAPHRAGM	1	4A38362
11	COMPRESSION SPRING	1	4EB 6371
12	O-RING	2	4A 40125/14
13	CUP DIAPHRAGM	1	4A30711
14	COMPRESSION SPRING	1	4A30485/15
15	O-RING	4	4EB 6375
16	O-RING	1	4EB 6349
17	VALVE SEAL	1	3B58852/6
18	COMPRESSION SPRING	1	4EB 6341
19	MESH	1	4EB 6380
20	SEAL	1	4EB 6357
21	COMPRESSION SPRING	1	4EB 6845B
22	O-RING	1	4EB 6348
23	K-RING 24.2	1	N 890/24.2
24	K-RING 30.2	1	N 893/30.2
25	K-RING 18.2	1	N 894/18.2
26	INTERNAL CIRCLIP 38X1.5 (SS-420)	2	IS:3075-2
27	BUSH (PART 1-LIP TYPE)	1	4EB 6382
28	INTERNAL CIRCLIP 26X1.2 (SS-420)	1	IS:3075-2
29	CIRCLIP B14 (SS-420)	1	IS:3075-2
30	INTERNAL CIRCLIP 22 X 1.0 N IS: 3075 (PART 2) SS-420	1	IS:3075-2

POH KIT FOR DUMP VALVE(2EB 8341)-1J112010474

S.NO	Description	Qty / Unit	Drawing No.
1	MAGNET CORE	2	ZV60100-941
2	RUBBER RING 20 X 2	4	ZM052109
3	SEAL 29 X 3	2	ZV06716-178
4	RUBBER SEAL	2	ZM311801
5	RUBBER SEAL 46 X 3	2	ZM068201
6	RUBBER SEAL	1	ZM311901
7	RING RUBBER 48 X 2	2	ZM052123

8	CIRCLIP K 3 NICKEL	1	ZM800214
9	CONNECTOR	1	ZM125305
10	TRANSIL	2	ZM000162
11	RUBBER RING 6 X 2	1	ZM052102
12	REPAIR LABEL	1	ZV02960-162/3
13	FILTER DDV	1	1J112010939
14	EXHAUST DISC DDV	1	1J112010859
15	FLAP DISC DDV	1	1J112010926
16	PUNCHED WASHER 4.5 IS: 2016-STAINLESS STEEL	1	1S102170053
17	SPRING LOCK WASHER B4-IS 3063	1	1S102170031
18	HEX SOCKET HEAD - CAP SCREW -DIN 912- M4 X 0.7 X 12- SS	1	1S102140024

POH KIT FOR SINGLE BRAKE INDICATOR (2EB 6615)-1J112010517

S.NO	Description	Qty / Unit	Drawing No.
1	COMPRESSION SPRING	1	4EB 6547
2	O-RING	2	4EB 6554
3	O-RING	1	4EB6546

POH KIT FOR PASSENGER EMERGENCY BRAKE VALVE (LHB) (2KB3683/A)-1J112010518

S.NO	Description	Qty / Unit	Drawing No.
1	PISTON ROD ASSY.	1	4B43762/5
2	SPRING WASHER B8	4	DIN127
3	O-RING	1	4A 27763/22
4	O-RING	1	4A38681
5	O-RING	1	4A 93706
6	K RING	1	N891/12.2
7	K RING	1	N896/60.2
8	K RING	1	N891/20.8
9	INTERNAL CIRCLIP 60 X 2.0	1	IS:3075-2
10	COMPRESSION SPRING	2	4EB9783

POH KIT FOR ROLLER LEVER VALVE (3EB9505)-1J112010519

S.NO	Description	Qty / Unit	Drawing No.
1	O RING ID 14 x 2.8	2	1J112000022
2	O RING (24X1)	1	4EB 9521
3	COMPRESSION SPRING	1	4A60934A
4	FILTER M22*1.5	1	4A70275
5	INTERNAL CIRCLIP 26X1.2 (SS-420)	1	IS:3075-2
6	BELLOW	1	4EB 9524

ANNEXURE-C

MUST CHANGE KIT SUMMARY DISC BRAKE UNIT OF EOG COACHES-SS-III (M72)

S. No	Component Description	Component Drawing No	POH KIT Drawing No	POH KIT Description	EOG COACHES	
					Quantity REV-0	Quantity REV-1
1	DISC BRAKE UNIT EOG Coach (WITHOUT HAND BRAKE)	1EB8121B	1J112010471	POH KIT DISC BRAKE UNIT (WITHOUT HAND BRAKE) EOG & POWER CAR COACHES	8	8

1. POH KIT DISC BRAKE UNIT (WITHOUT HAND BRAKE) EOG COACHES(1EB8121B) - 1J112010471

S.NO	Description	Qty / Unit	Drawing No.
1	INSERT 80X0.5	4	ZM010996
2	DISC SPRING 63X4.3	6	ZM011868
3	COTTER PIN 6.3X36	4	ZM003187
4	COTTER PIN 5X45	2	ZM008022
5	BUSHING 24D 39.5X30	4	ZV04200-210/B
6	BUSHING 42.3X20	4	ZM002822
7	BUSHING 33D 42X20	4	ZV04200-212/B
8	SILENT BLOCK	1	ZV60200-541
9	BUSHING 22 28X15	4	ZV04200-217/B
10	BUSHING 24 30X15	8	ZV04200-218/B
11	LOCK	2	ZM012819
12	SPRING	2	ZM010346
13	PIN	2	ZM009751
14	COTTER PIN 8X50	4	ZM003721
15	BUSHING 28X12	4	ZV04200-207/B
16	REPAIR LABEL	1	ZV02960-162/1
17	COMPLETE SLEEVE	1	ZV60200-140
18	LOCK PIN	1	ZM009846
19	ROLLER / TRACKLE	2	ZM009836
20	INSERT 45X0.5	1	ZV04484-117
21	OUTER INSERT 59X0.5	1	ZV04484-119
22	LATCH	1	ZV00705-178
23	COVER	1	ZM013492
24	SPRING WIRE 258	1	ZV08300-108
25	RETURN SPRING 106X93	1	ZM354701
26	CAM SPRING 30X50	1	ZM353001
27	SPRING 62X43	1	ZM021601
28	SPRING 17X11.1	1	ZM021701
29	SPRING 30X6	1	ZM023101
30	SPRING	1	ZM033601
31	CUFF RUBBER 256X20	1	ZM359201
32	COLLAR RUBBER ANTIDUST	1	ZM352701
33	HOSE CLIP D50	1	ZM284302
34	HOSE CLIP 120	1	ZM236407
35	RING RUBBER 8X2	1	ZM052103
36	RING RUBBER 22X2	1	ZM052110
37	CUFF RUBBER 35X45X6	1	ZM138901
38	SCREW	1	ZM001963
39	FAN WASHER	2	ZM001127
40	SECURE RING OUTER	1	ZM038816
41	PIVOT	1	ZM013280
42	HOUSING 30.2X15	4	ZM000349
43	OVERHAUL LABEL	1	ZV02960-162/3

ANNEXURE-D

MUST CHANGE KIT SUMMARY DISC BRAKE UNIT OF POWER CAR COACHES-SS-III (M72)						
S. No	Component Description	Component Drawing No	POH KIT Drawing No	POH KIT Description	POWER CAR COACHES	
					Quantity REV-0	Quantity REV-1
1	DISC BRAKE UNIT POWER CAR (WITHOUT HAND BRAKE)	1EB8121A	1J112010471	POH KIT DISC BRAKE UNIT (WITHOUT HAND BRAKE) EOG & POWER CAR COACHES	6	6
2	DISC BRAKE UNIT POWER CAR WITH HAND BRAKE	1EB8122	1J112010472	POH KIT DISC BRAKE UNIT (WITH HAND BRAKE) POWER CAR COACHES	2	2
MUST CHANGE KIT DETAILS DISC BRAKE UNIT -SS-III (M72)						
1. POH KIT DISC BRAKE UNIT (WITHOUT HAND BRAKE) POWER CAR COACHES(1EB8121A) - 1J112010471						
S.NO	Description	Qty / Unit		Drawing No.		
1	INSERT 80X0.5	4		ZM010996		
2	DISC SPRING 63X4.3	6		ZM011868		
3	COTTER PIN 6.3X36	4		ZM003187		
4	COTTER PIN 5X45	2		ZM008022		
5	BUSHING 24D 39.5X30	4		ZV04200-210/B		
6	BUSHING 42.3X20	4		ZM002822		
7	BUSHING 33D 42X20	4		ZV04200-212/B		
8	SILENT BLOCK	1		ZV60200-541		
9	BUSHING 22 28X15	4		ZV04200-217/B		
10	BUSHING 24 30X15	8		ZV04200-218/B		
11	LOCK	2		ZM012819		
12	SPRING	2		ZM010346		
13	PIN	2		ZM009751		
14	COTTER PIN 8X50	4		ZM003721		
15	BUSHING 28X12	4		ZV04200-207/B		
16	REPAIR LABEL	1		ZV02960-162/1		
17	COMPLETE SLEEVE	1		ZV60200-140		
18	LOCK PIN	1		ZM009846		
19	ROLLER / TRACKLE	2		ZM009836		
20	INSERT 45X0.5	1		ZV04484-117		
21	OUTER INSERT 59X0.5	1		ZV04484-119		
22	LATCH	1		ZV00705-178		
23	COVER	1		ZM013492		
24	SPRING WIRE 258	1		ZV08300-108		
25	RETURN SPRING 106X93	1		ZM354701		
26	CAM SPRING 30X50	1		ZM353001		
27	SPRING 62X43	1		ZM021601		
28	SPRING 17X11.1	1		ZM021701		
29	SPRING 30X6	1		ZM023101		
30	SPRING	1		ZM033601		
31	CUFF RUBBER 256X20	1		ZM359201		
32	COLLAR RUBBER ANTIDUST	1		ZM352701		
33	HOSE CLIP D50	1		ZM284302		
34	HOSE CLIP 120	1		ZM236407		
35	RING RUBBER 8X2	1		ZM052103		

36	RING RUBBER 22X2	1	ZM052110
37	CUFF RUBBER 35X45X6	1	ZM138901
38	SCREW	1	ZM001963
39	FAN WASHER	2	ZM001127
40	SECURE RING OUTER	1	ZM038816
41	PIVOT	1	ZM013280
42	HOUSING 30.2X15	4	ZM000349
43	OVERHAUL LABEL	1	ZV02960-162/3

2. POH KIT DISC BRAKE UNIT (WITH HAND BRAKE) POWER CAR COACHES(1EB8122) - 1J112010472

S.NO	Description	Qty / Unit	Drawing No.
1	INSERT 80X0.5	4	ZM010996
2	SAFETY WASHER 80.9X50	4	ZV00490-125
3	DISC SPRING 63X4.3	6	ZM011868
4	DISC SPRING 23X10.2X0.9X1	8	ZM002051
5	COTTER PIN 6.3X36	4	ZM003187
6	COTTER PIN 5X45	2	ZM008022
7	BUSHING 24D 39.5X30	4	ZV04200-210/B
8	BUSHING 33D 42X20	8	ZV04200-212/B
9	SILENT BLOCK	1	ZV60200-541
10	BUSHING 22 28X15	4	ZV04200-217/B
11	BUSHING 24 30X15	8	ZV04200-218/B
12	LOCK	2	ZM012819
13	SPRING	2	ZM010346
14	PIN	2	ZM009751
15	COTTER PIN 8X50	4	ZM003721
16	BUSHING 28X12	4	ZV04200-207/B
17	REPAIR LABEL	1	ZV02960-162/1
18	COMPLETE SLEEVE	1	ZV60200-140
19	SECURE WASHER	2	ZM012745
20	LOCK PIN	1	ZM009846
21	BLOCK	2	ZV04950-109
22	ROLLER / TRACKLE	2	ZM009836
23	INSERT 45X0.5	1	ZV04484-117
24	OUTER INSERT 59X0.5	1	ZV04484-119
25	LATCH	1	ZV00705-178
26	COVER	1	ZM013492
27	SPRING WIRE 258	1	ZV08300-108
28	RETURN SPRING 106X93	1	ZM354701
29	CAM SPRING 30X50	1	ZM353001
30	SPRING 62X43	1	ZM021601
31	SPRING 17X11.1	1	ZM021701
32	SPRING	1	ZM031701
33	SPRING 30X6	1	ZM023101
34	SPRING	1	ZM033601
35	ANTI-DUST COLLAR	1	ZV06779-105
36	ANTI-DUST COLLAR	1	ZV06779-109
37	CUFF RUBBER 256X20	1	ZM359201
38	HOSE CLIP D50	1	ZM284302
39	HOSE CLIP D90	2	ZM236404
40	HOSE CLIP 120	1	ZM236407
41	RING RUBBER 8X2	1	ZM052103

42	RING RUBBER 22X2	1	ZM052110
43	RING RUBBER 80X2	1	ZM052145
44	CUFF RUBBER 35X45X6	1	ZM138901
45	SCREW	1	ZM001963
46	FLEXIBLE SPRING 4.1	3	ZM800166
47	FAN WASHER	2	ZM001127
48	NOSE WASHER	1	ZM800179
49	SECURE RING OUTER	1	ZM038816
50	PIVOT	1	ZM013280
51	BUSHING 30X30	2	ZV04206-158/I
52	BUSHING 24D10X15	2	ZM010638
53	BUSHING D16E10X15	1	ZV04210-148
54	HOUSING 30.2x15	2	ZM000349
55	OVERHAUL LABEL	1	ZV02960-162/3

ANNEXURE-E
(List of Condition based items)

S. No.	Description	Drawing No.	Advertised Rate (Excl. GST)	Accepted Rate (Excl. GST)
1	(SCI*) DISC BRAKE PANEL ASSEMBLY (PMBS) FOR AC NAC	1EB9479	4,84,550.00	
2	(SCI*) DISC BRAKE PANEL ASSEMBLY (PMBS)- POWER CAR	1EB9480	5,20,135.00	
3	DISTRIBUTOR VALVE KELIPKS FOR DISC BRAKES	3EB6621	83,000.00	
4	FILLTER (1 NO.-MANIFOLD ASSY: 1 NO. - ON MAIN PANEL)	3EB5655	7,900.00	
5	TEST FITTING-KIE	4EB5681	3,890.00	
6	PRESSURE SWITCH (IN 1.3 & OUT 1.8) FOR LHB	3EB8146	11,550.00	
7	MANIFOLD ASSY (ISO, COCK. FILTER. CHV. TP)	2EB7922/2	25,850.00	
8	MANIFOLD-ISOLATING COCK WITH VENT	2EB7921C	28,050.00	
9	RESERVOIR 75 LTR.	3EB5289	44,000.00	
10	S.S RESERVOIR 125 LTR	3EB7386	86,400.00	
11	RESERVOIR 6 LTR.	3EB6685	27,885.00	
12	Complete Dump Valve with Connector (ZV90030-341/2503	2EB8341	1,02,520.00	
13	(SCI*) ANTI-SKID BRAKE CONTROL SYSTEM(WSP)	3EB8242	5,75,000.00	
14	JZV Card For WSP of LHB Coaches ESCORT to Drg. No 3EB 8242/1.	1J11201437002	1,31,500.00	
15	JZP CARD	3EB8242/2	2,74,500.00	
16	JIO card for WSP system of LHB coaches as per Escorts DRG. NO. 3EB8242/3	1J112010166FG	1,13,850.00	
17	JOP card for WSP system of LHB coaches as per ESCORTS to Drg. no. 3EB8242/4	1J11201439002	1,03,550.00	
18	CPU CARD	3EB8242/5	2,80,000.00	
19	JFP card for WSP system of LHB coaches as per ESCORTS DRG. NO. 3EB8242/6	1J11201440002	1,16,070.00	
20	SPEED SENSOR (WITH 2 mtr CABLE) (CUSTOMER P.NO. ZM004165)	3EB8342	94,400.00	
21	TOOTHED WHEEL	3EB6618	8,250.00	

22	Dump Valve with Wire Harness (3.5 Mtr.)	1J112000024	90,640.00	
23	Dump Valve with Wire Harness (7.5 Mtr.)	1J112000043	95,700.00	
24	Wire Harness for Dump Valve (3.5 Mtr.)	1J11201012000	6,050.00	
25	Wire Harness for Dump Valve (7.5 Mtr.)	1J11201012000	6,710.00	
26	Wire Harness for WSP (14 Mtr.) With Connector	1J112000042	11,730.00	
27	Wire Harness for WSP (27 Mtr.) with Connector	1J112000044	16,800.00	
28	Connector For Wire Harness (14 MTR & 27 MTR.)	1J112000037	14,100.00	
29	Connector For Speed Sensor	1J112000036	9,000.00	
30	Connector For Dump Valve (Male)	1J112000035	9,000.00	
31	Junction Box	1J112000013	10,835.00	
32	BALL VALVE 1"	4EB9482	19,950.00	
33	(SCI*) PRESSURE GAUGE 3.5"(BP)	3EB9501	32,670.00	
34	(SCI*) PRESSURE GAUGE 3.5"(FP)	3EB9502	35,400.00	
35	(SCI*) PRESSURE GAUGE 3.5"(BC)	3EB9503	35,400.00	
36	(SCI*) AIR BRAKE HOSE COUPLING FOR BRAKE PIPE	RDSO/SK-73547-ITEM IT-07	1,950.00	
37	(SCI*) AIR BRAKE HOSE COUPLING FOR FEED PIPE	WD-81027-S/1	1,950.00	
38	(SCI*) EMERGENCY BRAKE ACCELERATOR(EBA)	1EB6367	50,000.00	
39	(SCI*) PRESSURE EMERGENCY BRAKE VALVE NB12	2KB3683A	6,760.00	
40	(SCI*) SINGLE BRAKE INDICATOR ASSEMBLY	2EB6615	14,000.00	
41	(SCI*) ROLLER LEVER VALVE ASSEMBLY	3EB9505	18,000.00	
42	(SCI*) CUT OFF ANGLE COCK 1" IRS BP/FP	2KB4024 ALT.04	1,870.00	
43	EMERGENCY PULL BOX	1J112010040	8,750.00	
44	(SCI*) KBZ-10J 4001 DISC BRAKE UNIT (CUST. NO. ZV-90026-225/2210/101), W/O HAND BRAKE AND W/O SIGNALLING DEVICE	1EB8121A	2,71,040.00	
45	(SCI*) KBZ-10J 4001 DISC BRAKE UNIT (CUST. P.NO. ZV-90026-225/2120/101), W/O HAND BRAKE & W/O SIGNALLING DEVICE	1EB8121A	2,71,040.00	
46	(SCI*) KBZ-10J 4001 DISC BRAKE UNIT (CUST. P.NO. ZV-90026-225/1210/ 101) W/O HAND BRAKE & W/O SIGNALLING DEVICE-RII	1EB8121B	2,71,040.00	
47	(SCI*) KBZ-10J 4001 DISC BRAKE UNIT (CUST. P.NO. ZV-90026-225/1210/101) W/O HAND BRAKE & W/O SIGNALLING DEVICE-LH	1EB8121B	2,71,040.00	
48	(SCI*) BRAKE UNIT KBZ-10R 400L (CUST. P.NO. ZV-90026-227/2121/10) WITH HAND BRAKE & WITHOUT SIGNALLING DEVICE	1EB8122	3,96,000.00	
49	FLEXIBLE BALL CABLE-COACH-SET OF 2	3EB6619	2,42,550.00	
50	FLEXIBLE BALL CABLE LONG	3EB8066	1,18,800.00	
51	FLEXIBLE BALL CABLE SHORT	3EB8065	95,700.00	
52	(SCI*) BRAKE HOSE CONICAL TYPE	3EB9942	1,650.00	
53	(SCI*) HOSE CONNECTION 600MM	3EB8362	1,650.00	
54	FRAME ASSEMBLY FOR PMBS LHB	3EB9563	1,62,990.00	
55	CHECK VALVE ASSEMBLY	4EB5664	14,310.00	
56	INTERMEDIATE PIECE	4EB6345	9,675.00	
57	TAPER PLUG 1/4 BSP/ALLEN M10X1	DIN906	32.00	

58	EXTERNAL CIRCLIP A10 1MM	IS:3075-1	14.00	
59	O-RING 176.26X3.5	4EB9420/1	44.00	
60	O-RING 79.8X3.5	4EB9420/2	19.00	
61	O-RING 148.94X3.5	4EB9420/3	36.00	
62	O-RING 41.48X3.5	4EB9420/4	13.00	
63	O-RING 57.4X3.53	4EB9420/5	18.00	
64	O-RING 40X3.5	4EB9420/6	11.00	
65	O-RING 45.62X3.5	4EB9420/7	13.00	
66	O-RING 73.34X3.5	4EB9420/8	18.00	
67	O-RING 210.28X3.5	4EB9421/1	53.00	
68	O-RING 107.5X3.5	4EB9421/2	26.00	
69	O-RING 58.4X3.5	4EB9421/3	17.00	
70	O-RING 39.58X3.5	4EB9421/4	9.00	
71	O-RING 98.9X3.5	4EB9421/5	23.00	
72	O-RING 224.86X3.5	4EB9421/6	56.00	
73	O-RING 117.44X3.5	4EB9421/7	25.00	
74	O-RING 109X3.5	4EB9421/8	23.00	
75	O-RING 72.54X3.5	4EB9421/9	26.00	
76	O-RING 61.5X3.5	4EB9421/10	17.00	
77	O-RING 48.9X3.5	4EB9421/11	13.00	
78	RESERVOIR 6 LTR.	3EB6684	10,496.00	
79	PIPL 28 OD HL	3EB9462	1,440.00	
80	PIPE 10 OD C1A	3EB9463	468.00	
81	PIPE 10 OD C2A	3EB9464	354.00	
82	PIPE 18 OD C1	3EB9465	557.00	
83	PIPE 28 OD HBL	3EB9466	1,201.00	
84	PIPE 18 OD C2	3EB9467	752.00	
85	PIPE 10 ODT	3EB9468	453.00	
86	PIPE 10 OD FOR 6L RESERVOIR	3EB9470	340.00	
87	PIPE 22 OD FOR 75L RESERVOIR	3EB9475	1,742.00	
88	PIPE 22 OD FOR 125L RESERVOIR	3EB9476	1,044.00	
89	COMPRESSION SPRING	4EB6547	126.00	
90	O-RING	4EB6554	99.00	
91	PISTON	4EB6545A	118.00	
92	O-RING	4EB6546	135.00	
93	MAIN HOUSING M/C(EB3)	1EB6365	6,842.00	
94	BUSH (PART 2)	4EB6383	571.00	
95	GUIDE PIECE	4EB6374	159.00	
96	LOCKING SCREW	4EB6351	254.00	
97	BUSH (PART 1)	4EB6381	280.00	
98	BUSH (PART 1-LIP TYPE)	4EB6382	131.00	
99	VALVE PLATE TOP	3EB6339	473.00	
100	VALVE PLATE BOTTOM	3EB6338	223.00	
101	PILOT VALVE HOUSING M/C	3EB6364	1,180.00	

102	LOCKING PLUG (PILOT VALVE)	4EB6340	284.00	
103	BUSH	4EB6346	120.00	
104	INTERMEDIATE HOUSING M/C	3EB6369/A	4,780.00	
105	BUSH	4EB6353	72.00	
106	BUSH	4EB6354	118.00	
107	WING PLUG	4EB6358	230.00	
108	SUPPORT PIECE	4EB6377	53.00	
109	LOCATING SLEEVE	4EB6378	33.00	
110	MOUNTING BRACKET MACHINED	3EB6363	3,517.00	
111	COMPRESSION SPRING	3EB 6846A	23.00	
112	SCREWED CHOKE DIA 0.5	4A39064/3	16.00	
113	COMPRESSION SPRING	4EB6845B	53.00	
114	INTERNAL CIRCLIP 26X1.2	DIN472	36.00	
115	INTERNAL CIRCLIP 26X1.2	DIN472	36.00	
116	INTERNAL CIRCLIP 38X1.5	DIN472	59.00	
117	DUMMY PLUG 1"X25MM	SS:304	357.00	
118	ISOLATING COCK 1/2" WITHOUT VENT	4EB 9840	4,925.00	
119	SINGLE FERRULE FITTING 280D X 1" (SS-304)	4EB9759/5	2,805.00	
120	SINGLE FEERULE FITTING 18 OD X 1/2" (SS-304)	4EB9759/3	919.00	
121	SINGLE FEERULE FITTING 10 OD X 3/8" (SS-304)	4EB9759/2	792.00	
122	SINGLE FEERULE FITTING 22 OD X 1" (SS-304)	4EB9759/4	2,419.00	
123	ELBOW 22 OD X 3/4" (SS-304)	4EB9762	2,111.00	
124	ELBOW 10 OD X 3/8" (SS-304)	4EB9761	1,067.00	
125	HEX HEAD SCREW M8X25(S.S.)	DIN933	86.00	
126	PLAIN WASHER A8	4EB5897/1	9.00	
127	SCREW PLUG (LOCKING SCREW)	4B21552	117.00	
128	LOCATING SLEEVE	4A30480	23.00	
129	LOCKING PLUG M18X1.5	DIN906	45.00	
130	NAME PLATE	4EB6387	34.00	
131	PLAIN WASHER 10.4	DIN125	5.00	
132	Prevailing Torque Nut M6 (SS)	IS7002	90.00	
133	Conduit Speed Sensor (2 Mtr.)	1J112000041	245.00	
134	Conduit Dump valve (3.5 Mtr.)	1J112000041	428.00	
135	Conduit Dump Valve (7.5 Mtr)	1J112000041	918.00	
136	X1 Card	1J112010177	99,295.00	
137	X2 Card	1J112010178	99,295.00	
138	X1 Connector	1J112010152	11,950.00	
139	X2 Connector	1J112010153	11,950.00	
140	MANIFOLD-ISOLATING COCK WITHOUT VENT	2EB7922/1	25,850.00	
141	SILENT BLOCK FOR DISC BRAKE CALIPER		10,000.00	
142	SCREW (00006-153/.)		2,000.00	
143	BREATHING PLATE DBC		300.00	
144	VENTING PLUG DBC		300.00	
145	BOLT (M12x1.5)		300.00	

146	SPINDLE ASSY DBC		12,000.00	
147	CUTE RING SPINDLE YOKE DBC		750.00	
148	BOLT YOKE (M8) DBC		200.00	
149	STOPPER YOKE END DBC		500.00	
150	BOLT YOKE (M30 x 2) DBC		750.00	
151	PIN BRAKE PAD HOLDER		900.00	
152	MACHINED WASHER 34 IS: 2016-SS		300.00	
153	ADJUSTING RING (50 x 16)		1,000.00	
154	CYLINDER BODY LH MACHINED (WITHOUT HANDBRAKE) DBC		7,500.00	
155	HANGER MACHINED DBC		4,500.00	
156	ARM MACHINED AC/NAC DBC		6,000.00	
157	MIDDLE BRACKET (AC/NAC) DBC		7,500.00	
158	CYLINDER BODY RH MACHINED (WITHOUT HANDBRAKE) DBC		7,500.00	
159	BRAKE PAD HOLDER RII MACHINED DBC		8,000.00	
160	BRAKE PAD HOLDER LH MACHINED DBC		8,000.00	
161	ARM MACHINED (WITH HANDBRAKE) DBC		6,000.00	
162	MIDDLE BRACKET (POWER CAR) DBC		7,500.00	
163	HEXAGON HEAD SCREW ISO 4017-M4 x 16-5.8		100.00	
164	SPRING DOWEL SLEEVE LIGHT DIA 6 x 50		100.00	
165	HEXAGON CASTLE NUT (M24 x 3)		200.00	
166	BUSH CYLINDER POWER CAR (30 x 30) DBC		500.00	
167	ARM MACHINED POWER CAR WITHOUT HANDBRAKE) DBC		6,000.00	
168	BUSH(DIA42x20)		750.00	
169	X3 CONNECTOR WITH WIRING HARNESS (WSP)	1J112010137	11,050.00	
170	COMPRESSION SPRING	3EB6846A	23.00	
171	ISOLATING COCK 1/2" WITHOUT VENT	4EB9840	4,925.00	
172	JOP card	3EB8242/4	1,03,550.00	
173	JFP card.	3EB8242/6	1,16,070.00	
174	SPEED SENSOR (WITH 2mtr CABLE) (CUSTOMERP.NO.ZM004165)	1J112000023	94,400.00	

Note: - 1) Rates of condition-based items given in Annexure-E are basic rates inclusive of packing and freight charges. But exclusive of GST, which will be charged extra. Details of applicable GST shall be given with the offer. The list is not exhaustive. Other items may also be included in the offer being OEM of the Air Brake System.

2) Any other items required for SS-II & SS-III Schedule maintenance of LHB EOG/PC coaches, but not mentioned in above Annexures, shall be in the scope of the contractor.