

SCOPE OF WORK

1. **NAME OF WORK:** - AMC of Wheel Mounted Disc Brake System of Vande Bharat Coaches (M/s Knorr Bremse make) in Mechanical Workshop, Gorakhpur for Rake IC-2023 & IC-2024, consisting of 08 Coaches (02 Set EBU) in each rake (Total – 16 Coaches/04 Sets EBU).
2. **PERIOD OF CONTRACT:** -12 months from the date of issue of LOA.
3. **PLACE OF WORK:** -Mechanical Workshop, Gorakhpur.
4. **STARTING OF WORK:** -Within 45 Day for date of issue of LOA.
5. **WARRANTY PERIOD:** -The contractor shall give guarantee/warranty of 12 Months for repaired/ serviced items & 24 months for replaced items as complete assembly from date of commissioning of these items on coaches. However, the overhauling schedule does not cover the failure due to external circumstances such as fire, accident, explosion and theft, act of God. If any defect/ failure is noticed during the warranty period, contractor will rectify the defect/ failure free of cost within 15 days from date of issue of letter from primary depot subject to availability of condition based items, either to be provided by the IR- or to be arranged by the firm, 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.
6. **QUANTITY:** - 02 Rake of 08 Coaches (02 Sets EBU in each rake) - IC-2023 & IC-2024 (Total – 16 Coaches / 04 Sets EBU).
7. **Special Condition in Scope of work:** Items changed during repair/maintenance/warranty period should be reliable/genuine and as per standard of OEM's part No. Necessary documentarily evidence in support of items having been purchased from OEM or his authorized dealer shall be produced by tenderer.
8. **WORKING HOURS:** -
 - a. The work has to be carried out between 10:00 AM to 18:30 PM in all working day, However the contractor can work up to 10 PM duly taking the permission of administration depending upon the requirement of the work.
 - b. The work should be carried out only during working days and the contractor will not be permitted to work on Holidays and Sunday. However, if desired by the Railway administration, the contractor may be asked to carry out the work on Holidays and Sundays as well, depending upon the requirement of work.
 - c. The working time may be altered as per the need of the Railway and any such changes in timings shall be binding on the contractor. The contractor shall have to be prepared for managing his workforce according to such alteration in working time.
9. **SCOPE OF SUPPLY OF RAILWAY:** -
 - a. Storage space for tools, equipment and consumables shall be provided free of cost by the Railway as per availability. However, the contractor should make his own arrangement to keep the material in safe custody.
 - b. Electricity, water, compressed air for testing, EOT crane and fork lifter for undertaking the subject work will be provided by Railway at free of cost as & when required.
 - c. The Railway authority shall permit the contractor to work at nominated place. Railway may nominate the official for supervision of work.
 - d. The Railway shall issue the necessary permission letter to the contractor's working staff / engineer for their entry in Railway premises along with company photo identity card verified by Railway authority.
10. **SCOPE OF SUPPLY OF CONTRACTOR:** -
 - a. Sufficient manpower to complete the work within stipulated time.
 - b. Dedicated representative shall be posted to supervise the work and maintain proper data and records.
 - c. All the tools and equipments required to complete the work within stipulated time.

- d. The contractor shall ensure availability and usage of distinctive uniform and the Personal Protection Equipment (PPEs) (like helmets, safety shoes, hand gloves etc.) by their men which shall be commensurate with the severity of work.

Note: Any other work-related items not mentioned in the contractor's scope of supply but may be deemed necessary for the successful completion of work shall have to be arranged by the contractor.

11. RESPONSIBILITIES OF THE CONTRACTOR: -

- a. The contractor shall be prompt and vigilant towards the work at all times and maintain close liaison with the concerned railway supervisor during the work.
- b. The contractor shall be solely responsible for taking care of his/her staff & supervisor against any accident or safety risk. The entire liability arising out of injuries/death will rest solely on the Contractor.
- c. The contractor shall have to take permission for bringing necessary equipment and material inside the shop through personal transport if required. The firm must indicate whether the items are returnable or non-returnable while bringing anything inside the shop. It has to be noted that only returnable items will be allowed to be taken back by the firm.
- d. Sound and scientific housekeeping practices must be followed at all times. The scrap material removed from the coach shall be collected and disposed of at the nominated place provided by railway. No scrap should not be left scattered at the work premises. Loading of scrap shall be in scope of Contractor.

12. SCOPE OF WORK: -The scope of work in this tender includes carrying out SS-2 Maintenance work (M36) of Brake System. The work shall include following activity-

a. Pre-Inspection

- a. Safety Precautions: Ensure the train is isolated from the power supply (25 kV AC overhead line) and secured with wheel chocks. Depressurize the air brake system before commencing work. All the staff deputed should work in proper PPEs.
- b. Tools and Equipment: The contractor has to use only calibrated tools, pressure gauges, torque wrenches, multi-meters, specific to the Vande Bharat brake system.

b. The work shall include the following activities:

- a. Removal of valves for overhauling & fitment of overhauled valves from/on Train set to be done by contractor.
- b. Overhauling is preferred at the railway premises. If overhauling is to be done at Firm's premises then, Packaging & Transportation of valves for overhauling from workshop to firm's premises and collection of overhauled valves from firm's premises to workshop to be done by contractor.
- c. Set of valves identified for overhauling/replacement is attached as Annexure-A (EBU). Overhauling kits and consumables for valve overhauling to be provided by firm.
- d. The valves for overhauling will be jointly checked by firm and Nominated Railway representative prior to handing over for overhauling.
- e. Overhauled valves will be inspected by nominated Railway representative.
- f. The components connection joints leakage on fitment of components by firm to be checked by firm using as leak detector solution made with deionized water and a surfactant (soapy water) with system under pressure.
- g. Annexure-B contains Consignment stock for contingency replacement of damaged/non-overhaul able /non- repairable parts found during SS-2, which will be procured on condition basis from firm during SS-2 Schedule.
- h. On rake trial and testing of complete brake system to be supervised by firm's representative.

- c.** Cleaning, inspection, dismantling, overhauling, assembling, testing, adjustment, and minor repairs or replacements of components to maintain optimal braking performance, adhering to latest CAMTECH manual and RDSO/Railway Board guidelines and/or OEM specifications.
- d.** All the spares have to be supplied by the contractor as per CAMTECH Maintenance manual or OEM manual.
- e.** The SS-II Schedule (M36) of Vande-Bharat rake IC-2023 & IC-2024 consisting 08 Coaches i.e. 02 EBU Unit of each rake (Total – 16 Coaches/04 Sets EBU) is to be taken. Complete SS-2 schedule of each rake has to be completed within 60 days of handing over of rake. Firm to overhaul, fit and Test the valves within 60 days of handing over of rake. All on train activities to be completed within time to adhere to the 60 days time schedule for SS-II.
- f. Overhauling:**
- Overhauling of air brake components as per CAMTECH and OEM guidelines with material list attached as Annexure-A (EBU).
 - All Spare Part items as per Annexure-B (Condition bases item) which are required to be replaced during overhauling is to be provided from condition base item list.
 - KBI shall undertake overhaul of its own manufactured parts / equipment's only. KBI will not overhaul any part of other manufacturer which is fitted in allotted coach.
 - Condition based parts replacement shall be done after joint verification with railway staff.
 - All the spares i.e. must change items as well as condition-based items shall be inspected by the OEM and Test certificates from OEM shall be provided along with dispatch documents.
 - Any item repaired at contactors place then OEM work test certificate shall be submitted with the dispatch documents.
- g. Main Air compressor and auxiliary compressor:**
- a. KBI shall carry out overhauling of compressor under SS-II schedule as per CAMTECH manual (Replace resilient mounting & restrainer of all main Air compressors from condition base item as per Annexure - B).
 - b. Perform external cleaning, visual check and functional test, rectification of fault and torque of mounting bolts and marking as per the CAMTECH and OEM guidelines.
 - c. Check main air compressor running on TCMS.
 - d. Perform Air pressure Buildup test for individual compressors jointly with Railway staff and record for the same to be maintained.
- h. AIR GENERATION AND TREATMENT UNIT:** Perform external cleaning, visual check, changing must change items and functional test, rectification of fault and torque of mounting bolts and marking as per the CAMTECH and OEM guidelines.
- i.** Stripping and fitment of coach and bogie connections, installation lever, speed sensors as per CAMTECH and OEM guidelines for coach lifting and lowering for the schedule maintenance.
- j. Dump Valves & Control Valves:** Examine the Application Magnet Valve (AMV), Holding Magnet Valve (HMF), dump valves and distributor valves for signs of wear or contamination. Perform cleaning, overhauling and functional testing of all the valves.
- k. Brake Control Unit (BCU):** complete visual check, overhauling and function test of brake controls and WSP as per CAMTECH and OEM guidelines. Data downloading of WSP units, its analysis, diagnostics and rectification is part of this work.
- l. Brake Calipers and cylinders:** Perform external cleaning, visual inspection, function testing and maintaining proper brake pad and disc gap. The contractor must ensure free movement of brake caliper mounted on bogies. Painting (if required) as per OEM/ CAMTECH guidelines to be done by contactor with CAMTECH and OEM guidelines. Apply OEM specified lubricant (if applicable) as per schedule maintenance CAMTECH and OEM guidelines.

- m. Electrical Connections:** Inspect wiring, connectors, sensors and solenoids of the EP brake system and WSP for damage or loose connections. Change the damaged material from condition based items list.
- n. Air suspension control equipment:** Visual inspection, Cleaning, Overhauling, Testing and Adjustment of leveling valves, Duplex Check valve and Installation lever for proper functioning.
- o. Tyfon Horn:** This is a must change item of SS-II schedule. Low frequency and high frequency Tyfon Horn replacement to be done.
- p. Cleaning and Lubrication:**
- a. Air Filters:** Clean and/or replace air intake filters of the compressor to ensure uncontaminated air supply as per OEM guidelines.
 - b. Oil filters:** clean and /or replace micromesh oil filters as per SS-II guidelines in OEM manual.
 - c. Valves and Cylinders:** Remove dust, debris, or oil residues from AMV, H MV, and brake cylinders using OEM approved cleaning agents.
 - d. Mechanical Components:** Apply CAMTECH and OEM specified lubricants to brake calipers and moving parts of the parking brake mechanism.
- q. Work details:** The work has to be carried out as per CAMTECH manual and CAMTECH Maintenance Report and OEM work specifications. All the works and testing to be done as mentioned in CAMTECH/ OEM manual. The details of must change items is given in ANNEXURE-A and B. The work quality has to be adhering to OEM standards.
- r. Functional Testing and Adjustments:** The contractor has to follow the latest CAMTECH /OEM guidelines for testing of complete assemblies.
- a. Air compressor
 - b. BCU & WSP
 - c. Tyfon testing
 - d. Leakage testing of test points and components.
 - e. Functional testing of valves, transducers and sensors.
 - f. Leakage and functional testing of complete brake panel assemblies.
 - g. EP Brake System:**
 - Simulate brake application from the driver's cab and verify AMV energizes to supply air to brake cylinders.
 - Confirm H MV holds pressure during application and releases air to atmosphere during brake release.
 - Check response time of EP valves (should be near -instantaneous).
 - h. Functional Testing of Complete Basic Units (EBU):** This includes complete system checks, diagnosis and correction of any system failure.
- s. Component replacement:**
- The Firm should replace the all air brake components if found damaged or faulty and cannot be overhauled, from the condition based item list or provided by Railway.
 - Replace flexible hose pipes and other components as per Annexure- A.
 - Replace all damaged Valves and Components from condition based followed by retesting.
 - Only OEM items or parts to be used for fitment.
- t. Post-Maintenance Cleanup:**
- Remove all tools, debris, and waste materials from the work area.
 - Ensure all panels and covers are securely reattached.
- u. Acceptance criteria:**
- The air brake system must demonstrate full functionality (application, release, emergency and parking brake operations) with no leaks and defects.
 - All pressures and tolerances must meet CAMTECH and OEM specifications.

- V. Time period:** The complete rake is expected to be turned out within 60 days from arrival. The complete rake will be handed over to the firm for maintenance on arrival of rake at MWS/GKPS. The entire work from pre testing to final testing at MWS/GKP has to be done within 60 days. There should not be any delay in rake out turn from the firm work and testing.

Note – Air Brake Related work shall be monitor by **SSE/Air Brake Shop** and Main Air Compressor, Auxiliary Compressor, air generation and treatment unit and Air Dryer related work shall be monitor by **SSE/Millwright Shop**

POH for Vande Bharat (Train – 18) Brake System			
S. No.	Description of Work	Qty.	Unit
1	Overhauling & Unit Replacement charges for item as per annexure-A for EBU Unit	04	Set

13. DAMAGE TO RAILWAY PROPERTY: -

- The contractor shall be responsible to see that the work executed by him does not in any way infringe or damage the existing structures or other works in the area.
- The contractor is liable to take responsibility and rectify for the damage, if any, caused to the Railway property during the execution of the work. Any loss suffered by railways on account of damages by the contractor will have to be fully compensated by the contractor.

14. FIRE SAFETY COMPLIANCE IN WORKSHOP PREMISES (WHEREVER APPLICABLE) :-

- 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.
- 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.
- Storage and use of flammable items in use of contract (paints, diesel, LPG, oxygen-acetylene) must be in designated, ventilated areas only.
- The contractor must ensure use of fire-resistant PPE and deploy a trained fire watcher during welding, cutting, or grinding, wherever required.
- All temporary electrical connections must be taken only by certified electricians and removed after job completion. No cut wires will be allowed.
- Strict No Smoking compliance in all workshop areas and near flammable storage zones.
- Contractor staff must participate in fire drills, maintain good housekeeping, and ensure that cotton waste/oily rags are disposed of in metal bins.
- Hot work must not start without a valid hot work permit, and the fire watcher must stay 30 minutes after completion of work.
- The contractor must keep updated records of PPE issue and hot work permits.
- 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.

15. PENALTY: - Following penalties will be applicable in this contract:

- A penalty of Rs. 1000/- per day shall be imposed if the contractor fails to begin his work within 45 days from the date of issue of LOA.
- If Firm fails to complete the work within specified time give by railway a penalty of Rs. 4500/-per day up to the maximum limit of 5% of overhauling lot in default shall be applicable.
- If the contractor does not carry out the rectification work with immediate effect or leave the work in between, if required, and work is required to be carried out by Railways using its means, firm will be liable for a penalty of Rs 500/-per incident.
- During warranty period if failure occurs due to poor workmanship, contractor must attend the work in Coaching Depot/Division; contractor must rectify the work free of cost. A penalty of Rs. 200/- per failure will be levied to the contractor.
- Contractor must attend the site of defect as well as rectify the defect within 4 working days including the days of intimation on receiving communication through email/message/fax/telephone beyond which a penalty of Rs.500/- per day shall be levied.

- f. If the staff deployed by firm does not adhere to safety instructions or does not wear PPE/ Uniform a penalty of Rs 500/- per person per day will be imposed.
- g. In case of misconduct by firm's staff, firm will be liable for a penalty of Rs 200/- per incident.
- h. Work area should be kept clean and organized. If a firm fails to do so, a penalty of Rs. 500/- per occasion may be imposed on the contractor.
- i. If any damage to Railway property occurs due to contractor's poor workmanship or negligence, cost of the same as deemed suitable by the Railway or maximum a penalty of 5% of contract value shall be deducted from the contractor's bill.
- j. Penalty imposed by govt. authority due to non-compliance of statutory provision of laws or environmental standards shall be liable to be paid by the contractor.
- k. All the penalties will be deducted from running bills/SD/PG as per General Condition of contract
- l. The decision of Dy.CME/Works MWS GKP Regarding the imposition or waiving of penalties is final and binding on the contractor.

16. PAYMENT TERMS AND CONDITIONS: -

- a. No advance payment will be made in favour of the contractor.
- b. 100% payment of must change items for SS-II schedule, 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 annexure-A (EBU).
- c. 100% Payment (inclusive of GST) to be released for labour charges as per Joint Inspection report with Railways on monthly basis.
- d. 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.
- e. 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.
- f. The contractor will submit the bill in triplicate which should be complete and correct in all respects. Bill will be submitted to the concerned SSE/Air Brake Shop or any other nominated supervisor of Air Brake Shop. After counter verification through the concerned controlling officer, the bill will be forwarded to the competent authority for further payment process.
- g. Payment shall be made by Sr.AFA/ Workshop, Mechanical Workshop, Gorakhpur as per the Railway norms. All the taxes legally liable shall be deducted at source from the amount payable to the contractor.
- h. While processing payment of any 'On Account Bill' or 'Final bill' or release of 'Advances' or 'Performance guarantee/Security Deposit', contractor shall submit a certificate to the Engineer or Engineer's representative that "I have uploaded the correct details of contract labourers engaged in connection with this contract and payment made to them during the wage period in Railway's ShramikKalyan portal at 'www.shramikkalyan.indianrailways.gov.in' -----Month,-----Year."

17. BILL PASSING OFFICER:Dy.CME/Works/Mechanical Workshop/Gorakhpur.

18. BILL PAYING AUTHORITY:Sr.AFA/Workshop, Mechanical Workshop, Gorakhpur.

Annexure- A (EBU)

Periodic Maintenance Schedule (SS-2/M36) - EBU					DTC	MC (Each)	TC	DTC+2MC+TC
S. No.	Valve Description	Part No.	Overhauling/ Replacement part	Overhaul / Unit replacement	Qty per car			Qty per Basic Unit
1	CHECK VALVE	8.000.0.769.003.7	OPK00043	Overhaul	1	-	-	1
2	ANGLE COCK	I.2.411/3	XKI/KIT/02839	Overhaul	2	2	2	8
3	ANGLE COCK	I.2.411/6	XKI/KIT/02839	Overhaul	2	2	2	8
4	DUPLEX CHECK VALVE	I.3.1902	KIT1-I.3.1902	Overhaul	2	2	2	8
5	MEAN-PRESS. VALVE	I22950	OPK00683	Overhaul	2	2	2	8
6	DRIV. BRAKE VALVE	I69434/C	OPK01390	Overhaul	1	-	-	1
7	DRAIN VALVE	I81535	OPK02765	Overhaul	1	-	-	1
8	MAGNET VALVE	I82553/110	KN- XKI/KIT/03000/X	Overhaul	1	-	-	1
9	AIR FILTER	I88747	OPK00665	Overhaul	1	1	2	5
10	PISTON VALVE	I89525	OPK00007	Overhaul	2	2	2	8
11	CHECK VALVE	I90476	OPK00304	Overhaul	-	-	2	2
12	MAGNET VALVE	I94900/1110	OPK00029	Overhaul	2	-	-	2
13	MICROMESH OIL FILT	I98554	OPK00600	Overhaul	1	-	-	1
14	PRESS.REDUC.VALVE	II36508/0500	OPK00575	Overhaul	1	-	-	1
15	PRESS.REDUC.VALVE	II36508/0410	OPK00575	Overhaul	1	1	1	4
16	PRESS.REDUC.VALVE	II36508/0600	OPK00575	Overhaul	1	1	1	4
17	CHECK VALVE	II40529	OPK00196	Overhaul	6	6	6	24
18	RELAY VALVE	II46448/001	OPK01369	Overhaul	2	2	2	8
19	PRESS. LIMIT VALVE	II62590	OPK00871	Overhaul	2	2	2	8
20	OVERFLOW VALVE	II63947/0750	OPK03187	Overhaul	1	1	1	4
21	ANTI-SKID VALVE	II64108/0000024	OPK01506	Overhaul	4	4	4	16
22	CHECK VALVE	II67897	OPK02233	Overhaul	1	1	1	4
23	IMPULSE VALVE	II68655/110	OPK03148	Overhaul	1	1	1	4
24	LEVELLING VALVE	II68831	KIT-I.3.1901	Overhaul	4	4	4	16
25	AIR DRYER UNIT	II94016/12110	KN- XKI/KIT/03003/X	Overhaul	1	-	-	1
26	MAGNET VALVE	II97463/110	XKI/KIT/II97463	Overhaul	2	2	2	8
27	MAGNET VALVE, WITHOUT PLUG	II99620/110	KN- XKI/KIT/03002/X	Overhaul	1	-	-	1
28	AIR FILTER	WBFIL100AA001	KN- XKI/KIT/03001/X	Overhaul	2	1	1	5
29	DISTRIBUTOR VALVE	WBSTV200AA009	OPK01072	Overhaul	1	1	1	4
30	SEALING RING	457289		Unit replacement	1	-	-	1
31	SPRING WASHER	469646		Unit replacement	-	-	8	8
32	SPRING WASHER	469658		Unit replacement	4	4	4	16
33	SPRING WASHER	470090		Unit replacement	11	25	25	86
34	SEALING STRIP	504853		Unit replacement	3.2	6	6	21.2
35	O-RING	A37523		Unit replacement	4	5	5	19
36	O-RING	A95468		Unit replacement	15	15	15	60
37	O-RING	B57679		Unit replacement	4	5	5	19
38	DIAPHRAGM	B71484		Unit replacement	2	4	4	14
39	NYLOC NUT	C200084		Unit replacement	8	8	8	32
40	VENTING VALVE	I46367		Unit replacement	10	2	4	18
41	DRAIN VALVE	I73781		Unit replacement	6	6	7	25
42	PRESSURE GOVERNOR	II35829/07060		Unit replacement	-	-	1	1
43	PRESSURE GOVERNOR	II35829/07565		Unit replacement	1	1	1	4
44	PRESSURE GOVERNOR	II35829/10075		Unit replacement	1	-	-	1

45	PRESSURE GOVERNOR	II35830/00604		Unit replacement	2	2	2	8
46	PRESSURE GOVERNOR	II35830/01815		Unit replacement	2	2	2	8
47	PRESSURE GOVERNOR	II35830/04535		Unit replacement	2	2	2	8
48	PRESS.REGULATOR	II48135		Unit replacement	2	2	2	8
49	BALLCOCK	II53483/1A1		Unit replacement	1	-	-	1
50	BALLCOCK	II53483/2A1E		Unit replacement	2	2	2	8
51	BALLCOCK	II53484/1A1E		Unit replacement	1	-	-	1
52	BALLCOCK	II74553/2A1RE		Unit replacement	1	1	1	4
53	BALLCOCK	II74560/2A1RE		Unit replacement	1	-	-	1
54	BALLCOCK	II74573/2A1RE		Unit replacement	5	5	5	20
55	BALLCOCK	II74581/2A1RE		Unit replacement	2	1	3	7
56	HOSE CONNECTION	II76800		Unit replacement	5	-	-	5
57	HOSE PIPES	II90265/06006NN		Unit replacement	2	2	2	8
58	HOSE PIPES	II90265/06416NN		Unit replacement	4	4	4	16
59	HOSE PIPES	II93453/06416NQ		Unit replacement	8	8	8	32
60	HOSE PIPES	II93453/06608NQ		Unit replacement	4	4	4	16
61	SAFETY VALVE	II91919/02100		Unit replacement	-	-	1	1
62	SAFETY VALVE	II91919/02105		Unit replacement	1	-	-	1
63	SAFETY VALVE	II91919/02120		Unit replacement	1	-	-	1
64	HOSE FP	KND-I75882/560/KI		Unit replacement	1	2	2	7
65	HOSE FP	KND-I75882/670/KI		Unit replacement	1	-	-	1
66	HOSE BP	KND-I75888/670/KI		Unit replacement	1	-	-	1
67	FLAT GASKET	N62882/008		Unit replacement	15	15	16	61
68	PRESSURE SENSOR	STN29890		Unit replacement	16	14	14	58
69	HUMIDITY INDICATOR	I4.3087		Unit replacement	1	-	-	1
70	BRAKE COUPLING	I75888/455/KI		Unit replacement	1	2	2	7
71	GUARD EMERG. BRAKE VALVE	II90746		Unit replacement	1	-	-	1

Annexure-B (List of Condition Base Item)

S. No.	Description	KBI Kit Part No.	Advertise Unit Rate (in Rs) (Exclusive of GST)	Accepted Unit Rate (in Rs) (Exclusive of GST)
1	Screw plug	451486	19.69	
2	Sealing ring	457289	10.45	
3	Washer	464760	11.94	
4	Fastening clamp	469502	118.13	
5	Hexagon nut	469598	111.25	
6	Spring washer	469658	5.72	
7	Spring washer	470090	31.63	
8	Fastening clamp	476988	350.12	
9	Flat head ph screw	479712	236.25	
10	Sealing strip	504853	1050.34	
11	Check valve	8.000.0.769.003.7	32025	
12	Dry-type air filter	8.000.0.923.748.9	47421.96	

13	Coupling	8.120.0.700.006.6	65412.48	
14	Three-phase motor	8.121.0.072.845.6	405287.17	
15	Compressor set	8.121.2.321.211.9	1317750	
16	Compressor	8.121.2.321.S00.9	609218.61	
17	Resilient mounting	8.181.0.085.001.7	43875.3	
18	O-ring	A37523	204.28	
19	Sleeve	A70321/2	122.33	
20	O-ring	A95468	7.56	
21	O-ring	B57679	89.59	
22	Diaphragm	B71484	66.96	
23	Brake pad	C105255/35G5X	2834.24	
24	Pressures witch	C111028/10027	27010.97	
25	Pole wheel	C192816	2758.9	
26	Bracket	C196590	577.5	
27	Nyloc nut	C200084	28.22	
28	Terminal block	C211724	2968.33	
29	Terminal block	C212652	4856.67	
30	Terminal block	C212801	4729.62	
31	Nozzle	C68263/60	174.38	
32	Nozzle	C68263/70	207.27	
33	Crimp connection	C71225	174.25	
34	Angle cock	I.2.411/3	4289.04	
35	Angle cock	I.2.411/6	4289.04	
36	Duplex check valve	I.3.1902	3705.78	
37	Humidity indicator	I.4.3087	4530.75	
38	3pinconnector	I.4.3103/1	1771.88	
39	3pinconnector	I.4.3103/2	2012.5	
40	Mean-press.Valve	I20871/0	10000.8	
41	Mean-press.Valve	I22950	16748.81	
42	Venting valve	I46367	172.66	
43	Test fitting	I68943/K	3369	
44	Driv. brake valve	I69434/C	74564.13	
45	Drain valve	I73781	2541	

46	Brake coupling	I75888/455/KI	2126.25	
47	Drain valve	I81535	48207	
48	Magnet valve	I82553/110	15818.25	
49	Silencer	188533	21469.67	
50	Dummy chain couple	I8868	2500	
51	Air filter	I88747	8350.34	
52	Piston valve	I89525	6967.41	
53	Magnet valve	I94900/1110	21349.56	
54	Micromesh oil filter	I98554	35574.68	
55	Reducing bush	ICF/STD-3-5-36/10	908	
56	Terminal block	II102854	4911.14	
57	Air reservoir	II104741/0752	43803.64	
58	Brake caliper unit	II105236/24MX	214000	
59	Brake calliper unit	II105239/56124MX	270000	
60	Gauge (MR-BP)	II107056	6595.58	
61	Pressure governor	II35829/07565	13950	
62	Pressure governor	II35829/10075	15900	
63	Pressure governor	II35830/00604	13412.18	
64	Pressure governor	II35830/01815	15364.94	
65	Pressure governor	II35830/04535	12379.89	
66	Interm . flange	II35930	1782.39	
67	Press. reduc. valve	II36508	15179.93	
68	Press. reduc. valve	II36508/0410	17123.48	
69	Press. reduc. valve	II36508/0600	21260.45	
70	Check valve	II40529	4634.56	
71	Grounding	II43521	2309.63	
72	Test fitting	II46182	2072.88	
73	Relay valve	II46448/001	23243.82	
74	Test fitting	II48013	2280.77	
75	Press. regulator	II48135	21204.79	
76	Test fitting	II51150/A	11844	
77	Tyfon	II51213	25736.92	
78	Tyfon	II51466	31647.58	

79	Ballcock	II53483/1A1	15750	
80	Ball cock	II53483/2A1E	12777.35	
81	Ball cock	II53484/1A1E	14108.35	
82	Press. limit valve	II62590	35677.9	
83	Over flow valve	II63947/0750	12233.37	
84	Anti-skid valve	II64108/0000024	16691.27	
85	Wheel-m. brake disc	II64256/1	72000	
86	Test fitting	II65577	12507.31	
87	Check valve	II67897	3774.93	
88	Impulse valve	II68655/110	18765.09	
89	Levelling valve	II68831	8764.88	
90	Installation lever	II73437	2625	
91	Ball cock	II74553/2A1RE	23030.39	
92	Ball cock	II74560/2A1RE	15455.92	
93	Ball cock	II74573/2A1RE	19268.66	
94	Ball cock	II74581/2A1RE	6609.72	
95	Hose connection	II76800	1707.62	
96	6"single pr. Gauge	II88828	5213.2	
97	Grounding cable	II88953	642.86	
98	Hosepipes	II90265/06006NN	2534.73	
99	Hosepipes	II90265/06416NN	5079.53	
100	Hosepipes	II93453/06416NQ	2882.62	
101	Hosepipes	II93453/06608NQ	2810.75	
102	Guard emerg. Brake valve	II90746	12200.29	
103	Safety valve	II91919/02105	12472.56	
104	Safety valve	II91919/02120	5557.78	
105	Air dryer unit	II94016/12110	288964.3	
106	Magnet valve	I97463/110	22787.71	
107	Protection cover	II97669	23196.01	
108	Air reservoir	II97807	95960.55	
109	Air reservoir	II97812	42541.96	
110	Magnet valve, without Plug	II99620/110	17968.62	
111	Hose FP	KND-I75882/560/KI	2606.6	

112	Hose FP	KND-I75882/670/KI	2728.11	
113	Hose BP	KND-I75888/670/KI	2729.27	
114	Protection cover	KP0158720	50892.19	
115	Fuse holder	KP1275410	130.07	
116	End plate	KP1275413	13.7	
117	Stopper	KP1275414	20.69	
118	Cable gland	KP1287874	772.49	
119	Cable gland	KP1287876	411.26	
120	Connector	KP1436930	1614.38	
121	Terminal block	KP4138515	5300.14	
122	Terminal block	KP4181705	4721.38	
123	Terminal block	KP4319141	3507	
124	Terminal block	KP4319188	4356.87	
125	Terminal block	KP4319385	3835.13	
126	Terminal block	KP4319417	4704.68	
127	Crimp contact	N15702/13	75.68	
128	Crimp contact	N15702/18	119.75	
129	Crimp contact	N15702/2	109.54	
130	Crimp contact	N15702/7	73.21	
131	Connecting cable	N62148/01500	3024	
132	Plug	N62239/6	85.52	
133	Contact	N62239/9	97.28	
134	Flat gasket	N62882/008	65.6	
135	Connecting cable	N63976/01000	1724.7	
136	Connecting cable	N63976/02000	3308.34	
137	Power supply	STN25089	50977.87	
138	Pressure sensor	STN29890	13391.07	
139	Counter-connect. s	STN30711	11780.5	
140	Ground wire	STN30896/0100	432.84	
141	Ground wire	STN30896/0150	217.8	
142	Counter-connect. s	STN30981	2154.63	
143	Speed sensor	STN31451/120010U	42317.18	
144	Counter-connect. s.	STN33642/F003	1630.05	

145	Counter-connect. s.	STN33642/F008	3672.9	
146	Circuit board	STN38950	66604.26	
147	Counter-connector	STN39034	16741.44	
148	Circuit board	STN39577/201	86891.49	
149	Circuit board	STN39580/102	94849.73	
150	Circuit board	STN39580/103	105490.53	
151	Electro mechanic	STN42166	27356.12	
152	Counter-connect.s.	STN42260/1	10055.85	
153	Counter-connect.s.	STN42260/2	10147.67	
154	Counter-connect.s.	STN42260/4	10096.33	
155	Counter-connect.s.	STN42260/6	10102.6	
156	Coding plug	STN43614/0300000	22771.3	
157	Electro mechanic	STN43778	27185.97	
158	Electro mechanic	STN43780	18318.05	
159	Electro mechanic	STN43797	32865.78	
160	Set of connectors	STN44115	70347.32	
161	Connector	STN44115/101X	4692.19	
162	Connector	STN44115/103X	4297.2	
163	Set of connectors	STN44116	70024.63	
164	Connector	STN44116/102X	4336.11	
165	Connector	STN44116/104X	4345.56	
166	Electro mechanic	STN44295	33798.49	
167	Air filter	WBFIL100AA001	7305.56	
168	Distributor valve	WBSTV200AA009	36152.13	
169	Protection cover	II97696	31496.85	
170	Protection cover	II97669	23196.01	
171	Protection cover	II72978	32023.6	
172	Protection cover	II104727	22024.12	
173	Plate	C201153/1	136.37	
174	Plate	C201153/2	136.5	
175	Plate	C201153/7	136.42	
176	Plate	C90075	894.52	
177	Plate	C201153/6	136.47	

178	Plate	C201153/8	133.56	
179	Safety valve	II91919/02100	29400	
180	Pressure governor	II35829/07060	17542.88	
181	Auxiliary compressor	8.010.1.321.110.8	515000	
182	Application magnet valve	II74153/024	7350	
183	Venting magnet valve	II74151/024	7350	
184	Check valve	I90476	9116.1	
185	BCU mounting plate	II107110	51528.75	
186	B01 Mounting plate	II104860/1	50405.25	
187	B02 mounting plate	II104694/1	50360.63	
188	B07 mounting plate	II104718/1	25221	
189	LB mounting plate	II97698	27092.63	
190	U12 mounting plate	II104697	24722.25	

Note: The firm being OEM of brake system for the Vande Bharat Rake. So, this list is not exhaustive. Any other item of OEM to be provided by firm on requirement basis during work.