



**WESTERN COALFIELDS LIMITED**  
**( A SUBSIDIARY OF Coal India Limited )**

MATERIALS MANAGEMENT WING, COAL ESTATE, CIVIL LINES, NAGPUR - 440 001.  
PHONE : PBX : 0712-2611381, 2510691 Extn : 5606, 5861, Fax : 0712-25 10284

**Supply Order No. 12000110220183**

**DT: 04.12.2020**

**SUPPLY ORDER**

To,  
**M/s BEML Limited**  
V<sup>th</sup> Floor, Unity Building,  
J C Road, **Bangalore - 560002**

Vendor Code : 416002  
Vendor Category : Manufacturer  
FAX : 0712-2249997

Dear Sir,

- Sub : Formal Order for Supply, Installation, and commissioning of Crawler mounted 320 HP Dozer [(Engine Net Power Range 235KW to 250KW) / (315.135 HP - 335.25HP)] complete in all respects along with spares and consumables for 12 months of warranty period from date of commissioning of the equipment and thereafter Spares and Consumables for a period of 36 Months.
- Ref : 1. WCL Tender Enquiry no: WCL-hq-pur-yvr-ra-e062-2020-21 (tender id 2020\_WCL\_178311\_1) (E-268838) opened on 31.08.2020, Price bid / reverse Auction held on 07.10.2020  
2. Your offer / Bid ID number: 550287 and subsequent submission of shortfall / confirmatory documents  
3. Your letter no BEML/MN/209/WCL/BD155/720 dt 12.10.2020

This has reference to above. We are pleased to place Formal Order on you for the Supply, Installation, and commissioning of Crawler mounted 320 HP Dozer [(Engine Net Power Range 235KW to 250KW) / (315.135 HP - 335.25HP)] complete in all respects along with spares and consumables for 12 months of warranty period from date of commissioning of the equipment and thereafter Spares and Consumables for a period of 36 Months at the rates, following terms and conditions given and General conditions of Contract enclosed :-

Description	Ordered Qty (nos)	Unit FOR Destination Price Rs.	Extended value Rs.
Supply, Installation, and commissioning of Crawler mounted 320 HP Dozer [(Engine Net Power Range 235KW to 250KW) / (315.135 HP - 335.25HP)] complete in all respects along with spares and consumables for 12 months of warranty period from date of commissioning of the equipment and thereafter Spares and Consumables for a period of 36 Months and as per technical specifications, Model BD155 powered by <b>BEML Make Engine model BS6D170-1</b> ; (Replacement requirement/NCD : 4 nos; Additional requirement / PCD : 1 no)	5	1,76,73,000.00	8,83,65,000.00
Freight and Insurance charges			Inclusive
GST @ 18% on FOR destination price of 5 Dozers			1,59,05,700.00
Sub-Total value of Equipment and GST on equipment			10,42,70,700.00
cost of spares & consumables for 1 <sup>st</sup> year for 5 dozers @ Rs. 8,52,755.00 *			42,63,775.00
cost of spares & consumables for 2 <sup>nd</sup> year for 5 dozers @ Rs.25,20,865.00			1,26,04,325.00
cost of spares & consumables for 3 <sup>rd</sup> year for 5 dozers @ Rs. 62,15,310.00			3,10,76,550.00
cost of spares & consumables for 4 <sup>th</sup> year for 5 dozers @ Rs. 28,71,670.00			1,43,58,350.00
Spares & Consumables for 1+ 3 years for each machine for 5 dozers @ Rs. 1,24,60,600.00 / equipment			6,23,03,000.00
GST on above spares and consumables (1+3 years) for 5 dozers @ Rs. 25,20,543.20/ equipment			1,26,02,716.00
Total cost of equipments, spares for 4 years before availing ITC on GST			17,91,76,416.00
TCS @ 0.1% on total value of equipments, spares for 4 years before availing ITC on GST			1,79,176.42
Total cost of equipments, spares for 4 years before availing ITC on GST + TCS @ 0.1% on total value			17,93,55,592.42

**Total Value of the order: Rs.17,93,55,592.42** (Rupees seventeen crores ninety three lakhs fifty five thousand five hundred ninety two and paisa forty two only).

*Signature*

*Signature*

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Supply Order no I2000110220183 dt 04.12.2020 for supply of BD155 Dozers; M/s BEML Ltd

The present applicable rate of GST on individual spares is indicated in Annexure -C enclosed.

\* Note: To be supplied along with the equipment

The detailed technical specifications, scope of supply of technical requirement as per Annexure A enclosed.

Terms and Conditions:

1. Price: The Prices are FIRM on FOR Destination basis inclusive of packing & forwarding charges, Freight and transit insurance upto destination. Safe arrival of the consignment at destination shall be your responsibility. Supply of Equipment will be made from BEML Ltd, KGF and supply of spares and consumables will be made from BEML Ltd, Chandrapur.

2. GST: GST shall be paid extra as applicable at the time of Dispatch within the stipulated delivery period. Input Tax Credit benefit shall be availed by WCL, so the firm has to submit GST compliant Invoice along with the supplies. In case of spares (to be supplied for 4 years), GST applicable is different for different items, as given by the firm as applicable at the time of delivery and ITC shall be availed by WCL. You have to comply with the terms and conditions of GST Act/ Rules such as issuance of Tax Invoices, ensure payment of GST and enabling mechanism to facilitate Input Tax credit by WCL. You should upload the Tax Invoices/ Debit Note/ Credit Note in GST Portal, make payment of GST and file returns in time, as prescribed under GST Act and Rule to facilitate WCL to avail Input Tax Credit (ITC) as per eligibility under GST. In case WCL is unable to avail ITC or any liability arises to WCL due to failure on the part of you to comply the above provisions, the entire amount including Interest (If any) borne by WCL shall be recovered from you. The present rate of GST applicable on individual items of spares is as per Annex C, enclosed. The current rate of GST is as under:

Equipment	: 18%.
Spares and consumables	: As indicated by the firm (item-wise)

3. Delivery: The delivery shall be completed within 4 months, which shall be reckoned from the 7<sup>th</sup> day of order. Early supplies are acceptable. No material to be supplied without delivery extension. Request for extension of delivery period to be made within the schedule delivery period. Even if the materials are unloaded at the Stores, the same shall be at the risk and cost of the supplier and shall not be accepted unless the supplier has obtained the extension of delivery period.

Grace Period: A grace period of 25% of original delivery period or 21 days, whichever is earlier, unless specifically disallowed will be applicable.

Where supplies are made within the grace period, there is no necessity for any extension in delivery period and the paying authorities shall make payment without any amendment to the contract delivery period. No liquidated damages are leviable in respect of supplies made within the grace period. The extra expenditure, the purchaser may have to incur on account of increase/fresh imposition of GST/CST/VAT, Excise/Customs Duty etc. which takes place within the above grace period will also not be recoverable from the suppliers.

The grace period is allowed as a matter of grace and is not intended to operate as extension of the delivery period and the same will be available only for deliveries and not for offering stores for inspection ( in cases of pre- dispatch inspections) which should be made within the original delivery period or the re-fixed date of delivery.

If the stores are tendered for pre-dispatch inspection within the original delivery period stipulated in the contract and the firm delivers the stores within the grace period, the purchaser is bound to accept the stores even though the inspection was completed after the delivery date.

The grace period will only apply to the original contract delivery period/refixed delivery period and will not be applicable once an extension of delivery has been granted.

In case of scheduled delivery period, grace period shall be limited to 25% of original delivery period or 21 days, whichever is earlier, irrespective of delay in particular phase of delivery

4. Guarantee / Warranty / Special Guarantee: (Also refer B.6 and B.7 of Annexure "A")

A. Composite Warranty/ Guarantee: You shall warrant that the equipment supplied under this contract is:--

a) In accordance with the contract specifications.

b) The equipment shall have no defects arising out of design, material or workmanship & the Complete Equipment shall be warranted for 12 months from the accepted date of commissioning.

The warranty shall cover for total equipment so that ultimate responsibility lies only with you although components may be supplied by different suppliers to you.

c) The Equipment will be warranted against any manufacturing defects / workmanship for a period of 12 months from date of commissioning. Any defect observed on this account shall be attended to immediately.

B. Special Guarantee:

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*Signature*

*Signature*

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a) You must ensure that there is no major breakdown due to manufacturing / design defect during the warranty period. In case such breakdown occurs, the purchaser will reserve the right to extend the warranty period suitably.

b) The complete Equipment consisting of All Assemblies/ sub Assemblies/ components eg. Engine, Transmission, Final Drive, Air conditioning System, AFDSS, Under Carriage, Hyd System, Chassis/ Structure, Blade Assy, Brake System, Battery, Engine Hour Meter & Auto Electricals etc shall be covered for suitable replacement/ Repairs (on merit of the case), free from all costs to the purchaser (Over and above the list submitted along with the bid), during total 48 (forty eight) months from accepted date of commissioning.

c) The following guarantee will apply for the different components from the date of commissioning:

i) Complete engine system - 24 months or 6000 hours (whichever is earlier)

In case of failure of engine system within 6000 hrs, the failed components of the engine system will have to be replaced / repaired depending on the merit of the case, free of cost by you.

ii) Transmission Assy. - 24 months or 6000 hrs (whichever is earlier)

iii) Undercarriage set - 24 months or 4000 hours (whichever is earlier),

iv) Final Drive (excluding Sprocket) and Steering System - 24 months or 6000 hrs (whichever is earlier)

v) Engine Hour Meter - 12 months or 3000 hrs (whichever is earlier)

d) Air conditioning Systems and AFDSS system along with the all safety devices are to be maintained and kept operative by you throughout the contract period.

You will be required to stock spares parts to take care of entire Performance period. Spares should be available immediately for replacement against the breakdowns.

**C. Guaranteed Availability:** In accordance with the provisions of clauses B.7.2.2 and B.7.3.2 of the Technical Specifications, the Supplier shall guarantee that the availability of the equipment shall be not less than 75% (seventy five per cent) during entire 48 months from accepted date of commissioning (to be calculated Annually/ for each year).

**5. Performance Bank Guarantee:** You have to submit performance bank guarantee as per format at Annexure - H & as per clause no 9, for 10% of the order value (landed cost) of equipment plus 1st, 2nd, 3rd and 4th year spares and consumables valid for a period of 51 months of from the date of Commissioning of Equipment to cover the guarantee period i.e. Rs. 1,79,35,560.00 (rupees one crore seventy nine lakhs thirty five thousand five hundred and sixty only) and the same shall be released on receipt of satisfactory performance throughout the guarantee period. The release of the Performance Bank guarantee(s) after above indicated period, shall be subject to satisfactory performance of the equipment/ items during the warranty period and fulfilment of contractual obligations failing which, action for further extension or encashment of PBG, as deemed suitable shall be taken. The Performance Bank Guarantee shall be released after expiry of validity period if no claim is pending. The PBG may be submitted equipment also.

The PBG extension, if any, shall be done on or before expiry of original date of expiry of bank guarantee. The Bank Guarantee shall be released after successful completion of the guarantee/ warranty and Performance Guarantee period after confirmation from GM(EXCV)HOD, WCL(HQ)s.

**6. Inspection:**

a. **Pre-despatch Inspection:** Pre dispatch inspection shall be carried out by CM(Excv), CIL, Bangalore / representative of GM(Excv) I/C, WCL Hqrs or any other agency appointed by WCL and Final inspection of the consignment shall be carried out at the destination stores, which will be arranged by the consignee on receipt of stores. The equipment must be delivered at Consignee's project within 15 days or earlier from the date of inspection and clearance by CIL's / WCL's representative.

b. **Final Inspection:** Final inspection shall be carried out at the consignee stores

**7. Payment Terms:**

Equipment and initial spares and consumables for 12 months to be supplied along with equipment: For Payment of equipment and consumable spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment:

80% value of the equipment and consumable spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment and 100% taxes and duties and other charges excluding erection & commissioning charges shall be made within 21 days after receipt and acceptance of materials at site at the consignee's end and submission and Acceptance of Performance Bank Guarantee valid till 3 months after the completion of 48 months period from the date of commissioning of all the equipment covered in the contract.

Balance 20% payment including erection & commissioning charges shall be made after successful completion of erection, testing, commissioning and final acceptance of the equipment (along with the accessories) upon presentation of successful commissioning certificate, signed by Staff Officer of the technical department of the area / Area General Manager of WCL, where the equipment has been deployed and confirmation of receipt of DRR in respect of spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment by the paying authority.

For payment of Spares and consumables for 6 years after 12 months of warranty period from the date of

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*WCL*

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commissioning of the equipment: 100% Payment for spares and consumables for 2<sup>nd</sup> to 4<sup>th</sup> year of operation shall be paid on lot basis within 21 days, after receipt and acceptance of Spares and Consumables at site by the consignee or submission of bills whichever is later.

8. Security Deposit: Exempted being PSU.

9. Bank Guarantee towards SDBG / PBG (as per clause no 14 of section III)

For arriving at the value for Bank Guarantee to be submitted, the order value will be arrived at by adding all the Taxes & Duties applicable to the Free Delivery at Site Price of the materials on order as applicable on the date of opening of price bid.

The bank guarantee issued by the banker of the firm shall be operational for all purposes at Nagpur branch (Maharashtra). The Bank Guarantee issued by the issuing bank on behalf of the supplier in the favour of Western Coalfields Ltd shall be in paper form as well as issued under "Structured financial messaging system". The details of beneficiary for issue of BG under SFMS platform is furnished below:

Name of beneficiary and details	
Name	Western Coalfields Ltd
Area	Head Quarter
Bank A/c No: / Cust ID of beneficiary	Current Account no: 005905018053; Customer Id: 556096497 ; ICICI Bank Ltd, Commercial Banking, 9C/A & 9C/B, Ground Floor, Shriram Towers, LIC Square, Nagpur - 440001, Maharashtra
IFSC code	ICIC0000059
Bank Manager Name & Ph no:	UJJWAL KITE: Ph n: 0712-6627389
BG ADVISING MESSAGE - 760COV / 767COV via SFMS	
Field Number	Particulars
7035	ICICI0000059
7037	WCL556096497

The original bank guarantee issued by the issuing bank shall be sent by the issuing bank to the following address by Registered post / Speed Post to " General Manager (MM) I/c, Materials Management Wing, Western Coalfields Limited, HQ, Coal Estate, Civil Lines, Nagpur - 440001, Maharashtra" by **Registered Post/AD**.

Any extension / amendments to the BG shall be done following the same procedure as above.

For ready reference and updation of BG in WCL portal , it is necessary that BG issuing / amending bank send the BG advise in the form of message format 760COV /767COV via SFMS ( Structured Financial Messaging System ) as provided by RBI.

In the event of BG issuing / amending bank not sending the message 760COV /767COV or committing any error while capturing the details at least in the above mentioned field, BG confirmation through online portal would not be updated if issuing bank does not adhere to advisory, WCL will not be responsible

The above particulars are to be incorporated by the issuing bank properly while issuing BG under SFMS mode to avoid any problem in future.

Original bank Guarantee issued by the Issuing Bank shall be sent by the Issuing Bank to concerned Department/Area by Registered/ Speed Post.

The beneficiary's bank/advising bank shall send a copy of advice received under SFMS mode to concerned Area/HQ through e-mail at their e-mail id and provide print out of the said message from advising bank with seal and signature, to the Finance Dept, of concerned Area/HQ. For this purpose, each Area/HQ shall provide their e-mail ID to the Advising/Beneficiary Bank.

Under SFMS, extension/subsequent amendments to the BG can be done following the same procedure as stated above.

For encashment, the BG shall be placed directly before the issuing bank at Nagpur Branch.

9. Security Deposit: Exempted being PSU.

10. Consignee & Allocation:- **GSTIN no 27AAACW1578L1ZW** (for areas in Maharashtra State)

Qty	Area	Project	POSTAL ADDRESS OF THE CONSIGNEE
1 no	Wani	Neeljai Deep OC - 1 no	The Depot Officer, Regional Stores, Western Coalfields Limited, Wani Area, PO : Ghugus Colliery, Distt: Chandrapur (Maharashtra) Pin: - 442505
1 no	Ballarpur	Sasti Expn OCM - 1 no	The Depot Officer, Regional Stores, Western Coalfields Limited, Ballarpur Area, PO : Sasti, Distt:-Chandrapur.(M.S) Pin: - 442 701
2 nos	Nagpur	Gondegaon - 1 no; Adasa UG to OC - 1 no (Additional)	The Depot Officer, Regional Stores, Western Coalfields Limited, Nagpur area, PO : Silewara Colliery, Distt:-Nagpur (M.S) 441109
1no	Chandrapur	Padmapur OC - 1 no	The Depot Officer, Regional Stores, Western Coalfields Limited, Chandrapur Area, PO : Durgapur, Distt:-Chandrapur (M.S) Pin: - 442 403

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11. Paying Authority: General Manager (Finance), Western Coalfields Limited, Coal Estate, Civil Lines, Nagpur - 440 001 for the equipment and 1<sup>st</sup> year spares (to be supplied along with the equipment) and Area Finance Managers of respective areas for the Spares and consumables for 2<sup>nd</sup> to 4<sup>th</sup> year of operation.

12. EFT Details (as confirmed in your offer):-

Name of the Bank	State Bank of India
Branch & Location	Kingsway, Nagpur
Account Number	11172255258
Nature of Account	Current Account
IFS CODE of the Branch	SBIN0000432

13. Mode of dispatch: All the stores securely packed are to be dispatched by road transport to the consignee on Freight paid basis.

14. Liquidated Damages clause: In the event of failure to deliver or dispatch the equipment/stores within the stipulated date/period in accordance with the terms and conditions and the specifications mentioned in the supply order and in the event of breach of any of the terms and conditions mentioned in the supply order, the Purchaser shall have the right:

- To recover from the successful bidder as agreed liquidated damages, a sum not less than 0.5% (Half Percent) of the price of any equipment/ stores which the successful tenderer has not been able to supply as aforesaid for each week or part of a week during which the delivery of such stores may be in arrears limited to 10% (Ten Percent) of the total contract value, or
- To purchase elsewhere after due notice to the successful tenderer on the account and at the risk of the defaulting supplier, the equipment/stores not supplied or others of similar description without cancelling the supply order in respect of the consignment not yet due for supply, or
- To cancel the supply order or a portion thereof, and if so desired to purchase the equipment/ stores at the risk and cost of the defaulting supplier and also,
- To extend the period of delivery with or without penalty as may be considered fit and proper. The penalty, if imposed, shall not be more than the agreed liquidated damages referred to in clause (a) above.
- To forfeit the security deposit full or in part.
- Whenever under this contract any sum of money is recoverable from and payable by the supplier, the Purchaser shall be entitled to recover such sum by appropriating in part or in whole by deducting any sum or which at any time thereafter may become due to the successful tenderer in this or any other contract. Should this sum be not sufficient to recover the full amount recoverable, the successful tenderer shall pay the Purchaser on demand the remaining balance. The supplier shall not be entitled to any gain on any such purchase.

For the purpose of the calculation of the liquidated damages amount, the basic Free Delivery at Site price shall be considered. Taxes and duties shall not be taken into account for calculation of LD. However, when prices indicated in the order are inclusive of taxes and duties, such prices will be taken for calculation of Liquidated Damages.

15. SUBMISSION OF BILLS:

a. **For claiming 80% payment for equipment & 100% payment of 1<sup>st</sup> year Spares**, following documents are to be submitted along with original bills as per terms of the supply order to the consignee.

- Pre-receipted and stamped GST compliant Invoice as per GST rules and Act indicating HSN code
- Packing list in original list giving details of bill of materials, if applicable. (Invoice should be strictly as per GST rule 2017), if applicable.
- Consignment note / RR/ LR in original.
- Warranty / Guarantee certificate, if applicable.
- Manufacturer's test certificate, if applicable.
- DGMS / BIS / Pre dispatch inspection certificates / any other document, if required as per the contract.
- Price Certificate and Price Fall Certificate
- Any other document indicated elsewhere in the order & specifications

b. **For Claiming 20% payment of Equipment** and the following documents are to be submitted

- Pre-receipted and stamped bill for 20% payment.
- Commissioning Certificate from the respective Area General Manager / Staff Officer (Excv) of area
- Any other document indicated elsewhere in the order

16. Force Majeure Clause: If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, freight embargoes or act of God (hereinafter referred to

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"events") provided, notice of the happening of any such event is given by either party to the other within 21 days from the date of occurrence thereof neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, provide further that if the performance in whole or part or any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, either party may at its option terminate the contract provided also that if the contract is terminated under this clause, the purchaser shall be at liberty to take over from the contractor at a price to be fixed by the CIL / Subsidiary Company, which shall be final, all unused, undamaged and acceptable materials, bought out components and stores in course of manufacture in the possession of the contractor at the time of such termination or such portion thereof as the purchaser may deem fit excepting such materials, bought out components and stores as the contractor may with the concurrence of the purchaser elect to retain."

16. Lowest Price Certificate: You have undertaken that the prices quoted by them for the offered items are the lowest prices as applicable to any other Organization / Ministry / Department of the Govt, of India or Coal India Ltd. and /or its Subsidiaries or other PSU or any other private organization and also to submit the certificate as under:

"This is to certify that the prices quoted by us for the offered items are the lowest prices as applicable to any other Organization / Ministry / Department of the Govt, of India or Coal India Ltd. and /or its Subsidiaries or other PSU or any other private organization".

17. Price Fall Clause: "You have undertaken that you have not offered to supply / supplied / is not supplying same or similar product / systems or sub systems at a price lower than that offered in the present bid in respect of any Organization / Ministry / Department of the Govt, of India or Coal India Ltd. and /or its Subsidiaries or other P S U or any other private organization during the currency of the contract and if it is found at any stage that same or similar product / systems or sub systems was supplied by the bidder to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and /or its Subsidiaries or other PSU or any other private organization at a lower price during the currency of the contract, then that very price will be applicable to the present case and the difference in the cost would be refunded by the bidder to buyer, if the contract has already been concluded.

(i) The currency of contract will mean the period till completion of supply.

(ii) It shall be responsibility of the supplier to inform the purchaser of offer to supply / supply of the similar /ordered item (s) at a lower rate to any Organization / Ministry / Department of the Govt, of India or Coal India Ltd. and /or its Subsidiaries or other PSU or any other private organization during the currency of the contract.

(iii) The supplier shall submit a certificate along with the bill(s) that it has not offered to supply / supplied the similar /ordered item (s) at a lower rate to any Organization / Ministry / Department of the Govt, of India or Coal India Ltd. and /or its Subsidiaries or other PSU or any other private organization. "

18. Risk Purchase Clause: In the event of failure of the supplier to deliver or dispatch the stores within the stipulated date/period of the supply order or in the event of breach of any of the terms and conditions mentioned in the supply order/ contract, WCL shall have the right to purchase the stores from elsewhere after due notice to the defaulting supplier at the risk and cost of the defaulting supplier. The cost as per risk purchase exercise shall be recovered from the Earnest Money Deposit/ Security Deposit/ Performance Security of the supplier and/or bills submitted by the supplier against the same contract or any other contract pending in the same Subsidiary Co. and/or in any other Subsidiary Companies / CIL.

Risk Purchase Action shall be initiated as a last resort, if the supplier has failed to deliver despite having been given adequate and proper notice to discharge its obligations and under any of the following conditions:

a) When the supplier fails to deliver the materials even after extending the delivery period.

b) When the supplier fails to respond to purchaser's request for supply of the materials and fails to provide any genuine and bonafide reason for the delay in supply.

c) When the supplier breaches any of the terms and conditions of the supply order/ contract and as a result fails to execute the order satisfactorily.

19. Manufacturing certificate: As the order is being placed on the basis of consideration that you are a manufacturer of the ordered material, you will have to provide a certificate to the following effect on the body of each bill.

"Certified that the items supplied and included in this bill/ invoice are our own make and have been actually manufactured in our works situated at \_\_\_\_\_ (address of the factory)

20. Integrity Pact : Integrity Pact as per format (Annexure E of the NIT) signed and furnished by you along with the offer shall remain valid and applicable for this contract.

The name of the IEM for this tender are:

Dr. (Ms) Nivedita Haran, 23, IFS Vilas, P-6, Builders Area, Greater Noida 201310

*Nivedita Haran*

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Shri A.K.Mohapatra, Qrs no B-5/9, Unit – 9, Bhoi Nagar, Bhubaneswar 751022


21. Arbitration Clause : "In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/Port Trusts inter se and also between CPSEs and Government Departments / Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22.05.2018."

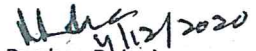
22. Settlement of Disputes through Court of Law of Competent Jurisdiction: The Courts in whose territorial jurisdiction the place from where Tenders / contract is being issued is located i.e. Nagpur shall be competent to deal with any matter arising out of this NIT / resultant purchase Order/Contract. Therefore any disputes/claims arising out of the NIT with bidders or arising out of the contract entered into with the suppliers will be subject to the jurisdiction of the Nagpur court of law

Unless otherwise specified above, the purchase order shall also be governed by the terms and conditions given in the General terms and conditions enclosed.

This order is issued with this acceptance. Kindly acknowledge the receipt of this order.

Yours faithfully

  
04/12/2020  
(Dr. Y. Venkata Ramana)  
Chief Manager (MM)

  
04/12/2020  
(N.V. Raghun Babu)  
Chief Manager (MM)

**Enclosures:-**

Annexure-A : Scope of supply and Technical specifications

Annexure B: List of Standard, Special Tools and Electronic Diagnostic Tools

Annexure-C: List of Spares and consumables required for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year of operation

Annexure-D: Major Bought out items list

Annexure-E: Oil and Lubricant chart

Annexure-F: Maintenance Schedule

Annexure-G: Erection chart

Annexure-H: Performance Bank Guarantee format

Annexure-I: General Conditions of the Contract

**Copy to :**

1. GM(Excv) HOD, WCL(HQ), Nagpur
2. AG M / SO(Excv)/SO(MM)/AFM/Depot Officer, WCL, Wani /Ballarpur/ Chandrapur / Nagpur
3. GM(CP)/ GM(Fin.) I/c -1 / GM(Fin) I/c-II/ GM(P&P) , WCL Hq., Nagpur
4. RD, CMPDIL, RI IV, Nagpur
5. GM(MM), CIL, SECL, MCL, CCL, BCCL, ECL, NCL
6. TS to DT(P&P), WCL, Nagpur
7. Chief Manager(MM/Admn.), WCL(HQ) – The Landed value of the order is Rs. 17,93,55,592.42
8. IEM, Dr. (Ms) Nivedita Haran, 23, IFS Vilas, P-6, Builders Area, Greater Noida 201310
9. IEM, Shri A.K.Mohapatra, Qrs no B-5/9, Unit – 9, Bhoi Nagar, Bhubaneswar 751022
11. GM(Excv), EED, Coal India Ltd., "Coal Bhawan", Premises no.04 MAR, Plot No AF III Action Area 1A, New Town, Rajarhat, Kolkatta 700156, West Bengal

This is issued with the approval of Board of Directors in their 327<sup>th</sup> meeting held on 27.11.2020, whose relevant excerpts from the minutes are circulated by Company Secretary vide WCL/Office of CS/BM-327/2020-21/652 dt 04.12.2020


Indent details: Indent No. 1483 dated 28.07.2020.

Budget Reference:

**Capital budget:** WCL/CAP/HEMM/2020-21/12/04/38 Dated 04.12.2020 for Rs.10,94,02,266.00 (Rupees Ten crore ninety four lacs two thousand two hundred and sixty six only)

**Revenue budget:** (Provisional)

Year	BC reference	BC Date	Value Rs.
2021-22	WCL/REV/HEMM Spares/2021-22/09/17/130	04.12.2020	1,09,402.50
2022-23	WCL/REV/HEMM Spares/2022-23/09/17/130	04.12.2020	1,50,50,280.25
2023-24	WCL/REV/HEMM Spares/2023-24/09/17/130	04.12.2020	3,77,11,871.70
2024-25	WCL/REV/HEMM Spares/2023-24/09/17/130	04.12.2020	1,70,91,772.20

  
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Chief Manager(MM)

  
04/12/2020  
Chief Manager(MM)

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**TECHNICAL SPECIFICATIONS**

**1. SCHEDULE OF REQUIREMENT**

Schedule of Requirement	Additional Requirement (PCD)	Replacement Requirement (NCD)	Total Requirement (NCD & PCD)
Supply, Installation, and commissioning of 05 nos of Crawler mounted Dozer 320 HP Dozer [(Engine Net Power Range 235KW to 250KW)/( 315.135 HP – 335.25HP)] complete in all respects along with spares and consumables for 12 months of warranty period from date of commissioning of the equipment and thereafter Spares and Consumables for a period of 36 Months	01 no	04 nos	05 nos

**2. Technical specification:**

**A. Scope of Supply.**

**A.1 Equipment Package.**

You are required to provide a complete package of Equipment for the Supply, Installation, testing and commissioning of 05 nos of Crawler mounted Dozer complete in all respects along with consumable spares and consumables for 12 months of warranty period from date of commissioning of the equipment and thereafter Spares and Consumables for a period of 36 months with necessary Training, at coal mining projects of WCL, Nagpur.

WCL shall make arrangements for the storage of Goods and Supplier's plant, tools etc. at project/site within the site(s) boundaries as may reasonably be required by you for the purposes of erection & commissioning of the Equipment, pending acceptance, at no cost to you.

**A.2 Supplementary Items**

All Spares, for Operational, Maintenance and standby/ contingency, Filters, O-rings/Gaskets etc, pertaining to all the systems of Equipment (including standard Engine filters etc) and Consumables including Battery, Auto Electricals, Ground Engaging Tools & Wear Materials eg Under carriage, Blade, Cutting Edges & End bits etc (herein after collectively referred to as "Spare Parts and Consumables" unless the context specifies otherwise)

The Consumables for operation shall not include Diesel/ Fuel, Oils & Lubricants (POL).

**(I) Items to be supplied, along with each Equipment:-**

- a. Spare Parts and Consumables, required for initial 12 Months operation.
- b. First fill of all Oils, Grease and Lubricants needed for test and commissioning of each equipment.
- c. A comprehensive tool kit, which shall include any special tools required for erection, commissioning and for the maintenance & repair of the Equipment. The following Special Tools, generally required for repair, Maintenance & Trouble-shooting/ Testing of Major sub-Assemblies, shall be provided, in addition to any other special Tools required for the Equipments :-
  - i. Hydraulic pressure gauges of different ranges, required for Hydraulic pressure setting and trouble-shooting.
  - ii. Socket set with torque wrench of reputed make, covering all sizes of high torque bolts used on the offered Equipment
  - iii. Dial Indicator Gauge with Magnetic base.

Any other tool, if required over and above the list of comprehensive tool kit and special tool kit, shall be provided by you at no cost to purchaser during the contract period.

**(II) Spare Parts & Consumables for 36 months operation, out of total 48 months, in accordance with your recommendations shall be delivered periodically, on Annual basis (in minimum three lots, Annually and in suitable module), throughout the balance period of 36 (thirty six) Months, of the total Guaranteed period of 48 (Forty eight) months from the accepted date of commissioning.**

**A.3 Information, Drawings & Manuals:**

You shall provide following manuals / documents with EACH Equipment, before commissioning:

1. Two set of suitably illustrated Operating, Repair and Maintenance Instructions for all the equipment, written in the English language, substantially bound in book form, as well as soft copy (in Pen drive / CD) with Each Equipment.
2. Two set of suitably illustrated, detailed Spares Parts Manuals covering all plant, Equipment and accessories substantially bound in book form; as well as soft copy (in pen drive/ CD), with Each Equipment.

ONE Set of Manuals (Hard & soft copies) shall be supplied to the office of GM(Exc)HOD, Excavation deptt WCL(HQ) Nagpur, at the time of supply.

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A.4 Erection/Assembly, commissioning and Performance Testing :You shall provide the service of Specialist Technicians/ Service Engineers to supervise the installation/ erection/ assembly, commissioning and any performance testing of the plant, equipment and accessories supplied.

The Service Engineer/ Technicians shall remain at site for the commissioning, until all necessary personnel are fully conversant with the maintenance and operation of the Equipment, and shall be available through out the guarantee period.

A-5 Training : You shall give a comprehensive training to the WCL Employees regarding complete operation, Maintenance & Trouble shooting of the Equipment, covering all the systems. You shall be responsible for the provision and delivery content of any suitable training program, necessary for operation and maintenance of the equipment.

The training shall include Audio Visual presentation at WCL's site/ project/ Training Institute. The presentation/ training shall be for a duration of 2 days at maximum 4 locations.

PART - 'B'

B. GENERAL REQUIREMENTS.

B.1 Geography and Climatic Conditions.

Elevation : The natural surface varies from 100m to 1000 m above mean sea level.

Climate : The climate is sub-tropical to tropical dusty with a hot and humid atmosphere. Monsoon rains occur in the period from June to October -

Ambient Conditions                      Relative humidity                      -                      Maximum 98%

Temperature                                  -                      Minimum 0<sup>o</sup> - Maximum 55<sup>o</sup> C

Rainfall : The mean annual rainfall is 1000 mm. 90 to 95% of which may fall in rainy season from June to October.

Wind                                              April to September                      -                      South to South Westernly

October to March                              -                      North Westernly

Speed                                              -                      8 Km per hr average

100 Km per hour max.

Under foot                                      Slushy and highly abrasive                      -

B.2 Goods (Equipment & Machinery)

Detailed specifications of the equipments to be supplied are given in part -'C', of this section.

In general all items shall be -

New, unused and of the current design (incorporating latest proven features) and not likely to be discontinued or become obsolete in near future.

Designed and constructed to handle without overload and for the working hours stated, the maximum volumes/rates specified.

Designed to facilitate ready access, cleaning, inspection, maintenance and repair of component parts.

Designed to facilitate rapid changeover of consumable items.

The component parts of all items shall, wherever possible, be selected from the standard ranges of reputable manufacturers.

The Equipments and accessories shall be physically robust and where necessary capable of dismantling for transportation and ready re-assembly using simple tools. All equipments items provided shall be designed to be compatible within the proposed overall Scope of Supply.

Electrical equipments shall provide all protection devices, controls and interfaces for the equipment to operate safely and efficiently.

All workmanship and materials shall be of first class quality in every respect.

All parts and surfaces which are exposed to corrosive environments shall be suitably protected to prevent any effects of corrosion or erosion.

B.3 Standard:

(a) Beside conforming to the standards specified in the Equipment specifications in Part 'C', the Equipment shall also have to meet approval of the Statutory Government Authorities including Director General of Mines Safety (DGMS) having jurisdiction over the Equipment and its use.

(The system of units for all measurements shall be the System International Units (S.I.).)

B.4 Suppliers Responsibility: You shall accept responsibility for the provision of complete operable and compatible Equipment and systems within the Scope of Supply. This documents identifies only the major items required for the installation and you shall ensure that the total supply includes all necessary Equipments for it to function effectively and safely. Any additional items, you considers necessary to ensure compliance with such a requirements shall be identified and included.

If you observes that this specification documents contains any anomalies, ambiguities, flaws, errors or omissions, you shall immediately bring these to the attention of the Purchaser.

You shall be responsible for the testing and commissioning of the equipments and ensure that it meets the requirements as specified. The commissioning and setting to work of the whole equipments supply package shall be carried out under the supervision of you in conjunction with the Purchaser's nominated personnel.

B.5 AFTER SALES SERVICE & SPARE PARTS SUPPORT

B.5.1 After Sales Support Net work :-

The necessary after sales service & Support Net work for the Equipment should be available in India, to support the product. You shall ensure that the availability of sufficient skilled service personnel, suitable stock of spares parts in the spare parts depot/ ware house and necessary servicing facilities is maintained,

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to support the Equipment in mines, to maintain the Equipments in use through out its life.

You should also warrant that the stock of (i) the fast moving spares for minimum 10 % Value of the Equipment (Landed) and (ii) the Insurance Items/ spares for minimum 10 % Value of the Equipment (Landed) shall be maintained throughout the operational period of the Equipments in WCL.

**B.5.2 Provisions of Spare Parts.**

B.5.2.1 Within the Contract Price, the Purchaser will agree to purchase all Operational, Maintenance and standby/ contingency Spare Parts, Filters, O-rings/Gaskets etc, pertaining to all the systems of Equipment (including standard Engine filters etc) and Consumables including Battery, Auto Electricals & Ground Engaging Tools / Wear Materials eg Dozer Blade, Cutting Edge, End Bits etc, in accordance you're your recommendations for 48 (Forty eight) Months from the accepted date of Commissioning.

Necessary Oil & Lubricant, required for Commissioning & Testing shall be supplied by you, as per the contract.

The Consumables for operation during subsequent period, shall not include Diesel/ Fuel, Oils & Lubricants (POL).

Necessary Spares & Consumables, required for initial 12 Months, shall be supplied with EACH Equipment.

*At every 2000 Hours of operation of under carriage set, Sprocket segments with bolts etc to be replaced mandatorily.*

All Spare Parts & Consumables, required for the balance period of thirty six (36) months (beyond the initial 12 months) of the Equipment, shall be delivered on Annual basis (in minimum three lots, Annually and in suitable module)

B.5.2.2 The assessment of the bidder of the Spare parts & Consumable requirements shall be based on the expected 2500 (Two Thousand Five Hundred) +/- 500 (five hundred) working hours per year.

However, any shortfall in quantity of these spares over and above the list enclosed during the period of 48 months, shall have to be supplied by you free of cost. Any shortfall in quantity of above items during the period of 48 months, if required beyond the above mentioned expected working hours, shall have to be supplied by you at extra cost.

B.5.2.3 In the event that the Spare Parts and Consumables, as recommended by you, in any way fall short of actual requirements during the period for which they are said to be adequate, you shall provide such additional Spare Parts and Consumables, as are necessary at the final destination. Such additional Spare Parts and Consumables shall be provided by you to the Purchaser free of all cost and shall be transported to Site by air freight internationally and by air, rail or fast road transport within India.

You shall also stock all necessary spares including sufficient fast moving & maintenance Spares, in their Local Depots to meet exigencies and to ensure maximum availability of the Equipments in use, throughout its life.

A Joint Inspection Report shall be prepared on fortnightly basis regarding the requirement of additional Spare Parts and Consumables over and above the List enclosed.

**B.5.2.4** You shall not be liable for the supply of additional Spare parts and Consumable, if these are required by reasons of unforeseen accidents, negligence or misuse on the part of the purchaser.

B.5.2.5 In the event that the operation of the plant is inhibited or frustrated as a direct result of lack of Spare parts and Consumables pursuant to clause B.5.2.2 hereof, then the period referred to in clause 'B.5.2.1' hereof shall be extended by a period of not less than the period during which operation as aforesaid was inhibited or frustrated.

B.5.2.6 In the event that the spare parts and consumables, as recommended by you are in excess of the actual requirements, The purchaser at its option may -:

1. Retain such excess spares and consumables as, in discretion, it may elect to do so.
2. Require you to reprocess or repatriate or otherwise dispose off such excess spare parts in exchange for payment to the purchaser of the contact Price of the spare parts and consumables concerned.

The purchaser shall notify you, in writing of it's requirement under the clause within Sixty (60) day after completion of the contact period of 48 months.

**B.5.3 Emergency Spare Parts:** You shall ensure that spare parts required urgently for repair of breakdown equipments, are supplied at over riding priority.

In case the required spares, for breakdown equipment, are not available in the inventory maintained in the local depot, the same should be immediately made available from nearest available stock or diverted from the production line in the factory. Arrangements will be made by you to air lift the required spares and supply the same immediately to facilitate early re- commissioning of the breakdown equipment.

**B.5.4 Lifetime Spare Parts:** You have undertaken and guaranteed to produce and maintain stocks, to be available for purchase by the Purchaser under separate agreements of all Spare Parts and Consumables as may be required for maintenance and repair of the equipment throughout its working life. In the event that

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you wishes to terminate production of such Spare Parts, you shall:

- (a) give not less than six months notice in writing of it's intention to terminate production in order to permit the Purchaser reasonable time in which to procure needed requirements and
- (b) immediately following termination, provide to the Purchaser at no cost, manufacturing drawings material specifications and all necessary permissions to facilitate manufacture of the spare parts elsewhere.

In any event, you shall not seek to terminate manufacture of spare parts for a period of not less than 10 (ten) Years from taking over.

B.5.5. Oil, Lubricants and Fluids : You shall provide to the purchaser a detailed schedule of all necessary oils, lubricants, fluids for the operation and maintenance of equipment and specify the appropriate Grades, Indian and International standard references (whichever is applicable), suitable for different assemblies.

B. 5.6 General: Nothing in this clause B.5 shall relieve you of any guarantee, Availability, Performance or other obligations or liabilities under the contract.

B.6 Composite Warranty/ Guarantee: You shall warrant that the equipment supplied under this contract is:-

- a) In accordance with the contract specifications.
- b) The equipment shall have no defects arising out of design, material or workmanship & the Complete Equipment shall be warranted for 12 months from the accepted date of commissioning. The warranty shall cover for total equipment so that ultimate responsibility lies only with you although components may be supplied by different suppliers to you.
- c) The Equipment will be warranted against any manufacturing defects / workmanship for a period of 12 months from date of commissioning. Any defect observed on this account shall be attended to immediately. In the event of any breakdown or failure of performance due to defects in materials, design, workmanship, spare parts etc., WCL shall promptly notify you in writing of any claims arising under this warranty. The repairs, replacement or rectification work shall be carried out by you at site, immediately at no cost to the purchaser, or latest within 21 days of settlement of warranty claims.

"At no cost to the purchaser" means, you will have to bear all the expenses upto the destination site i.e. Ex-works prices, Excise Duty, Sales Tax, Insurance, Inland transportation charges etc. as applicable to ensure free delivery of warranty replacement at WCL sites.

B.7 Performance Guarantee :

B.7.1 Introduction.

B.7.1.1 You shall guarantee that the equipment supplied pursuant to this contract shall be available for use by the Purchaser and shall meet the performance criteria specifications at the level and in accordance with the terms and conditions of the Availability Guarantee herein contained.

B.7.1.2 Where equipment supplied under the Contract fails to meet the criteria of the Availability Guarantee, you shall, at its own cost, provide suitably qualified and experienced personnel at site to demonstrate to the purchaser's satisfaction that the required level of availability can be achieved and maintained.

B.7.2 Guarantee

B.7.2.1 You shall guarantee that the equipment supplied pursuant to the Contract shall be available to the Purchaser at the level hereinafter defined to perform to criteria of not less than that defined in the Technical Specifications incorporated in the Contract.

B.7.2.2 You shall guarantee that the equipment shall be available to perform its duty to minimum criteria and to the minimum availability percentage level as defined in the individual equipment specifications included as the Attachment to the Technical specifications.

The method of assessment applied shall be as follows :

Method of Assessment :

The following calculation shall determine the availability of the equipment

$$\% \text{ Availability} = \frac{\text{Scheduled Available time} - \text{Down time}}{\text{Scheduled Available time}} \times 100$$

Scheduled Available time shall equate to 24 hours.

Down time shall mean all hours of work lost due to mechanical, electrical or other failure, Including :-

a) routine servicing and maintenance in accordance with the manufacturer's published recommendations

b) planned preventive maintenance programmes.

It shall however not include :-

- i. damage due to abusive use or incorrect operation methods by the Purchaser.
- ii. accidents.
- iii. Strikes or stoppage of work by the purchaser's personnel
- iv. Natural disaster.
- v. Lack of spare parts not attributable to a failure of you; it's Agents or Representatives.

Down time shall also specifically include all hours lost due to failures determined to be failures within guarantee period.

You shall state the number of hours per day required to carry out (a) and (b) above.

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The Purchaser will assist you, without relieving you of any other obligations under the Contract, to achieve the guaranteed availability by :

- i. Providing suitable skilled & un-skilled manpower for repair & maintenance.
- ii. Providing normal and proper maintenance, including preventive maintenance in accordance with your standard/published recommendations, and making all necessary repairs using only genuine manufacturer's spares.
- iii. Providing cooperation to all your authorized representatives, complying with all reasonable procedural suggestions to improve efficiency of machine operation or reduce downtime.
- iv. Where appropriate, providing and maintaining such conditions as :
  - (a) proper electrical supply
  - (b) Terrain area
  - (c) Bench preparation.
  - (d) Reasonable floor conditions.
- v. Providing all your authorized representatives access at all reasonable times to the machines service and repair facilities.
- vi. Maintaining of log book for each shift wherein the working hours, breakdown time, maintenance hours, idle time, etc. shall be recorded. This record will be available for examination and signature by your representative.

B.7.2.3 Waiting time for maintenance shall not be taken as downtime.

B.7.2.4 The average routine maintenance hours shall not be more than two hours per day. In case the site personnel of WCL are unable to carryout the daily maintenance in two hours in such case you shall carry out the maintenance within two hours and train the project personnel to enable them to carryout the normal routine maintenance within two hours every day. In the event the project personnel are unable to carry out the routine maintenance in two hours time every day even after the demonstration & training by you, the time taken over & above two hours by the project personnel will not be counted as downtime.

B. 7.2.5 You will promptly report any breakdown in any major sub assembly/sub-assembly to the concerned Head of Excavation Department of the subsidiary company.

**B 7.3 Effect and Duration of the Performance Guarantee :**

B.7.3.1 This guarantee shall become effective on the day on which the Equipment is commissioned at the Site. Commissioning shall be evidenced by the issue of the Purchaser's Acceptance Certificate.

B.7.3.2 This guarantee shall remain effective for 12 months of warranty period from date of commissioning of the equipment and thereafter Spares and Consumables for a period of 36 Months ie for Forty eight (48) months from the date of commissioning irrespective of the hours operated by the Equipment during the period of the guarantee.

B.7.3.3 In the event that the Equipment fails to achieve the Availability during Forty eight (48) months from the date of commissioning, herein provided during first or second or third or fourth 12 (twelve) months period, you shall be liable to pay to the Purchaser, as Penalty, a sum equal to as indicated hereunder for each Equipment, to be computed for each 12 months period (on annual basis):-

- a) 1% of the contract price of the equipment for every percentage reduction from the Guarantee Availability, for the first 5%
- b) 10% of the contract price of the equipment, for reduction beyond 5% from the Guaranteed Availability.

B.7.3.4 When you are unable to supply the replacement of a failed part under warranty within 21 days of giving intimation by the consignee and if the machine is commissioned by using the spares from the stock of the project the period (after 21 days) till you replaces the part under warranty shall be treated as "Deemed Breakdown" (the credit for keeping machine available shall not be given to you).

B 7.3.5 SPECIAL CONDITION : For close monitoring of the performance of equipment under warranty, the Project authority jointly with you must furnish the following information, as per proforma on monthly basis to the Area Staff- Officer (Excv). On completion of the Performance Guarantee period, a consolidated statement in the said proforma must be sent to GM(Excv)HOD of WCL for judgment regarding performance of the equipment.

The project authority must not give any performance certificate directly to the equipment supplier.

**B.8 QUALITY ASSURANCE**

B.8.1 You should furnish in detail its quality assurance plan for various stages of manufacture. The Quality Assurance Plan shall comply with an internationally recognized quality assurance standard such as ISO 9000.

B.8.2 You shall provide facilities to Purchaser or their authorized representatives, when so required by them, for progress inspection during manufacture at his works and furnish all test data available in this regard for quality control, both for bought out items and his own manufactured items.

B.8.3 The Purchaser or his agent, when so required by him, shall also be provided with samples of "bought-out" materials for the purpose of undertaking independent tests which independent tests shall be at the expense of the Purchaser.

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**PART-C**

**EQUIPMENT SPECIFICATION OF CRAWLER DOZER 320 HP.**

**1. Scope Of Specification:** This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on-site erection and commissioning of a self-propelled, crawler mounted dozer the range 235KW to 250KW.

**2. References:** The following International Standards are referred to in, and form part of, the Specification:

- ISO 2867 Earth-moving machinery - Access systems  
ISO 3449 Earth-moving machinery - Falling-object protective structures - Laboratory tests and performance requirements  
ISO 3457 Earth-moving machinery - Guards and shields - Definitions and specifications  
ISO 3471 Earth-moving machinery - Roll-over protective structures - Laboratory tests and performance requirements  
ISO 6014 Earth-moving machinery - Determination of ground speed  
ISO 6405-1 Earth-moving machinery - Symbols for operator controls and other displays - Part 1 : Common symbols  
ISO 6405-2 Earth-moving machinery - Symbols for operator controls and other displays - Part 2 : Specific symbols for machines, equipment and accessories  
ISO 6682 Earth moving machinery - Zones of comfort and reach for controls  
ISO 6747 Earth-moving machinery - Tractors - Terminology and commercial specifications  
ISO 6750 Earth-moving machinery - Operation and maintenance - Format and content of manuals  
ISO 7129 Earth-moving machinery - Tractors with dozer, graders, tractor scrapers - Cutting edges - Principal shapes and basic dimensions  
ISO 7464 Earth-moving machinery - Method of test for the measurement of drawbar pull  
ISO 9246 Earth-moving machinery - Crawler and wheel tractor dozer blades - Volumetric ratings  
ISO 9249 Earth-moving machinery - Engine test code - Net power  
ISO 10265 Earth moving machinery - Crawler machines - performance requirements and test procedures for braking systems  
ISO 10968 Earth moving machinery - Operator's controls

**3. Design Criteria:** The dozer shall be capable of continuous operation for protracted periods on a system of 3 shifts each of 8 hours duration per day throughout the year in hard, highly abrasive, blasted sandstone/ rock having a density after blasting of 1,800 kg/m<sup>3</sup>.

The dozer shall have the following minimum range of drawbar pull, measured according to ISO 7464:

1. 160 kN to 380 kN at 1 km/h speed
2. 180 kN to 550 kN at zero speed

**4. Technical Requirements:**

**4.1 Engine:** The dozer shall be powered by a direct injection 4-stroke turbo-charged diesel engine of Net Power Range - 235KW to 250KW measured between 1700 and 2200 r/min according to ISO 9249.

The engine shall be provided with 24V electric starting, dry type 2-stage air cleaner with manual / automatic dust evacuator and dust level indicator and 2-stage fuel filter with water separator.

The engine shall have a water jacket cooling system, thermostatically controlled, using an engine driven water pump, with the cooling water re-circulated through a heavy duty radiator. The system shall be capable of providing sufficient cooling to allow the dozer to continuously operate at the full rated output at the maximum ambient temperature.

The moving parts of the engine shall be lubricated by an engine driven oil pump, with full flow oil filtration and cooling. The engine shall be provided with a heavy duty removable pan guard.

The engine shall be equipped with an over-speed governor and Auto-shut off system should be provided.

**4.2 Drive System**

Power transmission from the engine to the crawler drive sprocket should through conventional means i.e. torque flow transmission, final drive, steering and brakes ; details are furnished below.

**4.2.1 Transmission**

Torque-flow transmission consisting of single stage torque converter, planetary gear drives and hydraulically operated multiple disc type clutches equipped with suitable valves for developing a minimum of 3 forward and 3 reverse speeds.

Heavy duty removable belly guard, designed such that it does not allow accumulation of dirt.

**4.2.2 Final Drive:** Heavy duty spur or planetary gear system.

**4.2.3 Steering:** Independent track steering by means of hydraulically actuated oil cooled multiple disc steering clutches and brakes shall be provided. These are to be held in engagement by springs and disengaged hydraulically. All hoses and piping shall be protected from damage.

**4.3 Undercarriage**

The undercarriage shall be a heavy duty rugged design suitably suspended with oscillating type equaliser bar and pivot shaft to reduce shock loads transmitted to the dozer.

Track frames and load rollers shall be of sufficient strength to withstand the high loads, which may occur due to uneven ground conditions. They shall be of welded construction and stress relieved as required.

The sprocket should preferably be a segmented bolt-on type. Preferably, life time lubricated idler and rollers,

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and a reliable hydraulic track tensioning arrangement should be provided.  
Extreme service single grouser shoes of not less than 560 mm width shall also be provided.

#### 4.4 Dozer Attachment

The dozer shall be fitted with hydraulically controlled straight-tilt blade attachment. The dozer blade shall be heavy duty type with steel wear plate and heavy duty end bits. Heavy duty hardened steel wear resistant cutting edges which comply with ISO 7129 shall be provided.

#### 4.5 Fuel Tank

The fuel tank should be of sufficient capacity for 16 hours operation without re-fuelling, and be provided with a level indicator and a lockable hinged cap.

Construction of the tank should be such that it provides for easy accumulation and drainage of water with minimum loss of fuel.

#### 4.6 Operator's Cab

A fully insulated, sound suppressed, Air conditioned operator's cab (walk-through type) shall be provided. The operator's seat shall be a fully adjustable bucket type with foam rubber cushion and best quality upholstery. Safety glass, windshield wiper and washer, Heavy duty rubber floor mats and a cooling fan shall also be provided. All doors, windows and vents shall have dust and weatherproof seals. Air conditioning system shall be maintained by the supplier during entire contract period along with manpower and material including gas charging etc.

Both a ROPS and FOPS which comply with ISO 3471 and ISO 3449 respectively shall be provided. All operating controls, monitoring and working signals should be conveniently located in consoles within easy reach of the operator and shall comply with ISO 6405-1, ISO 6405-2 and ISO 7095.

Non-slip type walkways which comply with ISO 2867 shall be provided.

#### 4.7 Gauges and Indicators

The following shall be provided as a minimum:

1. Water temperature Gauge
2. Engine oil pressure Gauge
3. Converter / Transmission oil temperature Gauge.
4. Fuel capacity Gauge.
5. Transmission Pressure Gauge
6. Combined Engine Tachometer and Engine Hour Meter

#### 4.8 Warning Alarms / Lights

The following audio/visual warning alarms shall be provided:

1. Coolant level & temperature
2. Low lube oil pressure of Engine
3. Converter oil temperature (where applicable)
4. Front warning horn
5. Reversing Alarm & light (Audio-Visual Reverse Alarm)
6. Operator's fatigue Warning Alarm

#### 4.9 Electrical Equipment

The dozer shall be provided with the following:

1. 24V DC electrical system with suitably rated alternator of reputed make
2. Electric start
3. Reputable make high capacity batteries
4. Battery isolation switch

All circuits shall be protected by adequately rated fuses which shall be easily accessible for maintenance.

#### 4.10 Lighting Adequate lighting, (conforming to the following minimum), shall be provided for safe nightshift operation :

- a. 4 (nos) Headlights
- b. 2 (nos) Rear working lights
- c. 4 (nos) ROPS mounted working lights (2-front and 2-rear)
- d. Cabin dome light

Headlights and Rear working lights shall be identical in rating and fitted in protective area.

#### 4.11 Guards and Shields

Adequate guards and shields, which comply with ISO 3457 shall be provided throughout the dozer.

4.12 Automatic Fire Detection & Suppression System: The supplied equipment should be fitted with DGMS approved / compliant Automatic Fire Detection & Suppression System (AFDSS), covering all major & vital points on the Equipment. Make & model of the AFDSS fitted, should be specifically mentioned. The system shall be maintained by you during entire contract period. The system shall be DGMS approved / compliant. You should submit DGMS approval / Self Certificate confirming that AFDSS fitted in the Equipment shall be in compliance with the DGMS circular and materials and chemicals used in the AFDSS shall also be in compliance with relevant IS standards.

4.13 Rear Vision System: The system shall be provided with a Monitor, installed inside the Operators Cabin and Automatic Switch on the reverse gear actuates ultra low light camera with sufficient number of infra red LEDs installed at the rear of the Dozer which provides picture in nearly pitch dark and in poor weather

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conditions and a clear & sharp picture is displayed on the Monitor. The monitor and camera shall be connected by a suitable detachable cable with water proof Fs and the system shall be suitable for operation in extreme climatic conditions in the Indian Open cast mines. The camera shall be housed in a fully water proof, dust proof and shock & vibration resistant case which is suitable for high pressure washing.

5. Ancillary Equipment/ Additional Safety Features and Other Requirements: (All the safety features provided in the equipment must comply DGMS Regulation 216(2) of CMR (2017) :-

The following are to be supplied with the dozer:

1. Front pull hook
  2. Rear mounted rigid drawbar
  3. Turbo Charger guard
  4. Fire/ Heat resistant/ retarder hydraulic hoses in place of ordinary hoses to decrease chances of fire
  5. All sleeves and conduits where cables/ wires are passed shall be fire heat resistant.
  6. Seat belt for operator
  7. Audio-visual Reverse Alarm system shall be provided, confirming to specifications as per DGMS (approval)/ AVA/ 01 dated 25-05-2010, issued by DGMS.
  8. Operator's fatigue sensor as per DGMS requirement
  9. Rear View Camera with Monitor
6. Performance Guarantee: In accordance with the provisions of clauses B.7.2.2 and B.7.3.2 of the Technical Specifications, you shall guarantee that the availability of the equipment shall be not less than 75% (seventy five per cent) during entire 48 months from accepted date of commissioning (to be calculated Annually/ for each year).

Specification Parameter	Value
7.1 : ITEM : Supply, Installation, and commissioning Crawler mounted Dozer 320 HP Dozer [(Engine Net Power Range 235KW to 250KW)/( 315.135 HP – 335.25HP)] complete in all respects along with consumable spares and consumables for 12 months of warranty period from date of commissioning of the equipment and thereafter Spares and Consumables for a period of 36 Months Replacement Requirement (NCD) : 4 Nos; Additional Requirement (PCD) : 01 nos	
7.2 Make, Model and type of offered Equipment : Make: BEML, Model: BD155	
<b>7.3 Dimensions, Weights, Technical &amp; Performance Details</b>	
<b>7.3.1 Dimensions :</b>	
7.3.1 a) Maximum overall length with & without blade	With Blade: 6555mm without Blade: 5095 mm
7.3.1 b) Maximum overall width with & without blade	With Blade: 4130 mm Without Blade: 2810 mm
7.3.1 c) Maximum overall height	3745 mm (With AC Cabin)
7.3.1.d) Drawbar Height	536 mm
<b>7.3.2 Weights :</b>	
7.3.2 a) Shipping weight of individual components	Basic Tractor: 30525 kg St.Tilt Blade: 6500 kg Cabin: 2080 kg
7.3.2 b) Total operating weight	39105 kg (With AC Cabin)
7.3.2 c) Operating weight excluding dozer attachment	32605 kg (including AC Cabin)
<b>7.3.3 Engine :</b>	
7.3.3 a) Manufacturer's NAME & Model NAME	BEML BS6D170-1
7.3.3 b) Number of cylinders	6 Cylinders
7.3.3 c) Bore	170 mm
7.3.3 d) Stroke	170 mm
7.3. e) Displacement	23.15 lts
7.3.3 f) ISO Net Power and rated rpm	242 kW (324 HP) @ 2000 rpm
7.3.3 g) Maximum Torque and rated rpm	1456 N-m @ 1400 rpm
<b>7.3.4 Transmission :</b>	
7.3.4 a) Name & Model	BEML
7.3.4 b) Type	Planetary, power shift transmission
7.3.4 c) Number of Gear speeds, forward and reverse	3 forward and 3 reverse
7.3.4 d) Travel speeds, forward and reverse	Annexure A
<b>7.3.5 Final Drive :</b>	
7.3.5 a) Make	BEML

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7.3.5 b).Type	Spur Gear Double Reduction
7.3.5 c) Ratio	40.104 : 1 (Total Reduction)
<b>7.3.6 Steering &amp; Braking</b>	
7.3.6 a) Type	Wet multiple disc type
7.3.6 b) Actuating System	Hydraulic through linkages
<b>7.3.7 Under Carriage :</b>	
7.3.7 a) Under Carriage overall width	2810 mm
7.3.7 b) Crawler tracks height	1412 mm
7.3.7 c) Crawler effective length	3150 mm (on either side)
7.3.7 d) Crawler width	560 mm
7.3.7 e) Crawler shoes, total numbers	41 Nos each side (82 Nos Total)
7.3.7 f) Ground contact area	3.528 Sq. m
7.3.7 g) Ground bearing pressure	0.86kg/cm2 (Bare tractor)
7.3.7 h) Load rollers, diameter and number per crawler	Track Rollers, S/F-2Nos, D/F-5Nos - Dia 255mm.
7.3.7 i) Driving Sprocket diameter	991.5 mm (PCD)
7.3.7 j) Idler roller diameter	800 mm
7.3.7 k) Centre to centre of idler roller and sprocket	3.15 m
<b>7.3.8 Hydraulic System :</b>	
7.3.8 (i) Make, Model, Number, flow rates and operative pressures of <b>PUMPS.</b>	BEML Make, 2 Nos Gear Pump, 335lpm, 140kg/cm2 & 25 lpm, 35kg/cm2
7.3.8 (ii) Make, Model, Number and ratings of <b>MOTORS</b> (where applicable)	Not Applicable
7.3.8 (ii) Make, Model, Number, piston diameters and stroke lengths of <b>CYLINDERS</b>	Annexure B
7.3.8 (iii) Relief valve operating pressure	140 kg/cm2 & 35 kg/cm2
<b>7.3.9 Dozer Attachment :</b>	
7.3.9 (i) Maximum digging depth	560 mm
7.3.9 (ii) Ground clearance at full lift	1560 mm
7.3.9 (iii) Maximum tilt adjustment	1000 mm
<b>7.3.10 Electrical System :</b>	
7.3.10 (i) Starter Make and Model	Make: TVS/REIL, Model: SM50 (TVS), 50MT (REIL), Rating: 24V, 9kW (for both)
7.3.10 (ii) Starter control make and model	Lucas TVS/ REIL.
7.3.10 (iii) Alternator make and model	Delco-Remy / Prestolite & 19011153 / BLD3314G11, Rating 24V,100A / 24V,140A
7.3.10 (iv) Batteries, numbers and ratings	EXIDE / AMCO / REPUTED 2 Nos & 200Ah 12V

8. Special GUARANTEE: (Also refer clause No 'B-5', 'B-6' & 'B-7' of the technical specifications.

- a) You must ensure that there is no major breakdown due to manufacturing / design defect during the warranty period. In case such breakdown occurs, the purchaser will reserve the right to extend the warranty period suitably.
- b) The complete Equipment consisting of All Assemblies/ sub Assemblies/ components eg. Engine, Transmission, Final Drive, Air conditioning System, AFDSS, Under Carriage, Hyd System, Chassis/ Structure, Blade Assy, Brake System, Battery, Engine Hour Meter & Auto Electricals etc shall be covered for suitable replacement/ Repairs (on merit of the case), free from all costs to the purchaser (Over and above the list enclosed), during total 48 (forty eight) months from accepted date of commissioning.
- c) The following guarantee will apply for the different components from the date of commissioning:
- Complete engine system - 24 months or 6000 hours (whichever is earlier)  
In case of failure of engine system within 6000 hrs, the failed components of the engine system will have to be replaced / repaired depending on the merit of the case, free of cost by the supplier.
  - Transmission Assy. - 24 months or 6000 hrs (whichever is earlier)
  - Undercarriage set - 24 months or 4000 hours (whichever is earlier),

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- iv) Final Drive (excluding Sprocket) and Steering System - 24 months or 6000 hrs (whichever is earlier)
- v) Engine Hour Meter - 12 months or 3000 hrs (whichever is earlier)

d) Air conditioning Systems and AFDSS system along with the all safety devices are to be maintained and kept operative by the supplier throughout the contract period.

Your will be required to stock spares parts to take care of entire Performance period. Spares should be available immediately for replacement against the breakdowns.

9. Performance Bank Guarantee: Also refer the relevant clauses under the technical specifications): In accordance to clause No B.7.2 & B.7.3 & clause No '6' of technical specifications, you have to furnish the Performance Bank Guarantees for the 10% value of the Equipment and Spares and consumables for 4 years (along with accessories) including taxes etc. of the total/ FOR Destination price of order (Landed value), initially. The performance Bank Guarantee shall cover the first, second, third & fourth year of performance. You will have to submit performance bank guarantee for 10% of the order value (landed cost) valid for a period of 51 months of from the date of receipt and acceptance of materials to cover the guarantee period (1+3 years) and the same shall be released on receipt of satisfactory performance throughout the above given guarantee period.

Performance Bank Guarantee has to be submitted for the order value, which will be arrived at by adding all the Taxes applicable, such as GST to the FOR Destination Price of the materials on order. The Performance Bank Guarantee shall be released after receipt of satisfactory performance and no claim certificate from the user department.

10. ERECTION & SUPERVISION : You shall be responsible for the erection and commissioning within 30 days of the receipt of complete equipment at site. However, the purchaser will assist in providing normal tools & tackles etc. and unskilled manpower for this purpose.

#### 11. INSPECTION AND TESTS

- i. The purchaser or its authorized representative shall have the right to inspect and/or to test the goods to confirm their conformity to the contract. The purchaser shall notify the supplier in writing of the identity of any representative retained for these purposes.
- ii. The inspections and tests may be conducted at the premises of the supplier or its subcontractor(s), at point of delivery and/or at the goods final destination when conducted on the premises of the supplier or its sub-contractor(a), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the purchaser.
- iii. Should any inspected or tested Goods fail to conform to the specifications, the purchaser may reject them and the supplier shall replace the rejected goods and make all alternatives necessary to meet specification requirements free of cost to the Purchaser.
- iv. The materials will be inspected on arrival at site by the consignee, which will be considered as final. This shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representatives prior to the despatch of the Goods.
- v. Nothing in these documents shall in any way release the supplier from any warranty or other obligations under this contract.

  
04/12/20  
Chief Manager(MM)

  
17/12/2020  
Chief Manager(MM)

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