



Under Jurisdiction of Dhanbad/Jharkhand Court Only

Bharat Coking Coal Limited

(A Miniratna Company)

A Subsidiary of Coal India Limited

Registered Office: Koyla Bhawan, Koyla Nagar, Dhanbad -826005

CIN:U10101JH1972GOI00091

Website: www.bccclweb.in

Material Management Department

Level-III, Commercial Block

Koyla Bhawan, Dhanbad-826005

(Fax No- 0326-2230183)

Phone No.0326-2230181

Email Id: gmmm.bcccl@coalindia.in

Purchase Order

Ref: BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/09

Date: 16.11.2022

To

M/s Gainwell Commosales Private Limited

Plot No. H-1 ADDA Industrial Area, NH-2

Bye Pass Road, Asansol 713 305, Dist. Burdwan, West Bengal ,

E-mail: sitansu.nandi@gainwellindia.com/

deepak.gupta@gainwellindia.com

GSTIN: 19AAFCG8736M1ZW

Vendor Category : Dealer

PAN-AAFCG8736M

Sub: Supply, Installation and Commissioning of 13 nos. of 60 Ton Rear Dumper along with Spares and Consumables for 12 months of warranty period from the date of commissioning of the Equipment and thereafter Spares & Consumables for 48 months guaranty period

Ref: Gainwell Online offer Ref: GCPL/BCCL/MBU/60T RD/26/22-23 dtd 20.06.22 (Bid Id: 826443 dtd 30.06.22) and subsequent last counter offer letter no. BCCL/MBU/60T RD/Clarification-Price Justification/2022-23 dtd 07.10.22 against open domestic e-tender with reverse auction vide tender no. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24 dtd 01.06.22 (Tender Id: 2022_BCCL_245460_1), Cover - I opened on 02.07.2022 & Cover-II opened on 04.08.22.

Dear Sirs,

With reference to the above, we, for and on behalf of BCCL, hereby place PURCHASE ORDER on Gainwell for the following items as per rate, terms and conditions indicated below as above Gainwell referred offer has been accepted to the extent as indicated here under,

1. SCOPE OF SUPPLY-

Sl	Item Description	Qty (No)	Price Element	Unit Price (Rs/No)	Extended Value (Rs)
1	Caterpillar Make 60T Rear Dumper , Model 773E Powered by Caterpillar Make Cat 3412E Diesel engine developing 537 KW net Power including first fill of oils , grease and lubricates	13	Basic	2,47,49,794.00	32,17,47,322.00
			P&F Charges	Inclusive	Inclusive
			Freight	Inclusive	Inclusive
			Transit Insurance	Inclusive	Inclusive
			GST @ 28 %	69,29,942.32	9,00,89,250.16
			Total	3,16,79,736.32	41,18,36,572.16
2	Erection & Commissioning, Special Tools charges	13	Basic	0.00	0.00
3	Spare Parts and Consumables for warranty period/1st year of the equipment	13	Basic	13,53,517.36	1,75,95,725.68
			GST @ 18/28 %	2,43,633.12	31,67,230.56
			Total	15,97,150.48	2,07,62,956.24
4	Spare Parts and Consumables for 2nd Year of Operation	13	Basic	16,27,126.04	2,11,52,638.52
			GST @ 18/28 %	3,00,724.08	39,09,413.04
			Total	19,27,850.12	2,50,62,051.56

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5	Spare Parts and Consumables for 3rd Year of Operation	13	Basic	32,91,963.15	4,27,95,520.95
			GST @ 18/28 %	5,92,553.37	77,03,193.81
			Total	38,84,516.52	5,04,98,714.76
6	Spare Parts and Consumables for 4th Year of Operation	13	Basic	25,89,641.15	3,36,65,334.95
			GST @ 18/28 %	4,74,454.34	61,67,906.42
			Total	30,64,095.49	3,98,33,241.37
7	Spare Parts and Consumables for 5th Year of Operation	13	Basic	15,50,891.13	2,01,61,584.69
			GST @ 18/28 %	2,79,160.40	36,29,085.20
			Total	18,30,051.53	2,37,90,669.89
8	Total Basic price of equipment with freight insurance and 5 years spares parts & consumables.	13	Basic	3,51,62,932.83	45,71,18,126.79
9	Total GST amount	13	GST @ 18/28 %	88,20,467.63	11,46,66,079.19
10	Total price of equipment with freight, insurance and 5 years spares parts & consumables.	13	Landed Price	4,39,83,400.46	57,17,84,205.98

Note: Year wise Spare Parts and Consumables List per equipment for above spares amount is as per Annexure -B

Supply Point:

Equipment: Supply and billing will be from Gainwell Commosales Private Limited, Plot No. H-1 ADDA Industrial Area, NH-2 Bye Pass Road, Asansol 713 305, Dist. Burdwan, West Bengal

Spares: Supply and billing will be from Gainwell Commosales Private Limited, Kusum Vihar Colony, P.O.-Koyla Nagar, Dhanbad-826005, Jharkhand

2. Total Purchase Value :- (Equipment & Spare Parts and Consumables for 12 months of warranty period from the date of commissioning of the Equipment and thereafter Spares & Consumables for a period of 48 months): **Rs 57,17,84,205.98** (Fifty Seven Crore Seventeen Lakh Eighty Four Thousand Two Hundred Five Rupees and Ninety Eight Paise Only.)

The above prices are FIRM and on FOR Destination basis inclusive of packing & forwarding, Freight & insurance. Safe arrival of the complete equipment upto destination stores shall be Gainwell's responsibility.

Note: During 60 months contractual period, guaranteed spares covered under price list, shall be paid at the price list rate prevailing in BCCL or order price, whichever is lower.

3. GST:

a) GST shall be paid at actual against documentary evidence as applicable at the time of dispatch within the stipulated delivery period. The current rate of GST is 28% on equipment. Input Tax credit benefit shall be availed by the consignee, for which you should submit GST complaint Invoice.

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 BCCL.

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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 BCCL to avail Input Tax Credit (ITC) as per eligibility under GST.

In case BCCL is unable to avail ITC or any liability arises to BCCL due to failure on the part of you to comply the above provisions, the entire amount including Interest (if any) borne by BCCL shall be recovered from you. The present rate GST applicable on individual items of spares is as per Annex- B enclosed.

b) Invoice issued by you should contain following elements as per Section 31 of CGST Act, 2017 along with Rule 46 and 47 of CGST Rule, 2017:

- Firm Name, address and GSTIN;
- A consecutive serial number (not exceeding sixteen characters) containing only alphabets and/or numerals, unique for a financial year; (should not be hand-written)
- Date of its issue;
- Name, address and GSTIN/ Unique ID Number, if registered, of the recipient;
- Name and address of the recipient and the address of delivery, along with the name of State and its code, if such recipient is unregistered and where the taxable value of supply is fifty thousand rupees or more;
- HSN code of goods or Accounting Code of services;
- Description of goods or services;
- Quantity in case of goods and unit or Unique Quantity Code thereof;
- Total value of goods or services;
- Taxable value of goods or services taking into account discount or abatement, if any;
- Rate of tax (CGST, SGST or IGST);
- Amount of tax charged in respect of taxable goods or services (CGST, SGST or IGST);
- Place of supply along with the name of State, in case of a supply in the course of inter-State trade or commerce;
- Place of delivery where the same is different from the place of supply;
- Whether the tax is payable on reverse charge;
- the word "Revised Invoice" or "Supplementary Invoice", as the case may be, indicated prominently, where applicable along with the date and invoice number of the original invoice; and
- Signature or digital signature of the Gainwell or its authorized representative
- GST Registration Number of BCCL in case of supply for Jharkhand is 20AAACB7934MFZB and in case of supply for WB is 19AAACB7934M2Z7. Your bills should bear this number to enable BCCL to claim INPUT TAX CREDIT.

- c) Gainwell has to ensure proper uploading in your return so that BCCL may be able to avail Input Tax Credit.
- d) Gainwell has to ensure that if BCCL does not be able to avail Input Credit due to your fault then the loss amount shall be recovered from your bill.
- e) The benefit of any extra input tax credit earned by Gainwell, if any, in future shall be passed on to BCCL.
- f) E-Way bill, if required, shall be arranged by Gainwell.
- g) HSN codes and GST rates of the items covered in the above supply order placed will be as under:

Sl	Item	HSN code	GST rate
1	Dumper	87041010	28 %
2	Spares & Consumables	HSN Code & GST mentioned in Annexure-B	

h) Your GST details are as under:

SN	Particulars	Firm's Details
1	Name	M/s Gainwell Commosales Private Limited
2	Constitution of Business	Private Limited
3	Trade Type (Manufacturer/Dealer/Service Provider)	Manufacturer
4	PAN	AAFCG8736M

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5	Contact number	9771441010
6	GST No.	19AAFCG8736M1ZW

4. Packing & Forwarding Charges: Inclusive

5. Freight/Transportation Charges Inclusive Of Service Tax: Inclusive

6. Transit Insurance Inclusive Of Service Tax: Inclusive

7. TERMS OF PAYMENT:

(a) For Payment of equipment and consumable spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment in Indian Rupees:

- 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 acceptance of Performance Bank Guarantee valid till 3 months after the completion of 60 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 the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. Of BCCL, where the equipment has been deployed and confirmation of receipt of spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment by the paying authority.
- Freight and transit insurance charges shall be paid at actual subject to ceiling of the quoted rates/prices.

(b) Payment of spares and consumables for 48 months after the warranty period of 12 months from the date of commissioning of the equipment in Indian Rupees:

100% value of the supplementary items as per scope of supply and 100% taxes and duties and other charges shall be made within 21 days after receipt and acceptance of materials at consignee's end. BCCL is making payment of Gainwell's bills through Electronic Fund Transfer (EFT). Gainwell is therefore, advised to indicate their Bank Account number and other Bank Details in their Invoice.

Name of the Bank.

Name of the Branch with complete address.

Party's Account Style.

Party's nature of Account.

Party's Account Number.

Your E-Payment mandate is enclosed as Annexure- O

8. DELIVERY:

(a) Period for supply of complete equipment shall be as under:

08 No's Dumpers to be supplied within 6 months from the date of receipt of purchase order and balance 5 nos Dumpers to be supplied in 7th month from the date of receipt of purchase order. However early supply will be appreciated. Hence, total delivery period shall be 7 months from date of supply order.

(b) The delivery of spare parts and consumables for individual machine should be made as follows:

The supplier shall submit *Five (5)* separate schedules for every year showing spare parts and consumables proposed to be supplied by them in each 12 (twelve) months period from the date of commissioning of equipment project-wise in order to comply with the provisions herein contained.

(c) Erection & Commissioning Period: The Equipment shall be commissioned at site within 30 days of receipt of last consignment of each Equipment.

9. LIQUIDATED DAMAGES CLAUSE:

(i) 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:

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- (a) 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
- (b) 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
- (c) 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,
- (d) 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.
- (e) To forfeit the security deposit fully or in part.
- (f) 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.

(ii) Compensation for not achieving guaranteed Availability:-

In the event that Equipment fails to achieve the Availability herein provided, measured over each twelve (12) month period, the Supplier shall be liable for and pay to the Purchaser, as liquidated damages, a sum equal to as indicated hereunder for each equipment against the PBG submitted by the bidder as per clause-2 of SCC

- 1% of the delivered landed price of the equipment including the price of spares & consumables for 60 months period for reduction in every percentage or part thereof from the Guaranteed Availability for the first 5%.
- 10% of the delivered landed price of the equipment including the price of spares & consumables 60 months period for reduction beyond 5% from the guaranteed availability.

(iii) LIQUIDATED DAMAGES CHARGES ON ERECTION & COMMISSIONING:

The supplier shall be responsible for the delivery, erection, commissioning and testing of each equipment as detailed in the Schedule of Requirements and the Technical Specifications.

If the supplier fails to commission the equipment within the specified period as incorporated in the NIT, Liquidated damages will be recovered @ 0.5% of the landed price of the equipment along with accessories per week or part thereof for the delayed period subject to a maximum of 10% of the landed price of equipment along with accessories including erection and commissioning charges.

10. CONSIGNEE:

The equipment allocated to the Areas as follows which is subject to change as per the requirement:

Sl	Name of the Area	Qty. (Nos.)	CONSIGNEE
1	Block-II	05	Depot Officer, Regional Store, Block-II, P.O.-Nudkhurkee, Dist.-Dhanbad, Jharkhand, Pin code-828307
2	Bastacolla	03	Depot Officer, Regional Stores, Bastacolla Area, Dhanbad Pin 828106
3	Lodna	05	The Depot Officer, Regional Stores, , Lodna Area ,Khaasjeenagora, Dhanbad -828115
	Total	13	

11. PAYING AUTHORITY: The HOD (Finance) MM, Purchase Finance ,Koyla Bhawan:Koyla Nagar,Dhanbad

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13. SECURITY DEPOSIT: You will have to submit Security Deposit for 3 % value of the total landed value of the Contract including all taxes, duties and other costs and charges (i.e. **Rs 1,71,53,526.18**) in the form of Bank Demand Draft/Banker's Cheque or in the form of a Bank Guarantee as per format enclosed at Sample Forms (As per format given in ANNEXURE-Q), from a RBI Scheduled Bank in purchaser's country (on a non-judicial stamp paper) within 30 days from date of notification of award.

In case of FOR destination contract in Indian Rupees, the total landed value of the contract will be arrived at after adding GST and any other tax and duty, if applicable and any other cost and charge, if applicable, to the FOR Destination price of the ordered Equipment and Spares & Consumables for first 12 months warranty period from installation of equipment and thereafter Spares & Consumables for a period of 48 months.

The Security Deposit Bank Guarantee shall remain valid up to 3 months after the supply and commissioning of all the equipment covered in the contract and will be released within 30 days after successful commissioning of all the equipment covered in the contract and on receipt of confirmation of Performance Bank Guarantee (s) for all the equipment covered in the contract. The Bank Guarantee for Security Deposit shall be extended till the Performance Bank Guarantee (s) are submitted by the firm, failing which Security Deposit will be forfeited.

If you fails to deposit the security deposit within 30 (thirty) days from date of notification of award, or fails to extend the Bank Guarantee for Security Deposit, suitably as required, the same shall be recorded as unsatisfactory performance for future dealings apart from taking any other penal action as may be deemed fit by BCCL.

The SDBG issued by issuing bank on behalf of the bidder in favour of "Bharat Coking Coal Ltd.," shall be in paper form (Stamp Paper) as well as issued under "Structured Financial Messaging System". Issuing Bank should send the underlying confirmation to either of following banks:

Name of beneficiary & its details	Name	Bharat Coking Coal Limited
	Area	HQ, BCCL
	Bank Account no.	35160317947
	Deptt.	MM Department
Beneficiary Bank, Branch & Address	State Bank of India	
	Main Branch Dhanbad	
IFSC code	SBIN0000066	

Or

Name of beneficiary & its details	Name	Bharat Coking Coal Limited
	Area	HQ, BCCL
	Bank Account no.	019605001057
	Deptt.	MM Department
Beneficiary Bank, Branch & Address	ICICI Bank	
	ICICI Bank, Dhanbad	
IFSC code	ICIC0000196	

Original copy of the Bank Guarantee issued by the Issuing Bank shall be sent by the issuing bank to MM department, BCCL.

14. COMPOSITE GUARANTEE/WARRANTY: As indicated in Technical Specification (ANNEXURE-A).

15. PERFORMANCE GUARANTEE:

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 4000 (four thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary +/- 500 hours.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 36 months from the date of accepted date of commissioning and 80% (eighty percent) annually for following 24 months.

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[Note - Expected annual working hours may be decided by the subsidiary company as per actual requirement]

Gainwell shall be required to furnish a Performance Guarantee equivalent to 10% value of the total landed value of the contract including all taxes, duties and other costs and charges subsidiary wise. The PBG will be required to be submitted to Paying Authority of BCCL. The performance guarantee shall be submitted in the form of a Bank Guarantee issued by a scheduled bank in the format Attached as ANNEXURE-G.

The PBG(s) shall remain valid till 3 months after the completion of 60 months period from the date of commissioning of respective equipment covered in the contract and the same shall either be released or extended depending upon the merit of the case. This Performance Guarantee shall be for the performance of the Contract /Supply Order.

The release of the Performance Bank Guarantee(s) after above indicated period shall be subject to satisfactory performance of the equipment during 60 months period from the date of commissioning of the equipment and fulfilment of contractual obligations failing which, action for further extension or encashment of PBG, as deemed suitable shall be taken. Release of PBG for each equipment may be done separately on satisfactory performance of the respective equipment as above.

The Bank Guarantee issued by the Bank on behalf of Gainwell in favor of "BHARAT COKING COAL LIMITED" shall be in paper form as well as issued under "Structural Financial Messaging System". The detail of beneficiary for issue of BG under SFMS platform is furnished below.

Name of beneficiary & its details	Name	Bharat Coking Coal Limited
	Area	HQ,BCCL
	Bank Account No	35160317947
	Deptt	MM Department
Beneficiary Bank Branch &Address	State Bank of India	
	Main Branch Dhanbad	
IFSC Code	SBIN0000066	

Or

Name of beneficiary & its details	Name	Bharat Coking Coal Limited
	Area	HQ,BCCL
	Bank Account No	35160317947
	Deptt	MM Department
Beneficiary Bank Branch &Address	ICICI Bank	
	ICICI Bank Dhanbad	
IFSC Code	ICIC0000196	

The PBG issued by Issuing bank on behalf of Gainwell in favour of "Bharat Coking Coal Limited" shall be in paper form (Stamp Paper) as well as issued under "Structured Financial Messaging System". Original copy of the PBG issued by the Issuing Bank shall be sent by the issuing bank to BCCL.

The Performance Bank Guarantee (s) may be submitted equipment wise to BCCL. Total value of Performance Bank Guarantee is Rs. 5,71,78,420.60 Or Rs. 43,98,340.05 per Equipment.

16. INTEGRITY PACT: The Integrity Pact document has been signed by you and the same is deemed to have been signed by BCCL authorities.





17. PRICE FALL CLAUSE:

The Bidder undertakes in CPS that it has 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 PSU 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) The bidder will be asked to submit a copy of the last (latest) purchase order for the similar/ordered item(s) received by them from 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, along with the offer.

Bidder may opt to mask the price portion and submit an undertaking that price copy will be submitted on being L-1 on opening of price bid/ reverse auction.

(iii) 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.

(iv) 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. INSPECTION AND TESTS:

Inspection and Tests shall be as per Clause 8 of the GCC and details of specific inspections and/or tests to be carried out at the Supplier's works and/or at the Site(s) are given in Section VI, Technical Specifications. However, Pre Dispatch Inspection will be done by GM(Excavation)/HOD, BCCL or its Authorized representative.

19. FORCE MAJEURE CLAUSE:

I. Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to, acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, freight embargoes and act of God.

II. If there is delay in performance or other failures by the supplier to perform its obligation under the contract due to an event of a Force Majeure and the contract is governed by Force Majeure Clause, the supplier shall not be held responsible for such delays / failures.

III. In such a situation, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof, duly certified by the local Chamber of Commerce or Statutory authorities, the beginning and end of the causes of the delay, within twenty-one days of occurrence and cessation of such Force Majeure Conditions. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

20. SUBMISSION OF BILLS:

(a) Submission of Documents for Payment in Indian Rupees for equipment

For payment for equipment in Indian Rupees, the supplier will submit the following documents along with bills to the paying authority:

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- a. Four copies of the Supplier's invoice, Pre-Receipted and Stamped showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.
- b. Receipted Challan/ Consignment Note of all the consignments.
- c. Manufacturer's Test & Inspection Certificate.
- d. Manufacturer's Warranty /Guarantee Certificate.
- e. Lowest Price Certificate as per SCC clause -8.2
- f. Copy of Performance Bank Guarantee as per Clause -2, SCC, Sec-IV.
- g. Documentary evidence for freight and transit insurance charges up to the destination.
- h. Copy of Certificate of Insurance.
- i. Any other document(s) required as per contract.

(b) Submission of Documents for Payment in Indian Rupees for spares and consumables as per scope of supply:

For payment for Spares and consumables in Indian Rupees, the supplier will submit the following documents along with bills to the paying authority:

- a. Four copies of the Supplier's invoice, Pre-Receipted and Stamped showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.
- b. Receipted Challan/ Consignment Note of all the consignments.
- c. Lowest Price Certificate as per SCC clause -8.2.
- d. Any other document(s) required as per contract.

21. Risk Purchase

a) 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, BCCL 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 may 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 BCCL and/or in any other Subsidiary Companies /CIL.

b) Risk purchase action may be initiated as a last resort, under any of the following conditions:

- I. When the supplier fails to deliver the materials even after extending the delivery period.
- II. (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.
- III. 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.

22. GENERAL TERMS AND CONDITIONS: Unless otherwise specified in the purchase order, the Purchase order shall be subject to the General Terms and Conditions of Supply of Stores given as ANNEXURE -D. In case there is a conflict in any particular term of the NIT with the General Terms, the terms of the NIT will prevail.

23. JURISDICTION: Any dispute arising out of this enquiry shall come under the sole jurisdiction of the Dhanbad/Jharkhand High Court, (INDIA).

All Other Terms & Conditions shall be as per NIT & as per Gainwell techno-commercial accepted offer.

Two copies of the order is being sent to Gainwell. Gainwell is advised to acknowledge the receipt and acceptance of the order by returning one copy duly signed and stamped to this office positively within 15 days, failing which this order shall be deemed to have been accepted by Gainwell for execution.

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Enclosures:

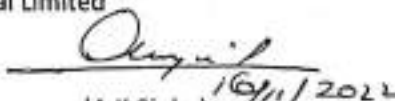
SL	ANNEXURE	DESCRIPTION
1	ANNEXURE - A	Technical Specifications Comprising Section - Schedule Of Requirement; Parts I,II, Schedule Of Requirements Of Service , Technical Specifications Preface - Scope Of Supply , Specific Project Requirements, General Requirement, Equipment Specification
2	ANNEXURE - B	List Of Warranty Spares & Spare Parts And Consumables For 5 (1+4) years
3	ANNEXURE - C	Quality Assurance Plan
4	ANNEXURE - D	GCC & SCC
5	ANNEXURE - E	Technical Parameters Sheet (TPS)
6	ANNEXURE - F	Tool List
7	ANNEXURE - G	Performa Of Performance Bank Guarantee
8	ANNEXURE - H	Leaflet of Offered Machine
9	ANNEXURE - I	Engine Performance Curves
10	ANNEXURE - J	Technical Description & Other offered details
11	ANNEXURE - K	List of Major Bought Out Items
12	ANNEXURE - L	Major Depot/Warehouse.& Service facility
13	ANNEXURE - M	Erection & Commissioning Program
14	ANNEXURE - N	Maintenance Schedule
15	ANNEXURE - O	Authorization For E Payment
16	ANNEXURE-P	Pre Integrity Pact
17	ANNEXURE-Q	Security Deposit Bank Guarantee Proforma

INDENT & BUDGET CERTIFICATION REFERENCE:

Area Indent ref no. and Date			Budget Reference
Sl	Area/ Colliery	Indent no	SAP PR no. 1300029418 dtd 26.04.2022,
1	Block-II/ABOCP	GM/B-II/EXCV/22-23 /20 dtd 13.04.22	
2	Bastacolla/ Kuya OCP	BCCL/CAP/IX/RS/2022-23/0 dtd 16.04.22	
3	Lodna /ANTST-JG OCP	BCCL/LA/AM(Excv) /22-23/07 dtd 18.04.22	
IR No. 422011 dtd 24.05.22			

Yours faithfully,
For & on behalf of Bharat Coking Coal Limited


(Alok Kumar)
Manager (MM)


(A.K.Sinha) 16/11/2022
Chief Manager (MM)

Note: - This is issued with the approval of competent Authority as communicated by Company Secretary vide note sheet no. 9164 dated 15.11.2022. This order is placed against the consolidated indent Ref no. Indent/HEMM Capital/60T Dumper /22-23/206 dated 27.04.2022 of GM (Excavation)/HOD, Excavation Department, BCCL HQ.

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Copy to:

1. GM(Excv) HOD, Koyla Bhawan: Koyla Nagar, Dhanbad
2. The HOD (Finance) MM, Koyla Bhawan: Koyla Nagar, Dhanbad
3. The GM(Areas), Block-II/Bastacolla/Lodna Area , BCCL
4. GM/HOD(MM), ECL/CCL/WCL/SECL/NCL/MCL
5. M/s Gainwell Commosales Private Limited , Kusum Vihar Colony , P.O.-Koyla Nagar , Dhanbad-826005, Jharkhand.
6. M/s Caterpillar India Pvt Ltd , RMZ NXT Campus, I-A ,III Floor , White Filed, Bangalore ,560066
7. The Depot Officer ,Regional Store , Block-II/Bastacolla/Lodna Area , BCCL
8. Company Secretary , Koyla Bhawan, BCCL
9. Tech-cell, MM Division, Koyla Bhawan: Koyla Nagar, Dhanbad
10. **The Independent External Monitor for Integrity Pact :-**
 - i. Sri Madusudan Prasad , IAS (Retd.) Address: M-I I, Green Park Main , New Delhi-110016
 - ii. Shri Gautam Sen , IDAS (Retd.) Address: Flat no.I-081, Vendanta , Gurugram , Sector-108, Haryana-122001

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Annexure-A

Section-I-Schedule of requirements

Part I

S. No	Brief Description of Goods & Services	Quantity	Expected Delivery Schedule at Site
1	60 US Ton (55 metric ton approx) Rear Dumper	13 no's	08 No's Dumpers to be supplied within 6 months from the date of receipt of purchase order and balance 5 nos Dumpers to be supplied in 7th month from the date of receipt of purchase order. However early supply will be appreciated. Hence, total delivery period shall be 7 months from date of supply order.
2	Ancillary Equipment and other requirements for each of Item 1 as specified in Technical Specifications included in Section VI Attachments	In accordance with item 1	Delivery to be made along with the machine.

The equipment allocated to the mine projects are as follows which is subject to change as per the requirement of purchaser:

Sl No.	Area/Project	Company	Total Requirement	
			Under NCD	Under PCD
1.	B-II Area	do	05 No's	-
2.	Bastacolla Area	do	03 No's	-
3.	Lodna Area	do	05 No's	-
	TOTAL		13 No's	NIL

Part II

S.No	Brief Description of Services	Period/Quantum
1	Training of Purchaser's Personnel at the manufacturer's works or elsewhere outside India.	Please refer to Schedule of Requirements of Services later in this Section and to the Technical Specifications (Section VI).
2	Training of Purchaser's Personnel on Site.	Please refer to Schedule of Requirements of Services later in this Section and to the Technical Specifications (Section VI).
3	Assembly and erection of equipment at Site in accordance with the Technical Specification and Conditions of Contract.	To be specified by the Bidder to comply with the Technical Specifications (Section VI) and the terms and Conditions of Contract.

Note: 1. Price for the equipment along with accessories should be quoted with Normal Custom Duty (NCD) for 13 no's. and Project Concessional Duty (PCD) for zero nos. applicable for the imported contents.

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Schedule of Requirements of Services

The Supplier's scope of the Contract will include the following -

- I. Type test on each equipment included in the technical specification and offered in the bid.
- II. Providing Services of Supplier's qualified engineer(s)/personnel for:
 - A. unloading, transportation to site, storage at site and/or
 - B. Transportation from storage to erection site, installation, testing and commissioning.
- III. Training of Purchaser's Personnel: Training of Purchaser's personnel to be confirmed by the bidder in respect of training to be provided at manufacturer's works or at our site in the following format :

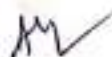
Type of Personnel	At Manufacturer's Works				At Site			
	No	Period	Total		No	Period	Total	
Mech Engineer		weeks		weeks		Week		Week
Elec Engineer		weeks		weeks		Week		Week
Mech Supervisor		weeks		weeks		Week		Week
Elec Supervisor		weeks		weeks		Week		Week
Mech Fitter						Week		Week
Electrician						Week		Week
Operator						Week		Week
Total		weeks		weeks				weeks

Definitions:

Mech/Elect Engineer -
Elect/Mech Supervisor -

Mech
Fitters/Electricians/Operators -

Graduate Engineer having basic knowledge of the equipment
Diploma Holder Engineer having basic knowledge of the equipment
Un-skilled, semi-skilled and skilled.

Section-II - Technical Specifications

Preface - Instructions to Bidders

Introduction

These Technical Specifications identify the technical requirements of the Goods and Services which are the subject of this tender.

The Technical Specifications are presented in four parts as follows:

- A. Scope of Supply
- B. Specific Project Requirements
- C. General Requirements
 - 1) Geography and Climatic Conditions
 - 2) Goods (Equipment and Machinery)
 - 3) Services
 - 4) Standards
 - 5) Supplier's Responsibility
 - 6) Spare Parts Provisions
 - 7) Availability Provisions
 - 8) Deemed Breakdown
 - 9) Composite Warranty / Guarantee
 - 10) Quality Assurance
- D. Equipment Specifications

Technical Response

Bidders shall provide a Clause by Clause commentary demonstrating compliance with the Purchaser's Technical Specifications, together with full supporting technical literature and data sheets.

Wherever graphical representation of data (e.g., load, power, performance curve) is required, the grid axis and data shall be properly and clearly labeled for ready comprehension. Additionally, Bidders shall provide the information specifically requested in the Attachment to the Technical Specifications.

Failure to demonstrate compliance in all respects with the requirements of the Technical Specifications may render the bid non-responsive.

Failure to provide any information requested in any part of this specification may deem the bid non-responsive.

Site Visits

The Bidder prior to making any Bid calculation and as part of the preparation of its Bid, shall be deemed to have visited and inspected the Site(s), made all enquiries and collected all information documentary or otherwise, including climatic conditions, as considered necessary by the Bidder for the proper and accurate preparation of its bid.

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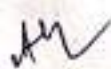
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A Bidder may visit the Site(s) by prior appointment with the purchaser. The number of Bidder's representatives permitted to make visits to the Site(s) shall be limited to a maximum of two.

Bidders wishing to make appointments for Site Visits should do so in writing or by facsimile directly with BCCL and concerned officer as detailed in the following schedule. Copies of all such communications should be sent to:

General Manager (MM)
Bharat Coking Coal Limited
KoynaBhawan, Koyna Nagar
Commercial Building (Level-III)
Dhanbad-826005 (Jharkhand), India,
Fax- 91 (0) 326 2230183

Company	Project
Bharat Coking Coal Limited KoynaBhawan, Koyna Nagar Commercial Building (Level-III) Dhanbad-826005, Fax- 91 (0) 326 2230177 Tel- 91 (0) 326 2230177 Attention: General Manager (Excv)	All Projects



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Part A

Scope of Supply

A.1 Equipment Package

The Supplier is required to provide a complete package of equipment for the supply of 60 T Rear Dumper to opencast (surface) coal mining projects as per the Technical Specifications provided in Part D.

The supplier is required to supply the equipment along with accessories, consumables, training, installation, commissioning and testing at the coal mining project.

The package also includes Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of 48 months.

The Scope and Phasing of supply for the 60 T Rear Dumper is given in 'Schedule of Requirement'.

A.2 Supplementary Items

The equipment shall be provided with a comprehensive tool kit which shall include any special tools required for erection and commissioning of equipment. First fill of all oils, greases and lubricants needed for test, erection and commissioning of equipment.

A.3 Information and Drawings

At least one month before the scheduled installation date, the Supplier shall provide not less than:

- (a) Suitably illustrated copies of Operating, Repair and Maintenance Manuals for each type/model of equipment and accessories, written in English language, substantially bound in book form;

Three (3) copies to each project site; and

One (1) copy each along with soft copy to the concerned Project In-charge, Area Manager / Staff officer (Excv), General Manager (Excv)/HOD, Subsidiary Hqrs. and General Manager (MM)/HOD, subsidiary Hqrs.

- (b) Suitably illustrated copies of detailed Spares Parts Manuals for each type/model of equipment and accessories, written in English language, substantially bound in book form;

Three (3) copies to each project site; and

One (1) copy each along with soft copy to the Project In-charge, Area Manager / Staff officer (Excv), General Manager (Excv)/HOD, Subsidiary Hqrs. and General Manager (MM)/HOD, subsidiary Hqrs.

In addition to the Equipment drawings, where appropriate the Supplier shall supply detailed drawings (in the same number of copies) illustrating erection/assembly site(s), foundation and accommodation requirements for such items as drive motors, switch installations etc.

A.4 Erection/Assembly, Commissioning and Performance Testing:

The Supplier shall provide the Services of Specialist Technicians (refer Part – C.3) and required manpower (skilled/semi-skilled/unskilled) to undertake the installation/erection/assembly, commissioning and any performance testing of the plant, Equipment and accessories supplied. The purchaser will assist in providing necessary facilities like erection tools and tackles (supplied along with the equipment), cranes with operator and electricity during erection and commissioning.

The technicians shall remain at site following commissioning until all necessary personnel are fully conversant with the maintenance and operation of the equipment.

The Equipment shall be commissioned at site within 30 days of receipt of last consignment of each Equipment.

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A.5 Training:

I. The supplier in consultation with the project in-charge / HOD [Excavation] of the respective site shall make available experienced personnel to conduct training of engineers, supervisors, technicians and operation personnel for specified period as mentioned in table given in 'Schedule of Requirement of Services' from the date of issue of acceptance certificate of the equipment. The training shall cover the following:

- a) Training on simulator module by the bidder at their works/suitable location in India/suitable end user's location is preferable.
- b) Equipment system, safety and risk assessment.
- c) Equipment operation and maintenance.
- d) Trouble shooting, localization of fault and their remedies covering:
 1. Electrical and electronics
 2. Mechanical
 3. Hydraulic system
 4. Lubrication system
 5. Pneumatic system etc.

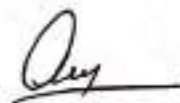
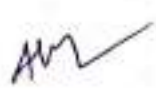
Comprehensive training manuals with clear illustration shall be provided to each participant in English language. The training courses shall be conducted in both English and Hindi language.

Details of purchaser's estimates of the minimum training programme required for total number of equipment is described in Sec-V.

Note: - The training shall be completed in batches within warranty period from the date of commissioning of first equipment in the respective project.

IV. Provision of additional training within the contract period after completion of warranty period.

- i. The bidder shall give confirmation in their bid to impart training to the BCCL personnel, in addition to the contractual training provision, after completion of warranty period but at any time within the contract period.
- ii. The additional training will be as per requirement of the user and shall cover the training scope same as per the mandatory training (within warranty period) of the contract.
- iii. The training will be on chargeable basis and additional payment to the supplier will be made at the same rates which have been indicated for mandatory training.



Part B

Specific Site Requirements

B.1 Project Specific Requirements

The equipment shall be suitable for use at the specific site projects under the conditions detailed below.

B.1.1 Opencast Projects

All the Opencast Project are owned by the Bharat Coking Coal Limited, a wholly owned subsidiary of Coal India Limited (the "Purchaser"). The mine is located partly in the Dhanbad District of Jharkhand approximately 30 Km from Dhanbad railway station.

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Part C

C.1 Geography and Climatic Conditions

Elevation: -

The natural surface varies from 100 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° C

Maximum 50° C

Rainfall: - The mean annual rainfall is 1,000mm, 90 to 95 % of which may fall in rainy season from June to October.

Wind: - April to September - South to South Westerly

October to March - North Westerly

Speed: -- 8 km per hr. average

- 100 km per hr. maximum

C.2 Goods (Equipment and Machinery)

Detailed specifications of the Equipment to be supplied are given in **Part D** of this section.

In general, all items shall be:

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

Electrical Equipment 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 environment, shall be suitably protected to prevent any effects of corrosion or erosion.

C.3 Services

The supplier shall be responsible for the erection and commissioning of the equipment at site.

The supplier shall depute qualified and competent Engineer(s) and specialist technicians to supervise the entire assembly, erection and commissioning of equipment free of cost.

C.4 Standards

The design, supply, erection, testing and commissioning of all Equipment under this Contract shall in all respects comply with the requirement of this specification and with the appropriate current Indian standards and codes, or relevant Standards issued by the Bureau of Indian Standard or International Standards Organization or any other equivalent international standards, which corresponds to specific ISO/Indian standards indicated in the technical specification.

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Such equivalent international standards are to be supported by documentary evidence certifying that offered standards are identical to the corresponding ISO/Indian standards.

The equipment shall comply with requirements 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 of International Units (S.I.)

C.5 Suppliers Responsibility

The Purchaser requires that the Supplier shall accept responsibility for the provision of complete operable and compatible Equipment and systems within the Scope of Supply. This document identifies only the major items required for the installation and the Supplier shall ensure that the total supply includes all necessary Equipment for it to function effectively, safely and efficiently. Any additional items the Supplier considers necessary to ensure compliance with such a requirement shall be identified and included.

If the Supplier observes that this Specification document contains any anomalies, ambiguities, flaws, errors or omissions, the Supplier shall immediately bring these to the attention of the Purchaser but not later than 15 days prior to the due date of opening.

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

C.6 Spare Parts Provisions

C.6.1.a. Availability of Spare Parts

All items and Equipment proposed shall be of current design and manufacture. The Supplier shall warrant that sufficient spares and servicing facilities will be available to maintain the Equipment in use throughout its life.

C.6.1.b Bought-out assemblies and sub-assemblies

The supplier is required to furnish the details of all Major bought-out items as indicated in the technical specification against "Information to be provided by the bidder".

C.6.2 Provision of Spare Parts

C.6.2.1 Within the Contract Price, the Purchaser shall agree to purchase all Operational, maintenance and standby/contingency spare parts, consumable items, wear materials, maintenance tools and special tools (hereinafter collectively referred to as "Spare Parts", unless the context requires otherwise) in accordance with the Supplier's recommendations for 60 months from the date of issue of the Commissioning Certificate. Similarly, within the Contract Price, the Purchaser shall also agree to purchase consumable items (hereinafter referred to as "Consumables") in accordance with the Supplier's recommendations for 60 months from the date of issue of the Commissioning Certificate. The schedule of supply of spares and consumables shall as indicate in Schedule of Requirement, Section-V. In addition, the Supplier shall provide Spare Parts and Consumables for Commissioning.

Consumables shall include items such as oils, lubricants and fluids also. Tyres and trailing cable are not included in consumables.

The supplier shall submit *Five (5)* separate schedules for every year showing spare parts and consumables proposed to be supplied by them in each 12 (twelve) months period from the date of commissioning of equipment project-wise in order to comply with the provisions herein contained.



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C.6.2.2 In the event that the spare parts and consumables, as recommended by the Supplier, in any way fall short of actual requirements during the period for which they are said to be adequate, the supplier 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 the Supplier 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.

C.6.2.3 In the event that the spare parts, Insurance items and consumables, as recommended by the Supplier, are in excess of actual requirements. The Purchaser may at its option.

a) Retain such excess spare parts and consumables as, in its discretion it may elect to do so

b) Require the Supplier to repossess or repatriate or otherwise dispose of such excess spare parts and consumables in exchange for payment to the Purchaser of the Contract Price of the spare parts and Consumables concerned.

The Purchaser shall notify the Supplier, in writing of its requirements under this Clause within thirty (30) days of completion of the period referred to in Clause C.6.2.1 hereof.

C.6.2.4. In the event that operation of the Plant is inhibited or frustrated as a direct result of lack of spare parts and consumables, pursuant to Clause C.6.2.2 hereof, then the period referred to in Clause C.6.2.1 hereof shall be extended by a period of not less than the period during which operation as aforesaid was inhibited or frustrated.

C.6.2.5. The supplier shall not be liable for the supply of additional spare parts and consumables, nor to extend the period referred to in Clause C.6.2.1 hereof, if and to the extent that, additional Spare Parts and Consumables are required by reason of unforeseen accidents, negligence or misuse on the part of the Purchaser.

C.6.2.6 The assessment of the Supplier of the spare parts requirements shall be based upon the expected working hours per year as defined in the individual Equipment Specifications included in the Technical Specifications.

C.6.3. Emergency Spare Parts

C.6.3.1. Emergency spare parts required by the Purchaser to repair breakdowns shall be dispatched to the site by the Supplier by the fastest, practicable means as directed from time to time by the Purchaser.

C.6.3.2. For the purpose of Clause C.6.2.6, "Emergency Spare Parts" shall mean those spare parts or components required by the Purchaser to repair any item of Plant supplied pursuant to the Contract in the event of a breakdown not attributable to a failure covered by guarantee or a failure of the Supplier to provide adequate Spare Parts or Consumables.

C.6.3.3 Payment in respect of the supply and delivery of such Emergency Spare Parts shall be made promptly, retrospectively, by the Purchaser, in a manner consistent with the terms of payment described in the contract.

C.6.3.4 Lifetime Spare Parts

The Supplier undertakes and guarantees to produce and maintain stocks, to be available for purchase by the Purchaser under separate agreement, of all Spare Parts and Consumables as may be required for maintenance and repair of the Plant throughout its working life. In the event that the Supplier wishes to terminate production of such Spare Parts, the Supplier shall:

(a) give not less than six months' notice in writing of its intention to terminate production in order to permit the Purchaser reasonable time in which to procure needed requirements; and

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- (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.
- (c) any change in part number or superseded part number should be informed to the HOD of Excavation department / MM department of BCCL hqrs. and the project site wherever the equipment is operating.

In any event, the Supplier shall not seek to terminate manufacture of spare parts for period of not less than (15) years from taking over or the life time of the equipment whichever is later.

C.6.4 Oils, Lubricants and Fluids

The Supplier shall provide to the Purchaser a detailed schedule of all necessary oils, lubricants, fluids for the operation and maintenance of Equipment. The schedule shall indicate estimated annual consumption and specify the appropriate international standard number or the name and reference number of an equivalent available in India considered to be acceptable by the Supplier.

C.6.5 General

C.6.5.1 Nothing in this Clause C.6 shall relieve the Supplier of any Guarantee, Availability, Performance or other obligations or liabilities under this Contract.

C 7 Guaranteed Availability

The Guaranteed availability shall be as per 'Clause – Performance Guarantee' of the individual equipment specification.

C.7.1 Introduction

C.7.1.1 The Supplier 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.

C.7.1.2 Where Equipment supplied under the Contract fails to meet the criteria of the Availability Guarantee, the Supplier 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.

C.7.1.3 The Supplier shall provide the Services of such personnel at Site within seven (7) days of notification by the Purchaser that the availability criteria have not been met in any one (1) month.

C.7.2 Guarantee

C.7.2.1 The Supplier 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.

C.7.2.2 The Supplier 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 in 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:

$$\% \text{Availability} = \frac{\text{Scheduled Available Time} - \text{Downtime}}{\text{Scheduled Available Time}} \times 100$$

Scheduled Available Time shall equate to 24 hours daily.

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[Signature]

Downtime: -

Downtime 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, including:
changing oils, oil filters and air filters; lubrication; changing identified consumable or wear parts.
- b) planned preventative maintenance programs;

It shall not however 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 the Supplier, its Agents or Representatives.

Downtime shall also specifically include all hours lost due to failures determined to be guarantee failures.

The Supplier shall provide a schedule of maintenance required to carry out (a) and (b) above for the first *Five (5)* years of operation and shall state the number of hours required to carry out each maintenance task. The time stated shall, with the agreement of the Purchaser, form the basis of the assessment of the availability.

This schedule of tasks and time will be reviewed periodically by the Purchaser and the Supplier, jointly, to monitor the practicality of the schedule.

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

1. Providing normal and proper maintenance, including preventative maintenance in accordance with the Supplier's standard/published recommendations, and making all necessary repairs using only spare parts provided by the Supplier in accordance with the requirements specified in part C6.
2. Providing co-operation to all Suppliers' authorized representatives, complying with all reasonable procedural suggestions to improve efficiency of machine operation or reduce downtime.
3. Where appropriate, providing and maintaining such conditions as:
 - Proper Electrical Supply
 - Terrain Area
 - Bench Preparation
 - Reasonable Floor Conditions
4. Providing all Suppliers' authorized representatives access at all reasonable times to the machine service and repair facilities.

Maintaining a logbook for each shift wherein the working hours, breakdown hours, maintenance hours, idle hours, etc. shall be recorded. This record will be available for examination and signature by the Supplier's representative.

C.7.3 Effect and Duration of Guarantee

C.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.

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C.7.3.2 This guarantee shall remain effective for 60 Months from the date of commissioning irrespective of the hours operated by the Equipment during the period of the guarantee.

C.7.3.3 Compensation for not achieving Guaranteed Availability

In the event that Equipment fails to achieve the Availability herein provided, measured over each twelve (12) month period, the Supplier shall be liable for and pay to the Purchaser, as liquidated damages, a sum equal to as indicated hereunder for each equipment against the PBG submitted by the bidder as per clause-2 of SCC

- a. 1% of the delivered landed price of the equipment including the price of spares & consumables for 60 months period for reduction in every percentage or part thereof from the Guaranteed Availability for the first 5%.
- b. 10% of the delivered landed price of the equipment including the price of spares & consumables 60 months period for reduction beyond 5% from the guaranteed availability.

C.8 Deemed Breakdown

When the supplier is unable to supply the replacement of a failed part during the contract period, and if the machine is commissioned by using the spares from the stock of the project, the period after 21 days till the supplier replaces the part shall be treated as 'deemed breakdown' (the credit for keeping machine available shall not be given to the supplier.)

The supplier shall not in any way be allowed to take out spare parts from other equipment, which are under breakdown and covered within the scope of this contract. However, BCCL, in the interest of work, reserves the right to advise the supplier to commission the breakdown equipment covered under this contract by taking out spare parts from other breakdown equipment. Nevertheless, during this period also, the equipment shall be treated as 'deemed breakdown' till the supplier replaces the spare parts.

C.9 Composite-warranty/guarantee

The supplier 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 date of commissioning. Any defect arising observed on this account will have to be attended immediately.
- c) The supplier must ensure that there is no major breakdown due to manufacturing / design defects during the warranty period. In case such breakdown occurs, the purchaser reserves the right to extend the warranty period suitably.

The warranty shall cover for total equipment so that comprehensive responsibility lies only with the equipment supplier although components may be supplied by different suppliers to the bidder.

C.10 Quality Assurance

C.10.1 The Supplier 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 or its equivalent.

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- C.10.2 The Supplier shall provide facilities to Purchaser or their authorized representatives 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.
- C.10.3 The Purchaser or his agent, when so required by him, shall also be provided with samples of "bought-out" materials for the purposes of undertaking independent tests, which independent tests shall be at the expense of the Purchaser.

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PART D: - EQUIPMENT SPECIFICATIONS
EQUIPMENT SPECIFICATION OF 60 TON REAR DUMPER
[Payload Range 60T – 65T]

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 diesel powered, self-propelled, Wheeled, Rock Body, Rear Dumper having payload range of 60 Ton to 65Ton.

Note: If the offered capacity is in fraction, then the fraction equal to or more than 0.5 will be taken as 1 (one) and less than 0.5 will be considered as zero. (1 Ton = 0.907185 Tonne)

2. References:

The following International Standards as per latest amendment are referred to in, and form part of, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO Ref.	Description
ISO 2867	Earth-moving machinery - Access system.
ISO 3450	Earth-moving machinery - Wheeled machines - Performance requirements and test procedures for braking systems.
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 5010	Earth-moving machinery - Rubber Tyres Machines - Steering 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 6483	Earth-moving machinery - Dumper bodies - Volumetric rating.
ISO 6682	Earth-moving machinery - Zones of comfort and reach for control.
ISO 6750-1	Earth-moving machinery - Operation and maintenance – Contents & Formats
ISO 6750-2	Earth-moving machinery - Operation and maintenance – Operator's Manual-Part 2: List of references
ISO 7132	Earth-moving machinery - Dumpers - Terminology and commercial specifications
ISO 7457	Earth-moving machinery - Measurement of turning dimensions of wheeled machines.

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ISO 9249	Earth-moving machinery – Engine test code – Net power.
ISO 10268	Earth-moving machinery – Retarders for dumpers – performance tests
ISO 10968	Earth-moving machinery – Operator's control.
ISO 7000 / IEC 60417	Graphical symbols for use on equipment.
Other ISO standards mentioned in the specification of individual system of the equipment	

3. Design Criteria

The dumper 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.

The dumper shall be suitable for loading by 5-6 CuM Backhoe Hydraulic Shovel, 5.5 -6.5 CuM Face Hydraulic Shovel & 5 CuM ER Shovel with rock. having average density of 1,800 kg/m³ after blasting.

4. Technical requirements:

4.1 Engine:

The dumper shall be powered by a direct injection 4-stroke Diesel Engine of not less than 475 kW net power measured between 1700 and 2200 r/min according to ISO 9249.

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

The engine shall have a water jacket cooling system, thermo-statically 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 dumper to continuously operate at full rated output at the maximum ambient temperature. The radiator cap shall be fastened with body with the help of suitable capacity chain/locking arrangement. 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 pan guard / suitable protection as per manufacturer design.

The engine is to be fuel efficient having fully integrated electronically controlled monitoring system & real-time self-diagnostic features with built in protections. The Engine electronic control module should be fully integrated with all systems of power train for all operating conditions and be capable to monitor operator's and sensors inputs for optimum engine performance & reduced emissions level. All engine vital parameter data shall be integrated with On Board Display (OBD) system of operator's cabin.

The engine shall be environment friendly with Tier-II or above or Equivalent standard certified. However, higher environmental standard, if any, shall be applicable as per notification of Govt. of India at the time of tendering. Certificate for Tier-II or above from engine manufacturer is to be enclosed.

A suitable electronic tool (laptop) loaded with compatible software and all related accessories shall be provided project wise (1 no. laptop for a fleet up to 10 nos. or part there off for each project) along with special tools for retrieval and analysis of the recorded critical parameters of self-diagnostic features, real time monitoring and equipment health-monitoring systems

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fitted with the equipment. The supplier shall also be required to provide readable reports downloaded from each Equipment.

Compatible Software loaded in electronic tool (Laptop) should be warranted for entire contract period.

4.2 Drive system:

The drive system shall be mechanical with power shift transmission.

4.2.1 Transmission

The dumper shall be provided with an off-highway electronically controlled automatic power shift hydraulic transmission/heavy duty double reduction planetary gear system with lock-up clutch and downshift/reverse inhibitors, engine over speed protection, body up shift limiter. A suitable arrangement of individual modulation for maximum smoothness in all gearshift is to be provided. The electronic control shall have built in diagnostics features with suitable memory capacity. Suitable protection of the transmission pan from external damage should be provided. The pan guard/ suitable protection should be designed to minimize accumulation of dirt and debris.

4.2.2 Propel and final drive

A dynamically balanced propel shaft with universal joints at both ends should be utilized for power transmission. Adequate means should be provided to prevent damage to other components in the event of failure of the universal joints.

The final drive shall comprise of a heavy-duty differential with high quality spiral bevel gear and pinions and a heavy-duty planetary gear system and drive axle.

4.3 Suspension:

Suitable (hydra-air) independent front and rear gas over oil suspension shall be provided to absorb road shocks and prolong chassis & tire life.

4.4 Steering:

Full hydraulic orbitrol power steering and emergency steering, which complies with latest ISO 5010, shall be provided. Emergency steering shall be automatically activated in the event of failure of the normal steering power source. Suitable steering locking arrangement is to be provided to prevent untoward movement of steering wheel and tyre during working below the cabin and engine is running.

4.5 Hoses:

Fire resistant/ fire retarder/ heat resistant hydraulic hoses to decrease the chance of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant /fire retarder type.

4.6 Brakes:

Suitable reliable Service, Secondary (Emergency) and Parking Brakes which comply with latest ISO 3450, shall be provided.

4.6.1 Service Brakes:

The front service brakes shall be air and/or hydraulic actuated caliper/disc type and should operate automatically in the event of low air/oil pressure.

The rear service brakes shall be air and/or hydraulic actuated oil cooled multiple disc type and should operate automatically in the event of low air/oil pressure.

They shall be fully enclosed to prevent entry of dust & water and designed for low maintenance.

4.6.2 Secondary Brakes (Emergency Brakes):

Provision of Automatic Emergency Brake along with manual Emergency Braking system, which shall be operative in the event of failure of Service Brake, shall be provided.

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4.6.3 Parking Brakes:

The parking brake system shall have suitable interlocking arrangement with Drive System to prevent movement of the dumper when parking brake is engaged.

The parking brakes should be operational even at zero system pressure.

4.7 Retarder:

Both Automatic and manual retarding control system to control speed while descending grades shall be provided.

4.8 Tyres:

Tubeless, rock duty, cut resistant, E 4 Tyre of size 24.00-35 of suitable TKPH rating to match the operational condition.

4.9 Frame:

The frame should be rugged durable construction of high strength steel and free from any stress concentration. The design must take care of all forces encountered during the operation of the dumper.

4.10 Dump Body:

The body should be an exhaust heated (excluding the extended canopy portion), heavy-duty (Rock as mentioned in clause 3) type with high hardness abrasion resistant side, front and bottom plates. The width of the body should be such that it protrudes over the tyres to prevent damage due to spillage of material from the body.

The volume of the body should be such that it can accommodate 6 pass loads from 5 CuM shovel & 5 pass loads from 6 CuM Shovel (**minimum 28 CuM struck capacity**) without spillage and body design should be such that the stability of the machine is maintained in all operating conditions especially during turning.

[Note - In case of coal body, the no. of pass and minimum dump body volume shall be indicated based on density of coal]

A body position indicator shall be provided in operator's cabin. Should comply as per requirement of Clause-6 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020

4.11 Fuel Tank:

The fuel tank shall be of sufficient capacity to allow 16 hours operation without refueling and be provided with a level indicator and a lockable-hinged filler cap. The cap shall be fastened with tank with the help of suitable capacity chain/locking arrangement.

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

4.12 Lubrication System:

A centralized PLC/microprocessor/micro controller based hydraulic/Air/Electric operated, automatic lubrication system shall be provided to service all lubrication points on the machine, including those points where use of high viscosity lubricants is required.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points of major parts. The monitoring system shall, wherever necessary, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and indications for failure of lubrication system shall be provided and may be repeated in the OBD (Onboard Display) of operator's cab.

Lubricant containers of adequate size shall be located in a separate room / enclosure inside the machinery house / convenient location and be large enough to cater lubrication needs for continuous operation between refills. The containers shall be fitted with suitable arrangement for cleaning and refilling

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All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the remote points should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Preferably steel piping shall be used for long runs and shall terminate in steel junction blocks or rigidly mounted bulk head connectors to prevent disturbance to steel piping when flexible hoses are replaced.

Fire/heat resistant/ retardant hoses shall be provided in lubrication system. Lubricants recommended shall be of reputed make with Indian equivalent, if available.

Note: Maintenance of lubrication system shall be done by the supplier during the contract period

4.13 Automatic Fire Detection and Suppression System (AFDSS):

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying Clause-5 of DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C shall be provided in the fire prone zone of the dumper.
- Bidder requires submitting a schematic drawing indicating Plan of the system with relative position of items to be protected from fire.
- Fire detection and suppression of fire may be either total gas flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.
- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.
- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.
- The system shall operate to supply adequate quantity of fire suppressing agent for effective firefighting and to avoid re-ignition and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location. The System shall operate only in active fire area.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high-pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

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Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.

Note: Periodical refilling and maintenance shall be done by the supplier during the contract period

4.14 Fire Extinguisher:

A fire extinguisher shall be provided on the dumper, suitably mounted in heavy-duty bracket for ease of removal. The extinguisher shall be dry powder (cartridge type) with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for fire extinguisher including Materials and Chemicals to be used in fire extinguisher from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS Circular No. DGMS(Approval)CircularNo.02 dtd. 08thJuly2013.

Periodical refilling of fire extinguishers shall be done by the supplier during the contract period

4.15 Operator's Station:

A suitable Operator's Station shall be provided on the equipment as per Gazette notification issued by Chief Inspector of Mines vide F. No. Z-20045/01/2018/S&T (HQ) Dhanbad, the 1st October, 2018.

4.15.1 Operator's Cabin:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, air conditioned, operator's cab with tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 85dBA while the equipment is operating, and with the door closed. All operating controls, all monitoring, working signals and emergency switch to stop the engine should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit in addition to primary access path to the cabin.

Alternative opening (Emergency Exit): An alternative opening shall be provided on a side other than that of the primary opening. A window panel or another door is acceptable if they are easy to open or remove without the use of keys or tools. Latches may be used if they can be opened from the inside without the use of keys or tools. The breaking of a suitable size of glass pane is considered to represent a suitable alternative opening, provided that the necessary pane hammer, immediately accessible to the operator, is provided and stored in the cab. When the window panel is used as an emergency exit, it shall bear an appropriate marking.

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Doors, Windows and flaps shall be securely held in their intended operating positions. Doors shall be retained at their intended operating positions by a positive engagement device. The front glass shall be fitted with motorized wind screen wipers and washers. The tank of the front glass washers shall be easily accessible.

Pipes and hoses that contain fluids at pressures exceeding 5MPa or temperatures above 60°C located inside the cab shall be suitably guarded.

Steps and handrails of robust design, which comply with ISO 2867, shall be provided for access to the operator's cab.

Periodical maintenance of Air Condition system including gas refilling to be done by the supplier during the contract period

4.15.2 Operator's Protective Structures:

Dumper shall be equipped with a roll-over protective structure (ROPS). The ROPS shall comply with ISO 3471. Also, FOPS shall be provided as per ISO -ISO3449

4.15.3 Operator's Seats:

The Operator's Station shall be fitted with an ergonomically designed adjustable seat that supports the operator in a position that allows the operator to control the machine under the intended operating conditions. The seat and its suspension shall be so designed to reduce vibration transmitted to the operator to the lowest level that can be reasonably achieved. An additional seat for a trainer installed in the Operator's Station, shall be padded and shall provide adequate space for the trainer. The trainer shall also have available a conveniently placed handhold.

Seat Belt for operator with reminder shall be provided as per DGMS circular no. DGMS (Tech) Circular No. 06 of 2020 Dhanbad dated 27.02.2020.

4.15.4 Operator's Controls and Indicators:

The controls shall be of suitable design and construction and arranged so that they are able to be operated with ease from the operator's seat and within the operator's force limits. Controls shall be laid out and designed to allow easy and safe operation based on the principle that a given direction of movement of any control produces a consistent and expected effect. The surfaces of frequently used pedals shall be fitted with skid resistant type materials. Controls that can cause a hazard due to inadvertent activation shall be so arranged, deactivated or guarded as to minimize the risk — particularly while the operator is getting into or out of the operator's station. The deactivation device shall either be self-acting or shall act by compulsory actuation of the relevant device.

4.15.5 Starting and Stopping System:

Dumper shall be equipped with a starting and stopping device (e.g., key). The starting system shall have a provision for protection against unauthorized use.

The starting and Stopping system shall be designed such that movement of the machine, shall not be possible, while starting or stopping the engine, without activating the controls. (e.g., Transmission Neutral-Engine Start safety arrangement).

4.16 Gauges and Indicators/Electronic Display:

The following shall be provided:

- a. Water temperature gauge
- b. Air cleaner vacuum gauge
- c. Engine oil pressure gauge
- d. Converter oil temperature gauge/indicator (where applicable)



- e. Fuel capacity gauge
- f. Engine tachometer
- g. Engine hour meter
- h. Speedometer
- i. Air pressure gauge (if applicable)
- j. Voltmeter (where applicable)
- k. Hydraulic Oil Temperature Gauge

4.17 Warning Alarms/Lights/Indicators:

Warning systems shall be provided for the following:

- a. Reversing –DGMS complied Audio Visual Alarm (Type confirming to Specifications as per DGMS (Approval)/ AVA/01 dated 25-05-2010 of DGMS)
- b. Parking Brake actuation
- c. High torque converter oil temperature (where applicable)
- d. Low engine oil pressure
- e. High coolant temperature
- f. Low air pressure (where applicable)
- g. Emergency steering
- i. Indicator light for retarding, over speed & service brakes
- j. Dumping buzzer
- g. Warning alarms in case of failure of automatic lubrication system.
- h. Tyre pressure monitoring system in cabin to be incorporated.

4.18 Engine Electrical System:

The dumper shall be provided with the following:

- a. 24V DC electrical system with suitably rated alternator of reputed make
- b. Electrical starter motor of reputable make
- c. High capacity maintenance free batteries of reputed make
- d. Battery isolation switch/ Relay

All electrical circuits shall be protected by adequately rated fuses/MCBs, which shall be easily accessible for maintenance. In case of fuses, at least two spare fuses of each size/ratings shall be provided in each fuse box, which shall be easily accessible for maintenance.

4.19 Lighting:

Adequate lighting shall be provided for safe night shift operation.

All lighting system shall be LED which include the following:

- a. 4 nos. LED Headlight
- b. Stop and tail LED lights
- c. Hazard and Turn signal lights (left and right) on both front and rear LED type
- d. Fog lamps 2 nos.
- e. Backup lights 2 nos.
- f. Cabin Dome & Ladder lights
- g. Service light in rear axle & under hood (Wherever applicable)
- h. Manual/ Auto backup light

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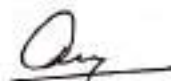
4.20 Guards and shields:

Adequate guards and shields, which comply with ISO 3457, shall be provided on the dumper.

5. Safety Features:

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS Circular No. DGMS (Tech) Circular No. 06 of 2020 Dhanbad dated 27.02.2020 and subsequent amendments, if any, including following shall be provided in the equipment. Bidder shall submit a Certificate as an undertaking in this regard that all safety features and devices are incorporated in the equipment.

- a. Mechanical steering locking device to prevent untoward movement of steering wheel and tyre while persons are working underneath the cabin when engine is ON.
- b. Blind spot mirror or any other device apart from rear view mirror to enable operator to have clear visibility of blind spot shall be provided.
- c. **Proximity Warning Device** - Should comply as per requirement of Clause 14 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020
- d. **Mechanical Device to avoid head to Tail Collision of Dumpers:** - Should comply as per requirement of **Clause 4** of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020. The manufacturers should submit a self-certificate explicitly stating that any one of the features fitted in the Dumper shall provide additional protection to the operator and it shall not affect the normal operation of the Dumper on the gradients and its steerability, loading or dumping operations.
- e. Fire resistant/ fire retarder/ heat resistant hydraulic hoses in place of ordinary hoses to decrease the chance of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant /fire retarder type.
- f. Seat belt &Seat belt reminder- Should comply as per requirement of Clause 10 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020
- g. Methodology/ facility to be provided in the dumper to restrict/ control the speed as determined by management.
- h. Propeller shaft guard (Wherever applicable).
- i. Mirrors, right and left.
- j. Hot zones shall be separated from cold zone by providing suitable arrangement.
- k. Exhaust pipes and turbocharger shall be adequately guarded.
- l. Load Indicator- Should comply as per requirement of Clause 8 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020
- m. Dump Body raised position indicator with warning- Should comply as per requirement of Clause-6 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020
- n. Safety provision for holding the dump body in hoist condition.
- o. Manual wheel stopper while parking dumper in gradient.
- p. Auto dipping system - Should comply as per requirement of Clause -3 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020
- q. Rear Vision Camera - Should comply as per requirement of Clause -1 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020
- r. Retro reflective reflectors on all sides for visibility of truck during night
- s. Cabin Guard Extension – Canopy shall cover the operator's cabin fully.
- t. Warning System for Operator Fatigue - Should comply as per requirement of Clause-2 of DGMS Circular no: 06 of 2020 Dhanbad dated: 27.02.2020



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6. Ancillary Equipment and other requirements:

The following shall be provided on the dumper:

- a. Front and rear tow hooks.
- b. Pressurized radiator cap with chain attachment.
- c. Headlight high beam indicator
- d. Cab protection spill guard
- e. Water separators in air lines (Where applicable)
- f. Rock ejector bar/chains between each set of dual rear wheels
- g. Suitable on-board payload monitoring system with a feature to store & retrieve data of at least one month
- h. Self-diagnostic and real time monitoring electronic tool
- i. Tyre inflation kit.

7. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have OBD Self-diagnostic & error alarm features and should capture the parameters of HMS module and other parameters not covered by HMS of the equipment to monitor the following items:

- i. Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation
- ii. Maximum speed, average speed, distance travelled, waiting time, loading time, unloading time, load carried by dumper for each trip and cumulative.
- iii. Engine oil pressure
- iv. Coolant temperature
- v. Coolant level
- vi. Engine RPM
- vii. Fuel level and fuel consumption rate
- viii. Hyd. oil temperature
- ix. Engine electrical system - Battery voltage and Alternator out put
- x. All vital parameters of drive system including transmission Fault codes along with details
- xi. Tyre inflation pressure & temperature

This system shall have suitable memory capacity to store above measured data in batch form for at least one month period and shall have suitable port to download these data to a laptop / data storage system.

Alert audio messages to be given to Dumper Operators and control room person for the following events:

- a) In the case of operator exceeds pre-defined maximum speed for different dumpers.
- b) In the event of dumpers travelling in opposite direction falls in line.
- c) To maintain safe distance between dumpers travelling in the same direction.
- d) Fire warning to operator in case of catching fire.
- e) Dump Body hoist indication to be given in the event of dumper travelling in dump body hoist position.





The supplier shall provide the following:

- A. There has to be one integrated single online port for capturing all the vital data.
- B. The real time interface telemetry port will be provided in the equipment
- C. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
- D. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
- E. There shall be integrated on board data management system as explained at point no.3 as above.
- F. Permission to third party for interfacing, data collection through online port.
- G. Signing of Non-disclosure agreement to protect intellectual property right on either side.
- H. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
- I. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment. However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

8. Special Guarantees

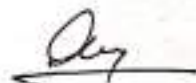
The following guarantee will apply for the different components from the accepted date of commissioning.

- a. Body, Chassis - 10,000 hours.
- b. Complete Engine system- 8000 hours
- c. Transmission Assembly (where applicable) - 8000 hours
- d. Differential / Final drive (where applicable) - 8000 hours
- e. Disc Brake - 8000 hours
- f. OTR tyre - 4500 hours or 12 months first life before re-treading

In case of failure of any of the above component within the special guarantee period, the supplier shall replace the same with a new one. However, in case of failure of any peripheral item of Engine and transmission e.g., fuel pump/ turbocharger/ water pump / transmission pump etc. within the special guarantee period shall not be treated as failure of engine and transmission but the failed item is to be replaced with new assy. and should work up to completion of the special warranty period. No repair of such components or use of spares supplied against Clause: C6.2 shall be allowed within the special guarantee period.

However, spares supplied against Clause: C6.2 can be used for repair/replacement of above assemblies after attaining above mentioned special guarantee period as indicated against individual item. The special guarantee shall be limited for the period of contract only.





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9. Performance Guarantee:

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 4000 (four thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary +/- 500 hours.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 36 months from the date of accepted date of commissioning and 80% (eighty percent) annually for following 24 months.

[Note - Expected annual working hours may be decided by the subsidiary company as per actual requirement]

10. Expected life of major assemblies:

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

Equipment	Major Assemblies	Expected Life* (in Hours)
Dumpers	Body Chassis	
	Engine	
	Transmission	
	Differential	
	Final Drive	

Note - * Expected life means life before first overhaul

11. Information to Be Provided by the Bidder

The bidder shall furnish the following information. All technical information shall be in SI units.

11.1 General

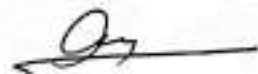
- a) Number of similar models supplied during the last five (5) years. The information shall be given in the following format and in the order of most recent first:

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self-certified.

- b) Details of special tools to be provided with the equipment.
c) Details of erection programme for the bid.
d) Details of nearest Depot/Warehouse and Service Facility available for the present offer

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11.2 Technical Details

- Latest engine performance curves showing net power, net torque and a specific fuel consumption of the installed engine, measures according to ISO 9249.
- Maximum speed determined according to ISO 6014
- Latest Rim-pull - Speed - gradeability Curves of the offered model clearly indicating Driving speed fully loaded up 14% effective grade.
- Latest retarding performance chart of the offered model in accordance with ISO 10268 clearly indicating: Maximum constant speed fully loaded down 10% effective grade.
- Calculations determining the time for the operating cycle specified in clause 11.3.12.
- Result of service and secondary brake stopping tests carried out according to ISO 3450.

Braking system tested	Slope (%)	Machine Speed (km/h)	Stopping distance(m)
Service			
Secondary			

- Turning diameter in accordance with ISO 7457.
- Detail technical description of all systems of the dumper.
- Detail technical description of Electronic Control Module used, its integration with other components of power train, details of data capturing (active, intermittent & calculated) & full feature, Diagnostic Tool's software version, data storage capacity & features and Payload Monitoring System fitted in the Dumper.
- Layout drawings and detailed technical descriptions of hydraulic systems and components
- Details of major bought out assemblies and sub-assemblies including manufacturer's name & full address, type, model etc.
- Comprehensive commercial literature specifications, the content of which must comply with ISO 7132.
- Operation and Maintenance manuals in accordance with ISO 6750 as indicated in clause A-3 of section VI.
- Details and layout of Automatic lubricating system.
- Details and layout of Automatic fire detection and suppression system.
- Details of rear vision system
- Details of proximity warning device.
- Calculations and drawings verifying the body capacity.

11.3 Dimensions, Weights and Performance Details

11.3.1 Dimensions

- Maximum Overall length (m)
- Maximum overall width (m)
- Maximum height without body (m)
- Maximum height with body (m)
- Loading height (m)

- f. Dump height (m)
- g. Discharge height (m)
- h. Maximum body depth (m)
- i. Body target area [inside length and width at top] (m²)
- j. Wheel base (m)

11.3.2 Weight Distribution

- a) Empty vehicle (kg)
 - Front axle (kg)
 - Rear axle (kg)
 - Total (kg)
- b) Loaded vehicle (kg)
 - Front axle (kg)
 - Rear axle (kg)
 - Total (kg)
- c) Payload (kg)

11.3.3 Engine

- a. Manufacturer and model
- b. Number of cylinders
- c. Bore (mm)
- d. Stroke (mm)
- e. Displacement (litre)
- f. ISO net power atr / min (kW)
- g. Maximum torque atr/min (Nm)
- h. ECM /alternate - make, model & data storage capacity
- i. Diagnostic tool's make, model, software version, data storage capacity & features.

11.3.4 Mechanical Drive System)

I Transmission

- a) Manufacturer and model
- b) Type
- c) Number of gear speeds: forward and reverse
- d) Travel speeds: forward and reverse

II Differential

- a) Manufacturer and model
- b) Type
- c) Ratio

III Final Drive

- a) Manufacturer and model
- b) Type
- c) Ratio

11.3.5 Suspension

I Front

- a) Type
- b) Stroke
- c) Load - deflection rate: loaded and empty

II Rear

- a) Type

- b) Stroke
- c) Load - deflection rate: loaded and empty

11.3.6 Steering

- a) Type
- b) Emergency steer method

11.3.7 Brakes

11.3.7.1 Service Brake:

I. Front

- a) Type
- b) Actuating System

II. Rear

- a) Type
- b) Actuating System

11.3.7.2 Emergency Brakes

- a) Type
- b) Actuating System

11.3.7.3 Parking brakes

- a) Type
- b) Actuating System

11.3.8 Retarder

- a) Type
- b) Actuating System

11.3.9 Tyres

- a) Manufacturer
- b) Size and type
- c) Tread
- d) Rim size
- e) TKPH

11.3.10 Hydraulic System

- a) Make & model, Number, flow rates and operating pressures of pumps
- b) Make & model, Number, piston diameters and stroke length of cylinders
- c) Relief valve operating pressures

11.3.11 Electrical System

- a) Starter make and model
- b) Alternator make and model
- c) Batteries numbers and rating
- d) Lighting details (number, type & rating)

11.3.12 Operating Cycle

The operating cycle, for which the bidder shall provide the information required in clause 11.2 (e), shall be:

Time for hauling, rated payload and returning empty to the place of loading on a haul road of the following profile with a rolling resistance of 2%.

First 1500 meters up a 12% grade, next 200 meters level, next 200 meters up a 10% grade, last 100 meters level.

A fixed time of six (6) minutes for loading and dumping shall be added to this time to calculate the total operating cycle.

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Equipment Acceptance

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 11. In case if testing facility for a particular parameter is not available at site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 11. A detrimental deviation of up to 2% will be accepted.

- | | | |
|---|--|--|
| 1 | Specific Fuel Consumption for engine | To be tested at Works/engine manufacturer plant. Minimum of 3 (three) readings at full load to be averaged- Manufacturer test data in respect of fuel consumption in terms of gm/kw-hr is to be submitted. |
| 2 | Pay load Capacity | To be tested at Works / Project Site. |
| 3 | Engine Net Power & RPM | Manufacturer's test report shall be submitted. However, the inspector should ensure the above during pre-dispatch inspection/acceptance of Equipment at site to ensure acceptance of Equipment. |
| 4 | Driving Speed - fully loaded up 14% effective gradient (assuming 2% Rolling resistance) | To be tested at Works / Project Site. |
| 5 | Retard Speed - fully loaded down 10% effective gradient (assuming 2% Rolling resistance) | To be tested at Works / Project Site. |
| 6 | Service Brake Stopping Distance as per ISO 3450 | To be tested at Works / Project Site. |
| 7 | Secondary Brake Stopping Distance as per ISO 3450 | To be tested at Works / Project Site. |
| 8 | Turning Dimension as per ISO 7457 | To be tested at Works / Project Site. |
| 9 | Dump body should accommodate 6 pass loads from 5 CuM shovel & 5 pass loads from 6 CuM Shovel without spillage. | To be tested at Project Site. |

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Consumable Spares and Consumables for Warranty Period of 773E (Per Equipment)

Sl. No.	Part No.	Description	Quantity	Unit of Measurement	HSN Code	Basic Rate Ex-Works (per unit) (in Rs.)	Total Basic Amount (in Rs.)	GST Rate (in %)	Total GST Amount (in Rs.)	Landed Rate Including GST (in Rs.)
1	1R1808	FILTER AS-LU	32	PC	84213920	3,930.00	125,760.00	18%	22,636.80	148,396.80
2	8U5604	BREATHING A	8	PC	84213900	1,337.00	10,696.00	18%	1,925.28	12,621.28
3	3261643	FILTER AS	8	PC	84213920	5,021.00	40,168.00	18%	7,230.24	47,398.24
4	1R0755	FILTER A	8	PC	84213920	6,108.00	48,864.00	18%	8,795.52	57,659.52
5	4T6788	OIL FILTER	8	PC	84213920	2,693.00	21,544.00	18%	3,877.92	25,421.92
6	1261813	ELEMENT-FILT	8	PC	84213990	8,157.00	65,256.00	18%	11,746.08	77,002.08
7	1G8878	FILTER	16	PC	84212900	3,754.00	60,064.00	18%	10,811.52	70,875.52
8	2457451	CLEANER AS-A	4	PC	84219900	3,237.00	12,948.00	18%	2,330.64	15,278.64
9	1303212	FILTER	16	PC	84212900	4,049.00	64,784.00	18%	11,661.12	76,445.12
10	9C4937	BREATHING A	4	PC	84219900	2,598.00	10,392.00	18%	1,870.56	12,262.56
11	8C9657	BREATHING A	4	PC	84213920	4,609.00	18,436.00	18%	3,318.48	21,754.48
12	6V3831	SEAL O RING	8	PC	40169390	1,934.00	15,472.00	18%	2,784.96	18,256.96
13	4N4668	BREATHING A	8	PC	84219900	5,463.00	43,704.00	18%	7,866.72	51,570.72
14	7F0880	GASKET	4	PC	40169340	401.00	1,604.00	18%	288.72	1,892.72
15	5B3265	GASKET	4	PC	40169340	477.00	1,908.00	18%	343.44	2,251.44
16	1900760	DESICCANT CA	4	PC	84219900	37,254.00	149,016.00	18%	26,822.88	175,838.88
17	1070266	FILTER AIR	4	PC	84219900	1,779.00	7,116.00	18%	1,280.88	8,396.88
18	6I2505	ELEMENT AS	8	PC	84213990	9,481.00	75,848.00	18%	13,652.64	89,500.64
19	6I2506	ELEMENT AS	8	PC	84213990	8,408.00	67,264.00	18%	12,107.52	79,371.52
20	153888	WASHER	4	PC	73182200	540.00	2,160.00	18%	388.80	2,548.80
21	153889	WASHER	4	PC	73182200	1,890.00	7,520.00	18%	1,353.60	8,873.60
22	6F4858	GASKET	4	PC	40169340	459.00	1,836.00	18%	330.48	2,166.48
23	2573226	DRYER-DYE	1	PC	84219900	5,843.00	5,843.00	18%	1,051.74	6,894.74
24	9C4937	BREATHING A	2	PC	84219900	2,598.00	5,196.00	18%	935.28	6,131.28
25	1779343	CAP&PROBE G	48	PC	73269099	191.00	9,168.00	18%	1,650.24	10,818.24
26	1667372	BOTTLE ASSY	88	PC	39269099	50.00	4,400.00	18%	792.00	5,192.00
27	16W40014	ENGINE OIL SAE15W40	4	NOS	27101980	27,352.50	109,410.00	18%	19,693.80	129,103.80
28	SAE30	TRANSMISSION OIL SAE30	2	NOS	27101980	27,090.00	54,180.00	18%	9,752.40	63,932.40
29	SAE10	HYDRAULIC OIL SAE10	4	NOS	27101980	23,310.00	93,240.00	18%	16,783.20	110,023.20
30	FDAXXINDIAN	FINAL DRIVE OIL FDA060	2	NOS	27101980	46,200.00	92,400.00	18%	16,632.00	109,032.00
31	4692719	EXTENDED LIFE COOLANT	1	NOS	38200000	31,952.36	31,952.36	18%	5,751.42	37,703.78
32	EP2GRS	GREASE EP2	2	NOS	27101980	47,684.00	95,368.00	18%	17,166.24	112,534.24
Total							1,353,517.36		243,633.12	1,597,150.48

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Consumable Spares and Consumables for 2nd Year of 773E (Per Equipment)

Sl. No.	Part No.	Description	Quantity	Unit of Measurement	HSN Code	Basic Rate Ex-Works (per unit) (in Rs.)	Total Basic Amount (in Rs.)	GST Rate (in %)	Total GST Amount (in Rs.)	Landed Rate including GST (in Rs.)
1	3R1808	FILTER AS-LU	32	PC	84213920	4,008.60	128,275.20	18%	23,089.54	151,364.74
2	855604	BREATHER A	8	PC	84213900	1,363.74	10,909.92	18%	1,963.79	12,873.71
3	3261643	FILTER AS	8	PC	84213920	5,121.42	40,971.36	18%	7,374.84	48,346.20
4	1R0755	FILTER A	8	PC	84213920	6,230.16	49,841.28	18%	8,971.43	58,812.71
5	476788	OIL FILTER	8	PC	84213920	2,746.86	21,974.88	18%	3,955.48	25,930.36
6	1261813	ELEMENT-FILT	8	PC	84213990	8,320.14	66,561.12	18%	11,981.00	78,542.12
7	1G8878	FILTER	16	PC	84213900	3,829.08	61,265.28	18%	11,027.75	72,293.03
8	2457451	CLEANER AS-A	4	PC	84213900	3,301.74	13,206.96	18%	2,377.25	15,584.21
9	1303212	FILTER	16	PC	84213900	4,129.98	66,079.68	18%	11,894.34	77,974.02
10	9C4937	BREATHER A	4	PC	84213900	2,649.96	10,599.84	18%	1,907.97	12,507.81
11	8C9657	BREATHER A	4	PC	84213920	4,701.18	18,804.72	18%	3,384.85	22,189.57
12	6V3831	SEAL O RING	8	PC	40169390	1,972.68	15,781.44	18%	2,840.66	18,622.10
13	4N4568	BREATHER A	8	PC	84213900	5,572.26	44,578.08	18%	8,024.05	52,602.13
14	7F0880	GASKET	4	PC	40169340	409.02	1,636.08	18%	294.49	1,930.57
15	583265	GASKET	4	PC	40169340	486.54	1,946.16	18%	350.31	2,296.47
16	1900760	DESICCANT CA	4	PC	84213900	37,999.08	151,996.32	18%	27,359.34	179,355.66
17	1070266	FILTER AIR	4	PC	84213900	1,814.58	7,258.32	18%	1,306.50	8,564.82
18	6D505	ELEMENT AS	8	PC	84213990	9,670.62	77,364.96	18%	13,925.68	91,290.65
19	6D506	ELEMENT AS	8	PC	84213990	8,576.16	68,609.28	18%	12,349.67	80,958.95
20	153888	WASHER	4	PC	73182200	550.80	2,203.20	18%	396.58	2,599.78
21	153889	WASHER	4	PC	73182200	1,917.60	7,670.40	18%	1,380.67	9,051.07
22	6F4868	GASKET	4	PC	40169340	468.18	1,872.72	18%	337.09	2,209.81
23	2573226	DRYER-DYE	1	PC	84213900	5,959.86	5,959.86	18%	1,072.77	7,032.63
24	9C4937	BREATHER A	2	PC	84213900	2,649.96	5,299.92	18%	953.99	6,253.91
25	1779343	CAP&PROBE G	48	PC	73269099	194.82	9,351.36	18%	1,683.24	11,034.60
26	1697372	BOTTLE ASSY	88	PC	39269099	51.00	4,488.00	18%	807.84	5,295.84
27	15W40C14	ENGINE OIL SAE15W40	4	NOS	27101900	28,993.65	115,974.60	18%	20,875.43	136,850.03
28	SAE30	TRANSMISSION OIL SAE30	2	NOS	27101900	28,715.40	57,430.80	18%	10,337.54	67,768.34
29	SAE10	HYDRAULIC OIL SAE10	4	NOS	27101900	24,708.60	98,834.40	18%	17,790.19	116,624.59
30	FDA0400000	FINAL DRIVE OIL FDA0400	2	NOS	27101900	48,972.00	97,944.00	18%	17,629.92	115,573.92
31	4002719	EXTENDED LIFE COOLANT	1	NOS	38200000	33,869.50	33,869.50	18%	6,096.51	39,966.01
32	EP30RS	GREASE EP2	2	NOS	27101900	50,545.04	101,090.08	18%	18,196.21	119,286.29
33	2976848	KIT-SEAL-H C	1	PC	84849000	30,502.42	30,502.42	18%	5,490.44	35,992.86
34	5N4751	VEE BELT SET	1	PC	40103200	5,771.09	5,771.09	18%	1,038.80	6,809.89
35	9L6639	VEE BELT	1	PC	40103200	3,669.89	3,669.89	18%	660.58	4,330.47
36	9L1130	BELT	1	PC	40103200	3,659.59	3,659.59	18%	658.73	4,318.32
37	1750888	SPIDER GP	2	PC	84839000	22,498.28	44,996.56	18%	8,099.38	53,095.94
38	081604	BOLT	8	PC	73181500	212.18	1,697.44	18%	305.54	2,002.98
39	1535710	BATTERY (200AH)	2	PC	80071000	39,206.95	78,413.90	28%	21,955.89	100,369.79
40	5251829	SENSOR GP-PR	1	PC	80314000	56,365.41	56,365.41	18%	10,145.77	66,511.18
41	R134A	REFRIGERANT	6	PC	29039919	400.00	2,400.00	18%	432.00	2,832.00
Total							1,627,126.04		300,724.08	1,927,850.12

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Consumable Spares and Consumables for 3rd Year of 773E (Per Equipment)

Sl. No.	Part No.	Description	Quantity	Unit of Measurement	HSN Code	Basic Rate Ex-Works (per unit) (in Rs.)	Total Basic Amount (in Rs.)	GST Rate (in %)	Total GST Amount (in Rs.)	Landed Rate Including GST (in Rs.)
1	1M1808	FILTER AS-LU	32	PC	84213920	4,088.77	130,840.70	18%	23,551.33	154,392.03
2	8U5604	BREATHER A	8	PC	84219900	1,391.01	11,128.12	18%	2,003.06	13,131.18
3	3261643	FILTER AS	8	PC	84213920	5,223.85	41,790.79	18%	7,522.34	49,313.13
4	1R0755	FILTER A	8	PC	84213920	6,354.76	50,838.11	18%	9,150.86	59,988.96
5	4T6788	OIL FILTER	8	PC	84213920	2,801.80	22,414.38	18%	4,034.59	26,448.97
6	1261813	ELEMENT-FILT	8	PC	84213990	8,486.54	67,892.34	18%	12,220.62	80,112.96
7	1G8878	FILTER	16	PC	84212900	3,905.66	62,490.59	18%	11,248.31	73,738.89
8	2457451	CLEANER AS-A	4	PC	84219900	3,367.77	13,471.10	18%	2,424.80	15,895.90
9	1303212	FILTER	16	PC	84212900	4,212.58	67,401.27	18%	12,132.23	79,533.50
10	9C4937	BREATHER A	4	PC	84219900	2,702.96	10,811.84	18%	1,946.13	12,757.97
11	8C9657	BREATHER A	4	PC	84213920	4,795.20	19,180.81	18%	3,452.55	22,633.36
12	6V3831	SEAL O RING	8	PC	40169390	2,012.13	16,097.07	18%	2,897.47	18,994.54
13	4N4668	BREATHER A	8	PC	84219900	5,683.71	45,469.64	18%	8,184.54	53,654.18
14	7F0880	GASKET	4	PC	40169340	417.20	1,668.80	18%	300.38	1,969.19
15	5B3265	GASKET	4	PC	40169340	496.27	1,985.08	18%	357.31	2,342.40
16	1900760	DESICCANT CA	4	PC	84219900	38,759.06	155,036.25	18%	27,906.52	182,942.77
17	1070266	FILTER AIR	4	PC	84219900	1,850.87	7,403.49	18%	1,332.63	8,736.11
18	612505	ELEMENT AS	8	PC	84213990	9,864.03	78,912.26	18%	14,204.21	93,116.47
19	612506	ELEMENT AS	8	PC	84213990	8,747.68	69,981.47	18%	12,596.66	82,578.13
20	153888	WASHER	4	PC	73182200	561.82	2,247.26	18%	404.51	2,651.77
21	153889	WASHER	4	PC	73182200	1,955.95	7,823.81	18%	1,408.29	9,232.09
22	6F4868	GASKET	4	PC	40169340	477.54	1,910.17	18%	343.83	2,254.01
23	2573226	DRYER-DYE	1	PC	84219900	6,079.06	6,079.06	18%	1,094.23	7,173.29
24	9C4937	BREATHER A	2	PC	84219900	2,702.96	5,405.92	18%	973.07	6,378.98
25	1779343	CAP&PROBE G	48	PC	73269099	198.72	9,538.39	18%	1,716.91	11,255.30
26	1697372	BOTTLE ASSY	88	PC	39269099	52.02	4,577.76	18%	824.00	5,401.76
27	15W40C14	ENGINE OIL SAE15W40	4	NDS	27101880	30,733.27	122,933.08	18%	22,127.95	145,061.03
28	SAE30	TRANSMISSION OIL SAE30	2	NDS	27101880	30,438.32	60,876.65	18%	10,957.80	71,834.44
29	SAE10	HYDRAULIC OIL SAE10	4	NDS	27101880	26,191.12	104,764.46	18%	18,857.60	123,622.07
30	FDAC60INDIAN	FINAL DRIVE OIL FDAQ60	2	NDS	27101880	51,910.32	103,820.64	18%	18,687.72	122,508.36
31	4692719	EXTENDED LIFE COOLANT	1	NDS	38200000	35,901.67	35,901.67	18%	6,462.30	42,363.97
32	EP2GRS	GREASE EP2	2	NDS	27101880	53,577.74	107,155.48	18%	19,287.99	126,443.47
33	MIS-773ENGGOVRLKIT	773 ENGINE OVERHAUL KIT	1	PC	84849000	1,340,723.69	1,340,723.69	18%	241,330.27	1,582,053.96
34	MIS-773ENGHOSEKIT	773 ENGINE HOSE KIT	1	PC	40094100	71,764.00	71,764.00	18%	12,917.52	84,681.52
35	MIS-773PTHOSEKIT	773 POWERTRAIN HOSE KIT	1	PC	40092200	245,602.00	245,602.00	18%	44,208.36	289,810.36
36	MIS-773HYDHOSEKIT	773 HYD HOSE KIT	1	PC	40092200	186,025.00	186,025.00	18%	33,484.50	219,509.50
Total							3,291,963.15		592,553.37	3,884,516.51

Consumable Spares and Consumables for 4th Year of 773E (Per Equipment)

Sl. No.	Part No.	Description	Quantity	Unit of Measurement	HSN Code	Basic Rate Ex-Works (per unit) (in Rs.)	Total Basic Amount (in Rs.)	GST Rate (in %)	Total GST Amount (in Rs.)	Landed Rate Including GST (in Rs.)
1	181808	FILTER AS-LU	32	PC	84213920	4,170.59	133,457.52	18%	24,022.35	157,479.87
2	805604	BREATHER A	8	PC	84213900	1,418.84	11,350.68	18%	2,043.12	13,393.80
3	3261643	FILTER AS	8	PC	84213920	5,328.33	42,626.60	18%	7,672.79	50,299.39
4	180755	FILTER A	8	PC	84213920	6,481.86	51,854.87	18%	9,333.86	61,188.74
5	476788	OIL FILTER	8	PC	84213920	2,857.83	22,862.67	18%	4,115.28	26,977.94
6	1261813	ELEMENT-FILT	8	PC	84213900	8,656.27	69,250.19	18%	12,465.03	81,715.22
7	168878	FILTER	16	PC	84212900	3,983.77	63,740.40	18%	11,473.27	75,213.67
8	2457451	CLEANER AS-A	4	PC	84213900	3,435.13	13,740.52	18%	2,473.29	16,213.81
9	1303212	FILTER	16	PC	84212900	4,296.83	68,749.30	18%	12,374.87	81,124.17
10	9C4937	BREATHER A	4	PC	84213900	2,757.02	11,028.07	18%	1,985.05	13,013.13
11	8C9657	BREATHER A	4	PC	84213920	4,891.11	19,564.43	18%	3,521.60	23,086.03
12	6V3831	SEAL O RING	8	PC	40169390	2,052.38	16,419.01	18%	2,955.42	19,374.43
13	4N4568	BREATHER A	8	PC	84213900	5,797.38	46,379.03	18%	8,348.23	54,727.26
14	7F0880	GASKET	4	PC	40169340	425.54	1,702.18	18%	306.39	2,008.57
15	583265	GASKET	4	PC	40169340	506.20	2,024.78	18%	364.46	2,389.25
16	1900760	DESICCANT CA	4	PC	84213900	39,534.24	158,136.97	18%	28,464.65	186,601.63
17	1070266	FILTER AIR	4	PC	84213900	1,887.89	7,551.56	18%	1,359.28	8,910.84
18	612505	ELEMENT AS	8	PC	84213900	10,061.31	80,490.50	18%	14,488.29	94,978.80
19	612506	ELEMENT AS	8	PC	84213900	8,922.64	71,381.09	18%	12,848.60	84,229.69
20	153088	WASHER	4	PC	73182200	573.05	2,292.21	18%	412.60	2,704.81
21	153089	WASHER	4	PC	73182200	1,995.07	7,980.28	18%	1,436.45	9,416.74
22	6F4968	GASKET	4	PC	40169340	487.05	1,948.38	18%	350.71	2,299.09
23	2573226	DRYER DYE	1	PC	84213900	6,200.64	6,200.64	18%	1,116.11	7,316.75
24	9C4937	BREATHER A	2	PC	84213900	2,757.02	5,514.04	18%	992.53	6,506.56
25	1779343	CAP&PROBE G	48	PC	73269099	202.69	9,729.12	18%	1,751.25	11,480.40
26	1697372	BOTTLE ASSY	88	PC	39269099	53.06	4,669.32	18%	840.48	5,509.79
27	15N40C14	ENGINE OIL SAE10W40	4	NOS	27101900	32,577.27	130,309.06	18%	23,453.63	153,762.69
28	SAE20	TRANSMISSION OIL SAE30	2	NOS	27101900	32,264.62	64,529.25	18%	11,615.26	76,144.51
29	SAE10	HYDRAULIC OIL SAE10	4	NOS	27101900	27,762.58	111,050.33	18%	19,989.06	131,039.39
30	FD406INDIAN	FINAL DRIVE OIL FDA060	2	NOS	27101900	55,024.94	110,049.88	18%	19,808.98	129,858.86
31	4602718	EXTENDED LIFE COOLANT	1	NOS	38200000	38,055.77	38,055.77	18%	6,850.04	44,905.81
32	EP20RS	GREASE EP2	2	NOS	27101900	56,792.41	113,584.81	18%	20,445.27	134,030.08
33	MIS-773TRANOVRLKIT	773 TRANSMISSION OVERHAUL KIT	1	PC	84821090	1,005,682.18	1,005,682.18	18%	181,022.79	1,186,704.97
34	1535710	BATTERY (200AH)	2	PC	85071000	41,594.65	83,189.31	28%	23,293.01	106,482.31
35	RT34A	REFRIGERANT	6	PC	29033919	424.36	2,546.16	18%	458.31	3,004.47
Total							2,589,641.15		474,454.34	3,064,095.48

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Consumable Spares and Consumables for 5th Year of 773E (Per Equipment)

Sl. No.	Part No.	Description	Quantity	Unit of Measurement	HSN Code	Basic Rate Ex-Works (per unit) (in Rs.)	Total Basic Amount (in Rs.)	GST Rate (in %)	Total GST Amount (in Rs.)	Landed Rate Including GST (in Rs.)
1	1R1808	FILTER AS-LU	32	PC	84213920	4,253.96	136,126.67	18%	24,502.80	160,629.47
2	8J5604	BREATHA A	8	PC	84219900	1,447.21	11,577.69	18%	2,083.98	13,661.68
3	3261643	FILTER AS	8	PC	84213920	5,434.89	43,479.14	18%	7,826.24	51,305.38
4	1R0755	FILTER A	8	PC	84213920	6,611.50	52,891.97	18%	9,520.55	62,412.52
5	4T6788	OIL FILTER	8	PC	84213920	2,914.99	23,319.92	18%	4,197.59	27,517.50
6	1261813	ELEMENT-FILT	8	PC	84213990	8,829.40	70,635.19	18%	12,714.33	83,349.53
7	1G8878	FILTER	16	PC	84212900	4,063.45	65,015.21	18%	11,702.74	76,717.94
8	2457451	CLEANER AS-A	4	PC	84219900	3,503.83	14,015.33	18%	2,522.76	16,538.09
9	1303212	FILTER	16	PC	84212900	4,382.77	70,124.29	18%	12,622.37	82,746.66
10	9C4037	BREATHA A	4	PC	84219900	2,812.16	11,248.64	18%	2,024.75	13,273.39
11	8C9657	BREATHA A	4	PC	84213920	4,988.93	19,955.72	18%	3,592.03	23,547.75
12	6V3831	SEAL O RING	8	PC	40169390	2,093.42	16,747.39	18%	3,014.53	19,761.92
13	4N4668	BREATHA A	8	PC	84219900	5,913.33	47,306.62	18%	8,515.19	55,821.81
14	7F0880	GASKET	4	PC	40169340	434.06	1,736.22	18%	312.52	2,048.74
15	5B3265	GASKET	4	PC	40169340	516.32	2,065.28	18%	371.75	2,437.03
16	1900760	DESICCANT CA	4	PC	84219900	40,324.93	161,299.71	18%	29,033.95	190,333.66
17	1070266	FILTER AIR	4	PC	84219900	1,925.65	7,702.59	18%	1,386.47	9,089.05
18	612505	ELEMENT AS	8	PC	84213990	10,262.54	82,100.31	18%	14,778.06	96,878.37
19	612506	ELEMENT AS	8	PC	84213990	9,101.09	72,808.72	18%	13,105.57	85,914.29
20	153888	WASHER	4	PC	73182200	584.51	2,338.05	18%	420.85	2,758.90
21	153889	WASHER	4	PC	73182200	2,034.97	8,139.89	18%	1,465.18	9,605.07
22	6F4868	GASKET	4	PC	40169340	496.84	1,987.35	18%	357.72	2,345.07
23	2573226	DRYER-DYE	1	PC	84219900	6,324.55	6,324.55	18%	1,138.44	7,463.09
24	9C4937	BREATHA A	2	PC	84219900	2,812.16	5,624.32	18%	1,012.38	6,636.69
25	1779343	CAP&PROBE G	48	PC	73265099	206.74	9,923.74	18%	1,786.27	11,710.01
26	1697372	BOTTLE ASSY	88	PC	39269099	54.12	4,762.70	18%	857.29	5,619.99
27	15W40C14	ENGINE OIL SAE15W40	4	NOS	27101980	34,531.50	138,127.60	18%	24,862.97	162,990.57
28	SAE30	TRANSMISSION OIL SAE30	2	NOS	27101980	34,200.50	68,401.00	18%	12,312.18	80,713.18
29	SAE10	HYDRAULIC OIL SAE10	4	NOS	27101980	29,428.34	117,713.35	18%	21,188.40	138,901.76
30	FD406INDIAN	FINAL DRIVE OIL FDA060	2	NOS	27101980	58,326.44	116,652.87	18%	20,997.52	137,650.39
31	4802719	EXTENDED LIFE COOLANT	1	NOS	38200000	40,339.12	40,339.12	18%	7,261.04	47,600.16
32	EP20RS	GREASE EP2	2	NOS	27101980	60,199.95	120,399.90	18%	21,671.98	142,071.89
Total							1,550,891.13		279,160.40	1,830,051.54

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CATERPILLAR CATERPILLAR INDIA PRIVATE LIMITED, THIRUVALLUR*

QUALITY ASSURANCE PLAN

CODIFICATION

#1	Structures	#4	Air Lines & Fittings
1.01	Frame Assembly	4.01	Air control parts
1.02	Body Assembly	4.02	Hoses
1.03	Cab Assembly	4.03	Tanks
#2	Power train & Accessories	#5	Hydraulic control parts
2.01	Engine	5.01	Hydraulic control parts
2.02	Transmission	5.02	Hoses
2.03	Differential	5.03	Tanks
2.04	Rear axle Assembly	5.04	Hydraulic cylinders
2.05	Drivelines	#6	Electricals
#3	Suspension & Steering	6.01	Harness
3.01	Ride cylinders	6.02	Gauges
3.02	Tyres	6.03	Batteries
3.03	Steering Linkages	#7	Complete Vehicle



CATERPILLAR CATERPILLAR INDIA PRIVATE LIMITED, THIRUVALLUR •

CODES FOR QUALITY ASSURANCE ACTIVITIES

01)	Visual	18)	Noise test
02)	Dimensional	19)	Fitment & Alignment
03)	Functional	20)	Sub assembly checks
04)	Metallurgical	21)	Assembly checks
05)	Ultrasonic	22)	Road test
06)	API	23)	Pre delivery inspection
07)	Radiography	24)	Unit shipping checks
08)	Dye penetrant		
09)	Pressure test		
10)	Leakage test		
11)	Welder qualification		
12)	WPS & PQR		
13)	Heat treatment		
14)	Surface treatment		
15)	Test certificate from suppliers for		
16)	Castings, Forgings, Heat treated parts, etc		
17)	Source Inspection Report		
	Check sheet		



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CATERPILLAR CATERPILLAR INDIA PRIVATE LIMITED, THIRUVALLUR •

QUALITY ASSURANCE PLAN FOR MANUFACTURING 773E DUMPER								
Equipment Details		Inspection and Tests						
S.No	Description	Manufacturer's Name & Place	Raw Materials & Process Inspection		Final Inspection		Doc. To be submitted	Remarks
			CIPL	Customer	CIPL	Customer		
1.01	Frame Assembly	CIPL Thiruvallur	1-2-4-5-6-11-12-15-17-7		1-2-5-6-8-14-17-7*			*Random
1.02	Body Assembly	CIPL Thiruvallur/ Various Cat approved suppliers	1-2-4-5-11-12-15-16-17		1-2-8-14-17			
1.03	Cab Assembly	Various Cat approved sources	1-2-16		1-2-17			
2.01	Engine	Caterpillar	1		1-3-9-10-17		T.C, Warranty Card	
2.02	Transmission	Caterpillar	1		1-3-9-10			



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CATERPILLAR CATERPILLAR INDIA PRIVATE LIMITED, THIRUVALLUR

QUALITY ASSURANCE PLAN FOR MANUFACTURING 773E DUMPER							
Equipment Details		Inspection and Tests					
S.No	Description	Manufacturer's Name & Place	Raw Materials & Process Inspection		Final Inspection		Remarks
			CIPL	Customer	CIPL	Customer	
2.03	Differential Assembly	CIPL Thiruvallur / Caterpillar	1-2-3-4-10-15-16		1-3-10-17		
2.04	Rear Axle	CIPL Thiruvallur / Caterpillar	1-2-3-4-6-10-13-14-15-16-17		1-3-10-17-19		
2.05	Drivelines	Caterpillar	1		1-3-19		
3.01	Ride Cylinder	Various Cat approved suppliers	1		1-2-3-7-9-10-15		RANDOM



CATERPILLAR CATERPILLAR INDIA PRIVATE LIMITED, THIRUVALLUR

QUALITY ASSURANCE PLAN FOR MANUFACTURING 773E DUMPER									
Equipment Details		Inspection and Tests							
S.No	Description	Manufacturer's Name & Place	Raw Materials & Process Inspection		Final Inspection		Doc. To be submitted	Remarks	
			CIPL	Customer	CIPL	Customer			
3.02	Tyres	Various approved sources	1		1-3				
3.03	Steering Linkages	Caterpillar	1		1-3				
4.01	Air control parts	Caterpillar	1		1-3-10				
4.02	Hoses	Caterpillar	1		1-3-10				
4.03	Tanks	Various approved sources	1		1-3-10				
5.01	Hydraulic control parts	Caterpillar / Various approved sources	1		1-3-10				
5.02	Hoses	Caterpillar	1-15		1-3-10				



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As per Request

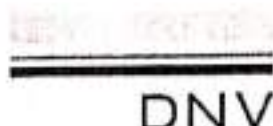
CATERPILLAR CATERPILLAR INDIA PRIVATE LIMITED, THIRUVALLUR*

QUALITY ASSURANCE PLAN FOR MANUFACTURING 773E DUMPER								
Equipment Details		Inspection and Tests						Remarks
S.No	Description	Manufacturer's Name & Place	Raw Materials & Process Inspection		Final Inspection		Doc. To be submitted	
			CIPL	Customer	CIPL	Customer		
5.03	Tanks	Various approved sources	1-15		1-3-10			
5.04	Cylinders	Various Cat approved sources	1-15		1-3-9-10-19			
6.01	Harness	Various approved sources	1		1-3			
6.02	Gauges	Caterpillar	1-3		1-3			
6.03	Battery	Caterpillar	1		1-3-10			
7.00	Complete Vehicle	CIPL Thiruvallur	17-19-20-21		22-23-24			



Drop Name





MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
168038-2014-AQ-IND-RwA

Initial certification date:
28 January 2008

Valid:
28 January 2021 – 27 January 2024

This is to certify that the management system of
Caterpillar India Private Limited
Melnallathur, Thiruvallur – 602 004, Tamil Nadu, India

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:

Design, development and manufacture of construction & mining machines, attachments, spares and components for both domestic & export requirements



Place and date:
Chennai, 16 March 2021

For the issuing office:
DNV - Business Assurance
ROMA, No. 10, GST Road, Alandur,
Chennai - PIN - 600 016, India



[Signature]
Shradheen Mediyall
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT, DNV GL Business Assurance B.V., Zwolsseweg 1, 2994 LB, Barendrecht, Netherlands - TEL +31(0)102027600 www.dnvgl.com/assurance

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Section--General Conditions of Contract (GCC)

1. Definitions

In the interpretation of the contract and the general and special conditions governing it, unless the context otherwise requires, the following terms shall be interpreted as indicated below:

- a) "The Contract" means the agreement entered into between the Purchaser and the Supplier including all attachments and appendices thereto and all documents incorporated by reference therein including Invitation to tender, Instructions to tenderers, Acceptance of tender, Particulars and the General and Special Conditions specified in the acceptance of tender;
- b) "Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- c) "Goods" means all of the equipment, plant, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract;
- d) "Services" means those Services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental Services, such as installation, commissioning, provision of technical assistance, training and other such obligations of the Supplier covered under the Contract;
- e) "GCC" means the Conditions of Contract contained in this section;
- f) "SCC" means the Special Conditions of Contract;
- g) "Purchaser" means the organization purchasing goods and services, i.e., Coal India Limited or its subsidiaries or areas falling under various subsidiaries of Coal India Limited;
- h) "Purchaser's country" is India;
- i) "Supplier/Contractor" means the individual, firm or company with whom the contract has been concluded for supplying the Goods and Services under the Contract. The Supplier/Contractor shall be deemed to include its successors (approved by the purchaser), representatives, heirs, executors, administrators and permitted;
- j) "CIL" means Coal India Limited or the Subsidiary Company of CIL or areas falling under various subsidiaries of CIL where Goods are deployed/ used;
- k) "Year" means the Calendar Year.
- l) "Chairman" means the Chairman of Coal India Limited.
- m) "Chairman-cum-Managing Director" means Chairman-cum-Managing Director of any of the Subsidiary Companies of Coal India Limited, presently Central Coalfields Limited, Eastern Coalfields Limited, Western Coalfields Limited, Bharat Coking Coal Limited, Central Mine Planning & Design Institute Limited, South Eastern Coalfields Limited, Northern Coalfields Limited and Mahanadi Coalfields Limited.
- n) "Drawing" means the drawing and plans specified in or annexed to the schedule or specifications.
- o) "Inspector" means any person nominated by or on behalf of the purchaser to inspect supplies, stores or work under the contract or his duly authorized agent.
- p) "Progress Officer" means any person nominated by or on behalf of the Purchaser to visit supplier's works to ascertain position of deliveries of Goods ordered.
- q) "Materials" shall mean anything used in the manufacture or fabrication of the stores.
- r) "Stores" means the goods specified in the Supply Order or schedule which the supplier / contractor has agreed to supply under contract.



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- s) "Test" means such test or tests as are prescribed by the specifications or considered necessary by the Inspector or any agency acting under direction of the Inspector.
- t) "Site" mean the place or places named in the "Supply Order" or such other place or places at which any work has to be carried out as may be approved by the purchaser.
- u) Words denoting the persons shall include any company or association or body of individuals whether incorporated or not.
- v) Words in singular include the plural and vice-versa.
- w) Words denoting the masculine gender shall be taken to include the feminine gender.
- x) "Writing" shall include any manuscript, typewritten or printed statement under or over signature or seal as the case may be.
- y) "Unit" and "Quantity" means the unit and quantity specified in the schedule.
- z) "Purchase Order" or "Supply Order" or "Order" or "Contract" means an order for supply of stores and includes an order for performance. The terms "Supply Order", "Purchase Order", "Order" and "Contract" are interchangeable.
- aa) "Particulars" shall mean the following:
 - i. Specifications;
 - ii. Drawing;
 - iii. Sealed pattern denoting a pattern sealed and signed by the Inspector;
 - iv. Certified or sealed sample denoting a copy of the sealed pattern or sample sealed by the purchaser for guidance of the Inspector;
 - v. Trade pattern denoting a standard of the ISI or other standardising authority or Coal India Ltd. and / or any of its subsidiary companies or a general standard of the industry and obtainable in the open market;
 - vi. Proprietary make denoting the product of an individual manufacturer;
 - vii. Any other details governing the construction, manufacture and / or supply as existing in the contract.
- bb) Terms and expressions not defined herein shall have the meanings assigned to them in the Indian Sale of Goods Act, 1930 or the Indian Contract, 1872 or the General Clauses Act, 1897, as amended, as the case may be.

2. Application

These Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

3. Standards

The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications. Such standards shall be the latest issued by the concerned institution.

4. Use of Contract Documents and Information

- 4.1. The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
- 4.2. The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in sub-clause 4.1 above, except for purposes of performing the Contract.



4.3. Any document, other than the Contract itself, enumerated in sub-clause 4.1 above shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so, required by the Purchaser.

5. Patent Rights

The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in the Purchaser's country.

6. Security Deposit

- 6.1. The successful tenderers will have to submit Security Deposit for the 3% value of the total landed value of the contract including all taxes, duties and other costs and charges, without considering Input Tax Credit.
- 6.2. The Security Deposit shall be in the form of a Bank Demand Draft or in the form of a Bank Guarantee in the prescribed format from an RBI Scheduled Bank in purchaser's country (on a non-judicial stamp paper) within 15 days from date of notification of award or placement of order.
- 6.3. The Security Deposit shall be in the same currency (ies) in which contract is to be signed/ issued. In case of multi-currency contract, separate Security Deposit Bank Guarantee (SDBG) in respective currency for required value as above shall be submitted.
- 6.4. In case of equipment, SDBG shall not be individual equipment wise. However, multiple Bank Guarantees for Security Deposit shall be permissible provided value of all the SDBGs totals to 3% of the contract value, and all are submitted simultaneously within the specified time schedule and all of them are in the same prescribed format of SDBG without linking to any particular equipment.
- 6.5. The SDBG shall remain valid up to 3 months after completion of supplies and acceptance of materials by the consignee in case of supply contracts/ rate/running contracts and in case of contracts for equipment involving installation and commissioning, 3 months after the supply and commissioning of all the equipment covered in the contract.
- 6.6. If the successful tenderer fails to deposit the security deposit within 15 (fifteen) days from date of notification of award/ placement of order, another opportunity may be given to them for submission of Security Deposit within next 15 days. If the successful tenderer still fails to deposit the security deposit within the extended period but executes the supplies within the extended security deposit submission period, the submission of Security Deposit may be waived, as the purpose of submission of SD is fulfilled.
- 6.7. In cases where the successful tenderer did not submit the security deposit even within the extended period for SD submission but has supplied the materials either in full or in part after the extended period for SD submission, the SD may be deducted from the first bill or in case of insufficient amount from subsequent bill(s) of the supplier till the full SD amount is deducted. Further, a penalty equivalent to 0.5% (half percent) of SD amount for delay of each week or part thereof (period of delay is to be calculated from the 31st day from the date of notification of award/placement of order to the date of receipt of full SD/deduction of full SD) shall be levied subject to a maximum of 10% of the contract value.

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- 6.8. Security Deposit will be released with the approval of HOD of MM Department/ Area GM within 30 days after completion of supplies and acceptance of material by the consignee in case of supply contractor after successful commissioning and on receipt of confirmation of Performance Bank Guarantee(s) for all the equipment covered in the contract in case of contracts for equipment and all those items/ goods involving installation and commissioning and PBG.
- 6.9. Security Deposit may be converted into Performance Bank Guarantee (PBG) wherever PBG is required at the option of the supplier. At the time of conversion of security money into PBG, it should be ensured that the amount of PBG should not be less than 10% of landed value of order. Wherever Security Deposit is converted into PBG, the operation of such SDBG/ Performance BG shall be guided by Performance Bank Guarantee Clause.
- 6.10. All Central/State Government Organization/PSUs shall be exempted from submission of Security Deposit. OEM/OES shall also be exempted from submission of Security Deposit in case of procurement of Spare Parts for equipment against Single Tender Enquiry/Open/Limited Tenders.
- 6.11. Submission of Security Deposit is exempted for the contracts having value up to Rs.2 lakhs.
- 6.12. The SDBG will be submitted Through Structured Financial Management System (SFMS).

7. Performance Bank Guarantee

- 7.1. Wherever applicable, the successful bidder shall be required to furnish a Performance Guarantee equivalent to 10% value of the total landed value of the contract including all taxes, duties and other costs and charges, without considering Input Tax Credit.
- 7.2. The Performance Guarantee shall be in the form of a Bank Guarantee issued by an RBI scheduled bank in India in the prescribed format on a non-judicial stamp paper.
- 7.3. The Performance Bank Guarantee (PBG) shall be in the same currency (ies) in which contract has been signed. In case of multi-currency contract, separate PBG in respective currency for required value shall be submitted.
- 7.4. If the contract is for procurement of equipment, the PBG (s) may be submitted equipment wise also. For this purpose, the value of each equipment will be worked out by dividing the total value of contract for a particular item of NIT, worked out as per provisions contained in clause- 7 above, by the number of equipment ordered for that particular item of the NIT.
- 7.5. The PBG (s) shall remain valid till 3 months after the completion of warranty period.
- 7.6. The PBG shall be submitted sufficiently in advance (say 3-4 weeks) to enable its verification from the issuing bank, before submission of the invoice for 80% payment of the particular goods/ equipment(s).
- 7.7. 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, with the approval of the concerned HOD (MM)/ Area GM.
- 7.8. In case of procurement of equipment, if the successful tenderer which does not have the After Sales Service Support facilities in India like Depot/ Warehouse for supply of spare parts, Workshop facilities for servicing and repair of assemblies, sub-assemblies and equipment, availability of trained technical manpower etc., training facilities for providing training to CIL's personnel, wherever required, additional Performance Bank Guarantee for the 30% value of the total landed value of the contract including all taxes, duties and other costs and charges shall have to be submitted.

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This 30% PBG will be released after establishment of After Sales Service Support facilities in India subject to confirmation of the same by concerned Head of Technical Department. However, the supplier shall have to submit PBG for 10% of the total contract value to be kept valid for the remaining period of the contract plus 3 months processing period before release of 30% PBG. This 10% PBG will be released after satisfactory performance of all equipment/ items and fulfilment of contractual obligations including warranty obligations.

7.9. The PBG will be submitted through Structured Financial Management System (SFMS).

8. Inspections and Tests

- 8.1. The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract Specifications at no extra cost to the Purchaser. Generally, the Goods shall be of the best quality and workmanship and comply with the contract or supply order in all respect. The Technical Specifications shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing, of the identity of the inspector(s). The Purchaser reserves the right, at the Purchaser's cost, to depute its own inspector(s) and/or to engage any other third party inspecting agency, to conduct inspections and tests pursuant to the Contract. Sufficient time, at least 30 days in advance will be given for inspection.
- 8.2. The inspections and tests may be conducted on the premises of the Supplier, at point of delivery and/or at the Goods' final destination. If conducted on the premises of the Supplier, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser. However, any drawing and proprietary information provided for this purpose shall remain in control of the supplier. The inspector shall have full and free access at the supplier's works for the purpose of carrying out inspection. The Inspector shall have the right to put all the stores or materials forming part of the same or any part thereof to such tests as he may think fit and proper. The supplier shall not be entitled to object, on any ground whatsoever, to the method of testing adopted by the Inspector. Unless otherwise provided for in the contract, all stores / materials expended in test will be to supplier's account. In the event of Goods found acceptable by the Inspector during inspection, he shall furnish the supplier with necessary copies of Inspection notes for attaching to the supplier's bill.
- 8.3. Should any inspected or tested Goods fail to conform to the Specifications, including acceptance tests and periodic tests to verify guaranteed performance, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet Specification requirements free of cost to the Purchaser within thirty days of such rejection. Replaced or altered goods shall be subjected to repeated inspection or tests to demonstrate conformity with the Specifications. In the event that replacement or alteration is not done within thirty day period as aforesaid, or, replaced or altered goods fail to demonstrate conformity with the Specifications in repeated inspections or tests as aforesaid, the Purchaser reserves the right to terminate the Contract in part or in whole and the Supplier shall repay forthwith to the Purchaser all monies paid including all costs incurred in the inspection and tests, in respect of Goods and Services associated therewith, for which the termination is applicable and, subsequently remove the same from the Purchaser's Site at the Supplier's cost.
- 8.4. Any Goods rejected at a place other than the premises of the supplier, shall be removed by the supplier within 14 days of the date of receipt of intimation of such rejection. The Inspector may call upon the supplier to remove what he considers to be dangerous, infected or perishable Goods, within 48 hours of the receipt of such intimation.

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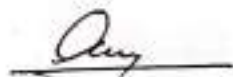
The rejected stores shall under all circumstances lie at the risk of the supplier from the moment of rejection and if such stores are not removed by the supplier within the above mentioned period, the Inspector / Purchaser may either return the same to the supplier at the supplier's risk and cost (a public tariff rate) by such mode of transport as the Purchaser or Inspector may select or dispose of such stores at the supplier's risk on his account and retain in such portion of the proceeds as may be necessary to cover any expense incurred in connection with such disposal. The purchaser shall also be entitled to recover handling and storage charges for the period during which the rejected stores are not removed.

- 8.5. The Purchaser's right to inspect, test and where necessary, reject the Goods after the Goods' arrival in the Purchaser's country 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 representative prior to the Goods' shipment from the Supplier's premises.
- 8.6. Nothing in this clause shall in any way relieve the Supplier of any warranty or other obligations under this Contract.

9. Packing and Marking

- 9.1. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.
- 9.2. All packing cases, containers, packing and other similar materials shall be supplied free by the Supplier and these shall not be returned unless otherwise specified in the Contract/Purchase order.
- 9.3. The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the contract and in any subsequent instructions ordered by the Purchaser. Packages will be stamped with identification marks both outside the packages as well as on the contents inside. Packages containing articles liable to be broken by rough handling like glass or machinery made of cast iron will be marked with cautionary words like 'Fragile' 'Handle with care'.
- 9.4. The marking of the Goods must comply with the requirements of the law relating to Merchandise Mark, in force in India.
- 9.5. Packing instructions: The Supplier will be required to make separate packages for each consignee. Each package will be marked on three sides with proper paint with the following:
- i. Project;
 - ii. Contract No;
 - iii. Country of origin of Goods;
 - iv. Supplier's name;
 - v. Packing list Reference Number;
 - vi. The gross weight, net weight and cubic measurement;
 - vii. Consignee Name and Address;
- 9.6. A complete list of contents in each package called the packing list will be prepared and one copy of the packing list shall be inserted inside the package.





10. Delivery and Documents

- 10.1. The delivery period stipulated in the Contract / Purchase Order shall be deemed to be the essence of the contract and delivery of the Goods must be completed within the specified period.
- 10.2. Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in the Schedule of Requirements. The delivery of Goods shall be deemed to take place on delivery of the Goods in accordance with the terms of the contract after approval of Goods by the Inspector.
- 10.3. For purposes of the Contract, "EXW", "FOB", "FCA", "CFR", "CIF", "CIP" and other trade terms used to describe the obligations of the Parties shall have the meanings assigned to them by the prevailing edition of *Incoterms* on the date of tender opening, published by the International Chamber of Commerce, Paris.
- 10.4. The details of shipping documents to be furnished by the Supplier are specified below:

a) For Imported Goods:

Within forty eight (48) hours of shipment, the Supplier shall notify the Purchaser, Port Consignee and Ultimate Consignee by fax and email, full details of the shipment including Contract number, description of Goods, quantity, the vessel, the bill of lading number and date, port of loading, date of shipment, port of discharge, etc. The Supplier shall deliver by express courier service the following documents to the Purchaser, with a copy to the Port Consignee and Ultimate Consignee:

- i. Supplier's shipping invoice showing Contract Number, Goods description, quantity, unit price, total amount and GST number of ultimate consignee;
- ii. Clean on-board bill of lading indicating the Importer-Exporter Code (IEC) of the concerned Subsidiary Company of CIL and non-negotiable bill of lading;
- iii. Packing list identifying contents of each package;
- iv. Manufacturer's/Supplier's warranty / guarantee certificate;
- v. Manufacturer's Test & Inspection certificate;
- vi. Certificate of Country of Origin issued by the Chamber of Commerce of Manufacturer's Country;
- vii. Documentary evidence of marine freight & marine insurance.

The above documents shall be sent by supplier well in advance, so that the same are received by the Purchaser at least one (1) week before arrival of the Goods at the port or place of arrival and, if not received, the Supplier will be responsible for any consequent expenses.

b) For Domestic Goods from within India:

Upon dispatch of the Goods to the consignee, the Supplier shall notify the Purchaser and Ultimate Consignee and deliver by express courier service the following documents to the Purchaser with a copy to the Ultimate Consignee:

- i. Supplier's invoice showing Contract Number, Goods description, quantity, unit price, total amount;
- ii. Railway receipt / Transporter's consignment note / acknowledgement of receipt of Goods from the consignee(s);
- iii. Manufacturer's / Supplier's warranty / guarantee certificate;
- iv. Manufacturer's Test & Inspection certificate.

The above documents shall be provided by the supplier at the time of arrival of the Goods at the consignee's end. In case of delay, the Supplier will be responsible for any consequent expenses.





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11. Insurance

- 11.1. Wherever necessary, the goods supplied under the contract, shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, delivery, storage and erection and commissioning at site (wherever applicable) in the manner specified in the contract. The insurance is to be done for coverage on "all risks" basis including war risks and strike clauses. The amount to be covered under insurance should be 110% of the invoice value to take care of the overall expenditure to be incurred by the purchaser for receiving the goods at the destination.
- 11.2. Where delivery of imported goods is required by the purchaser on CIF / CIP basis, the supplier shall arrange and pay for marine / air insurance, making the purchaser as the beneficiary. Where delivery is on FCA / FOB / CFR basis, marine / air insurance shall be the responsibility of the purchaser.
- 11.3. In case of domestic supplies on Free Delivery at site / FOR Destination basis, the supplier has to arrange insurance at its cost. For Ex-works and FOR station of dispatch contracts, it is the responsibility of the purchaser to arrange for insurance.
- 11.4. Where the delivery of the Goods is on CIP Basis, the supplier shall deliver the goods at the named place of destination at its own risks and costs. CIL has no obligation to the supplier for arranging insurance. However, CIL will provide the supplier upon request, with necessary information for obtaining insurance.
- 11.5. Where the delivery of the Goods is on FOR destination Basis, the supplier shall deliver the goods at the FOR destination site at its own risks and costs. CIL has no obligation to the supplier for arranging insurance. However, CIL will provide the supplier upon request, with necessary information for obtaining insurance".

12. Transportation

- 12.1. In case of FOB (Port of Shipment) contracts, the purchaser has to arrange transportation its own cost and risk.
- 12.2. In case of CIF (Port of Destination) contracts, transport of the goods to the port of destination in the Purchaser's country, as shall be specified in the contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. In case of inland transportation of goods, the same is to be done through registered common carriers only.
- 12.3. In case of CIP (Final Place of Destination) contracts, transport of the goods to the port of destination and further to the named place of Final Destination in the Purchaser's country, as shall be specified in the contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. In case of inland transportation of goods, the same is to be done through registered common carriers only.
- 12.4. In case of FOR Destination contracts, transport of goods to the Destination site shall be arranged and paid for by the supplier and the cost thereof shall be included in the contract price. Transportation of goods is to be done through registered common carriers only.

13. Warranty

- 13.1. The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship or from any act or omission of the Supplier that may develop under normal use of the supplied Goods in the conditions prevailing in the purchaser's country.

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- 13.2. This warranty shall remain valid for twelve (12) months from the date of commissioning of the equipment.
- 13.3. The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. The Supplier shall, within thirty days, repair or replace the defective Goods or parts thereof, free of cost at the ultimate destination. The Supplier shall take over the replaced parts / Goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts / Goods thereafter.
- 13.4. If the Supplier, having been notified, fails to remedy the defect(s) within thirty days, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

14. Payment

14.1. As stipulated in the NIT and the resultant contracts.

14.2. Payment for Indian Agency Commission

The payment of Indian Agency Commission, if any, involved, may be considered in case of necessity, subject to compliance of the Government of India guidelines issued from time to time. Agency commission, if any, shall be paid in equivalent Indian Rupees, after erection and commissioning of the equipment, wherever applicable, within twenty-one days of submission of bills along with following documents:

- A) Copy of foreign principal's invoice.
 - B) Copy of bill of lading.
 - C) Certificate from State Bank of India regarding Bill selling exchange rate ruling on the date of bill of lading (in case of bank holiday on date of bill of lading, Bill Selling exchange rate on next working day shall be considered).
 - D) In case of procurement of equipment, commissioning certificate signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Technical Dept. of the subsidiary company, where the equipment has been deployed.
- 14.3. In order to enable the purchaser to avail Input Tax Credit as per applicable Indian laws, the supplier shall furnish all the necessary documents to the consignee / paying authority as required, failing which the equivalent deduction will be made from the supplier's bills. In case of successful bidder(s), if at the time of supply, it is found that Input Tax Credit as per Invoice (Credit available to CIL / Subsidiary on this account) is less than the "Input Tax Credit Amount" declared in the Price Bid, the differential amount between the two shall be deducted from the Supplier's bills while making payment to them.
- If the evaluation of the supplier has been made considering the concessional rate of customs duty applicable for import from certain countries under trade agreements / treaties with Govt. of India, all the required documentation for availing concessional customs duty and subsequent customs clearance etc. will be provided by the supplier failing which the equivalent deduction will be made from their bills.

15. Changes in Order

The Purchaser may at any time, by a written order given to the Supplier, make changes within the general scope of the Contract in any one or more of the following:

- a) drawings, designs or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- b) the method of shipment or packing;
- c) the place of delivery; and/or

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d) the place of Services to be provided by the Supplier.

16. Contract Amendments

Subject to relevant clause of GCC, no variation in or modification of the terms of the Contract / Purchase Order shall be made except by written amendment issued against the Contract / Purchase Order.

17. Assignment

The Supplier shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Purchaser's prior written consent. However, the consent of the Purchaser shall not relieve the supplier from any obligation, duty or responsibility under the contract.

18. Subcontracts

The Supplier shall notify the Purchaser in writing of all subcontracts awarded by it to discharge the works under this Contract. Such notification, in the original bid or later, shall not relieve the Supplier of any liability or obligation under the Contract and the supplier will be solely responsible for all obligations under the contract.

19. Delays in the Supplier's Performance

19.1. Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Purchaser in the Schedule of Requirements.

19.2. If at any time during performance of the Contract, the Supplier or its Subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, by way of an amendment to the Contract / Purchase Order.

19.3. Except as provided under Force Majeure clause, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages, unless an extension of time is agreed upon pursuant to relevant clause without the application of liquidated damages.

20. Liquidated Damages

20.1. 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:

- (a) 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
- (b) 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
- (c) 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,

- (d) 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.
- (e) To forfeit the security deposit fully or in part.
- (f) 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.

20.2. For the purpose of the calculation of the liquidated damages amount, the basic FOR Destination price shall be considered. For direct imports, the CIP price at Final Place of destination will 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 LD.

21. Termination for Default and breach of contract

21.1. The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:

- (a) If the supplier fails to deliver any or all of the stores within the time period(s) specified in the contract, or any extension thereof granted by the Purchaser; or
- (b) If the supplier fails to perform any other obligation under the contract within the period specified in the contract or any extension thereof granted by the purchaser; or
- (c) If the Supplier, in the judgement of the Purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

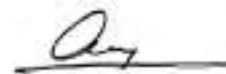
21.2. Code of Integrity for Public Procurement (CIPP):

The supplier shall observe the highest standard of ethics while competing for and during execution of contracts.

The following practices would amount to violation of CIPP:

- i. "Corrupt Practice" means making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii. "Fraudulent Practice" means any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in the execution of a contract;
- iii. "Anti-competitive Practice" means any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act 2002, between two or more bidders, with or without the knowledge of the Purchaser, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- iv. "Coercive Practice" means harming or threatening to harm, directly or indirectly, at any stage, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

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- v. "Conflict of interest" means participation by a bidding firm or any of its affiliates that are either involved in the consultancy contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if the bidding firm or their personnel have relationships or financial or business transactions with any official of Procuring Entity who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from the Procuring Entity with an intent to gain unfair advantage in the procurement process or for personal gain; and
 - vi. "Obstructive practice" means materially impede the Procuring Entity's investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the Procuring Entity's rights of audit or access to information.
- 21.3. In the event the Purchaser terminates the Contract in whole or in part, pursuant to relevant clause, the Purchaser may procure on such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.
- 22. Force Majeure**
- 22.1. Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to, acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, freight embargoes and act of God.
- 22.2. If there is delay in performance or other failures by the supplier to perform its obligation under the contract due to an event of a Force Majeure and the contract is governed by Force Majeure Clause, the supplier shall not be held responsible for such delays / failures.
- 22.3. In such a situation, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof, duly certified by the local Chamber of Commerce or Statutory authorities, the beginning and end of the causes of the delay, within twenty-one days of occurrence and cessation of such Force Majeure Conditions. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
- 22.4. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.
- 22.5. For delays arising out of Force Majeure, the supplier will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of Force Majeure.
- 22.6. There may be a Force Majeure situation affecting the purchaser also. In such a situation, the purchaser is to take up with the supplier on similar lines as above for further necessary action.

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22.7. The contract shall be governed by the following 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 "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, PROVIDED 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. "

23. Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

24. Termination for Convenience

24.1. The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

24.2. The Goods that are complete and ready for shipment within thirty (30) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

- a) to have any portion completed and delivered at the Contract terms and prices; and / or
- b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.

25. Governing Language

The Contract shall be written in English language. All correspondence and other documents pertaining to the Contract which are exchanged by the Parties shall be written in the same language.

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26. Taxes and Duties

26.1. A foreign Supplier shall be entirely responsible for all taxes, duties, license fees and other such levies imposed outside the Purchaser's country. The foreign supplier shall also be responsible for all taxes & duties in Purchaser's country legally applicable during execution of the contract other than those which are to be paid by purchaser, as specified in as per relevant clause of NIT.

26.2. A Domestic Supplier shall be entirely responsible for all taxes, duties, licence fees etc., incurred until the execution of the contract, other than those which are to be paid by purchaser, as specified in as per relevant clause of NIT.

27. Limitation of Liabilities

Except in case of criminal negligence or willful misconduct.

27.1. Notwithstanding anything herein to the contrary, no party shall be liable for any indirect, special, punitive, consequential or exemplary damages, whether foreseeable or not, arising out of or in relation to this contract, loss of goodwill or profits, lost business however characterised, any/ or from any other remote cause whatsoever.

27.2. The supplier shall not be liable to the purchaser for any losses, claims, damages, costs or expenses whatsoever arising out of or in connection with this contract in excess of the contract value of the equipment supplied hereunder which caused such losses, claims, damages, costs or expenses.

27.3. However, the limitation of liability of the supplier indicated above shall not apply to Liquidated damages.

28. Settlement of commercial disputes in case of contracts with Public Sector Enterprises/ Govt. Dept.(s)

28.1. In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) 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 its resolution through Administrative Mechanism for Resolution of CPSEs Disputes (AMRCD), as per the guidelines stipulated in the Office Memorandum No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22.05.2018 of Department of Public Enterprises, Ministry of Heavy Industries and Public Enterprises, Govt. of India.

28.2. In case of contract with a Public Sector Enterprise or Govt. Dept., the following Arbitration Clause shall be incorporated in the contract: -

"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."

29. Progress Reports

29.1. The Supplier shall from time to time render such reports concerning the progress of the contract and/or supply of the stores in such form as may be required by the Purchaser.

29.2. The submission, receipt and acceptance of such reports shall not prejudice the right of the Purchaser under the contract nor shall operate as an estoppel against the Purchaser merely by reason of the fact that he has not taken notice of or objected to any information contained in such report.

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30. Provisions of CIL's Purchase Manual

The provisions of CIL's Purchase Manual and its subsequent amendments (Available on CIL's website, www.coalindia.in) shall also be applicable, if not specified otherwise in this Bid document.

31. Applicable Law

The Contract shall be governed by the laws of the Republic of India, unless otherwise specified in the bid document.

32. Jurisdiction of Courts

32.1. Irrespective of the place of delivery, the place of performance or place of payment under the contract, the contract shall be deemed to have been made at the place from where the acceptance of tender or supply order has been issued.

32.2. The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of the contract.

33. Notices

33.1. Any notice given by one Party to the other pursuant to this Contract shall be sent to the other Party in writing or facsimile to be confirmed in writing, to the other Party's address. For the purpose of all notices, the following shall be the addresses of the Purchaser and the Supplier:

Purchaser:

General Manager (MM)

Bharat Coking Coal Limited

Materials Management Division

Level-III, Commercial Block, Koyla Bhawan

Koyla Nagar, Dhanbad, Jharkhand, India- 826 005.

Fax No.: +91 0326-2230183, Phone: +91 0326-2230181.

Supplier:

[-----]

Fax No.: +91 -----

Phone: +91 -----]

33.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

33.3. In case of change in address, the Supplier shall immediately notify the same to the Purchaser in writing. The supplier shall be solely responsible for the consequences of omission to notify the change of address to the Purchaser.



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Section -Special Conditions of the Contract (SCC)

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions contained herein shall prevail over those in the General Conditions of Contract. The corresponding Clause number of the General Conditions is indicated in parentheses.

1. Security Deposit (GCC clause-6)

1.1 In case of FOR destination contract in Indian Rupees, the total landed value of the contract will be arrived at after adding GST and any other tax and duty, if applicable and any other cost and charge, if applicable, to the FOR Destination price of the ordered Equipment and Spares & Consumables for first 12 months warranty period from installation of equipment and thereafter Spares & Consumables for a period of 48 months.

1.2 The Security Deposit may be in the form of a Bank Demand Draft/Banker's Cheque or in the form of a Bank Guarantee as per format enclosed at Annexure-4 Sample Forms, Section-VII, from a RBI Scheduled Bank in purchaser's country (on a non-judicial stamp paper) within 15 days from date of notification of award.

1.3 The SDBG will be submitted Through Structured Financial Management System (SFMS).

The SDBG issued by issuing bank on behalf of the bidder in favour of "Bharat Coking Coal Ltd.," shall be in paper form (Stamp Paper) as well as issued under "Structured Financial Messaging System". Issuing Bank should send the underlying confirmation to either of following banks:

Name of beneficiary & its details	Name	Bharat Coking Coal Limited
	Area	HQ, BCCL
	Bank Account no.	35160317947
	Deptt.	MM Department
Beneficiary Bank, Branch & Address	State Bank of India	
	Main Branch Dhanbad	
IFSC code	SBIN0000066	

Or

Name of beneficiary & its details	Name	Bharat Coking Coal Limited
	Area	HQ, BCCL
	Bank Account no.	019605001057
	Deptt.	MM Department
Beneficiary Bank, Branch & Address	ICICI Bank	
	ICICI Bank, Dhanbad	
IFSC code	ICIC0000196	

Original copy of the Bank Guarantee issued by the Issuing Bank shall be sent by the issuing bank to MM department, BCCL.

1.10 If the successful tenderer fails to deposit the security deposit within 30 (thirty) days from date of notification of award, or fails to extend the Bank Guarantee for Security Deposit, suitably as required, the same shall be recorded as unsatisfactory performance for future dealings apart from taking any other penal action as may be deemed fit by BCCL.

1.11 Failure of the successful bidders to comply with the above requirement of Security Deposit shall constitute sufficient ground for the annulment of the award and forfeiture of the Earnest Money Deposit.

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2. Performance Bank Guarantee (PBG) (GCC Clause 7)

- 2.1 The PBG will be required to be submitted to Paying Authority of BCCL.
- 2.2 The Performance Guarantee shall be in the form of a Bank Guarantee issued by a RBI scheduled bank in India in the format attached at Annexure-5, Sample Forms, Section-VII on a non-judicial stamp paper.
- 2.3 The PBG(s) shall remain valid till 3 months after the completion of 60 months period from the date of commissioning of respective equipment covered in the contract.
- 2.4 The PBG issued by Issuing bank on behalf of the bidder in favour of "Bharat Coking Coal Limited" shall be in paper form (Stamp Paper) as well as issued under "Structured Financial Messaging System". The details of beneficiary Bank for issue of BG through SFMS Platform is mentioned in above SDBG clause.
Original copy of the PBG issued by the Issuing Bank shall be sent by the issuing bank to concerned subsidiary.
- 2.5 The release of the Performance Bank Guarantee(s) after above indicated period shall be subject to satisfactory performance of the equipment during 60 months period from the date of commissioning of the equipment and fulfillment of contractual obligations failing which, action for further extension or encashment of PBG, as deemed suitable shall be taken. Release of PBG for each equipment may be done separately on satisfactory performance of the respective equipment as above.
- 2.6 In case of successful tenderer which does not have the After Sales Service Support facilities in India, Performance Bank Guarantee for the 30% value of the total landed value of the contract including all taxes, duties and other costs and charges as defined in clauses 1.2 above shall have to be submitted to BCCL (HQ). This 30% PBG will be released after establishment of After Sales Service Support facilities in India for the ordered equipment within completion of warranty period of the first equipment commissioned or earlier subject to confirmation of the same by GM Area, BCCL Area where the equipment(s) have been deployed in consultation with GM/HOD (Excavation) BCCL. However, the supplier shall have to submit PBG for 10% of the total contract value to be kept valid for the remaining period of the contract plus 3 months processing period before release of 30 % PBG. The total contract period is 60 months from the date of commissioning of respective equipment covered in the contract. This 10% PBG will be released after satisfactory performance of all equipment and fulfillment of contractual obligations.
- 2.7 In cases where the supplier does not submit the PBG in time or as per the prescribed format in line with the contract stipulations, the PBG amount may be deducted from the first bill or in case of insufficient amount, from subsequent bill(s) of the supplier till the full PBG amount is deducted. This amount shall be refunded to the supplier upon acceptance of PBG submitted by them.

3. Inspection and Test (GCC Clause 8)

- 3.1 Pursuant to Clause 8.1 of the GCC, details of specific inspections and/or tests to be carried out at the Supplier's works and/or at the Site(s) are given in Section VI, Technical Specifications.

4. Payment (GCC Clause 14)

- 4.1 Payment shall be made in the currency or currencies specified in the contract in the following manner:

- 4.1.1 For Payment of equipment and consumable spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment in Indian Rupees:

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- i) 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 acceptance of Performance Bank Guarantee valid till 3 months after the completion of 60 months period from the date of commissioning of all the equipment covered in the contract.
- ii) 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 the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. Of BCCL, where the equipment has been deployed and confirmation of receipt of spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment by the paying authority.
- iii) Freight and transit insurance charges shall be paid at actual subject to ceiling of the quoted rates/prices.

4.1.2. For Payment of spares and consumables for 48 months after the warranty period of 12 months from the date of commissioning of the equipment in Indian Rupees:

100% value of the supplementary items as per scope of supply and 100% taxes and duties and other charges shall be made within 21 days after receipt and acceptance of materials at consignee's end.

4.2.1. Submission of Documents for Payment in Indian Rupees for equipment

For payment for equipment in Indian Rupees, the supplier will submit the following documents along with bills to the paying authority:

- a. Four copies of the Supplier's Invoice, Pre-Receipted and Stamped showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.
- b. Receipted Challan/ Consignment Note of all the consignments.
- c. Manufacturer's Test & Inspection Certificate.
- d. Manufacturer's Warranty /Guarantee Certificate.
- e. Lowest Price Certificate
- f. Copy of Performance Bank Guarantee
- g. Documentary evidence for freight and transit insurance charges up to the destination.
- h. Copy of Certificate of Insurance.
- i. Any other document(s) required as per contract.

4.2.2. Submission of Documents for Payment in Indian Rupees for spares and consumables as per scope of supply:

For payment for Spares and consumables in Indian Rupees, the supplier will submit the following documents along with bills to the paying authority:

- a. Four copies of the Supplier's Invoice, Pre-Receipted and Stamped showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.
- b. Receipted Challan/ Consignment Note of all the consignments.
- c. Lowest Price Certificate
- d. Any other document(s) required as per contract.

4.3 Paying Authority

The Paying Authority shall be HoD (Finance) MM of company Headquarter i.e. BCCL.





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5. Lowest Price Certificate

The Tenderer should submit a certificate along with the offer confirming the prices quoted in the Tender are the lowest and not higher than as applicable to other Govt. Deptts./ Undertakings including other Subsidiaries of CIL/ Private Organisations for equipment of same specifications.

6. Price Fall Clause

The Bidder undertakes in CPS that it has 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 PSU 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) The bidder will be asked to submit a copy of the last (latest) purchase order for the similar/ordered item(s) received by them from any Organization / Ministry / Department of the Govt. of India Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization, along with the offer. Bidder may opt to mask the price portion and submit an undertaking that price copy will be submitted on being L-1 on opening of price bid/ reverse auction.
- (iii) 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.
- (iv) 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.

7. Banned or De-listed suppliers

The bidders as well as the manufacturer (if bidder is not the manufacturer) would give a declaration in CPS that they have not been banned or de- listed or debarred or 'Put on Holiday' by any Government or Quasi-Government agencies or PSUs in India. If a bidder has been banned by any Government or Quasi-Government agencies or PSU in India, this fact must be clearly stated and it may not necessarily be a cause for disqualifying him. If this declaration is not given, the bid may be liable for rejection. The declaration format is built in the Letter of Bid (LOB) which shall be filled in by the bidder suitably. In case India Agent or Indian Office or Indian Subsidiary of a Foreign Manufacturer / Indian Subsidiary of an Indian Manufacturer is quoting against the tender, the equipment manufacturer will also give a declaration towards 'Banned or De-listed suppliers in the Manufacturer's Authorisation Form, Annexure-3, Sec-VII, Sample Forms.

8. Distribution of Order

- (i) BCCL reserves the right to distribute the total required/tendered quantity. If L1 bidder is not capable of quoting the full tendered quantity due to capacity constraints, BCCL may place order on the L2 (next higher) bidder for the balance tendered quantity subject to L2 bidder matching the price of L1 bidder on Landed Price (FOR Destination/CIP named place of destination inclusive of all taxes & duties) basis. In case L2 bidder does not match the L1 price, BCCL reserves the right to go to higher ranked bidders in sequence (i.e. L3, L4) and place order for balance tendered quantity on the next higher bidder matching the price of L1 bidder. In case the higher bidder turns out to be an Overseas Bidder quoting the price on CIP Basis, the bidder shall be asked to match the L-1 price by

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proportionately working out the CIP price on the basis of their Landed Price in Indian Rupees calculated for evaluation, as on the date of price bid opening.

Above distribution will also be subject to Purchase Preference to certain categories of bidders falling under 'Make In India' policy and MSEs.

- (ii) While counter offering, the L1 price comprising the sum total of Landed Price of Equipment + Net Landed Price of supplementary items, to be supplied as per scope of supply offered by the L1 bidder shall be considered. L2 or higher bidder as the case maybe, shall match this sum total comprising above three elements.

9. Deemed Exports

If the bidder has quoted the items under the deemed exports, then it will be the responsibility of the bidder to get all the benefits under deemed exports from the Government. CIL/Subsidiary Companies responsibility shall only be limited to the issuance of required certificates. The quotation will be unconditional and phrases like "subject to availability of deemed exports benefit" etc. will not be accepted.

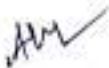
10. Deviation

Deviations sought by the bidders, whether these are commercial or technical deviations, must only be given in the prescribed schedules. Any attempt by the bidders to camouflage the deviations by giving them in the covering letter or other documents than the prescribed schedules may render the bid non-responsive.

11. Extension of Delivery Period

If the supplier is unable to complete the supply within the stipulated delivery period for which the supplier is responsible, it (supplier) is required to request for extension of delivery period. Delivery extension may be granted with or without reserving purchaser's right to levy LD depending upon the merit of the case, provided the materials are still required by the consignee (s) even after expiry of the stipulated delivery period. The above extension of delivery date will also be subject to the following further conditions:-

- a) That no increase in price on account of any statutory increase in or fresh imposition of customs duty, excise duty, sales tax, CST, VAT, GST or on account of any other tax or duty leviable in respect of the stores specified in the said contract which takes place after.....(Insert here the original delivery date) shall be admissible on such of the said stores as are delivered after the said date and
- b) That notwithstanding any stipulation in the contract for increase in price on any other ground (including foreign exchange rate variation) no such increase which takes place after.....(Insert here the original delivery date) shall be admissible in such of the said stores as are delivered after the said date.
- c) But, nevertheless, the purchase shall be entitled to the benefit of any decrease in price on account of reduction in or remission of customs duty, excise duty, sales tax, GST or on account of any other tax or duty or on any other ground, stipulated in the price variation clause which takes place after the expiry of the above mentioned date namely..... (Insert here the original delivery date),
- d) Imposition of liquidated damages shall be as per GCC



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12. Grace Period

- a) A grace period of 25% of original delivery period or 21 days, whichever is earlier, will be provided automatically in all the contracts, unless specifically disallowed. Where supplies are made within the grace period, there is no necessity for any extension in delivery period and the paying authorities will 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.
- b) 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 delivery 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.
- c) 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.
- d) 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.
- e) In case of phased delivery, the grace period will be applicable to each phase separately, within the original Contract Delivery Period / Re-fixed Delivery Period.

13. Risk Purchase

- a) 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, BCCL 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 may 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 BCCL and/or in any other Subsidiary Companies / CIL.
- b) Risk purchase action may be initiated as a last resort, under any of the following conditions:
 - (i) When the supplier fails to deliver the materials even after extending the delivery period.
 - (ii) 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.
 - (iii) 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.

14. TReDS: Trade Receivables Discounting System (TReDS) is an initiative of Reserve bank of India (RBI) to facilitate MSME receivable payments from corporates. BCCL has on boarded TReDS platform thro' Receivables Exchange of India Ltd (RXIL) (URL - <https://www.rxil.in/Home/Index>). MSE bidders willing to get payment thro' this system may get registered on TReDS platform and confirm in offer and the same would be mentioned in the purchase order. The bidder may contact Mr. Mainak Mandal, AVP, Business Development, RXIL, Mob: +91 9475622182 (email-mainak.mandal@rxil.in) for help in registration.



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15. Price : Prices stated in the contract shall remain firm and fixed throughout the period of the Contract.

16. Applicability of GST on Liquidated damages, EMD and/or Security Deposit forfeiture:
GST shall be applicable on liquidated damages, EMD and/or Security Deposit forfeiture and will be extra and recovered from suppliers/bidders

17. Spare Parts

The Supplier may be required to provide any or all of the following materials, notifications, and Information pertaining to spare parts manufactured or distributed by the Supplier:

- a) Such spare parts as the Purchaser may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under the Contract ;and
- b) In the event of termination of production of the spare parts;
 - i. advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements and
 - ii. following such termination, furnishing at no cost to the Purchaser, the manufacturing drawings, material specifications and all necessary permissions to facilitate manufacture of the Spare Parts elsewhere
- c) Supplier shall carry sufficient inventories to assure ex-stock supply of consumable and fast moving spares. The provision of Spare Parts by the Supplier to the Purchaser shall be governed by Part C.6 of Section VI (Technical Specifications).

18. Incidental Services

The Supplier may be required to provide any or all of the following Services, including additional Services as given below:

- a) Performance or supervision of on-site assembly and/or start-up of the supplied Goods;
- b) Furnishing of tools required for assembly and/or maintenance of the supplied Goods;
- c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
- d) Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the Parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract.
- e) Training of the Purchaser's personnel, at project site and manufacturer's training facility available in India.

The following Services, pursuant to above, shall be provided by the Supplier:

(a) Erection, Testing and Commissioning

The supplier shall be responsible for the delivery, erection, commissioning and testing of each equipment as detailed in the Schedule of Requirements (Section-V) and the Technical Specifications (Section-VI).

The purchaser will provide necessary facilities like erection tools and tackles etc. (supplied by the bidder as per Clause A2. with the equipment for this purpose), electricity and fuel required for testing only.

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If the supplier fails to commission the equipment within the specified period as incorporated in the NIT, Liquidated damages will be recovered @ 0.5% of the landed price of the equipment along with accessories per week or part thereof for the delayed period subject to a maximum of 10% of the landed price of equipment along with accessories including erection and commissioning charges.

(h) Tools

Furnishing of tools required for assembly and maintenance of the supplied Goods as detailed in the Schedule of Requirements (Section-V) and the Technical Specifications (Section-VI). A complete list as per clause-A.2 of Technical Specifications (section-VI) is to be furnished by the supplier.

(c) Manuals

Furnishing of detailed operating, repair, maintenance and spare parts manuals as detailed in the Technical Specifications (Section-VI).

(d) Training

Training of the Purchaser's personnel as detailed in the Schedule of Requirements (Section-V) and the Technical Specifications (Section-VI). The cost of such Services shall be included in the Contract Price.

The Supplier shall be responsible for arranging and the cost of all necessary tickets, visas, permits, foreign exchange and any other matter or facility for visits of the Supplier's personnel for the purposes of Erection, Testing and Commissioning the Equipment and/or Training of the Purchaser's personnel - the Purchaser shall have no responsibility in this regard except in respect of issuance of letters supporting visa applications as may reasonably be requested by the Supplier. The Supplier shall be responsible for paying taxes, if any, including personal income tax and surcharge on income tax, for which it or its personnel may become liable.

19 . Jurisdiction of Courts (clause no. 32 of GCC) , Any dispute arising out of this enquiry shall come under the sole jurisdiction of the Dhanbad/Jharkhand High Court, (INDIA).



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Technical Specification- Calibration System" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- AFSS as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Fuel Engines" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Operators station" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Operators Cab" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Operator's protective structure" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Operator's seat" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Operator's seat of and indicators" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- steering and stopping system" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Gages & Indicators" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Warning lights" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Engine Electrical system" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Lighting" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Guards & Shields" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Auxiliary equipment and other safety requirements" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Safety Features" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- productivity and health monitoring system" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
"Special Guarantee" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- Performance guarantee" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
"Expected life of major assemblies" as per "Equipment Specification" of Section-VI MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Technical Specification- 11.1 General 11.2 Technical details, 11.3 Dimensions, weights and performance details" as per Section-VI of MT details to be uploaded separately in relevant upload section	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Supplementary data, information and drawing, Erection, Assembly, Commissioning, Performance testing, and Training as per Scope of Supply of Section-VI of MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
All other relevant Technical Clauses & Terms of the MT	NA	AGREED or DISAGREED	AGREE	AGREE	TRUE
Specify make and model	NA	NOT NULL	NOT NULL	Notes: Complete and Model: 778	TRUE
Specify Offered Quantity within the specified Delivery Schedule of MT	NA	NOT NULL	NOT NULL	11	TRUE
*** TECHNICAL PARAMETER SHEET ***					
*** PLEASE ENTER THE DETAILS AS PER THE INFORMATION AND DOCUMENTS YOU HAVE W.R.T. YOUR OFFERED ITEMS ***					
*** BY TENDER BIDDING AUTHORITY ***					

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Tender No. BCCL/Pur/422011/60T Dumper/OTF-RA/22-23/24, Dated 01.06.2022

List of Standard Tool Kit for 773E

Sl. No	Tools Description	Qty.
1	Combination Spanner 1.1/8" (SAE)	1 each
2	Combination Spanner 1.5/16" (SAE)	1 each
3	Combination Plier 8"	1 each
4	D.E. Spanner 1/4 X 5/16" (SAE)	1 each
5	D.E. Spanner 7/16 X 3/8" (SAE)	1 each
6	D.E. Spanner 1/2 X 9/16" (SAE)	1 each
7	D.E. Spanner 11/16 X 19/32" (SAE)	1 each
8	D.E. Spanner 5/8 X 3/4" (SAE)	1 each
9	D.E. Spanner 13/16 X 7/8" (SAE)	1 each
10	D.E. Spanner 15/16 X 1" (SAE)	1 each
11	D.E. Spanner 1.1/16 X 1.1/4" (SAE)	1 each
12	D.E. Spanner 8 X 9mm	1 each
13	D.E. Spanner 10 X 11mm	1 each
14	D.E. Spanner 12 X 13mm	1 each
15	D.E. Spanner 16 X 17mm	1 each
16	D.E. Spanner 18 X 19mm	1 each
17	Extension Bar 1/2" Dr. 5"	1 each
18	Extension Bar 3/4" Dr. 8"	1 each
19	Extension Bar 3/4" Dr. 16"	1 each
20	Extension Bar 1/2" Dr. 10"	1 each
21	Extension Bar 1" Dr. 8"	1 each
22	Feeler Gauge 26 B	1 each
23	Hammer 600 grm.	1 each
24	Circlip Plier Inner 8"	1 each
25	Nose Plier 6"	1 each
26	Pipe Wrench 24"	1 each
27	Ratchet Handle 1/2" Dr.	1 each
28	Ratchet Handle 3/4" Dr.	1 each
29	Ratchet Handle 1" Dr.	1 each
30	Ring Spanner 1/4 X 5/16" (SAE)	1 each
31	Ring Spanner 7/16 X 3/8" (SAE)	1 each
32	Ring Spanner 1/2 X 9/16" (SAE)	1 each
33	Ring Spanner 11/16 X 5/8" (SAE)	1 each
34	Ring Spanner 5/8 X 3/4" (SAE)	1 each
35	Ring Spanner 13/16 X 7/8" (SAE)	1 each
36	Ring Spanner 15/16 X 1" (SAE)	1 each
37	Ring Spanner 1.1/8 X 1.1/4" (SAE)	1 each
38	Ring Spanner 10 X 11mm	1 each
39	Ring Spanner 12 X 13mm	1 each
40	Ring Spanner 16 X 17mm	1 each
41	Ring Spanner 18 X 19mm	1 each
42	Screw Driver 936	1 each
43	Screw Driver 927	1 each
44	Screw Driver 862-100	1 each



45	Sliding Bar 1/2" Dr.	1 each
46	Sliding Bar 3/4" Dr.	1 each
47	Socket 1" Dr. 1.1/2"	1 each
48	Socket 1/2" Dr. 7/16"	1 each
49	Socket 1/2" Dr. 3/8"	1 each
50	Socket 1/2" Dr. 1/2"	1 each
51	Socket 1/2" Dr. 9/16"	1 each
52	Socket 1/2" Dr. 11/16"	1 each
53	Socket 1/2" Dr. 19/32"	1 each
54	Socket 1/2" Dr. 5/8"	1 each
55	Socket 1/2" Dr. 3/4"	1 each
56	Socket 1/2" Dr. 13/16"	1 each
57	Socket 1/2" Dr. 7/8"	1 each
58	Socket 1/2" Dr. 15/16"	1 each
59	Socket 1/2" Dr. 1"	1 each
60	Socket 1/2" Dr. 1.1/16"	1 each
61	Socket 1/2" Dr. 1.1/4"	1 each
62	Socket 3/4" Dr. 1.1/2"	1 each
63	Socket 3/4" Dr. 3/4"	1 each
64	Socket 3/4" Dr. 1.1/8"	1 each
65	Socket 3/4" Dr. 1.5/16"	1 each
66	Tools Box with Lock & Key	1 each
67	Chisel 125mm	1 each
68	Centre Punch 100mm	1 each
69	Socket 1" Dr. 1.3/4"	1 each
70	Socket 1" Dr. 1.7/8"	1 each
71	Socket 1" Dr. 1.5/16"	1 each
72	Socket 1" Dr. 2.3/4"	1 each
73	Socket 1" Dr. 1.11/16	1 each
74	D.E Spanner 6 mmX 7mm	1 each
75	D.E Spanner 20 X 22mm	1 each
76	D.E Spanner 21 X 23mm	1 each
77	D.E Spanner 24 X 27mm	1 each
78	D.E Spanner 30 X 32mm	1 each
79	D.E Spanner 36 X 41mm	1 each
80	Ring Spanner 6 mmX 7mm	1 each
81	Ring Spanner 20 X 22mm	1 each
82	Ring Spanner 21 X 23mm	1 each
83	Ring Spanner 24 X 27mm	1 each
84	Ring Spanner 30 X 32mm	1 each
85	Ring Spanner 36 X 41mm	1 each
86	Mallet Hammer 1kg (NYLON)	1 each
87	Measuring Tap 3m	1 each
88	Hand Operated Grease Gun (PRIMA)	1 each
89	Allen Key Set (mm & inch)	1 each
90	Cutting plier	1 each



Signature

80/182

GAINWELL



Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
CIN : U74900WB2014PTC204347
Registered Office
Godrej Waterside, Tower-II,
7th Floor, Unit No - 705,
Block-DP, Sector-V, Salt Lake,
Kolkata - 700091
Ph: (91) (33) 6644-2000
Fax: (91) (33) 6644-2009
Website: www.gainwellindia.com

GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Special Tools


Dear Sir,

All the tools required to carry out for the equipment for erection and commission work, routine maintenance and repair activity are provided in the standard tools supplied with the equipment. Hence, no separate special tools are required / provided.

Thanking you,

Yours faithfully,

For Gainwell Commosales Private Limited


Sitansu Nandi
Head - Surface Mining Sales



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Annexure-G
Performance Bank Guarantee Format

M/s. Bharat Coking Coal Ltd.
Koyla Bhawan
Koyla Nagar
Dhanbad - 826005

Re : Bank Guarantee in respect of Notification of Award/Purchase order vide no.....dated...
between (Name of Purchaser Company) and (Name of
Supplier Company)

Messrs a Company Firm having its office at No.
(hereinafter called the Contractor) has received the Notification of Award/Purchase order
vide no.....dated (hereinafter called 'the said agreement') with Coal India
Limited, Kolkata on behalf of Bharat Coking Coal Limited /Purchaser Company (hereinafter
called 'the Company') to supplystores/materials amounting to Rs ...
..... on the terms and conditions contained in the said agreement.

The(Name of the Bank) having its Office at..... has at the
request of the Contractor agreed to give the guarantee as hereinafter contained.

We(Name of the Bank) do hereby unconditionally agree with the
Company that if the Contractor shall in any way fail to observe or perform the terms and
condition of the said agreement or shall commit any breach of its obligations thereunder, the
Bank shall on demand and without any objection or demur pay to the Company the said sum
of Rs or any portion thereof without requiring the company to have
recourse to any legal remedy that may be available to it to compel the Bank to pay the same
or calling on the company to compel such payment by the contractor.

Any such demand shall be conclusive as regards the liability of the Contractor to the
company and as regards the amount payable by the Bank under this guarantee. The Bank
shall not be entitled to withhold, payment on the ground that the contractor has disputed its
liability to pay or has disputed the quantum of the amount or that any arbitration proceeding
or legal proceeding is pending between the Company and the contractor regarding the claim.

We, the Bank- further agree that the guarantee shall come into force from the date hereof and
shall remain in full force and effect till the period that will be taken for the performance of
the said agreement which is likely to be the day of but if the period of agreement is
extended either pursuant to the provisions in the said agreement or by mutual agreement
between the contractor and the Company the Bank shall renew the period of the guarantee
failing which it shall pay to the Company the said sum of Rs..... or such lesser amount
out of the said sum of Rs..... as may be due to the Company and as the Company
may demand. This guarantee shall remain in force until the dues of the Company in respect of
the said sum of Rs..... are fully satisfied and the company certifies that the
agreement has been fully carried out by the contractor and discharges the guarantee.

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The Bank further agrees with the Company that the Company shall have the fullest liberty without the consent of the Bank and without affecting in any way the obligations hereunder to vary any of the terms and conditions of the said agreement or to extend the time for performance of the said agreement from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the contractor and to forbear to enforce any of the terms and conditions relating to the said agreement and the Bank shall not be relieved from its liability by reason of such failure or extension being granted to the contractor or through any forbearance, act or omission on the part of the Company or any indulgence by the Company to the contractor or any other matter or thing whatsoever which under the law relating to sureties would but for this provisions have the effect of relieving or discharging the Guarantor.

The Bank further agrees that in case this guarantee is required for a longer period and it is not extended by the Bank beyond the period specified above, the Bank shall pay to the Company the said sum of Rs or such lesser sum as may then be due to the Company and as the Company may require.

Notwithstanding anything herein contained the liability of the Bank under this guarantee is restricted to Rs..... only. The guarantee shall remain in force till the day of20... and unless the guarantee is renewed or a claim is preferred against the Bank within the validity period and/or the claim period from the said date ,all rights of the company under this guarantee shall cease and the Bank shall be released and discharged from all liability hereunder except as provided in the preceding clause.

The Bank has under its constitution power to give this guarantee and (Name of the person) who has signed it on behalf of the Bank has authority to do so.

Dated this.....Day of.....20.....
Place.....
authorized person

Signature of the

For and on behalf of the Bank

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773E

Off-Highway Truck

**Engine**

Engine Model

Gross Power - SAE J1995

Net Power - SAE J1349

Cat® 3412E

567 kW 760 hp

537 kW 720 hp

Operating Specifications

Target Payload

59.1 tonnes 65.2 tons

Maximum Payload*

65.0 tonnes 71.7 tons

*Target Payload calculated using Dual Slope Body option. Excluded all other attachments.

*M**Any*

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773E Features

Operator Station

Controls and gauges are conveniently positioned for productivity and comfort. Includes an air suspension seat and advanced electronic monitoring system.

Power Train - Engine

Features the 3412E diesel engine and HEUI™ for efficient operation.

Power Train - Transmission

The Cat seven-speed, power shift transmission gets the job done smoothly and quickly.

Engine/Power Train Integration

Cat Data Link System electronically combines engine, transmission, brake and operational information for optimum truck performance.

Oil-Cooled, Rear Disc Brakes

Designed and built for reliable, adjustment-free operation, superior performance and service life.

Integrated Braking Control (IBC - Optional)

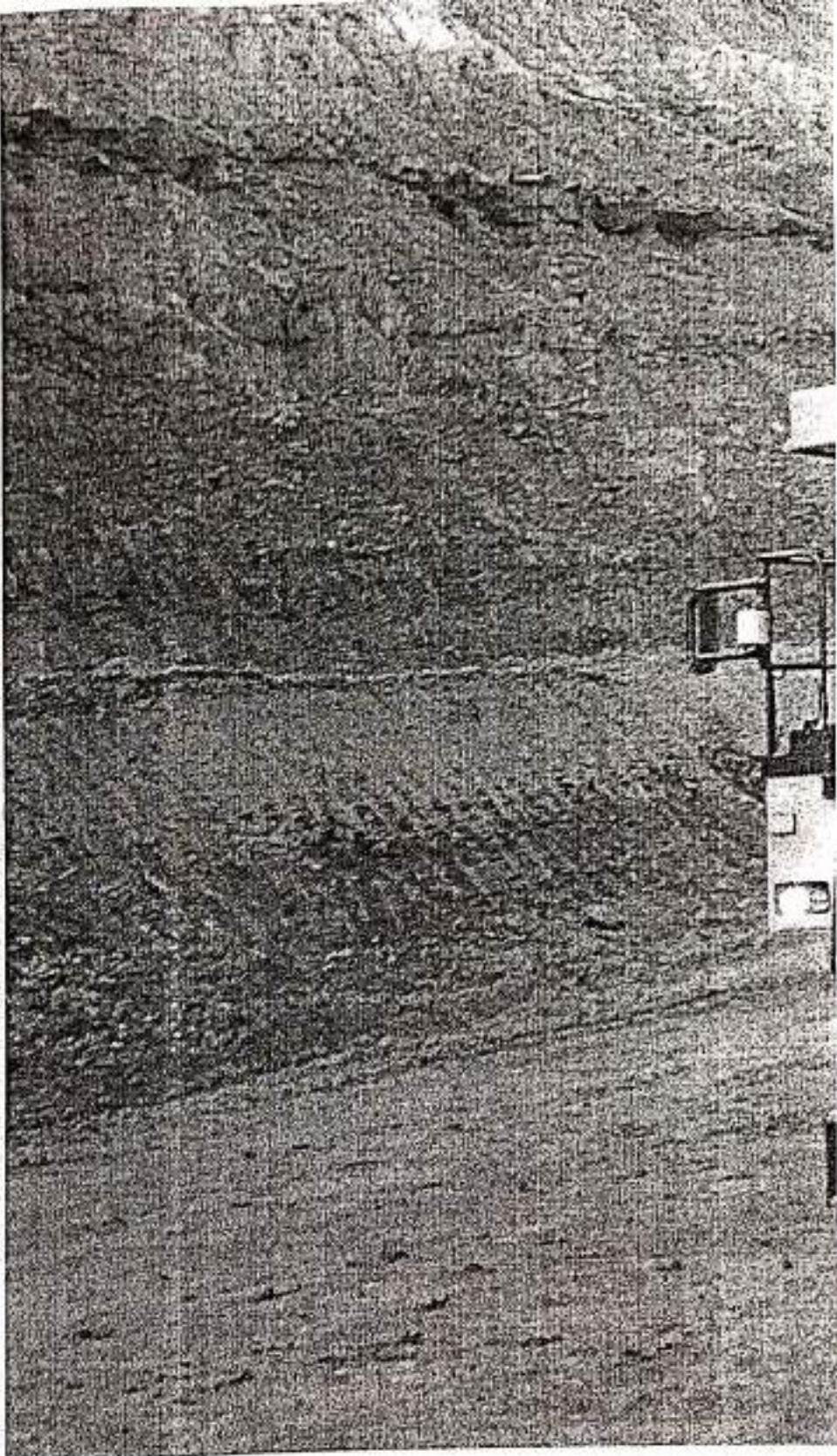
Integrates Automatic Retarder Control and Traction Control System (TCS), with oil cooled rear disc brakes to enhance truck performance and improve operator confidence.

Structures

The Mild steel Cat truck frames provide flexibility, durability and resistance to impact loads. Castings and forgings in high stress areas increase structural strength.

Contents

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Operator Station.....	6
Environmental Responsibility.....	8
Power Train - Engine.....	9
Power Train - Transmission.....	10
Engine/Power Train Integration.....	11
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Standard Equipment.....	25
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Time proven iron and modern technology combine to provide a highly productive, durable and reliable off-highway truck focused on our customers greatest need... lowest cost-per-ton.

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Safety

Connecting people and equipment safely



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A Focus on Personnel

The 773E is designed to minimize slips and falls, providing firm footing and stability.

- Ground level Engine and Machine lockout controls
- Integrated access system with hand rails for three points of contact
- Aggressive tread plate on all step areas

Confidence and Control

Confident operators will move material quickly, efficiently and profitably.

- Standard wet Disc Braking on rear wheels
- Integrated park brake for slope holding capability
- Brake Retarder provides better speed control on downhill operation. With auto retarder, operator can concentrate fully on machine maneuvering. Automatic Retarding Control is optional.
- Traction control system if equipped improves control in poor underfoot conditions

Key Features

The 773E is solidly constructed for safety.

- Rollover and Falling Object Protection is an extension of the truck frame
- Emergency egress available through the right-side door
- Laminated glass is used in the front and left side windows
- Ground level engine shutdown
- Integrated four-point seat belt
- Trainer seat with lap belt facilitates on-the-job training
- Excellent visibility with mirror and lighting options
- Automatic secondary steering in the event of a primary system failure
- Gear limiting during body up operations

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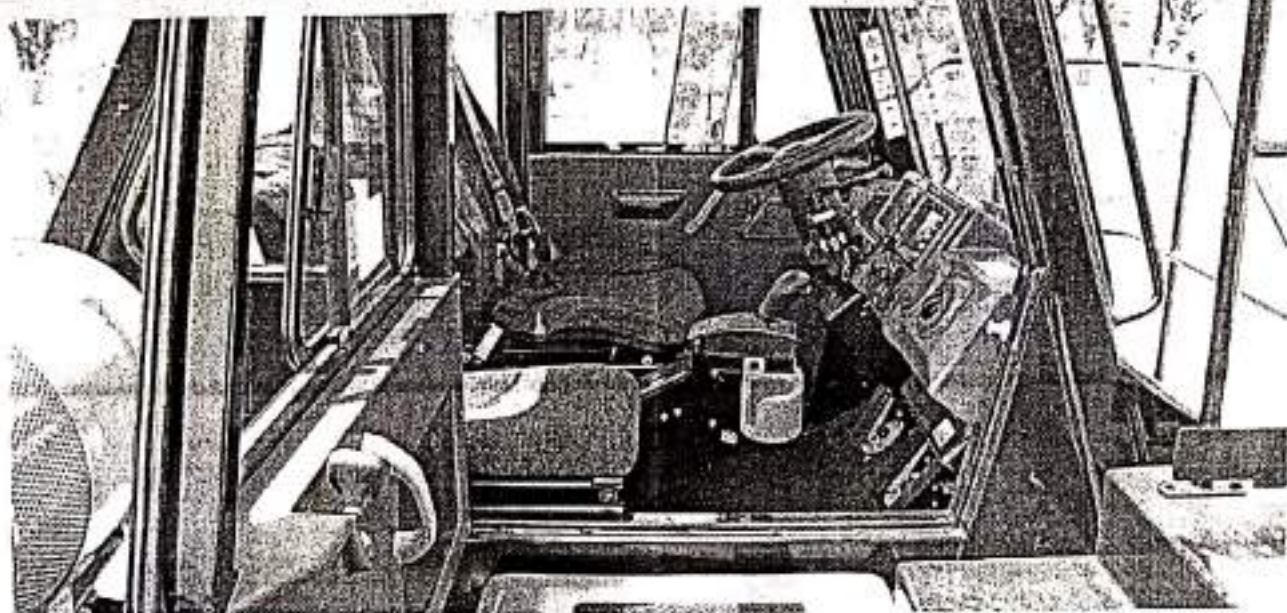
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Operator Station

Control ease and comfort maximize productivity



The all new 773E operator station interior is ergonomically designed for total machine control in a comfortable, productive and safe environment.



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Comfort

- Cat Comfort Seat with air suspension and retractable four-point harness is adjustable and secure for operator seat
- Outstanding visibility with mirror and lighting options
- Left side power window
- Standard HVAC

Information

The Advisor display and VIMS software are important reporting tools that help you analyze:

- Productivity, haul road efficiency, operator skill
- Fuel use, cycle times, idle time
- Machine health and events

Control

From improved visibility to helpful technology, it's never been easier to be so productive.

- Excellent visibility and clear sight lines to the haul road
- Cat systems include features to help the operator control ground speed, engine speed, braking on grade, traction, even fuel consumption, for greater confidence and higher production

Contour Series Air Suspension Seat and Tilt-Telescoping Steering Wheel

Standard and fully adjustable, including an adjustable right-hand armrest. Steering wheel's ergonomic grip improves comfort and control. Low effort steering system and hand-operated retarder reduce operator fatigue. Turn signal lever includes high beam actuator and electric windshield wiper controls. Cat comfort series seat with four point seat belt for the operator and seat belt reminder.

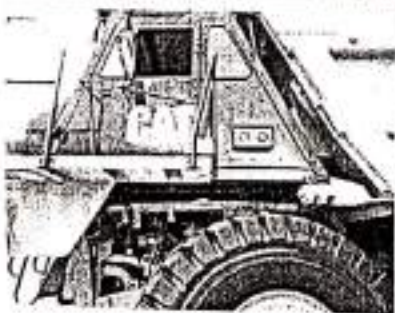
Visibility, Quiet ROPS/FOPS Cab

Exceptional all-around viewing area reduces fatigue and improves operator confidence and productivity.

Cab is resiliently mounted and sound-suppressed for a quiet, protected work environment, and is radio-ready.

Truck Production Management System (TPMS) Provides Payload and Cycle Time Data (Optional)

- Cat technology uses strut pressure sensors and on-board processors to determine payload weight
- Second gear reweigh for enhanced accuracy
- Consistently accurate payloads improve efficiency by minimizing overloading and under loading
- On-board computer stores 2,400 cycles of payload weight, cycle times, distances and more



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Environmental Responsibility

Help the environment, help your bottom line

It's true. Burning less fuel, extending the service life of components like filters, tires or fluids, even using remanufactured parts, are all environmentally friendly. They are also bottom line friendly, reducing your operating costs while reducing the impact on our world.

Fuel Economy

The 773E fuel saving strategies find opportunities to reduce fuel burn and fuel costs.

- Meets China Nonroad Stage III emission standards equivalent to U.S. EPA Tier 2.
- Economy Mode modifies engine maps to take advantage of steady grades and level ground, reducing power and fuel burn
- Programmable Top Gear/speed to help operators maintain speed limits and save fuel
- Speed Limiting automatically selects the most fuel efficient gear and speed for the terrain instantaneously
- Engine Idle Shutdown identifies when the truck is in park and idles for more than a preset time, and initiates engine shutdown to conserve fuel

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Power Train – Engine

Cat 3412E Turbocharged engine
with a HEUI™ fuel-system

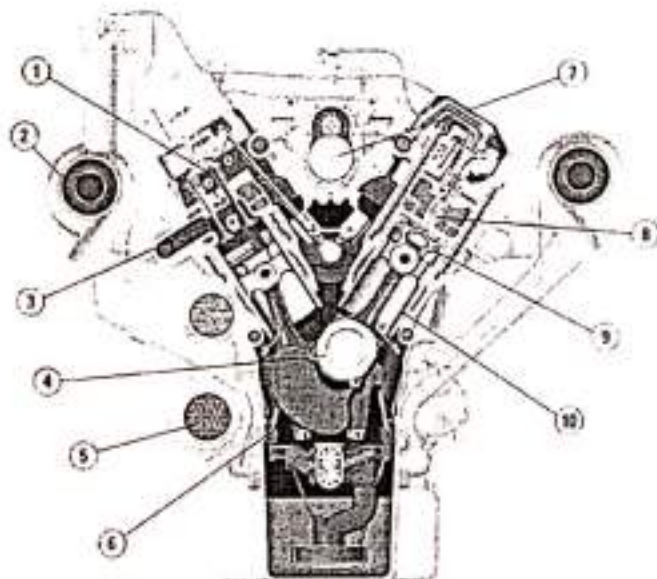
Cat 3412E Air to Air After Cooled Diesel Engine

The four stroke design uses long power strokes for complete fuel combustion and optimum efficiency.

High displacement/low speed rating extends engine life and meets China Nonroad Stage III emission standards equivalent to Tier 2.

Engine

- 1) Valve Rotators
- 2) Turbocharger
- 3) Steel-Faced Valves
- 4) Steel-Backed, Copper-Bonded Bearings
- 5) Oil Cooler
- 6) Forged Crankshaft
- 7) Adjustment-Free, Fuel Injection Pumps
- 8) Hydraulic Injectors
- 9) Forged Steel Pistons
- 10) Full-length, Water-Cooled Cylinder Liners



33 Percent Torque Rise Means Faster Cycle Times

High lugging force during acceleration and less downshifting on grade or rough underfoot conditions. Also effectively matches gear shift points for maximum efficiency.

3412E Power and Reliability Features

- High pressure injection
- Full electronic control
- Copper-bonded crankshaft bearings
- Hardened crankshaft journals
- Dry-type, radial seal air cleaners (primary, secondary elements, precleaner)

HEUI™ Delivers Excellent Fuel Control

Electronically monitors operator and machine inputs to optimize engine performance. Independently controls injection pressure, timing and duration over the engine operating range. Rate shaping technology modifies the heat release characteristics of the combustion process for significant decreases in sound and exhaust emission levels.

Electronic Control Module (ECM)

The ECM monitors key functions and logs critical indicators. The on board advisor can access this diagnostic information for easier maintenance and repair.

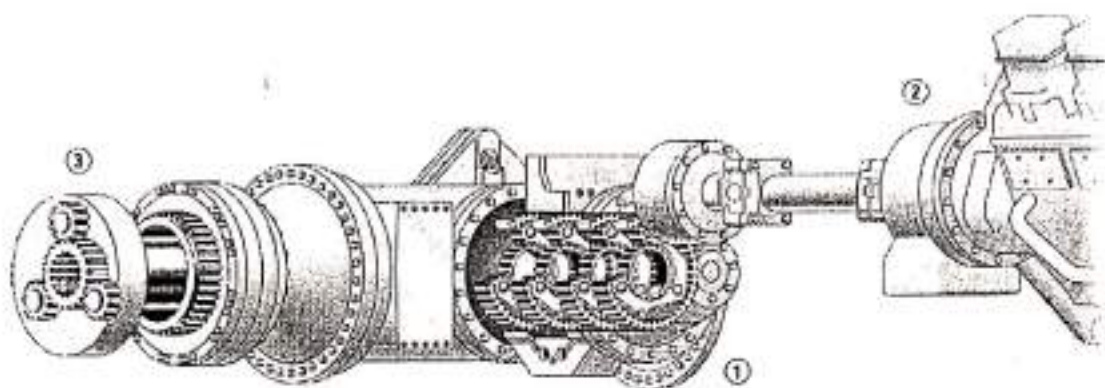
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Power Train – Transmission

The Cat transmission gets the job done smoothly and quickly



Lock-up Torque Converter Extends Transmission Life and Increases Operator Comfort

High rimpull and cushioned shifts with direct drive's efficiency and performance.

- Engages at approximately 6.9 km/h (4.3 mph), delivering more power to the wheels
- Quickly releases/re-engages during shifts, maintaining power wind-up

Cat Seven-Speed, Power Shift Transmission

A modulating pressure valve regulates clutch pressure to ease clutch engagement, reducing shock loads.

- Patented rotating clutch pressure seals minimize drag losses and improve reliability
- 35 percent gear splits between all gears match Cat engine design for optimum use of engine power with minimized shifting and torque converter use
- Matched with the 3412E engine for constant power over a wide range of operating speeds
- Seven speeds forward, one reverse; second through seventh gears are direct drive
- First gear has both torque converter drive and direct drive

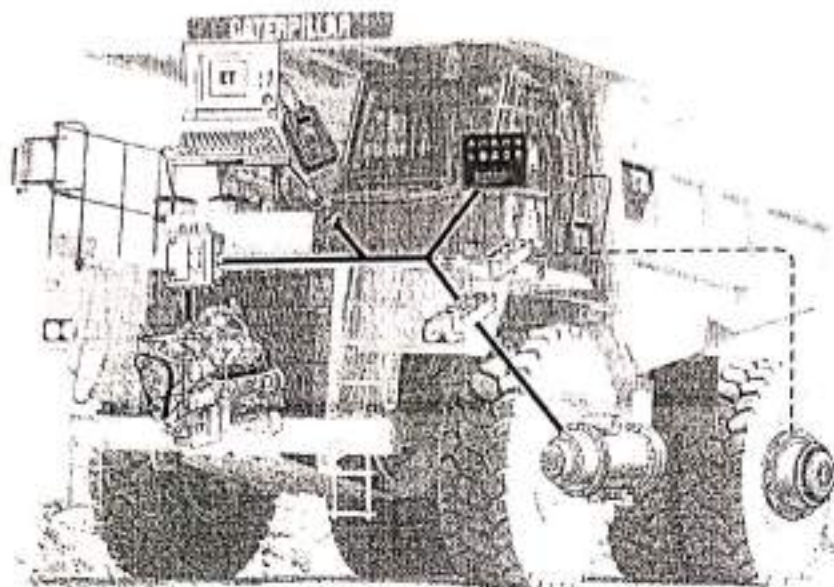
Final Drives

Final drive and differential torque multiplication of 17.48:1 further reduces stress on the drive train.

Axles, Wheel and Rims

Full floating axles are shot-peened to relieve internal stresses and increase durability. Rolled splines also provide increased service life. Cast rear wheels and center-mount rims are mounted using studs and nuts for maximum reliability.

1) Lock-up Torque Converter 2) Cat Seven-Speed, Power Shift Transmission 3) Final Drives



Engine/Power Train Integration

Combining engine control module (ECM)
with the transmission controller

Integrating Systems Improves Performance

Electronic control of the engine and transmission improves efficiency, lowers operating costs and extends machine life.

Cat Data Link

Integrates machine computer systems:

- Controlled Throttle Shifting regulates engine speed during shifts to reduce driveline stress, and deliver smoother shifts and longer component life
- Economy Shift Mode modifies engine maps for lower fuel consumption
- Directional Shift Management regulates engine speed during directional shifts to prevent damage
- Elevated Idle Neutral Coast Inhibitor helps prevent shifts to neutral at speeds above 6.5 km/h (4 mph)
- Body-up Shift Inhibitor helps prevent transmission shifts above a preprogrammed gear without the body fully lowered
- Event Memory stores operational data for Electronic Technician access. Data includes:
 - Shift histograms
 - Operator-induced events
 - Lock-up clutch counter
 - Machine/Transmission overspeed

Engine Over Speed Protection

Electronically senses engine conditions and automatically up-shifts one gear to prevent over speeding. If over speeding occurs in the top gear, the lock-up clutch is disengaged, and the brakes are applied for machines equipped with ARC.

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Oil-Cooled, Rear Disc Brakes

Rear braking lets the operator concentrate on the haul road

Multiple Disc Brakes – Exceptional, Fade-Resistant Braking and Retarding

Cat multiple disc brakes use continuous forced oil-cooling. The optional ARC and TCS utilize the oil-cooled rear brakes to enhance truck performance and increase productivity.

Oil-Cooled Rear Disc Brakes

Designed and built for reliable, adjustment-free operation providing superior performance and service life in comparison to shoe-type and dry-disc systems. The system combines service, retarding and parking brake functions in a single unit.

If hydraulic system pressure drops below a certain level, the spring applied secondary piston automatically applies the brake.

Oil Film Prevents Direct Contact between Discs

Absorbing the braking forces by shearing oil and carrying heat away, this design extends brake life.

Secondary Braking

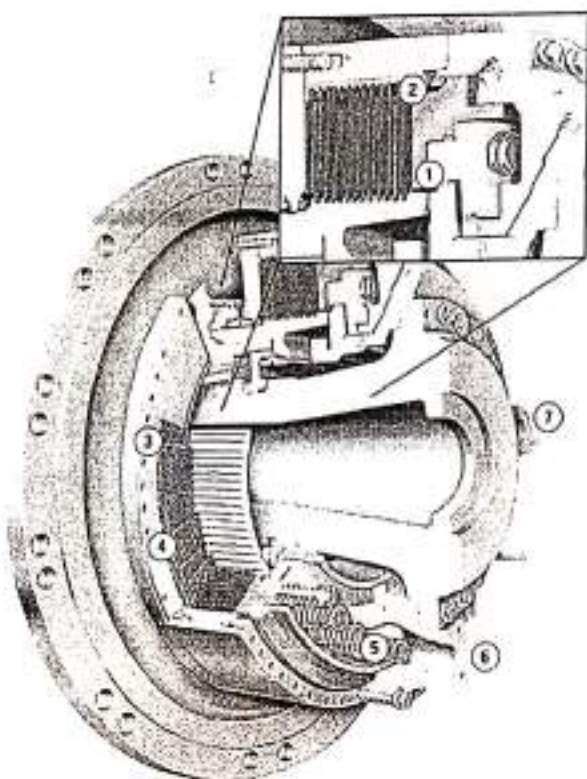
Spring-applied, hydraulically released, oil-cooled disc brakes are located on the rear axle. The front brakes will activate as part of the secondary system, even if switched out of service.

Parking Brakes

Spring-applied, hydraulically released parking brakes use wet disc brakes in the service system. A toggle switch activates the parking brake.

Pistons

A Caterpillar patented, two-piston design combines the service, secondary and parking brakes, along with retarding functions.



Brakes

- 1) Parking/Secondary Piston
- 2) Service/Retarding Piston
- 3) Friction Discs
- 4) Steel Plates
- 5) Actuating Springs
- 6) Cooling Oil In
- 7) Cooling Oil Out

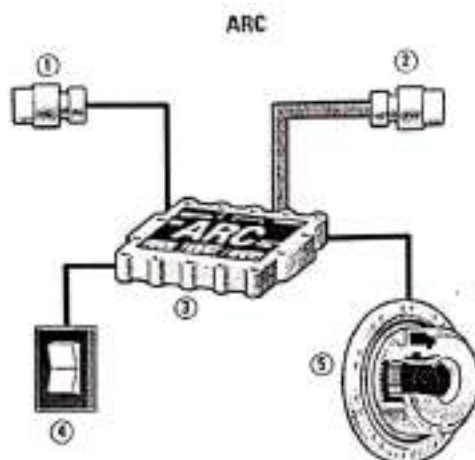
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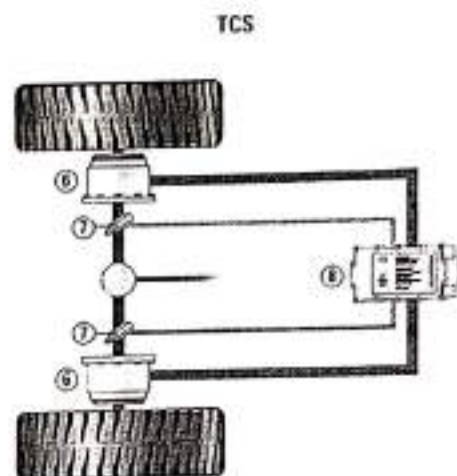
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Optional Attachments

Integrated Braking Control (IBC): Combines benefits of Automatic Retarding and Traction Control System



- 1 Service Brake Sensor
- 2 Engine Sensor
- 3 ARC
- 4 ARC Switch
- 5 Brakes
- 6 Service Brakes
- 7 Axle Speed Sensor
- 8 TCS



Automatic Retarder Control (ARC)

Better machine control, greater production.

ARC Benefits include:

- Increased operating efficiency with faster downhill speeds. By maintaining consistently higher engine speeds, average truck speed will be higher than a manually controlled truck.
- Excellent controllability and reduced operator effort. Automatic brake modulation provides a smoother ride over manual modulation, allowing the operator to focus more on truck operation down the haul road.
- Improved component life, optimized system cooling capability and reduced torque fluctuations result from ARC's precision.
- Faster troubleshooting and diagnosis with self-diagnostic capability and the ability to communicate with ET through the Cat Data Link System.
- Operator awareness through electronic integration and EMS, alerting the operator to overspeed conditions and critical machine functions.

Traction Control System (TCS)

- Senses rear wheel slip and automatically applies rear brakes to slow the spinning wheel. On-dash indicator shows the operator that TCS is engaged.
- Utilizes normal differential action for superior maneuvering in poor underfoot conditions and to reduce tire scuffing.
- TCS divides torque equally to reduce stress created on final drives and axles when torque is transferred to one side.
- Should sensors fail, the normal differential action is still available to maintain control and steering.
- Integrated Brake Controller (IBC) combines ARC and TCS, reducing electronic components and electrical lines.

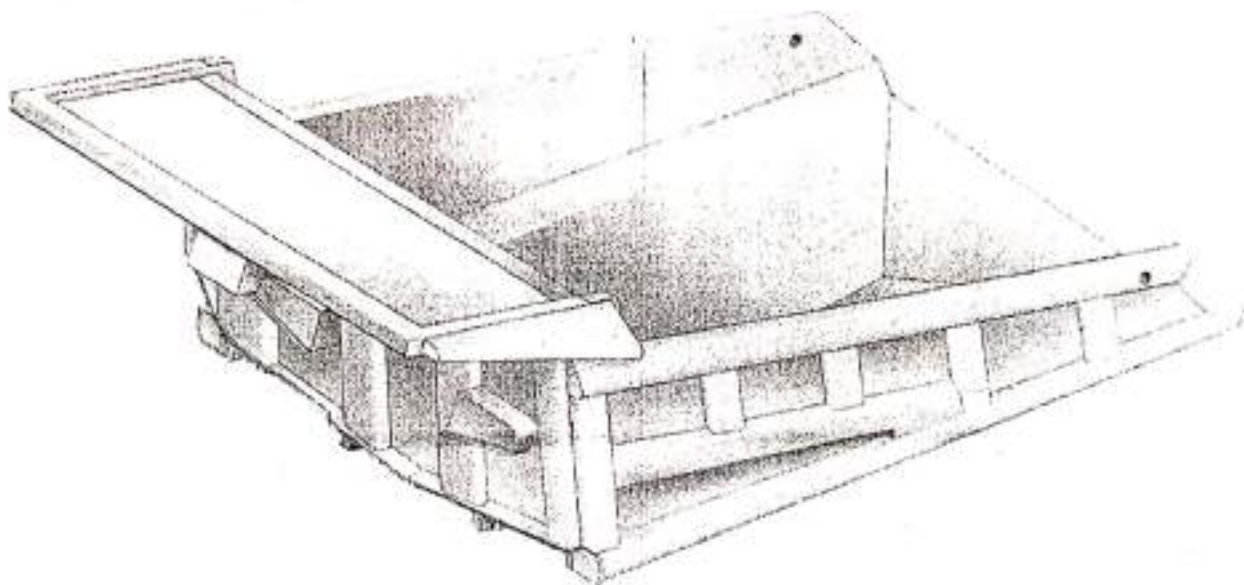
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Truck Body

Rugged body for varying applications



Designed To Handle a Variety of Material Densities.

Maximum payload in 3-5 passes with matched Cat loader in material over 1700 kg/m³ (2,900 lb/yd³).

Truck Body Features

- Sidewall and floor junctions use five-sided beams to resist impact loads and hauling stresses
- Box-section beams increase durability in the floor, sidewalls, top rail, corner and cab canopy areas
- 400 Brinell Steel wear surfaces provide excellent wear resistance and are easily cold welded
- Two-stage hoist cylinders raise in 9.5 seconds, lower in 12.5 seconds
- Standard Body comes exhaust heated with options including a full-time muffler or exhaust diverter
- Custom attachments include tail end liner, sideboards and more, to help ensure rated payload

Dual-Slope Body Delivers Lowest Cost-Per-Ton

In most construction and mining applications, but excels on rough haul roads and steeper grades.

Body Floor Construction

- 8° "V" Bottom – Centers loads, lowers the center of gravity, increases retention, reduces shock loads
- 18° Ducktail and 9° Forward Body Slope – retains loads on 15 percent grades
- 12° Single Slope – Excellent wear characteristics and uniform dumping into hoppers, crushers and feeders

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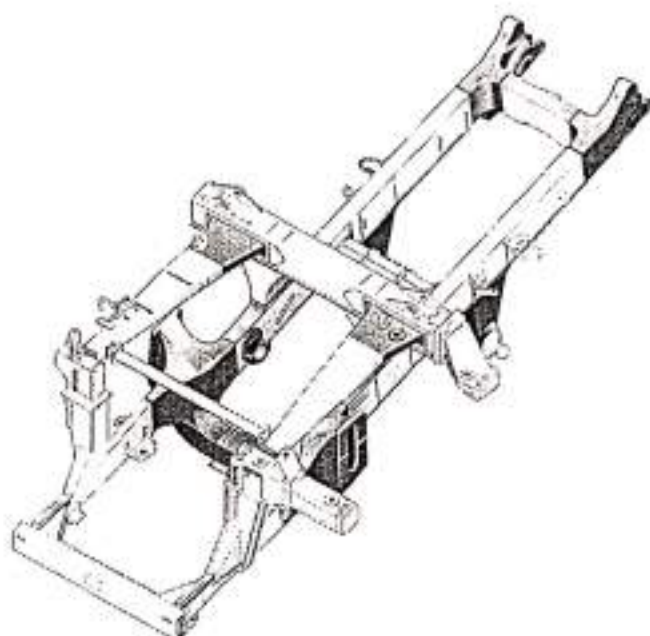
Structures

The back bone of the Cat off-highway truck

Structural Strength

The 773E frame uses a proven box-section design that resists damage from twisting loads without adding extra weight. Castings have large radii with internal reinforcing ribs to dissipate stress and move welds to lower stress areas for longer frame life.

- Mild steel used throughout frame provides flexibility, durability and resistance to impact loads, even in cold climates, and allows for easy field repairs.
- The open design allows easy access to power train components, reducing removal and installation time, and lowering overall repair costs.
- The integral ROPS structure is designed as an extension of the truck frame, resiliently mounted to the main frame to reduce vibration and sound.



Suspension

Designed to dissipate haul road and loading impacts for longer frame life and a more comfortable ride.

- Front spindles and wheels are rigidly mounted to the cylinder rods for reliable operation and long life.
- Rear wheel spindles are solid steel for longer life, and the rear suspension cylinders have been inverted to minimize contamination. These rugged cylinders use large diameter bore and low pressure nitrogen/oil design for long life with minimal maintenance.

Steering

Cat integrated steering and suspension system is designed for precise steering, excellent maneuverability, minimal tire wear and superior ride control.

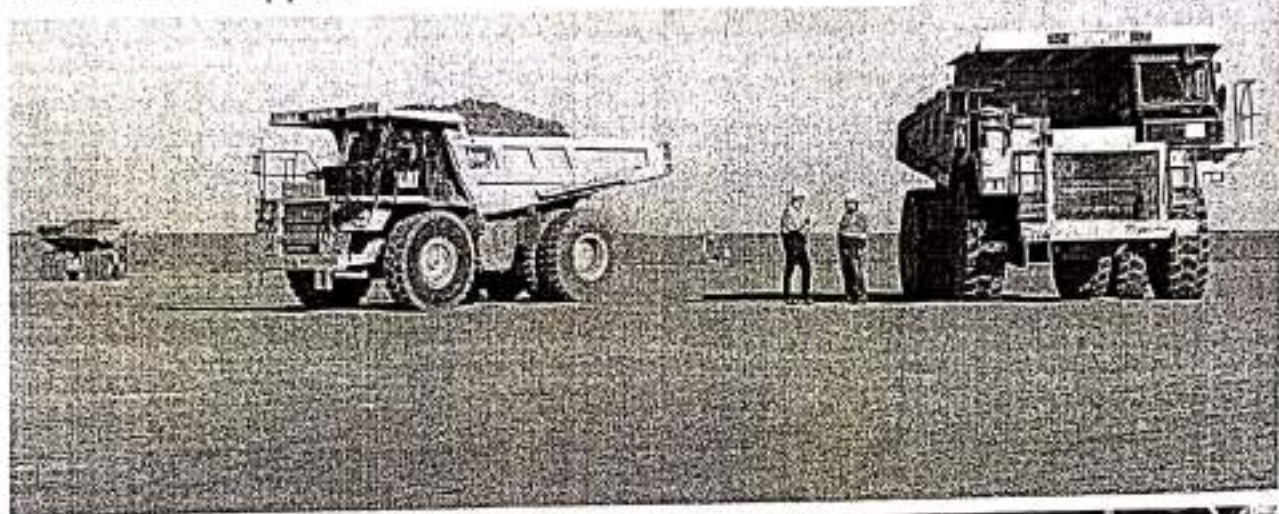
- The steering linkage is designed to provide good feedback to the operator
- The Cat king pin front suspension system maintains steering tolerances and tire alignment
- The steering system is separate from the main hydraulic system to prevent cross-contamination and overheating from other sources
- Main hydraulic steering system is backed by a battery powered secondary steering system that allows up to three 90° turns in case of engine failure
 - System automatically engages when needed

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Serviceability/Customer Support

Cat dealers offer their total commitment to customer support



Easy access to daily service points simplifies servicing and reduces time spent on regular maintenance procedures. Enhanced serviceability reduces machine downtime.

Service Center – Fluid Fill

You will save both time and money using the optional fluid fill service center.

- Fill and extraction for most fluids in one location
- Conveniently located at ground level

Service Center – Electrical Connections

- Master disconnect switch
- Engine lockout switch
- Breaker access

Diagnostic Capability

- Critical power train data, including transmission shifting, engine speed and fuel consumption, provides service technicians with enhanced diagnostic capability to reduce downtime and operating costs.
- Cat ET service tool provides service technicians with easy access to stored diagnostic data through the Cat Data Link.



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773E Off-Highway Truck Specifications

Engine

Engine Model	Cat 3412E
Rated Engine Speed	2,000 rpm
Gross Power - SAE J1995	567 kW 360 hp
Net Power - SAE J1349	557 kW 370 hp
Number of Cylinders	12
Net Peak Torque	3436 ft·lb 4.71 kNm
Torque Rise	33%
Bore	137 mm 5.4 in
Stroke	152 mm 6.0 in
Displacement	27.1 L 1,649 in ³

- These engine ratings apply at 2,000 rpm when tested under the specified conditions for the specified standard.
- Power rating conditions based on standard conditions of 25°C (77°F) and 99 kPa (29.53 in Hg) dry barometer, mean 55°C (133°F) API gravity fuel having an LHV of 42,000 kJ/kg (10,000 Btu/lb) when used at 30°C (86°F) (reference fuel density of 832.9 g/L [7.001 lb/gal]).
- Net power indicated is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Decelerating required up to 2,000 m (7,500 ft) altitude.
- Meets China National Stage III emission standards equivalent to Tier 2.

Transmission

Forward 1	10.8 km/h 6.7 mph
Forward 2	15.1 km/h 9.4 mph
Forward 3	20.4 km/h 12.7 mph
Forward 4	27.4 km/h 17.0 mph
Forward 5	37.0 km/h 23.0 mph
Forward 6	50.0 km/h 31.1 mph
Forward 7	67.8 km/h 42.1 mph
Reverse	13.1 km/h 8.1 mph

- Maximum travel speeds with standard 24.00R35 (E4) tires

Final Drives

Differential Ratio	3.64:1
Planetary Ratio	4.8:1
Total Reduction Ratio	17.48:1

- Planetary, full floating

Brakes

Brake Surface - Front	1,995 cm ² 316 in ²
Brake Surface - Rear	61,269 cm ² 9,496 in ²

- Brake Standard ISO 3450:2011

Body Hoists

Pump Flow - High Idle	562 L/min 148 gal/min
Relief Valve Setting - Raise	17,735 kPa 2,580 psi
Relief Valve Setting - Lower	14,454 kPa 2,090 psi
Body Raise Time - High Idle	9.5 seconds
Body Lower Time - Float	12.5 seconds
Body Power Down - High Idle	17.51 seconds

- Twin, two stage hydraulic cylinders mounted inside the main frame; double acting cylinders in second stage.
- Power raise in both stages and power down in second stage.

Capacity - Dual Slope - 100% Fill Factor

Struck	26.6 m ³ 34.8 yd ³
Heaped 2:1 (SAE)	35.2 m ³ 46 yd ³

Weight Distributions - Approximate

Front Axle - Empty	46.6%
Front Axle - Loaded	53.8%
Rear Axle - Empty	53.4%
Rear Axle - Loaded	46.2%

Suspension

Effective Cylinder Stroke - Front	234 mm 9.2 in
Effective Cylinder Stroke - Rear	149 mm 5.9 in
Rear Axle Oscillation	8.1°

Sound

Sound Standards	ISO 6393:2008, SAE J1166:2008
-----------------	----------------------------------

- The operator sound exposure Leq (equivalent sound pressure level) measured according to work cycle procedures specified in SAE J1166:2008 is 80 dB(A) for cab offered by Caterpillar, when properly installed and maintained and tested with doors and windows closed.
- The dynamic operator sound pressure level is 80 dB(A) as per ISO 6396:2008 for cab offered by Caterpillar. When properly installed and maintained and tested with doors and windows closed.
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in a noisy environment.

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773E Off-Highway Truck Specifications

Steering

Steer Angle	31°	
Turning Diameter Front Wheel Track	22 m	72 ft 2 in
Turning Circle Clearance Diameter	25 m	82 ft 0 in

- Steering Standards Steering Standards Meets ISO 5010:2007.
- Separate hydraulic system prevents cross contamination. Steering wheel effort is low and steering wheel cycle times are reduced with a new variable-displacement, piston type steering pump.

ROPS

ROPS/FOPS Standards

- ROPS (Rollover Protective Structure) cab offered by Caterpillar meets ISO 3471:2008 for Operator and ISO 13459:2012 for Trainer.
- FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 Level II FOPS criteria for Operator and ISO 13459:2012 Level II FOPS criteria for Trainer.

Tires

- | | |
|---------------|---------------|
| Standard Tire | 24.00R35 (E4) |
|---------------|---------------|
- Productive capabilities of the 773E truck are such that, under certain job conditions, TKPH (TMPH) capabilities of standard or optional tires could be exceeded and, therefore, limit production.
 - Caterpillar recommends the customer evaluate all job conditions and consult the tire manufacturer for proper tire selection.

Service Refill Capacities

Fuel Tank	700 L	185 gal
Cooling System	122 L	32 gal
Crankcase	68 L	18 gal
Differentials and Final Drives	155 L	41 gal
Steering Tank	34 L	9 gal
Steering System (includes tank)	60 L	16 gal
Torque Converter/Brake/Hoist Hydraulic Tank	133 L	35 gal
Brake/Hoist System (includes tank)	307 L	81 gal
Torque Converter/Transmission System	53 L	14 gal
Torque Converter/Transmission System (includes sump)	72 L	19 gal

773E Off-Highway Truck Specifications

Weight/Payload Calculation

		Dual Slope			
		Without Liner		With Liner	
Base - Floor/Sidewall/Frontwall	mm	16/8/10		16/8/10	
	(in)	(0.62/0.31/0.39)		(0.62/0.31/0.39)	
Liner - Floor/Sidewall/Frontwall	mm	NA		16/8/8	
	(in)	(NA)		(0.62/0.31/0.31)	
Body Capacity	m ³ (yd ³)	35.2	(45.0)	34.7	(45.4)
Target Gross Machine Weight	kg (lb)	99 300	(218,920)	99 300	(218,920)
Empty Chassis Weight	kg (lb)	30 219	(66,622)	30 219	(66,622)
Body System Weight	kg (lb)	9400	(20,724)	13 474	(29,705)
Empty Machine Weight	kg (lb)	39 619	(87,345)	43 693	(96,327)
Attachments					
Fuel Tank Size	L (gal)	700	(185)	700	(185)
Fuel Tank - 100% Fill	kg (lb)	573	(1,263)	573	(1,263)
Empty Operating Weight	kg (lb)	40 192	(88,608)	44 266	(97,590)
Target Payload	kg (lb)	59 108	(130,311)	55 034	(121,330)
	tonne (ton)	59.1	(65.2)	55.0	(60.7)
Maximum Payload (110%)*	kg (lb)	65 019	(143,342)	60 537	(133,463)
	tonne (ton)	65.0	(71.7)	60.5	(66.7)
Not to exceed Payload (120%)*	kg (lb)	70 930	(156,374)	66 041	(145,596)
	tonne (ton)	70.9	(78.2)	66.0	(72.8)

*Refer to Caterpillar 10/10/20 overload policy.

Payload Calculation: Definitions

Target Payload = Target Gross Machine Weight less Empty Machine Weight

Empty Machine Weight = Empty Chassis Weight + Body System Weight

Maximum Payload = Target Payload × 1.10 (110%)

Maximum Gross Machine Weight = Target Payload × 1.2 (120%) + Empty Machine Weight

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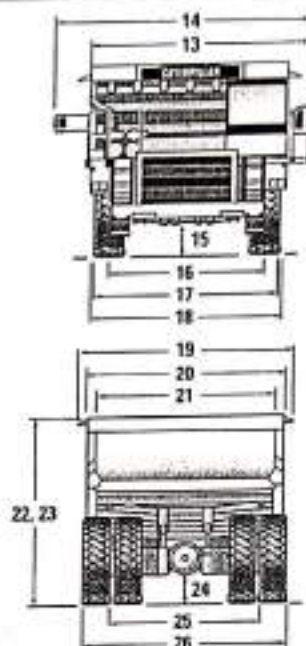
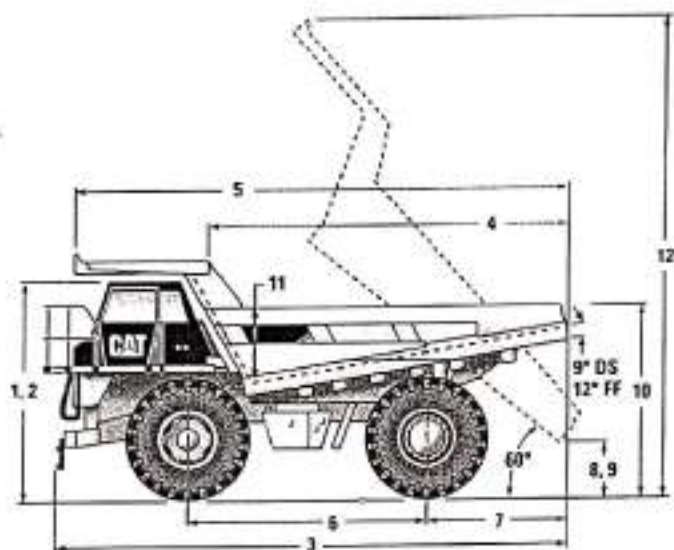
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773E Off-Highway Truck Specifications

Dimensions

All dimensions are approximate.



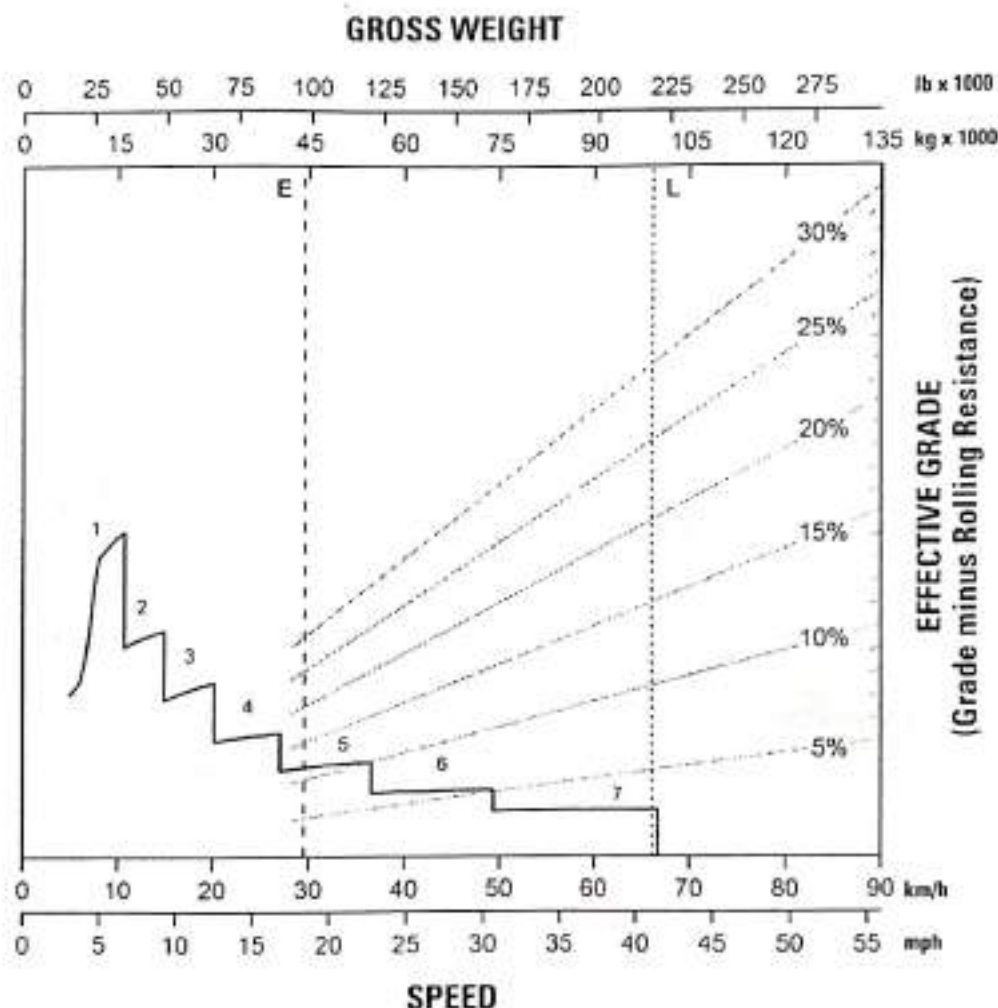
	Dual Slope Floor	
1 Height, Top of ROPS, Empty	4000 mm	13 ft 2 in
2 Height, Top of ROPS, Loaded	3900 mm	12 ft 10 in
3 Length, Overall	9338 mm	30 ft 8 in
4 Length, Inside Body	6400 mm	21 ft
5 Length, Overall Body	8535 mm	28 ft
6 Wheelbase	4191 mm	13 ft 9 in
7 Rear Axle to Tail	2782 mm	9 ft 2 in
8 Ground Clearance	676 mm	2 ft 3 in
9 Dump Clearance, Empty	566 mm	1 ft 11 in
10 Height, Loading - Empty	3773 mm	12 ft 5 in
11 Depth, Inside Body - Maximum	1840 mm	6 ft 4 in
12 Height Overall, Body Raised	8787 mm	28 ft 10 in
13 Width, Left Railing to Right Side Body	4316 mm	14 ft 2 in
14 Width, Operating	5076 mm	16 ft 10 in
Width, Operating (with extended catwalk)	5539 mm	18 ft 2 in
15 Engine Guard Clearance	667 mm	2 ft 2 in
16 Width, Front Tire Center Line	3275 mm	10 ft 9 in
17 Width, Outside Front Tires	3966 mm	13 ft
18 Width, Cab	4040 mm	13 ft 5 in
19 Width, Overall Canopy	4398 mm	14 ft 5 in
20 Width, Outside Body	3910 mm	12 ft 10 in
21 Width, Inside Body	3658 mm	12 ft
22 Height, Front Canopy, Empty	4393 mm	14 ft 5 in
23 Height, Front Canopy, Loaded	4350 mm	14 ft 4 in
24 Rear Axle Clearance	591 mm	1 ft 11 in
25 Width, Rear Dual Tire Centerline	2927 mm	9 ft 7 in
26 Width, Overall Tire	4457 mm	14 ft 8 in

773E Off-Highway Truck Specifications

773E Retarding - Continuous Grade Length

To determine retarding performance, add lengths of all downhill segments and, using this total, refer to proper retarding chart. Read from gross weight down to the percent effective grade. Effective grade equals actual % grade minus 1% for each 10 k g/h (20 lb/ton) of rolling resistance. From this weight-effective grade point, read horizontally to the curve with the highest obtainable gear, then down to maximum descent speed brakes can properly handle without exceeding cooling capacity. The following charts are based on these conditions: 32° C (90° F) ambient temperature, at sea level, with 24.00R35 (E4) tires.

NOTE: Select the proper gear to maintain engine rpm at the highest possible level, without overspeeding the engine. If cooling oil overheats, reduce ground speed to allow transmission to shift to the next lower speed range.



- 1 — 1st Gear
- 2 — 2nd Gear
- 3 — 3rd Gear
- 4 — 4th Gear
- 5 — 5th Gear
- 6 — 6th Gear
- 7 — 7th Gear

E — Empty 43 659 kg (96,252 lb)
L — Target Gross Machine Weight (TGMW) — 99 300 kg (219,000 lb)

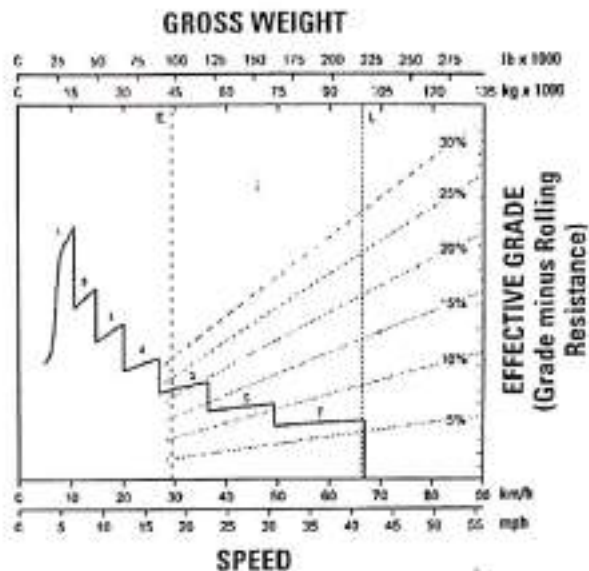
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773E Off-Highway Truck Specifications

773E Retarding - Grade Length - 450 m (1,500 ft)

E - Empty 43 659 kg (96,252 lb)
L - Target Gross Machine Weight
(TGMW) - 99 300 kg (219,000 lb)

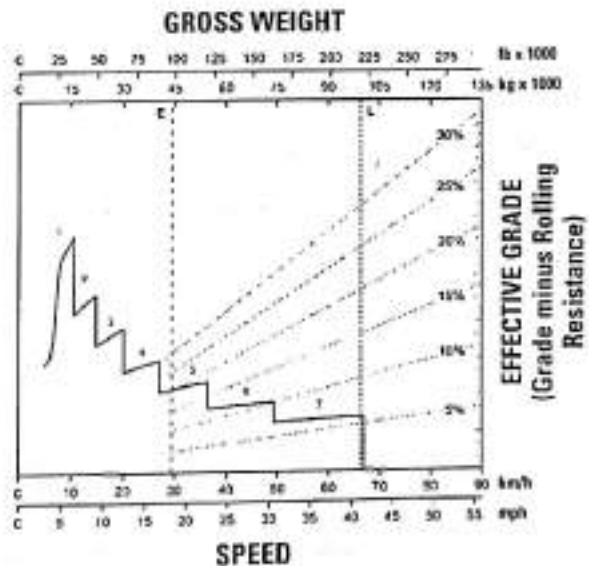
1 - 1st Gear
2 - 2nd Gear
3 - 3rd Gear
4 - 4th Gear
5 - 5th Gear
6 - 6th Gear
7 - 7th Gear



773E Retarding - Grade Length - 600 m (2,000 ft)

E - Empty 43 659 kg (96,252 lb)
L - Target Gross Machine Weight
(TGMW) - 99 300 kg (219,000 lb)

1 - 1st Gear
2 - 2nd Gear
3 - 3rd Gear
4 - 4th Gear
5 - 5th Gear
6 - 6th Gear
7 - 7th Gear

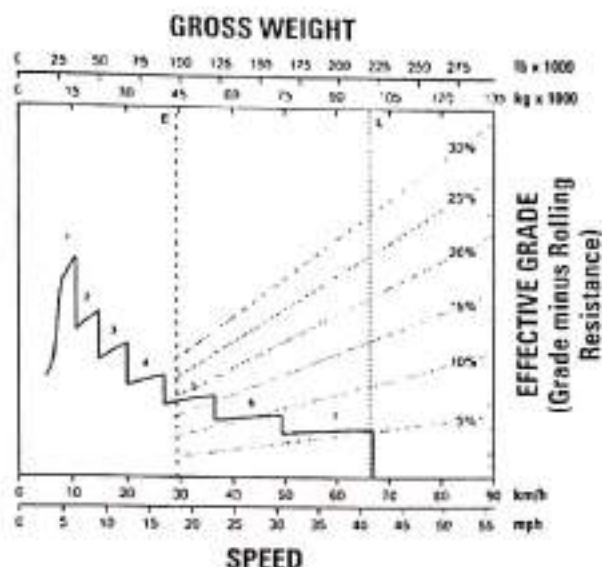


773E Off-Highway Truck Specifications

773E Retarding – Grade Length – 900 m (3,000 ft)

E — Empty 43 659 kg (96,252 lb)
L — Target Gross Machine Weight (TGMW) – 99 300 kg (219,000 lb)

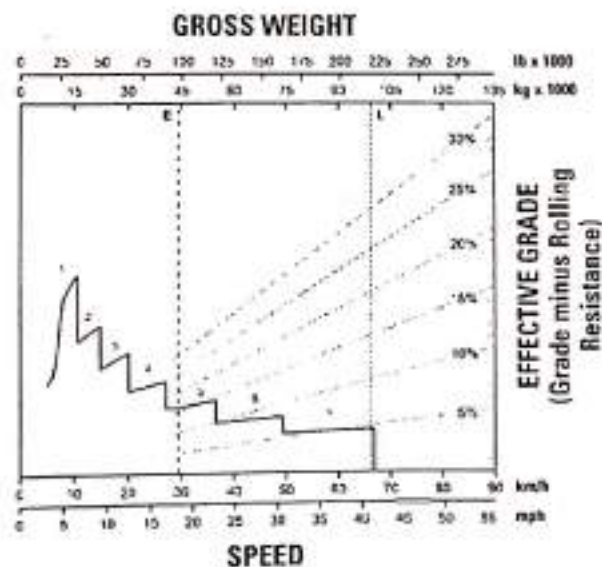
1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear



773E Retarding – Grade Length – 1500 m (5,000 ft)

E — Empty 43 659 kg (96,252 lb)
L — Target Gross Machine Weight (TGMW) – 99 300 kg (219,000 lb)

1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear



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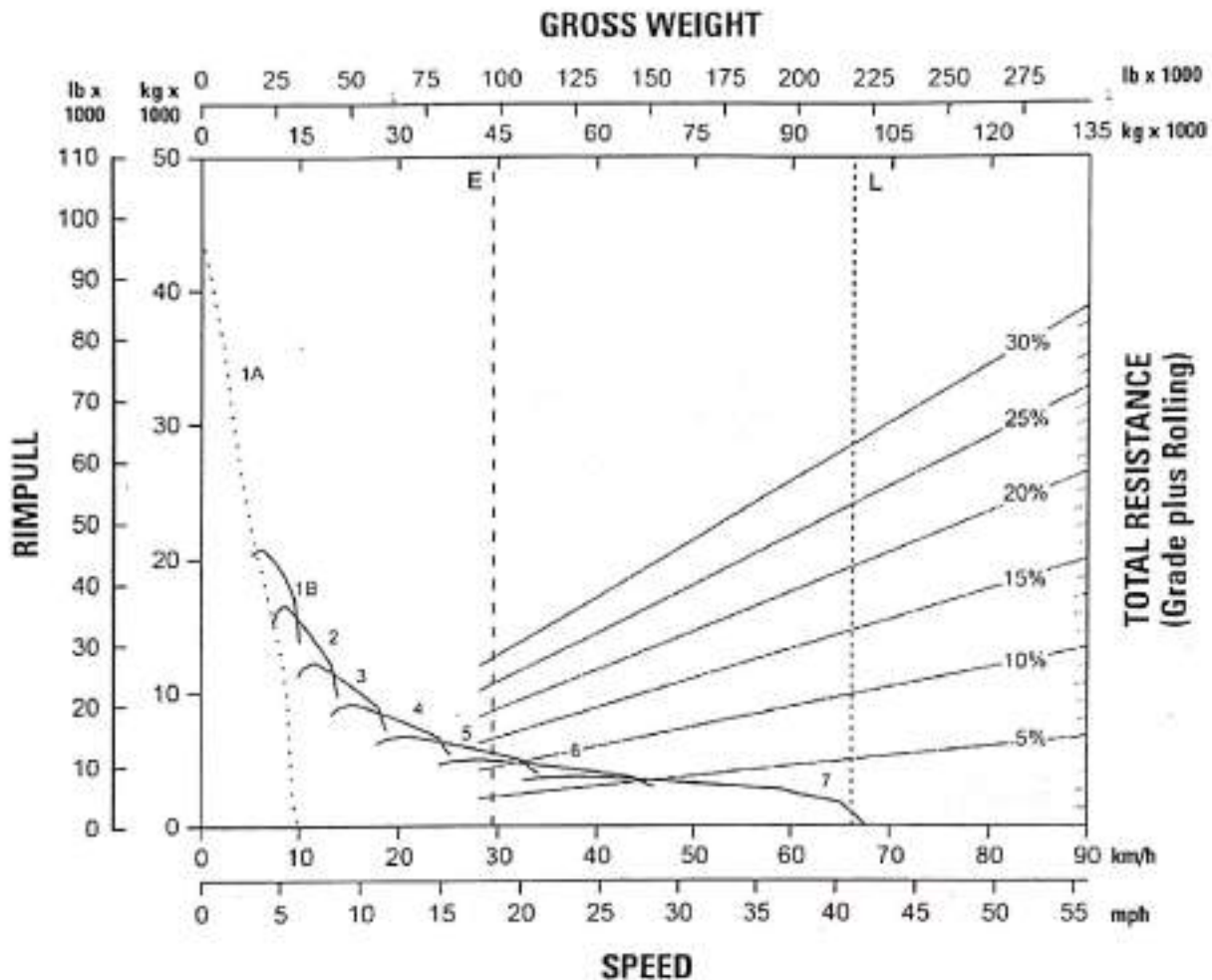
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773E Off-Highway Truck Specifications

773E Gradeability/Speed/Rimpull

To determine gradeability performance: Read from gross weight down to the percent of total resistance. Total resistance equals actual percent grade plus 1% for each 10 kg/t (20 lb/ton) of rolling resistance. From this weight-resistance point, read horizontally to the curve with the highest obtainable gear, then down to maximum speed. Usable rimpull will depend upon traction available and weight on drive wheels.



- 1A — 1st Gear (Torque Converter)
- 1B — 1st Gear
- 2 — 2nd Gear
- 3 — 3rd Gear
- 4 — 4th Gear
- 5 — 5th Gear
- 6 — 6th Gear
- 7 — 7th Gear

- E — Empty 43 659 kg (96,252 lb)
- L — Target Gross Machine Weight (TGMW) — 99 300 kg (219,000 lb)

773E Standard Equipment

Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

POWER TRAIN

- Cat 3412E HEUI engine
 - 12 cylinder diesel
 - Air-to-air aftercooler (ATAAC)
 - Hydraulic electronic unit injection
 - Air cleaner with pre-cleaner (2)
 - Automatic cold mode idle control
 - Turbocharger (2)
- Braking system
 - Oil-cooled, multiple disc (rear)
 - Parking/secondary
 - Caliper disc (front)
 - Manual retarder (utilizes rear oil cooled, multiple disc brakes)
 - Brake release motor (towing)
- Transmission
 - Seven speed automatic power shift with ICM control
 - Auto neutral idle
 - Body up shift inhibitor
 - Controlled throttle shifting
 - Directional shift management
 - Downshift inhibitor
 - Neutral coast inhibitor
 - Neutral start switch
 - Programmable top gear/speed selection
 - Reverse neutralizer during dumping
 - Reverse shift inhibitor

SUSPENSION SYSTEMS

- Hydro pneumatic suspension at front and rear

ELECTRICAL

- Alarm, backup
- Alternator, 115 ampere
- Auxiliary jump start receptacle
- Batteries, maintenance-free, 12V (2), 190 amp-hour
- Electrical system, 24V
- Lighting system
 - Backup light (halogen)
 - Directional signals/hazard warning, (front and rear LED)
 - Headlights, (halogen) with dimmer
 - Hazardous lights (LED)
 - Stop/tail lights (LED)

OPERATOR ENVIRONMENT

- HVAC
- Ashtray and cigarette lighter
- Coat hook
- Diagnostic connection port
- Entertainment radio ready
 - Speakers, antenna, wiring harness
- Air cleaner service indicator
- Transmission oil temperature gauge
- Air system pressure gauge
- Brake oil temperature gauge
- Coolant temperature gauge
- Fuel level, gauge
- Tachometer
- Speedometer with odometer
- Hour meter
- Engine overspeed indicator
- Transmission gear indicator
- Load counter, automatic
 - Advisor display
- Hoist lever
- Horn
- Mirrors, left and right
- ROPS cab, insulated/sound suppressed
- Seat, Caterpillar comfort, full air suspension and retractable four point seat belt with shoulder harness
- Audio visual seat belt reminder
- Seat, trainer with a lap belt
- Steering wheel, padded/tilt/telescopic
- Storage compartment
- Sun visor
- Throttle lock
- Right side access door
- Left side power window
- Windshield wiper, intermittent, and washer
- Tinted, laminated glass

TECHNOLOGY PRODUCTS

- Product Link™
- Telematics

GUARDS

- Engine crankcase
- Driveline, operator safety vandalism protection lock

FLUIDS

- Extended life coolant to -35° C (-30° F)

OTHER STANDARD EQUIPMENT

- Airline dryer
- Body mounting group
- Body safety pin (secures body in up position)
- Body down indicator
- CD ROM parts book
- Center mounted rims
- Ground level battery disconnect
- Ground level engine shutdown
- Ground level grease fittings
- Reservoirs
 - Transmission
 - Steering
 - Brake, converter and hoist
- Rock ejectors
- Secondary steering, automatic
- Tie down eyes
- Tow hooks, front/tow pin, rear

773E Optional Equipment

Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

- Weather Package, 240V cold weather starter
- Service Package, Autolube
- Service Package, clustered
- Brake, dry, front, TCS
- Brake, dry, front, ABC
- Brake, dry, front, IBC
- Exhaust, muffler
- Lights, LED
- Lights, HID
- Mirror, heated
- Product Link
- Payload System
- Catwalk, extended
- Service center, Wiggins
- Oil change system, high speed
- Fan, cab, cooling
- Camera, front and rear with radar
- Fog lamp GP
- Fire extinguisher
- Fuel system, Fast Fill
- Rim, spare
- Guard, turbocharger
- Wheel chocks
- Body, dual slope
- Tail end liner DS body
- Extensions, sideboards

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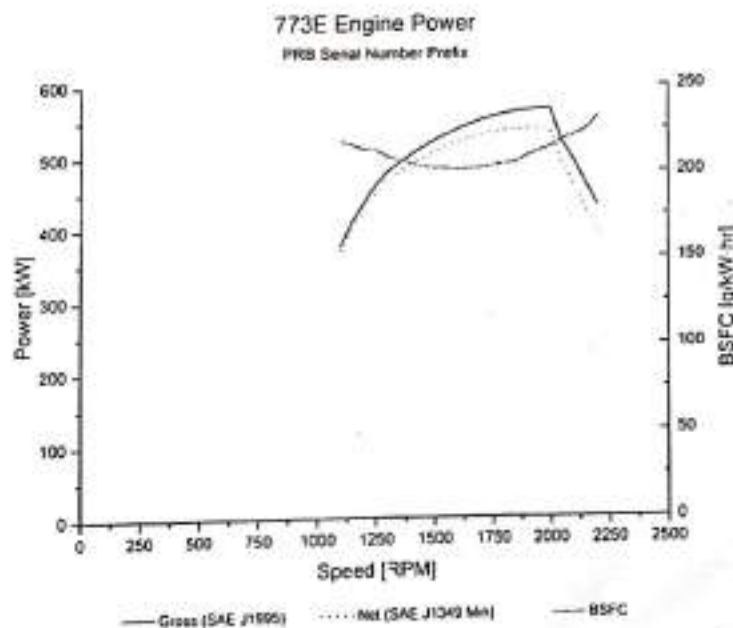
Facility Caterpillar Global Mining
 Date October 12, 2016
 Plant/Office 13 - Decatur
 WK - CIPL
 Department Systems Integration - Off Highway Trucks
 Attention J Jiji Kumar
 Balaji Gopal
 Subject 773E Engine Power and Brake Specific Fuel Consumption

INTRODUCTION

Typically Caterpillar Inc. only publishes data that is useful for customers to determine vehicle performance for their jobsite (i.e. Rimpull, Continuous and Intermediate Retarding charts.) In some instances non-published information is requested for a tender, such as engine power and torque curves. Although this information is not very helpful in determining vehicle performance, it is hesitantly given below.

ENGINE PERFORMANCE CURVES

The following graphs shows engine power, brake specific fuel consumption, and engine torque curves for the 773E (PRB Serial Number Prefix). The engine has a Gross Power (SAE J1995) of 567[kW] and meets China NR Stage III emissions standards.

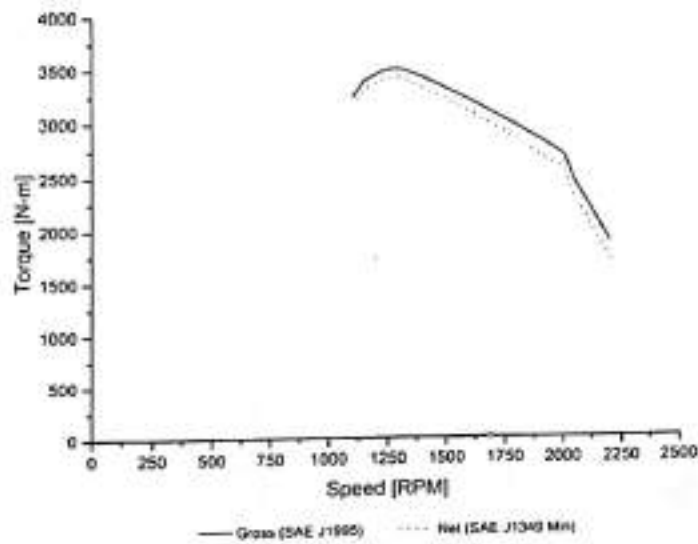


Caterpillar: Confidential Yellow



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773E Engine Torque
PRB Serial Number Prefix



[Signature]

James McKnight
Performance Engineer - Off Highway Trucks



Caterpillar: Confidential Yellow

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[Signature]

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CATERPILLAR®

Caterpillar Inc.

100 NE Adams Street
Peoria, Illinois 61629-7150

September 29, 2021

To Whom It May Concern:

Subject: Certification details for 773E Off-Highway Trucks

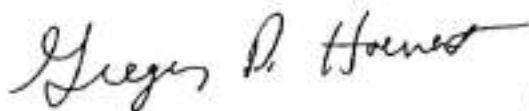
Caterpillar 773E Off-Highway Trucks (serial number prefix PRB) are equipped with Caterpillar 3412 engines (serial number prefix NTE) rated at 567kW gross power.

Although the engines are not EPA certified, they are capable of meeting US EPA Tier 2 emissions standards for criteria pollutants shown below:

ISO 8178 C1 cycle	Tier 2 Standard (g/kW-hr)
NO _x + HC	6.4
Carbon Monoxide (CO)	3.5
Particulate Matter (PM)	0.20

Exhaust gas levels of the tested engine were measured using instrumentation and procedures detailed in US Code of Federal Regulations. All test facilities, instrumentation and technical personnel are acceptable for certification of Caterpillar products by the United States Environmental Protection Agency.

Sincerely,



(CTV)

Gregory D. Hoenert
Manager, Global Emissions Certification
Large Power Systems Division (AC 6146)
Caterpillar Inc.

Telephone: (309) 578-4868
Hoenert_Gregory_D@Cat.com



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GAINWELL



Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
CIN : U74900WB2014PTC204347
Registered Office
Godrej Waterside, Tower-II,
7th Floor, Unit No.-705,
Block-DP, Sector-V, Salt Lake,
Kolkata - 700091
Ph : (91) (33) 6644-2000
Fax : (91) (33) 6644-2009
Website : www.gainwellindia.com

GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Maximum Speed


Dear Sir,

Maximum Speed of Caterpillar 60T Rear Dump Truck (model: 773E) is determined according to
ISO 6014: 67.8 km/hr.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited


Sitananda Nandi

Head - Surface Mining Sales

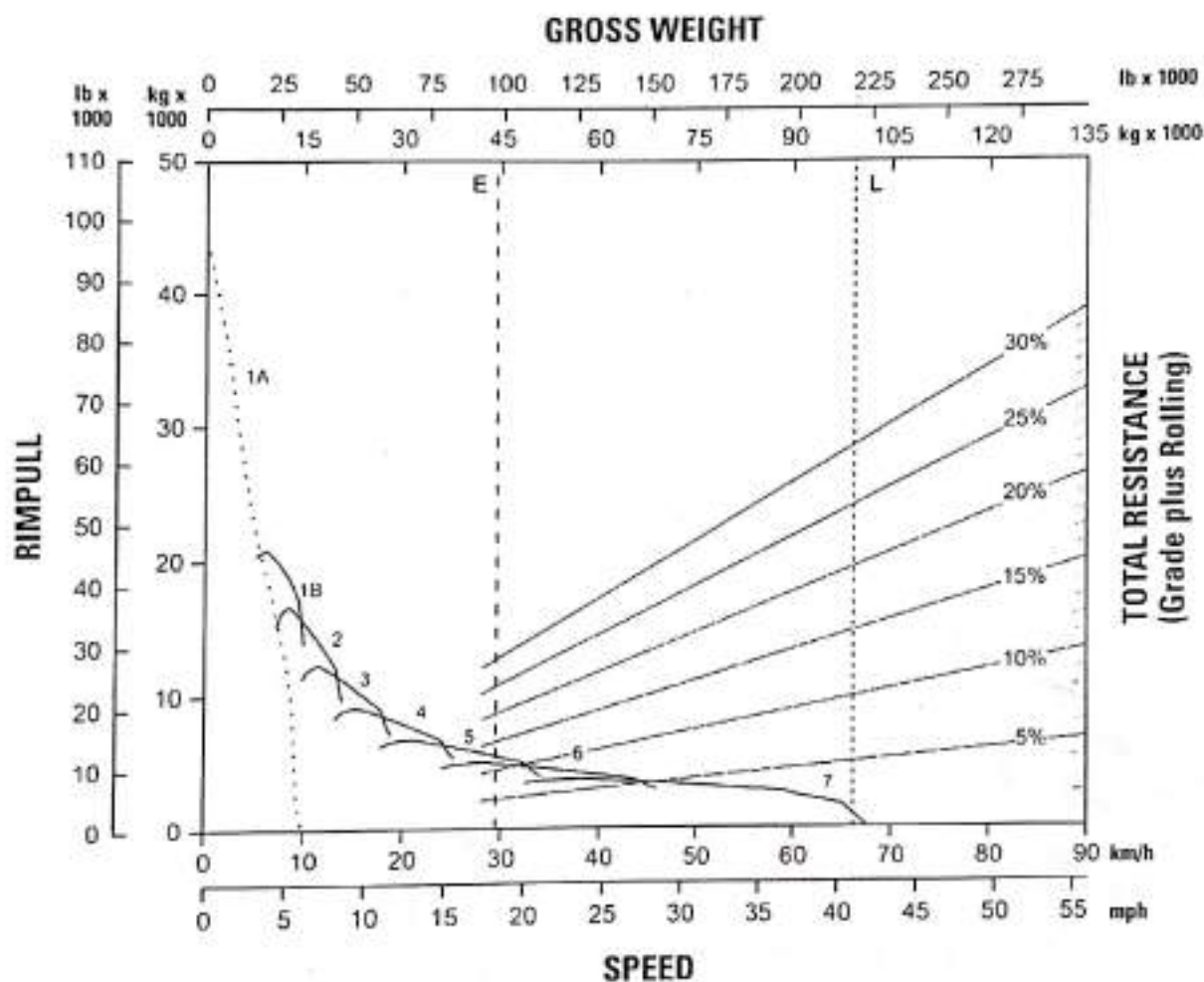


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773E Off-Highway Truck Specifications

773E Gradeability/Speed/Rimpull

To determine gradeability performance: Read from gross weight down to the percent of total resistance. Total resistance equals actual percent grade plus 1% for each 10 kg/t (20 lb/ton) of rolling resistance. From this weight-resistance point, read horizontally to the curve with the highest obtainable gear, then down to maximum speed. Usable rimpull will depend upon traction available and weight on drive wheels.



- 1A — 1st Gear (Torque Converter)
- 1B — 1st Gear
- 2 — 2nd Gear
- 3 — 3rd Gear
- 4 — 4th Gear
- 5 — 5th Gear
- 6 — 6th Gear
- 7 — 7th Gear

- E — Empty 43 659 kg (96,252 lb)
- L — Target Gross Machine Weight (TGMW) — 99 300 kg (219,060 lb)

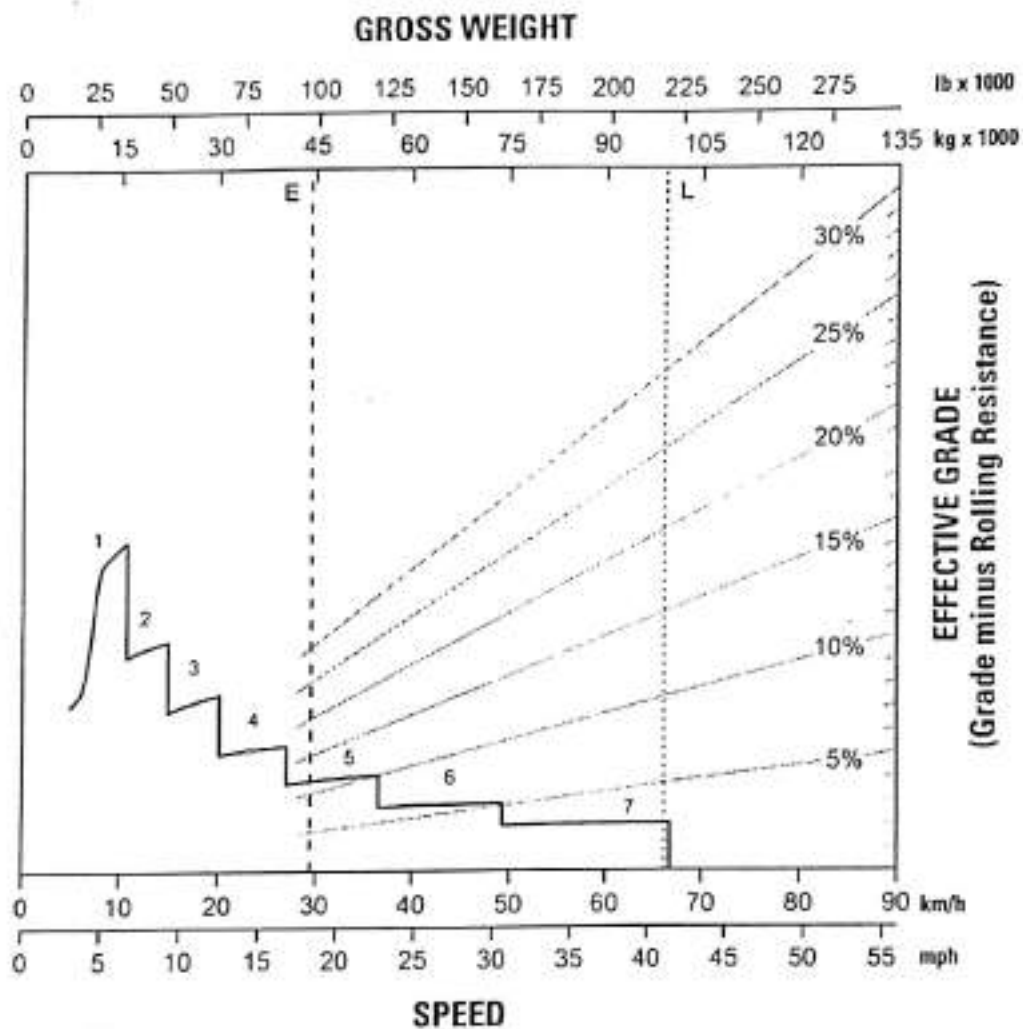


773E Off-Highway Truck Specifications

773E Retarding – Continuous Grade Length

To determine retarding performance: Add lengths of all downhill segments and, using this total, refer to proper retarding chart. Read from gross weight down to the percent effective grade. Effective grade equals actual % grade minus 1% for each 10 kg/t (20 lb/ton) of rolling resistance. From this weight-effective grade point, read horizontally to the curve with the highest obtainable gear, then down to maximum descent speed brakes can properly handle without exceeding cooling capacity. The following charts are based on these conditions: 32° C (90° F) ambient temperature, at sea level, with 24.00R35 (E4) tires.

NOTE: Select the proper gear to maintain engine rpm at the highest possible level, without overspeeding the engine. If cooling oil overheats, reduce ground speed to allow transmission to shift to the next lower speed range.



CONTINUOUS GRADE LENGTH

- 1 — 1st Gear
- 2 — 2nd Gear
- 3 — 3rd Gear
- 4 — 4th Gear
- 5 — 5th Gear
- 6 — 6th Gear
- 7 — 7th Gear

E — Empty 43 659 kg (96,252 lb)
L — Target Gross Machine Weight (TGMW) — 99 300 kg (219,000 lb)



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CATERPILLAR

Caterpillar India Private Ltd.

Machines Division
Mehrauli, Thiruvallur - 602 004
Tamil Nadu, India
Phone : +91 44 4760 0000
Fax : +91 44 4760 0444

ISO 3450:2011 Brake Certificate of Compliance

Category Rigid Frame Dumper
Make Caterpillar
Type 773E (PRB Prefix)

As manufactured, the 773E with serial number prefix PRB meets applicable requirements specified in ISO 3450:2011. A summary of actual stopping distances based on a sample of one machine is provided in the table below. Actual stopping distances will vary based on multiple test and machine variables such as actual weight of the machine, tire size, machine configuration, actual brake test slope, brake condition, ground condition, friction limits etc.,

Brake System	Run	Speed (km/h) (50 ± 3)	Measured Stopping Distance (m)	Maximum Allowed Stopping Distance (m)
Service Brake Stops	1	50.6	59.9	116.4
	2	49.0	57.6	108.9
	3	47.9	60.9	104.1
	4	51.1	64.7	118.6
	5	50.6	63.8	116.4
Secondary Brake Stop	1	26.1	41.8	85.1

Signature: Jason Lewis

Jason Lewis
Engineering Manager
Off-Highway Trucks and Wheel Tractor Scrapers
Date: 9 July 2019



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GAINWELL



Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
CIN - U74900WB2014PTC204347
Registered Office:
Godrej Waterside, Tower-II,
7th Floor, Unit No -705,
Block-OP, Sector-V, Salt Lake,
Kolkata - 700091
Ph : (91) (33) 6644-2000
Fax : (91) (33) 6644-2009
Website : www.gainwellindia.com

GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Turning Diameter


Dear Sir,

Turning Diameter is 22m for Caterpillar 60T Rear Dump Truck (model: 773E).

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited


Sitansu Nandi
Head - Surface Mining Sales



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Truck Production Management System for Off-highway Trucks



Truck Production Management System is a productivity boosting Cat® Connect PAYLOAD technology that helps operators measure and deliver accurate payloads to optimize hauling efficiencies and lower costs for an improved operation.

PRODUCTIVITY / EFFICIENCY

- **Increase productivity** – eliminate the guesswork with real-time weighing while loading.
- **Work confidently** – without guesswork; check weight and progress from the cab at a glance on the standard cab display. Loader can use the exterior loading lights.
- **Work efficiently, every cycle** – load to exact specification without under or overloading; load more trucks faster; move more material; generate more revenue.
- **Improve jobsite efficiency** – lower costs; optimize machine use and establish loading patterns; reduce rework, cycles; save time, labor, and fuel cost.
- **Enhance hauling capability** – minimize overloading and load to capacity to make optimum use of each truck.
- **Track material movement** – operators can track daily production of weights, load and cycle counts, and totals from the cab. Managers can view production totals and efficiency metrics online to manage the business.

INTEGRATION

- **Built-in reliability** – factory-installed sensors, components and display ensures reliable operation.
- **Optimized performance** – Caterpillar designed and integrated into Cat OHTs for precise weighing with world-class accuracy.
- **Easy operation** – built into machine display to simplify viewing and navigation.
- **World class support** – Cat dealers can help you get set up, calibrated, and working efficiently.

AVAILABILITY

G Series | F Series | E Series | D Series

APPLICATIONS

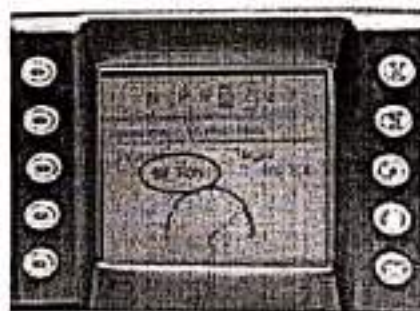
- **Materials producers:** mining, aggregates, sand and gravel, cement and asphalt plants.
- **Heavy civil:** long haul distances for site work and road development.

ACCURACY

- **Precise weighing** with an accuracy of +/- 5% over a shift depending on strut maintenance, machine calibration, and site conditions.



LOAD LIGHTS (ALL)
OR
INDICATOR DISPLAY (777 ONLY)



INTEGRATED
ADVISOR DISPLAY



SUSPENSION
SENSORS ON
EACH STRUT



CAT

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FEATURES AND DISPLAY

Truck Production Management System is a valuable and cost effective PAYLOAD technology

- **Real-time weighing** – calculates payload and brings weighing values to the cab.
- **Cycle segmentation** – detailed cycle information available to enhance fleet production, download with VIMSpc.
- **Automatic adjustment** – system adjusts the empty weight relative to fuel levels, carryback and debris on the underside of the truck.
- **Assists with** – Payload Management Guidelines 10-10-20 rule, reference AEXQ0250-03.
- **Resettable totals** – number of loads, weight, distance traveled, and travel time.
- **External light indicator** – loader can easily visualize when truck is loaded to capacity. Indicator display available for 777.
- **Last pass** – light indication to signal loader one more pass is need to reach capacity.

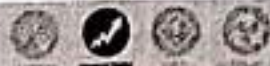
PRODUCTIVITY AND EFFICIENCY REPORTING G-Series Trucks only

REPORTING METRICS	Cab	Office
Total Payload Weight	*	*
Total Load Count	*	*
Cycles	*	*
Loads per Hour		*
Avg Payload/Hour or Avg Payload/Cycle (Productivity)		*
Avg Payload/Fuel Unit (Efficiency)		*

*Cycle segmentation data is available with VIMSpc

PRODUCTIVITY MONITORING

- **Automatically track** material movement, monitor progress, and make timely decisions to keep the operation running at peak efficiency via LINK technologies using online VisionLink® (G-Series trucks only).
- **Detailed production reports** for payload and cycle segmentation production is available using VIMS™pc.
- **View trends** from previous jobs to create more accurate bids for future projects.



CAT CONNECT | PRODUCTIVITY

BUILT FOR IT.

www.cat.com

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CAT



M9/182

CAPTURING DATA. DELIVERING RESULTS.

VIMS SYSTEM



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CAPTURING DATA

Predict and Save

A large mine was changing air filters on its trucks every 500 hours. Then they began using VIMS Trends reports to monitor filter restrictions over time. These reports predicted that it would be safe to extend the change interval. Now the company replaces filters only when VIMS data shows that performance is declining. In this way, the VIMS System saved the company \$7,000 per truck per year.



The VIMS On-Board System

The VIMS On-Board System includes a central data recorder networked with the machine's ECMs and an array of sensors, plus downloading interfaces and a port for wireless transmissions. Recorded data can be downloaded in the shop or field, or transmitted wirelessly to the Off-Board System.

Full integration produces comprehensive results.

Unlike other monitoring systems—which may gather data from only a few components or systems—the VIMS On-Board System is fully integrated with all machine ECMs, power train components and critical machine operations. A keypad in the cab lets the operator acknowledge alerts and “talk back” to the system as required.

VIMS System Main Module - Acquires data from the ECMs and sensors, stores it away and compares it against preprogrammed specifications and limits. It generates in-depth, detailed data which enables the VIMS System to produce comprehensive results.

Downloading and Telemetry

The VIMS On-Board System includes ports for both wired downloading and wireless transmission. Downloading stored files to a laptop computer or other device can be done in the cab or from ground level. CAN and Broadcast ports allow for the use of an optional wireless telemetry system such as MineStar™ FleetCommander and Health. Optional interface units are available providing additional wireless radio options and user scheduled file transmissions.

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THE CAT VIMS™ SYSTEM GIVES YOUR EQUIPMENT ITS OWN VOICE.

The VIMS System helps you manage your entire fleet by letting each machine provide you with up-to-the-minute information about its own health and the working conditions around it.

The key to letting you "listen" to your equipment is a combination of two integrated systems:

- The VIMS On-Board System—This hardware-based system captures machine data, delivers instant feedback to the operator and makes vital machine-generated data available for download.
- The VIMS Off-Board System—Primarily a software solution, this system helps you drill into the information, glean the relevant facts and make well-informed maintenance, operations and management decisions.

The VIMS System enables many other integrated Cat mining technologies, as well, making all your data even more powerful and valuable. Plus, Caterpillar and your Cat Dealer offer tools to help you manage and analyze your proprietary data, helping to deliver maximum value for your entire operation.

The VIMS System Watches

The VIMS System collects data from the sensors and Electronic Control Modules (ECMs) on the machine. This data can be stored for future download and analysis, or can optionally be sent wirelessly to a remote location.

The VIMS System Informs

Data is only valuable when it is turned into useful information. The VIMS System does that instantly by providing real-time feedback through an in-cab display that keeps operators informed about machine conditions and advises them to take appropriate actions. In some cases, it can automatically govern machine performance.

The VIMS System Remembers

The system stores a lot of information over a long period of time. It also provides detailed information about specific events—much like an airplane flight recorder—to help your team analyze problems as they occur and decide on the best course of action.

The VIMS System Analyzes

Once the data is downloaded or transmitted, the VIMS System offers several software tools that help you drill into and summarize the data. These tools give you a complete picture of your entire operation.

The VIMS System Enables

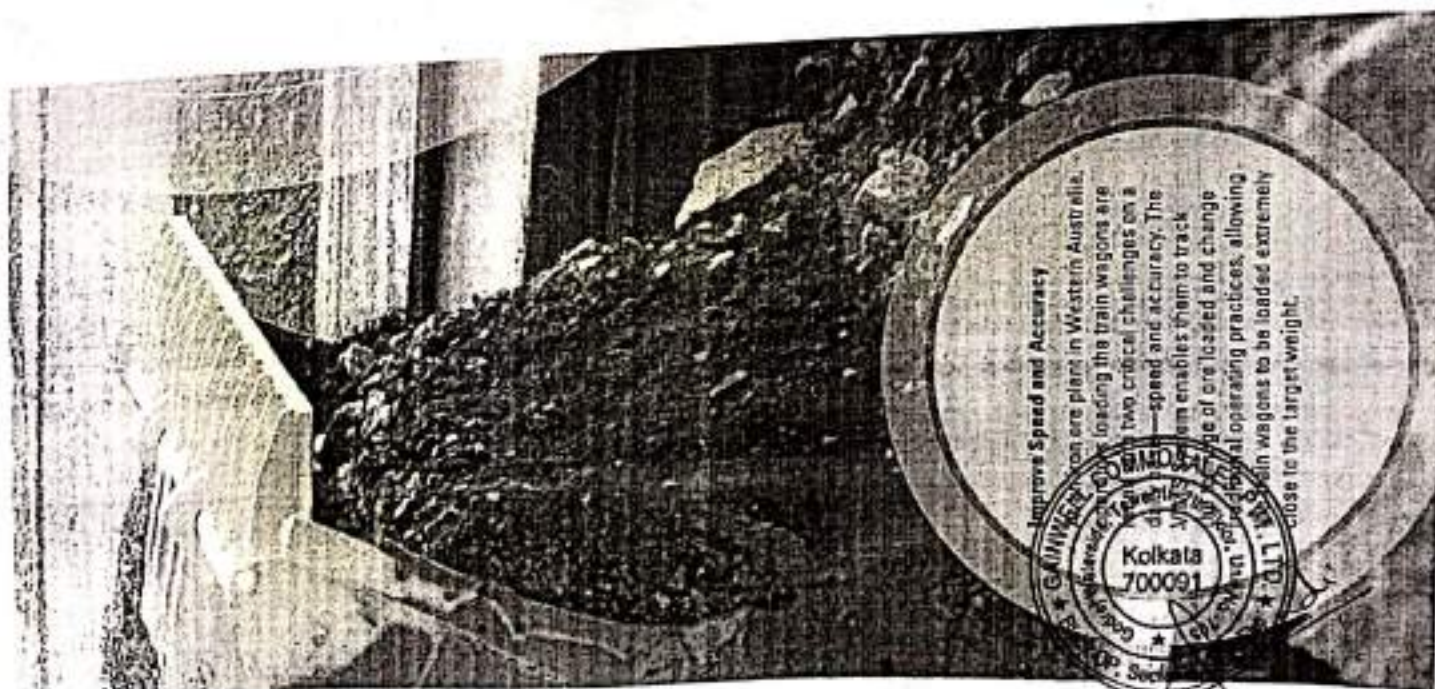
The VIMS system remembers what happened yesterday and can help forecast tomorrow. It helps your team identify potential problems, plan for maintenance procedures and schedule repairs before failure.

The VIMS System Delivers

It all adds up to more proactive equipment management—which translates into more machine availability, more production, lower costs and more life from your Cat equipment.

The VIMS Guardian System Extends

VIMS Guardian retrofit system provides machine health and performance data, but without an operator interface. It is available on certain track-type tractors, underground mining equipment and more.



AM:

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Signature

CATERPILLAR

CAT

CAT

VIMS SYSTEM

Brakes



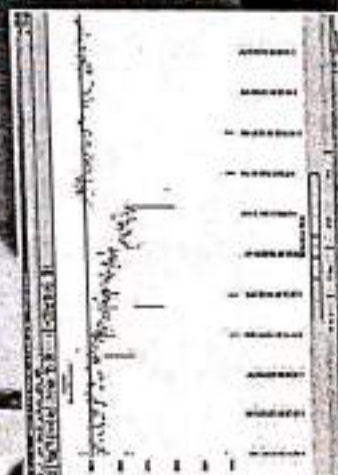
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123/



MAX Payload Speed Manager helps alleviate load-related haul-truck safety and maintenance issues by automatically limiting travel speeds when haul trucks are overloaded.

TKPH Monitor provides haul-truck operators with a warning to reduce their speed if operational tire loads are exceeded, reducing costly tire damage from overheating.

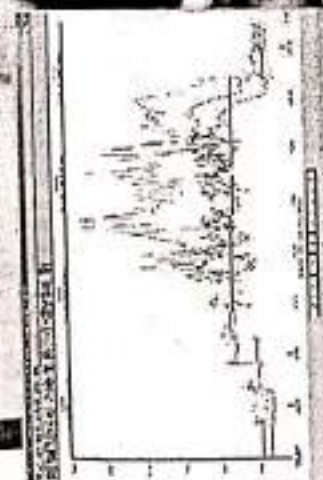


Additional Features Address Specific Issues

Along with its general data analysis tools, the WIMS On-Board System includes a number of specialized features aimed at specific operational and management issues.

- **RAC (Road Analysis Control)** helps operators reduce road-related stresses on haul trucks, and helps your team focus haul-road maintenance operations where they are needed most.

- **Payload Scoreboard** provides the loading tool operator with a numerical display of the tonnage loaded or a "countdown-to-zero" readout.



Data Logger aides in troubleshooting by enabling the operator to trigger recording of real-time data that can show service personnel exactly what is happening when an unusual situation or event occurs.

- **Payload** helps enhance truck and loading tool effectiveness and improve total fleet production by collecting payload, cycle-time and haul-distance data. (Not available on VIMS Guardian)

Reads, Cumulatives & Histograms provide summaries and time-based graphs of key data used in diagnostics, proactive maintenance and performance evaluation.



The third generation of the VIMS System—VIMS 3G—is now available for select Cat Mining equipment, offering enhanced convenience and functionality, along with updated communications capabilities.



VIMS 3G allows users to view near-real-time machine data in an easy-to-access web browser. An intuitive browser interface provides information on up to ten machine parameters at a time, including: coolant temperature, oil pressure, current gear selection, current payload and more. This new feature also enables you to trigger snapshots and data downloads instantly from a wirelessly-connected remote location.



VIMS 3G boasts faster download speeds and has an embedded Ethernet controller enabling expanded broadband capability. VIMS 3G is compatible with the most widely-used radio and cellular broadband systems.

In addition, it allows direct connection to a laptop through an on-board Ethernet port, with or without using a separate communications hardware/software system.



All information generated by VIMS 3G, VIMS Guardian, and all prior VIMS systems are compatible with VIMSpc desktop software. VIMS 3G is now offered on key Cat mining machines. See your Cat Dealer for available models.

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Any



GAINWELL



Gainwell Commosales Private Limited

(Formerly Tractors India Private Limited)

CIN : U74900WB2014PTC204347

Registered Office:

Gedraj Waterside, Tower-II,

7th Floor, Unit No.-705,

Block-OP, Sector-V, Salt Lake,

Kolkata - 700091

Ph : (91) (33) 6644-2000

Fax : (91) (33) 6644-2009

Website : www.gainwellindia.com

GCPL/BCCL/MBU/60T RD/26/22-23

Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Mechanical Device to avoid Head to Tail Collision of Dumpers


Dear Sir,

We are enclosing a certificate from Caterpillar regarding to the subject mentioned clause.

Thanking you.

Yours faithfully;

For Gainwell Commosales Private Limited


Sitansu Nandi

Head - Surface Mining Sales



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CATERPILLAR

Caterpillar India Private Ltd.

Machines Division
Meinallathur, Thiruvallur - 602 004
Tamil Nadu, India
Phone : +91 44 4760 0000
Fax : +91 44 4760 0444

TO WHOM SO EVER IT MAY CONCERN

Caterpillar India Private Ltd. confirms that the cabs used on its 773E and 777D dumpers exceeds ISO 3471's longitudinal force requirements by at least 10% (under the static laboratory test conditions specified in ISO 3471). This provides additional protection to the operator. This feature will not adversely impact normal operations of the dumpers in terms of steerability, loading, dumping or movements on gradients.

Signature: _____

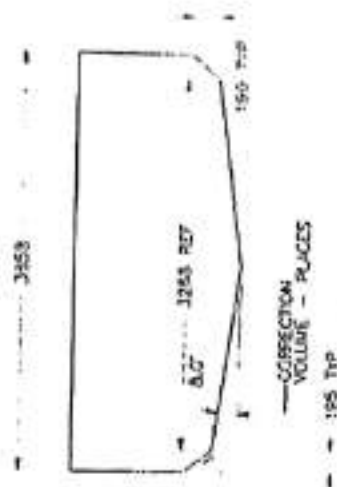


Sreyas Vidyasagar
Tech Manager - Growth Markets
Caterpillar Global Mining
Caterpillar India Private Ltd.

Date: 23 July 2013



Area ABCDE = 6.73 sq.m
 Volume Of ABCDE = 6.73 X 3.658 = 24.62 cum
 Correction Volume = 0.195 x 0.190 x 5.618 (Length CD) = 0.208 cum.
 Volume V1 (ABCDE) = 24.62 – 0.208 = 24.412 cum
 Area DGHJ = 0.994 sq.m
 Volume V2 (DGHJ) = 0.994 X 3.658/2 = 1.82 cum
 Area CHJ = 0.178 sq.m
 VolumeV3 (CHJ) = 0.178 x 3.658/2 = .325 cum
 Area ABKL = 3.499 sq.m = (5.856-0.22) x2x 0.305 +(0.11*0.305*3.658
 Volume V4 (ABKL) = 3.499 x 3.658/2 = 6.349 cum


$$\text{Stuck Volume} = V1 + V2 + V3 + V4 = 32.906 \text{ Cum}$$


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Caterpillar 773E Rear Dumper 2 : 1 Heap Body Volumetric Calculations

Heaped (2:1) - (26.565 deg)

Values (M)

$$\text{Struck Volume (CuM)} = 32.906$$

$$A = 3.658$$

$$\text{Vol 1} = (G \cdot F \cdot (C - (D + E))) / 3$$

$$B = 0.914$$

$$\text{Volume of Segment 1 (CuM)} = 1.302$$

$$C = 5.600$$

$$\text{Vol 2} = [(B \cdot F) / 6] \cdot (((C - E - D) \cdot G) - ((C - E - D) \cdot H) + (G + A) \cdot H + A \cdot H)$$

$$D = 1.829$$

$$\text{Volume of Segment 2 (CuM)} = 0.668$$

$$E = 2.196$$

$$\text{Vol 3} = E \cdot (A \cdot B) / 2$$

$$F = 0.787$$

$$\text{Volume of Segment 3 (CuM)} = 3.674$$

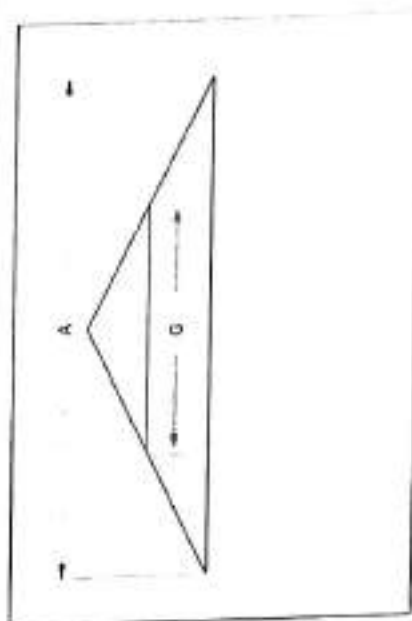
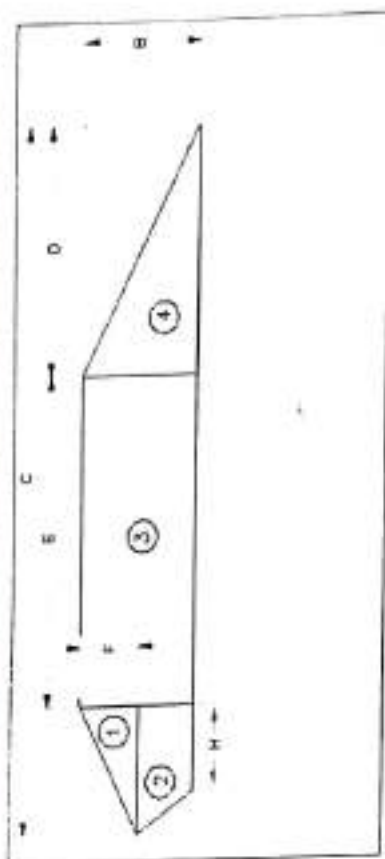
$$G = 3.150$$

$$\text{Vol 4} = (A \cdot B \cdot D) / 3$$

$$H = 1.516$$

$$\text{Volume of Segment 4 (CuM)} = 2.039$$

$$\text{Heaped Volume (2:1) (CuM)} = 40.589$$



Signature

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UENR6746
October 2016

Schematic

773E Off-Highway Truck Hydraulic System

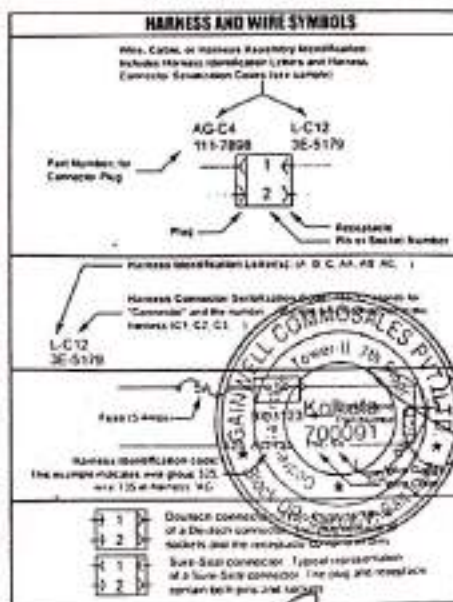
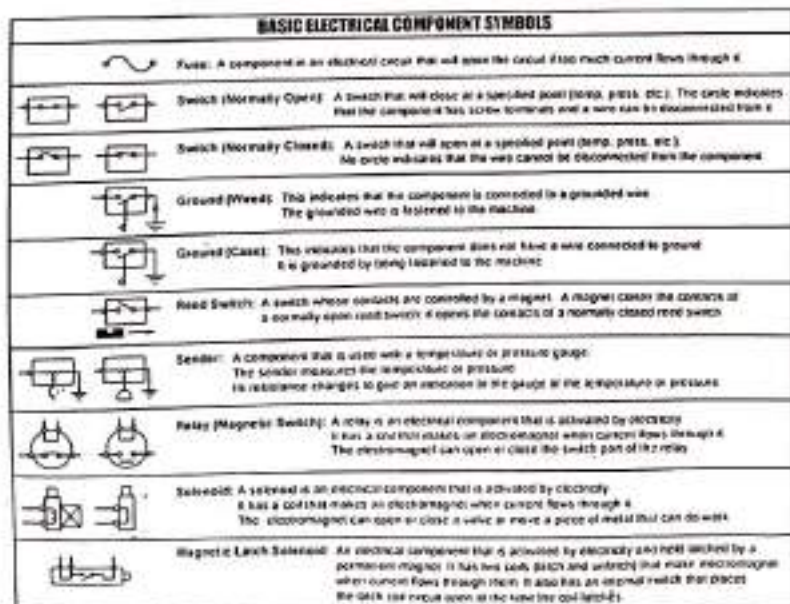
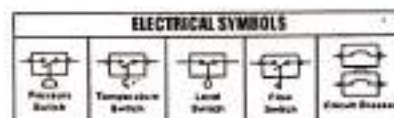
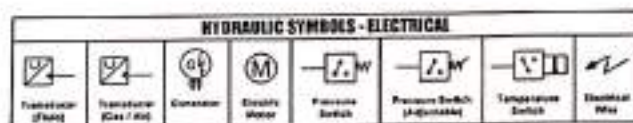
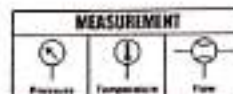
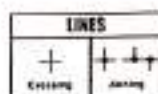
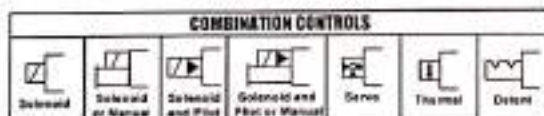
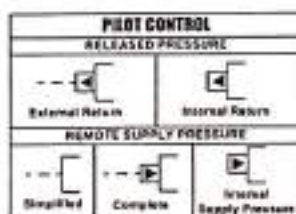
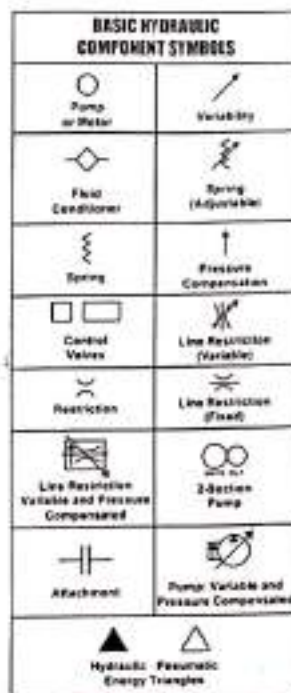
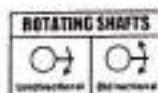
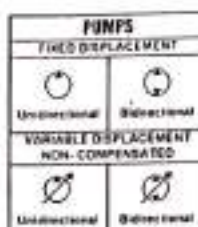
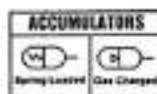
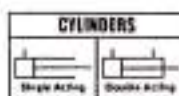
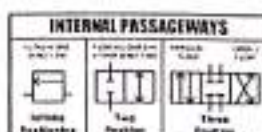
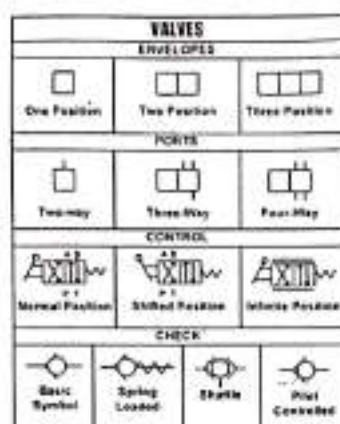
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SCHEMATIC SYMBOLS AND DEFINITIONS





WORKING PROCEDURE OF FLOW MATICS MAKE PNEUMATICALLY OPERATED AUTOMATIC CENTRALIZED LUBRICATION SYSTEM

PRINCIPLES OF LUBRICATION:

The proper lubrication of the machine is vital to its successful, continued operation, application of the RIGHT lubricant in the RIGHT amount at the RIGHT place as a part of PROVEN maintenance program required to keep the machine operating at a level of productivity that will make your mining operation profitable. Proper lubrication will provide better components service life and reduce repairs and downtime. When not properly lubricated moving parts wear quicker and fail sooner.



OPERATION OF SYSTEM:

Pneumatically Operated Centralized Lubrication System comprises of the components mentioned below, each part functions as follows.

- **Reservoir** : Provides a bulk quantity of grease that can be kept clean and readily available to the system.
- **Pump** : Pneumatically operated JAGUAR grease pump produces flow of grease and builds up pressure in the lines. Pump size will be varying depending on the distance between the pump and the furthest injector. JAGUAR pump is a double acting reciprocating pump and can develop very high pressure for operating automatic lubrication system.
- **Injector** : Injector will operate when the pressurized grease enters from the pump discharge line.
- **Lube Controller** : Manages the pressure on the system by turning pressure supply valves ON and OFF on the basis of either the time or cycle. It can also receive signals indicating restricted or failed grease flow to the bearing.

Contd..2

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- **Pressure Switch** : Pressure switch is used to control the total system operation. During each and every cycle operation pressure switch will actuate and switch off the power supply to the Air Solenoid Valve (Switch OFF pump operation)
- **Lines/ Hoses** : Provide a clean path for the grease to move from the reservoir through the system to the final grease point(s).

The system is ready for operation the moment the ignition key is ON, thereby switching on the Lubrication Controller. The controller operates the Air Solenoid Valve and allows air to the Jaguar Pump via Air Regulator and closes the Vent Valve. The pump is operated with the regulated air and supplies the lubricant for the injectors. The feed lines connected from the injectors cater the lubricant to the lube points. Thus one lubrication cycle is completed.

Once all the injectors are operated the pump stalls against the grease pressure. The Pressure Switch provided in the system is actuated at the set pressure (150 bar), the contact is broken and controller will cut off the power supply to the solenoid valve, shutting off the air supply to the Jaguar Pump and Vent Valve assembly. Pause time starts and the system pressure is vented through the Vent Valve and the injectors are reset themselves for the next cycle.

The total lubrication system is monitored by a Pressure Switch provided in the system. Each and every cycle the Switch has to be actuated only once. If the switch is not actuated at the set time of the system the controller announces fault indication in the system. The fault announcement is also for many other reasons like Pump not developing pressure, Pressure Switch malfunctioning, grease leakage in the main line/ Injectors, non-functioning of the Pump, faulty electrical connections etc.







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TECHNICAL SPECIFICATION OF PNEUMATICALLY OPERATED AUTOMATIC CENTRALIZED LUBRICATION SYSTEM

SL. NO.	DESCRIPTION	
1.	PUMP: MAKE : FLOW MATICS MODEL : JAGUAR PUMP OPERATING RATIO : 50:1 AIR CONSUMPTION : 15.9 cfm MAX. GREASE OUTPUT PRESSURE : 500 bar AIR MOTOR DIAMETER : 3 in. AIR OPERATING RANGE : 1.37 to 10 bar MAX. FLOW RATE : 1500 gms/min AIR INLET : 1/4" npt - f LUBRICANT OUTLET : 1/4" npt - f WETTED PARTS : Steel, CI, NBR, PTFE The pump is mounted on a grease reservoir along with air FRL unit, vent valve assembly and follower plate. All hoses required for the pump station assembly include vent line hose and grease refill hose. Level indicator rod is provided for monitoring the grease level in the reservoir.	
2.	INJECTOR: MAKE : FLOW MATICS MODEL : FM-01 MIN. OPERATING PRESSURE : 128 bar MAX. OPERATING PRESSURE : 241 bar OUTPUT VOLUME/ CYCLE : 0.131 cc. - 1.31 cc. RESET PRESSURE/ VENT PRESSURE : 41 bar	
3.	VENT VALVE ASSEMBLY: MAKE : FLOW MATICS Vents/ relieves the inbuilt system pressure back into the grease reservoir.	
4.	LUBRICATION CONTROLLER (LC-20): FEATURES:- <ul style="list-style-type: none"> ➤ COMPACT TIMER MOUNTS EASILY IN OPERATOR'S CABIN ➤ SIMPLE TIMING SET UP ➤ DUAL FUNCTION CAP: SIMPLE CYCLE TIMER/ CONTROL MONITOR ➤ INDICATES PUMP ON, PAUSE TIME, ALARM (Fault indicator) ➤ 24 VDC POWER VOLTAGE ➤ INDICATOR LIGHTS FOR ALARM, POWER ON, PUMP MODE, TIMER MODE 	



- 2 -

5.	PRESSURE SWITCH: MAKE : Reputed PRESSURE SETTING : 75-175 bar
6.	TUBING & FITTINGS: ALL FITTINGS ARE CARBON STEEL COMPRESSION TYPE, WHICH ARE AS PER DIN STANDARDS 2353
7.	HOSES: HOSES CONSIDERED ARE HIGH PRESSURE - REPUTED MAKE FOR MAIN LINE AND FEED LINES

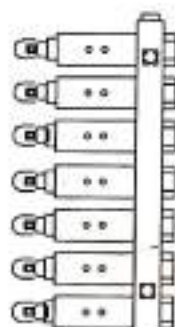


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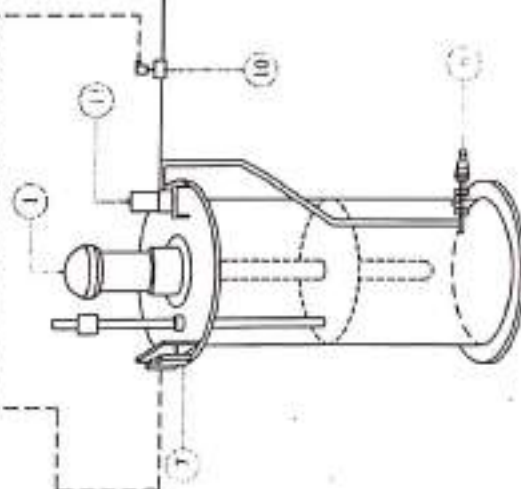
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LUBRICATION CONTROLLER

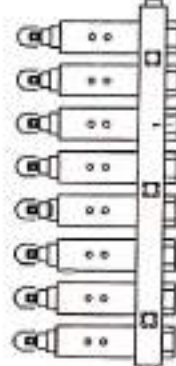
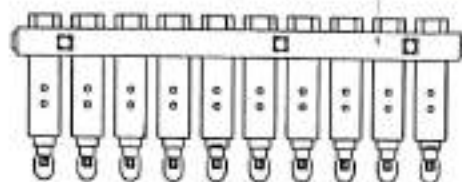


LHS



PUMP STATION ASSEMBLY

REAR



RHS

Sl No	DESCRIPTION	Qty
1	1/4" INCH PUMP MOUNTED ON 27kg RESERVOIR	1 No
2	7 BANK INJECTOR WITH MANIFOLD	1 No
3	8 BANK INJECTOR WITH MANIFOLD	1 No
4	20 BANK INJECTOR WITH MANIFOLD	1 No
5	LUBRICATION CONTROLLER LC-22	1 No
6	REHILLING HOSE WITH FILTER AND GPC	1 No
7	PIPE	1 No
8	4-OSIS	1 No
9	ELECTRIC WIRE HARNESS	1 No
10	PRESSURE SWITCH	1 No
11	VENT VALVE ASSEMBLY	1 No

Flow Metrics Pvt Ltd,
#18, KEMPAIAH GARDEN
NEAR B.M.T.C 9TH DEPOT
4TH PHASE PEENYA LOCAL AREA
BANGALORE - 560058
PH: 080-41310052
E-MAIL: info@flowmetrics.co.in



AUTO LUBRICATION SYSTEM FOR
CAT 773E DUMPER
DRG NO: FM/PLA/773/2013-40
CUSTOMER NAME: SMC/COY.LTD KENKARA
SCALE: PROJECTION
DATE: 15/07/2013
SHEET 1 OF 1

TOTAL NUMBER OF LUBRICATION POINTS - 25

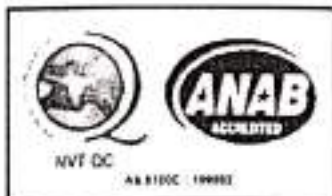
138/182

**AUTOMATIC FIRE DETECTION & SUPPRESSION SYSTEM
FOR HEMM EQUIPMENTS, ZONE TYPE**

Manufactured by:



SOUTHERN ELECTRONICS (BANGALORE) PRIVATE LIMITED



ISO 9001 :- 2000
FM 75038

**16-A, PEENYA INDUSTRIAL AREA,
PHASE-1, PEENYA, BANGALORE - 560 058.**

Phone No: 91-80-39280341-50

Fax No: 91-80-39280365.

E-mail: marketing@seonics.co.in service@seonics.co.in,

Website : <http://www.seonics.co.in.com>

<http://southernelectronicbangalore.com>

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INTRODUCTION

Heavy-duty Mining Equipments require Automatic Fire Protection System to save Equipment, Operators and down time cost.

"Southern Electronics (Pvt) Ltd, Bangalore" AN ISO 9001- 2000 Company has designed and developed an "Automatic Fire Detection & Suppression System" for fitment on mining equipment.

The primary cause of "FIRE" on mining equipment is stated to be due to spillage / splash of hydraulic fluid or diesel on hot spots like exhaust manifold, turbo charger etc.

"SOUTHERN" Auto Fire Detection & Suppression System is designed to take care of the above occurrences. The system is basically a temperature sensing system.

The system operates by flooding the pre defined fire prone areas in zonal area with Dry Chemical Powder from fixed nozzle locations. The activation is done either automatically by the sensing system or by manual operation.

MV





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SYSTEM CONFIGURATION

The main features of the system are:

- Automatic Detection of Fire
- Automatic flooding of extinguishing agent.
- Activation of Audio Alarm.
- Shut off the Equipment (Optional)

The detection of fire is primarily made by a Sensor cable, which can detect fire anywhere along its length. The Sensor Cable is highly flexible is routed throughout the equipment so as to cover areas prone to fire due to spillage areas like turbo-charger, exhaust manifold transmission, parking brake etc. .

The Automatic Fire Detection & Suppression System has been divided into two Zones, ie LHS & RHS of the equipment. In the event of a fire / overheat condition, the sensor cable of the respective zone gets shorted and the solenoid valve on the respective Zone Nitrogen Cylinders get activated (energised) thereby initiating the extinguishing process. The pressurized gas from Nitrogen cylinder enters into the DCP Cylinder Assy of th respective zone, there by rupturing the CO2 Cartridge housed inside the Dry Chemical Powder Cylinder. The CO2 will propel the Dry Chemical Powder and get released through hose to the pre-defined nozzle Points of the respective zone area.

The engine shut off relay (optional) is also energised in the process, thereby shutting off the engine to prevent further spread of fire. The built-in buzzer and external Horn Unit starts sounding continuously and stops only after the system is reset.

Auto Fire Suppression System Consists of:

- | | |
|--------------------------------|---------|
| 1. Sensor Cable | 2 Nos . |
| 2. Control Unit, | 1 No. |
| 3. Horn unit. | 1No |
| 4. DCP Cylinder Assembly. | 2 Nos. |
| 5. Nitrogen Cylinder Assembly. | 2 Nos. |

1. SENSOR CABLE

The Sensor cable is a continuous heat detector cable which can respond to fire at any part of its length, the routing of fire is done LHS side & RHS of the Equipment in the fire prone area in 2 Zones. The sensor cable is comprised of two steel conductors individually insulated with a heat sensitive polymer. The insulated conductors are twisted together to impose a spring pressure between them, and finished with an outer jacket suitable for the environment where it is installed.

The sensor cable is a fixed temperature digital sensor and is capable of initiating an alarm once its rated temperature (180 deg C) is reached. At this temperature, the heat sensitive polymer insulation melts and yields to the pressure upon it, permitting the inner conductors to move into contact with each other and initiating the signal to the control unit and the extinguisher circuit.

The sensor cable is routed throughout the equipment so as to cover areas prone to fire due to spillage areas like turbo-charger, exhaust manifold transmission, parking brake etc. The end of Sensor Cable is terminated with end of line resistor.

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II. CONTROL UNIT

The Control Unit is located inside the cabin and controls the operation of the system. It is connected to the battery of the equipment and contains inbuilt power conditioning circuits to enable isolation and operation of the system at an input volt of 18V to 30 V DC.

The Control Unit has indication & circuit for 2 Zones, which continuously monitors the shorting of the sensor cable. When a 'SHORT CONDITION' occurs, (due to overheat / fire condition) the control unit will

- (1) Activate Audio Alarm
- (2) Activate the Solenoid Valves on the extinguisher (Zone Area)
- (3) Shuts off the engine (optional).

In the event of a fire / overheat condition, the sensor cable gets shorted and the solenoid valves on the Nitrogen Cylinders respectively get activated (energised) thereby initiating the extinguishing process. The engine shut off relay (optional) is also energised in the process, thereby shutting off the engine to prevent further spread of fire.

The built-in buzzer and external Horn Unit starts sounding continuously and stops only after the system is reset. The system can also reset itself automatically after two minutes.

The control unit also has a Built In Test Equipment (BITE) facility to monitor.

1. System Serviceability
2. Condition of Sensor cable
3. Connection to the Solenoid Valve.

III. HORN UNIT

The horn unit is provided to alert the operators and other people around. On activation the Horn Unit provides an intermittent sound at a level of 100db.

IV. ELECTRICAL CABLES:

All interconnection between Control Unit and sub assemblies are made with cable harnesses and terminated with reliable military type connectors with rubber boots for easy installation. Appropriate identification is made on the cable to connect the sensor and Cylinder with respect the zonal area.

V. EXTINGUISHER SYSTEM:

The Extinguisher system mainly consists of:

NITROGEN CYLINDER ASSEMBLY

Two Nitrogen Cylinder are provided for Zonal activation, the Cylinder containing Nitrogen gas pressurised upto 600 PSI. It contains a plunger mechanism housed in a stainless steel head on which a solenoid valve is fitted to contain the nitrogen inside (for Automatic activation). A rupture disk is provided to contain the pressure in the cylinder. A High pressure valve for charging the nitrogen cylinder and a pressure gauge to indicate the pressure of nitrogen. A Knob is provided to operate the system manually. In the event of fire in a particular zone, on detection of a short condition in the sensor cable, the Control unit energises the solenoid valve fitted on the Nitrogen Cylinder of the particular Zone thereby releasing the pressurised gas into the DCP cylinder of the particular zone.

The system can be operated manual by sticking the knob of the particular zone. This will cause the stored Nitrogen to flow out to the DCP Cylinders by means of hose network to discharge in the desire zone.

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DCP CYLINDER ASSEMBLY:

Two DCP Cylinder have been provided for LHS & RHS area of the equipment, has Dry Chemical Powder in unpressurised form. It contains an inlet port for the Nitrogen to enter in and also for refilling the cylinder and an outlet port for the extinguisher powder to be propelled out. The outlet port also contains a housing in which a rupture disk is located to prevent the ingress of moisture into the DCP Cylinder and also prevent the extinguisher powder from flowing out of the cylinder under normal conditions. A CO2 cartridge assembly with rupture disc is housed inside the DCP cylinder.

PNEUMATIC OPERATION:

A Non-return valve is fitted at the inlet of the head to avoid return of the Nitrogen. The Nitrogen from the Nitrogen cylinder enters the DCP cylinder through the Non-return valve and pushes the plunger so as to pierce the rupture disc thereby releasing the pressurised CO2 into the DCP Cylinder.

DISTRIBUTION SYSTEM:

The distribution system is meant for carrying the extinguisher powder from the outlet of the DCP Cylinder to the end of nozzles. This is done by means of high-pressure hoses, pipe cross distributors and nozzles. Other hardware like elbows, couplers etc. are used wherever required.

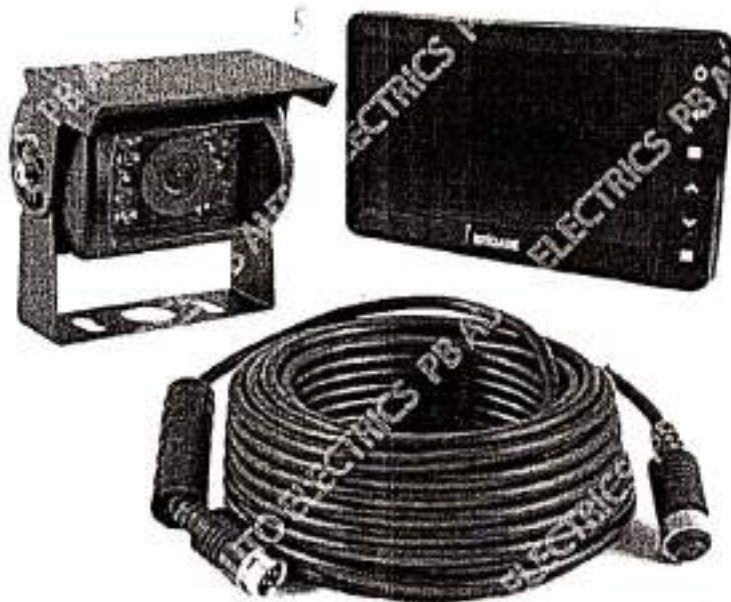


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BRIGADE



Monitor

- 12-24Vdc
- 3 Camera inputs
- Size (WxHxD) 195.5 x 117.5 x 25.5 mm
- 7.0"

Camera

- Viewing angle (HxVxD) 92 x 70 x 115°
- IP67
- Size (W x H x D) 81 x 77 x 70 mm

Part Numbers

- VBV-770M - Monitor
- VBV-700C - Camera
- VBV-L420 - 20m cable



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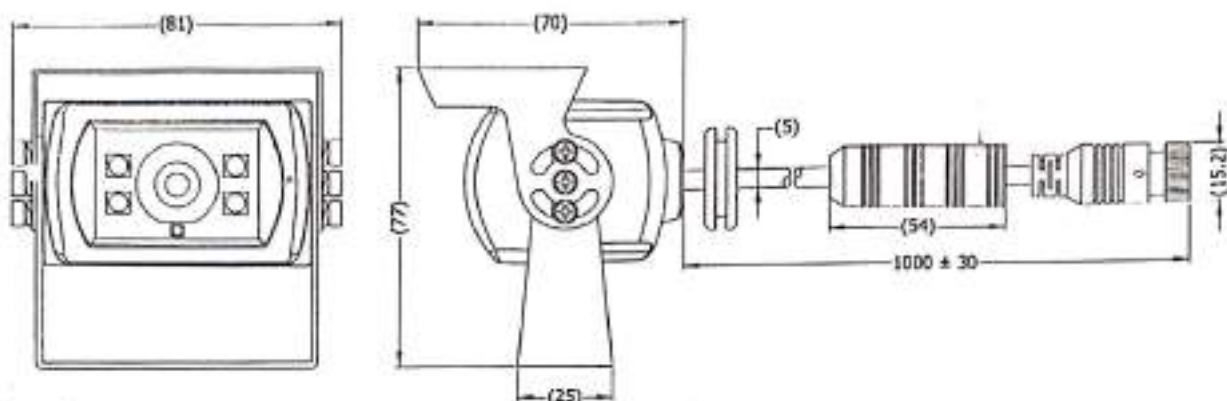
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Product Specification

BRIGADE

Brigade Model Number:
Brigade Part Number:

VBV-700C	VBV-701C	VBV-790C	VBV-791C
1379D	2575C	2724C	2842C



Dimensions: mm

Product Specification

Environmental Specifications:

- Shock Rating: 51 G (All 3 Axes - 6 directions)
- Vibration Rating: 10 G
- Camera IP Rating: IP69K
- Connector IP Rating: IP67
- Operating Temperature: -30° to +70°C
- Storage Temperature: -40° to +85°C

Approved Standards:

- CE - (EN 61000-6-3:2007 + A1:2011 + AC:2012 EN 61000-6-2:2005 + AC:2005)
- FCC - (47 CFR Part 15 Subpart B)
- 'E' Mark - (ECE Regulation 10 Rev 05) - For all (ECE Regulation 46 Rev. 06 with VBV-770NV VBV-770DM/ VBV-7104FM) - For VBV-700C / 790C only
- Ingress Protection - (ISO 20653:2006)
- Elements of ISO 16750:2012
- RoHS2
- WEEE

Technical Specifications:

- Operating Voltage: 12 Vdc ± 2Vdc
- Current Consumption: ≤250mA @ 12 Vdc
- Power Consumption: ≤3Watts @ 12 Vdc
- Imaging Devices: CCD - 1/3" Sharp DSP - Seinmedia
- TV System:
 - VBV-700C / VBV-790C: PAL
 - VBV-701C / VBV-791C: NTSC
- Picture Elements:
 - VBV-700C / VBV-790C: 976(H) x 582(V)
 - VBV-701C / VBV-791C: 976(H) x 494(V)
- Visual Resolution:
 - VBV-700C / VBV-790C: 620 TV Lines
 - VBV-701C / VBV-791C: 750 TV Lines

Technical Specifications Continued...

- Required Illumination: 0 Lux (IR LED ON)
- Illumination Area: Approx. 7m (L) x 5m (W)
- Viewing Angle:
 - VBV-700C / VBV-790C: 88° (H), 68° (V), 115° (D)
 - VBV-701C / VBV-791C: 86° (H), 72° (V), 122° (D)
- Assembled Weight: 315 Grams
- Video Output: 1.0 Vp-p / 75Ω
- Length of Cable: 1000 ± 30mm
- Overall Dimensions: 81mm (W) x 70mm (D) x 77mm (H)
- Housing Material: Aluminium Alloy
- Camera View: Fixed - Mirror
- Finish: Black Powder Coating

Features:

- Night Vision via 4 x High Power Infrared LEDs enabled by integrated Day / Night sensor
- VBV-700C / VBV-701C - Integrated Microphone
- High Quality Sharp CCD & Seinmedia DSP
- Back Light Compensation
- Automatic White Balance
- Fixed IRIS
- VBV Type Female Connector

Package Contents:

- 1 x VBV-70XC/79XC-C - Camera
- 1 x VBV-71XXC-BKT - Bracket
- 1 x VBV-71XXC-SS - Sunshield
- 1 x VBV-71XXC-FIX - Fixing Pack
- 1 x VBV-79X/70XC-IG - Installation Guide



Brigade House: The Mills, Station Road, South Darenth, Kent DA4 5BD.

Technical +44 (0) 1322 420047 marketing@brigade-electronics.com www.brigade-electronics.com

Specifications Subject To Change Without Notice

PS(VBV-70XC/79XC)01

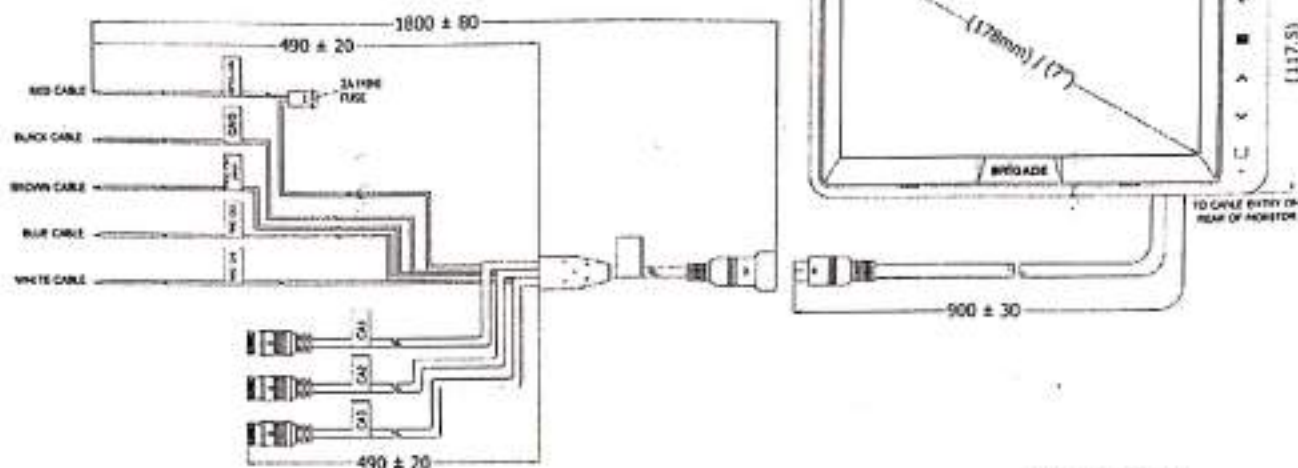
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Product Specification

BRIGADE

Brigade Model Number: VBV-770M / VBV-770M-S

Brigade Part Number: 4288A / 4697A



Dimensions: mm

Product Specification

Environmental Specifications:

- Shock Rating: 100 G
- Vibration Rating: 4 G (All 3 axis each 32hr random)
- Connector IP Rating: IP40
- Monitor IP Rating: IP30
- Operating Temperature: -30°C to +70°C
- Storage Temperature: -40°C to +85°C

Approved Standards:

- CE - (EN 61000-6-2:2005 + AC:2005) / (EN 61000-6-3:2007 + A1:2011 + AC:2012)
- 'E' Mark - (ECE Regulation 10 Rev 04) (ECE Regulation 46 Rev 08 with BN-360-200X SS-002/ VBV-300C/ VBV-320C/ VBV-700C/ VBV-790C)
- FCC - (47 CFR Part 15 Subpart B)
- HALT
- RoHS
- WEEE

Technical Specifications:

- Operating Voltage: 12 / 24 Vdc
- Current Consumption: ≤ 1.5A @ 12Vdc
- Power Consumption: ≤ 18W @ 12Vdc
- TV System: PAL / NTSC
- Display Size: 7.0" (diagonal)
- Resolution: 800 x (RGB) x 480
- Contrast Ratio: 500:1
- Brightness: 400 cd/m²
- Display Viewing Angle: 50(T), 70(B), 70(L), 70(R)
- Number of Triggers Inputs: 3
- Mirror/Normal via OSD Menu: All Channels

	VBV-770M	VBV-770M-S
• Number of Video Inputs:	VBV-770M	VBV-770M-S
• 4 pin VBV connector	CA 3	CA 1, 2
• 5 pin VBV connector	-	CA 3
• Shutter camera support:	-	CA 3
• Tilt camera support:	-	-

Technical Specifications Continued:

- Speaker Rating: 8Ω @ 1 Watt
- Monitor Dimensions: (Without Sunshield) 195.5 mm (W) x 25.5 mm (D) x 117.5 mm (H)
- Monitor Weight: Approx. 500 Grams
- Video Input Impedance: 1.0 Vp-p / 75Ω
- Power / Trigger Cable Thickness: 18 AWG
- Cable Length:
 - Monitor Pigtail: 900 ± 30mm
 - Cable Adapter: 1800 ± 80mm
- Casing Material: ABS Plastic
- Finish / Colour: Soft Touch Black

Features:

- High quality digital LCD with LED backlight.
- Low reflection TFT LCD (Anti Glare Coating).
- Integrated light sensor for backlight dimming.
- Illuminated touch keypad.
- Keypad disable/lock via OSD menu.
- Integrated large speaker.
- Automatic detection of PAL or NTSC signal.
- Shutter camera support on VBV-770M-S
- 10 x On Screen Display (OSD) languages: (English, French, German, Spanish, Turkish, Italian, Dutch, Portuguese, Russian, Polish)
- Configurable trigger off delay (0-20 sec.)
- Configurable trigger input functions.
- Configurable auto scan delay (0-20 sec.)
- 2 Variations of electronic on screen markers.
- Compatible with Remote Control VBV-7X0DM-RC.

Package Contents:

- 1x VBV-770M-M
- 1x VBV-7X0M-XCA
- 1x VBV-770M-SS
- 1x VBV-770M-X-IG
- 1x BMM-015
- Monitor
- Cable Adapter
- Sunshield
- Installation Guide
- Bracket

Brigade House, The Mills, Station Road, South Oare, Kent DA4 9BD

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Specifications Subject To Change Without Notice

PS(4368A)02 - VBV-770M-M

MV

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Signature

BRIGADE®

BS-9000

Backsense® CAN Radar Object Detection System

Installation & Operating Guide

BRIGADE



1 Introduction

Brigade's Backsense® uses FMCW (Frequency Modulated Continuous Wave) radar system technology and is designed to detect people and objects in blind spots, significantly reducing collisions. Backsense® detects both stationary and moving objects and works effectively in harsh environments with poor visibility including darkness, smoke, fog and dust.

The Brigade BS-9000 radar sensor features an internal CAN interface for network connectivity, allowing the user to link up to 8 sensors and a network host on a single CAN bus, enabling monitoring of multiple detection areas around the vehicle.

Each Backsense® BS-9000 sensor is capable of detecting and reporting data for up to 8 objects enabling a fully featured system (consisting of 8 sensors) to detect and report up to 64 separate objects.

To ensure the Backsense® system performs to the best of its ability, it is imperative that installation and commissioning is carried out by competent, trained technicians. The installer is responsible for the fitness for purpose of the overall system and must adhere to relevant regulations and legislation.

Operators of the vehicle to which the Brigade Backsense® System is fitted must be made fully aware of how to interpret the system so they will not be distracted by or rely completely on it. Distraction can cause collisions.

The system is intended as an aid only. The operator must still concentrate on operating the vehicle, obeying traffic and local regulations and continuing to use his/her own training, senses and other vehicle aids, such as mirrors, as if the system were not in place. Nothing removes the responsibility of the operator to operate the vehicle in a proper and lawful manner.

1.1 Detection Range

Model Name	Detection Length		Detection Width		Nominal Tolerance	
	[m]	[ft]	[m]	[ft]	[m]	[ft]
BS-9000	0 – 30	0 – 98	0 – 10	0 – 33	±0.25	±1

1.2 Object Detection Capability

Warning

- There is no detection of objects or part of an object closer than approx. 0.3m to the sensor.
- Object detection between approx. 0.3m to 1.3m from the sensor requires a minimum relative speed of around 2km/h between the object and sensor. The same requirements apply for re-detection of objects after a stationary condition.
- Brigade Backsense® radar beam angle has a 120° horizontal angle out to the maximum designated width and symmetrically perpendicular to the sensor front surface. The vertical angle is 12°.
- All dimensions for detection of objects are nominal and vary significantly depending on many parameters. For more details, see section "1.2.2 Factors Influencing the Detection of Objects".
- An object will cause a detection data transmission in less than 0.5 seconds.



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- After turning on power the system takes around 1 second to be active. There is no standby mode.

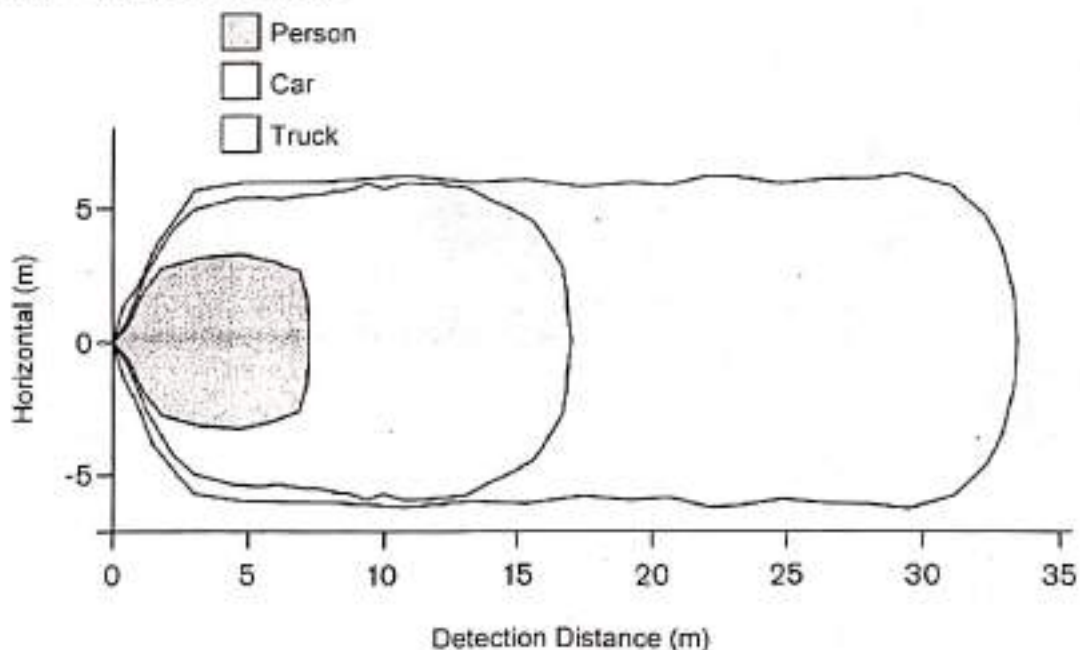
Notes:

- For distances below 1.3m (detection with relative speed only) or below 0.3m (no detection) the space covered in general by radar systems is very small. In this scenario, Backsense® may not be the most suitable solution and therefore Brigade recommends adding an additional or alternative detection system depending on the vehicle's application. For example, Brigade Backscan® based on ultrasonic sensing technology, offers superior detection at close ranges.
- Brigade Backsense® systems remain unaffected even when multiple sensors are operating in the same area or on the same vehicle. Close proximity and overlapping detection areas cause no adverse effect on Backsense's detection properties.

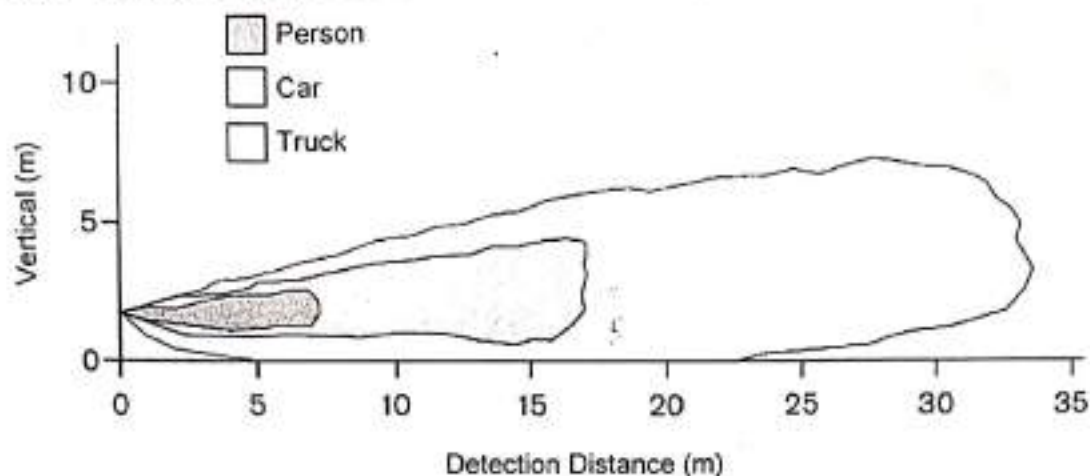
Tip: Brigade Backsense® detection is generally better when there is relative speed between the sensor and the objects and when the direction of approach is perpendicular to the sensor front face.

1.2.1 Detection Pattern

1.2.1.1 Horizontal Pattern



1.2.1.2 Vertical Detection Area



1.2.2 Factors Influencing the Detection of Objects

Brigade Backsense® shares in principle the advantages and limitations of all radar-based systems when compared to other sensing technologies. In general, it can reliably detect most objects in most environmental conditions such as dirt, dust, rain, snow, sun, fog, darkness, acoustic noise, mechanical vibration, electromagnetic noise or similar.

However, there are some occasions when an object could stay undetected. Radar works on the principle of line of sight and relies on some of the electromagnetic energy transmitted by the sensor being reflected back from the object to the sensor. If an object does not reflect enough electromagnetic energy back to the sensor it will not be detected.

In the case where there are multiple objects in the detection area at various distances and/or angles, the sensor will detect up to 8 of the closest objects (based on radius), which are the most important for collision avoidance.

The object properties, location and direction are key influences in determining if an object is detected or not. The influencing factors are listed below.

- **Size:** Larger surfaces are detected better than smaller surfaces. If there are small and large objects in the detection area, the smaller object might only register in Detection Zones closer to the sensor.
- **Material:** Metal is detected better than non-metal materials, e.g. wood, plastic.
- **Surface:** A smooth and solid surface is detected better than rough, uneven, porous, fragmented or liquid surfaces, e.g. bushes, brick work, gravel, water.
- **Shape:** A flat object is better detected than a complex shape. Variation in relative location and direction can influence detection significantly.
- **Angle:** An object facing directly towards the sensor (perpendicular, orientation head on to the sensor) is detected better than an object that is located towards the edges of the detection area or at an angle.
- **Distance:** An object closer to the sensor is better detected than one that it is further away.
- **Relative speed to sensor:** Detection is better if there is a relative speed between object and sensor.
- **Ground condition:** Objects on flat, mineral material ground are better detected than on rough or metal surfaces.
- **Environmental conditions:** Dense dust or very strong rain or snowfall will reduce the detection capability.



2 Contents

2.1 Standard System Contents

BRIGADE

Sensor
BS-9000S



4x

Sensor Fixing Kit
BS-FIX-01

2.2 Optional items (not included)

Extension Cables 2m, (6ft) 5m (16ft), 9m
(29ft) or 25m (82ft)
BS-02DCX BS-05DCX or BS-09DCX
BS-25DCSX

Adjustable Sensor Bracket
BKT-017

Network Y Cable
BS-00NYC

Low Profile Adjustable Sensor Bracket
BKT-018

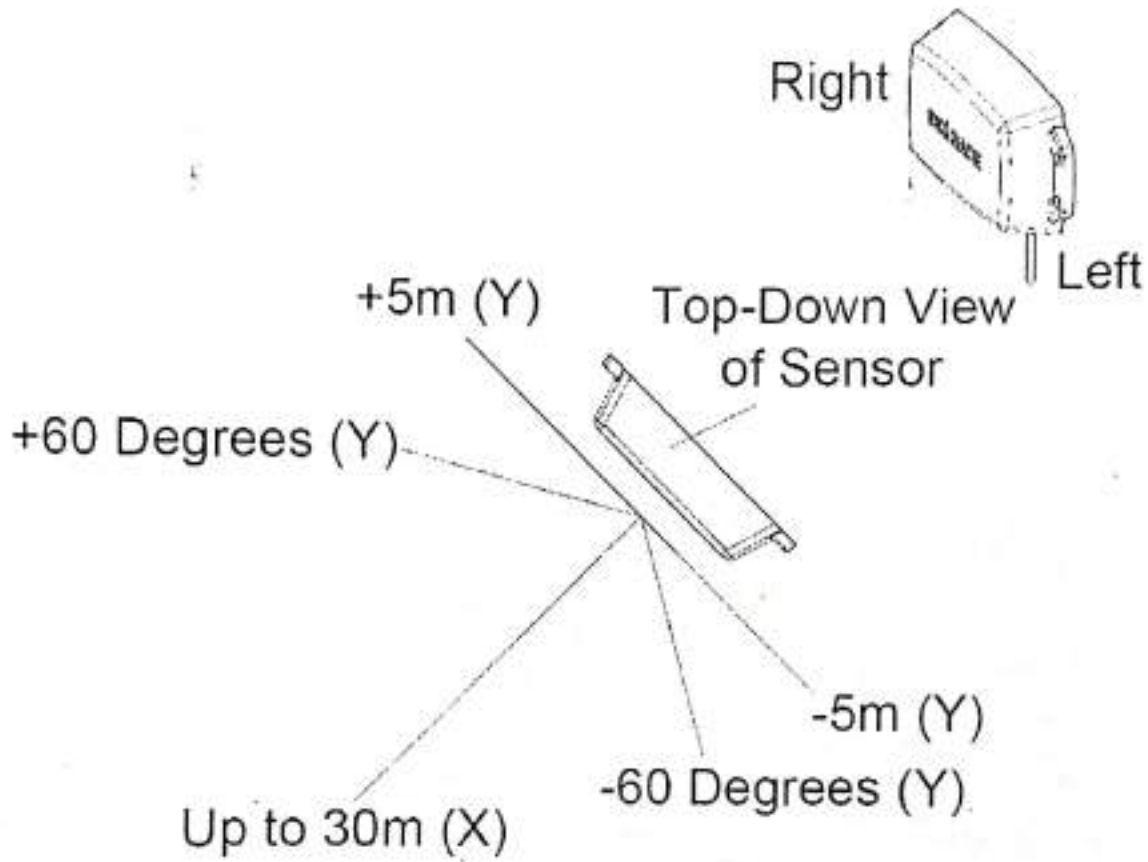
Network Power Input Cable
BS-02PIC

120Ω Network Terminator
BS-00NT



3.3 Detected Object Position Relative to Sensor

The image below illustrates the relative position of detected objects with respect to the sensor's front face



9 Specifications

Operation Characteristics

Model name	BS-9000
Detection length	30m (98 ft approx.)
Detection width	10m (33ft approx.)
Nominal tolerance	$\pm 0.25\text{m}$ / (1ft approx.)
Radar beam angle	Horizontal 120° out to the maximum designated width Vertical 12° (symmetrically perpendicular to sensor front surface)
Distance resolution	0.25m (1ft approx.). Limitations apply, see section "1.2 Object Detection Capability" for details.
Object detection	$\leq 0.5\text{second}$. Limitations apply, see section "1.2 Object Detection Capability" for details.
Power on to system ready	≤ 2.5 seconds
Maximum simultaneous objects per sensor	8
Maximum sensors per system	8

Communication between Sensor and Host

Physical layer	CAN bus 2.0A Base Frame Format
Protocol layer	Proprietary Protocol (see section 5 for details)
Max. cable length between termination points	30m (98ft approx.)

Sensor Specifications

Transmitter	Frequency Modulated Continuous Wave (FMCW)
Frequency and bandwidth	24.05GHz to 24.25GHz
Dimensions (all in mm)	217 x 129 x 50
Connector	Manufacturer Deutsch Part Number DT06-4S-CE06 (female)
Cable length	1.0m / 3ft 3in
Weight	0.7kg (including pigtail cable)
Operating temperature	-40°C to +85°C
IP protection	Sensor: IP69K (Protected from dust & strong water jets) Connector: IP68 (Protected from dust & immersion into water)
Vibration	8.3G
Shock	100G all three axes
Mounting	Four 5.2mm diameter holes on 198mm horizontal centres, and 40mm vertical centres. Unit is supplied with M5x30mm screws and M5 polymer locknuts for mounting purposes. Recommended torque is 5.6Nm, (50 inch/lbs approx.).
Bracket	Optional, adjustable for vertical angle. See section 2.2



Electrical Specification

Input Voltage Range	9 to 32 Vdc
Input Current (per sensor)	typ. 0.31A at 12Vdc / typ. 0.17A at 24Vdc
Power Supply Fusing	Dependent upon number of sensors in network. See section 4.9 for details
Vehicle Connections	System supply positive & negative.
Host Connections	CAN High & CAN Low
Voltage Protection	ISO 16750 (over and reverse voltage protection)

Approvals

CE

ECE Regulation No. 10 Revision 4 ("E-marking")

ISO 16750

ISO 13766

EN 13309

FCC



Brigade Electronics
BS-XXXX

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any change or modifications not expressly approved by the responsible party responsible for compliance could void the user's authority to operate the equipment.

EU Declaration of Conformity

Product Types:

Brigade Backsense Radar Obstacle Detection System BS-9000

Manufacturer:

Brigade House, The Mills, Station Road, South Darenth, DA4 9BD, UK

This declaration of conformity is issued under the sole responsibility of Brigade Electronics.

Objects of the declaration:

Radar sensor, cables and termination

The objects of the declaration described above are in conformity with the relevant Union harmonisation legislation: Directive 2014/53/EU

Relevant Harmonised Standards:

- EN301489-1 V2.1.1(2017-02) and EN301489-3 V2.1.0 (2017-03)
- EN300440-2 V1.4.1(2010-08) and EN300440-1 V2.1.1(2017-03)

Additional information:

- Operational Frequency Band: 24050MHz – 24250MHz
- Maximum Transmitted Power: 19.20 dBm
- This equipment should be installed and operated with a minimum distance of 20cm between the radar sensor and any human body.

Signed for and on behalf of Brigade Electronics Group PLC

11/01/2016, South Darenth, DA4 9BD, UK

David Wallin, Quality and Standards Manager



GAINWELL

Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
CIN - U74000WB2014PTC204347
Registered Office
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7th Floor, Unit No. - 705,
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Kolkata - 700091
Ph (91) (33) 6644-2000
Fax (91) (33) 6644-2000
Website www.gainwellindia.com

GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Undertaking regarding Clause No. 5. Safety Features under Part D: Equipment Specifications

Dear Sir,

We confirm that Caterpillar 60T Rear Dumper (Model 773E) is complied with all safety features and devices applicable to Dumper as per Govt. of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018 and DGMS Circular No. DGMS (Tech) Circular No. 06 of 2020 Dhanbad dated 27.02.2020.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited


Sitansu Nandi

Head - Surface Mining Sales



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Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
CIN : U74900WB2014PTC204347
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Kolkata - 700091
Ph (91) (33) 6644-2000
Fax (91) (33) 6644-2009
Website: www.gainwellindia.com

GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

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To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Safety Features and Devices as detailed in Govt. of India Gazette notification no. Z20045/01/2018/S&T (HQ) dated 01.10.2018 for Dumper

Dear Sir,

We will comply the below mentioned safety features in Caterpillar 60T Rear Dumper (Model 773E).

1.0 General Requirements:

- A. Access: **Complied**
- B. Operator's Station (Cabin): **Complied**
- C. Operator's protective Structures: **Complied**
- D. Seats: **Complied**
- E. Operator's Controls and Indicators: **Complied**
- F. Starting and Stopping System: **Complied**
- G. Steering System: **Complied**
- H. Brake System: **Complied**
- I. Visibility: **Complied**
- J. Stability: **Complied**
- K. Noise: **Complied**
- L. Warning devices and safety signs: **Complied**
- M. Protective measures and devices: **Complied**
- N. Electrical and Electronic Systems: **Complied**
- O. Fire Protection: **Complied**



2.1 Dumper:

- a) Mechanical steering locking to prevent untoward movement of steering wheel and tyre during work persons working below the cabin while engine is running. - **Complied**




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(b) Mechanical type device to protect operator in case of head to tail collision of dumpers. - Caterpillar certificate is attached stating that the feature provided on the dumper shall provide additional protection to the operator. It shall not affect the truck operation on the gradients, steerability of the truck, and loading and dumping operation of the dumper.

(c) Limiting speed device to limit the speed as per working conditions. - **Complied**

(d) Propeller shaft guard. - **Complied**

(e) Proximity warning device. - **Complied**

(f) Dump body raised position indicator with Warning. - **Complied**

(g) Retarder System in addition to Service, Parking and Dump Brakes. - **Complied**

(h) Rock ejectors for tandem tyres. - **Complied**

(i) Body raised position mechanical locking arrangement - **Complied**

(j) Engine cut off arrangement / Battery Cut-off switch on front lower portion of the Dumper - **Complied**

(k) Cabin Guard Extension / Canopy fully covering operator's cabin. - **Complied**

(l) Load Indicator. - **Complied**

(m) Auto dipping System. - **Complied**

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited


Sitansu Nandi

Head - Surface Mining Sales



AN



Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
CIN: U74900WB2011PTC204347
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GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Design requirements of safety features as detailed in DGMS Circular No. DGMS (Tech)
Circular No. 06 of 2020 Dhanbad dated 27.02.2020

Circular No.	Particulars of Safety Items	Remarks
1.0	Rear Vision Camera Consisting of points 1.1 (1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6)	Complied
2.0	Warning System for Operator Fatigue Consisting of points 2.1 (2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.6)	Complied
3.0	Auto Dipping System Consisting of points 3.1 (3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5)	Complied
4.0	Mechanical Device to avoid Head to Tail Collision of Dumpers Consisting of points 4.1 (4.1.1, 4.1.2, 4.1.3, 4.1.4)	Caterpillar certificate is attached stating that the feature provided on the dumper shall provide additional protection to the operator. It shall not affect the truck operation on the gradients, steerability of the truck, and loading and dumping operation of the dumper.
5.0	Automatic Fire Detection and Suppression System (AFDSS) for HEMM Consisting of points 5.1 (5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.1.5)	Complied
6.0	Dump Body raised position with warning Consisting of points 6.1 (6.1.1, 6.1.2, 6.1.3)	Complied
7.0	Exhaust Brake	Not Applicable for Dumper



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	Consisting of points 7.1 (7.1.2, 7.1.3, 7.1.4)	
8.0	Load Indicators Consisting of points 8.1 (8.1.1, 8.1.2, 8.1.3, 8.1.4, 8.1.5, 8.1.6)	Complied
9.0	Dump Body Stabilizers for Tippers	Not Applicable
10.0	Seat Belt and Seat Belt Reminder Consisting of points 10.1 (10.1.1, 10.1.2)	Complied
11.0	No Bump Circuit for Drills	Not Applicable
12.0	Breakout Wrench for Drills Consisting of points 12.1, 12.2, 12.3	Not Applicable
13.	Propel joystick-spring loaded Woe to return to neutral (Dead-man safety) for Drills	Not Applicable
14.0	Proximity Warning Device Consisting of points 14.1 (14.1.1, 14.1.2, 14.1.3, 14.1.4, 14.1.5, 14.1.6, 14.1.7, 14.1.8, 14.1.9)	Complied

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi

Sitansu Nandi

Head - Surface Mining Sales



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Gainwell Commodities Private Limited
(Formerly Tractors India Private Limited)
CIN: U74900WB2014PTC204347
Registered Office:
Godrej Waterside, Tower-II,
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Block-OP, Sector-V, Salt Lake,
Kolkata - 700091
Ph: (91) (33) 6644-2000
Fax: (91) (33) 6644-2008
Website: www.gainwellindia.com



GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

**Sub: Dimensions, Weights and Performance Details as per Clause No. 11.3 of PART D:
EQUIPMENT SPECIFICATIONS**

11.3 Dimensions, Weights and Performance Details

11.3.1 Dimensions

- a) Maximum overall length - 9338 mm
- b) Maximum overall width - 5539 mm
- c) Maximum height, without body - 4000 mm
- d) Maximum height, with body - 4393 mm
- e) Loading height - 4078 mm
- f) Dump height - 566 mm
- g) Discharge height - 8787 mm
- h) Maximum body depth - 2145 mm
- i) Body target area (inside length and width at top) - 23.45 m²
- j) Wheelbase - 4191 mm

11.3.2 Weight Distribution

- a) Empty vehicle
 - Front axle - 19271.2 kg
 - Rear axle - 22083.3 kg
 - Total - 41354.5 kg
- b) Loaded vehicle
 - Front axle - 33563.4 kg
 - Rear axle - 65736.6 kg
 - Total - 99300.0 kg
- c) Payload - 57945.5 kg



11.3.3 Engine

- a) Manufacturer and model - Make: Caterpillar, Model: Cat 3412E
- b) Number of cylinders - 12
- c) Bore - 137 mm
- d) Stroke - 152 mm

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- c) Displacement - 27 L
- f) ISO net power at.....r/min - 537 kW (720 hp) @ 2000 rpm as per SAE J1349
- g) Maximum torque - 3436 Nm @ 1300 rpm

11.3.4 Mechanical Drive System

11.3.4.1 Transmission

- a) Make and Model - Caterpillar and Caterpillar Power Shift
- b) Type - Automatic Power Shift Hydraulic Transmission
- c) Number of gear speeds, forward and reverse - 7 Forward and 1 Reverse
- d) Travel speeds, forward and reverse - Forward (max) - 67.8 Km/Hr and Reverse (max) - 13.1 Km/Hr

11.3.4.2 Differential

- a) Type & Make - Caterpillar and Heavy Duty Bevel Gear
- b) Ratio - 3.64:1

11.3.4.3 Final Drive

- a) Type & Make - Caterpillar Full Floating Planetary Drives
- b) Ratio - 4.8:1

11.3.5 Suspension

11.3.5.1 Front

- a) Type & Make - Independent Self-Controlled Oil Pneumatic, Caterpillar / Wipro / UT
- b) Stroke - 234 mm
- c) Load - Deflection rate, loaded and empty - 30.83 kg/mm

11.3.5.2 Rear

- a) Type & Make - Independent Self-Controlled Oil Pneumatic, Caterpillar / Wipro / UT
- b) Stroke - 149 mm
- c) Load - Deflection rate, loaded and empty - 152.38 kg/mm

11.3.6 Steering

- a) Type & Make - Caterpillar Full Hydraulic Isolated Power Steering
- b) Emergency steer method - Automatic Controlled Electric Driven Hydraulic Pump

11.3.7 Brakes

11.3.7.1 Service brakes

11.3.7.1.1 Front

- a) Type - Caliper Disc
- b) Actuating system - Air over Oil

11.3.7.1.2 Rear



- a) Type - Multiple Disc Oil Cooled
- b) Actuating system - Air over Oil

11.3.7.2 Emergency brake

- a) Type - Spring applied hydraulically released oil cooled disc brakes on rear axle - front brakes will activate as part of the secondary system, even if switched out of service system
- b) Actuating system - Air over Oil

11.3.7.3 Parking brake

- a) Type - Multiple Disc
- b) Actuating system - Air over Oil, Spring applied oil release

11.3.8 Retarder

- a) Type - Rear Disc Brakes
- b) Actuating system - Air over Oil

11.3.9 Tyres

- a) Make - Bridgestone / BKT / Michelin / JK / MRF / Goodyear / Apollo
- b) Size and type - 24.00-35 and E4 type
- c) Tread - E-4
- d) Ply rating - 48 PR
- e) Rim size - 432 mm x 889 mm (17" x 35")

11.3.10 Hydraulic System

- a) Make & model, number, flow rates, operating pressures of pumps - CAT make, 01 No., 491 LPM, 2500 psi
- b) Make & model, number, piston diameters, stroke lengths of cylinders - CAT Make, 02 Nos., 209.55 mm x 822.80 mm, 165.10 mm x 796.90 mm
- c) Relief valve operating pressures - 2500 psi

11.3.11 Electrical System

- a) Starter make and model - CAT make
- b) Starter control make and model - CAT make
- c) Alternator make and model - CAT make
- d) Batteries, numbers and rating - CAT / Reputed make, 2x12V, 190 AH
- e) Lighting details - Head Light Front - 04 Nos., Rear Tail Light - 02 Nos., Back-up Light - 01 No., Stop Light - 02 Nos.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi
Head - Surface Mining Sales



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GAINWELL**Gainwell Commosales Private Limited**

(Formerly Tractors India Private Limited)

CIN : U74900WB2011PTC204347

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Website : www.gainwellindia.com

GCPL/BCCL/MBU/60T RD/26/22-23**Date: 20.06.2022****Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022**

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Expected Life of Major Assemblies

Sir,

Expected life of major assemblies of Caterpillar make 773E rear dumper are given below.

Major Assemblies	Expected Life* (in Hours)
Body Chassis	30000-35000
Engine	11000-13000
Transmission	15000-17000
Differential	18000-20000
Final Drive	14000-16000

Note - * Expected life means life before first overhaul

The indicated expected life of major assemblies is based upon OEM recommendation and specified site conditions, the actual performance may vary based upon actual site conditions.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited
Sitansu Nandi**Head - Surface Mining Sales**

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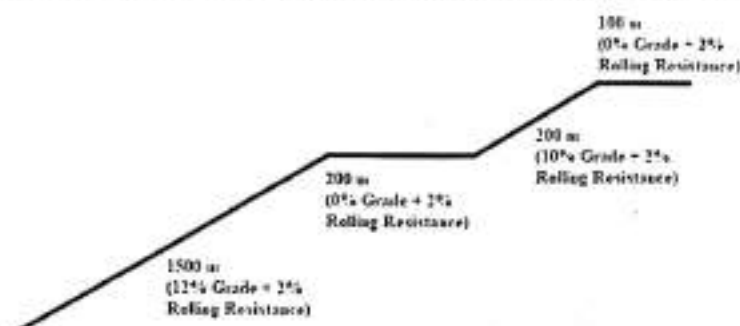
Gainwell Commosales Private Limited
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GCPL/BCCL/MBU/60T RD/26/22-23

Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

Sub: Calculations determining the time for the operating cycle specified in clause 11.3.12



Cycle Time Calculation						
Dumper in Loaded Condition						
Sl. No.	Distance (in Meter)	Grade Resistance (GR)	Rolling Resistance (RR)	Effective Grade (GR + RR)	Speed (km/hr)	Time (in Min)
1	1500	12%	2%	14%	12	7.50
2	200	0%	2%	2%	62	0.19
3	200	10%	2%	12%	14	0.86
4	100	0%	2%	2%	62	0.10
Total Time (in Min)						8.65
Dumper in Empty Condition						
Sl. No.	Distance (in Meter)	Grade Resistance (GR)	Rolling Resistance (RR)	Effective Grade (GR + RR)	Speed (km/hr)	Time (in Min)
1	100	0%	2%	2%	66	0.09
2	200	-10%	2%	-8%	49	0.24
3	200	0%	2%	2%	66	0.18
4	1500	-12%	2%	-10%	36	2.50
Total Time (in Min)						3.02
Fixed Time to be added (in Min) (Based on Assumption)						6.00
Total Operating Cycle Time (in Min)						17.67

Note: 1. The Calculation are based on Rimpull and Retarding Performance Curve of Caterpillar 773E rear dump truck
 2. Fixed Time includes Loading Time, Dumper Spotting Time and Unloading Time.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitanu Nandi
 Head - Surface Mining Sales



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Gainwell Commosales Private Limited

(Formerly Tractors India Private Limited)

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GCPL/BCCL/MBU/60T RD/26/22-23

Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Details of Retrofitted Items to be fitted at site

Dear Sir,

The following items will be supplied locally by Gainwell Commosales Private Limited (GCPL) and will be retrofitted at site by GCPL during erection and commissioning.

- Automatic Fire Detection and Suppression System (AFDSS)
- Automatic Lubrication System
- Tool Kit
- Proximity Warning Device
- Rear Vision System
- Portable Fire Extinguisher
- Retro Reflective Reflector
- Operator Fatigue Monitoring System

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited


Sitansu Nandi
Head - Surface Mining Sales



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GAINWELL

Gainwell Commosales Private Limited
 (Formerly Tractors India Private Limited)
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GCPL/BCCL/MBU/60T RD/26/22-23
 Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
 General Manager (MM)
 Bharat Coking Coal Ltd.,
 Koyla Bhawan,
 Dist. - Dhanbad,
 Jharkhand - 826005

Additional Information under PART D: Equipment Specifications

Sl. No.	Clause No.	Gainwell Comments
1	4.2.1 Transmission	Caterpillar transmission are designed in a manner that 'A' frame of the rear dump truck protects itself the transmission. Apart from the ground clearance of the transmission is very high. Hence separate guard is not required. Globally all 60T rear dump trucks are working with the same system from its inception.
2	4.11 Fuel Tank	Fuel tank are lockable and secured in such a way that no hinge is required and not to be fitted. Globally all 60T rear dump trucks are working with the same system from its inception.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi

Head - Surface Mining Section



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Gainwell Commosales Private Limited

(Formerly Tractors India Private Limited)

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Website : www.gainwellindia.com

Date: 19.07.2022

Ref No. GCPL/BCCL/MBU/60T RD/26/22-23, Dated 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

Your e-Confirmatory document list uploaded on e-Procurement portal of Coal India Ltd.,
Dated 15.07.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad, Jharkhand - 826005

Sub: Clarification regarding clause no. 4.13 i.e. Automatic Fire Detection and Suppression System or AFDSS of Part-D of section-VI, Technical Specification of NIT

Dear Sir,

We shall submit a valid test certificate for AFDSS (valid as on the date of commissioning of the equipment at site) at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited



Sitansu Nandi

Head - Surface Mining Sales



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GAINWELL**CAT**

Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
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Website: www.gainwellindia.com

Date: 19.07.2022

Ref No. GCPL/BCCL/MBU/60T RD/26/22-23, Dated 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

Your e-Confirmatory document list uploaded on e-Procurement portal of Coal India Ltd.,
Dated 15.07.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad, Jharkhand - 826005

**Sub: Clarification regarding clause no. 4.14 i.e. Fire Extinguisher of Part-D of section-VI,
Technical Specification of NIT**

Dear Sir,

We shall submit a valid test certificate for Fire Extinguisher (valid as on the date of commissioning of the equipment at site) at the time of supply of equipment along with other documents, for fire extinguisher including Materials and Chemicals to be used in fire extinguisher from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS Circular No. DGMS(Approval) CircularNo.02 dtd. 08th July 2013.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi

Head - Surface Mining Sales



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Gainwell Commosales Private Limited
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GCPL/BCCL/MBU/60T RD/26/22-23
 Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
 General Manager (MM)
 Bharat Coking Coal Ltd.,
 Koyla Bhawan,
 Dist. - Dhanbad,
 Jharkhand - 826005

Sub: Details of Major Bought-out Assemblies and Sub-Assemblies

Dear Sir,

The major supplier of brought out assemblies are as below:

- **CKD Components** : Caterpillar, USA
- **Engine** : Caterpillar / CIPL
- **Cylinders** : Wipro / Usha Telehoist / CIPL / Cat make with cat seals
- **Suspension** : Caterpillar/ Wipro / UT
- **Tires** : Bridgestone / BKT / Michelin / JK / MRF / Goodyear / Apollo
- **Auto Lube** : Lincoln Helios (India) Limited / Flow Matics
- **Auto Fire Suppression System** : Southern Electronics Pvt. Ltd. / Associate Engineers
- **Fire Extinguisher** : Southern Electronics Pvt. Ltd. / Associate Engineers

All other major components not identified / mentioned herein are manufactured by the M/s Caterpillar, i.e. the components are propriety of Manufacturer's firm.

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi
 Head - Surface Mining Sales



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Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Details of nearest Depot / Warehouse and Service Facility

Major Depot / Warehouse	Service Facility	Contact Number	No. of Engineers
Asansol Plot No. H-I ADDA Industrial Area, NH-2 Bye Pass Road, Asansol 713 305, Dist. Burdwan, West Bengal	Component Rebuild Center	+91 341 660 5000	Approx. 50
Dhanbad Kusum Vihar Colony, P.O. Koyla Nagar, Dhanbad, 826 005, Jharkhand	Service / Spare Parts Support	+91 326 223 0743	Approx. 25
Ranchi Village: Kedai, Thana No. 165, Chakru Chowk, P.S. Ranchi - Sadar, (Near BIT Mesra Chowk), Dist. Ranchi 835 217, Jharkhand	Service / Spare Parts Support	+91 92343 01561	Approx. 25
Bhubaneswar Plot No. 2132 / 5140 BJB Nagar, (Near Gautam Petrol Pump), Bhubaneswar 751 014, Odisha	Service / Spare Parts Support	+91 674 243 3831	Approx. 25

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi
Head - Surface Mining Sales



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Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Details of Erection and Commissioning Programme

Dear Sir,

The detail erection and commissioning programme for Caterpillar 60T Rear Dump Truck (model: 773E) are as given below.

Mounting of tyres	- 1 day
Mounting of cab and connection installation	- 1 day
Body guards welding & mounting	- 1 day
Checking of torque, oil level checks and no load test	- 1 day
Retro fitment of AFSS & Auto lube System	- 2 days
Load trials & delivery	- 1/2 day

Man Power Involvement - 4 nos. (2 nos. skilled + 2 semiskilled)

Tools and facility -

- Crane - 25 T & 5T (if Forklift not available) / Forklift - 3T / OH Crane.
- Torque Multiplier - 1000 -2500 ft-lbs. (Output capacity).
- Pneumatic Gun with Adapter, Socket - 1" drive, Heavy Duty application.
- Welding Machine + welder - Availability - for Tyre guard, Cab guard etc. welding.
- Hand tools, lifting tools and tackles (like ceiling, rope, pry bar, hammer etc)

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi

Head - Surface Mining Sales



[Signature]

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Gainwell Commosales Private Limited
(Formerly Tractors India Private Limited)
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GCPL/BCCL/MBU/60T RD/26/22-23
Date: 20.06.2022

Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

To,
General Manager (MM)
Bharat Coking Coal Ltd.,
Koyla Bhawan,
Dist. - Dhanbad,
Jharkhand - 826005

Sub: Schedule of all necessary Oils, Lubricants and Fluids

Sir,

Schedule of all necessary oils, lubricants and fluids for Caterpillar make 773E rear dumper are given as follows considering 4,000 hours of operation per annum.

Schedule of all necessary Oils, Lubricants and Fluids					
Compartment or System	Oil Viscosities	Quantity in Litres	Changing intervals (Hours)	Estimated Annual Consumption (Litres)	Estimated Annual Consumption (Barrel)
Engine	15W40 CI4+	87	500	700	4
Transmission & TC	SAE30	66	1000	264	2
Hoist, Brake & Hydraulic	SAE10	147	1000	588	3
Steering System	SAE10	42	1000	168	1
Differential and Final Drives	FDAO60	168	4000	168	1
Front wheel	FDAO60	9	500	70	1
Coolant	ELC	218	6000	145	1
Grease (kg)	EP2	15	250	240	2

Thanking you.

Yours faithfully,

For Gainwell Commosales Private Limited

Sitansu Nandi
Sitansu Nandi

Head - Surface Mining Sales



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e-Tender No. BCCL/Pur/422011/60T Dumper/OTE-RA/22-23/24, Dated 01.06.2022

Annexure-6

PRE CONTRACT INTEGRITY PACT**General**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made 20th day of June 2022, between on one hand, BCCL (hereinafter called the "BUYER / Principal", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s. Gainwell Commosales Private Limited represented by Shri Saikat Bardhan, Group Company Secretary & Group Head – Legal (hereinafter called the "BIDDER/Seller/Contractor" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to Supply, Installation and Commissioning of 60 Ton Rear Dumper along with Spares and Consumables for 12 months of warranty period from the date of commissioning of the Equipment and thereafter Spares & Consumables for 48 months guaranty period and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Central Public Sector Unit.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Section I -Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles. -

a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand; take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

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b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

c. Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/ PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

(1) The Bidder(s) / Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.

a. The Bidder(s) / Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidder(s) / Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.

c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s) / Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s) / Contractors(s) of foreign origin shall disclose the name and address of the Agents/ representatives in India, if any. Similarly, the Bidder(s) /Contractors(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/ Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/ representative have to be in Indian Rupees only. *The guidelines and terms and conditions for Indian agents of Foreign supplier shall be as per the provisions in the NIT.*

e. The Bidder(s)/ Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

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f. Bidder(s) / Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.

(2) The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3: Disqualification from tender process and exclusion from future contracts

If the Bidder, before contract award, has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

(1) If the Bidder / Contractor / Supplier has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is also entitled to exclude the Bidder / Contractor / Supplier from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case. In particular, the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

(2) A transgression is considered to have occurred if the Principal, after due consideration of available facts and evidences within his / her knowledge concludes that there is a reasonable ground to suspect violation of any commitment listed under Section 2 i.e. "Commitments of Bidder(s) / Contractor(s)".

(3) The Bidder accepts and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

(4) If the Bidder / Contractor / Supplier can prove that he has restored / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

Section 4 - Compensation for Damages

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5 - Previous transgression

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(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6 - Equal treatment of all Bidders / Contractors / Subcontractors

(1) In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violating Bidder(s) / Contractor(s) / Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.


Section 8 - Independent External Monitor

(1) The Principal appoints competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his/ her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him / her to treat the information and documents of the Bidders/Contractors as confidential. He/ she reports to the CMD, BCCL.

(3) The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/ her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.

(4) The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non-Disclosure of Confidential Information' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform CMD, BCCL and recuse himself / herself from that case.



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(5) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/ she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(7) The Monitor will submit a written report to the CMD, BCCL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the Monitor has reported to the CMD, BCCL, a substantiated suspicion of an offence under relevant IPC/ PC Act, and the CMD, BCCL has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by CMD, BCCL.

Section 10 - Other provisions

(1) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(2) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(3) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(4) Issues like Warranty / Guarantee etc. shall be outside the purview of IEMs.

(5) In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.

Section 11- Facilitation of Investigation



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In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

Section 12- Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

Section 13 - Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

(For & On behalf of Bidder/ Contractor)

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Saikat Bardhan
Group Company Secretary & Group Head – Legal
Gainwell Commosales Pvt. Ltd.
Date: 20.06.2022

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Annexure-Q

Security Deposit Bank Guarantee Proforma

M/s. Bharat Coking Coal Ltd.
Koyla Bhawan
Koyla Nagar
Dhanbad - 826005

Re : Bank Guarantee in respect of Notification of Award/Purchase order vide no.....dated...
between (Name of Purchaser Company) and (Name of
Supplier Company)

Messers a Company Firm having its office at No.
(hereinafter called the Contractor) has received the Notification of Award/Purchase order
vide no.....dated (hereinafter called 'the said agreement') with (Name of the
Purchaser Company) (hereinafter called 'the Company') to supply
.....stores/materials amounting to Rs on the terms and
conditions contained in the said Notification of Award/Purchase order.

The(Name of the Bank) (hereinafter called 'the Bank') having its Office
at..... has at the request of the Contractor agreed to give the guarantee as
hereinafter contained.

We(Name of the Bank) do hereby unconditionally agree with the
Company that if the Contractor shall in any way fail to observe or perform the terms and
condition of the said agreement or shall commit any breach of its obligations thereunder, the
bank shall on demand and without any objection or demur pay to company, the said sum of
Rs..... regarding repayment of the said sum of Rs or any of them
including the term for payment of interest for delay in deliveries or shall commit any breach
of its obligations thereunder, the Bank shall on demand and without any objection or demur
pay to the Company the said sum of Rs or any portion thereof without
requiring the company to have recourse to any legal remedy that may be available to it to
compel the Bank to pay the same or calling on the company to compel such payment by the
contractor.

Any such demand shall be conclusive as regards the liability of the Contractor to the
company and as regards the amount payable by the Bank under this guarantee. The Bank
shall not be entitled to withhold payment on the ground that the contractor has disputed its
liability to pay or has disputed the quantum of the amount or that any arbitration proceeding
or legal proceeding is pending between the Company and the contractor regarding the claim.

We, the Bank- further agree that the guarantee shall come into force from the date hereof and
shall remain in full force and effect till the period that will be taken for the performance of
the said agreement which is likely to be the day of but if the period of agreement is
extended either pursuant to the provisions in the said agreement or by mutual agreement
between the contractor and the Company the Bank shall renew the period of the guarantee
failing which it shall pay to the Company the said sum of Rs..... or such lesser amount
out of the said sum of Rs..... as may be due to the Company and as the Company
may demand.

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This guarantee shall remain in force until the dues of the Company in respect of the said sum of Rs..... fully satisfied and the company certifies that the agreement has been fully carried out by the contractor and discharges the guarantee.

The Bank further agrees with the Company that the Company shall have the fullest liberty without the consent of the Bank and without affecting in any way the obligations hereunder to vary any of the terms and conditions of the said agreement or to extend the time for performance of the said agreement from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the contractor and to forbear to enforce any of the terms and conditions relating to the said agreement and the Bank shall not be relieved from its liability by reason of such failure or extension being granted to the contractor or through any forbearance, act or omission on the part of the Company or any indulgence by the Company to the contractor or any other matter or thing whatsoever which under the law relating to sureties would but for this provisions have the effect of relieving or discharging the Guarantor.

The Bank further agrees that in case this guarantee is required for a longer period and it is not extended by the Bank beyond the period specified above, the Bank shall pay to the Company the said sum of Rs or such lesser sum as may then be due to the Company and as the Company may require.

Notwithstanding anything herein contained the liability of the Bank under this guarantee is restricted to Rs..... only. The guarantee shall remain in force till the day of and unless the guarantee is renewed or a claim is preferred against the Bank within the validity period and/or the claim period from the said date, all rights of the company under this guarantee shall cease and the Bank shall be released and discharged from all liability hereunder except as provided in the preceding clause.

The Bank has under its constitution power to give this guarantee and (Name of the person) who has signed it on behalf of the Bank has authority to do so.

Dated this.....Day of.....20.....
Place.....
authorized person

Signature of the

For and on behalf of the Bank

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