



ISO 9001 Company

Heavy Engineering Corporation Limited
(A Govt. of India Enterprise)
Heavy Machine Building Plant
CRANE EXECUTION DIVISION

Tender Enquiry No HMB/CED/PUR/99/03/09/008/LTE-013

Dtd 21.11.09

We request you to submit your most competitive offer for the following items as per the given schedule & Technical specification.

Sl no.	Description	Total Qty.
1	DCEM Brakes With Brake Rectifier Panels along with commissioning spares	As per Technical Specification DAP NO 102/09M

Note:

1. The items shall be as per the technical specification (DAP NO 102/09M) which is enclosed here.
2. Makes: - Electromag, BCH Electrics & Storm Kraft

Schedule of Tender receipt by 07.12.09 up to 1 PM

Opening of Tender on 07.12.09 at 3 PM

Terms & Conditions

1. The rate quoted shall be Inclusive of all packing & forwarding. Freight charges to be mentioned separately.
2. The Price quoted by the tenderer should be exclusive of Sales Tax / VAT. The rate and nature of sales tax applicable should be shown separately. Tax will be paid to the seller at the rate at which it is liable to be assessed or has actually been assessed on the date of supply provided the transaction of sale is legally liable to sales tax and within the delivery period. Any change on the taxes & duty structure beyond the delivery period will not be considered by HEC.
3. The rates quoted must be firm and the offers made must remain open for acceptance for three months from the due date of opening of the tender.
4. Quotations erased or over written are likely to be rejected unless all corrections are authenticated with the tenderers signature.
5. Delivery date offered must be specified and guaranteed.
6. Payment-Full payment will be made after 30 days of the receipt of supplies at destination duly inspected.
7. Full particulars specifications, literature and / or drawing wherever applicable should be submitted along with the quotation. The brand and 'Make' name must be indicated.
8. The Corporations does not pledge itself to accept the lowest or any tender and reserves to itself the right of accepting the whole or any part of tender or portion of the quantity offered and you shall supply the same at the rate quoted.



ISO 9001 Company

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Heavy Machine Building Plant CRANE EXECUTION DIVISION

9. Supplies will be subject to inspection by our Inspection wing/or Inspection agencies prescribed by us.
10. Order placed as a result of this tender will be subject to the Corporation's General Terms and Conditions of contract, which can be down loaded from our web site www.hecltd.com.
11. Corporation reserves the right to call for and examine at any time the books of accounts and other documents and papers of the firm for the purpose of ascertaining whether any excess payments has been made or the firm likely to be received/ received undue benefit out of execution of the particular contract.
12. Earnest Money- Earnest money to the extent of 2% of the total value will be to deposited by demand draft on the State Bank of India, Ranchi Hatia Branch, in favour of Heavy Engineering Corporation Ltd. Ranchi-4.
13. Security Deposit- The firm has deposit a sum equal to a 5 percent of the total value of the contract as Security Deposit for the due fulfillment of the contract within 14 days after placement of order. Failing this the contract will be cancelled at the risk & expense of the supplier. This will be in addition to other remedies available to the purchaser for the successful completion of the contract. The validity of the security deposit shall be up to the receipt of the last consignment.
14. Delivery- The time for and the date of delivery of the Stores stipulated in the acceptance of tender shall be deemed to be the essence of the contract and delivery must be completed not later than the dates specified therein. Otherwise:
 - (a) The purchaser to recover from the contractor a sum of 0.5 % per week (completed week) of the price any stores (up to maximum 10%) as liquidated damages, which the contractor has failed to deliver as aforesaid or
 - (b) The purchaser may procure the un deliver stores/ similar items from elsewhere, without notice to the contractor at the risk of the contractor without canceling the contract in respect of the consignment not yet due for delivery or,
 - (c) To cancel the contract or a portion thereof.
15. Income Tax Clearance Certificate- All tenderers shall submit along with their tender an Income Tax Clearance Certificate duly countersigned by the Income Tax Officer of the Circle concerned under the seal of the office. Copy of permanent A/c no. (PAN) (of income tax) to be enclosed with the bid.
16. There is no obligation on our part to accept delayed / late tenders received after the due date of opening and there are liable to be summarily rejected.
17. The rates quoted shall also be inclusive of embossing on the material. The Ownership namely "HMBP" at a predominant place of the material to a size/thickese depending upon the volumes of the material.
18. Performance Bank guarantee- Performance Bank guarantee amounting to 10% of the basic price of the contract is to be submitted in HEC's Format issued by any Nationalized Bank (Preferably State Bank of India) valid till guarantee period.

Page 2 of 15



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

DAP NO 102/09M

1. TECHNICAL SPECIFICATIONS

1.1 General: -

1.1.1

Work Order No.	Crane capacity	Qty.	Ambient
8102.002/003.150	20+20T X 32.4M	2	55°C
8102.004.150	60+60T X 12.1M	1	55°C
8102.005/006.150	50/10T X 13.9M	2	55°C
8102.007.150	20/10T X 20.6M	1	55°C
8102.008.150	20/10T X 23.65M	1	55°C
8102.009/010.150	100/30+5T X 33M	2	60°C
8102.011.150	30/5T X 33M	1	60°C

1.1.2 The brakes shall follow the general requirements of IPSS: 1.08.005-86 and IPSS: 1.10.009-88 & also GS-01, GS-03, GS-05, GS-09,& GS-13 of GTS of BSL/MECON

1.1.3 The brakes & rectifier panel with resistors shall be suitable for the following ambient conditions.

Ambient Temp. : Pl. refer Cl. 1.1.1

Humidity : 100%

1.1.4 Painting shall be as per IPSS: 1.07.064.03.

1.2 Specification of Brake: -

1.2.1 The brake shoes shall be of hinged type. Brake levers shall be forged or fabricated or of cast steel. Hinged pins shall be of hardened alloy steel and shall be lubricated. The pins shall have steel bushes at bearing points. The rubbing surfaces of the brakes shall be asbestos base material smooth and free from defects.

The brake lining shall be effectively & permanently secured to the brake shoes during the effective life of the lining and shall be protected from water, grease, oil & other adverse effects. The temperature of rubbing surfaces shall not exceed 124°C. The



ISO 9001 Company

Heavy Engineering Corporation Limited

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Heavy Machine Building Plant

CRANE EXECUTION DIVISION

brakes shall have a simple and accessible means of adjustment to compensate for wear and removal of brake lining. Necessary locking devices at the brake level shall be provided.

1.2.2 Electro-Magnet : -

The DC electromagnet shall be shunt type, suitable for operation from 415V, 50 Hz, single-phase supply with rectifier, permanent resistance & forcing resistance.

- 1.2.2.1 Type of Electromagnet : DC
Electromagnet
- 1.2.2.2 No. of operation per hour : 600
- 1.2.2.3 Coil winding with flexible lead : Copper
- 1.2.2.4 Coil insulation : Epoxy filled Class-F insulation.
- 1.2.2.5 Max. Permissible temp. rise by resistance method : Limited to 85°C
- 1.2.2.6 C.D.F. (based on 10 min. duty Cycle) : 100%
- 1.2.2.7 The electromagnet shall be able to pick up at 80% of rated voltage with the spring set for rated braking torque and shall not over heat at 110% rated voltage.
- 1.2.2.8 The terminals shall be suitable for termination of 4 sq. mm conductor.
- 1.2.2.9 A suitable lever arrangement shall be provided for manual release of the brake.

1.3 Technical Specification Of Rectifier Panel

- 1.3.1 Supply Voltage : 415V, $\pm 10\%$, 50Hz $\pm 5\%$, Single phase
- 1.3.2 Control Supply : 240V, $\pm 10\%$, 50Hz $\pm 5\%$, Single phase
- 1.3.3 The panel shall consist of selenium bridge rectifier for coil load. It shall be suitable for taking switching in-rush current and repeated voltage surges during opening of the coil.
- 1.3.4 The panel shall be wired up with suitable HR-PVC single core copper cable with stranded conductors of size minimum 2.5 sq. mm.
- 1.3.5 The panel consisting of bridge rectifiers, relays, contactors, switches, fuses etc. shall have single gasketed door having IP-54 enclosure & shall be made up of 2 mm thick CRCA sheet steel.
- 1.3.6 The permanent and forcing resistor shall be housed in a separate sheet steel enclosure with louvered side covers and shall be



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

mounted on top of the rectifier panel thus making the panel and resistance box as one complete unit. The degree of protection of resistor housing shall be IP- 33.

1.3.7 One no. auxiliary relay for monitoring healthiness of fuses at the incoming side shall be provided.

1.3.8 The rectifier panel is to be complete with cable glands. Overall dia of cables shall be furnished to the successful tenderer for selection of proper cable gland.

1.3.9 Devices used in the rectifier panel shall be of following make.

Contactors	ABB, SPRECHER,L&T,SCHNEIDER,SIEMENS,GE POWER
Aux. Relay	ABB,BCH,L&T,SCHNEIDER,GE POWER,SIEMENS
Timers (Electronics)	ABB,BCH,L&T,GE POWER,SIEMENS
HRC fuse	AREVA,HAVELLS,L&T,SIEMENS,BUSMAN,GEPOWER INDO-ASIAN
MCB	HAVELLS, INDOKUPP, MDS LEGRAND,S&S, SCHNEIDER STANDARD,GEPOWER,DATAR
Terminal blocks	CONNECT WELL, ESSEN-DINKY,PHONIX,WAGO,LAPP

2. Scope of Supply: -

2.1.1 DC Brakes :-

A. 20+20T X 32.4M

Sl. no.	Item code.	Brake size in mm	Qty./ Crane	Total Qty.
1	5534104123	DC shunt brake - Ø400 mm Mechanism - MH Max. Torque -138Kg-m Set Torque-99.18 Kg.-m	2	4
2	5534104124	DC shunt brake-Ø250 mm Mechanism-MCT Max. Torque -27Kg-m Set Torque – 13.6 Kgm	1	2
3	5534104125	DC shunt brake – Ø300mm Mechanism -LT	2	4



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

		Max. Torque -76 Kg-m Set Torque - 48.99 Kg-m		
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B. 60+60T X 12.1M

Sl. no.	Item code.	Brake size in mm	Qty./ Crane	Total Qty.
1	5534104125	DC shunt brake - Ø300 mm Mechanism - MH-Trolley-I Max. Torque -76 Kg-m Set Torque-.63.51 Kg.-m	4	4
2	5534104125	DC shunt brake-Ø300 mm Mechanism-MH-Trolley-II Max. Torque - 76 Kg-m Set Torque- 63.51Kg.m	4	4
3	5534104126	DC shunt brake-Ø160 mm Mechanism-CT-Trolley-I Max. Torque - 7.6Kg-m Set Torque -3.01Kgm	1	1
4	5534104126	DC shunt brake - Ø160mm Mechanism -CT-Trolley-II Max. Torque -7.6Kg-m Set Torque - 3.01Kg-m	1	1
5	5534104125	DC shunt brake-Ø300 mm Mechanism-LT Max. Torque - 76Kg-m Set Torque -35.11Kgm	4	4

C. 50/10T X 13.9M

Sl. no.	Item code.	Brake size in mm	Qty./ Crane	Total Qty.
1	5534104123	DC shunt brake -Ø 400 mm Mechanism - MH Max. Torque - 138Kg-m Set Torque-.Kg.-91.84m	2	4
2	5534104125	DC shunt brake-Ø300 mm Mechanism-AH Max. Torque -76Kg-m Set Torque- 36.48 Kg.m	1	2
3	5534104124	DC shunt brake-Ø250 mm Mechanism-MCT	1	2



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

		Max. Torque - 27Kg-m Set Torque - 17.37Kgm		
4	5534104125	DC shunt brake - Ø300mm Mechanism -LT Max. Torque - 76Kg-m Set Torque - 31.03Kg-m	2	4

D. 20/10T X 20.6M

Sl. no.	Item code.	Brake size in mm	Qty./ Crane	Total Qty.
1	5534104125	DC shunt brake - Ø300 mm Mechanism - MH Max. Torque -76Kg-m Set Torque-.53.89Kg.-m	2	2
2	5534104127	DC shunt brake-Ø200 mm Mechanism-MCT Max. Torque - 13Kg-m Set Torque - 8.45Kgm	1	1
3	5534104124	DC shunt brake - Ø250mm Mechanism -LT Max. Torque - 27Kg-m Set Torque - 19.89 Kg-m	2	2

E. 20/10T X 23.65M

Sl. no.	Item code.	Brake size in mm	Qty./ Crane	Total Qty.
1	5534104125	DC shunt brake - Ø300 mm Mechanism - MH Max. Torque -76Kg-m Set Torque-.26.94Kg.-m	4	4
2	5534104127	DC shunt brake-Ø200 mm Mechanism-MCT Max. Torque -13Kg-m Set Torque - 7.25Kgm	1	1
3	5534104124	DC shunt brake - Ø250mm Mechanism -LT Max. Torque -27Kg-m	2	2



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

		Set Torque – 20.94Kg-m		
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F. 100/30+5T X 33M

Sl. no.	Item code.	Brake size in mm	Qty./ Crane	Total Qty.
1	5534104136	DC shunt brake - Ø500 mm Mechanism - MH Max. Torque -277Kg-m Set Torque- 241Kg.-m	2	4
2	5534104125	DC shunt brake-Ø300 mm Mechanism-AH Max. Torque -76Kg-m Set Torque- 72.98 Kg.m	2	4
3	5534104124	DC shunt brake-Ø250 mm Mechanism-MCT Max. Torque -27Kg-m Set Torque – 18.73 Kgm	1	2
4	5534104125	DC shunt brake - Ø300mm Mechanism -LT Max. Torque -76Kg-m Set Torque – 25.30Kg-m	4	8

G. 30/5T X 33M

Sl. no.	Item code.	Brake size in mm	Qty./ Crane	Total Qty.
1	5534104125	DC shunt brake - Ø300 mm Mechanism - MH Max. Torque -76Kg-m Set Torque- 71.85Kg.-m	2	2
2	5534104125	DC shunt brake-Ø300 mm Mechanism-AH Max. Torque -76Kg-m Set Torque- 29.85Kg.m	1	1
3	5534104127	DC shunt brake-Ø200 mm Mechanism-MCT Max. Torque - 13Kg-m Set Torque –8.76 Kgm	1	1
4.	5534104125	DC shunt brake – Ø 300mm Mechanism -LT	2	2



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

		Max. Torque – 76Kg-m Set Torque –31.69 Kg-m		
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Brake Rectifier Panel: -

A. 20+20T X 32.4M

Sl. no.	Item code	Description	Qty./ Crane	Total Qty.
1	5534104128	For Simultaneous operation of 2 nos. of DC brakes of dia.- 400mm for MH	1	2
2	5534104129	For operation of 1 no. of DC brake of dia.- 250 mm for MCT	1	2
3	5534104130	For Simultaneous operation of 2 nos. of DC brake of dia.- 300 mm for LT	1	2

B. 60+60T X 12.1M

Sl. no.	Item code	Description	Qty./ Crane	Total Qty.
1	5534104130	For Simultaneous operation of 2 nos. of DC brakes of dia.- 300mm for MH-Trolley-I	2	2
2	5534104130	For Simultaneous operation of 2 nos. of DC brakes of dia.- 300mm for MH-Trolley-II	2	2
3	5534104131	For operation of 1 no. of DC brake of dia.- 160 mm for CT-Trolley-I	1	1
4	5534104131	For operation of 1 no. of DC brake of dia.- 160 mm for CT-Trolley-II	1	1
5	5534104130	For Simultaneous operation of 2 nos. of DC brakes of dia.- 300 mm for LT	2	2



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

C. 50/10T X 13.9M

Sl. no.	Item code	Description	Qty./ Crane	Total Qty.
1	5534104128	For Simultaneous operation of 2 nos. of DC brakes of dia.- 400mm for MH	1	2
2	5534104132	For operation of 1 no. of DC brakes of dia.- 300mm for AH	1	2
3	5534104129	For operation of 1 no. of DC brake of dia.- 250 mm for MCT	1	2
4	5534104130	For Simultaneous operation of 2 nos. of DC brake of dia.- 300 mm for LT	1	2

D. 20/10T X 20.6M

Sl. no.	Item code	Description	Qty./ Crane	Total Qty.
1	5534104130	For Simultaneous operation of 2 nos. of DC brakes of dia.- 300mm for MH	1	1
2	5534104133	For operation of 1 no. of DC brake of dia.- 200 mm for MCT	1	1
3	5534104134	For Simultaneous operation of 2 nos. of DC brake of dia.- 250 mm for LT	1	1

E. 20/10T X 23.65M

Sl. no.	Item code	Description	Qty./ Crane	Total Qty.
1	5534104130	For Simultaneous operation of 2 nos. of DC brakes of dia.- 300mm for MH	2	2
2	5534104133	For operation of 1 no. of DC brake of dia.- 200 mm for MCT	1	1
3	5534104134	For Simultaneous operation of 2 nos. of DC brake of dia.- 250 mm for LT	1	1



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

F. 100/30+5T X 33M

Sl. no.	Item code	Description	Qty./ Crane	Total Qty.
1	5534104135	For Simultaneous operation of 2 nos. of DC brakes of dia.- 500mm for MH	1	2
2	5534104130	For Simultaneous operation of 2 nos. of DC brakes of dia.- 300mm for AH	1	2
3	5534104129	For operation of 1 no. of DC brake of dia.- 250 mm for MCT	1	2
4	5534104130	For Simultaneous operation of 2 nos. of DC brake of dia.- 300 mm for LT	2	4

G. 30/5T X 33M

Sl. no.	Item code	Description	Qty./ Crane	Total Qty.
1	5534104130	For Simultaneous operation of 2 nos. of DC brakes of dia.- 300mm for MH	1	1
2	5534104132	For operation of 1 no. of DC brakes of dia.- 300mm for AH	1	1
3	5534104133	For operation of 1 no. of DC brake of dia.- 200 mm for MCT	1	1
4	5534104130	For Simultaneous operation of 2 nos. of DC brake of dia.- 300 mm for LT	1	1

2.1.3 Spares:-

2.1.3.1 Commissioning Spares per crane

List of commissioning Spares per crane:

Sl. no.	Item description	Qty.
1	Power Contactor Coil	1 no. of each type



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

2	Auxiliary contactor	1 no. of each type
3	Pneumatic Timer	1 no. of each type
4	Power fuse	5% of each rating
5	Control fuse	10% of total quantity

2.1.3.2 Essential Spares – Item wise prices for these spares are to be furnished.

Supply of these spares is not included in the scope of supply.

List of essential Spares for two years of operation per crane:

Sl. no.	Item description	Qty.	% of total equipment
1	Power Contactors	1 no. of each rating	-
2	Fixed and moving contacts for Contactor of each type	Minimum 1 set for each	25%
3	Contact set for auxiliary contactors	Minimum 1 set for each	25%
4	Coils for Power Contactor	Minimum 2 nos. for each type	50%
5	Coils for Auxiliary Contactor	Minimum 1 no. for each type	25%
6	Pneumatic Timers	Minimum 2 nos	15%
7	Auxiliary Contactor	Minimum 1 no. of each type	25%
8	Fuses		



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

	a) Power circuit fuses	Minimum 1 no. of each rating	100%
	b) Power circuit fuse base	Minimum 1 no. of each type	25%
	c) Control fuse	Minimum 4 nos. of each rating	25%
	d) Control fuse base	Minimum 1 no. of each type	25%
9	Coils for brake of each type	Min 1 No of each type	100%
10	Brake lining with rivets	1 no. each size	

3.0 Testing :-

Each brake shall be subjected to a static load test for 10 min. by applying 125 percent of the rated torque.

4.0 Drgs. and documents :-

i) Within two weeks of order placement 10 copies of the following drgs. are to be furnished for approval by our customer / their consultant :-

- a) G. A. drg. of brake.
- b) G. A. drg. rectifier panel.
- c) Schematic drg. & B.O.M. of rectifier panel.

ii) Firm will supply 10 sets of the approved drgs. as distribution copy

iii) Soft copy of the drgs. & data sheet prepared in AutoCAD package on CD.

iv) The first sheet of each drg. shall have nameplate, which shall be supplied to the successful tenderer.

Any minor comment of our customer / their consultant during drg. approval stage is to be incorporated without any price implication.

5.0 Technical information along with the offer :-



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

CRANE EXECUTION DIVISION

The following information must be furnished along with the offer failing which the offer may be ignored.

- a) Point-wise confirmation of the above specification.
- b) Brake overall and installation dimensions.
- c) Resistance box & Rectifier panel overall and installation dimensions.
- d) Coil consumption in Watts and pick up and drop-out times in secs, rated current and voltage.
- e) Maximum and minimum torque rating of the brake of intermittent (25%, 40%, and 60% CDF) and continuous duty operation.
- f) Adjustment range of Braking Torque in terms of percentage of Max. Braking Torque.
- g) Weight of the Brakes and Resistance Boxes & Rectifier Panel.
- h) Schematic diagram with B. O. M. of rectifier panel.
- i) List of commissioning spares and , two years operational spares with item wise price.

INSTRUCTIONS

The tender is to be submitted in two parts. Part- I & Part – II

- a. Part I- Tender comprising Techno Commercial offer which shall cover all technical part as well as commercial terms & conditions except the prices. Tenderers shall also mention whether Earnest Money is enclosed in Part II of the bid or not. They should not mention about the value.
- b. Part II – The Tender shall comprise Price Bid & Draft of earnest money as per Clause 12 of the enquiry.

The price bids shall be opened only after the Techno Commercial terms are settled and accepted.

Part I & Part II offers shall be in separate sealed covers. The tenderers are to clearly super scribe on the top of each envelope the relevant part number and description along with tender reference number and date of opening.

Both the envelopes (Part I & Part II) shall be enclosed in one envelope. This envelope shall also be super scribed on the top with tender reference number and date of opening of enquiry, indicating that both the parts (Part I & Part II) are enclosed in the envelope.

If the offer is not submitted as per the instructions above the same can be rejected.



ISO 9001 Company

Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

**Heavy Machine Building Plant
CRANE EXECUTION DIVISION**

Regards

Ashim Kumar
Sr DGM / Purchase & Out Sourcing
Crane Execution Division
Room no. 72, HMBP ADM Bld
HEC LTD, Ranchi 4
Phone 0651 2401200, Fax No. 0651 2401166