



**Heavy Engineering Corporation
Heavy Machine Building Plant
(A Govt of India Enterprises)
Ranchi- 834004 (INDIA)**

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Limited Tender

No. HMBP/PUR/2011/961708/EL-2712

Dated : 21.02.2011

Dear Sir,

We request you to submit your most competitive offer for the Motors (detailed technical specification as per enclosed DAP No.155/04M and additional commercial terms & conditions as per enclosed Annex-I).

Sl. No	Description of items	Unit of measurement	Nos. of unit required.
1.	Quotation is invited for Liquid Rotor Starter for Motot. Please refer the enclosed DAP No.314/10M For detailed technical specifications. The electrical equipment/components/items to be used in the above Liquid Rotor Starter shall be strictly as per enclosed list of approved vendor.	Nos.	02 (Two)

Terms and Conditions :

a) The offers shall be submitted strictly in TWO BID SYSTEMS i.e.

- i) Techno-commercial bid.
- ii) Price Bid.

Also give the un-price schedule of quoted items (item wise) with your techno-commercial bid and both the sealed covers must bear at its top about the enquiry no. and dt., due date of tender opening.

c) **The Payment Terms shall be as under :**

“ 100% of the total contract value along with taxes and duties shall be released through cheque within 30 days of receipt of materials complete in all respect alongwith guarantee certificate, inspection certificate (to be issued by HEC), Excise duty gate pass (if applicable), original invoice and 10% performance bank guarantee to be valid till full guarantee period form any from any nationalized bank only in HEC’s format and all the documents as per enquiry specifications. “

d) **Guarantee Clause :**

The materials supplied shall be guaranteed for 18 months from the date of dispatch or 12 months from the date of commissioning whichever is earlier.

e) **L.D. Clause :**

For late delivery of goods, the L.D. @0.5% per week limited to 10% maximum shall be levied on the order value.

f) This tender is subject to the General Conditions of Contract of HEC which can be downloaded from the website of HEC at “www.hecltd.com“.

g) The prices quoted shall be firm and the prices quoted must be on FOR: Destination i.e. HMBP Stores, Ranchi basis indicating the basic price and freight charge component & taxes and duties separately.

h) EMD of 2% of the quoted price shall be submitted in separate sealed cover and shall be enclosed in Price Bid only. The E.M.D. shall be submitted in the form of Demand draft drawn on any nationalized bank and in favour of HEC Limited payable at Ranchi. The firm shall mention about the submission of EMD in their techno-commercial bid indicating DD No. Date etc. **BUT THE AMOUNT OF D.D. SHALL NOT BE MENTIONED IN THE TECHNO-COMMERCIAL BID. IT MAY PLEASE BE NOTED THAT EMD SHALL BE REFUNDED TO THE UNSUCCESSFUL TENDERERS.**

- i) The successful tenderer will have to deposit 5% Security deposit of the basic order value in which the amount of 2% EMD shall be adjusted and the supplier will have to deposit only balance amount within 15 days time after placement of order.
- j) **PBG** : The successful tenderer will have to deposit Performance Bank Guarantee of the 10% of the Basic order value in the form of Bank Guarantee to be valid till full guarantee period from any nationalized bank only in HEC's format.
- k) Un-priced schedule (Blank Price – Format) of items considered in line with scope of supply of Tender Enquiry shall be furnished alongwith techno-commercial bid.

Schedule of Tender receipt by **10.03.2011 upto 1.00 PM**. Opening of Tender on **10.03.2011, at 3.00PM** TENDERS must be submitted in sealed cover with Tender No. and the Due date superscribed on it failing which Tenders may be ignored.

NOTE:

1. The rate quoted shall be on F.O.R. destination i.e. Store/HMBP/HEC Ltd. Ranchi – 83004
2. The Price quoted by the tenderer should be exclusive of sales tax. The rate and nature of sales tax applicable should be shown separately. Sales 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 date of opening of the tender. Variable price or price variation clause shall not be accepted in any case. Firms offers with price variation clause will not be considered.
4. Un-priced scheduled (blank price format) of items considered in line with scope of supply of tender enquiry shall be furnished alongwith techno-commercial bid.
5. Quotations erased or over written are likely to be rejected unless all corrections are authenticated with the tenderer's signature.
6. Delivery date offered must be specified and guaranteed.
7. Full particulars i.e. specification, literature and / or drawing wherever applicable should be submitted alongwith the quotation. The brand and 'Make' name must be Indicated.
8. The Corporation 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.
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 website (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 have to be deposited by demand draft on the State Bank of India, Ranchi Hatia Branch, in favour of Heavy Engineering Corporation Ltd. Ranchi.- 4
13. Security Deposits -successful tenderers will have to deposit security equal to 5 percent of the value of the contract within the desired period. Failing this, the contract will be cancelled at the risk and expenses of the suppliers.
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 of the stores(upto maximum 10 %) as liquidated damages, which the contractor has failed to deliver as aforesaid or
 - b) The purchaser may procure the undelivered 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 Account No.

(PAN) (of Income Tax) to be enclosed with the bid.

16. There is no obligation on our part to accept delayed / late tenders. Tenders received after the due date of opening are liable to be summarily rejected.
17. The rates quoted shall also be inclusive of embossing on the material. The Ownership namely HMBP / FFP / HMTP should be at a predominant place of the material to a size / thickness upon the volume of the material.

Special .Note:

While submitting tender pl. mentioned your Registration No. with HEC as a registered vendor with valid paper.

If not pl. get registered your firm with HEC Limited immediately.

Signature of Purchase Executive

Sl. No.	Description	Enquiry No. & Date	Tender Opening Date	Remarks
01.	Liquid Rotar Stater for Motor of PGC Crusher	HMBP/PUR/2011/961708/EL-2712 Dtd.21.02.2011	10.03.2011	Limited Tender

HMB	SPECIFICATIONS OF LIQUID ROTOR STARTER FOR PRIMARY GYRATORY CRUSHER – 1500H, L&T	DAP – 314/10M
RPD		SHEET 4 OF 6

W.O. No.	0089.001/002.140

1. INTENT

The intent of this specification is to design, manufacture and supply of the Liquid Rotor Starter Panel complete with all components duly wired up to terminals for external cable connection. The workmanship of fabrication, painting and wiring should be of highest quality.

2. SCOPE

Scope of work includes design, manufacture and supply of Liquid Rotor Starter complete with Liquid Tank, Electrode Travel Drive, Electrical Starter Panel, Field Switches etc.

All electrical components and materials will be supplied as per the approved make only (ref. Approved vendor list).

The Liquid Rotor Starter Panel shall be designed, constructed and tested in accordance with applicable sections of the latest revision of relevant Indian Standards, I.E.C. Standards and Indian Electricity Rules.

All motor feeders (unless if otherwise specified) shall be equipped with switch – fuse, contactor and over-load relay with SPP of proper rating. The Unit should have resistance shorting contactor.

3. SITE CONDITION

- i. Site Location : NCL, Amlori
- ii. Ambient Temperature : 50 °C
- iii. Relative Humidity : 97%
- iv. Installation : Indoor
- v. Power Supply : (To Rotor Starter Panel)

- a) 415 volts, 50 Hz, 3 Phase, 4-wire system.
- b) Voltage variation : ± 10%
- c) Frequency variation : ± 5%

vi. Control Power Supply :

- a) From : 415/110V Control transformer.
- b) Voltage : 110 volts. AC

HMB	SPECIFICATIONS OF LIQUID ROTOR STARTER FOR PRIMARY GYRATORY CRUSHER – 1500H, L&T	DAP – 314/10M
RPD		SHEET 2 OF 5

4. SPECIFICATION

a) Construction

The Liquid Rotor Starter Panel shall be made of MS Sheet Steel of CRCA grade with following thickness.

- i. Liquid Tank : 5 mm (minm.)
- ii. Electrode : 5 mm (minm.)
- iii. Mech. Box/Electric Panel : 2 mm

The Electrical Panel shall be of non-compartmentalized, NON-DRAWOUT and Single-Front type. The Panel shall be wall-mounting type complete with fixing arrangement built in the Liquid Rotor Starter assembly. The door should be hinged type.

Starter Panel frame shall be fabricated using MILD STEEL structural section of pressed and shaped, cold rolled sheet steel of thickness not less than 2 mm.

Gland Plate shall be removable type. Thickness of Gland Plate should not less than 3 mm.

All equipment in the Electric Panel shall be properly mounted and indicating equipments should be flush or semi-flush type on the door. All equipment shall be so located that their terminal and adjustments are readily accessible for inspection and maintenance and their removal and replacement can be done without disturbing the other equipment. The handles should be interlocked with the doors.

b) Wiring

i. Control Wiring

Control wiring shall be done using 1100 volts grade, PVC insulated, single core 2.5 sq. mm. stranded copper conductor.

- Each wire shall be identified at BOTH ENDS by proper ferrules.
- Wires shall be accommodated neatly through PVC channels having removable cover and avoiding sharp bends. Each group shall be adequately supported along its run to prevent sagging and strain on the terminations.
- The wiring shall be complete in all respects to ensure proper functioning of control, protection, monitoring etc.

ii. Power Wiring

Power wiring shall be done using 1100 Volts grade, PVC insulated single core, stranded copper conductor of minimum size 4 Sq. mm.

HMB	SPECIFICATIONS OF LIQUID ROTOR STARTER FOR	DAP – 314/10M
RPD	PRIMARY GYRATORY CRUSHER – 1500H, L&T	SHEET 3 OF 5

c) Terminal Blocks

Control Terminals

Clip-on type suitable for 6 sq. mm. conductor complete with necessary base channel and stopper and marking strips for circuit identification for terminating panel wiring and outgoing cables.

20% spare terminals (minimum 4 nos.) to be provided.

Not more than 2 wires shall be connected to any terminal on either side.

For external connection of Ammeters, separate Stud type terminals shall be provided. These terminals will normally be kept shorted.

Power Terminals

Power terminals shall be suitable for power cable sizes as in respective schematic Diagram.

All power terminals shall be complete with copper, crimping type lugs of suitable sizes.

d) Cable Entry

Cable entry shall be from bottom of Starter Panel. Detachable, gasketed, undrilled 3 mm thick base plate shall be provided for glanding of cables.

e) Legend Plates

External

The Electric Panel to be identified with Name Plate/Legend Plate and should be black PVC with white engraving, fixed with screws.

Letter size and type for the legend shall be finalized during detailing of panel, subject to space availability, visibility and aesthetics.

Internal

All relays and devices mounted inside the Panel shall have identification marking clearly visible from inside. MCCB provided for protection of various circuits shall be easily accessible for replacement without disturbing/dislocating other components.

f) Earthing

The Liquid Rotor Starter Panel shall have two separate, external earthing points suitable for connecting to Main Earth grid.

HMB	SPECIFICATIONS OF LIQUID ROTOR STARTER FOR PRIMARY	DAP – 314/10M
RPD	GYRATORY CRUSHER – 1500H, L&T	SHEET 4 OF 5

g) Electrolyte (liquid) to be used in the tank

- i. Type of Electrolyte : Sodium Carbonate (Washing Soda) + Water
- ii. Quantity required : Vendor to specify

h) Auxiliary Motors

The auxiliary drive motors for Electrode travel and Pump should be TEFC, IP-55 protection, Class F insulated Squirrel Cage Induction Motors suitable for 415V $\pm 10\%$, 3 ph, 50Hz, $\pm 6\%$ AC supply system. The ratings of the motors are to be decided by the LRS manufacturer & indicated in the offer.

i) Field Switches

Required field devices i.e. Electrode Travel Limit Switches, Level Switch and Thermostat should be supplied along with the Liquid Rotor Starter, installed and completely wired up to the terminals. Provision of locating Travel Limit Switches should be provided to adjust the starting time of the Crusher Motor.

j) Crusher Main Motor Details (Tentative rating)

The Liquid Rotor Starter should be suitable for starting of the Crusher Motor with Load/No load condition as per system requirement. The major datas of the Motor are given below.

- i. Type of Motor : Slip Ring Induction Motor
- ii. Motor Rating/Speed : 400KW / 600 RPM (Synchronous)
- iii. Consumed Power : 320KW
- iv. Supply Voltage : 6.6KV $\pm 10\%$, 3 ph, 50Hz $\pm 6\%$, AC
- v. Rotor Voltage : 740V
- vi. Rotor Current : 320A
- vii. Acceleration time : 15/20 Sec.

5. DRAWINGS, DATA & MANUALS

The following drawings, data & manuals shall be provided :-

- a) Along with bid
 - i. General arrangement (GA) with dimensions.
 - ii. Schematic diagram with Bill of Material indicating make, type and quantity of each component.
- b) After Placement of Order (for approval)
 - i. Certified G.A. drawing and Final Bill of Materials indicating make, type and quantity of each component.
 - ii. Foundation Plan / Mounting Arrangement.
 - iii. Schematic and Wiring diagram with all terminal markings.
 - iv. Routine / Type Test certificates of all tests completed at manufacturer's works.

All the above drawings shall be submitted in 10 sets and comments of L&T/Consultant shall be incorporated without any price implication. Finally 2 sets of Reproducible / soft copy of As-Built drawings shall be submitted.

HMB	SPECIFICATIONS OF LIQUID ROTOR STARTER FOR PRIMARY GYRATORY CRUSHER – 1500H, L&T	DAP – 314/10M
RPD		SHEET 5 OF 5

c) As-Built Drawings

Preparation of As-built drawing is in the vendor's scope of work.

6. PAINTING & SURFACE TREATMENT

The Liquid Rotor Starter Unit shall be thoroughly degreased, derusted and given two coats of primer and two coats of finished paint.

Outside : Shade 692 of IS: 5(Smoke grey)

Inside Tank : Epoxy Black

Inside Elec. Panel: Glossy White

7. INSPECTION & TESTING

Approved HEC / L&T / Client's Quality Assurance Plan (QAP) shall be adhered to for any manufacturing / testing / inspection of the Starter Panel. The inspection shall be carried out by HEC / L&T / Client's representative.

Type Test: Reports to be furnished as mentioned in Clause 5-b (iv).

8. PERFORMANCE GUARANTEE

Bidder / Vendor shall guarantee that the equipment offered shall meet the performance requirement as stipulated in the specification. In case the performance is not as per the performance guarantee, the bidder shall rectify / replace it to the satisfaction of HEC / L&T / Client's.

9. INSTRUCTION TO BIDDER

a) Make of all equipments shall be as per the preferred make list of L&T. Makes of items not appearing in the preferred make list shall be subject to approval by L&T/Consultant.

10. BILL OF QUANTITY

SL. NO.	DESCRIPTION	QTY.
1	Liquid Rotor Starter for Gy. Crusher Motor	2 Nos.

LAT

APPROVED MAKE LIST FOR ELECTRICAL EQUIPMENT

SL. NO	ITEM	NAME OF APPROVED MANUFACTURERS
1	MOTOR (L.T.)	: KIRLOSKAR/ BHEL/ SIEMENS/ MARATHON ELECTRIC MOTORS/ JYOTI/ NGEF/ ABB/ CROMPTON GREAVES/ BHARAT BIJLEE/ INTEGRATED ELECTRIC COMPANY LTD/ LAXMI HYDRAULICS PVT. LTD.
2	MOTOR (H.T.)	: KIRLOSKAR/ BHEL/ SIEMENS/ MARATHON ELECTRIC MOTORS/ JYOTI/ NGEF/ ABB/ CROMPTON GREAVES/ BHARAT BIJLEE/ INTEGRATED ELECTRIC COMPANY LTD/ LAXMI HYDRAULICS PVT. LTD.
3	FLP MOTORS	: KIRLOSKAR/ BHEL/ BHARAT BIJLEE / CROMPTON GREAVES/ MATHER & GREAVES/ LAXMI HYDRAULICS PVT. LTD.
4	POWER TRANSFORMER	: KIRLOSKAR/ BHEL/ BHARAT BIJLEE / GEC ALSTOM/ CROMPTON GREAVES/ ANDREW YULE/ SIEMENS/ VOLTAS/ ABB / NGEF
5	LIGHTING TRANSFORMER	: KIRLOSKAR/ BHEL/ BHARAT BIJLEE / GEC ALSTOM/ CROMPTON GREAVES/ ANDREW YULE/ SIEMENS/ VOLTAS/ ABB / NGEF/ L&T/ POWER MASTER ELECTRICAL PVT. LTD.
6	CONTROL TRANSFORMER	: L&T/ SIEMENS/ JYOTI/ GEC ALSTOM/ NGEF/ KIRLOSKAR/ BHARAT CUTLER HAMMER
7	VACUUM CIRCUIT BREAKER/6.6 KV SWITCHGEAR	: KIRLOSKAR SYSTEMS/ BHEL/ JYOTI/ MEI/ SIEMENS/ ABB/ GEC ALSTOM/ ALIND/ NGEF/ ANDREW YULE/ ASEA/ SOUTHERN SWITCHGEAR (SSG)/ ELECTRO TEKNICA/ MEDITRON
8	VACUUM CONTACTOR	: GEC/ ALSTOM/ JYOTI/ UNIVERSAL ELECTRICAL/ BHEL/ ANDREW YULE/ SIEMENS/ CROMPTON GREAVES
9	MOTOR CONTROL CENTRE/ AIR CIRCUIT BREAKER/ MCCB/ MCB/ RCCB	: NGEF/ L&T/ ANDREW YULE/ GEC ALSTOM/ JYOTI/ SIEMENS/ BHARATIA INDUSTRIES LTD. / ABB/ EASUN ENGG/CROMPTON GREAVES/ KIRLOSKAR SYSTEMS/ SCHNEIDER/ CONTROL & SWITCHGEAR COMPANY/ BHARATIA INDUSTRIES LTD/ MAX ENERGY PVT. LTD.
10	P.F. CORRECTION EQUIPMENT	: ABB/ MADHAV CAPACITOR/ GEC ALSTOM/ VIOLTAS/ YESHA/ KHATAU JUNKER/ BHEL/ UNISTAR/ NGEF

✓ 11	POWER CABLES	:	CABLE CORPORATION/ FORT GLOSTER/ UNIVERSAL CABLES/ NICCO/ PREMIER CABLES/ HINDUSTAN CABLES/ INCAB/ ASEAN/ HAVELLS/ RADIANT
12	CONTROL CABLES	:	CABLE CORPORATION/ FORT GLOSTER/ NICCO/ ASEAN/ UNISTAR/ HINDUSTAN CABLES/ K.D.K./ RAJNIGANDHA CABLES/ HAVELLS/ RADIANT
13	COMMUNICATION CABLES	:	HINDUSTAN CABLES/ DELTRON/ TOSHNIWAL/ INCAB/ VINDHYA TELELINK LTD.
14	HT TRAILING CABLES	:	UNISTAR/ INCAB
15	COMMUNICATION SYSTEM/ EQUIPMENT	:	ITI/ PHILIPS/ MOTWANE/ TATA TELECOM/ UPTRON/ GECL/ ECIL/ CROMPTON GREAVES
16	LIGHT FITTINGS	:	PHILIPS/ CROMPTONS/ GEC ALSTOM/ BAJAJ/ ECE/ GLOLITE/ ANCHOR
✓ 17	RELAYS	:	GEC ALSTOM/ L&T/ UNIVERSAL ELECTRIC/ SIEMENS/ KIRLOSKAR SYSTEMS/ A.V.K.-S.E.G. CONTROLS LTD./ BCH/ EASUN REYROLL/ ABB/ ANDREW YULE/ TELEMCHANIQUE/ BHARATIA INDUSTRIES LTD./ CONTROL & SWITCHGEAR COMPANY LTD.
18	PLC	:	L&T/ SIEMENS/ ALLEN BRADLEY/ KELTRON/ UPTRON/ TTS SYSTEMATIC PVT. LTD./ ABB/ MITSUBISI/ SCHNEIDER/ GE FANUE/ BHARATIA INDUSTRIES LTD.
✓ 19	CT'S & PT'S	:	ELECTRIC POWER EQPT./ EASTERN SWITCHGEAR/ AUTOMATIC ELECTRIC/ POLYCRETE LTD./ KAPPA/ ABB/ CONTROL & SWITCHGEAR COMPANY LTD./ MAX ENERGY PVT. LTD.
✓ 20	L.T. CONTACTOR	:	SIEMENS/ L&T/ BHARATIA INDUSTRIES LTD./ GEC ALSTOM/ ANDREW YULE/ JYOTI/ HAVELL'S/ KIRLOSKAR SYSTEMS/ ABB/ TELEMCHANIQUE
✓ 21	PUSH BUTTON; INDICATING LAMP	:	L&T/ SIEMENS/ ESSEN/ BCH/ BHARATIA INDUSTRIES LTD./ RASS CONTROLS
✓ 22	CONTROL SWITCHES	:	L&T/ KAYCEE/ JYOTI/ ESSEN/ SIEMENS/ HAVELL'S
✓ 23	ISOLATING SWITCHES	:	SIEMENS/ L&T/ BHARATIA INDUSTRIES LTD./ ANDREW YULE/ GEC ALSTOM/ JYOTI/ CROMPTON GREAVES/ HAVELL'S/ TELEMCHANIQUE/ ABB/ CONTROL & SWITCHGEAR COMPANY

24	H.T. LOAD BREAK SWITCH	:	JYOTI/ NGEF/ SIEMENS/ KIRLOSKAR SYSTEMS/ BHEL/ ABB/ EASUN/ MEI/ CONTROL & SWITCHGEAR COMPANY
25	CONTROL CONSOLE WITH COMPONENT	:	L&T/ SIEMENS/ JYOTI/ NGEF/ GEC ALSTOM/ KIRLOSKAR SYSTEM/ ANDREW YULE/ APLAB/ ABB/ ALLEN BRADLEY/ BHARATIA INDUSTRIES LTD.
26	BATTERY & BATTERY CHARGER	:	CHLORIDE/ STANDARD/ AMCO
27	LIGHTNING ARRESTER	:	ICE/ OBLUM/ IGE (I) LTD./ WS INSULATORS/ CROMPTON GREAVES
28	WELDING TRANSFORMER / MG WELDING SET	:	ADVANI OERLICON/ INDIAN OXYGEN/ PHILIPS/ ESAB
29	ALTERNATOR	:	JYOTI/ BHEL/ KIRLOSKAR ELECTRIC/ CROMPTON GREAVES/ AVK-SEG CONTROLS LTD.
30	DG SET	:	KIRLOSKAR ELECTRIC/ CUMMINS/ LEYLAND/ JYOTI/ SRI RAM HONDA/ YAMAHA
31	LIMIT SWITCH, PULL CORD SWITCH, BELT SWAY SWITCH, CENTRIFUGAL SWITCH	:	R.K. ELECTRICALS/ ESSEN/ SIEMENS/ TECHNOCRAT/ PHOTO CONTROL/ JAYSHREE ELECTRONICS/ BHARATIA INDUSTRIES LTD.
32	TIMER	:	BCH/ TELEMECHANIQUE/ L&T/ SIEMENS/ GEC ALSTOM/ ABB
33	ELECTRO MAGNETIC BRAKE	:	ELECTROMAG/ PBL/ INDUSTRIES SYNDICATE/ BCH
34	METERS	:	AEP/ IMP
35	SELECTOR SWITCH	:	L&T/ SIEMENS/ CROMPTON/ BHARATIA INDUSTRIES LTD./ RASS CONTROLS
36	HRC FUSE	:	GEC ALSTOM/ L&T/ SIEMENS/ STANDARD/ ABB/ CONTROL & SWITCHGEAR COMPANY LTD.
37	HOOTERS	:	TULLU/ NATIONAL
38	AIR CONDITIONER	:	ACCAIRE/ BLUE STAR/ VOLTAS/ GODREJ/ CARRIER

