



TATA MOTORS

**E-SALE CATALOGUE-HFO/LDO/HSD FUELED MAN B&W DG POWER
PLANT
PUNE, INDIA**



**CONDUCTED BY
mjunction services limited**



**SALE OF 3 X 11.65 MW -HFO/LDO/HSD FUELED MAN B&W DG POWER PLANT &
SPARES ITEMS – TATA MOTORS**

**Online Sale Event conducted by mjunction services ltd
“Being sold on “AS IS WHERE IS & NO COMPLAINT BASIS”**

Table – 1

| | | | | | | | | | | | | | | | |
|-------------------------|---|--------------|---------------------|----------------|----------------|-----------|----------------|----------------|---|-------------|------|-----------|----------------------------|-----------|-----------|
| Mandate Number: | VJ_____ | | | | | | | | | | | | | | |
| Seller: | TATA MOTORS LIMITED | | | | | | | | | | | | | | |
| Online Event website: | www.metaljunction.com | | | | | | | | | | | | | | |
| Date & Time: | On 11-08-2016 online sale event will be held at 2 PM, details will be communicated to participants who qualify | | | | | | | | | | | | | | |
| Inspection Date & Time: | 28-07-2016 to 09-08-2016 (on working days) with prior appointment with concerned person from mjunction at least 2 days before date of visit. Inspection timings – 9am to 12 pm & 2 pm to 4.30 pm (Monday to Saturday only) | | | | | | | | | | | | | | |
| Location of material: | <u>Tata Motors Limited</u> <u>Telco Road, K S B Chowk, MIDC Road, Pimpri, Pune-411018</u> | | | | | | | | | | | | | | |
| Security Deposit | <p>Non-Interest bearing security deposit has to be submitted in the form of Bank Guarantee/TT/RTGS to “Tata Motors Limited”. The Security Deposit Amount is given in TABLE -3.</p> <p>Bank details are below:</p> <table><tr><td>Account Name</td><td>Tata Motors Limited</td></tr><tr><td>Account Number</td><td>00070110000277</td></tr><tr><td>Bank Name</td><td>HDFC Bank Ltd.</td></tr><tr><td>Branch Address</td><td>Netrali Apts, Law College Road, Pune 411004</td></tr><tr><td>Branch Code</td><td>0007</td></tr><tr><td>IFSC Code</td><td>HDFC0000007 (All are zero)</td></tr><tr><td>MICR Code</td><td>411240002</td></tr></table> | Account Name | Tata Motors Limited | Account Number | 00070110000277 | Bank Name | HDFC Bank Ltd. | Branch Address | Netrali Apts, Law College Road, Pune 411004 | Branch Code | 0007 | IFSC Code | HDFC0000007 (All are zero) | MICR Code | 411240002 |
| Account Name | Tata Motors Limited | | | | | | | | | | | | | | |
| Account Number | 00070110000277 | | | | | | | | | | | | | | |
| Bank Name | HDFC Bank Ltd. | | | | | | | | | | | | | | |
| Branch Address | Netrali Apts, Law College Road, Pune 411004 | | | | | | | | | | | | | | |
| Branch Code | 0007 | | | | | | | | | | | | | | |
| IFSC Code | HDFC0000007 (All are zero) | | | | | | | | | | | | | | |
| MICR Code | 411240002 | | | | | | | | | | | | | | |

| | |
|-------------------------|--|
| Contact Details: | <p>mjunction services limited :</p> <p>Mr. Rajdeep Datta : 08336925974 ; rajdeep.datta@mjunction.in</p> <p>Auction Room No's:</p> <p>(033)66031760-72 (13 lines)</p> <p>(033)44091760-72 (13 lines)</p> <p><u>Contact person from TML</u></p> <p>Mr. VV Joshi (Head CCE, Pune)</p> <p>9011022583</p> |
|-------------------------|--|

Note:

- I. Taxes and duties will be charged as applicable at the rates prevailing at the time of invoicing
- II. Sale order & Delivery order shall be issued by Tata Motors Limited.
- III. Proforma Invoice to be issued by TATA MOTORS LIMITED to the winning buyer on price approval.
- IV. Bidders will have to bid for the power plant and the spares separately even though both (Power plant and spares) will be sold as a single lot.

Special Terms & Conditions:**Onsite Inspection:**

- i. Inspection will only be permitted by giving prior notification to the valuejunction team at least 2 days before the date of visit. Refer to the Expression of Interest document for inspection appended below in this catalogue.
 - ii. Interested customers are required to submit the duly filled in EOI (next page) & submit the balance sheet of the previous financial year to mjunction before visiting the site.
 - iii. Customers visiting the site are required to carry the following 2 items with them:
 - ◆ Photo identity proof of each visitor.
 - ◆ Company letterhead.
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EXPRESSION OF INTEREST FOR INSPECTION
(To be printed on company letter head)

To

The Manager
Value junction
mjunction services limited
Godrej Waterside Building Tower 1
Sec-V, Salt Lake
Kolkata - 700091

REF.: Sale of HFO/LDO/HSD FUELED MAN B&W DG POWER PLANT & SPARES ITEMS
from Pune plant of TATA MOTORS LIMITED

Dear Sir,

As we are interested to participate in the upcoming online sale of used machineries at Pune plant of TATA MOTORS LIMITED, we want to visit the site for detailed Inspection on _____.

We agree to follow all the safety norms of TATA MOTORS LIMITED inside the plant during inspection. We are made aware that the Inspection by our company at the site is to be completed by us within a maximum of **one** day and by a maximum of **four** people.

We are hereby submitting the last year's Balance Sheet of our company and Company Incorporation Certificate to "**mjunction services limited**" prior to the site visit. We are providing the details of the personnel who will be visiting the site on behalf of our company and submitting their official photo identity proof.

(A) Name of the Company : _____

(B) Address : _____

(C) Name of the Proprietor/CEO/MD/Director: _____



(D) Contact Telephone No : _____

(E) Mobile No. : _____

(F) FAX No. : _____

(G) E-Mail : _____

I / WE CONFIRM THAT I / WE ARE AWARE ABOUT THE TERMS & CONDITIONS FOR INSPECTION AND THE ITEMS ON OFFER.

The Name & Detail of Persons who will be visiting the site:

- 1.
- 2.
- 3.
- 4.

Yours faithfully
For M/S

Signature of authorized person
With company seal

Place: Date:

Note: This document can be scanned & sent to the following email address along with the other documents to be submitted.

1. rajdeep.datta@mjunction.in



1. Online bidding process:

Multi-Variable Bidding Process:

The material will be sold in a single lot (having multiple categories) & a single bidder will emerge as the winner.

- I. Online auction shall be conducted as per the process below:
 - a. The material is divided into various categories as per the requirement.
 - b. An estimate quantity has been provided against each category.
 - c. Customers will have to place their quote in Rs/Lot for the respective categories.
 - d. The system will decide the H1 on the basis of 'total lot value' as shown in the

Example below.

- e. The system will not accept a bid if quotes are not placed in all the categories.
- f. The dispatches and invoicing would be on Rs/No and Rs/Lot basis respectively, category wise.
- g. If the actual tonnage exceeds the estimated tonnage during dispatch, the winning buyer will need to make extra payment before he can lift the material.
- h. In case of shortages against the indicated quantity, refund will have to be made to the buyer.

Example - Calculation of H1 price on Total Lot Value

| | Asset description | Quantity | Customer A (INR Cr.) | Customer B (INR Cr.) | Total Price: A (INR Cr.) | Total Price: B (INR Cr.) |
|--------------|-------------------|----------|----------------------|----------------------|--------------------------|--------------------------|
| Cat 1 | Engines | 3 No. | 20 | 19.8 | 20 | 19.8 |
| Cat 2 | Spares | 1 Lot | 2 | 2.5 | 2 | 2.5 |
| TOTAL | | | | | 22 | 22.3 |

Hence the winner in the above example is Customer B

2. Details of Machines for Disposal at Pune Units are as under:

Equipment details:

Table: 2

| Particulars | Nos. | Make/Details | Taxes (Over & above the basic price) |
|---|------|--|--------------------------------------|
| Engine | 3 | Man B & W, Germany Sr. No. - 1135016/1135017/1135018 | |
| Turbo Charger | 6 | Man B & W, Germany | |
| Lube Oil Pump | 3 | Leistritz, Nuremberg, Germany | |
| Jacket Cooling Water PHE | 3 | Alfa Laval | |
| Charge Air Cooling Water PHE | 3 | Alfa Laval | |
| Lube Oil PHE | 3 | Alfa Laval | |
| Alternators | 3 | Siemens AG | |
| Turning Gear Unit Motor | 3 | Flender (Germany) | |
| Alternator Bearing Oil Cooling Pump | 3 | Rickmeier | |
| Charge Air Cooling Water Pump | 3 | Allweiler AG | |
| Nozzle Cooling Water Pump | 3 | Grundfos | |
| Jacket Water Cooling Pump & Motor | 3 | Allweiler AG/ Barat Bijlee | |
| Jacket Water Circulation Pump Secondary & Motor | 3 | Allweiler AG/Gaudfos | |
| Lube Oil Centrifuge | 3 | Westfalia Make + 3 Motors (Crompton Greaves 1 No., Siemens 2 Nos.) | |
| Lube Oil Separator Feed Pump | 3 | Crompton Greaves | |
| HFO Centrifuge | 3 | Westfalia Make + 3 Motors (Crompton Greaves 1 No., Siemens 2 Nos.) | |
| Governor | 3 | Woodward | |
| Cylinder Lube Oil Pumps | 6 | Grundfos | |
| Valve Seat Lube Oil Pumps | 6 | VEM Germany | |
| HFO Module Feed Pump | 3 | IMO AB Sweeden + Motor (Brook Hansen Make) | |

| | | | |
|--|---|--|--|
| HFO Circulation Pump | 1 | IMO AB Sweeden + Motor (Brook Hansen Make) | |
| Non IBR HFO Fired Boilers | 3 | Elite Engineers | |
| DG Chimney | 3 Nos + 3 DG Silencers + 1 Boiler Chimney | Sterling Strips, 4 Sections, Self Supporting, Bottom Section Tapered from 4 mt Dia to 2 mt Dia | |
| Lube Oil Auto Filter | 3 | Boll & Kirch + Motor (Stefphan) | |
| Intake Air Filter | 3 | Locker Air Maze + Motor (Parvalux) | |
| Raw Water Pumps | 4 | Kirloskar Brothers Limited + Motor (Siemens) | |
| Air Compressors | 4 | Ingersoll Rand + Motor (Bharat Bijlee) | |
| Cooling Tower | 1 | Paharpur | |
| SIT Unit (HFO Homogeniser) | 1 | Schiffs & Industries Technic, GmbH | |
| Fresh Air Supply Fans | 6 (2 for each engine) | GEC + Motor (Kirloskar) | |
| Electrical Switch Boards | 10 | Siemens AG | |
| Station Transformers | 2 | Bharat Bijlee | |
| Engine Control Panels | 12 | Siemens AG | |
| Common Aux Panel | 3 | Siemens AG | |
| Relay Panels | 7 | Siemens AG | |
| Control Desk | 1 | Siemens AG | |
| PLC | 3 | Siemens Symatic S7, 400 DC 24 V | |
| Battery Charger for 110V/300 AH L.A. Battery | 1 | FLOT CUM BOOST Type | |
| Battery Charger for 24V/300 AH L.A. Battery | 1 | FLOT CUM BOOST Type | |

Note: List of Spares in Scope of Sale is attached as Annexure -1 & 2

Table: 3

| <u>LOT No.</u> | <u>LOT DETAILS</u> | <u>LIFTING PERIOD</u> | <u>Security Deposit</u> |
|----------------|--|---|--|
| 1 | 3 X 11.65 MW HFO Power Plants & STORE ITEMS as per Annexure 1 & 2 attached | Within 90 days from the date of Lot confirmation intimation (confirmation through Email or Hard copy of proforma invoice) | Security deposit of INR 50 Lakhs. Or USD equivalent is to be submitted in the form of Bank Guarantee /TT /RTGS to participate in the sale event. |

Taxes will be over & above the basic price

Tax (Extra as applicable) on all item: Excise duty - _____ + CST / VAT as applicable

3. Requirements of participation in online sale:

3.1 Registration: Before participation in the e-Sale, a prospective bidder shall be required to get registered with mjunction services limited. For details visit **www.metaljunction.com** OR get in touch with the concerned person from valuejunction.

3.2 Documentation: The following documents need to be submitted by the bidder interested for participating in the e-Sale to mjunction services limited prior to the date of the e-Sale:

- Letter of Interest duly signed and stamped by bidder (attached with this catalogue).
- Each page of this catalogue to be signed and stamped by the intending bidders and to be submitted to mjunction services limited in hard copy & soft copy.
- New bidders (not registered with mjunction) are requested to submit notarized copies of their SOI's & supporting documents before participating in the e Sale.

Last Date for submission of Security Deposit & all supporting Documents: 09-08-2016

Bid Validity: Bid shall be valid for **3 weeks** from the date of completion of the sale.

4. Due Diligence of International Buyer

We will need the following documents from the buyer to check their credentials and to make sure that they qualify to participate in the event

- Company Profile

- Certificate of Incorporation
- AOA & MOA
- Audited financial statements (last 1 year)

5. **Payment & Lifting Terms:**

- I. Security Deposit: **Security Deposit as mentioned above against the Lot** is to be submitted for participating in the sale.
 - II. Payment & Lifting schedule: The payment along with taxes and duties is to be made as shown under subheading 6– **Payment & Lifting Schedule**
 - III. Site clearance: The material will have to be removed on 'AS IS WHERE IS & NO COMPLAINT BASIS' at the successful bidder's own cost & expenses. The successful bidder would have to arrange for all the equipment as may be needed for dismantling and transportation. All the safety norms of TATA MOTORS LIMITED will have to be strictly followed while the dismantling & lifting activity is underway.
 - IV. The successful bidder must clearly understand that mjunction services limited/TATA MOTORS LIMITED does not guarantee the correctness or accuracy of any description printed, read out or verbally declared. The bidder must satisfy themselves on all aspects pertaining to the nature, quantity, quality, other technical specifications, taxes-duties and legalities prior to bidding in the e-sale. No complaint, whatsoever, would be entertained after the submission of the online bid.
 - V. After the submission of bid(s) by the Successful bidder, a presumption would be drawn that the successful bidder has inspected the material and has satisfied himself fully about the nature, quantity, quality, other technical specifications, taxes-duties and legalities prior to the e-sale. No complaint, whatsoever, on the points referred above or any other points with regard to material would be entertained after the submission of the bid.
 - VI. The submission of the Security Deposit along with the sign & stamped Letter of Interest (LOI) shall confirm the acceptance of the terms and conditions of the sale in full and totality.
 - VII. No subletting of the contract shall be permitted by mjunction services limited/TATA MOTORS LIMITED. If it comes to the knowledge of mjunction services limited/TATA MOTORS LIMITED that subletting has taken place, then mjunction services limited/TATA MOTORS LIMITED shall be free to cancel the contract and forfeit all amounts of the purchaser available with mjunction services limited/TATA MOTORS LIMITED.
 - VIII. If the successful bidder/purchaser who is awarded contract fails to make the full payment or fails to lift the materials in full within the stipulated period, then TATA MOTORS LIMITED / mjunction services limited reserves the right to foreclose/cancel the contract, and in such an event, the entire amount available
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with mjunction services limited/TATA MOTORS LIMITED, under any account head, shall be forfeited.

- IX. It will be at the sole discretion of TATA MOTORS LIMITED to accept or cancel the BID placed in the online sale without assigning any reason. The contract shall be treated as having been entered into as soon as a Letter of Acceptance / Sale Order is issued to the successful bidder by TATA MOTORS LIMITED/ mjunction.
- X. The contract shall be deemed to be completed as soon as the entire area is cleared by the successful bidder and when the TATA MOTORS LIMITED issue the completion certificate to the successful bidder.

6. Payment & Lifting Schedule:

6.1 Payment

- The H1- Bidder will have to pay 10% of the Bid Value as Security Deposit within 5 working days from the Bid Price Approval by Tata Motors Limited. The complete amount (Pre-bid Security and 10% of the Bid Value) will be refunded after the site clearance from Tata Motors.
- 100% BY LETTER OF CREDIT (IRREVOCABLE), ISSUED BY A FIRST CLASS INVESTMENT GRADE BANK ACCEPTABLE TO INDIAN BANKS PAYABLE AS UNDER :
- LC terms to be finalized and approved and LC to be issued within 7 days from the issue of proforma invoice
- 1st Installment of 20% to be paid within 5 days after finalizing the LC terms
- 2nd Installment of 30% to be paid before start of dismantling
- 3rd & final payment of 50% to be paid before commencing of loading activities

Other Terms & Conditions:

- 1) Delivery: after receipt of full payment
- 2) This transaction is to be on as is where is basis
- 3) Arrangement & cost towards inspection, dismantling, packing, loading / unloading, transports and insurance to be on buyer's account
- 4) Payment through irrevocable L/C opened by first class investment grade bank acceptable to Indian banks.
- 5) L/C should not be restricted, to be freely negotiable with any bank in India
- 6) Place of expiry in L/C should be beneficiary's country

6.2 Lifting Terms:

- The dismantling & lifting of all equipment/material is in the scope of the buyer.
 - The equipment/material will be allowed to be lifted only after full & final payment including taxes & duties has been deposited.
 - Within 90 days from the date of Lot confirmation intimation (confirmation through Email or Hard copy of proforma invoice)
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7. Penalties:

- I. The entire Security Deposit amount will be forfeited if the H1 Successful bidder fails to deposit any of the instalments as given in the Payment & Lifting Schedule within the given stipulated time.
- II. In case the buyer deposits the first instalment but fails to deposit the second instalment, the Security Deposit and the first instalment amount will be forfeited.
- III. However, acceptance of late payment for any of the instalments will be at the sole discretion of TATA MOTORS LIMITED.
Beyond the allotted time for dismantling and lifting, the H1 successful bidder will not have the right to claim any of the material. TATA MOTORS LIMITED will have the right to re-sell the item and forfeit all the payments made to mjunction/TATA MOTORS LIMITED.
- IV. If the buyer fails to lift the assets out of TML's premises within 90 days, mjunction, at the sole discretion of TML will allow the grace period. Any further delay beyond the grace period will attract demurrage charges (Penalty) to be calculated @0.5% of total sale value per week.

8. Refund

- I. For non H1 bidders, the Security Deposit will be refunded within 3 working days from the date of receiving the refund request letter on the letter head along with company seal from the bidder by Tata Motors Limited.
- II. For H1 bidder, the entire Security Deposit (Pre-bid Security and 10% of Bid Value as Security Amount) will be refunded after successful site clearance from Tata Motors Limited.

9. CAVEAT EMPTOR:

9.1. The quantity, quality, measurement and condition of the materials indicated are all approximate. Participation and bidding by anyone in this sale shall be treated as conclusive evidence of the fact that the party has inspected the materials offered for sale and satisfied himself in all respect regarding quantity, quality, measurement, weight and condition of materials, taxes and duties, local working condition and other extraneous factors and principle of Caveat Emptor (let the successful bidder beware) will apply.

9.2. It shall be implied and taken for granted that the party has carefully gone through and understood the terms and conditions of e-Sale including the amendments if any, prevailing at the time of bid. No complaints or objections shall be entertained by TATA MOTORS LIMITED and/or the Authorities after the bid is opened / accepted.



10. SALE ORDER/Work Permit:

It will be the sole discretion of TATA MOTORS LIMITED to accept or cancel the sale without assigning any reason at any stage. The contract shall be treated as having been entered into as soon as a Letter of Acceptance / Sale Order is issued to the successful bidder by TATA MOTORS LIMITED. The contract shall be deemed to be completed as soon as the entire area is cleared by the successful bidder of the entire materials allotted or on completion of the period of contract, whichever is earlier.

11. PAYMENTS:

11.1 The cost of material along with all applicable taxes and duties shall be paid by the successful bidder as per the following details:

Bank Details of TATA MOTORS LIMITED:

| |
|---|
| Bank Details of TATA MOTORS LIMITED ----- |
|---|

11.2 VAT is applicable @as applicable presently. However, any taxes/duties applicable on the transaction at the time of delivery of the goods will be borne by the purchaser at actual.

11.3 The purchaser may clearly note that all the taxes, duties, levies, etc., if any is levied/imposed by any Statutory Authority till the final conclusion of the contractual period/ contract shall be borne by him/them including the interstate transactions and TATA MOTORS LIMITED shall not be responsible to pay the same, if any, since the sale is on 'AS IS WHERE IS BASIS' AND NO COMPLAINT BASIS EX WORKS OWNER.

12. DELIVERY:-

12.1 Vehicles deputed for disposal of the material(s) should report for loading in early hours in such a manner that requisite time is available for loading and vehicles are released before closing of the working hours i.e. at 17:00Hrs.

12.2 Successful bidder shall dismantle and lift the listed material by employing their own labour and at their own cost.

12.3 The material will have to be removed on "AS IS WHERE IS & CLEAN SWEEP BASIS" and at the successful bidder's own cost and expenses. No processing, whatsoever, other than dismantling, required for convenient transportation, will be permitted by TATA



MOTORS LIMITED. The successful bidder shall not be provided with any work force or equipment. The successful bidder would have to arrange for all the equipment as may be needed for dismantling and transportation including Cranes, Gas, etc. However, Power, Water or other facilities available with TATA MOTORS LIMITED may be considered to be made available to the purchaser as per TATA MOTORS LIMITED's rules. While removing materials from one site, the other site's materials should not be disturbed /damaged.

13. REMOVAL OF PLANT MACHINERY/ EQUIPMENT

13.1 Dismantling and transportation of the goods shall be the responsibility of the successful bidder at his costs and risks. It shall be obligatory for them to take safety precautions as per applicable laws/rules.

13.2 TATA MOTORS LIMITED or its authorized representatives shall have the right to stop dismantling and loading of the material if they feel that the successful bidder or his representatives are not following the instructions given to them or the job is not being carried out in accordance with the provisions of terms & conditions of Contract and successful bidders will be solely responsible for the same.

13.3 Dismantling/removal of materials on 'Pick & Choose' basis shall not be allowed.

13.4 Removal and transportation of materials shall be done only during general shift hours of TATA MOTORS LIMITED. No materials will be allowed to go out after 5.00 P.M. on week days. Similarly, no materials will be allowed to go out on Sundays and TATA MOTORS LIMITED holidays. Suitable security arrangements should be made by the successful bidder to look after the sold goods, his tools & tackles and other materials/stores, for which security guards may be engaged by the successful bidder, round the clock, with prior permission of TATA MOTORS LIMITED security department in this regard.

13.5 The successful bidder shall not be allowed to store the material on the road sides which may cause hindrance in movement on the road or cause inconveniences to public.

13.6 The successful bidder shall not be entitled to resale any of the material equipment/items sold to him by TATA MOTORS LIMITED while these goods are still lying within the premises of TATA MOTORS LIMITED. No delivery of material would be affected by TATA MOTORS LIMITED to any persons other than the successful bidder or his authorized representative.

14. INDEMNITY TO DAMAGES

- 14.1 The Successful bidder shall indemnify TATA MOTORS LIMITED for all acts / commissions or omissions of its Engineers/officials, their agents or employees from and against all losses and all claims, demands, payments, suits, actions, recoveries and judgments of every nature and description brought or recovered from TATA MOTORS LIMITED during execution of the work. An indemnity bond to this effect will be submitted by the contractor to the Site in-charge.
- 14.2 The Successful bidder shall also indemnify TATA MOTORS LIMITED against payment under the workmen's compensation act, which TATA MOTORS LIMITED may suffer, sustain or be in any way subjected to be reason for injuries to the Successful bidder's or the Owner's employees, or other person or damage to the property of any person or corporation arising out of or resulting from the performance of the work of this contract.
- 14.3 In addition, the Successful bidder is fully responsible for all the equipment and material for damage or loss from any cause during transition and/or while in custody of Successful bidder at his works site until his complete work is formally accepted by TATA MOTORS LIMITED. Any damage to the site at the time of removal of asset will be compensated on actual repair cost. TML decision will be final and binding in this regard.
- 14.4 The successful bidder must use the right kind of transport to move the assets and expert manpower, who are experienced in the field, by complying with all the statutory regulations, transit insurance etc. and adheres to all state/central/International regulations.
- 14.5 If the buyer fails to lift the asset out of TML's premises within the lifting period mentioned earlier, TML may allow a grace period (at its sole discretion). Any further delay beyond the grace period will attract penalty of 0.5% of the total sale value per week.
- 14.6 TML will provide power supply and water facility to the successful bidder. Canteen facility will be on chargeable basis if required.
- 14.7 Successful bidder to ensure that any damage / removal of wall / structure of the building at / to site at the time of removal of asset will be compensated on actual cost of repairs. TML's decision will be final and binding in this regards.

15 SAFETY:

Safety norms as per TML – Contractor Safety Manual attached as Annexure -3 is to be strictly followed by the successful bidder.



16 STATUTORY REQUIREMENT:-

The bidder shall abide by all Acts notified by the Govt. of India from time to time to the extent they are applicable during the execution of the contract. Further, the bidder should comply with all statutory requirement/ clearances in respect of laws, regulations and procedures governing this contract.

17 JURISDICTION:

The Contract shall in all respect be construed and operated as an Indian Contract and in accordance with the Indian laws in force and is subject to the exclusive jurisdiction of only Courts in Pune, Maharashtra.

18 ARBITRATION:

Any dispute arising under this Agreement w.r.t services render by mjunction services limited with the bidder shall be considered first in person or by telephone by designated representatives of mjunction services limited within 10 days of receipt (the date of receipt, the "Dispute Date") of a notice addressed to the applicable representative from the other referencing this clause and specifying the nature of the dispute. If for any reason the dispute has not been resolved to the satisfaction of the Parties within twenty (20) days after the Dispute Date, then either Party may opt for resolution of the dispute through arbitration to a single arbitrator who shall be the Managing Director of mjunction services limited or his nominated representative. The arbitration shall be conducted in accordance with the Arbitration and Conciliation Act, 1996 in effect at the time of arbitration. The seat of the arbitration shall be Kolkata, India. The arbitration award shall be final and binding of the Parties as permitted under the applicable laws.

19 GENERAL TERMS & CONDITIONS :

General Clause: TATA MOTORS LIMITED (herein after termed as "Client") will dispose of the items as listed in the sale catalogue through mjunction services limited on "as is where is" basis. mjunction services limited (herein after termed as mjunction) will conduct the e-Sale on its website www.metaljunction.com

- i. **Bidder Registration:** Before participation in the e-Sale, a prospective bidder shall be required to get itself/himself registered with mjunction for the purpose, by submitting an application in the prescribed format available on the website. Details of the registration process are available on the mjunction website (www.metaljunction.com). The application shall be made along with the documents (1) copy of latest Income Tax return (2) PAN Card/ Company
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Incorporation Certificate (3) Sales Tax/Vat Registration Certificate,(4) SSI Registration Certificate (if applicable) (5) Trade License and (6) Statement of Interest Form duly filled in and signed/stamped by the bidder. Registration can be done online by forwarding the application form backed up by the necessary documents to any of the front offices of mjunction. After the registration, all prospective Successful bidders will have an auto generated "Unique User ID" & a "password" based on which they can log in. Both domestic as well as international bidders are eligible to participate.

- ii. **Inspection:** The bidders are free to inspect the items/ materials, ready for disposal for their satisfaction within the time period specified on the sale catalogue. Intending bidders shall take prior appointment and submit the EOI for inspection.
 - iii. **Goods will be sold 'as is where is' & no complaint basis.** Bids will be deemed to have been made on the clear understanding that intending bidders have satisfied themselves fully in regard to the nature, condition, quality and quantity of goods upon inspection or otherwise. No error, omission or mis-statement or mis-description or printing mistake whatsoever and howsoever made or published whether in the catalogue or otherwise and no defects or faults in the goods shall annul the sale or be the subject of any claim on the part of the bidder and no claim for compensation or otherwise be entertained by client. Further, client will take it for granted that the bidders have fully read and understood the language, spirit and objective in these "terms and conditions of sale" of the materials before making any bid and that there does not exist any ambiguity whatsoever in the expressions.
 - iv. **Bid Validity Period:** The bid submitted should be valid for 3 Weeks from the date of completion of the sale.
 - v. Client and/or mjunction shall be under no obligation to put up the lots singly or serially or in any other particular manner and Client reserves the right at its discretion to withdraw any lot or lots from sale at any time without assigning any reason thereof.
 - vi. The LOT will be sold subject to approval by client. Client reserves to itself the right:
 - a. To accept or reject the highest offer or any other bid or all the bids
 - b. To accept or to reject the online sale result. The bidders would have no claim for issuance of sales release orders.
 - c. To cancel or reschedule the sale.
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- vii. Bidders bidding for the goods sold shall be deemed to have taken into account and made due allowance for the cost of handing, loading or other expenses (including dismantling if permitted by client) for purposes of removal of the goods and shall be entirely responsible for booking goods by rail where so required. Client will affect delivery of goods only at the site.

 - viii. **Statutory Documents:** All sales tax, terminal tax, excise duty and all other taxes, duties (imposts) whether to payable to the Central Government or to the State Government or to the municipal, local or other authorities shall be deposited by the successful bidder with mjunction along with the sales value of the materials. Non-payment of any amount payable under this clause will have the same effect as non-payment of the purchase money and will result in ipso-facto cancellation of the sale and forfeiture of the security deposit. If the liability of such tax (impost) and/or duty is in doubt, mjunction will have a right to call upon the successful bidder to make such provision as Client may deem fit and proper to ensure the recovery of such taxes (impost) and/or duty. If the tax (impost) and/or duty is not recovered at the time of delivery/dispatch Client/mjunction will have the right to call upon the successful bidder, to pay such amount as may be due whenever the Client/mjunction find that it has omitted to charge or Client become liable to pay higher charge as a result of decisions or announcements by Government or any other competent authority, even though, the full value of the materials may have been already paid or delivery/dispatches may have been completed from Client's units. Client shall be free to call upon the successful bidder to make good the amount short recovered whenever such contingency should arise, or Client shall be entitled to recover the Amount of such tax (impost) or duty from the successful bidder by way of set off against any amount or amounts that might at any time become payable by Client/mjunction to the purchaser on any account or accounts whatsoever. Taxes as applicable from time to time shall be payable by the successful bidder.

 - ix. Successful bidder will have to pay the local sales Tax/VAT, any other tax/duty as per the applicable rate during the time of invoicing (taking delivery) and no representation in this regard will be entertained by mjunction services Limited.
 - x. In the event of failure on the part of the bidder to fulfil the contractual obligations. Client/mjunction shall reserve the right to debar such bidder from participating in any future sales conducted by mjunction on behalf of Client.
 - xi. TATA MOTORS LIMITED will issue the sale order voucher for the items sold and also the delivery order will also be issued by TATA MOTORS LIMITED.
 - xii. Client shall not be responsible for any liability in respect of labour/employee appointed/engaged by the successful bidder for lifting of the materials. All formalities required under the provision of respective Labour Laws /Rules shall
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be duly and punctually observed/complied at their own cost and they alone shall be responsible and liable for punitive action/payment of any dues, compensation or any amount, required to paid under any provisions of Laws/Rules in any case of non-compliance and default on the part of successful bidder. If Client in any case is held liable under any Laws/Rules then in such cases the successful bidder shall not only make payment of such dues and/or caused but also be responsible for payments of damages to Client.

- xiii. In case it is detected at any time that the successful bidder has loaded material and/or materials for which he is not the sale purchaser Client will be within its rights to detain the truck, unload the materials at the cost and expenses of the successful bidder and take such other and further action as may deem fit and necessary for the purpose.
 - xiv. In the event of failure by the successful bidder to fulfil any obligations under the general conditions of sale including failure remove/lift the goods against any lots within the stipulated time, the sale of such lot may be cancelled for the quantities not lifted by the successful bidder and all moneys paid by the bidder for those specific lots shall stand forfeited. Client will be entitled to re-sell the goods through MJ, at the entire risk and cost of the successful bidder as and when Client may deem fit without any notice to the successful bidder. Client shall be at full liberty to retain and/or adjust/or recover any losses incurred on account of the failure of the successful bidder to lift the material from any amount lying with Client to the successful bidder's credit. The decision of Client in regard to the actual losses incurred by Client shall be final and binding on the Successful bidder. Any gain on any re-sale as aforesaid shall, however, belong to Client.
 - xv. All sale-related complaints should be referred to mjunction, Kolkata, during the sale duration only by the parties concerned. Complaints pertaining to difficulties in lifting etc. should be referred directly to TATA MOTORS LIMITED by the concerned successful bidder.
 - xvi. Client/mjunction shall not be liable for non-performance of any contract either wholly or in part nor for any delay in performance resulting from or due to any cause beyond the control of Client' or mjunction including fires, strikes, go-slow, lockout, closure, dispute with workmen, uncertain and unstable labour situation, power shortage, war, riots, civil commotion, pestilence, epidemics, floods, accidents, damages or accidents to machinery, shortage of wagons, shortage of fuel, shortage of any raw materials, shortage of labour, governments or railway restrictions, acts, demands or requirements of government, force majeure or any circumstances beyond the control of Client/ mjunction whether directly due to
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or in consequence of the aforesaid causes or not and the existence of such causes of consequences shall operate to extend the time of the performance on the part of Client/mjunction by such period as may be necessary to enable Client, shall have no claim upon Client/mjunction of any kind. The provision of this paragraph shall not be limited or abrogated by any other terms of the contract whether printed or written nor will the provisions of this clause abrogate or limit the effect of any other clause mentioned in this catalogue.

20 Special instructions:

- i. Special terms and conditions for internet sale: Bandwidth problems, connectivity problems with the local ISP (internet service provider), slowness to access pages for downloading etc. are beyond the control of Client and mjunction. Hence no responsibility and liabilities lies with Client/ mjunction for the above problems, if any, faced by the bidders before/during the sale
- ii. Any bid placed using the bidder's username and password is unconditionally binding on the bidder to whom such username and password had been allotted and he shall be solely responsible for maintaining the confidentiality of the same and fully responsible for all activities that occur under their username and password. Hence the user is advised to check the username and password before the sale in order to familiarise himself with the same and is advised not to reveal it to anyone else so as to prevent misuse of the same. The bids made by the bidders against their username and password shall be irrevocable.
- i. The bidders are advised to register and pre-qualify for bidding well in advance and place their bids early in order to take care of any unforeseen technical difficulty that might surface in the internet operations.
- ii. Any quarters of TATA MOTORS LIMITED used by the successful bidder will be on chargeable basis, subject to availability.

21 GENERAL RULES AND REGULATION GOVERNING CONDUCT OF ONLINE SALES ON THE "SERVICE PROVIDER" PLATFORM

Introduction:

This Online Forward Sale is being conducted for **TATA MOTORS LIMITED** (hereinafter referred as the "**Client**") on the Sale Platform of mjunction services ltd, (hereinafter referred as "**Service Provider**").

The General Rules and Regulations provided herein govern the conduct of on line Forward Sales arranged by "**Service provider**" on its Sale Platform. These rules cover the **roles and responsibilities** of the parties in the online Forward Sales on the Sale Platform.

Acceptance in-to to these General Rules and Regulations governing conduct of online sales, and Terms and Conditions for Sale of Materials by sale of client is a pre-requisite for securing participation in the online sales.



Prospective bidders are advised to read through the key terms pertaining to the online Forward Sales as provided in the Annexure containing the Definition.

Role of “Service Provider”

The role of the service provider is outlined below:

- I. “Service Provider” is the agency (operator) primarily providing the service of the Forward sale to the “client”.
- II. Finalization of the sale items in consultation with the client.
- III. Defining of bidding rules for each sale in consultation with the client.
- IV. Enhancing bidder awareness of and comfort with the sale mechanism and bidding rules.
- V. Input of the Sale items and defining the bidding rule in the sale engine.
- VI. Enlarging the bidder base by introducing new bidders.
- VII. Collection of Security Deposit, Letter of Interest etc. from the willing bidders and forwarding the same to the Client.
- VIII. Providing access to the approved bidders to participate in the Sale.
- IX. Summarizing the Sale proceedings and communicate the outcome to the Client.

The responsibility of fulfilment of the contract rests between the bidders and the client and the responsibility of the “Service Provider” shall be restricted to the extent of the services provided by them.

Role of Bidder

The role of the bidder is outlined below:

- i. The bidder would participate in the sale with the aim of bidding to secure the sale item in the sale
 - ii. The bidder would be provided access to the Sale through a “User ID” protected by a “Password”. The bidder needs to ensure that the “User ID” and “Password” is not revealed to unauthorized persons. Bidders are also requested to change the password allocated to them by the “Service Provider” to keep their confidentiality. However it would be bidder’s sole responsibility to ensure the security and privacy of the same and he/they would not hold the “Client” / “Service Provider” responsible in any manner whatsoever for any misuse of these user IDs and/or Password. Access to the sale mechanism shall be provided to all the approved bidders subsequent to obtaining their written consent to the General Rules & Regulations and the Letter of Interest. Payment of Earnest Money Deposit (Security Deposit) as decided by the client before the start of the Forward sale will be one of the necessary conditions for participating in the sale.
 - iii. Bidders hereby confirm that they shall commit to lift the item (being bid for) at the price entered by them in the sale engine AND as per the terms and conditions specified herein by the Client. All Prices entered shall be legally binding on the bidders. Bidders are strongly advised to exercise due diligence while placing bids. Failure to honour the bids placed during online bidding shall render the bidders liable for penal action as deemed fit by “Client” / “Service Provider”.
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iv. In the event of winning an allotment in the sale mechanism, the bidder shall commit to fulfil outlined obligations under the contract.

v. The bidders shall bid on the terms specified by the client & place their bid in the sale engine in the manner specified by “Service Provider”. The bidders shall not stipulate any conditions on their own unless the terms of the client (the client’s terms & conditions) expressly permit such conditions being stipulated by the bidder. Bids entered with conditions attached shall be considered Conditional bids & “service provider” retains the right of rejecting these bids even without intimating the client.

Bidding Rules

The Bidding Rules refer to the information and terms defined specifically for a particular sale. The purpose of the Bidding rules is to provide approved bidders with the information and terms specific to the sale in which they are bidding. This would include:

- a) Any extension of the duration of the sale in the event of bids being received towards the end of the pre-specified duration
- b) Start Bid Price
- c) Specified Unit for Bidding
- d) Price Increments and any reduction in the price increment in the sale in the event of inactivity
- e) Other attributes (informational/non-negotiable in nature)

While it shall be the endeavour of “Service Provider” to specify these rules at the earliest for each online sale, the “Service Provider” shall retain the right to delay the announcement of these biddings rules or modify rules specified earlier at the time of the online bidding. These details would be available to the bidders on the Sale Engine at the time of bidding.

Participation in the sale process presumes complete awareness and understanding of the Bidding rules.

Conduct of the Sale:

Only those bidders who have been approved by mjunction and handed over stamped and manually signed “Catalogue governing conduct of online sale along with Letter of Interest, required SECURITY DEPOSIT amount and other necessary documents to the “Service Provider” prior to the start of online sale will be given “Login ID” and “PASSWORD” to enable them view and participate in online sale. The Sale shall be conducted on pre-specified date. The Key Terms pertaining to the conduct of Sale such as “START TIME”, “DURATION”, “END TIME” AND “AUTO EXTENSION FACILITY” Shall be specified separately for each Sale. “Service provider” retains the right to cancel or reschedule the sale, with the approval of the Competent Authority of the Client, on any of the following reasons:

The number of confirmed bidders is deemed insufficient to conduct the sale



- Some of the confirmed bidders are unable to access the module due to infrastructure problems such as sustained power failure or telecommunication breakdown.
- There are no bids, which are equal to or below Start Bid Price.
- Any other reason which in the opinion of “Service Provider” / “Client” requires such action to be initiated.

The duration of sale may also vary from the pre-specified period of time either on account of termination of the sale by “Service Provider” on the advice of the Client

Or

In case of situations where it is felt that continuance of the sale proceedings is prejudicial to the smooth conduct and / or the integrity of the sale process. Or due to Auto Extension during the Sale, duration may increase from specified period.

In the event of any problems being faced in the smooth conduct of the sale, “Service Provider” with the approval of the Competent Authority of the Client, shall have the right to undertake one or more of the following steps:

- Cancellation/ premature termination of the sale with/ without a subsequent rerun of the sale on a mutually decided date
- Cancellation of a bid
- Locking / deactivate a bidder’s account (suspension of operations in the account), etc.

In case of failure of net connection, bidder will give his best price to the “Service Provider”. “Service

Provider” will bid on behalf of the bidder with the minimum increment until the bid price reaches the best price offered by the bidder, by proxy bidding mechanism.

The best price communicated by the bidder will have to be authenticated by written confirmation or fax to the “Service Provider” and will be kept confidential between the “Service Provider” and the bidder. Bidder will be bound by the price offered.

Liability of “Service Provider”

Service Provider shall not be liable to the client/ bidders participating in the sale or any other person(s) for:

- Any breach of contract by any of the parties in the fulfilment of the underlying contract.
- Any delays in initiating the online sale or postponement / cancellation of the online sale proceedings due to any problem with the hardware / software / infrastructure facilities or any other shortcomings.

While, reasonable care and diligence will be taken by Service Provider in discharge of its responsibilities such as design of the online bid, communication of bid details and rules, guidance to client/ bidders in accessing the Sale Engine and placing bids, etc. the bidders shall specifically indemnify Service Provider from all liabilities for any shortcomings on these aspects. It is clearly understood that these activities are undertaken by Service



Provider to assist the bidders in participation but the ultimate responsibility on all these counts lies totally with the bidders.

Right of the Client:

The Client reserves the right to partially or totally accept or reject any / all bids placed in the Online Sale without assigning any reason whatsoever. The decision of the client would be final and binding on the bidder in any such case.

Confidentiality Clause:

Service Provider undertakes to handle any sensitive information provided by the client or confirmed bidders for the sales conducted with utmost trust and confidentiality.

Jurisdiction

The Contract shall in all respect be construed and operated as an Indian Contract and in accordance with the Indian laws in force and is subject to the exclusive jurisdiction of only PUNE, Maharashtra. Courts.

Signed in acceptance of the above terms and conditions.

Signature

Name:

Designation of signatory:

Date:

Place:

Telephone / FAX no._____



Prospective bidders are advised to read through the key terms pertaining to the online Forward Sales as provided here.

Definition of Key Terms Sale: Sale refers to a forum where the sale for one/more lots of an item is stated and the participants (bidders) are required to bid up the price to be selected to purchase the requirement.

Saleeer: The Online Sale service provider, in this case M/S **mjunction services limited**.

Online Sales: Online sales refer to those sales conducted through the Internet with the bidders (from one or more locations) simultaneously bidding to be selected for supplying the item/s on sale. In other words, the venue for the sale is on an Internet website/platform. The "Service Provider's" website assigned by "Service Provider" would constitute venue for the purpose of the online sale.

Award at the Sale:

In a single winner format, only one bidder (normally the bidder who quotes the highest price) is awarded all the units of the item being saleed. The bidder quoting the highest price is normally allotted the item.

Client/Company: Company/Client is the individual/business entity who has contracted "Service Provider" to conduct such sale. In case of sale, the purpose would be the genuine intent to sell the selected item/s (Lot) to the bidders desiring to buy these items from the Client.

Bidder: Bidder is the individual/business entity participating in the sale, intending to buy the item/s from the Company/Client. To become a Bidder in the sale, a business entity has to provide written assent to the **General and Special Terms & Conditions of Sale** and the **List of Materials Contained**, as well as fully fill up the **Letter of Interest**.

Sale Engine: Sale Engine refers to the software that encapsulates the entire sale environment, processing logic and information flows. "Service Provider" is the sole owner of the sale engine and retains exclusive right over the utilization of the same.

Timings of the Online Bid: All the timings of the Online Bid shall be based on the time indicated by the Server hosting the Sale Engine. It shall be the endeavour of "Service Provider" to ensure that the Server Time reflects as closely as possible the Indian Standard Time (IST) i.e. GMT + 0530 hrs. However, in the event of any deviations between the Server Time and the Indian Standard Time, the functioning of the Sale Engine (launch, operation, and closure) would be guided by the Server Time. Bidders are advised to refresh both the windows of the Sale Module check the exact Server Time (displayed in both the windows).

Preview Time: Preview Time refers to the period of time that is provided prior to the commencement of bidding. This is to facilitate approved participants to view the sale details such as item specifications, bidding details and bidding rules. The purpose is also to familiarize participants with the functionality and screens of the sale mechanism. It is not mandatory for "Service Provider" to provide Preview Time.



Start Time: Start time refers to the time of commencement of the conduct of the online sale. It signals the commencement of the Price Discovery process through competitive bidding.

Successful bidder: The Successful bidder shall mean bidder whose bid has been accepted by the Company, under the terms of the tender and/or as per those terms and conditions mentioned in the Online Sale Documents & also Sale offer.

Duration of the Sale: It refers to the length of time the price discovery process is allowed to continue by accepting bids from competing bidders. The duration of the sale would normally be for a pre-specified period of time. However, the bidding rules may state the conditions when the pre-specified duration may be curtailed/ extended. The conditions include:

- Curtailement of sale duration in the event of no bids for a specified period of time (Inactivity Time)
- Automatic extension in the event of bids being entered towards the end of the scheduled duration to facilitate the other bidders to view and react to the bid.

Auto Extension of the Sale Timings: In the event of bids in the last few minutes of the scheduled bid time, the Bid Timings are automatically extended for a specified period from each such bid. Such Auto Extension shall continue until no bids are placed for the specified period (Engine remains inactive for the specified period). The Inactivity Time for Auto Extension purpose is normally X minutes. "Service Provider" however retains the right to change the same. The Inactivity Time applicable for the particular Online Bid shall be visible to the bidders under the Bidding Rules module on the engine.

End of the Sale: End of the Sale refers to the termination of the sale proceedings signalling an end to the price discovery process.

Sale Report: "Service Provider" would provide an Sale Report to the Client containing a summary of the sale proceedings and outcome. The Sale Report would constitute the official communication from "Service Provider" to the client about the outcome of the Sale.



Letter of interest to be filled and submitted by bidders interested in participating in the sale. The duly filled & signed LOI is to be sent to the following email id only: loi@mjunction.in & copy to rajdeep.datta@mjunction.in ; also the Subject of the mail should read as: **LOI/TATA MOTORS LIMITED/SALE ON 11-Aug-2016/BIDDER NAME.**

The Hard Copy/Scanned copy of the LOI & signed & stamped catalogue is to be submitted to mjunction head office or any branch office latest by 9-Aug-2016.

LETTER OF INTEREST (To be submitted by bidders on company letter head)

To
The Manager,
mjunction services limited.
West Bengal

REF.: Online Sale event of HFO Plants - TATA MOTORS LIMITED at Pune Plant, Dt. 11/08/2016

Dear Sir,

(1) We are interested in participating in the Online sale event notified vide your notice under reference for **TATA MOTORS LIMITED** and lifting of material to be done from TML Pimpri, Pune, by road. We also agree to abide by all the instructions contained in the Online sale event Catalogue, Special Terms & Conditions, General Rules and Regulations governed in Conduct of Online forward sale, invitation to online sale event sale notice.

(2) We are hereby submitting the applicable **SECURITY DEPOSIT to participate in the sale event conducted by mjunction services limited**

(3) We agree to offer our best bid in the online event, in INR or USD equivalent per Lot for the lot in the sale process, Ex- Pune exclusive of all taxes & duties, and other Statutory Levies if any, as legally applicable at the time of delivery/dispatch and hold the same valid for **5 days** for acceptance of the bid from the date of online sale event.

(4) We agree to comply with all "**SAFETY MEASURES**" of TATA MOTORS LIMITED during the activity of lifting.

(5) We are providing the following details of ourselves in connection with the above Online Sale event.



Name of the Company: _____

Name of the contact person_____

Address of the Company: _____

Telephone No: _____

Mobile No._____

FAX No. : _____

E-mail : _____

Yours faithfully

Name and Signature of authorized Person.

For M/S _____

(With Company's Seal)

Place_____

Date_____



Following particulars to be furnished along with LETTER OF INTEREST in the company's letter head.

1) Name of the COMPANY :

2) Address :

3) Contact Phone & FAX No. :

4) E-mail id :

5) Name of Contact Person :

6) Consignee Address :

7) Name of BANK:

8) Name of Br. With ADDRESS:

9) Bank A/c. No. :

10) Bank IFSC code :

11) VAT NO. :

12) CST NO. :

13) Certificate of Incorporation:

14) ECC No. :

15) EXCISE RANGE :

16) EXCISE DIVN :

17) EXCISE COMM. :

Authorized Signatory
(With Name and Seal)

Pictures

The pictures shown below are indicative in nature. Interested bidders are advised to visit the site and inspect the material, to satisfy them before participating in the sale event.













Annexure – 1

(Unused Spares)

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|---|------------|--------------|-----------------|----------|----------|
| CRANK CASE | | | | | |
| Tie rod | 012-06-035 | | Basement | Box 6 | 8 |
| Round seal ring | 012-06-036 | 883110720627 | Control Room | Cup 6 A | 19 |
| Round seal ring | 012-06-037 | | Control Room | Cup 6 A | 10 |
| O ring | 012-06-038 | | Control Room | Cup 6 A | 7 |
| Nut | 012-06-039 | | Basement | Box 12 | 3 |
| Nut | 012-06-020 | | Basement | Rack 1 C | 2 |
| Nut | 012-06-021 | | Basement | Box 12 | 2 |
| Stude Screw | 012-06-030 | | Basement | Rack 1 D | 2 |
| Round ring | 012-06-032 | 883110720664 | Control Room | Cup 6 A | 12 |
| Nut | 012-06-33 | | Basement | Rack 1 E | 2 |
| Tie rod | 012-06-019 | | Basement | Box 5 | 2 |
| CRANK SHAFT BEARING | | | | | |
| Upper bearing shell | 021-04-001 | 883110720624 | Basement | Rack 3 A | 5 |
| | | | Basement | Box 1 | 5 |
| Lower bearing shell | 021-04-003 | 883110720625 | Basement | Rack 3 A | 5 |
| | | | Basement | Box 1 | 5 |
| Thrust bearing ring D=495 | 021-04-006 | 883110721821 | Basement | Box 1 | 3 |
| Ledge | 021-04-007 | 883110721822 | Basement | Box 1 | 2 |
| Clamping Pin | 021-04-008 | 883110721823 | Basement | Box 1 | 2 |
| CONNECTING ROD | | | | | |
| Upper connect rod bear | 030-01-A | 883110720628 | Basement | Rack 3 D | 4 |
| Lower connect rod bear | 030-01-B | 883110720629 | Basement | Rack 3 D | 4 |
| Nut | 030-1-017 | 883110720632 | Basement | Rack 3 E | 2 |
| Nut | 030-1-018 | | Basement | Box 12 | 1 |
| Piston Pin Bush | 030-1-005 | | Basement | Rack 3 B | 2 |
| Connecting rod head | 030-01-003 | 883110720630 | Basement | Box 8 | 1 |
| Connecting rod bolt | 030-01-016 | 883110720631 | Basement | Rack 3 E | 1 |
| PISTON | | | | | |
| Piston Pin | 034-01-002 | 883110720634 | Basement | Box 8 | 1 |
| Retaining Ring | 034-01-003 | | Basement | Box 12 | 34 |
| O Ring | 034-01-511 | | Control Room | Cup 6 E | 12 |
| Compression Ring (chrome ceramic) only for new crown 1534 | 034-01-A | 883110720638 | Basement | Rack 3 B | 3 |
| Compression Ring (unchromed) 1312 | 034-01-A | 883110720639 | Basement | Rack 3 B | 4 |
| Compression Ring 1198 | 034-01-B | 883110720640 | Basement | Rack 3 B | 4 |
| Compression Ring 1198 | 034-01-C | 883110720641 | Basement | Rack 3 B | 6 |
| Oil scraper Ring 0234 | 034-01-D | 883110720642 | Basement | Rack 3 B | 4 |
| Guide shoe complete with item 521-524 | 034-01-520 | 883110720636 | Control Room | Cup 6 A | 1 |
| Piston Skirt | 034-01-503 | | Basement | Box 8 | 1 |
| Lock Ring | 034-01-527 | | Control Room | Cup 6 A | 2 |
| Clamping Pin | 034-01-512 | 883110721443 | Control Room | Cup 6 A | 6 |
| Thrust Piece | 034-01-514 | 883110720757 | Control Room | Cup 6 D | 5 |
| Nut | 034-01-515 | 883110720758 | Control Room | Cup 6 D | 5 |
| Stud Screw | 034-01-516 | 883110720635 | Basement | Rack 3 C | 4 |
| Pressure Sping | 034-01-522 | 883110720637 | Control Room | Cup 6 A | 2 |
| CYLINDER LINER | | | | | |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|---------------------------------|----------------|--------------|-----------------|----------|----------|
| Seal Ring(same as baffle screw) | 050-04-015 | 883110720644 | Control Room | Cup 6 A | 23 |
| Seal Ring | 050-04-029 | 883110720647 | Basement | Box 12 | 6 |
| Fire Land Ring | 050-04-040 | 883110720646 | Basement | Box 4 | 1 |
| O Ring | 050-04-041 | 883110720645 | Control Room | Cup 6 E | 13 |
| O Ring | 050-04-032 | | Control Room | Cup 6 A | 151 |
| O Ring | 050-04-027 | 883110720990 | Control Room | Cup 6 E | 65 |
| CYLINDER HEAD | | | | | |
| O Ring | 055-04-022 | 883110720983 | Control Room | Cup 6 A | 33 |
| O Ring | 055-04-027 | 883110720656 | Control Room | Cup 6 A | 24 |
| Valve Seat Ring(water cooled) | 055-04-030 | 883110720650 | Basement | Rack 3 C | 24 |
| Valve Seat Ring(un- cooled) | 055-04-030 | | Basement | Rack 3 C | 9 |
| O Ring | 055-04-031 | | Control Room | Cup 6 A | 24 |
| Gasket | 055-04-014 | 883110720649 | Control Room | Cup 6 A | 1 |
| Inlet Valve Guide | 055-04-042 | 883110720651 | Basement | Rack 3 C | 14 |
| Round Seal Ring | 055-04-043 | 883110720652 | Control Room | Cup 6 A | 59 |
| Stud Screw | 055-04-047 | 883110720654 | Control Room | Cup 6 A | 4 |
| Hex. Nut | 055-04-048 | 883110720655 | Control Room | Cup 6 A | 2 |
| O Ring | 055-04-053 | 883110720658 | Control Room | Cup 6 E | 16 |
| O Ring | 055-04-054 | 883110720659 | Control Room | Cup 6 E | 12 |
| O Ring | 055-04-055 | 883110721445 | Control Room | Cup 6 C | 8 |
| O Ring | 055-04-062 | 883110721444 | Control Room | Cup 6 C | 9 |
| O Ring | 055-04-059/056 | | Control Room | Cup 6 A | 8 |
| Gasket(EXH) | 055-04-052 | 883110720657 | Control Room | Cup 6 A | 12 |
| cylinder cover bush | 055-04-021 | | Control Room | Cup 6 C | 1 |
| Stud for cylinder cover | 055-04-045 | 883110720653 | Basement | Rack 3 B | 6 |
| CYLINDER HEAD COVER | | | | | |
| Round Seal Ring | 059-01-003 | 883110720661 | Control Room | Cup 6 E | 8 |
| Hex. Nut | 059-01-010 | | Control Room | Cup 6 A | 4 |
| Handle for roocker cover | 059-01-005 | | Control Room | Cup 6 A | 4 |
| CASING FREE END SIDE | | | | | |
| Round Seal Ring | 072-04-006 | 883110720662 | Control Room | Cup 6 E | 12 |
| RELIFE VALVE | | | | | |
| O ring seal | 073-02-006 | 883110720663 | Control Room | Cup 6 A | 6 |
| CRANK CASE COVER | | | | | |
| Seal ring | 073-03-018 | 883110720752 | Control Room | Cup 6 E | 10 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|---------------------------------------|------------|--------------|-----------------|----------|----------|
| Gasket | 073-03-021 | 883110720665 | Control Room | Cup 6 C | 14 |
| CAM SHAFT CASING | | | | | |
| CAM SHAFT BEARING | | | | | |
| Upper CAM Shaft Bearing | 102-05-A | | Basement | Box 2 | 29 |
| Lower CAM Shaft Bearing | 102-05-B | | Basement | Box 2 | 29 |
| Bearing Body | 102-07-001 | | Basement | Rack 1 C | 1 |
| CONTROL LEVER WITH BEARING | | | | | |
| Washer | 111-04-051 | | Control Room | Cup 6 A | 1 |
| Round Seal Ring | 111-04-010 | 883110720668 | Control Room | Cup 6 A | 14 |
| Thrust Piece | 111-04-017 | 883110720669 | Control Room | Cup 6 A | 5 |
| Thrust Piece | 111-04-019 | | Control Room | Cup 6 A | 4 |
| Ball Cup | 111-04-020 | | Control Room | Cup 6 A | 1 |
| Circlip | 111-04-021 | 883110720670 | Control Room | Cup 6 A | 6 |
| Ball Cup | 111-04-023 | | Control Room | Cup 6 A | 1 |
| Circlip | 111-04-024 | | Control Room | Cup 6 A | 2 |
| Thrust Piece | 111-04-043 | 883110720667 | Control Room | Cup 6 A | 1 |
| Thrust Piece | 111-04-044 | | Control Room | Cup 6 A | 1 |
| INLET & EXHAUST ROCKER ARM | | | | | |
| Rocker Arm ,1,2IN&Out) | 112.09.002 | | Basement | Rack 1 D | 1 |
| Push Rod | 112-08-001 | | Basement | Box 6 | 2 |
| Bearing Bush | 112-09-003 | | Basement | Rack 1 E | 4 |
| Roller | 112-09-008 | | Basement | Rack 1 C | 1 |
| | | | | | |
| INLET VALVE | | | | | |
| Valve Cone | 113-03-003 | 883110720671 | Basement | Box 4 | 13 |
| Valve Rotating Device | 113-03-014 | 883110720672 | Basement | Rack 1 C | 16 |
| EXHAUST VALVE | | | | | |
| O ring | 114-03-003 | 883110720678 | Control Room | Cup 6 A | 34 |
| Exhaust Valve Cone | 114-03-006 | 883110720673 | Basement | Box 4 | 2 |
| Axil Bearing SKF 51118 (L) | | 883110721584 | Control Room | Cup 6 C | 9 |
| Round Seal Ring | 114-03-019 | 883110720677 | Control Room | Cup 6 E | 40 |
| Washer | 114-03-023 | 883110720679 | Basement | Rack 3 B | 19 |
| Valve Guide | 114-03-512 | 883110720675 | Basement | Rack 3 C | 15 |
| MANOEURING EQUIPMENT | | | | | |
| SS Braided hose (Local cont.) | | 883110422144 | Control Room | Cup 6 D | 13 |
| Pressure reducing valve | 125-98-589 | 883110720986 | Control Room | Cup 8 D | 2 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--|-------------------------|-------------------------------|-----------------|----------|----------|
| Pressure Regulating Valve | 125-98-138 | | Control Room | Cup 8 D | 3 |
| Profile gasket | 125-98-812 | 883110720370 | Control Room | Cup 8 D | 24 |
| Non return Valve | 125-98-469 | | Control Room | Cup 8 E | 2 |
| End switch | 125-98-745 | | Control Room | Cup 8 D | 1 |
| 3/2 W ay Solenoid valve | 125-98-573 | 883110720985 | Control Room | Cup 8 D | 1 |
| Throttle non return valve | 125-98-590 | 883110720371 | Control Room | Cup 8 E | 3 |
| 3/2 W ay valve | 125-98-596 | 883110720358 | Control Room | Cup 8 E | 3 |
| Set of Wear Parts | 125-99-317 | 883110720369 | Control Room | Cup 8 D | 5 |
| 3/2 W ay Solenoid valve | 125-98-371 | 883110720984 | Control Room | Cup 8 D | 1 |
| 3/2 W ay Solenoid v/v M329/2 with plate "Emergency stop" | 125-98-329 | 883110720365/ 883110721837 | Basement | Box 1 | 1 |
| 3/2 W ay Solenoid v/v M329/1 with plate "Emergency start" | 125-98-329 | 883110721825 | Basement | Box 1 | 1 |
| Set of Wear Parts | 125-99-329 | 883110720364 | Control Room | Cup 8 D | 3 |
| Set of Wear Parts | 125-99-388 | 883110722174 | Control Room | Cup 8 D | 3 |
| Filter element | 125-99-462 | 883110721456 | Control Room | Cup 8 A | 2 |
| Round seal ring | 125-99-462 Z/P7 | 883110721457 | Control Room | Cup 8 A | 1 |
| Round seal ring | 125-99-462 Z/P5 | 883110721458 | Control Room | Cup 8 A | 1 |
| Round seal ring | 125-99-462 Z/P8 | 883110721459 | Control Room | Cup 8 A | 1 |
| GOVERNOR DRIVE | | | | | |
| Speed setting motor | 140-16-NP1(1SV 1010) | 883110720975 | Control Room | Cup 8 D | 2 |
| Rod end bearing(RH) | 140-16-030 | 883110720882 | Control Room | Cup 6 D | 4 |
| Rod end bearing(LH) | 140-16-031 | 883110720883 | Control Room | Cup 6 D | 4 |
| Set of gasket (Booster) | 140-17-075-01 | | Basement | Rack 3 A | 1 |
| STARTING AIR PILOT VALVE | | | | | |
| Control piston | 160-01-006 | | Control Room | Cup 6 A | 2 |
| Set OF Gasket | 160-01-007 | 883110720989 | Control Room | Cup 6 A | 10 |
| STARTING VALVE | | | | | |
| Valve Cone | 161-01-003 | 883110720683 | Control Room | Cup 6 A | 1 |
| Pressure spring | 161-01-004 | | Basement | Rack 3 B | 6 |
| Piston | 161-01-005 | 883110720680 | Control Room | Cup 6 A | 1 |
| Set OF Gasket | 161-01-006 | 883110720681 | Control Room | Cup 6 A | 4 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|----------------------------|-----------------|--------------|-----------------|----------|----------|
| Set OF Gasket | 161-01-007 | 883110720682 | Control Room | Cup 6 A | 4 |
| O Ring (221-1-014) | 161-01-012 | | Control Room | Cup 6 A | 42 |
| MAIN STARTING VALVE | | | | | |
| Valve seat | 162-02-003 | | Basement | Box 4 | 2 |
| Plunger | 162-02-004 | | Control Room | Cup 8 E | 2 |
| Safty valve | 162-02-005 | | Control Room | Cup 8 E | 3 |
| Seal ring | 162-02-006 | | Control Room | Cup 8 E | 4 |
| Pressure Spring | 162-02-008 | | Control Room | Cup 8 E | 6 |
| Set OF Gasket | 162-02-009 | | Control Room | Cup 8 E | 9 |
| Seal ring | 162-02-011 | | Control Room | Cup 8 E | 4 |
| Valve seat | 162-02-014 | | Control Room | Cup 8 E | 4 |
| Vending cone | 162-02-015 | | Control Room | Cup 8 E | 4 |
| Piston | 162-02-016 | | Control Room | Cup 8 E | 4 |
| Set OF Gasket | 162-02-017 | | Control Room | Cup 8 E | 9 |
| Lock nut | 162-02-018 | | Control Room | Cup 8 E | 4 |
| Closing cap | 162-02-019 | | Control Room | Cup 8 E | 4 |
| Ball cock | 162-02-032 | | Control Room | Cup 8 E | 2 |
| Seal ring | 162-02-033 | | Control Room | Cup 8 E | 5 |
| FUEL INJECTION PUMP | | | | | |
| Hex. Bolt | 200-01-020 | | Control Room | Cup 6 B | 12 |
| Hex. Bolt | 200-01-027 | | Control Room | Cup 6 B | 12 |
| Round seal ring | 200-01-031 | 883110721036 | Control Room | Cup 6 B | 49 |
| O Ring | 200-01-032 | | Control Room | Cup 6 B | 1 |
| O Ring | 200-01-050 | 883110720689 | Control Room | Cup 6 B | 4 |
| Fitting Disk | 200-01-053 | | Control Room | Cup 6 B | 4 |
| Control Sleeve | 200-01-035 | | Control Room | Cup 6 B | 1 |
| Ball | 200-01-014(J) | | Control Room | Cup 6 B | 18 |
| Spring Plate | 200-01-015 (L) | 883110721446 | Control Room | Cup 6 B | 5 |
| Pressure Spring | 200-01- M (16) | 883110720686 | Control Room | Cup 6 B | 44 |
| Sleeve | 200-01-019 | 883110721449 | Basement | Rack 1 C | 2 |
| Clamping Pin | 200-01- S (21) | 883110721450 | Control Room | Cup 6 B | 6 |
| Baffle Screw | 200-01-G | 883110720685 | Basement | Rack 1 C | 73 |
| Pressure Spring | 200-01-039 | | Basement | Rack 1 C | 1 |
| Hex. Bolt | 200-01-041 | | Control Room | Cup 6 B | 6 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|---|---------------|--------------|-----------------|----------|----------|
| Seal Ring Square | 200-01-044 | 883110720688 | Control Room | Cup 6 B | 3 |
| Seal Ring Square | 200-01-045 | 883110720684 | Control Room | Cup 6 B | 2 |
| Control Rod | 200-01-049 | 883110720696 | Basement | Rack 3 C | 1 |
| Articulated Bearing | 200-01-064 | 883110720880 | Control Room | Cup 6 D | 10 |
| Articulated Bearing | 200-01-065 | 883110720881 | Control Room | Cup 6 D | 10 |
| Seal Ring (Baffle screw) | 200-01-086 | 883110720693 | Control Room | Cup 6 B | 29 |
| Pump Element Complete | 200-01-P | | Basement | Rack 3 E | 2 |
| Distance sleeve | 200-01-507 | 883110720690 | Control Room | Cup 6 B | 14 |
| Circlip | 200-01-508 | 883110721447 | Control Room | Cup 6 B | 13 |
| Pressure Sping | 200-01-509 | 883110720691 | Control Room | Cup 6 B | 7 |
| Valve Cone | 200-01-510 | 883110720954 | Control Room | Cup 6 B | 11 |
| Spring plate | 200-01-036 | 883110721448 | Control Room | Cup 6 B | 2 |
| Distance sleeve | 200-01-N(017) | 883110720687 | Control Room | Cup 6 B | 8 |
| Valve carrier | 200-01-H | 883110720695 | Basement | Rack 3 E | 2 |
| Circlip | 200-01-R(018) | 883110720692 | Control Room | Cup 6 B | 9 |
| FUEL INJECTION PUMP DRIVE | | | | | |
| Roller | 201-01-G | | Basement | Rack 1 C | 1 |
| O Ring | 201-01-026 | | Control Room | Cup 6 B | 3 |
| Roller tapet | 201-01-001 | 883110720697 | Basement | Rack 1 E | 1 |
| Roller | 201-01-006 | | Basement | Rack 3 C | 4 |
| Roller pin | 201-01-010 | | Basement | Rack 3 C | 2 |
| spring Plate | 201-01-021 | | Control Room | Cup 6 B | 2 |
| Pressure Spring | 201-01-022 | | Basement | Rack 1 E | 3 |
| Lock Ring | 201-01-027 | | Control Room | Cup 6 B | 3 |
| Bearing Bush | 201-01-047 | | Basement | Rack 1 E | 2 |
| Bearing Bush | 201-01-H | | Basement | Rack 1 E | 23 |
| Threaded Piece | 201-01-034 | | Control Room | Cup 6 B | 2 |
| Roller Pin | 201-01-060 | 883110721451 | Basement | Rack 3 C | 1 |
| Threaded Pin | 201-01-062 | | Control Room | Cup 6 B | 38 |
| CONTROL LINKAGE INJ/PP | | | | | |
| Articulated Bar Head for the cylinder cover | 203-04-041 | 883110720709 | Control Room | Cup 6 A | 2 |
| Articulated Bar Head | 203-04-042 | 883110720710 | Control Room | Cup 6 A | 2 |
| Hexagun Nut | 203-04-043 | | Control Room | Cup 6 A | 3 |
| CAM SHAFT WITH CAMS | | | | | |
| Inlet cam | 209-7-205 | | Basement | Rack 1 D | 1 |
| out let cam | 209-7-210 | | Basement | Rack 1 D | 1 |
| Injection cam | 209-7-200 | | Basement | Rack 1 D | 1 |
| FUEL INJECTION VALVE | | | | | |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--|----------------|--------------|-----------------|----------|----------|
| Sprng plate | 221-01-010 | 883110720957 | Control Room | Cup 6 B | 7 |
| Pressure Spring | 221-01-011 | 883110720958 | Control Room | Cup 6 B | 4 |
| Thrust Piece | 221-01-012 | 883110720959 | Control Room | Cup 6 B | 7 |
| O RING (161-1-012) | 221-01-014 | 883110720698 | Control Room | Cup 6 B | 94 |
| Clamping Pin | 221-01-015 | 883110720960 | Control Room | Cup 6 B | 5 |
| Injection Nozzle | 221-02-K | 883110720699 | Basement | Rack 3 C | 7 |
| Injection valve | 221-01-K | | Basement | Rack 1 A | 3 |
| CHARGE AIR PIPE | | | | | |
| Axial compensator | 280-14-007 | 883110720874 | Basement | Box 9 | 1 |
| Pipe Coupling | 280-14-008 | 883110720876 | Basement | Rack 3 A | 13 |
| O RING | 280-14-010 | | Control Room | Cup 6 C | 19 |
| EXHAUST PIPE | | | | | |
| Axial compensator | 289-11-015 | | Basement | Box 3 | 4 |
| Axial compensator | 289-11-014 | | Basement | Box 9 | 2 |
| Cuick coupling | 289-11-017 | | Basement | Box 9 | 2 |
| CYLINDER LUBRICATOR | | | | | |
| Inspection glass | 302-02-012 | | Control Room | Cup 6 A | 7 |
| Alarm unit | 302-02-019 | | Control Room | Cup 8 A | 2 |
| LUBRICATION OIL PUMP FOR VALVE SEAT LUBRICATION | | | | | |
| Oil pump for valve seat lubrication | 302-17-001 | 883110721460 | Basement | Box 1 | 1 |
| Block distributor | 302-17-008 | 883110721461 | Basement | Box 1 | 1 |
| OIL MIST DETECTOR UNIT | | | | | |
| Measuring riser with e- module (OMD) | 413.X1.NP1 | 883110721442 | Control Room | Cup 8 D | 1 |
| Filter element | 413-A-10790 | 883110720979 | Control Room | Cup 6 D | 3 |
| Set of Wear Parts | 413-A-10001-VP | 883110720972 | Control Room | Cup 6 D | 3 |
| Air filter | 413-A-10002 | 883110720971 | Control Room | Cup 6 D | 8 |
| Scavang air filter(413-06-015) | 413-A-10042 | 883110720372 | Control Room | Cup 6 D | 4 |
| INDICATING DEVICE | | | | | |
| Threaded socket | 419-01-D | 883110720961 | Basement | Rack 3 C | 5 |
| Connection socket | 419-01-001 | 883110720965 | Basement | Rack 3 C | 2 |
| Sleeve | 419-01-002 | 883110720701 | Control Room | Cup 6 D | 6 |
| Cylindrical screw | 419-01-003 | 883110720964 | Basement | Rack 3 C | 6 |
| Seal ring | 419-01-006 | 883110720962 | Control Room | Cup 6 D | 35 |
| Indicator pipe | 419-01-007 | | Basement | Rack 3 B | 1 |
| Seal ring | 419-01-011 | 883110720963 | Control Room | Cup 6 D | 9 |
| Indicator valve | 419-01-012 | 883110720700 | Basement | Box 4 | 11 |
| PIPING FOR TURBO CHARGER | | | | | |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|-----------------------------------|---------------|--------------|-----------------|----------|----------|
| Pressure reducing valve | 430-13-145 | | Control Room | Cup 8 E | 1 |
| STARTING AIR PIPE | | | | | |
| Flame breaker | 432-07-007 | 883110721037 | Basement | Rack 1 C | 2 |
| Cylindrical screw | 432-07-016 | 883110721035 | Basement | Rack 1 C | 8 |
| Cylindrical screw | 432-07-014 | 883110721038 | Basement | Rack 1 C | 8 |
| Round seal ring | 432-07-011 | 883110720702 | Control Room | Cup 6 B | 20 |
| FUEL INJECTION PIPE | | | | | |
| Round seal ring(161-01-012) | 434-01-006 | 883110720703 | Control Room | Cup 6 B | 14 |
| O ring seal | 434-01-008 | | Control Room | Cup 6 B | 69 |
| Nut | 434-01-016 | | Control Room | Cup 6 E | 48 |
| Jacketed injection pipe | 434-01-L | 883110721824 | Basement | Box 1 | 4 |
| Circlip | 434-01-019 | | Control Room | Cup 6 B | 48 |
| O ring seal | 434-01-022 | 883110720760 | Control Room | Cup 6 B | 34 |
| FUEL PIPES | | | | | |
| O ring seal | 434-15-113 | 883110720966 | Control Room | Cup 6 B | 2 |
| O ring seal | 434-15-120 | | Control Room | Cup 6 B | 16 |
| O ring seal | 434-15-116 | 883110720705 | Control Room | Cup 6 B | 46 |
| FUEL PIPES ON COUPLING END | | | | | |
| Hollow screw | 434-19-057 | 883110720967 | Control Room | Cup 6 B | 1 |
| seal ring | 434-19-058 | 883110720968 | Control Room | Cup 6 B | 6 |
| seal ring | 434-19-059 | 883110720969 | Control Room | Cup 6 B | 6 |
| O ring seal | 434-19-062 | 883110721452 | Control Room | Cup 6 B | 2 |
| BUFFER PISTON | | | | | |
| Pressure spring | 434-20-011 | | Control Room | Cup 6 B | 3 |
| Presure Spring | 434-20-012 | | Control Room | Cup 6 B | 4 |
| Seal Ring | 434-20-016 | 883110721453 | Control Room | Cup 6 B | 4 |
| Gasket | 434-20-018 | 883110720706 | Control Room | Cup 6 B | 1 |
| Piston | 434-20-020 | 883110720708 | Basement | Rack 1 C | 2 |
| FUEL PIPES ON FREE END | | | | | |
| Pressure limiting valve | 434-21-066 | 883110720727 | Basement | Rack 3 C | 1 |
| O Ring | 434-21-066-14 | | Control Room | Cup 6 B | 2 |
| Round seal ring | 434-21-066-15 | | Control Room | Cup 6 B | 2 |
| | | | | | |
| | | | | | |
| ROCKER ARM LUBRICATION | | | | | |
| Feed pipe | 440-18-024 | | Basement | Rack 3 B | 2 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|-----------------------------|----------------|--------------|-----------------|---------|----------|
| | | | | | |
| | | | | | |
| COOLING WATER PIPES | | | | | |
| O ring | 447-23-067 | | Control Room | Cup 6 C | 34 |
| HONING AND GRINDING MACHINE | | | | | |
| O ring | 490-009-010-16 | | Control Room | Cup 6 C | 4 |
| Support ring | 490-009-010-17 | | Control Room | Cup 6 C | 4 |
| Support ring | 490-009-010-19 | | Control Room | Cup 6 C | 4 |
| O ring | 490-009-010-18 | | Control Room | Cup 6 C | 4 |
| Honing stone | 490-NP-14 | 883110720711 | Control Room | Cup 6 C | 124 |
| O ring | 490-009-346 22 | 883110721033 | Control Room | Cup 6 C | 13 |
| O ring | 490-009-346-23 | 883110721034 | Control Room | Cup 6 C | 12 |
| O ring | 490-009-346-19 | 883110721031 | Control Room | Cup 6 C | 9 |
| Round seal ring | 490-009-346-20 | 883110721032 | Control Room | Cup 6 C | 8 |
| Bearing shell push-out tool | 490-021-201 | 883110721240 | Control Room | Cup 6 C | 1 |
| Bearing shell push-out tool | 490-021-202 | 883110721241 | Control Room | Cup 6 C | 1 |
| Centering templet | 490-021-203 | 883110721238 | Control Room | Cup 6 C | 1 |
| Centering templet | 490-021-204 | 883110721239 | Control Room | Cup 6 C | 1 |
| Ball guide adjustabale | 490-050-136-28 | | Control Room | Cup 6 C | 3 |
| Coupling shaft | 490-212-15-300 | | Control Room | Cup 6 C | 1 |
| Worm | 490-212-15-001 | | Control Room | Cup 6 C | 1 |
| Rack | 490-212-40-20 | | Control Room | Cup 6 C | 2 |
| COG Belt Disc | 490-240-20-005 | | Control Room | Cup 6 C | 1 |
| Wax coated paper | 490-419-351-4 | | Control Room | Cup 6 C | 4 |
| Grinding wheel | 490-861-51-250 | 883110720713 | Control Room | Cup 6 C | 5 |
| Grinding wheel | 490-861-60-626 | 883110720712 | Control Room | Cup 6 C | 40 |
| COG Belt (Drive Unit) | 490- | | Control Room | Cup 6 B | 2 |
| COG Belt | 490-831-21-150 | 883110720970 | Control Room | Cup 6 C | 4 |
| EXHAUST TURBO CHARGER | | | | | |
| Nozzel ring for TC | 513-01-001 | TC | Basement | Box 12 | 2 |
| Clamping Ring | 513-010 | 883110720741 | Basement | Box 12 | 2 |
| Lock washer | 513-014 | 883110720747 | Control Room | Cup 6 C | 10 |
| Lock washer | 513-01-015 | 883110720742 | Control Room | Cup 6 C | 10 |
| Lock washer | 513-01-024 | 883110720745 | Control Room | Cup 6 C | 16 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--------------------------------------|------------|--------------|-----------------|----------|----------|
| Sleeve | 513-01-016 | 883110720743 | Control Room | Cup 6 C | 6 |
| Shroud ring | 513-508 | 883110720751 | Basement | Box 12 | 4 |
| Clamping Ring | 513-011 | | Basement | Rack 1 E | 4 |
| Hex Bolt | 513-01-025 | 883110720746 | Basement | Rack 1 B | 17 |
| Hex Bolt | 513-025 | 883110720750 | Basement | Rack 1 B | 11 |
| Hex Bolt | 513-012 | | Basement | Rack 1 B | 126 |
| Hex Bolt | 513-022 | 883110720748 | Basement | Rack 1 B | 47 |
| gasket | 517-070 | 883110720728 | Control Room | Cup 6 C | 8 |
| gasket | 517-079 | 883110720729 | Control Room | Cup 6 C | 14 |
| gasket | 517-085 | 883110720724 | Control Room | Cup 6 C | 1 |
| Labrynth disc | 517-089 | 883110720738 | Basement | Rack 1 B | 2 |
| Round seal ring | 517-063 | 883110720977 | Control Room | Cup 6 C | 2 |
| Labrinth disc | 517-064 | 883110720725 | Basement | Box 12 | 2 |
| Stud screw | 517-068 | 883110720733 | Basement | Rack 1 B | 12 |
| Stud screw | 517-069 | 883110720734 | Basement | Rack 1 B | 12 |
| Hex Bolt | 517-093 | 883110720732 | Basement | Rack 1 B | 30 |
| Hex Nut | 517-094 | 883110720736 | Basement | Rack 1 B | 24 |
| Lock washer pair | 517-095 | 883110720735 | Control Room | Cup 6 C | 16 |
| Lock washer pair | 517-082 | 883110720731 | Control Room | Cup 6 C | 16 |
| screw plug | 517-016 | 883110720737 | Control Room | Cup 6 C | 4 |
| Hex Bolt | 517-081 | 883110720730 | Basement | Rack 1 B | 26 |
| Plain bearing | 517-055 | 883110720723 | Basement | Rack 1 A | 2 |
| Locating bearing | 517-075 | 883110720722 | Basement | Rack 1 A | 2 |
| End cover | 517-072 | | Basement | Rack 1 A | 2 |
| compressor wheel with conical sleeve | 520-044 | | Basement | Box 12 | 1 |
| Fixing plate | 520-006 | | Control Room | Cup 6 C | 289 |
| Fixing block nut | 520-007 | 883110720721 | Control Room | Cup 6 C | 180 |
| Shielding sheet rot | 520-013 | 883110720716 | Control Room | Cup 6 C | 206 |
| Intermediate ring | 520-039 | 883110720718 | Control Room | Cup 6 C | 2 |
| Conical sleeve | 520-047 | 883110720714 | Control Room | Cup 6 C | 3 |
| Feather key | 520-056 | 883110720749 | Control Room | Cup 6 C | 1 |
| Claw sleeve | 520-061 | 883110720720 | Basement | Rack 1 B | 1 |
| Special nut | 520-067 | 883110720715 | Basement | Rack 1 A | 1 |
| screw plug | 520-090 | 883110720719 | Control Room | Cup 6 C | 3 |
| Anti vibration lac wire | 520-009 | | Basement | Rack 1 B | 1 |
| Turbine blade | 520-008 | | Basement | Rack 1 B | 35 |
| Round seal ring | 540-016 | 883110721225 | Control Room | Cup 6 C | 2 |
| Sealing disc | 546-050 | | Control Room | Cup 6 C | 5 |
| closing sleeve | 578-001 | | Control Room | Cup 6 D | 1 |
| Round seal ring | 596-048 | | Control Room | Cup 6 C | 9 |
| Round seal ring | 596-049 | | Control Room | Cup 6 C | 4 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--|--------------|--------------|-----------------|----------|----------|
| Ball | 596-051 | | Control Room | Cup 6 C | 6 |
| NCW | | | | | |
| Compensation tank(ncw) | 602-D-013 | | Basement | Box 9 | 1 |
| PHE for NCW | 602-D-003 | | Basement | Rack 3 C | 1 |
| THERMOSTAT | | | | | |
| Set of gasket | 620.D.900 | | Control Room | Cup 6 D | 2 |
| LO PUMP | | | | | |
| O ring for L.O pump 62 | 620.B.018 | 883110721826 | Control Room | Cup 6 D | 1 |
| Flat gasket ring | 620-B-031 | 883110721827 | Control Room | Cup 6 D | 1 |
| Flat gasket ring | 620.B.046 | 883110721828 | Control Room | Cup 6 D | 1 |
| Bearing bush | 620-B-152 | 883110721829 | Basement | Box 1 | 8 |
| Lock ring Lo pump | 620-B-164 | 883110721830 | Control Room | Cup 6 D | 1 |
| Feather key | 620.B.165 | 883110721831 | Control Room | Cup 6 D | 2 |
| Deep groove ball bearing (6314/C3) | 620-B-170 | 883110721832 | Control Room | Cup 8 C | 1 |
| Supporting Disc | 620.B.172 | 883110721833 | Control Room | Cup 6 D | 1 |
| Lock ring | 620-B-173 | 883110721834 | Control Room | Cup 6 D | 1 |
| Feather key | 620.B.180 | 883110721835 | Control Room | Cup 6 D | 3 |
| Coupling Rubber | 620-B-900 | 883110721836 | Control Room | Cup 6 D | 4 |
| FO AUTO FILTER | | | | | |
| O ring | 643-B-015 | | Control Room | Cup 6 D | 2 |
| O ring | 643-B-016 | | Control Room | Cup 6 D | 1 |
| O ring | 643-B-017 | | Control Room | Cup 6 D | 2 |
| gasket | 643-B-018 | | Control Room | Cup 6 D | 3 |
| gasket | 643-B-019 | | Control Room | Cup 6 D | 3 |
| gasket | 643-B-111 | | Control Room | Cup 6 D | 6 |
| gasket | 643 -B-114 | | Control Room | Cup 6 D | 8 |
| 4/2way solenoid valve | 643-B-900 | | Control Room | Cup 8 D | 1 |
| Sealing Piston(FO filter) | 643- | 883110721812 | Control Room | Cup 6 D | 14 |
| T/C SUCTION BELOW | | | | | |
| Rubber compensator | 670-A-010 | 883110720875 | Basement | Rack 3A | 1 |
| LO DUPLEX FILTER | | | | | |
| Stainer element rod | 620-F-012 | | Basement | Rack 1 C | 9 |
| PLATE HEAT EXCHANGER | | | | | |
| M20 Rubber gasket,NBRP clip on gasket for LO/CA (new) | 32330-2604-6 | 883110720169 | Basement | Box 7 | 110 |
| M20 Rubber gasket,Local | | | Basement | Box 26 | 150 |
| M20 Plates with gasket for LO//CA (Used) | 32330-2604-6 | 883110720169 | Basement | Box 17 | 110 |
| M20 Plates for LO/CA (New) | 32330-2604-6 | 883110720169 | Basement | Box 7 | 110 |
| M10 Rubber gasket,NBRP clip on gasket | 32330-1509-6 | 883110720171 | Basement | Box 26 | 50 |
| M10 Rubber gasket,Local | | | Basement | Box 26 | 21 |
| LO AUTO FILTER UNIT | | | | | |
| Venting Unit | 620-E-008 | | Control Room | Cup 8 A | 1 |
| Bush | 620-E-021 | | Control Room | Cup 8 B | 1 |
| Cock plug (5424000) | 620-E-004 | 883110721462 | Basement | Box 10 | 1 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|----------------------------------|--------------|--------------|-----------------|----------|----------|
| Stainer element | 620-E-006 | | Basement | Rack 1 D | 152 |
| Cam disc (5134200) | 620-E-023 | 883110721463 | Control Room | Cup 8 B | 1 |
| O Ring | 620-E-036 | | Control Room | Cup 8 B | 4 |
| O Ring | 620-E-039 | | Control Room | Cup 8 B | 5 |
| Scraper | 620-E-043 | | Control Room | Cup 8 B | 4 |
| Groved-ring | 620-E-045 | | Control Room | Cup 8 B | 4 |
| O-ring | 620-E-050 | | Control Room | Cup 8 B | 7 |
| 5/2 way valve | 620-E-060 | | Control Room | Cup 8 B | 2 |
| Magnet coil | 620-E-060-01 | | Control Room | Cup 8 A | 1 |
| O-ring (3030063) | 620-E-038 | 883110721464 | Control Room | Cup 8 B | 8 |
| Safty Valve | 620-E-071 | | Control Room | Cup 8 B | 1 |
| Differential Pressure switch | 620-E-073 | | Control Room | Cup 8 B | 1 |
| Pressure Spring | 620-E-103 | | Control Room | Cup 8 B | 1 |
| Shaft nut (5002790) | 620-E-104 | 883110721467 | Control Room | Cup 8 B | 1 |
| Straight Pin (2300123) | 620-E-108 | 883110721468 | Control Room | Cup 8 B | 1 |
| Feather key (2400109) | 620-E-111 | 883110721469 | Control Room | Cup 8 B | 1 |
| Traurc Inverted V ring (3542193) | 620-E-049 | 883110721470 | Control Room | Cup 8 B | 3 |
| O ring | 620-E-032 | | Control Room | Cup 8 B | 10 |
| O ring | 620-E-041 | | Control Room | Cup 8 B | 3 |
| Sealing piston | 620-E-044 | | Control Room | Cup 8 B | 1 |
| O ring (3041058) | 620-E-046 | 883110721465 | Control Room | Cup 8 B | 4 |
| O ring (3050256) | 620-E-047 | 883110721466 | Control Room | Cup 8 B | 5 |
| Set of sealing | 620-E-180 | | Control Room | Cup 8 E | 3 |
| Cylindrical roller bearing | 620-E-058 | 883110721039 | Control Room | Cup 8 E | 1 |
| O-ring | 620-C-012 | | Control Room | Cup 8 B | 4 |
| O-ring | 620-C-016 | | Control Room | Cup 8 B | 2 |
| O-ring | 620-C-020 | | Control Room | Cup 8 B | 2 |
| O-ring | 620-C-025 | | Control Room | Cup 8 B | 2 |
| O-ring | 620-C-061 | | Control Room | Cup 8 B | 4 |
| Valve spring | 620-C-211 | | Control Room | Cup 8 B | 1 |
| Valve cone | 620-C-008 | | Control Room | Cup 6 D | 1 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|----------------------------------|-------------------|--------------|-----------------|---------|----------|
| Spring | 620-C-229 | | Control Room | Cup 6 D | 1 |
| Angle Ball Cock (2560063) | | 883110721816 | Control Room | Cup 6 D | 2 |
| ELECTRICALS SPARES | | | | | |
| PCB for diode monitor | | | Control Room | Cup 8 B | 2 |
| Motorize valve | 643-D-04-050 | | Control Room | Cup 8 D | 1 |
| Single type Thermo couple , EXH | 409-A-001 | | Control Room | Cup 8 E | 10 |
| Seal ring 006 | | | Control Room | Cup 8 D | 10 |
| Rotor | 400-01-002 | | Control Room | Cup 8 A | 1 |
| Speed Pick Up | 400-05-001 | | Control Room | Cup 8 A | 6 |
| Plug | 400-05-002 | | Control Room | Cup 8 A | 5 |
| Elect.Bulb | 125-X1-102 | 883110720363 | Control Room | Cup 8 B | 32 |
| Magnet 110/110V DC | | | Control Room | Cup 8 D | 2 |
| Under Voltage protection | 3AX-1103-2E | | Control Room | Cup 8 A | 1 |
| Time relay DC 24 V | AI 933N.0082 | | Control Room | Cup 8 A | 1 |
| Speed control device(on/off) | 994-008/ss1002 | | Control Room | Cup 8 A | 2 |
| Speed control device(over speed) | 994-010/1SSZ1002 | | Control Room | Cup 8 D | 3 |
| Speed control device(over speed) | 994-012-2SSZ1002 | | Control Room | Cup 8 E | 1 |
| Rpm indicator | 994-021/SI1004 | | Control Room | Cup 8 D | 3 |
| Speed Pick Up (T/C) | 994-020/1SE1004 | | Control Room | Cup 8 A | 4 |
| Elec. Speed indicator | 994-002/1SI1000 | | Control Room | Cup 8 D | 2 |
| Rectifier Module | | | Control Room | Cup 8 A | 1 |
| Synchronizer indictaor | | | Control Room | Cup 8 B | 1 |
| Frequency to current | 994-005-/St1000 | | Control Room | Cup 8 D | 1 |
| Frequency to current | 994-022-/St1004 | | Control Room | Cup 8 D | 4 |
| Trip Solenoid | 994-023-/1SZ-1010 | | Control Room | Cup 8 A | 1 |
| Motor contactor | 991-009-B123022 | | Control Room | Cup 8 A | 1 |
| Motor circuite breaker | 602-d-f1 | | Control Room | Cup 8 A | 1 |
| Pressure transmitter | 994-343-pt7180 | | Control Room | Cup 8 A | 2 |
| Pressure trnsmitter | 994-346-pt7400 | | Control Room | Cup 8 A | 1 |
| Pressure trnsducer | 994-319-pt6180 | | Control Room | Cup 8 A | 1 |
| Pressure trnsducer | 994-022/pt110 | | Control Room | Cup 8 A | 1 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--|---|--------------|-----------------|----------|----------|
| Spare contactor star/delta | | | Control Room | Cup 8 C | 1 |
| Alternator bearing pump | | | Control Room | Cup 8 C | 1 |
| Flow switch for ABOC (GEN) | | | Control Room | Cup 8 A | 1 |
| Resistance thermometer, PT 100(new type) | 994-085/2te2580 | | Control Room | Cup 8 B | 6 |
| Operation panel | 991-c-025 | | Control Room | Cup 8 B | 1 |
| Loauto filter cards | | | Control Room | Cup 8 B | 2 |
| Solenoid valve(DE F) | 620-C-100 | | Control Room | Cup 8 D | 2 |
| Indicating instrument | 926-961 | | Control Room | Cup 8 D | 2 |
| Heating paste | 413-A-NP3 | 883110720367 | Control Room | Cup 8 D | 1 |
| Temperature sensor | 408-A-001 | | Control Room | Cup 8 C | 1 |
| Temp. sensor PT 100(Local) | | 883110721203 | Control Room | Cup 8 E | 6 |
| EFF1,3KW,2820 RPM,100L,B3,MOTOR | JCW HEATER | 883110720944 | Basement | Basement | 1 |
| PUMP SERVICE KIT | | | | | |
| Mech. Seal for Booster p/p | ACG045K5NTBT,Si ze 25mm,Type-SB/S-43/0250/M1 | 883110720622 | Control Room | Cup 12 D | 6 |
| Mech. Seal for cooling water p/p | Allweiler pump,Model no. 160/011/70.Type-ERS/B/0300 | 883110720403 | Control Room | Cup 12 D | 2 |
| Allweiler p/p for JCW/CA | Type:NI80-160/01/170U3.1D-W19-42/350 | | Control Room | Cup 12 D | 2 |
| Mech. Seal for sep. feed p/p | Tushco Model 338-248,Type-SB/S-43/0380 | 883110720623 | Control Room | Cup 12 D | 6 |
| Bearing for feed p/p | 6305 2Z | | Control Room | Cup 12 D | |
| Mech. Seal for NCW p/p | Grunfoes Monoblock,Size 12 mm,Type-GSCU/0122 | 883110720621 | Control Room | Cup 12 D | 3 |
| Mech. Seal for Preheating p/p | Grundfoes LP65-125/128 | 883110720886 | Control Room | Cup 12 D | 1 |
| Mech. Seal for Preheating priming p/p | NB 32-160 | 883110721804 | Control Room | Cup 12 D | 2 |
| HFO & LO SEPERATOR | | | | | |
| Sight Glass | 0001-0028-830 | 883110721068 | Control Room | Cup 7 E | 1 |
| Gasket | 0004-5056-740 | 883110721070 | Control Room | Cup 7 D | 30 |
| Gasket | 0004-2199-750 | 883110721069 | Control Room | Cup 7 E | 12 |
| Gasket | 0004-1657-770 | 883110721017 | Control Room | Cup 7 E | 15 |
| Gasket | 0004-1658-770 | 883110721020 | Control Room | Cup 7 E | 14 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--------------------------------|-------------------------------------|--------------|-----------------|---------|----------|
| Gasket(0004.5316.740) | 0004-5316-780 | 883110721021 | Control Room | Cup 7 E | 2 |
| Gasket | 0004-5358-700 | 883110720991 | Control Room | Cup 7 E | 36 |
| Shaft seal ring(0004-5770-910) | 0004-3003-830 | 883110721026 | Control Room | Cup 7 E | 7 |
| Shaft seal ring(0004-5771-910) | 0004-3004-830 | 883110721024 | Control Room | Cup 7 E | 6 |
| Shaft seal ring(0004-5773-910) | 0004-3005-830 | 883110721023 | Control Room | Cup 7 E | 6 |
| Control unit(PLC) | 0005-4050-290 | | Control Room | Cup 7 D | 2 |
| Memory cassette(Eprom) | 0005-3668-000 8119-2224-717(LO) | | Control Room | Cup 7 D | 1 |
| Memory cassette(Eprom) | 0005-3668-000 8119-2224-716(HFO) | | Control Room | Cup 7 D | 1 |
| Gasket(2) 307 | 0007-1674-750 | 883110720998 | Control Room | Cup 7 C | 2 |
| Gasket | 0007-1861-750 | | Control Room | Cup 7 E | 7 |
| Gasket | 0007-1874-750 | | Control Room | Cup 7 E | 2 |
| Gasket | 0007-1890-750 | 883110721003 | Control Room | Cup 7 C | 13 |
| Gasket | 0007-1893-750 | 883110721004 | Control Room | Cup 7 C | 11 |
| Gasket | 0007-1937-750 | 883110721817 | Control Room | Cup 7 E | 20 |
| Gasket | 0007-1943-750 | 883110721009 | Control Room | Cup 7 C | 15 |
| Gasket | 0007-1944-750 | 883110720995 | Control Room | Cup 7 C | 18 |
| Gasket(2) 314 | 0007-2023-750 | 883110721001 | Control Room | Cup 7 C | 18 |
| Gasket | 0007-2078-750 | 883110721008 | Control Room | Cup 7 C | 7 |
| Gasket | 0007-2148-750 | 883110721818 | Control Room | Cup 7 E | 21 |
| Gasket | 0007-2334-750 | 883110721060 | Control Room | Cup 7 C | 21 |
| Gasket | 0007-2379-750 | 883110721013 | Control Room | Cup 7 E | 16 |
| Gasket | 0007-2425-750 | | Control Room | Cup 7 E | 5 |
| Gasket | 0007-2479-750 | 883110721010 | Control Room | Cup 7 C | 13 |
| Gasket | 0007-2507-750 | 883110721067 | Control Room | Cup 7 C | 12 |
| Gasket | 0007-2544-750 | 883110721820 | Control Room | Cup 7 E | 10 |
| Gasket | 0007-2548-750 | 883110720994 | Control Room | Cup 7 E | 6 |
| Gasket | 0007-2571-750 | 883110720992 | Control Room | Cup 7 E | 10 |
| Gasket | 0007-2572-750 | 883110721028 | Control Room | Cup 7 E | 7 |
| Gasket | 0007-2592-750 | 883110721016 | Control Room | Cup 7 E | 3 |
| Gasket | 0007-2586-750 | 883110721012 | Control Room | Cup 7 E | 15 |
| Gasket | 0007-2607-750 | 883110721022 | Control Room | Cup 7 E | 10 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--|---------------|--------------|-----------------|----------|----------|
| Gasket | 0007-2608-750 | 883110721027 | Control Room | Cup 7 E | 6 |
| Gasket | 0007-2631-750 | 883110721006 | Control Room | Cup 7 C | 3 |
| Gasket | 0007-2636-750 | 883110721002 | Control Room | Cup 7 E | 6 |
| Gasket | 0007-2641-750 | 883110721005 | Control Room | Cup 7 C | 11 |
| Gasket(Teflon) | 0007-2849-910 | 883110720999 | Basement | Cup 7 C | 2 |
| Gasket(Teflon) | 0007-2849-910 | 883110720999 | Basement | Rack 3 A | 5 |
| Gasket | 0007-2925-750 | 883110721007 | Control Room | Cup 7 E | 6 |
| Gasket | 0007-2940-750 | 883110721000 | Control Room | Cup 7 E | 9 |
| Gasket | 0007-3032-750 | 883110720993 | Control Room | Cup 7 E | 7 |
| Clutch pully | 2179-3370-020 | | Basement | Rack 3 E | 1 |
| Bearing cover | 2179-3375-000 | | Control Room | Cup 7 E | 1 |
| Worm wheel shaft(H) | 2179-3400-000 | | Control Room | Cup 7 D | 1 |
| New 040 worm spindle(V) | 2179-3420-000 | | Control Room | Cup 7 D | 1 |
| Clutch shoe | 0021-3051-000 | 883110720996 | Control Room | Cup 7 E | 12 |
| Protecting ring | 0008-5508-050 | 883110721071 | Control Room | Cup 7 E | 1 |
| Protecting ring | 0008-3008-050 | | Control Room | Cup 7 E | 1 |
| Spring assembly compl. | 0010-7220-000 | 883110721011 | Control Room | Cup 7 E | 2 |
| Chamber cover | 2178-6642-030 | | Control Room | Cup 7 E | 1 |
| Set of neck bearing spring | 0006-4389-090 | 883110721018 | Control Room | Cup 7 E | 1 |
| Angular contact Ball beaing(V) 7306 BECBM SKF (L) | 0011-7306-100 | 883110721585 | Control Room | Cup 7 E | 8 |
| Grooved Ball beaing (H&V)6211 P6 | 0011-6211-110 | 883110721015 | Control Room | Cup 7 E | 7 |
| Angular contact Ball beaing (H) 3208A B/T/H | 0011-3208-470 | 883110721025 | Control Room | Cup 7 E | 4 |
| Spherical plain bearing, GE 80 ES | 0011-8071-000 | 883110721588 | Control Room | Cup 7 E | 2 |
| Spring piston | 0026-2225-110 | 883110721019 | Control Room | Cup 7 E | 9 |
| Rotex pneumatic V/V (Displacement) | | 883110720860 | Control Room | Cup 7 E | 1 |
| Gasket | 0018-4845-750 | 883110721819 | Control Room | Cup 7 E | 12 |
| Rotex Solenoid V/V(Sealing) | 0018-8092-610 | 883110720861 | Control Room | Cup 7 D | 1 |
| Non return valve | 0018-4273-600 | | Control Room | Cup 7 D | 1 |
| Solinoid valve | 0018-6226-600 | | Control Room | Cup 7 D | 1 |
| Throttle valve(Rotex) | 0018-1677-280 | 883110721535 | Control Room | Cup 7 D | 4 |
| Air filter(1/4inch-10bar) | 0018-2535-600 | 883110721536 | Control Room | Cup 7 D | 4 |
| Water pressure reg. | 0018-1741-000 | | Control Room | Cup 7 D | 1 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--|--------------------|-------------------------------|-----------------|----------|----------|
| | | | | | |
| BOILER SPARES | | | | | |
| | | | | | |
| DTC 1set ponit PT-100 | | 883110720762 | Basement | Cup 13 | 1 |
| Diffuse plate 180 | | 883110720763 | Basement | Cup 13 | 2 |
| Electrode caps | | 883110720764 | Basement | Cup 13 | 2 |
| Fuel pump | | 883110720765 | Basement | Cup 13 | 1 |
| Mech.seal for fuel pump | | 883110720766 | Basement | Cup 13 | 2 |
| Flame failure relay | | 883110720767 | Basement | Cup 13 | 1 |
| Ignation Electrode 75X55 | | 883110720770 | Basement | Cup 13 | 7 |
| High Temp.Gland Washer | | 883110720771/ 883110721748 | Basement | Cup 13 | 1 |
| Photocell | | 883110720774 | Basement | Cup 13 | 1 |
| RTD Sensor PT-100 | | 883110720776 | Basement | Cup 13 | 1 |
| Safety valve 1.5 | | 883110720777 | Basement | Cup 13 | 1 |
| PH make Solenoid valve F.O | | 883110720778 | Basement | Cup 13 | 3 |
| Toughened Glass | | 883110720779 | Basement | Cup 13 | 3 |
| No water switch MNLP UA 10 | | 883110720780 | Basement | Cup 13 | 1 |
| Pressure switch MAH-15 CB-10 | | 883110720781 | Basement | Cup 13 | 2 |
| F.O Brades pipe 3/8"X500mm | | 883110720782 | Basement | Cup 13 | 3 |
| S.S.Brades pipe 3/8"X1000mm | | 883110720783 | Basement | Cup 13 | 3 |
| Ignation Transformer | | 883110720784 | Basement | Cup 13 | 1 |
| Blow down valve 1" | | 883110720785 | Basement | Cup 13 | 1 |
| Filter Element (Duplex) | | 883110720786 | Basement | Cup 13 | 1 |
| Backlite Gasket | | 883110720847 | Basement | Cup 13 | 5 |
| Steam solenoid valve 1/4" | | 883110720848 | Basement | Cup 13 | 2 |
| F.O Solenoid valve 1" | | 883110720849 | Basement | Cup 13 | 1 |
| DTC 2set Point | | 883110720850 | Basement | Cup 13 | 1 |
| Rubber Spider | | 883110720852 | Basement | Cup 13 | 2 |
| Thermostat 0~200°C | | 883110720853 | Basement | Cup 13 | 2 |
| Pres. Guage, 0~42 Kg/Cm2, Bottom connection | | 883110721744 | Basement | Cup 13 | 3 |
| Pres. Guage, 0~42 Kg/Cm2, Back connection | | 883110721745 | Basement | Cup 13 | 3 |
| Bronze Valve DN 40 | | 883110721746 | Basement | Cup 13 | 2 |
| Bronze Valve DN 15 | | 883110721747 | Basement | Cup 13 | 4 |
| Fuel oil heater coil | | 883110721915 | Basement | Basement | 1 |
| | | | | | |
| HFO AUTO FILTER UNIT, COMTECH | | | | | |
| O-Ring (Pos no.17) | 2-261 | 883110721048 | Basement | Cup 13 | 9 |
| O-Ring (Pos no.18) | 2-223 | 883110721049 | Basement | Cup 13 | 3 |
| O-Ring (Pos no.19) | 2-118 | 883110721050 | Basement | Cup 13 | 6 |
| O-Ring (Pos no.15) | 2-117 | 883110721051 | Basement | Cup 13 | 1 |
| Mud Drain Throttle (Pos no. 11) | 4-25488 | 883110721052 | Basement | Cup 13 | 1 |
| Valve seat/ valve Face (Pos no.7) | 4-25127 | 883110721053 | Basement | Cup 13 | 1 |
| Diff.Pre. Indicator (Pos no.51) 0.6~0.8 | 4.36.2 | 883110721054 | Basement | Cup 13 | 2 |
| 4/2way solenoid valve | 643-B-900/ 2604928 | 883110721811 | Basement | Cup 13 | 4 |
| Sleve disc for fuel filters | 643-B-005/ 1830996 | 883110720626 | Basement | Cup 13 | 30 |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|--|--|--------------|-----------------|----------|----------|
| O-Ring | 3031222 | 883110721814 | Basement | Cup 13 | 10 |
| O-Ring | 3034299 | 883110721815 | Basement | Cup 13 | 10 |
| Support Body | 6652259 | 883110721813 | Basement | Cup 13 | 1 |
| HFO MANUAL FILTER UNIT , COMTECH | | | | | |
| O-Ring/Tech. Ring (Pos no .113) | J-330-7-R-T | 883110721055 | Basement | Cup 13 | 3 |
| O-Ring (Pos no.114) | 2-231 | 883110721056 | Basement | Cup 13 | 6 |
| CYLINDER L.O FILTER UNIT , COMTECH | | | | | |
| Filter Element /Disposable Catridge (Pos no.17) | | 883110721057 | Basement | Cup 13 | 12 |
| O` Ring/ High Pre. Gasket (Pos no: 6) | 172x189x1.5 | 883110721058 | Basement | Cup 13 | 4 |
| HFO P/P ROOM MANUAL FILTER UNIT , COMTECH | | | | | |
| O Ring/ Gasket (Pos no. 7) | 13d x 18 x 1.5 | 883110721059 | Basement | Cup 13 | 10 |
| O Ring / High Pre. Gasket (Pos no.5) | 172dx189dx1.5 | 883110721058 | Basement | Cup 13 | 12 |
| O Ring (Pos no.15) | 69d x 22 x 5.33 | 883110721061 | Basement | Cup 13 | 12 |
| LO MANUAL FILTER UNIT , COMTECH | | | | | |
| O ring (Pos.No.6) | Art.-Nr.458 367.67x6.99 | 883110721062 | Basement | Cup 13 | 8 |
| Filter element./ Socket Candle (Pos. No. 12) | | 883110721063 | Basement | Rack 1 C | 10 |
| O-Ring/Gasket (Pos. No .24) | 3420011 Best.Nr.2.02.036Art.- Nr.375 240.67x5.33 | 883110721064 | Basement | Cup 13 | 7 |
| Gasket (Pos.No.25) | 3420011 Best.Nr.2.02.036Art.- Nr.375 240.67x5.33 | 883110721064 | Basement | Cup 13 | 8 |
| O-Ring (Pos.No.28) | 3040133 Art.-Nr.378 260.07x5.33 | 883110721065 | Basement | Cup 13 | 7 |
| Diff Press Indic (Pos.no32) 0.9~1.2 | 4.36.2 | 883110721066 | Basement | Cup 13 | 2 |
| HYDROLIC PUMP, GEMINI | | | | | |
| Air Regulator | | 883110721211 | Control Room | Cup 7 C | 1 |
| Repair Kit for RCH306 | | 883110721210 | Control Room | Cup 7 C | 1 |

IMPORTED ELECTRICAL SPARE

| Item | Description | Quantity | Module | MLFB No |
|------|-------------|----------|--------|---------|
|------|-------------|----------|--------|---------|

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storge Location | | Quantity |
|-------------|--|--------------|-------------------------------|--------------------------------|----------|
| 1 | Siemens make, S7-400 Controller | 1 | S7-414- 2DP | 6ES7 414- 2XK05- 0AB0 | |
| 2 | Siemens make, S7-400 memory card | 1 | 2 MB FEPROM memory card | 6ES7 952- 1KL00- 0AA0 | |
| 3 | Siemens make, S7-300 Controller | 1 | S7-315- 2DP | 6ES7 315- 2AH14- 0AB0 | |
| 4 | Siemens make, S7-300 memory card | 1 | 2 MB Micro Memory Card | 6ES7 953- 8LL20- 0AA0 | |
| 5 | Siemens make, S7-400 power supply | 1 | PS-405-4A | 6ES7 405- 0DA02- 0AA0 | |
| 6 | Siemens make S7-300, Profibus Module IM153-1 | 1 | IM-153-1 | 6ES7 153- 1AA03- 0XB0 | |
| 7 | Siemens make, S7-300, Digital Input module, 32 CH, 24V DC | 1 | DI-32 | 6ES7 321- 1BL00- 0AA0 | |
| 8 | Siemens make, S7-300, Digital Output module, 32 CH, 24V DC | 1 | DO-32 | 6ES7 322- 1BL00- 0AA0 | |
| 9 | Siemens make, S7-300, Analogue input module, 8 CH, Volt/Current | 1 | AI-8 | 6ES7 331- 7KF02- 0AB0 | |
| 10 | Siemens make, S7-300, Analogue Output module, 8 CH, Volt/Current | 1 | AO-8 | 6ES7 332- 5HB01- 0AB0 | |
| 11 | Siemens make, S7-300, Front connectors for DI/DO | 1 | SPRING TYPE | 6ES7 392- 1BM01- 0AA0 | |

DG SPARE PARTS STATEMENT(INVENTORY) 12 V 48/60

| DESCRIPTION | Part No. | SAP Code no. | Storage Location | | Quantity |
|-------------|---|--------------|------------------|--------------------------------|----------|
| 12 | Siemens make, S7-300, Front connectors for AI/AO | 1 | SPRING TYPE | 6ES7 392- 1BJ00- 0AA0 | |
| 13 | Siemens Make Profibus DP connector | 5 | With PG Port | 6ES79 72- 0BB42- 0XA0 | |

Annexure – 2 (Reconditioned Spares & Tools available with the Plant)

| Portable Equipments for MAN DG Sets | | | | | |
|-------------------------------------|---------|---|------------------|-------------|-----|
| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | | QTY |
| TOOLS CUPBOARD NO 2 | | | | | |
| 1 | OOO.262 | Tommy Bar 8mm Dia | Engine Room | Tool Box 2 | 1 |
| 2 | OOO.263 | Tommy Bar 10mm Dia | Engine Room | Tool Box 2 | 1 |
| 3 | OOO.264 | Tommy Bar 12mm Dia | Engine Room | Tool Box 2 | 1 |
| 4 | OOO.507 | Tommy Bar 5mm Dia | Engine Room | Tool Box 2 | 1 |
| 5 | OO9.068 | Tommy Bar 6mm Dia | Engine Room | Tool Box 2 | 1 |
| 6 | OO9.010 | Hydraulic Tensioning Cylinder | Engine Room | Tool Box 2 | 2 |
| 7 | OO9.022 | Trunk Piston Tensioning Clylinder | Engine Room | Tool Box 2 | 1 |
| 8 | OO9.028 | Hydraulic Connector | Engine Room | Tool Box 2 | 2 |
| 9 | OO9.062 | Hydraulic Tensioning Cylinder | Engine Room | Tool Box 2 | 3 |
| 10 | OO9.063 | Hydraulic Tensioning Cylinder | Engine Room | Tool Box 2 | 3 |
| 11 | OO9.072 | Lifting tool (Ratchet type) | Engine Room | Tool Box 2 | 1 |
| 12 | OO9.072 | Lifting tool (Hyd. Type) | Engine Room | Tool Box 2 | 1 |
| 13 | OO9.079 | Hydraulic Tensioning Cylinder | Engine Room | Tool Box 2 | 2 |
| 14 | OO9.346 | Hydraulic Tensioning Cylinder | Engine Room | Tool Box 2 | 5 |
| 15 | OO9.338 | High Pressure Pump 2000 Bar | Engine Room | Tool Box 3 | 1 |
| 16 | O14.015 | Stud remover | Engine Room | Tool Box 2 | 1 |
| 17 | O20.046 | Thrust piece | Engine Room | Tool Box 2 | 2 |
| 18 | O21.089 | Thrust piece | Engine Room | Tool Box 2 | 2 |
| 19 | O21.195 | Thrust piece | Engine Room | Tool Box 2 | 2 |
| 20 | O30.206 | Thrust piece | Engine Room | Tool Box 2 | 4 |
| 21 | O55.100 | Thrust piece | Engine Room | Tool Box 2 | 2 |
| 22 | O55.125 | Thrust piece | Engine Room | Tool Box 2 | 2 |
| 23 | O55.126 | Thrust piece | Engine Room | Tool Box 2 | 2 |
| 24 | O55.127 | Thrust piece | Engine Room | Tool Box 2 | 2 |
| 25 | 101.018 | Thrust piece | Engine Room | Tool Box 2 | 4 |
| 26 | O34.086 | Piston Ring Pliers | Engine Room | Tool Box 2 | 1 |
| 27 | OO2.165 | Circlip Pliers | Engine Room | Tool Box 2 | 1 |
| 28 | | Wooden Block | Engine Room | Tool Box 2 | 4 |
| 29 | | Torque Wrench 50-210 Nm | Engine Room | Tool Box 2 | 2 |
| 30 | | Torque Wrench 140-560 Nm | Engine Room | Tool Box 2 | 2 |
| 31 | | Torque Wrench 750-2000 Nm | Engine Room | Tool Box 2 | 1 |
| 32 | D3245 | Torque Wrench 150-800 Nm (German) | Engine Room | Tool Box 2 | 1 |
| 33 | | Torque Wrench 475-1015 Nm | Engine Room | Tool Box 2 | 2 |
| 34 | | Torque Wrench DC-5A 100-500 | Engine Room | Tool Box 2 | 1 |
| 35 | | Pipe 2' long | Engine Room | Tool Box 2 | 2 |
| 36 | O50.095 | Liner Calibration Tool | Engine Room | Tool Box 2 | 1 |
| 37 | | Steel Scale (1mtr) | Engine Room | Tool Box 2 | 1 |
| 38 | | Vernier (1mtr) | Engine Room | Tool Box 2 | 1 |
| 39 | | 36 Box with 1" female for tappet setting | Engine Room | Tool Box 2 | 1 |
| 40 | | 36 Ring Spanner for tappet setting | Engine Room | Tool Box 3 | 2 |
| 41 | | Reducer 1" male X 3/4" female | Control Room | Spl Tool CB | 1 |
| 42 | | Reducer 3/4" male X 1/2" female | Control Room | Spl Tool CB | 2 |
| 43 | | 1" female with 22mm Allen Head (Rocker arm) | Engine Room | Tool Box 2 | 1 |
| 44 | | Tool 030.235 | Engine Room | Tool Box 2 | 1 |
| | | | | | |
| | | | | | |

| WORK SHOP EQUIPMENTS | | | | | |
|-------------------------------|------------|--|------------------|--------------|-----|
| SR NO | PART NO. | DESCRIPTION | | | QTY |
| 1 | 221.222 | Injector nozzle test stand 48/60B; 51/60DF | WORK SHOP | | 1 |
| 2 | 113.242 | Electric valve cone grinding machine without collet chuck typ VKM 3.1 | WORK SHOP | | 2 |
| 3 | 55.13 | Mounting and turning device 40/50, 48/60B 51/60DF, 51/60G | WORK SHOP | | 2 |
| 4 | 113.251 | Electrical valve seat turning machine maker VD4E, AC 230 V (+/- 10%), 50-60 Hz 48/60B, 48/60CR | WORK SHOP | | 1 |
| | | | | | |
| | | | | | |
| TOOLS CUPBOARD NO 3 (RACK 1) | | | | | |
| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | | QTY |
| 1 | | Eye Bolt M10 | Engine Room | CB 3/ Rack 1 | 4 |
| 2 | | Eye Bolt M12 | Engine Room | CB 3/ Rack 1 | 4 |
| 3 | | Eye Bolt M16 | Engine Room | CB 3/ Rack 1 | 7 |
| 4 | | Eye Bolt M20 | Engine Room | CB 3/ Rack 1 | 3 |
| 5 | | Eye Bolt M24 | Engine Room | CB 3/ Rack 1 | 4 |
| 6 | 000-552 | Ratchet type Tackle (Chain Block) | Engine Room | CB 3/ Rack 1 | 1 |
| 7 | 030-033 | Carrier | Engine Room | CB 3/ Rack 1 | 1 |
| 8 | 030-237-9 | Rod for dummy piston | Engine Room | CB 3/ Rack 1 | 1 |
| 9 | 050-084 | Installing & Removing tool (set of 6 nos) | Engine Room | CB 3/ Rack 1 | 1 |
| 10 | 055-133 | Injector pocket Cleaning Device | Engine Room | CB 3/ Rack 1 | 1 |
| 11 | 111-115 | Connecting Shackle | Engine Room | CB 3/ Rack 1 | 3 |
| 12 | 113-131 | Valve Spring Compression device | Engine Room | CB 3/ Rack 1 | 1 |
| 13 | 113-138 | Valve seat mounting device | Engine Room | CB 3/ Rack 1 | 1 |
| 14 | 113-141 | Installing & Removing tool v/v guide | Engine Room | CB 3/ Rack 1 | 1 |
| 15 | 114-030 | Receptacles for Exh. cage pocket | Engine Room | CB 3/ Rack 1 | 2 |
| 16 | 114-031 | Suspension nut | Engine Room | CB 3/ Rack 1 | 1 |
| 17 | 114-033 | Holding device for valve cone | Engine Room | CB 3/ Rack 1 | 1 |
| 18 | 114-034-06 | Extractor sleeve | Engine Room | CB 3/ Rack 1 | 1 |
| 19 | 114-034-13 | Nut | Engine Room | CB 3/ Rack 1 | 1 |
| 20 | 161-014 | Installing & Removing tool | Engine Room | CB 3/ Rack 1 | 1 |
| 21 | 200-062 | Suspension device | Engine Room | CB 3/ Rack 1 | 1 |
| 22 | 201-009 | Installing & Removing tool (Roller Tappet) | Engine Room | CB 3/ Rack 1 | 1 |
| 23 | 221-128 | Extraction sleeve | Engine Room | CB 3/ Rack 1 | 1 |
| 24 | 221-129 | Removing tool | Engine Room | CB 3/ Rack 1 | 1 |
| 25 | 434-029 | Pin Wrench | Engine Room | CB 3/ Rack 1 | 1 |
| 26 | 201-006 | Locking Tool for fuel pump | Engine Room | CB 3/ Rack 1 | 12 |
| 27 | | Injector sleeve removing device | Engine Room | CB 3/ Rack 1 | 1 |
| 28 | | Rubber Protection cover for Cylinder head | Engine Room | CB 3/ Rack 1 | 8 |
| 29 | | Rubber Protection Roll | Engine Room | CB 3/ Rack 1 | 1 |
| | | | | | |
| (RACK 2) | | | | | |
| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | | QTY |
| 30 | 000-333 | Hook wrench | Engine Room | CB 3/ Rack 2 | 1 |
| 31 | 030-195 | Holding device | Engine Room | CB 3/ Rack 2 | 4 |

| | | | | | |
|----|---------|-----------------------------------|-------------|--------------|---|
| 32 | 030-210 | Guide tube | Engine Room | CB 3/ Rack 2 | 2 |
| 33 | 030-213 | Bracing device | Engine Room | CB 3/ Rack 2 | 4 |
| 34 | 030-219 | Connecting Rod holding device | Engine Room | CB 3/ Rack 2 | 6 |
| 35 | 030-224 | Rope guide | Engine Room | CB 3/ Rack 2 | 1 |
| 36 | 030-225 | Rope guide | Engine Room | CB 3/ Rack 2 | 1 |
| 37 | 030-226 | Clamp | Engine Room | CB 3/ Rack 2 | 1 |
| 38 | 030-227 | Guide tube | Engine Room | CB 3/ Rack 2 | 2 |
| 39 | 030-228 | Extention tube | Engine Room | CB 3/ Rack 2 | 2 |
| 40 | 030-229 | Rope guide | Engine Room | CB 3/ Rack 2 | 1 |
| 41 | 030-231 | Wire rope | Engine Room | CB 3/ Rack 2 | 1 |
| 42 | 030-236 | Holding device | Engine Room | CB 3/ Rack 2 | 2 |
| 43 | 034-006 | Guide Rod | Engine Room | CB 3/ Rack 2 | 1 |
| 44 | 034-089 | Installing & Removing tool (pin) | Engine Room | CB 3/ Rack 2 | 1 |
| 45 | 034-092 | Suspension device | Engine Room | CB 3/ Rack 2 | 1 |
| 46 | 034-094 | Inserting Bush for piston ring | Engine Room | CB 3/ Rack 2 | 1 |
| | | | | | |

(RACK 3)

| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | | QTY |
|-------|---------|-------------------------------|------------------|--------------|-----|
| | | | | | |
| 47 | 021-193 | Struts | Engine Room | CB 3/ Rack 3 | 2 |
| 48 | 021-199 | Mounting Device | Engine Room | CB 3/ Rack 3 | 1 |
| 49 | 021-212 | Traverse | Engine Room | CB 3/ Rack 3 | 2 |
| 50 | 021-213 | Traverse | Engine Room | CB 3/ Rack 3 | 1 |
| 51 | 021-214 | Guide Tube | Engine Room | CB 3/ Rack 3 | 2 |
| 52 | 021-215 | Guide Tube | Engine Room | CB 3/ Rack 3 | 2 |
| 53 | 021-196 | Guide | Engine Room | CB 3/ Rack 3 | 2 |
| 54 | 021-208 | Guide Tube | Engine Room | CB 3/ Rack 3 | 2 |
| 55 | 030-217 | Claw | Engine Room | CB 3/ Rack 3 | 1 |
| 56 | 030-219 | Connecting Rod holding device | Engine Room | CB 3/ Rack 3 | 6 |
| | | | | | |

SPECIAL TOOL LIST

| SR.NO | DESCRIPTION | STORAGE LOCATION | | QTY |
|-------|--|------------------|-------------|-----|
| 1 | (030-202) Measuring TOOL (030-202) | Control Room | Spl Tool CB | 1 |
| 2 | (434-033) Finish Milling Tool (434-033) | Control Room | Spl Tool CB | 1 |
| 3 | OMD Filter cleaning and vacuum gauge | Control Room | Spl Tool CB | 1 |
| 4 | Torque Wrench (20-150NM) | Control Room | Spl Tool CB | 1 |
| 5 | Torque Wrench (20-200NM) | Control Room | Spl Tool CB | 1 |
| 6 | (050-107) Liner Calibration Tool (050-107) | Control Room | Spl Tool CB | 1 |
| 7 | Magnetic Stand | Control Room | Spl Tool CB | 2 |
| 8 | (596-053) Oil Pump for T/C (596-053) | Control Room | Spl Tool CB | 1 |
| 9 | Hyd.Tens.Device (700Bar)Enerpac | Control Room | Spl Tool CB | 1 |
| 10 | Hyd.Tens.Device (63KN)Lukas | Control Room | Spl Tool CB | 2 |
| 11 | Depth Gauge | Control Room | Spl Tool CB | 1 |
| 12 | (113-132-21) Dial Gauge Seat Grinding (113-132-21) | Control Room | Spl Tool CB | 1 |
| 13 | Digital Temp.Censor | Control Room | Spl Tool CB | 1 |
| 14 | (009-052) Dial Gauge for Main bearing (009-052) | Control Room | Spl Tool CB | 4 |
| 15 | Outside Micrometer(0.01-25.0mm) | Control Room | Spl Tool CB | 1 |
| 16 | Inside Calliper | Control Room | Spl Tool CB | 1 |
| 17 | Outside Calliper | Control Room | Spl Tool CB | 1 |

| | | | | | |
|----|-------------|--|--------------|--------------|-------|
| 18 | .000.454 | Filler Gauge for Main Bearing (000.454) | Control Room | Spl Tool CB | 1set |
| 19 | | Filler Gauge 6 inch | Control Room | Spl Tool CB | 3 |
| 20 | | Filler Gauge 1feet | Control Room | Spl Tool CB | 1 |
| 21 | | Filler Gauge 1and1/2 | Control Room | Spl Tool CB | 1 |
| 22 | | Air Gun | Control Room | Spl Tool CB | 1 |
| 23 | (030-302) | Piston Centering Tool (030-302) | Control Room | Spl Tool CB | 1 |
| 24 | | Needle File Set | Control Room | Spl Tool CB | 1 |
| 25 | | Diamond File | Control Room | Spl Tool CB | 2 |
| 26 | (200-068) | FIP Setting Tool (200-068) | Control Room | Spl Tool CB | 1 |
| 27 | | NCW Air Tank Measuring Tool | Control Room | Spl Tool CB | 1 |
| 28 | (008-171) | Deflection Gauge (008-171) | Control Room | Spl Tool CB | 1 |
| 29 | | Extention Flexible Pipe | Control Room | Spl Tool CB | 2 |
| 30 | | Pre. Gauge for Honing Tool Air Hose PRV | Control Room | Spl Tool CB | 1 |
| 31 | | Dissolved Solid Tester | Control Room | Spl Tool CB | 1 |
| 32 | | Vernier Calliper ,1feet | Control Room | Spl Tool CB | 1 |
| 33 | | Hydrometer 91.100-1.300) | Control Room | Spl Tool CB | 1 |
| 34 | | Feeler Gauge,Inlet | Control Room | Spl Tool CB | 2 |
| 35 | 113-139 | Feeler Gauge, Exh.113-139 | Control Room | Spl Tool CB | 7 |
| 36 | | Feeler Strips 0.10mm | Control Room | Spl Tool CB | 1 |
| 37 | | Feeler Strips 0.20mm | Control Room | Spl Tool CB | 6 |
| 38 | | Feeler Strips 0.90mm | Control Room | Spl Tool CB | 3 |
| 39 | (030-192) | Upper Crank Pin Shell Holding Device (030-192) | Control Room | Spl Tool CB | 4 |
| 40 | | Inside Circlip Plier | Control Room | Spl Tool CB | 1 |
| 41 | | Outside Circlip Plier | Control Room | Spl Tool CB | 3 |
| 42 | | Piston Groove Measuring Tool | Control Room | Spl Tool CB | 1 |
| 43 | | Peak Pressure Gauge (200bar) | Control Room | Spl Tool CB | 1 |
| 44 | | Air intake filter circlip tool | Control Room | Spl Tool CB | 1 |
| 45 | | LO Auto filter element removing tool | Control Room | Spl Tool CB | 2 |
| 46 | | Set of Hydraulic connectors | Control Room | Spl Tool CB | 1 box |
| 47 | | Set Box Type allen keys and reducer | Control Room | Spl Tool CB | 2 box |
| 48 | | Oil Stone | Control Room | Spl Tool CB | 2 |
| 49 | | Divider | Control Room | Spl Tool CB | 1 |
| 50 | | Allen Key 22mm | Control Room | Spl Tool CB | 2 |
| 51 | | Allen Key 19mm | Control Room | Spl Tool CB | 2 |
| 52 | | Allen Key 17mm | Control Room | Spl Tool CB | 1 |
| 53 | | Allen Key 14mm | Control Room | Spl Tool CB | 2 |
| | | | | | |
| | | | | | |
| 1 | OO9.304 | Hyd.Hose 2m | Engine Room | Tool Box 2 | 4 |
| 2 | OO9.305 | Hyd.Hose 3m | Engine Room | Tool Box 2 | 6 |
| | | | | | |
| 1 | 490.021.201 | Bearing Shell Push-Out Tool | Control Room | Cup 6/Rack C | 1 Pc |
| 2 | 490.021.202 | Bearing Shell Push-Out Tool | Control Room | Cup 6/Rack C | 1 Pc |
| 3 | 490.021.203 | Centering Templet | Control Room | Cup 6/Rack C | 1 Pc |
| 4 | 490.021.204 | Centering Templet | Control Room | Cup 6/Rack C | 1 Pc |
| | | | | | |
| | | | | | |

TOOLS in Basement

| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | QTY |
|-------|---------|-------------|------------------|-----|
|-------|---------|-------------|------------------|-----|

| | | | | | |
|---|-----------|---|--------|-----------|---|
| 1 | 050-114-1 | Jacking Device (Liner) | Man DG | Basement | 1 |
| 2 | 050-116 | Installing & Removing tool (Fireland ring) | Man DG | Basement | 1 |
| 3 | 055-141 | Suspension Device (Cylinder Head) | Man DG | Work Shop | 1 |
| 4 | 111-113 | Suspension Device (Rocker Arm Cover) | Man DG | Basement | 1 |
| 5 | 114-037 | Installing & Removing tool (Exh. v/v cage) | Man DG | Basement | 1 |
| | | | | | |
| | | | | | |
| | | | | | |

TOOLS RACK IN BASEMENT (SECTION 1)

| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | | QTY |
|-------|---------------|------------------------------|------------------|----------|-----|
| 6 | 021-179 | Engine special tool | Man DG | Basement | 2 |
| 7 | 021-207 | Engine special tool | Man DG | Basement | 1 |
| 8 | 021-296 | Engine special tool | Man DG | Basement | 1 |
| 9 | 030-217 | Installing & Removing Device | Man DG | Basement | 1 |
| 10 | 030-223 | Installing & Removing Device | Man DG | Basement | 1 |
| 11 | 030-240 | Setting Device | Man DG | Basement | 1 |
| 12 | 030-247 | Suspension Device | Man DG | Basement | 1 |
| 13 | 050-127 | Engine special tool | Man DG | Basement | 1 |
| 14 | 111-121 | Assembling sleeve | Man DG | Basement | 1 |
| 15 | 11.49023-0264 | Device for Cam | Man DG | Basement | 1 |
| 16 | 11.32200-0774 | Device for Cam | Man DG | Basement | 1 |
| | | | | | |
| | | | | | |

TOOLS RACK IN BASEMENT (SECTION 2)

| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | | QTY |
|-------|------------|---------------------|------------------|----------|-----|
| 17 | 596.130 | Suspension Device | Man DG | Basement | 1 |
| 18 | 021-206 | Engine special tool | Man DG | Basement | 1 |
| 19 | 030-221 | Bracing Device | Man DG | Basement | 1 |
| 20 | 030-237-1 | Dummy Piston | Man DG | Basement | 2 |
| 21 | 050-086-15 | Upper Carrier | Man DG | Basement | 1 |
| 22 | 200-069-1 | Support | Man DG | Basement | 2 |
| 23 | 200-069-12 | Rope Guide | Man DG | Basement | 1 |
| 24 | 200-069-18 | Guide bar | Man DG | Basement | 1 |
| | | | | | |

TOOLS RACK IN BASEMENT (SECTION 3)

| SR NO | TOOL NO | DESCRIPTION | STORAGE LOCATION | | QTY |
|-------|---------|-------------------------------|------------------|----------|-----|
| 25 | 030-217 | Installing & Removing Device | Man DG | Basement | 1 |
| 26 | 077-001 | Engine special tool | Man DG | Basement | 1 |
| 27 | 030-238 | Engine special tool | Man DG | Basement | 1 |
| 28 | 030-274 | Carrier 1780 long | Man DG | Basement | 1 |
| 29 | 030-222 | Carrier 1400 long | Man DG | Basement | 2 |
| 30 | 030-223 | Engine special tool | Man DG | Basement | 1 |
| 31 | 289-013 | Exhaust Manifold Lifting tool | Man DG | Basement | 2 |
| 32 | 021-286 | Engine special tool | Man DG | Basement | 1 |
| | | | | | |

USED AND RECONDITION SPARES & TOOLS

| DESCRIPTION | Part.No | Location | QTY |
|-------------------------------------|--------------------|-----------|-----|
| Compensation tank(ncw) | 602-D-013 | RACK-04 A | 3 |
| Librynith disc | | RACK-04 A | 1 |
| Indicator pipe | 419.01.007 | RACK-04 A | 5 |
| Axial compensator | | RACK-04 A | 5 |
| Stud for exhaust manifold | 289 | RACK-04 B | 11 |
| Thrust flange | 161.01.011 | RACK-04 B | 1 |
| Axle center (small) | 112.09. | RACK-04 B | 2 |
| Axle outer (big) | 112.09.021 | RACK-04 B | 1 |
| Washer | 221.01.022 | RACK-04 B | 4 |
| Roller | | RACK-04 B | 1 |
| Nut | 055.04.048 | RACK-04 B | 5 |
| Nut | 055.04.046 | RACK-04 B | 1 |
| Control sleeve | 200.01.035 | RACK-04 B | 1 |
| Stud screw | 055.04.047 | RACK-04 B | 7 |
| Exhaust rocker arm | 201.01.F | RACK-04 B | 3 |
| Stud screw with nut & thrust washer | 034.01.514,515,516 | RACK-04 B | 8 |
| Valve cone piece | 114.03.018 | RACK-04 B | 34 |
| Retaining ring | 112.09.026 | RACK-04 B | 2 |
| Butting ring | 112.09.025 | RACK-04 B | 2 |
| Connection piece | 419.01.001 | RACK-04 B | 1 |
| Cylindrical screw | 111.04.004 | RACK-04 B | 8 |
| Quick release coupling pin | 289 | RACK-04 B | 5 |
| Rocker arm body | 112.09. | RACK-04 B | 4 |
| Valve seat (1mm over size) | | RACK-04 B | 1 |
| Rocker arm drive in/out | 112.09.002 | RACK-04 B | 2 |
| Handle for rocker box | 059.01.005 | RACK-04 B | 2 |
| Piston ring (1312) | | RACK-04 B | 1 |
| Graphite gasket | | RACK-04 B | 6 |
| Water washing line dummy | 578 | RACK-04 B | 1 |
| Allen. Bolt (12 mm X 50 mm) | | RACK-04 B | 8 |
| Connection pipe | 596.054 | RACK-04 B | 1 |
| Guide shoe | 034.01.520 | RACK-04 B | 1 |
| Sleeve | 419.01.002 | RACK-04 B | 8 |
| Cylindrical Pin | 055.05.036 | RACK-04 B | 4 |
| Cylindrical Pin | 055.05.035 | RACK-04 B | 1 |
| Insert | 055.04.025 | RACK-04 C | 3 |
| Flange | 055.04.026 | RACK-04 C | 2 |
| Shaft (Dia.32 X 245) | 24.90205.0075 | RACK-04 C | 1 |
| Nut (small) | | RACK-04 C | 5 |
| Sealing set for hyd. Jack | 009.062 | RACK-04 C | 10 |
| Sep. bearing cover (L) | | RACK-04 C | 1 |
| Grinding machine shaft | | RACK-04 C | 1 |
| Sleeve | | RACK-04 C | 5 |
| Guide pin | | RACK-04 C | 3 |
| Tension bolt | 200.01.068 | RACK-04 C | 4 |
| Clamping ring | 200.01.059 | RACK-04 C | 4 |
| Coller bolt | 200.01.062 | RACK-04 C | 4 |
| Nut | 200.01.063 | RACK-04 C | 4 |
| Dummy block | 578.02.040 | RACK-04 C | 1 |
| Exhaust/Inlet press. Spring | 114.03.010 | RACK-04 D | 15 |
| Exhaust/Inlet press. Spring | 114.03.011 | RACK-04 D | 15 |
| Roller tappet | 201.01.001 | RACK-04 D | 4 |
| FIP sleeve | 200-01-019 | RACK-04 D | 2 |

[illegible]

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| ELECTRICAL SPARE in CUPBOARD | | |
|-------------------------------------|--|------------|
| Godrej 04849 | | |
| Rack 1 | | |
| no. | Description | Qty |
| 1 | Interface module 6ES5312-5CA12 | 1 |
| 2 | Simatic 6ES5 300 5CA11 | 1 |
| 3 | CPU for siudur2000 | 1 |
| 4 | SIDUR 2000 Power supply card | 1 |
| 5 | CPU 6ES5 524-3UA13 | 1 |
| 6 | D.I. module : 6ES5420-4UA13 | 1 |
| 7 | A.O.module 6ES5470-4UC12 | 1 |
| 8 | A.I. module: 6ES5460-4UA13 | 2 |
| 9 | A.I. module: 6ES5 464 8ME11 | 1 |
| 10 | D.O. module 6ES5441-4UA13 | 1 |
| 11 | D.O. module 6ES5441-8MA11 | 2 |
| 12 | Simatic 6ES5 308 3UA11 | 1 |
| 13 | Simatic 6ES5421-8MA12 | 1 |
| 14 | Simatic Bus module 6ES5 700-8MA11 | 4 |
| 15 | L.O auto filter panel PCB card | 1 |
| 16 | PLC S5-155U Power supply unit- 6ES5931.8MD11 | 2 |
| 17 | Connector for computer bus | 1 |
| 18 | Impulse transmitter | 1 |
| 19 | PLC-Direct205 Logic-Old(1Box) | 1 |
| 20 | Fan replacement kit-6ES5981-0F441 | 3 |
| 21 | CPP P.C.B(018-1,016-1,017-1) | 3 |
| RACK 2 | | |
| no. | Description | Qty |
| 1 | SIDUR 2000 Spare cards(Big box) | 5 |
| 2 | S5-155U PLC Fan module-Old | 1 |
| 3 | S5-155U PLC Power supply card-Old | 1 |
| RACK 3 | | |
| no. | Description | Qty |
| 1 | Bus Diff. relay for generator 7ss1320 | 1 |
| 2 | Siemens relay 7SJ 5001 4DA00/FF | 1 |
| 3 | Battery charger Diodes(Anode,Cathode) | 6 |
| 4 | Diode fuse(GSA50) | 6 |
| 5 | DB9 Connector | 1 |
| 6 | U.P.S. Cable | 1 |
| 7 | Siemens breaker(11KV) moving contact | 1 |
| 8 | Glass Fuse-4A | 3 |
| 9 | PT100 Transceducers | 4 |
| 10 | OMD Card(Old) | 1 |
| 11 | S5 PLC CPU Card(old) | 1 |
| 12 | Analog i/p module 6ES5465-4UA12(faulty) | 1 |
| 13 | 6ES5095-8MA03(faulty) | 1 |
| 14 | Breaker On/Off indication | 6 |
| 15 | Speed Relay-Old | 3 |
| 16 | siemens relay 7SJ 5001 4DA00/FF | 1 |

ELECTRICAL SPARE in CUPBOARD

Godrej 0999

| | | |
|----|--|----|
| 1 | Governor motor old | 1 |
| 2 | Techogenerator old | 1 |
| 3 | L.O PRV spare solonoid coil | 1 |
| 4 | SOMS -PT100 | 24 |
| 5 | Pedistial bearing support ring | 1 |
| 6 | Impulse transmitter | 3 |
| 7 | Cyl. Lubrication glass tube+oring | 1 |
| 8 | RTD for bearing | 1 |
| 9 | RTD / PT100 | 25 |
| 10 | Thermocouple | 3 |
| 11 | Thermowell | 6 |
| 12 | Temp. sensor Type 'K' | 4 |
| 13 | Speed transmitter socket | 2 |
| 14 | Tank level indicator | 1 |
| 15 | Pressure transmitter (0- 30)mbar spare for EDS | 1 |
| 16 | L.O auto filter 5/2 way valve | 1 |
| 17 | Pressure transmitter (0 - 10)bar | 1 |
| 18 | Speed pick up | 3 |
| 19 | inductive position sensing device | 1 |
| 20 | OMD- 1complete unit(W/o card) | 1 |
| 21 | OMD- only control unit(with cord card) | 1 |
| 22 | OMD | 1 |
| 23 | Reverse power relay ;Typ:RW1-12-110-50-1-old | 2 |
| 24 | Generator slot temp selector switch | 2 |
| 25 | 7UT51 Differential proct. Relay for Generator | 1 |
| 26 | Reactive power control relay 7RM31.01-1B | 1 |
| 27 | earth fault relay :7SK8833 | 1 |
| 28 | Ext.Temp digital meter(ultra instruments) | 1 |
| 29 | Transducer ETPQ30 MW+MVAR | 1 |
| 30 | Magnetic isolation transducer 4...20mA | 1 |
| 31 | Frequency convertor transducer for T/c Speed | 1 |
| 32 | KV Meter for synchronising(dual) ~0-13.2 KV | 1 |
| 33 | Frequency meter dual for synchronising | 1 |
| 34 | Synchronoscope | 1 |

Annexure – 3



Contractor Safety Manual

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1. Purpose

Contractors comprise a part of the workforce across TML. Effective safety management of the Contractor is important to managing our overall safety performance.

The intent of this manual is to ensure a formal, uniform approach for the Management of Contractor Safety. The objective of this program is the development of an incident free work environment, by creating a systematic approach to managing contractors and making them aware of the risks associated with working on site. This is accomplished by implementing the following systematic program that requires the involvement and accountability of the contractor, their employees and management.

This Manual is developed based on Tata Motors Limited Contractor Safety Management Standards & Procedure.

2. Scope

This shall apply to all on-site contractor and subcontractor activities where a TML executed contract is in effect. The term “on-site” includes TML -owned or -leased facilities where operational controls of TML are in force.

3. Safety & Health Policy & Philosophy

For Tata Motors Limited Safety Policy & Philosophy - Refer to Annexure # I

Tata Motors Limited expects that all its contractors & sub contractors shall have their own safety & health policy signed by the topmost authority of the company.

4. TML Contractor Safety Management

It is a company-wide practice to contract with companies that embrace the TML Safety, Health and Environment Commitment. The TML six-step contractor safety management process is designed to provide a methodology for managing the risks associated with contractor activities at TML facilities. All TML facilities using contractor services on-site should observe the provisions of the six-step process, which are as follows:

The Six step processes are

- Contractor Pre-qualification
- Contract preparation
- Contract award

- Orientation and training
- Managing the Work
- Periodic evaluation

Only the contractors those who meet the pre qualification criteria of TML will be given offer to work inside TML premises. **Refer to Annexure # II**

5. Objectives & targets

5.1 General:

All personnel working in the Project site shall be committed to a policy of ensuring that the highest standards of Environment, Health, Safety and Welfare are being implemented. For such a purpose, the following objectives have been set forth in the Project:

- Unsafe acts & conditions must be detected, stopped immediately & corrected, with the aim to prevent their recurrence.
- Achieve a Safe and Healthy Workplace.
- The Safety & Health of all employees must receive prime consideration throughout all phases of work.
- Ensure compliance with all applicable laws, statutory regulations, codes of practices and standards set forth by the government and Owner's EHS standards time to time.
- In essence '**NO SAFETY NO WORK**'.

5.2 Goals (targets)

The following Safety goals apply to the Project:

- 100 % compliance to TML Contractor Safety Management Standards & procedures.
- 100 % induction & Job specific Training to all employees
- 100 % compliance of Contractor Field Safety Audits (CFSA)
- 100 % implementation of all TML High risk standards at site. .
- Lost Time Injuries - Zero
- Reportable Injuries - Zero
- Restricted Work Case & Medical Treatment case - Zero

- Reportable Environmental Incidents - Zero
- Pilferage - Zero
- Compliance to all applicable regulations - 100 %

6. Contractor Duties and Responsibilities

6.1 Legal Compliance:

The contractor must comply with The Factories act 1948, The state factories rules, and other applicable acts, statutes, codes, ordinances and regulations along with the requirements of the TML safety conditions in the contract.

Contractors are responsible for ensuring that their employees adhere to the directives of the safety program when performing work for TML.

6.2 Dress code

All Contract employees will adhere to the mandatory PPE requirements of TML, also the contract employees shall adhere to the dress code specified by the location.

6.3 Duties of Contractor

The contractor is obliged to follow all contractual conditions. Without prejudice to generality of what has been stated above, the contractor has to do the following:

The Contractor is responsible for controlling the manner and methods of its operations and is directly responsible for the safety of its employees and the employees of its sub-contractors. They should understand the methodology for contracting, planning and execution of work implemented by TML. The contractor's supervision should do all things necessary to insure the safety of its employees. The contractor responsibilities should include but are not limited to;

- Provide the site with individuals who are adequately trained for their assigned tasks.
- Contractor owner/manager must assign contact person i.e. contractor supervisor.
- Appropriate safety instructions / training of employees must be provided by the contractor supervisor.
- Ensure adherence to safety laws/regulations, and Tata Motors Ltd. safety rules, standards, procedures & practices.

- Contractor Supervisor must ensure that his personnel use the approved & appropriate PPE and equipment.
- Contractor shall prepare and ensure Standard Operating Procedures for all activities.
- Contractor shall create and ensure HIRA review periodically for all activities
- To ensure communication in local language or languages
- Maintain all records as per site and legal requirements.
- Report all near misses, incidents & support investigating incidents.
- Contractor to ensure that the Supervisor :
 - Meets all Safety, Health and Environmental requirements including obtaining permits, providing Material Safety Data Sheets, monitoring environmental controls, etc.
 - Follows the scope of work
 - Meets all work specifications and safety standards.
 - Provides satisfactory quality of work.
 - Maintains proper housekeeping.
 - Provides Safety resources / Stewards as applicable.

6.4 Duties of Contractor supervisor

The Contractor Site Supervisor is the connection between TML and the contractor employees.

In cooperation with the site-in-charge of his company and the TML Field Contract Administrators (FCA) he shall coordinate the work of his employees on site. He is not only responsible for the quality and safety of himself & his employees work, he is accountable, too. Similarly the contractor supervisor shall coordinate the work of all his sub-contractors' employees.

The contractor's supervisor shall review the site safety requirements with his employees prior to the beginning of each job. Documentation of this review shall be forwarded to the FCA.

In many cases several contractors of different crafts work together. Then the FCA and the different Contractor Supervisors shall synchronize their activities to maintain

safe work at all times. This will be normally done in regular meetings and in the field to be certain there is no misunderstanding. No incompatible activities shall be performed simultaneously in the same vicinity.

6.5 Safety Supervisors:

Contractors are required to designate a qualified safety supervisor who is knowledgeable in safety & health, and fire prevention.

Dress code: As specified by the Plant CSM Sub committee

Contractor must depute a safety supervisor(s) as per the Annexure III - A

Contractor must submit the experience history and qualifications for the person who is to manage the contractor's safety functions in the Form 1. (Refer to Annexure # III B)

6.6 Contractor Employee

The Contractor Employee has to be a well trained, competent and informed person. The instructions to these contractor employees should be given through Contractor Supervisor only.

Persons who are new entrants to the plant/site must complete a safety orientation as well as all relevant safety training that is equivalent to his experienced co-workers already on the site. No contract worker is allowed to perform any work until they have successfully completed the TML specified safety orientation.

7. No tolerance policy

7.1 Temporary or permanent removal from TML, premises may occur if the contractor's manager, supervisor, or person in charge of the work requests, allows, or employees to work in or around unsafe acts or conditions or violate regulations.

7.2 Immediate and permanent removal from TML, Dharwad premises may occur if a contractor's manager, supervisor, or employee engages in any of the following activities:

A. Openly exhibits disregard, defiance, or disrespect for the safety program.

B. Knowingly falsifies investigative documents or testimony involving an investigation.

D. Violates established safety rules, regulations, or codes that endanger themselves or others

E. Violates established environmental rules, regulations, or procedures that endanger the environment.

7.3 The contractor will be issued the show cause notice in the ANNEXURE IV for their safety violations. The contractor to receives 3 show cause notices will be penalized with penalty of Rs.25, 000 /-. Similarly Rs.50, 000 /- will be deducted for 5 show cause notices issued for violations within same financial year. Any violations beyond 5 will attract termination or blacklisting of contractor.

Annexure IV : Show cause notice

Annexure V : Penalty order

Annexure VI : Termination or Blacklist of Contract Order.

8. Reservation of Rights

8.1 TML reserves the right to interpret, to revise, or to depart from safety policies and procedures at any time without notice. TML also reserves the right to dictate safety standards during the course of a contract as necessary in the interest of safety.

8.2 Compliance with this safety manual or TML policies, procedures, and standards does not confer or entitle contractors or their employees to any benefits, rights, or privileges that go to TML employees by virtue of their status as employees of TML other than as per Factory ACT 1948.

9. Project Safety Management

Strategies:

The following are some of the important strategies, which must be in place to accomplish the SHE Plan.

Site opening : The contractor shall submit the following documents :

➤ General lay out

- General method of project development, equipment and materials storage areas, crane movements and positions, prefabrications, transport of equipment, machinery and materials, etc....
- Safety plan of action and policy for the project
- A formal document for site opening will be established

Installing: The contractor shall include the safety requirements at the design stage and highlight it in the drawings or documents.

- Method statements should be prepared by the contractors well in advance of corresponding activities. Activities will not start before submission / review of the method statements proposed by the contractor and approval by TML FCA
- Monitor compliance of EHS Plan requirements by all involved personnel.
- Conduct Safety Audits.

Resource Plan : _ Plan the execution of the fieldwork to avoid conflict between activities.

- Separate (Physically) the pedestrian traffic from vehicle traffic
- Ensure the Safety Compatibility of simultaneous operations.
- Minimize congestion at worksite areas.
- Use appropriate lay down areas.
- The contractors shall ensure training of all personnel on the general requirements for work and for specific requirements of the project.
- Instill people with project safety philosophy.
- Contractor must employ skilled people who are suitable for the Job.
- Ensure that all workers are physically fit for the Job. Safety induction will be given to whomever enter the construction site

Hazard Information

- Prior to the start of the work, the contractor shall contact the FCA and DCA to ensure that they have received pertinent information for the Work including permits, floor plans, utility information, etc.
- The contractor shall be responsible for the daily removal and/or disposal of waste generated from his work area. Good housekeeping shall be maintained

at all times. Hazardous waste generated from the work area must be removed and disposed of in accordance with Pollution Control Board / in accordance with contractual terms.regulations.

Applicability

All contractors performing work as per the contract, fabrication & erection, etc at the Project Site are to comply with the requirements of this policy.

10. Pro active Safety Monitoring

A Pro-active Safety Monitoring Program shall be used on the projects.

The following are some of the elements of such program

- Safety Audit Reports
 - To be conducted by the Senior person (may be a safety officer /in charge) at the sight on weekly basis. The records of the same shall be submitted to FCA on a monthly basis as per Annexure.
- Safety Inspections
 - To be carried out by the Safety in charge along with the site supervisor, the same shall be submitted to FCA on a monthly basis. The format of various equipment inspections are enclosed as **Annexure – VII**
- Safety Action Plan
 - To be submitted to FCA/DCA by the site manager before start of project with the approval of site Project manager – The Safety Action Plan shall identify all hazards associated in the project along with the plan for minimizing the risk posed by those hazards. .
- Method Statements
 - Method statement is to be prepared for all high risk jobs involved in day to day activities. The method statement must be approved by FCA before execution of the same. – Format enclosed as Annexure - VIII
- Monthly Safety Committee Meeting
 - The contractor (High risk contractors with work force more than 25) shall establish a Safety Committee Comprising of equal participation from contract workers and management staff. The Committee shall meet once

in a month to discuss the safety issues of the contract work men. The Minutes of such meetings shall be accurately recorded and promptly submitted to FCA after each monthly meeting. .

- Emergencies & Mock drill
 - The contractor (all high risk contractors) shall identify all possible emergencies / High potential risk that could arise out of work and organize a mock drill once in 3 months. the FCA promptly.

11. Safety Orientation & Training

All contractors and subcontractors are required to attend

- 1) General safety orientation,
- 2) TML Site Safety Orientation Training, and
- 3) Factory safety orientation,

which are prerequisites to start the job at any TML site.

Contractors shall submit the names of new employees to receive the safety orientation training, well in advance of the commencement of the work. TML safety team shall then schedule the training and advise the contractor of the orientation time and venue. No contract worker (including sub-contract workers) shall be allowed to start the job at TML premises until they have successfully completed a safety orientation.

Contractor's Supervisor's Role in Worker's Safety Orientation

The attitude of employees toward incident prevention depends a great deal upon the attitude of the supervisor. The supervisor shall take an active interest in the new worker, ensuring that all necessary safety information has been provided and that the new worker is adjusting well to the job.

The following action steps are a part of the contractor's supervisor's personal safety orientation and coaching of the new worker:

- Ask about last job
- Describe the new job
- Show worker around work area; point out hazards
- Introduce worker to others
- Describe basic rules

- Give worker a test run on tools and equipment
- Ensure daily Tool Box talk, TAKE 2, Oath etc
- Monitor new employee SHE performance.
- Provide safety coaching where necessary.
 - Check back to see how the worker is progressing.

Trade and Skill Training

- Appropriate training need to be organized by contractor, when needed, to ensure that a jobholder, either supervisor or worker, is competent to do his job safely. Trade and skill training and/or demonstrations of competence by the contractor worker that is required in the industries are:
 - Lifting Supervisor
 - Crane operator
 - Scaffold Supervisors
 - Scaffold Erectors
 - Equipment Operator
 - Forklift Operator
 - Slings and Rigging Operator
 - Drivers of mobile equipment
 - Licensed Electrical Workers
 - First Aid Training
 - Rescue Team Training

Contractors shall ensure that refresher training is provided at periodic intervals but not later than 01 year. All training information, records, and certificates will be properly documented and original documents shall be made available for verification. Failure to attend the training by a contractor worker can result in dismissal from the TML site.

12. Incident Notification

It is the policy of TML that all accidents or incidents that results in either personal injury or illness, and or damage to the property or environment shall be immediately reported to TML FCA and thoroughly investigated as per the Incident Investigation Procedure of Tata Motors Limited.

The steps involved in the incident Reporting

1. The contractor shall inform his immediate TML In charge over phone. In turn TML authorities will inform their appropriate people as per TML, Incident Investigation procedure.
2. Immediate , organize for rescue of personnel, provide first aid and transport for further Medical help
3. Contractor shall report to our health service centre for any injury inside the premises.
4. Fill the initial incident report and submit at First Aid Centre.
5. Commence Preventive Measures to mitigate the impact of the incident.
6. Preserve and cordon off the incident site, until the incident investigation authorities arrive at the spot.
7. Co operate fully during the incident investigation process.

Classifying Incidents:

The first step in classification is to determine work relatedness. This is based on whether or not the injury or illness occurred while the individual was engaged in TATA MOTORS site. Once it is decided that the injury or illness is work related, it must also be classified into severity categories that denote the impact of an injury or illness.

Fatal:

Fatal Accident may be defined as the death of an employee resulting from an accident caused while performing his regular duties or while performing his work related activities.

Loss Time Injury (LTI)

If an employee is unable to work on a subsequent scheduled shift because of a work related injury or illness, the case is classified as an LTI. The shift on which the case occurred is not counted as a lost workday.

Restricted workday cases (RWC)

An RWC is a case in which a work-related injury or illness prevents the employee from working a complete shift (or from doing any tasks that are part of his or her regularly scheduled job that may be performed or assigned) but which does not result in lost workdays.

Medical treatment cases (MTC)

An MTC is a work-related case for which medical treatment is indicated but that does not result in lost time work or work restrictions. The treatment usually involves Prescription medicines and care from a Medical Doctor or nurse.

First-aid cases (FAC)

A minor injury that calls for only simple treatment and does not call for follow-up treatment. The treatment usually involves only Over –The- Counter (OTC) medicines and care from a Paramedic. A case can be classified as FAC even if a Medical Doctor or nurse administers the first aid.

Near Miss Cases (NMC)

An event that could have resulted in an injury, property damage, environmental loss or business interruption is a Near Miss Case. A near miss having potential of Fatality will be considered as High Potential near Miss.

Total Recordable Cases (TRC)

Total recordable Case will be the sum of Fatalities plus LTIs plus RWCs plus MTCs.

Major PDFE (Process, Distribution, Fire, Environment) Incident

Please refer to the definition of Process, Distribution, Fire, Environment incidents for classification as major incident

Minor PDFE (Process, Distribution, Fire, Environment) Incident

Please refer to the definition of Process, Distribution, Fire, Environment incidents. Any PDFE incident that is not a major incident as per the classification will be treated as minor PDFE incident.

Note:

1. Contractor is responsible for payment of compensation, compliances of legal requirement arising out of incidents / accidents such as liaisoning with Govt. officials etc.

The contractor shall obtain fitness certificate from our factory medical officer before injured person is allowed to resuming work.

13. Disposal of waste from the site

For Disposal of waste the contractor shall obtain the approval from the Plant Environment team through FCA & DCA. (Annexure - IX)

14. Risk Analysis

Contractors should review their operation processes by conducting risk analysis, and implement measures to control these risks. Contractors are required to produce safety risk assessments for the following high risk works, but not limited to:

- Scaffolding erection & dismantling
- Working at height
- Confined space entry
- Energized & high voltage electrical work
- Lone work at remote location
- Commissioning of equipments
- Energizing utility services
- Interruption to utility services
- Lifting operations with a mobile crane, stationary crane, forklift, hydra or jib crane.

The risk assessment form shall be submitted to the FCA at least 48 hours before the job commences, and include the following information:

- Identification of all significant risk activities involved in the work.
- Details of measures taken to control the risks identified.
- Justification that the existing control measures are adequate or if not, a detailed action plan on how the risk(s) shall be controlled.
- All risk assessments must be communicated to the workforce who will be involved in undertaking the work.

15. Job Safety Analysis (JSA) (Refer TML Standards for more detail)

Contractors shall submit work method statements (JSA) for work activities such as the following, but not limited to:

- Lifting operations
- Erection work
- Hot work operations
- Radiography
- Entry into confined spaces
- Pressure testing
- Working at height
- Electrical work
- Piping and structural work

Work method statements / JSA must also be submitted for activities, which have been identified as being of significant risk assessment process and activities selected by FCA.

All method statements shall be submitted to the FCA at least 3 days before planned commencement of work and approval shall be obtained.

The work method statement / JSA shall include, but not limited to:

- The job to be undertaken
- The individual activities required to complete the job.
- The individual trades/disciplines involved in each activity.
- Plant, equipment, tools to be used in each activity.
- Any hazardous substances/chemicals to be used along with their MSDS.
- The name(s) of the Supervisor(s) for each activity.
- The name of responsible person in charge of the job.
- A detailed description of how the work will be done including control measures and procedures to complete each activity and the overall job safety.

Compliance with the standards; detailed on the work method statement and relevancy to current operations shall be monitored on a daily basis and reviewed during safety

management meetings. Necessary drawings with safety precautions to be taken are to be attached.

16. Permit to work system (PTW) (Refer TML Standards for more detail)

Permit to Work (PTW) System is based on the facility ownership concept. The facility owner is custodian of equipment and facilities and all work in that functional area should have authorization of the custodian.

Permit-to-work System is a formal written system used to control certain types of work which are potentially hazardous. It is also the documentation of communication among site personnel to ensure all necessary safety precautions are taken before commencing such work. The types of work permits are:

1. General Work Permit, also called as 'Cold work permit'
2. Special Work Permit(s)
 - i) Hot Work Permit
 - ii) Working at height and Scaffolding Permit
 - iii) Electrical Work Permit (HT/LT)
 - iv) Excavation Work Permit
 - v) Confined Space Entry Permit

Only authorised contractor supervisor shall request the work permit for review and approval by appropriate TML authorities. For more details, refer TML "Permit to Work Standard"

17. Personal Protective Equipment (Refer TML Standards for more detail)

The PPE listed below is the minimum mandatory PPE required to be worn by contractor employees while entering inside factory premises.

- Safety Helmet
- Safety Shoes
- Florescent / /Reflective jacket or vest
- Other PPE's will have to be provided by the contractors to its employees (but not limited to) as per the PPE matrix below. (Annexure - X)

All PPE must at minimum; meet all regulatory and TML defined standards. All areas and tasks for which PPE is needed under expected routine or non-routine operating

conditions shall be clearly displayed at each worksite and must be documented in respective Safe Work Procedure (SWP).

Contractor will provide all required personal protective equipment (PPE), **free of charge**, to all of their employees. Company reserves the right to levy a penalty on the contractor for non compliances.

18. Lock out / Tag out (LOTO) (Refer TML Standards for more detail)

Lockout Tagout is performed to prevent injury to personnel or damage to property and or environment by the unexpected release of hazardous energy.

The following principles govern all Lockout Tagout:

- All sources of hazardous energy shall be identified prior to initiating any LOTO.
- All sources of hazardous energy (which also includes stored energy) shall be safely removed or controlled prior to potential exposure to the hazards.

Examples of removing or controlling hazardous energy are as follows:

- a. Disconnecting electric power and discharging any capacitance.
 - b. Isolating pressure sources (pneumatic or hydraulic) and releasing the pressure.
 - c. Stopping rotating devices and securing them from further movement.
 - d. Releasing stored hazardous energy.
 - e. Lowering or securing equipment to prevent movement caused by gravity.
 - f. Protecting equipment from external forces (e.g., wind) that may cause movement.
 - g. releasing mechanical energy, such as a compressed spring
- Before starting work each individual working on a task must determine, to his or her satisfaction, that appropriate isolations are in place and the isolations are secure for the task in which he or she is involved.
 - Where a lock can be applied, tagout alone shall not be used to control exposure to sources of hazardous energy. Where a lock cannot be applied, site procedures shall address the use of tagout and the additional steps essential to help ensure a level of safety equivalent to that obtained by using lockout. Other means shall be used to secure access to the device, where possible.

- Each person potentially exposed to the hazardous energy must place a lock to prevent the re-activation of that energy source , when a lock can be applied. Individuals who enter the hazard zone of a lockout shall be considered potentially exposed to the hazard.
- Each person potentially exposed to the hazardous energy must participate in the LOTO.
- An energy source shall be considered energized until the source is removed and the energy isolation is verified according to the LOTO Procedure.
- An effective verification (try) step must be performed. All interlocks that may prevent an effective try step must be accounted for.
- A test for the absence of voltage must be performed for all electrical hazards.

Contractor has to arrange necessary hardwares for undertaking LOTO operations. Training on LOTO for contractor employees will be provided by TML.

19. Electrical Safety Management System (Refer TML Standards for more detail)

The electrical safety improvement process shall include, but not be limited to the following activities:

- Developing, documenting, and issuing electrical safety procedures and practices.
- Providing training in safe electrical work practices appropriate for job responsibilities for all electrical personnel.
- Conducting internal audits for compliance with TML electrical safety procedures and practices, analyzing audit results and preparing reports, acknowledging strengths, and recommending upgrades and corrective actions.
- Elimination of unnecessary and avoidable exposures.
- Visual warnings (i.e., signs, barriers, and labels) on electrical equipment.

Contractor shall employ an electrical safety resource to implement the electrical safety improvement process identified above. The electrical safety resource's knowledge and qualifications shall include, but not be limited to;

- Being a certified electrician, electrical technician, or electrical engineer with knowledge of electrical power systems.

- Understanding the hazards associated with electrical energy and the association of electrical safety.
- Having knowledge of local electrical safety regulations.

20. Work at height (Refer TML Standards for more detail)

The Project Manager and his team dealing in work at height are responsible for adhering to the standard during working at height.

The project manager or his authorized delegate, has to ensure that risk assessment is prepared and attached to work permit before work at height commences. It is responsibility of the Project Manager to ensure that only trained people are deployed for the jobs at work at height.

Proper scaffolds and/or temporary work platforms shall be provided for working at height at elevations 1.8 mtr. or more where no permanent work platform is available to work safely. The elevated work platforms shall have guardrails & toe boards and provided with ladders for access/egress. Elevated platforms shall be flat, level and free of openings.

Besides the use of a safety full body harness, there is also a need to eliminate the hazards and reduce the risks to an acceptable level; use other required PPE's.

Where it is not feasible to erect scaffolds, suitable hydraulically elevated work platforms or portable platform with wheel locks / chokes and guardrails shall be used. Ladders shall not be used as work platforms.

Full body harness with double lanyard attached to a lifeline or suitable anchorage point shall be used by persons where work requires persons to move or walk from one place to another for changing work locations at height and where it is not feasible to provide guarded platforms and scaffolds (e.g., pipe racks) . Persons shall always keep one lanyard anchored/tied with the fixed support or lifeline while walking/moving on unguarded surface/edges or structures. Wherever , appropriate fixed support is not available to anchor the lanyard of full body harness, contractor shall provide lifelines of inspected fibre/ nylon rope or steel wires to anchor lanyard. In no case, free fall of more than 1.8 mtr. shall be allowed.

Unsafe arrangements viz., drums, barrels; chairs, etc. shall not be used as work platform to work at height. Full body harness, which meet IS standard, (IS 3521: 1999) shall be used. Safety belts are prohibited. Lanyards must be made from "Dacron" or equivalent polyester rope or web material, or wire rope, and shall be fitted with locking snap hooks and of 1.8 mtr. in length.

When need arises for work above 15m and work cannot be safely performed in any other way, the use of certified personnel platforms (workbaskets) suspended from a crane or permanent structure shall be used. When performing man lift operations, all personnel in the personnel basket (platform) must wear a full body double lanyard harness (class 3) with the lanyard attached to crane or permanent structure. Do not anchor a lanyard with personnel platforms (work baskets).

Work from portable and extension ladders above 1.8 mtrs height from the working/walking surface will require the use of personal fall arrest equipment. The ladders must be secured from moving by tying the ladder to the structure and by using an attendant holding the base of the ladder. Refer to procedure for Safe Use of a Portable Ladder.

Temporary platforms and scaffolds should be provided with solid grating (free of openings) and standard guardrails (mid-rails and top rails) with toe boards attached.

Trimming of tree branches to be executed with the use of Cherry Picker or equivalent equipment.

Whenever it is required to carryout work at height where scaffolding cannot be provided, use of safety net is must. Safety net mesh openings shall have a maximum size of 6 inches x 6 inches and be secured at each crossing to prevent elongation of the opening. All safety net systems shall meet the requirements of Indian Standard (IS: 5175).

Safety nets shall be installed as close as possible to the working level but in no case more than 7.7 mtr. below the working level. The safety nets shall extend out at least 2.5 mtr. from the side of the open edge.

The area at ground level below the work at height shall be surrounded by a suitable barricade to prevent pedestrians walking below the work at height.

21. Safe Driving & Vehicle Traffic Safety (Refer TML Standards for more detail)

The company recognizes that driving errors and inappropriate traffic behavior cause most motor vehicle incidents. Since employees can control only the vehicles they drive, defensive driving habits are crucial.

To drive safely, employees must have sufficient strength, endurance, agility, coordination, and reaction speed to meet the demands of driving. While driving, the main job of the driver is to safely control the vehicle.

Drivers must follow all government laws and regulations concerning driving, including but not limited to;

- Having a valid driver's license to operate the vehicle being driven. An original license must be provided for validity verification by TML.
- Following alcohol and illegal drug prohibitions.
- Having appropriate insurance.
- Maintaining vehicles that are being driven in roadworthy condition.
- Obeying all traffic regulations.
- Crash Helmets shall be worn by Motor Cycle riders and pillion riders.
- Seat belts shall be worn by all occupants in moving vehicles.
- Vehicle speed shall not exceed the prescribed limit inside plant premises or as per the limit specified by regulatory authorities whichever is lower.
- The hand brake or emergency brake, or parking brake shall be set before the driver leaves the vehicle.
- Always park so the first move in the vehicle is forward direction

- Transportation of hazardous materials and dangerous goods must be done in accordance with applicable laws and regulations. Relevant government licenses, registration certificates and permits must be available for verification by TML.
- Radar detectors shall not be carried in vehicles.
- No explosives, ammunition, fireworks, or weapons (e.g., crossbows, bows and arrows, legally possessed handguns, rifles, shotguns, illegal weapons, and air- or gas-powered guns) shall be stored or transported in the vehicle
- Pressurized containers inside the vehicle (spray lubricants, deodorants, fire extinguishers etc.) should be stored away from direct sun light / heat source.
- Provision of basic first aid kits
- Adhere to the load limitations applicable to the vehicle as well as the roads.
- The driver's Assistant / Cleaner will, at no time be allowed assume the position of a .
- An assistant / cleaner must be used to guide the reversing of any vehicle.
- All parked vehicles (Except cars) must have at least two wheel chokes (Right Front Front and Left Rear Rear), with parking brakes applied and their keys removed.

The drivers shall not use the following while driving:

- Cellular (mobile) telephones, even if they are "hands-free"
- Text messaging devices
- Computers & Laptops
- PDAs and smartphones
- Electronic Devices including games, videos etc.
- Headphones
- High volume in the music system. Use of a vehicle navigation system or personal music player is allowed but shall only be programmed when the vehicle is stopped and parked in a safe position.

22. Warning signs, Barricades and Signals

A safe and accessible path-of-travel shall be provided for all pedestrians, including those around and/or through construction / work sites. Barricades act as warning devices, alerting others of the hazards created by repair teams, construction activities, and should be used to control traffic, both vehicular and pedestrian, safely through or around the plant& work site.

While barricades shall be used wherever necessary for the physical protection of people or property, the following is a list of activities where their use is mandatory but not limited to;

- Areas with temporary wiring operating at more than 230 volts.
- Work areas for electrical equipment with exposed, energized parts.
- The swing radius of the rotating superstructure of cranes or other equipment.
- Wherever equipment is left unattended near a roadway at night.
- Excavation.pits and trenches.
- Areas used for the preparation of explosive charges or blasting operations.
- Street openings, such as manholes.
- Floor opening in the cover slab, etc.,
- Restricted entry areas in the project site.
- Scaffolding
- Areas below work at height activities

The Contractors shall:

- Use barricades as required (only steel pipe of 40nb and above shall be permitted for deep excavations and high potential activities)
- Erect, and maintain for the duration of the Contract, proper barricades including fencing material, traffic cones, A-frames, caution tape, etc., set forth by regulatory agencies.
- Furnish, erect, and maintain all necessary signs, barricades, lighting, fencing, bridging, and flags that conform to the requirements set forth by regulatory agencies.

- No construction materials, tools, equipment or any other materials shall be stored and/or placed in the path-of travel.
- The Contractor shall not obstruct free and convenient approach to any fire extinguisher.
- Remove barriers and enclosures upon completion of the work.

Note: With the unique nature of each project or the type work, certain issues may arise which have not been covered in the above guidelines. The contractor is required to review on a case-by-case basis, to ensure that complete, safe, usable and accessible paths-of-travel are maintained during construction. All floor openings, cutouts, open edges and excavations shall be properly barricaded, covered and warning notices posted.

23. Housekeeping:

All Contractors and subcontractors on site shall ensure the following task must be done while the performing work on site for good housekeeping:

- Elimination of fire hazards.
- Elimination of slipping and tripping hazards;
- Maintain Good access ways. Keep the access clear from all obstructions.
- Maintain A clean site; and
- Segregation of materials and waste for recycling, reusing and reducing.
- Keep the site neat and tidy. Keep adequate number of skips / waste bins. Do not allow rubbish bins to overflow. Remove waste routinely from the site.
- Remove the nails or bend it down from the wooden scrap and remove it from job site.
- Store the material in an orderly manner.
- Maintain a safe and healthy work environment
- Provide adequate light in work area and passages.

The contractor shall on a daily basis keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by activities. At the completion of days work, or as directed by the TML FCA, the contractor shall remove these materials to avoid Slip/Trip hazards and provide safe areas for movement of all workers and supervisor. No wastewater / liquid / chemical that can cause an environmental pollution

to the water sources shall be allowed to enter drains or contaminate soil. Contractor should establish regular maintenance program of sweeping and hosing to minimize accumulation of dirt and dust in working areas. If the contractor fails to clean up as provided in this document, TML may do so or otherwise and cost thereof shall be charged to the contractor. On completion of the job the contractor shall remove all his construction materials, tools etc.. and demolish all temporary constructions and leave the job site thoroughly cleaned up and ready for use.

24. Installation equipment and vehicles:

Pre-Installation Examination and Inspection: The Contractors shall provide a list of equipment and vehicles needed to safely perform the work. Cranes, hoists, slings, lifting tackles and other lifting equipment shall be selected as per load carrying capacities.

All hoisting and lifting equipment shall be thoroughly examined by a competent agency approved by TML as per applicable local laws and regulations. A report on the result of examination shall be submitted (in prescribed form) before equipment is brought into site.

Operators of all cranes and other heavy equipment must be physically and mentally fit to operate the assigned equipment. Operator's qualification for cranes, pile drilling rig and heavy equipment are subject to review by the competent Contractor's equipment supervisor and safety manager. Proof of vehicle insurance is to be submitted before site entry.

Before use at the site, portable electrical tools and equipment, such as grinders, electric saws, drills, etc. and pneumatic driven tools such as jack hammers must be inspected to confirm they are in proper condition to be used safely. TML may inspect all such devices at any time during the work.

Scheduled Inspections and Maintenance: Contractor's equipment and vehicles are to be periodically inspected and maintained according to pre-determined schedule . Complete record of all inspection and maintenance shall be maintained and submit to TML.

Equipment Operator Qualification and Training: Contractor shall review the qualifications of all crane operators, crane maintenance personnel and other mobile equipment operators in accordance with the following procedure:

- Possession of valid driver's license and job site authorization card signed by TML's Safety Officer.
- Successful completion of a practical operating examination administered by competent and authorized personnel.

Flag man: Flag man shall be responsible for the following task to ensure traffic movement on site:

- Flag man are required to regulate traffic for all construction vehicles and equipment like concrete trucks, trailers, dumpers, cranes, excavators, trucks, scissors lifts, boom lifts and forklifts, etc.;
- Contractor to ensure that flag man shall undergo training on their roles and responsibilities.
- All Flag man must be equipped with a whistle; and at least 1 Flag man shall be deployed for each vehicle.

25. Machinery Safety

Machine Guarding / Fencing

- The Contractor shall ensure that all gears, revolving shafts, flywheels, couplings and other dangerous parts of machinery shall be effectively guarded unless they are so constructed, installed or placed as to be safe as if they were guarded.

Maintenance

- The Contractor shall ensure that all machinery used on site is in safe condition and is properly maintained and repaired by duly authorized, thoroughly trained and experienced person & there must be traceability sticker over all machines
- No repair to machinery shall be carried out while is in motion.
- Maintenance / History records shall be kept available for inspection.

26. Compressed Gases and Combustible Liquids

Gases

- Valve protection caps shall be provided while transporting or storage.
- All compressed gas cylinders shall be used, stored and transported in an upright position. At no time shall a cylinder be in a horizontal position.
- Compressed gas storage facilities shall be positioned at a sufficient distance from work area, offices and roads in such a manner as not to cause a hazard to employees, facilities and/or a third party.
- Cylinders should be stored in suitably designed racks, which must have chains so that any number of cylinders can be securely and safely stored.
- Signs indicating the contents with separate storage for “full” or “empty” shall be displayed. Warning signs must be posted - “DANGER - HIGHLY FLAMMABLE – NO SMOKING OR NAKED FLAME”. Fire extinguisher shall be located within accessible distance.
- Oxygen cylinder shall be separated from other combustible gas, oil or grease.
- The storage of gas cylinders shall be according to statutory regulations pertaining to the use of industrial gases and gas cylinder rules.

Combustible Liquids

- Flammable and combustible liquids must be stored in an appropriate metal storage cabinet designed for flammables storage with a prominent notice - “FLAMMABLE - NO NAKED FLAME”.
- The area should be well ventilated and free from flammable material
- Suitable fire extinguishers must be located adjacent to the cabinet.
- Code of practice for storage of combustible liquids shall be followed.

Storage Gas Cylinders: Oxygen Cylinders

- Full cylinders must always be stored in an area away from empty ones, and all cylinders secured in an upright position.
- Check that all cylinders, valves and equipment are free from oil and grease, secured in an upright position and when not in use have the valves shut.

- Under no circumstances oxygen cylinders shall not be stored with liquefied petroleum gas cylinders, or within three meters of an LPG storage area.
- Cylinders must be stored in an area, which is under cover and well ventilated, and away from flammable materials, solvents, ignition sources or excessive heat.
- Storage in such a position to be easily moved in the event of a fire.
- Cylinders should not be subjected to rough treatment, if moved by mechanical means then a cradle or strip must be used, never lift by the neck or valves.
- Check the code of practice for storage of gas cylinders.

Storage Gas Cylinders: Acetylene Cylinders

Storage precautions are the same as for oxygen cylinders with additional points to observe.

- Acetylene should be kept away from copper and alloys containing more than 70% copper.
- Must be stored and used in well ventilated areas due to a narcotic effect if inhaled.
- Check the code of practice for storage of gas cylinders.

27. Welding and Gas Cutting

Safety procedures for welding and cutting have been elaborated below,

- All gas and oxygen regulators shall be fitted with flashback arresters, being non return valves designed to prevent an explosive mix developing in either cylinder. Such explosive mixers can occur due to loose connections, leaking hoses, etc.
- Calibrated Pressure gauges shall be provided to monitor the cylinder pressure as well as the gas flow pressure. Glass covers on the pressure gauges must not be cracked or damaged. Replace all faulty gauges immediately.
- Prior to use, all equipment shall be thoroughly checked to ensure that:
 - all connections are 'tight', checking for leaks shall be by means of soapy liquid applied to each joint;
 - all fittings such as gauges, flashback arrests etc. are functioning correctly;
 - hoses are in good condition, and free from signs of cracking or perishing.

- Under no circumstances shall an open flame be applied to any part of the cylinder or hose arrangement to detect leaks.
- The cutting and welding of certain metals or metal coatings such as zinc galvanized surfaces give off harmful fumes and such works must, where possible be carried out in a well ventilated area.
- The welders shall wear good quality insulated welding gloves & mask and use proper Welding shields (Eye and face protection). Welding holders shall be of insulated type with finger guard.
- When not in use, the current to the holder and electrode must be turned off.
- Work area beneath or adjacent to fabrication of welding works shall be made free from combustible materials and cordoned-off to prevent personnel being injured by weld spatter or molten metal. Placing of cylinders directly beneath the work area shall not be permitted.
- Mechanically rigid earthing must be ensured

Elimination of danger from welding and cutting is of the application of sensible precautions. Rigorous supervision and control of portable equipment is essential as is adequate training.

- Supply hoses should be arranged, preferably overhead, so that they are not likely to be tripped over, cut, or otherwise damaged by moving objects: a sudden jerk or pull on the hose is very liable to pull the torch out of the operator's hands, or a hose connection to fail.
- Explosions can occur when acetylene gas is present in the air in any proportion between 2 and 82%. Acetylene is also liable to explode when under excessive pressure, even in the absence of air.
- The first essential requirements are, therefore, adequate and proper ventilation, and the examination of the equipment to ensure that it is free from leaks.
- Flashback arrestors and hose check valves should be fitted to both oxygen and fuel gas regulators and manifolds. Acetylene manifolds must be fitted with an effective flashback arrestor.

- Non-return valves are also fitted in the hose connectors at the torch end to resist flashback.
- During welding and cutting operations, precautions must be taken to prevent burns of the eyes and exposed parts of the body. This includes the welder's helper.
- Use of LPG cylinder for gas cutting or any other purpose is prohibited in the site.
- The operator should be provided with suitable respirators to protect him from dangerous gases evolved during welding operations in confined space .
- If the eyes are exposed to the light of the arc, even for quite short periods, arc eye may develop.
- Eye injuries also occur during scraping operations so safety glasses/goggles must be used while scraping.
- Damaged cables shall not be used. The cables shall be connected to through lugs and proper joints . Grounding return should be connected rigidly to the job.

Welders should wear safety helmets even while welding by attaching the welder's hood to the safety helmet with din glass. The welder's helper shall take appropriate precautions and wear appropriate PPE to prevent injury from exposure to the welding activity.

Code of equipments & their inspection date are to be maintained on equipments.

28. Lifting & Supporting of loads (Refer TML Standards for more detail)

Lifting machine, chains, ropes and lifting tackles used by the contractor on site must conform to the following,

- All parts must be of good construction, adequate strength and free from defects. Damaged equipment shall be removed from the site.
- Must be properly maintained, thoroughly examined and load tested by the contractor's competent person regularly.
- No lifting machine and no chain, rope or lifting tackle should, except for the purpose of test, be loaded beyond safe working load and this safe working load must be plainly marked on the gear concerned.

The contractor shall offer his tools and tackles for inspection and approval of TML before start of work, if so desired. He shall produce valid Test- Certificates from Govt. approved Competent Engineers for all of the lifting gear and hoists (Slings, chains, hooks, chain-pulley blocks, winches, hoists, cranes, etc.) as well as Electrical, Pneumatic and Hydraulic equipment and appliances. These certificates shall be retained at the site with the contractor's Supervisor/ Site-in charge for subsequent spot checks also.

29. Abrasive Wheels

When any abrasive wheel/disc/cutter/side grinder is mounted on a grinding machine, the person mounting the wheel shall be fully trained and competent to do the job. er
Selecting the right abrasive wheel for a particular application is critical. Check for expiry date. Only reinforced resin-bonded or resin-bonded abrasive wheels must be used with portable grinding machines. Any damaged or defective wheel shall be replaced immediately.

Grinding machines are marked with the maximum working speeds of their spindles, whilst abrasive wheels are marked with the maximum speed at which they may be operated. They should be compatible.

Full face shield and gloves shall be worn during all grinding operations. Protection for those not involved in the operations shall also be provided by the erection of screens, or barriers to keep personnel out of the danger zone.

The safe operation of a properly mounted abrasive wheel is determined to a large extent by a trained grinding machine operator taking the following precautions:

- Guards: Seeing that the guard is in position and properly adjusted. No machine without proper guards will be permitted
- Side grinding: Avoid grinding on the sides of straight-sides wheels.
- Lubrication: Checking that spindles do not become overheated through lack of lubrication.
- Stopping wheels: Do not stop wheels by applying pressure on the work piece or the floor/bench.

- Cutting-off wheels: Avoiding the use of warped wheels/discs or exerting pressure on the sides, ensure that the work piece is rigidly supported and firmly clamped and let the cutter cut through before removing the cut piece.

30. Confined Spaces (Refer TML Standards for more detail)

All entry into confined spaces shall be controlled by means of a "WORK PERMIT".

Persons authorizing entering into confined spaces must have the required competence to issue any work permit, and to check for contamination and/or dangerous atmospheres. Safety precautions, restrictions of the operations and personal protection equipment will be clearly shown on the work permit. Check if retrieval/harnesses are required. A standby man is required outside the confined space. He should be instructed on his duties. A register of who has entered and exited the confined space must be maintained. Air/ Gas detectors/ monitors will normally be required. A rescue plan must be prepared prior to the issue of the WORK PERMIT and rescue equipment must be placed at the opening of the confined space.

31. Contractors tools and equipment

The following principles shall be applied to and govern the safe use of hand and power tools.

- All Contractors tools and equipment must be suitable and adequate for the purpose.
- Guards and electrical trip switches must work effectively and must not be removed or bypassed.
- All tools shall be of good quality and maintained in a safe working condition.
- Contractors shall provide suitable storage with suitable racks and bins for storing tools and equipment.
- The contractor shall nominate or employ the services of a competent qualified electrician to inspect and tag electrical power hand tools transformers, distributing boards, extension cables etc on an at least quarterly basis. The tag shall display name, signature of the individual inspecting the tool, date of inspection.

- The contractor shall keep, on site, a register of all electrical power hand tools in use.
- The register shall detail :-
 - Individual identity number of the tool.
 - Name, signature and company of the qualified electrician carrying out the inspection.
 - Date of the inspection .
 - Maintenance and inspection schedule.
 - Remarks on condition of tool and whether required or withdrawn from use.

32. Chemical handling, storage & usage.

When working with any chemical, the employees working with the chemicals & their supervisors shall be familiar with the chemical that is used. All storage of hazardous Chemical (such as acids, solvents, caustic or , toxic materials) shall be in accordance with the requirements of the project specifications and manufacture, storage & import of Hazardous Chemicals Rules, 1989 (MS&IHC). The contractor shall be follow requirements listed below but not limited to:

- All the chemicals shall be received and stored along with MSDS. Always read MSDS before using chemicals.
- Contractor shall notify appropriate TML authority, such as FCA, of their intent to bring materials, supplies or other substances onto the site and provide an up-to-date MSDS corresponding to the materials for review and approval by TML prior to bringing the material to the site.
- A copy of the MSDS shall be made available with the Medical Officer to their awareness and preparedness to treat in the event of chemical accidents.
- Always wear proper personal protective equipment as mentioned in the MSDS
- All cleaning and chemical supplies must be clearly labelled
- Always use cleaning supplies only as directed and to clean what they are intended to clean
- Never mix chemicals without prior approval from the manufacturer.

- When pouring chemicals, always pour close to the lip or rim to avoid splashing. Use trays beneath the container to contain minor spills.
- Always store cleaning supplies in the designated storage area, away from food and food packaging products.
- Ensure that all chemicals and hazardous materials are identified with hazardous material warning labels by the manufacturer prior to storage or use.
- Ensure that employees understand the information on the warning label.
- Properly label the container with a replacement label containing identical information if either of the following occurs:
 - The label falls off or is removed.
 - The contents are transferred to a new container for either moving or storing.
- Submit an inventory of all hazardous chemicals at site to the TML safety person on a monthly basis. The inventory shall be updated as materials are delivered to or stored on site.
- Containers of hazardous substances should carry or be accompanied by instructions for the safe handling of the contents and procedures to be followed in case of a spillage.
- Necessary Hazard communication sheet needs to be displayed at site based on MSDS
- All measures regarding spill measures should be taken to avoid any spillage in or near storage area. Contractor should be provided Spill control kit and with proper training, in case of leakage or spillage according to chemical property based on MSDS guideline. Liquid containers shall be stored with suitable secondary containments.
- Contractor shall ensure provision of healthy Eye Washer.
- Ensure dispose of hazardous & non—hazard material as per ISO 14000 guidelines or local Pollution Control Board guidelines

ANNEXURES

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