

RAIL COACH FACTORY, KAPURTHALA			
Specification No.	Description	Page No.	Date
Mech/M&P/3700/GM/24-27	Fork Lift Truck Cap-3 Ton	1 of 9	15.03.2023

1 INSTRUCTIONS TO TENDERERS FOR FILLING TECHNICAL BID

- 1.1 The bidder must submit the technical offer as per the specification. Bidders are required to give comments/compliance against each clause and sub clause on the following technical specifications.
Comments should be specific and to the point. It should also give specific information, wherever, asked for. Deviations, if any, should be clearly indicated with details and proper justification to avoid back reference.
- 1.2 Unless otherwise stated, latest alterations/ revisions of specifications/ standards/ drawings shall be applicable. In respect of safety standards and environmental standards relevant to the machine, the machine manufacturers shall ensure compliance with international (CE/ISO/DIN/JIS)/National standards (IS) (where applicable).
- 1.3 Tenderers should offer and quote for all the specified concomitant accessories, as these are considered essential for commissioning and utilization of the machine. Even if bidder does not recommend the purchase any of these accessories upfront, the price must be quoted for comparison purposes and their recommendation/suggestion indicated in the offer. Tenderers should also quote for optional accessories, spares and consumable spares as asked in the specifications.
- 1.4 In case, any item is required in sets, please specify nos./pieces per set. This is essential for proper technical evaluation of the offer. Offers received without this may be considered as incomplete and liable to be rejected.
- 1.5 The bidder should quote only for the specified make of sub-assemblies and equipment wherever specified. Makes of sub-systems other than the specified ones will normally not be acceptable. In case, some other make is quoted, specific reasons for the same including its features/advantages over specified makes must be brought out in the offer along with the supporting documents.
- 1.6 In case there is a contradiction in any information provided (some parametric values given in the specification and those given in the brochure or some other document enclosed by the tenderer), unless specifically mentioned in the deviation cum confirmation statement , the values as given in the specification shall be taken as confirmed by the tenderer and offer evaluated accordingly.
- 1.7 The Purchaser may accept internationally accepted alternative specifications which ensure equal or higher quality than the specifications mentioned in the Technical Specification. However, the decision of the Purchaser in this regard shall be final. A copy of the alternative specifications offered should be sent along with the offer. The Tenderer should also furnish "Statement of Deviations" from tender specifications along with the offer.
- 1.8 Purchaser reserves the right to verify the details submitted by the bidder by actual site visits.
- 1.9 Other term and condition of the contract will be as per Indian Railway Standard Conditions of Contract.

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2 DESCRIPTION:

2.1 Diesel Operated Fork Lift Truck capacity 3-Ton with all the standard accessories as per Specification.

3 SCOPE:

3.1 The scope of the specification covers design, manufacture, supply, erection, commissioning and proving out of Diesel Operated Fork Lift Truck capacity 3-Ton to RCF/ Kapurthala as per technical specification given below and also as per Technical parameters given at Annex.-I.

4.0 CAPABILITY:

4.1 Diesel Operated Forklift Truck should be capable to lift and move the 3-Ton material inside the workshop of Rail Coach Factory, Kapurthala.

5.0 TECHNICAL SPECIFICATION:-

5.1 ENGINE:

4 Stroke, four-cylinder diesel engine confirming to IS-10000 (1 to 12) latest and IS 10002 latest rated at 48 HP or more @ approx 2200 RPM with adequate power rating, Water/Liquid-cooled, Direct injection (as per make mentioned in Annexure-I). Twin element dry type air filter with restriction indicator is provided. Engine is equipped with dual fuel filter, and lubrication oil filter. Air filtration should be done through a Dry/ Oil bath heavy-duty air cleaner. Vertical Exhaust should be so fitted that Exhaust Gases are discharged well clear off the operator after suitable purification through exhaust spark arrester and Oxycatalyst Exhaust Gas Purifier. Cold Starting Device should be provided at suitable place in the engine to avoid starting problem in winter season. Oil check mechanism should be easily accessible for checkup/top-up during maintenance.

5.2 ENGINE COOLING SYSTEM:

Cooling system of engine should be provided with heavy duty Water/liquid pump at the front end of the engine with a large Radiator of reputed make having tubes, fins & suitable pusher fan.

5.3 ENGINE IGNITION SYSTEM:

Electrical system of the plant should be connected with maintenance free lead acid battery of suitable capacity (make Exide/ Amron/ Amco) charged with belt driven Alternator, Axial type starter motor of reputed make only and multiphase panel with heavy duty

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Starting Switch should be provided with individual circuit protection. Alternator and Axial type self starter assembly should be Lucas or Bosch only.

5.4 INSTRUMENTATION:

Instrument Panel should be equipped with battery charge indication light, brake warning lights, reverse operation hooter & light, and direction indicators lights etc.

5.5 TRANSMISSION:

Automatic hydrodynamic transmission should be used for frequent stops, starts, and direction reversal (Minimum twin speed in forward direction and minimum twin speed in reverse direction). The forward/ reverse direction should be effected by mechanical/ electrically lever. Separate levers should be provided for direction/speed control. Forward/ reverse hydrodynamic transmission should also be equipped with neutral start switch. Lever Rods should be provided for Hi-Low / Fwd-Rev instead of cables. Transmission suction hose should have same size of connectors on both ends. Oil check mechanism should be easily accessible for check-up /top-up during maintenance.

5.6 HYDRAULIC SYSTEM:

Gear type hydraulic pump should be provided, which should be driven by engine, for lift, tilt, power steering and other auxiliary system. Proper lock valve assy. should be provided to lock the system in any position during working. Control levers with easy to understand symbols should be mounted ergonomically on cowl. Proper Capacity Hydraulic Tank should be provided with suction strainer and full flow return line filter. The hydraulic cylinders of any one of given Indian make may be used in the FLT i.e Dental, Wipro, Fasto, TAFE, Precision & Canara etc. Oil check mechanism should be easily accessible for check-up /top-up during maintenance.

5.7 STEERING SYSTEM:

Hydrostatic power steering system should be provided for smooth responsive, steering wheel control. Suitable articulated/ fabricated steering axle should be provided to give equal ratio in both directions.

5.8 BRAKES:

Self adjusting hydraulic Wet Disc Service Brakes /Pneumatic service brake should be provided with heavy duty brake master cylinder and wheel cylinders of reputed/established make. Mechanical Parking Brake with micro adjustable lever should be mounted externally near the operator.

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5.9 FRAME:

Frame of the truck should be made of steel, precision aligned construction with integral fuel and hydraulic tanks fitted with magnetic drain plug and having large inspection & maintenance windows. Operator Overhead Guard should be provided to protect the operator from overhead objects. The suitable elegantly designed canopy, integrated with the frame body should also be provided. Counter balance weight should be provided with profiled exterior for improved rear visibility. Details and type of counter weight should be submitted. Engine hood cover should be made of FRP composite/Steel. The proper heat insulating shall be provided on the inner side of the engine hood cover.

5.10 WHEELS :

Solid Rubber Cushion tyres of established make should be provided on the FLT.

5.11 MAST ASSEMBLY:

Clear view mast assembly with load backrest should be provided for greater comfort and easy to operator. Reinforced Mast, combination roller bearings capable of taking axial load as well as thrust load simultaneously should also be provided. Suitable arrangement should be made to resist deflection due to off center loading.

5.12 OPERATOR SEAT

Adjustable cushioned Comfortable drivers' seat and driver overhead guard with steel reinforcement at the top should be provided with spacious leg room. Soft touch accelerator and brake paddle should be so designed for easy approach to operator.

5.13 SAFETY ATTACHMENT:

Truck should be confirms all safety requirements as per ISO standards Helogen/LED Head Lights, rear light, signal lights, Electric Horn, Parking brake and Rear towing hook/towing arrangement should be provided at proper place covered with Rear indicator light with buzzer should also be provided, which should be work on movement of FLT in reverse direction.

5.14 SPECIAL FEATURES:-

The tenderer should separately explain the special features and their benefits if any, of the equipment offered by him. Special features should be quoted with cost as optional.

6.0 ACCESSORIES:-

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1. Yellow Flasher Light on the top.
2. For Cold starting one heater to be provided in inlet manifold of engine.
3. Hour Meter, temperature Gauge, Engine oil Pressure gauge, Fuel Gauge to be provided.
4. Canopy – Tarpaul in covering for driver's overhead guard.
5. Head & Tail Light, Signal Light, Spot light (Reverse).
6. Oxycatalyst exhaust Gas purifier
7. Rear View Mirror.
8. Tool Kit (Including Transmission repair tools).
9. Towing.

7.0 SPARES AND CONSUMABLES.

- 7.1 Two years normal maintenance spares including all types of filters i.e Engine oil filter, Diesel oil filter, Hydraulic oil filter & transmission oil filter should be quoted by the bidder separately.
- 7.2 Rate should also be quoted by the supplier for the Preventive Maintenance Schedule of the equipment for 5 years after completion of warranty.

8.0 COMMISSIONING AND PROVING OUT:

The contractor shall arrange commissioning and proving out of the equipment at site i.e. Rail Coach Factory, Kapurthala (Punjab), India within 15 days from the receipt of the equipment at site and after successful commissioning, will demonstrate the performance of the equipment to the nominated staff of Rail Coach Factory at consignee's premises.

9.0 TRAINING:

- 9.1 Technical experts of the supplier, during commissioning of equipment will fully and adequately train operation/ maintenance staff nominated by the consignee at Rail Coach Factory, Kapurthala (Punjab).
- 9.2 Maintenance training of fuel injection pump, transmission system, hydraulic system, steering system should also be given to maintenance staff by successful bidder.

10.0 SERVICING AND WAREHOUSING FACILITIES:-

- 10.1 The tenderer will clearly spell out in the offer the facilities available with him or his agent for providing adequate after-sales service in India during warranty period. The complete details such as organization for after sales service, availability of technically competent engineers and warehousing facilities for spares should be clearly indicated. Bidders not offering complete servicing/repair facilities in India to ensure quick response to

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maintenance/ servicing calls are not likely to be considered.

- 10.2 A copy of price list of spares for the model offered including repair kits, pressure hoses, gaskets etc should be enclosed with the offer.
- 10.3 After the warranty period and AMC period, if any, the manufacturer or his agent shall agree to provide service supports for trouble shooting and obtaining spare parts. The manufacturer shall be obliged to provide spare parts required by the Purchasers for a period of 10 years from the date of delivery of the machine at the ultimate destination to safeguard against obsolescence.
- 10.4 Tenderer who are OEM, shall undertake to supply spare parts for a period of expected life of machine. Alternatively, tenderers shall also submit undertaking from OEM for supply of spare parts for a period of expected life of the machine
- 10.5 Tenderers shall indicate the list of spares required for maintenance of the machine beyond warranty period. Current cost of such spares and current service charges for the items of work of repair of machine shall also be indicated
- 10.6 During warranty period, the supplier or his authorized agent shall attend for break down as soon as possible.
- 11.0 TECHNICAL LITERATURE:**
- 11.1 One copy of the printed illustrative catalogue showing various features of the equipment and its element must be enclosed with each copy of bid.
- 11.2 The successful tenderer will also have to furnish 4 copies of spare parts catalogue giving the part list number of each component with exploded views and assembly drawings of major assembly and 4 copies of maintenance manual, trouble shooting guide, operation manual and all electrical circuit diagrams to the consignee. The bidders should provide a list of literature, they will supply along with the equipment. The technical literature shall be provided in English language only.
- 12.0 EVALUATION CRITERIA:** The total value of the offer will be calculated based on
- i. The cost of the basic machine.
 - ii. Cost of the accessories according to tender specification para 6.0
 - iii. Cost of any other accessory which in the opinion of supplier is essentially required for making the machine fully functional.
 - iv. Applicable duties and taxes, insurance, freight, installation & commissioning charges, training etc.

13.0 ANNUAL MAINTENANCE CONTRACT (OPTIONAL)

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13.1 Tenderers are required to quote for a Comprehensive Annual Maintenance Contract for the machine supplied against this specification for a period of five years on yearly basis giving the rates for each year i.e. first year, second year so on., which will be inclusive of all spares, material and labour costs. The duties and taxes as applicable should be indicated separately. All consumables spares and materials shall form a part of the scope of comprehensive AMC. Periodic safety and legal clearance will also be obtained by the contractor at its own cost.

13.3 AMC is not part of scope of supply, is an optional requirement and not included in commercial evaluation criteria. The option to award AMC shall remain with the consignee after completion of warranty period. In case consignee wants to exercise the option of entering into AMC after warranty, then the bidder will be bound to enter into AMC.

(i)at the offered rates

or

(ii) at the negotiated rates lower than offered rates

or

(iii) Shall participate with valid offer if the fresh tender for AMC is floated by the consignee.

Failing which RCF/KXH shall encash the Warranty/Bank Guarantee of the bidder

14.0 Performance:-

14.1 Minimum 5 deg C ambient temperature up to which engine shall be able to start without the aid of cold starting device.

15.0 Certification:

15.1 Stability testing as per IS 4537

15.2 Acceptance criteria IS 10517

15.3 The approval certificate and conformity of production certificate from ARAI or other agency as approved by Government of India for latest smoke emission norms.

15.4 All test report should be latest.

15.5 Availability of complete & satisfactory test report from Central Govt/NABL/ILAC accredited laboratory to IS 10002 for diesel engine.

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ANNEXURE -I

SPECIFICATION OF DIESEL OPERATED FORK LIFT TRUCK – 3 TON

Sr. No.	Description	UOM	Specification
1.	Load Capacity	Kg.	3000 @ load centre of 500 mm.
2.	Load Center	mm.	500 or more
3.	Engine capacity	H.P	4 Stroke Diesel Engine equal to or more than 48 H.P of Simpson (S-4)/ TATA (497 TC)/Kirloskar/Cummins make. Fuel injection system of Bosch makes.
4.	Rated RPM		Approx 2200
5.	Engine Torque	Nm	200
6.	No of cylinders	nos	4
7.	No of speed forward/Reverse	nos	Minimum 2/2
8.	Tilt Angle (Farward/Backward)	Degree	5/10 or 6/12
9.	Fork lift Gradeability	(%)	17.0-28.0
10.	Transmission		Automatic Torque flow Transmission to be fitted.
11.	Brake System		Service:- Hydraulic Wet Disc / Pneumatic Brake Parking:- Mechanical
12.	Lifting Stages		2-Stage Clear view mast.
13.	Fork/ Lift height	mm.	3000 to 3800
14.	Tyre type	Front/Rear	Solid cushioned Tyre.
15.	Wheels	Front/Rear	2/2
16.	Minimum Ground Clearance	mm	110
17.	Fork arm for fork lift truck.		Confirm IS 6876 latest & IS 7570 latest.
18.	Mounting dimensions for attachment		To the extent applicable IS 7525 latest
19.	Max. fork spread	mm	975-1100
20.	Fork length	mm	1000-1200
21.	Overall length	mm	3700-4000
22.	Overall width	mm	1200-1250
23.	Wheel base	mm.	1600-1900
24.	Overall height raised	mm	4500-5000
25.	Collapsed Height	mm	2200-2700
26.	Free lift height	mm	100-150

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27.	Tare weight of fork lift truck	Kg	4200 to 4900
28.	Outer Turning Radius	mm.	Not more than 3000
29.	Travel Speed (Forward/Reverse)	Km./hr.	0 to 18 or higher.
30.	Steering	Type	Hydrostatic.
31.	Cooling System		Liquid Cooled.
32.	Method of starting		Electric starting (Battery & Alternator Fitted).
33.	Colour		Golden Yellow / Traffic Yellow

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