

RAIL COACH FACTORY, KAPURTHALA
TECHNICAL SPECIFICATION OF FORK LIFT TRUCK, CAP. 5T

Specification No. MECH/M&P/ 3000/4 & 6

1 INSTRUCTIONS TO TENDERERS FOR FILLING TECHNICAL BID

- 1.1 The bidder must submit the technical offer as per the specification. All the information as asked for must be given accordingly. e.g. wherever a parametric value is sought, it should be furnished, similarly, if a brochure or drawing or sketch is warranted the same need to be provided.
- 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

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Conditions of Contract.

2 DESCRIPTION:

2.1 Diesel Operated Fork Lift Truck capacity 5-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 5-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 5-Ton material in side the workshop of Rail Coach Factory, Kapurthala.

5.0 TECHNICAL SPECIFICATION:-

5.1 ENGINE:

Bharat Stage-III compliant four cylinder diesel engine confirming to IS-10000 (1980) rated at 75 HP or more with adequate power rating, Water-cooled, Direct injection is used. Twin element dry type air filter with restriction indicator is provided. Engine is equipped with dual fuel filter, mud filter and lubrication oil filter. Fuel tank capacity is 70 liters. 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.

5.2 ENGINE COOLING SYSTEM:

Cooling system of engine should be provided with heavy duty water pump at the front end of the engine with a large Radiator of reputed make having copper tubes and copper fins and suitable pusher fan.

5.3 ENGINE IGNITION SYSTEM:

Electrical system of the plant should be connected with maintenance free lead acid battery 12 Volt, 6 Cell, 19 Plate, 130/135 AH (make Exide/ Mico/ Amco) charged with belt driven Alternator, Axial type starter motor and multiphase panel with heavy duty Starting Switch should be provided with individual circuit protection.

5.4 INSTRUMENTATION:

Instrument Panel should be equipped with Fuel gauge, Engine oil pressure gauge, Ampere meter, engine hour meter, Engine Temperature Gauge, T Q oil temperature gauge, battery charge indication light, brake warning lights, reverse

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operation hooter & light, and direction indicators lights etc.

5.5 TRANSMISSION:

Automatic hydrodynamic transmission should be used for frequent stops, starts, and direction reversal. The forward/ reverse direction should be effected by mechanical/ electrically lever. Separate levers should be provided for direction/speed control. Twin speed, 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.

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 with suitable hyd. cooling system.

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/Pneumatic service brake should be provided with heavy duty brake master cylinder and wheel cylinders (make TVS Girling/ Ferrado/ KBX). Mechanical Parking Brake with micro adjustable lever should be mounted externally near the operator.

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. Cast Counter balance weight should be provided with profiled exterior for improved rear visibility. The mounting of cast counter weight should be fitted with atleast two heavy duty bolts. Engine hood cover should be made of FRP/Steel and it should be so designed that it takes the load of two persons sitting on the engine hood excluding driver while operating at rated load and at full speed. The proper heat insulating shall be provided on the inner side of the engine hood cover.

5.1 WHEELS :

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Solid Rubber Cushion tyres should be provided on the FLT (make M/s Hindustan/ M/s Shaktiman/ M/s Madras Elastomers). The rim should be provided with two locking rings at front wheels. Rear wheels should have split type rims having two pieces bolted with each other for ease of maintenance.

5.1 **MAST ASSEMBLY:**

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Clear view mast assy 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.

5.1 **OPERATOR SEAT**

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Comfortable drivers' seat should be provided with spacious leg room. Soft touch accelerator and brake padel should be so designed for easy approach to operator.

5.1 **SAFETY ATTACHMENT:**

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Truck should be confirms all safety requirements as per ISO standards Helogen/LED Head Lights and Electric Horn should be provided at proper place covered with wire mesh guard. Rear indicator light with buzzer should also be provided, which should be work on movement of FLT in reverse direction.

6.0 **ACCESSORIES:-**

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, Ampere meter, 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 coupler.

7.0 **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 with in 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.

8.0 **TRAINING:**

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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).

9.0 SERVICING AND WAREHOUSING FACILITIES:-

- 9.1 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 maintenance/ servicing calls are not likely to be considered.
- 9.2 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 15 years from the date of delivery of the machine at the ultimate destination to safeguard against obsolescence.
- 9.3 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
- 9.4 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
- 9.4 During warranty period, the supplier or his authorized agent shall attend for break down as soon as possible, but in no case later than 72 hours of receipt of intimation of the breakdown. The supplier has to furnish proper guarantee to this effect.

10. TECHNICAL LITERATURE:

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- 10. One copy of the printed illustrative catalogue showing various features of the equipment and its element must be enclosed with each copy of bid.
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- 10. 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.
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11. WARRANTY:

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- The equipment should be under warranty for a period of 24 months from date of commissioning of the plant at Rail Coach Factory, Kapurthala.

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- 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.

ANNEXURE - I

SPECIFICATION OF DIESEL OPERATED FORK LIFT TRUCK – 5TON

No. Mech/M&P/ 3000/4 & 6

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Sr. No.	Description	UOM	Specification
1	Load Capacity	Kg.	5000
2	Load Center	mm.	600 or more
3	Power		4 Stroke Diesel Engine equal to or more than 75 H.P.
4	Tyre	Front/Rear	Solid cushioned Tyre
5	Wheels	Front/Rear	4/2
6	Type of Mast		2-Stage Clear view mast.
7	Max. Fork/ Lift height	mm.	More than 3600
8	Lifting / Lowering speed(Laden)	mm/sec.	Lifting 220-500 Lowering 300-500
9	Tilt Angle (Forward/Backward)	Degree	6/12
10	Outer Turning Radius	mm.	Not more than 3700
11	Transmission		Automatic Torque flow Transmission to be fitted
12	Travel Speed (Forward/Reverse)	Km./hr.	18 (Approx.)
13	Wheel base	mm.	2000-2300
14	Brakes		Service:- Hydraulic/ Pneumatic Brake Parking:- Mechanical
15	Steering	Type	Hydrostatic.
16	Ground clearance	mm	Laden at lowest point not less than 155 mm.
17	Fork Spread	mm	Min.- 300 -475 Max.- 1500 or higher
18	Cooling System		Water Cooled.
19	Method of starting		Electric starting (Battery & Alternator fitted).
20	Length of Fork	mm.	Option 1:- 1220 Option 2:- 1600
21	Type of Fork		Pin type sliding arrangement is required for forks and the fixing at any location with pin.
22	Colour		Golden Yellow.

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