

## **SPECIFICATION OF 5 TON CAPACITY DIESEL OPERATED FORK LIFT TRUCK**

SPECIFICATION No :

LOCATION :- LEM

ITEM NO :-

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### **1. INTRODUCTION :-**

The Diesel operated fork lift (DOFL) truck is required for material movement, picking and placing various jobs inside, outside and within blocks.

### **2. CONSTRUCTION :-**

It should be high performance general purpose forklift and should be tough, compact and highly maneuverable for wide ranging outdoor / indoor standard applications.

It should have power steering. It should have high capacity control valve and piping to give high productive performance and reliability.

Drive wheels should have solid tyres to be quickly dismounting type permitting the wheel removal without exposing the bearings and other components.

#### **2.1 CHASSIS :-**

Sturdy design with integral tanks, to resist distortion and fatigue & components to be protected from damage. Fuel and hydraulic tanks are to be incorporated within the chassis.

#### **2.2 COUNTERWEIGHT :-**

Low profile, vertical slides and rear face complete with inset tow bar.

#### **2.3 ENGINE:**

No. of strokes & No. of cylinders to be specified by vendor. Coolant cooled, optimized for diesel fork lift.

#### **2.4 TRANSMISSION AND AXLE :-**

Compact transaxle with forward and reverse speeds. Optimum grade ability for rapid acceleration to working speed.

#### **2.5 FORKS :**

The forks should be easily mountable and detachable. It should be supplied with complete load back rest. The fork should be adjustable on the carriage and can be locked in position by locking pins.

### 3. SPECIFICATIONS :-

SL. NO	DESCRIPTION		Units	BHEL's specification	Vendor's specifications	Remarks
1	Model				Vendor to specify	
1.1	Power Type			Diesel	Vendor to confirm	
1.2	Rated Capacity		kg	5000	Vendor to confirm	
1.3	Load centre		mm	600	Vendor to confirm	
1.4	Tyres Solid (Front-4/2 nos)		mm	suitable	Vendor to Specify	
1.5	Tyres Solid (Rear -2nos)		mm	suitable	Vendor to specify	
2	<b>Engine</b>	Model			Vendor to specify	
2.1		Make			Vendor to specify	
2.2		Output	Kw	69 Minimum	Vendor to confirm	
3	<b>TRANSMISSION</b>	Stage-fwd/rev		2/2	Vendor to confirm	
3.1	Brake	Service brake		Air assisted/suitable	Vendor to specify	
3.2	Parking			Manual	Vendor to confirm	
3.3	Steering system			Power /Hydraulic	Vendor to confirm	
4	<b>DIMENSIONS</b>					
4.1	Lift Height		mm	3000	Vendor to confirm	
4.2	Free Lift Height		mm	120 /suitable	Vendor to confirm	
4.3	Fork Size	Standard	mm	suitable	Vendor to specify	
4.4	Mast Tilt Angle	Forward / Backward	Degrees	6 /12 degrees	Vendor to specify	
5	Overall Dimensions	Length to face of fork	mm	3180/suitable	Vendor to specify	
5.1		Overall width	mm	1790/suitable	Vendor to specify	
6		Mast lowered height	mm	2500/suitable	Vendor to specify	
6.1		Mast extended height	mm	4420/suitable	Vendor to specify	
6.2		Overall guard height	mm	2280/suitable	Vendor to specify	
6.3	Turning Radius		mm	3000/suitable	Vendor to specify	
7	Minimum right angle aisle width		mm	2780/suitable	Vendor to specify	
8	<b>PERFORMANCE</b>					
8.1	Speed	Travel	Km/hour	0-17 or more	Vendor to confirm	
8.2		Lifting(full load)	mm/sec	360 or more	Vendor to confirm	
8.3	Maximum Gradeability		%	18 or more	Vendor to confirm	
9	<b>OPTIONAL FEATURES</b>				Vendor to specify	
9.1	Oxy-catalyst exhaust gas purifier		Number	- 01 No.	Vendor to specify	
9.2	Load back rest		Number	- 01 No.	Vendor to specify	
9.3	Rear towing hook		Number	- 01 No.	Vendor to specify	
9.4	Lights (front & rear)		Set	01 set.	Vendor to specify	
9.5	Fork extensions ( 1.5 meters long)		Set	- 01 set.	Vendor to specify	
9.6	Vertical exhaust - 01 no		Number	- 01 No.	Vendor to specify	

**NOTE:-** 1.Dimensional tolerances as per IS standards for fork lift.

2.Variations in the above values to the extent of +/- 5 % are acceptable for considering nearest options of various makes.

#### **4. SCOPE OF SUPPLY :-**

- Diesel Operated fork lift truck as per standard accessories & solid tyres & tool Kit.
- Literature in 4 copies (operations, maintenance and spares manuals, blow out diagrams for repairs and changing & ordering spares) per machine
- Erection, Commissioning and Proving

#### **Optional :-**

Following may be incorporated as optionally and quoted separately

1. Oxy-catalyst exhaust gas purifier – 1 No
2. Load back rest - 01 No
3. Rear towing hook - 01 No -
4. Lights (front & rear) 01 set -
5. Fork extensions( 1.5 meters) - 01 set
6. Vertical exhaust - 01 no

#### **5. CONTROLS**

##### **5.1 INCHING :-**

5.1.1 Controlled full power inching,

5.1.2 Forward/ reverse direction control mounted for easy hand operation.

5.1.3 Hydraulic control levers and key switch- incorporating neutral start to be within easy reach of driver's hand.

##### **5.2 BRAKES :-**

5.2.1 **Service** :- Hydraulically/pneumatically operated drum brakes (self adjusting) on transaxle for light, responsive braking, asbestos free brake linings. Progressive snatch free braking.

5.2.2 **Parking** :- Ratchet type hand brake , mechanically linked to the drum brake.

##### **5.3 STEERING**

- Hydrostatic/Suitable Power steering
- Fork material – high tensile and impact strength forks of material of best quality (to be specified by the Supplier- 30 Mn5Vn preferred)

## **6. HYDRAULICS :-**

**6.1 Pump** : Heavy duty pump, shaft driven from transmission power take off.

**6.2 Control Valve** :- Fine metering control valves are to be provided

**6.3 Cylinders** :- All hydraulic cylinders should have suitable piston and heavy duty wiper seals . Fine – honed bores and hard chromium plated Piston rods for long life and trouble free operation.

## **7. INSTRUMENTATION :-**

Instruments such as Hour meter, neutral start indicator, signal indicator, warning lamps for engine oil pressure and temperature gauge, circuit breaker, brake light, battery charging rate etc are to be incorporated. 12 Volt electrical systems for lights etc is to be incorporated.

## **8. GRADIENT**

Truck to carry full load at 18 % gradient.

## **9. SAFETY :-**

Suitable safety arrangement is to be incorporated

## **10. VIBRATIONS AND NOISE :-**

Noise should be minimum. Max. Decibel level to be indicated .

## **11. LUBRICATION :-**

All gears should run in oil bath. All steering connection are to be equipped with high pressure lubrication fittings. First filling of lubricants , oil etc are to be supplied by the firms.

## **12. ERECTION , COMMISSIONING AND PROVING :-**

Supplier to commission and prove the equipment at our works. Following tests will be done

- Max speed
- Max load
- Max. gradient
- Max lift
- Combinations of above
- Various controls/ operations and stability

**13. PROTECTION :-**

All under carriage operation and steering connections are to be treated against corrosion.

**14. SPARES :-**

Recommended spares for two years normal operation is to be given item wise.

**15. GUARANTEE :-**

Equipment to be guaranteed for performance for a period of 12 months from the date of commissioning

**16. PREDESPATCH INSPECTION :-**

Inspection shall be carried out at supplier's works before dispatch.

**17. REFERENCES :-**

Supplier to give suitable customer references and their fax nos. as well as email addresses. Supplier should have sold at least 2 Nos of DOFL in the past 10 years.

**18. DOCUMENTS to be attached with the offer :-**

1. Point to point confirmation of our specs
2. Catalogues
3. Full technical and dimensional details and salient points