

2.5T - 3.0T Battery Operated Forklift Truck

Capacity : 2500 / 3000 kg
at 500 mm LC



**INDIA'S MOST
COMPACT & ENERGY
EFFICIENT FORKLIFT**

- ✓ Ergonomical and Modern looking Forklift
- ✓ Reduced Energy Consumption
- ✓ Longer Hours of Forklift Operation
- ✓ Variable Lifting speeds Adaptable to varying Customer Applications
- ✓ Clear Visibility Mast

Now with option of
Easy Side Extraction
of Battery

MAX

**Reliability
Performance
Productivity**

19+ Safety Features



Drive Comfort Drive Productivity ...

Do You Know

- ✦ You can increase productivity by manifold by using right material handling equipment.
- ✦ Labor dependency can be reduced to a great extent by using MH equipments.
- ✦ Annual World wide material handling equipment volume is more than 1 million.
- ✦ Annual Indian market is approximate 10,000 units and is less than 1% of global volume.
- ✦ KION group is worldwide leader in Material Handling equipment.
- ✦ KION India is pioneer in Indian MH market for more than 50 year through **VOLTAS** brand of equipments.
- ✦ More than 15,000 Voltas fork lifts are working in Indian market.
- ✦ KION India is having leadership position in IC truck in India.
- ✦ KION India makes Battery operated Fork Lifts with latest design and world class technology which ensures maximum energy saving and maximum productivity.



**High Powered
72V drive**



**Single Motor for
Hoist & Steer
Operations**

Split rim design

**Dual Controller
System**

DRIVE MOTOR

Drive motor is AC Traction motor with class "F" insulation is designed to provide high starting torque and withstand high temperatures in the most demanding applications. Highly energy efficient in the entire variable working condition and it is absolutely maintenance free.

HOIST MOTOR

The hoist motor is supported on rubber pads for reduced vibration and noise emission. The motor is series wound with class F insulation and internal cooling fan OR alternatively AC Motor for maintenance free operation. Pump motor is managed by dedicated pump controller optimizing the motor performance in accordance with demand thus giving high operating efficiency & motor life and also eliminating the separate steer motor.

DRIVE CONTROL

A "State of the art" high power solid-state microprocessor based traction control - Inverter controlled AC motor controller. This will provide Hare & Tortoise control with Regenerative Braking.

A Self diagnostic with on board display system is built into the controller, which constantly monitors the electrical control system and indicates diagnostic codes. The control system provides smooth step-less acceleration, variable speed control and precise inching and maneuvering in confined areas.

The regenerative Braking feature is so effective that it nearly eliminates the use of foot brake thus saving energy and reducing operator fatigue. The Battery Connector is located adjacent to the Operator for quick battery disconnection.

TRANSMISSION

A three stage reduction drive train features helical gear reduction specially designed for smooth & silent operation. Traction motor can be installed or removed without affecting the gear mesh. A full floating axle design ensures that tyre loads are carried by the axle housing and not by the drive shafts.

BRAKES

Heavy duty brakes linings are bonded to steel shoes and operate against independently mounted brake drums. Brakes are Self adjusting. The service brake is operated by an ergonomically located pedal. The mechanical parking brake is released by a handle located on the cowl.

MAST, CARRIAGE & FORKS

An excellent design supported by superior welding process ensures highly durable and dependable High Visibility masts. High Visibility simplex mast is standard. Optional Full Free Lift. Triplex mast variations are available for a variety of applications including container stuffing/de-stuffing. High visibility carriage with improved visibility is standard. Forks are of world-class quality.

STEER AXLE

The axle is fabricated from steel plates for durability and strength. The axle is supported in the frame by using hardened steel bushing for providing the required articulation. The integrated balanced power cylinder is well protected inside the axle body. The axle assembly uses plain pin joints for ease of maintenance. It provides accurate steering geometry, minimizes tyre wear and allows sharp angle steering for greater maneuverability.

HYDROSTATIC POWER STEERING

The Load sensing hydrostatic power steering provides a finger touch effortless, smooth steering, enhancing operator comfort. To conserve battery energy, the pump motor operates for minimal required speed. In the unlikely event of pump pressure failure, the truck can be steered to controlled stop.

FRAME, BATTERY COMPARTMENT AND CANOPY

The frame is designed using computer aided modeling and optimized by finite element analysis techniques. It is fabricated from heavy steel plates using latest welding process, ensuring excellent rigidity and strength

Located below within the chassis the battery is restrained in position by pads. Hood assembly is supported by gas springs for ease of opening to access battery.

An elegant canopy integrated with the frame body provides a safe enclosure for operator conforming to IS: 7621 (2000)

HYDRAULIC SYSTEM

Hydraulic system consists of reservoir, pump, directional control valve, cylinders and full flow filtration system with bypass protection, suction strainer and 25-micron replaceable return line filter. Pressure relief, Tilt lock and Flow regulators are provided for safety. The tilt lock feature control valve protects against inadvertent forward tilt whilst providing precise load positioning. Pump motor performance is synchronized with hydraulic flow demand thus enabling power saving with enhanced operator safety.

INSTRUMENTATION AND CONTROLS

Pedals are provided for acceleration and braking. These are located ergonomically with ample leg room for the operator. Dual direction lever is automotive type mounted on the steering column for easy operation. Hydraulic control valve levers are ergonomically positioned for fatigue free operation.

Hour meter and Battery State of Charge gauge housed in an elegantly designed FRP housing are available as standard. An enhanced dash display provides battery state of charge display. Controller diagnostic, fault code readouts are displayed to minimize downtime.

OPTIONAL

1. All AC drive
2. Non marking tyres instead of standard molded rubber tyres
3. Higher Battery options upto 550 AH
4. Pneumatic tyres

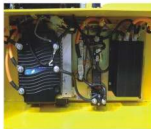
SALIENT FEATURES



Powerful, energy efficient drive line



Heavy duty steer axle for rugged operations



Rear mounted controller for easy maintenance



Rear Side mounted hoist motor for easy maintenance



72V battery & AC traction for longer hours of operation



Minimum rear overhang for less turning radius



Large front tyres for enhanced road grip and stability



Elegant Instrument Panel with on board diagnostics



Ample leg room for operator comfort



Large operator hand assisted access grip



Side removal of battery (optional)



Easy Side removal of battery (optional)



Wide view mast for clear front operator visibility



Wider Operator foot rest for safer entry and exit



High Mounted Rear Combination and Beacon Lights



Easy access combination switch

MAST CONFIGURATIONS

TYPE OF MAST	MAST MODEL	OAH h1 mm	FFH h2 mm	MFH h3 mm	OAH @ MFH with LBR h4 mm	TILT ANGLE DEGREE FWD / BWD	CAPACITY (Kg) at MFH @ 500 mm LC
							EVX 30 AC
2-Stage	HVM	2350	Nil	3500	4150	6 / 9	3000
2-Stage	HVD	2100	1500	3000	3650	6 / 9	3000
3-Stage	HVT 2125	2100	1500	4500	5150	4 / 5	2400
3-Stage	HVT 2520	2520	1780	5350	6560	3 / 5	2250
3-Stage	HVT 2700	2700	2140	6090	7310	3 / 5	1500

OAH : Overall Mast Height FFH : Free Fork Height MFH : Max Fork Height FWD : Forward BWD : Backward

* Capacity shall derate by 200 kg with sideshifter.

Safety Features Offering in EVX Max Series Fork Lifts

No.	Safety Feature	Advantage	Remarks
1	Hose Burst valve in hydraulic cylinders	In case of rupture of hoses/accident controlled lowering possible.	Standard
2	Consealed working hydraulic system hoses	Safe for operator/ Minimising chances of external damage.	Standard
3	Seat belt	Operator safety	Standard
4	Becon light/turn light	Safe working	Standard
5	Lift lock	In case of battery charging going down sufficient to drive it to charging station by locking lifting option.	Standard
6	Tilt lock valve	Load will not drift if truck is in switched off condition	Standard
7	Neutral interlock	Truck will not move unless it is in neutral position. Warning will appear	Standard
8	Intelligent drive control	Right sequence of gear shifting and accelartion	Standard
9	Regenarativ braking	In case of mech brake failure machine will stop in deacceleration	Standard
10	Anti roll back	At slope machine will not be reversing even if operator not pressing the acceleartor	Standard
11	Heavy duty box type overheady guard	Operator safety from falling object	Standard
12	Intelligent pump controller	Jerk free hydraulic operation	Standard
13	Independent parking brake	In case of hydraulic failure, brake will function normally.	Standard
14	Fork Lock	Fork will not come out form insert slot	Standard
15	Heavy duty box type Rear axle	For rugged operation	Standard
16	OPS*	No function of truck happen unless operator sits properly	Optional
17	Biometric*	Truck will be operated by authorized operator only.	Optional
18	Automatic speed reduction at turning *	Safe at turnings	Optional
19	Side removal of battery *	Easy/Safe/fast and no OH crane required	Optional

* Optional safety features

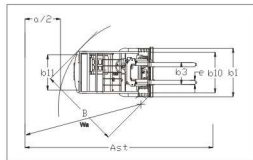
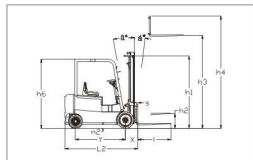
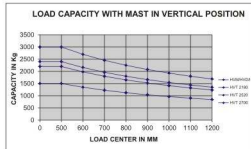
Running Cost Calculation of 3 yrs for Electric & Diesel counterbalance Truck

No.	Item	Quantity	Unit	Expenses				
				MRP	Electric Truck	MRP	Diesel Truck	
1	Mast OH	1	Ea	17000	12750	17000	12750	0.75
2	Steer Axle OH	1	KIT	25000	18750	25000	18750	0.75
3	Gear Oil	15	Ltr	3000	2250	3000	2250	0.75
4	Hydraulic Oil	120	Ltr	24000	18000	24000	18000	0.75
5	Brake OH	4	Ea	20000	15000	20000	15000	0.75
6	Electricity Charges	18750	UNIT	180000	180000	0	0	0.75
7	Diesel Charges	12000	ltr	0	0	732000	732000	0.75
8	Engine OH	1	Ea	0	0	60000	45000	0.75
9	Tyres	4	Ea	32000	24000	45000	33750	0.75
10	Engine Oil	120	Ltr	0	0	24000	18000	0.75
11	Filters	3	Kit	9000	6750	45000	33750	0.75
12	Motor Servicing	2	Ea	10000	7500	0	0	0.75
13	Clutch Maintenance	1	Ea	0	0	25000	18750	0.75
	TOTAL				285000		948000	0.75
	Running Cost per day				950		3160	0.75

* Above costs are on estimation basis

SPECIFICATIONS 3T AC ELECTRIC FORKLIFT

CHARACTERISTICS		KION INDIA
1.1 MANUFACTURER		HVD
1.2 MAST SPECIFICATION		EVX 30 MAX
1.3 MODEL DESIGNATION		BATTERY
1.4 POWER UNIT		SEATED
1.5 OPERATION		3000
1.6 LOAD CAPACITY	Q(Kg)	500
1.7 LOAD CENTRE	C(mm)	420
1.8 AXLE CENTRE TO FORK FACE	X(mm)	1600
1.9 WHEEL BASE	Y(mm)	4550
2.1 SERVICE WEIGHT	Kg	6750/ 800
2.2 AXLE LOAD LADEN, FRONT/ REAR	Kg	1770/ 2780
2.3 AXLE LOAD UNLADEN, FRONT/ REAR	Kg	
3.1 TYRE		SOLID
3.2 TYRE SIZE, FRONT		21x15x 8
3.3 TYRE SIZE, REAR		18x7-8 -14 PR
3.4 WHEELS, NUMBER FRONT/REAR (x-drive)		2/2.
3.5 TRACK WIDTH, FRONT	b10 mm	1020
3.6 TRACK WIDTH, REAR	b11 mm	950
4.1 MAST TILT, FORWARD/BACKWARD	alpha/B	6°/9
4.2 MAST HEIGHT, LOWERED	h1 mm	2125
4.3 FREE LIFT	h2 mm	1460
4.4 MAX LIFT	h3 mm	3000
4.5 MAST HEIGHT, EXTENDED	h4 mm	3600
4.6 HEIGHT OF OVERHEAD GUARD	h6 mm	2140
4.7 LENGTH TO FORK FACE	L2 mm	2280
4.8 OVERALL WIDTH	b1 mm	1220
4.9 FORK DIMENSIONS	s/e/l mm	45x125x1070
4.1 FORK CARRIAGE, ISO CLASS		3A
4.11 FORK SPREAD	b3 mm	1000
4.12 GROUND CLEARANCE AT FRAME	m2 mm	120
4.13 TURNING RADIUS	Wa mm	2150
5.1 TRAVEL SPEED, WITH/WITHOUT LOAD	km/h	12/12.
5.2 LIFTING SPEED, WITH/WITHOUT LOAD	m/s	0.25/0.35
5.3 LOWERING SPEED, WITH/WITHOUT LOAD	m/s	0.35/0.45
5.4 GRADABILITY WITH LOAD	%	17
5.5 SERVICE BRAKE		HYDRAULIC
6.1 MOTOR TYPE		AC Motor
6.2 DRIVE MOTOR	KW	12 KW, 60 Min
6.3 LIFT MOTOR RATING	KW	8.5 KW, 10 Min
6.4 DRIVE CONTROL		AC MOSFET
6.5 BATTERY VOLTAGE /RATED CAPACITY	V/AH	72V/330AH



**100+
CUSTOMER
TOUCH POINTS**



QM VOLTAS
DESIGNED TO WORK

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