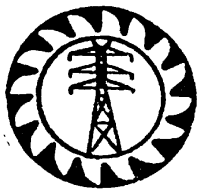


120-3 : 2008

**CEB
SPECIFICATION**

**DIGGER DERRICK (CRANE AND
DIGGER)**



**CEYLON ELECTRICITY BOARD
SRI LANKA**

Specification

for

**DIGGER DERRICK (CRANE AND
DIGGER)**

CEB Specification 120-3 : 2008

CEYLON ELECTRICITY BOARD

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SPECIFICATION FOR DIGGER DERRICK (CRANE AND DIGGER)

1.0 General

The vehicle shall be of brand new normal or forward control right hand driven type with manufacturer's factory fitted brand new high performance digger derrick consisting of an auger for digging pole pits and earth pits of substations. The truck also fitted with brand new telescopic/rope type crane with a winch of suitable capacity for the purpose of lifting and erecting of poles, transformers, cable drums etc. over flat and mountain terrains. The lifting capacity of the crane shall be 5 MT at 5m distance. The make and model offered shall be of latest type suitable for use in the tropical climate. The entire vehicle together with digger and crane shall conform to the Motor Traffic Act of Sri Lanka. The make of the truck/r/crane/digger offered should have been used for at least five years and shall be well known make.

2.0 Cab

The enclosed cab shall be of all steel or steel and Aluminium construction of a standard pattern with toughened glass or laminated glass single piece wind shield and rear window. The cab should be of tilting type with torsion bars. The cab should have seating capacity of 3 persons inclusive of the driver. The seats and back rest should have foam rubber cushions covered with toughened PVC or similar material. The driving seat shall be adjustable and reclining type with head rest. The floor has to be covered with rubber sheets or similar material. The suitable type of carpets should also be provided for cab.

3.0 Rear Bed

The rear bed shall be made out of steel and be able to carry at least 02 Nos. 13m long concrete poles of 3,500 kg of each. There are 04 Nos. outriggers with horizontally expandable bars to increase stability when the machine is in operation should be provided. The wheel base should be preferably around 3.5m.

4.0 Engine

The diesel engine shall be of four/six cylinder, 4 stroke, radiator water cooled having a minimum capacity of 6500cc. The diesel engine shall be fitted with heater plugs for easy cold starting.

5.0 Transmission

The minimum requirement is 5 forward speeds and a reverse with manual synchromesh transmission. The floor mounted gear shift and single drive plate clutch mechanism to be provided. The power take off (P.T.O) arrangement shall also be provided to transmit the power to digger and crane.

6.0 Steering

Hydraulic power assisted steering system with tilt column and steering lock shall be provided.

7.0 Suspension

Heavy duty semi-elliptic laminated leaf spring should be provided in front and rear together with heavy duty double action hydraulic shock absorbers on front and rear.

8 .0 Brakes

Servo assisted hydraulic/air brake system or full air brake system acting on all four wheels with parking breaks to act on rear wheels shall be provided.

9 .0 Wheels & Tyres

The front single, rear dual and spare wheels shall be of same size of at least 16 inch and having pressed steel wheels fitted with heavy duty standard size tyres of suitable tread pattern suit for rough roads. Spare wheel shall be mounted securely under the rear tray.

10 .0 Rear Axle

Rear axel shall be suitable for transport of the specified maximum payload on all types of terrain.

11 .0 Fuel tank

The capacity of the frame mounted fuel tank shall not be less than 150 litres_ with lockable type filling cap to be provided.

12 .0 Electrical System

24V electrical system should consist of heavy duty battery, heavy duty starter motor and battery charging alternator.

13 .0 Standard Fittings

The vehicle shall have following standard fittings.

1. FM radio/Stereo type cassette player with antenna
2. Clock
3. Fresh air blower 3 speeds
4. Front seat belts
5. Cigarette lighter socket and socket cover
6. Mud flaps
7. Full set of floor carpets
8. Sun visors for front passenger and driver
9. Seat head restraint for front passenger and driver.
10. Both side view mirrors and rear view interior mirror & globe type front view mirror.
11. Two wind shield wipers with two variable speeds and intermittent operation facility.
12. Wind shield washer
13. Cab interior lights
14. Electric horns
15. Halogen head lamps
16. Turning indicator lamps
17. Parking lamps.
18. Reverse lamps
19. Rear number plate lamp.
20. 04 Nos. Hydraulically operated outriggers.
21. P.T.O. switch

14 .0 Instruments

1. Speedometer with odometer and trip meter
2. Fuel level gauge
3. Cooling water temperature gauge
4. No/low battery charge indicator
5. Head light dip/beam indicator
6. Turning signal indicators

7. Hazard warning indicators
8. Parking brake indicator
9. Engine oil low pressure indicator
10. Low fuel indicator
11. Door open indicator
12. PTO "ON" and "OFF" indicator.

15 .0 Crane & Digger

The crane and digger to facilitate digging of pole pits, loading and unloading of heavy equipment shall be fitted behind the cab. The crane shall be of telescopic/rope type with a winch of suitable capacity and shall be hydraulically operated and powered by the vehicle engine through PTO. Hydraulically operated outriggers shall be provided to enable stability for crane and digger operation. The beams and jacks should be able to adjust individually.

The lifting capacity of crane shall be 5 MT at the working radius of 5m and minimum lifting height of 10 m. The working radius should be approximately from 1.0 m to 10 m. Dual hydraulic operating controls shall be provided to facilitate operation of the crane and the outriggers and the digger.

The digger derrick shall be consisting of earth auger for digging, digger rest, digger support and hydraulic pump. A separate seat on the rear bed shall be placed at a higher elevation together with the hydraulically operated control levers for operation of digger and the crane for convenience of the operator. Advance safety devices and alarms on crane and digger operation to be provided

(a) Crane

- Lifting Load – 5 Ton (inclusive weight of hook and slings) at 5m radius at 10m height.
- Lifting Height – not less than 14m
- Working radius 1.0m to 10.0 m

(b) Digger

- Drilling depth - Maximum 4.5 m
- Working radius – from 1.0 m to 7.0 m
- Diameter of the digger blade - 0.45m
- Blade height of the digger from the tip – 1.5m
- The shaft of the digger blades shall be adjustable to drill holes up to 4.5m depths.

(c) Minimum of following safety devices should be provided

- Hydraulic circuit relief valve.
- Pilot operated check valve.
- Holding valve
- Shut off valve
- Safety latch for hook.
- Over winding cut off device.
- Automatic hook height compensating device

16 .0 Spares, Tools & Manuals

(a) The following spares and tools shall be supplied with each vehicle.

1. Spare wheel complete with tyre.
2. Wheel brace
3. Heavy duty jack with levers.
4. Set of spanners, screw driver and pliers

The spares recommended by the manufacturer for the truck, crane and digger for a three year period of maintenance shall be itemised and indicated separately.

- (b) The following instruction manuals and the literature in English shall be supplied.
1. Operation & maintenance manual of vehicle, crane & the digger
 2. Driver's instruction books.
 3. Service & maintenance manual of the truck, crane and the digger

17 .0 Warranty

Minimum warranty period of 12 months or 20,000 km mileage for the truck whichever come first. Minimum of 12 month warranty should be provided for the Crane and the digger.

18 .0 Services

The vehicle should be of well known brand and represented by a reputed dealer in Sri Lanka in order to maintain adequate spares, repair and service facilities for the truck, crane and the digger for at least next 10 year period.

Appendix 1

**GURANTEED SCHEDULE OF PARTICULARS
DIGGER DERRICK (CRANE AND DIGGER)**

(Please state the description and availability when and where necessary)

(A) Truck

1	Make of the Truck	
2	Model	
3	Year of manufacture	
4	Name & Address of Manufacturer	
5	Name & Address of Local Agent	
6	General Information	
	(a) Overall length (m)	
	(b) Overall width (m)	
	(c) Wheel base (m)	
	(d) No. of crew	
	(e) Vehicle weight in kg	
	(f) Pay load in kg	
	(g) Gross weight in kg	
	(h) Overall height to roof top in mm	
	(i) Ground clearance (un laden) in mm	
	(j) Right hand drive or otherwise	
	(k) Colour of the Truck	
7	Seats	
	(a) No. of seats	
	(b) Type of Sets	
	(c) Whether Driving seat is adjustable	
	(d) Availability of seat belts	
8	Engine	
	(a) Model	
	(b) Type	
	(c) Maximum Output atrpm
	(d) Displacement	
9	Fuel	
	(a) Type of fuel used	
	(b) Fuel tank capacity (Lt)	
	(c) Whether fuel tank filling cap is lockable	

	(d) Fuel consumption (km/Lt)	
10	Transmission System	
	(a) Model	
	(b) Gear System	
	(c) Type	
	(d) No. of Forward gear	
	(e) Whether floor mounted gear shifting	
11	Steering System	
	(a) Type	
	(b) Power steering	
	(c) Minimum turning radius	
12	Suspension System	
	(a) Front	
	(b) Rear	
13	Breaking System	
	(a) Front	
	(b) Rear	
	(c) Parking breaks	
14	Wheels & Tyres	
	(a) Number of wheels & tyres	
	(b) Tyre size & type front	
	(c) Tyre size & type rear	
	(d) Spare wheel provided (Specify the wheel size)	
15	Standard fittings	
	(a) Fm Radio/Stereo cassette player with antenna & 02 speakers (State the frequency range)	
	(b) Clock (Analogue or Digital)	
	(c) Fresh Air blower 3 speed /Air Conditioner Auto or Manual	
	(d) Cigarettes lighter socket and socket cover	
	(e) Mud Flap	
	(f) Full set of floor carpets.	
	(g) Sun wiser for front passenger & Driver	
	(h) Seat head restraint for front passenger and driver	
	(i) Both side view mirror, globe type front view mirror and rear view interior mirror	

	(j) Two wind shield wipers with two variable speed & Intermittent Operation facility	
	(k) Wind shield washers	
	(l) 04 Nos. Hydraulically operated outriggers.	
16	Instruments	
	(a) Speedometer with Odometer & Trip Meter	
	(b) Fuel level gauge	
	(c) Cooling Water temperature gauge	
	(d) No/low Battery Charge Indicator	
	(e) Head light dip/beam Indicator	
	(f) Turning Signal Indicators	
	(g) Parking Break Indicator	
	(h) Hazard warning indicators	
	(i) Parking break indicator	
	(j) Engine oil low pressure indicator	
	(k) Low fuel indicator	
	(l) Door Open indicator	
	(m) Break fluid low level indicator	
	(n) PTO "ON" & "OFF" indicator	
17	Electrical system	
	24V electric system with heavy duty battery and alternator charging system	
	Turning indicator lamps, parking lamps, stop lamp, rear number plate lamps, reverse lamps, hazard lamps and cab interior lamp	
	(a) Halogen head lamps	
	(b) Head lamps dipper switch	
	(c) Electrical horns (01 set)	
	(d) Heavy duty starter motor	
18	Spares, tools & manuals	
	(a) Spare wheel complete with tyre	
	(b) Wheel brace	
	(c) Jack with lever	
	(d) Set of spanners, screw driver and pliers	
	(e) Operation & maintenance manual and the Service booklet in English	
	(f) Standard accessories (Please list out)	
19	Address of the dealer in Sri Lanka	

20	Availability of spare parts for 10 years (Please provide details)	
21	Availability of service and repair facilities for 10 years (please provide details)	
22	Number of similar vehicles sold during last 05 years	
23	Whether the vehicle offered conforms to Motor Traffic Act of Sri Lanka	
24	Whether the letter of confirmation is attached to prove the offered Vehicle conform to the specification	
25	Warranty	

(B) Crane and Digger

	Crane	
1	Make & Model of Crane	
2	Country of manufacture	
3	Name of manufacturer	
4	Capacity	
5	Maximum Lifting Load Main Boom (kgf) Sub Boon (kgf)	
	Details of winch	
6	Working range	
7	Maximum Lifting height Main Boom (m) Sub Boom (m)	
8	Working radius Main Boom (m) Sub Boom (m)	
9	Lifting Range over rear (Degrees)	
10	Out rigger extended with Front (m) Rear (m)	
11	Describe safety devices	
12	Warranty for Crane	
	Digger	
1	Make & Model	
2	Country of manufacture	
3	Name of manufacture	
4	Maximum digging depth (m)	
5	Working radius (m)	

6	Torque of the digger motor (kgj-m)	
7	Boring Diameter (Standard) (m)	
8	Digger extension stroke (m)	
9	Digging range over rear (degrees)	
10	Height of digger blades	
11	Describe Safety devices	
12	Other equipment supplied with the digger	
13	Warranty for Digger	
	Hydraulic System	
14	Oil reservoir capacity (Litres)	
15	Recommended Hydraulic Oil	
16	Maximum Hydraulic Pressure (kgf/cm ²) Main relief (kgf/cm ²) Attachment (kgf/cm ²)	
	Hydraulic Pump	
17	Pump Type	
18	Discharge Volume (cc/rev)	
19	Warranty Hydraulic equipment	
20	Availability of spares, service and repair facilities for 10 years for crane & digger(please provide details)	

We hereby guarantee that the above particulars given by us are true and accurate. We also confirm that the required spares for the model offered are available with us and we maintain adequate after sales service and repair facilities.

Signature & Seal of the bidder

Date