

TM 825

Product Guide



TRUCK MOUNTED HYDRAULIC CRANE

Features

- **CAPACITY (Outriggers)** - 25 Tonnes at 3.0m radius (85%Rating) 360° Slew
- **BOOM** - 4 Section - 9.94m to 32.7m
- **MAXIMUM ROAD SPEED** - 60 km/hr (unladen)
- **CARRIER** - 6 X 4 Drive

Superstructure Specification

BOOM

9.94m-32.7m four section, full powered, fully synchronized boom by means of cylinder and wire ropes to ensure proportional telescoping of boom sections.

Maximum Tip Height: 35m.

BOOM ELEVATION

Single double acting hydraulic ram mounted on large diameter bushes. Fitted with combined cartridge type externally mounted hydraulic lock and counterbalance valve to prevent ram collapse in the event of hydraulic failure and provides positively controlled derricking out.

BOOM ANGLE

Maximum 76°, Minimum -3°.

SUPERSTRUCTURE FRAME

Fabricated from high tensile steel plates and sections. Mechanical superstructure lock operated from cab.

SLEW SYSTEM

Gear type hydraulic motor driving a pinion through a double reduction gear unit. The pinion meshes with an externally cut slew ring for 360° smooth and precise continuous rotation. Spring applied hydraulically released multi plate brake.

SLEW SPEED

Maximum 2.0 RPM (Unladen) for controlled operation.

HOIST SYSTEM

Gear type hydraulic motor driving hoist barrel via reduction gear unit. Fitted with counterbalance valve for controlled lowering of the load. Spring applied hydraulically released multi plate brake.

Limit switch provided to prevent over-lowering.

Non-Spin Hoist Rope: 13mm dia. & length 115m.

Line Speed: Top layer 40m/min.(Max) Unladen.

Maximum Permissible Line Pull: 3000 kg (4thLayer).

HOOK BLOCK

25 MT, 4 sheaves.

COUNTER WEIGHT

Pinned with superstructure. Weight- 3500 kg.

TELESCOPING SYSTEM

Double acting ram, with wire rope mechanism provides proportional telescoping of boom sections with single lever control. Fitted with combined cartridge type hydraulic lock and counterbalance valve to sustain telescopic ram in the event of hydraulic failure and provides positively controlled boom retraction.

CRANE CONTROLS

Lever operated control valves for Slew, Telescoping, Hoisting, and Derricking with independent or simultaneous operation of crane motions. Engine speed governed by foot pedal control.

LOAD MOMENT INDICATOR & ANTI-TWO BLOCK SYSTEM

Electronic load moment indicator system with audio-visual warning & control lever lock out indicates electronic display of boom angle, length, radius, relative load moment, permissible load, load indication & warning of impending two block condition. Motion cut off to ensure the safe operation with load for tele, derrick & hoist motions.

SAFETY SYSTEM

Pendent limit switch provided on boom head for over hoist. Third wrap indicator provided on hoist barrel to ensure three turns of rope on hoist drum. Hydraulic relief valves protect pumps and structures from excessive pressure. Lock and counterbalance valves fitted on derrick, telescopic and outrigger cylinders to sustain rams in the event of hydraulic failure.

OPERATOR'S CAB

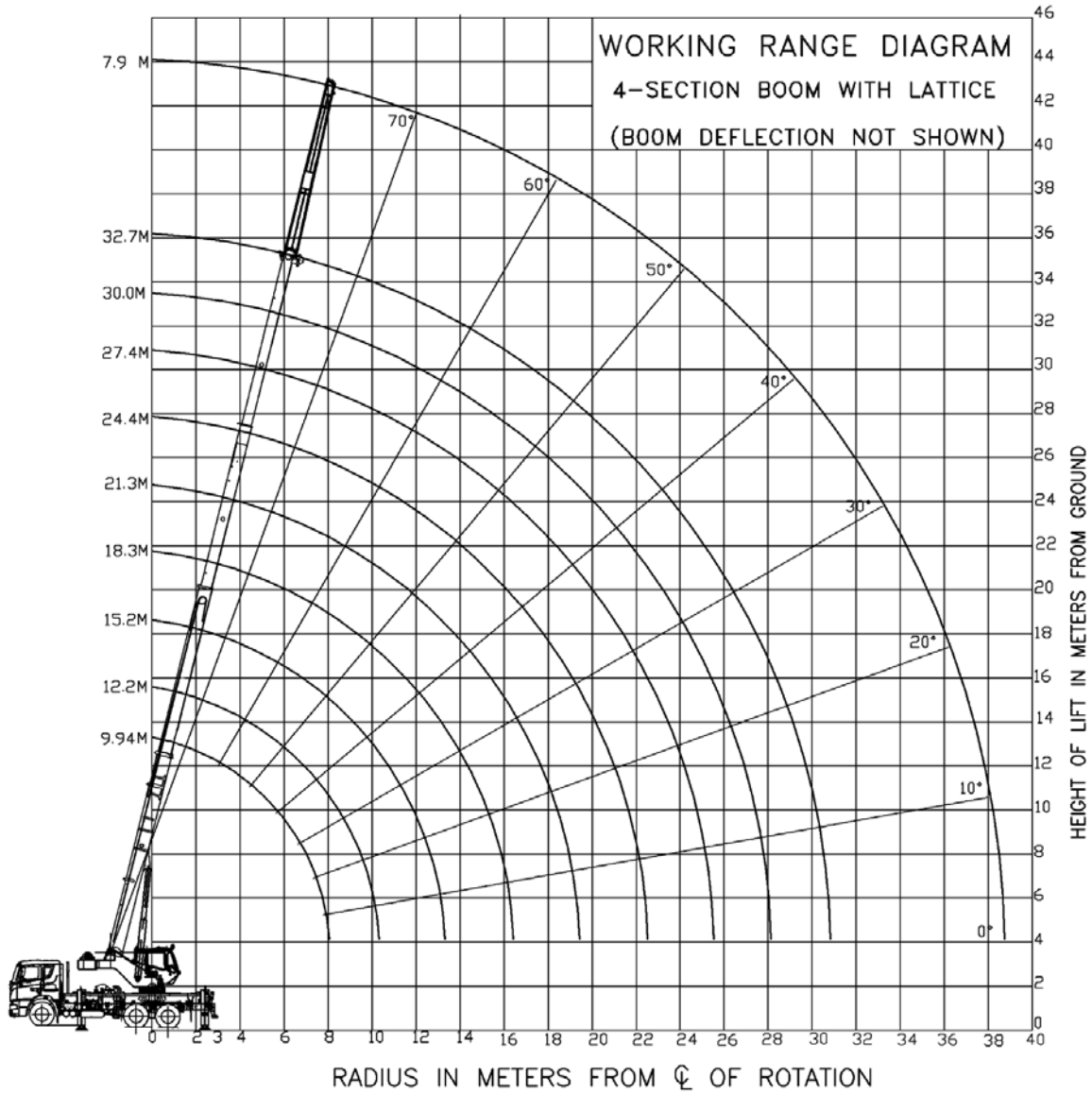
Totally enclosed steel construction, full vision type, windows fitted with toughened safety glass including front windscreen. Adjustable operator's seat, cab interior light, electric fan, electric horn, electric windshield wiper and lockable sliding door. Ergonomically designed cab and controller layout to give fatigue free operator's comfort.

OPTIONAL EQUIPMENT

7.9m fixed swing away extension on standard 4 section boom.

Headache Ball

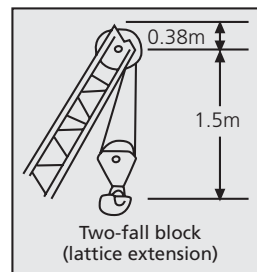
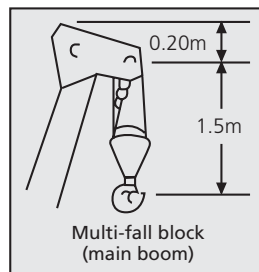
Height of Lift - 4 Section Boom with Lattice



(BOOM DEFLECTION NOT CONSIDERED)
 OUTRIGGERS FULLY EXTENDED AND TIRES LIFT OFF THE GROUND
 (TIP HEIGHT SHOWN FOR 360° ROTATION ALL ROUND)

NOTE:
 The above heights of lift and boom angles are based on a straight (unladen) boom and allowance should be made for boom deflections obtained under laden conditions.

Height to Boom Head –
 (Add to hook height for head room calculations)



Metric 85% Lifting Capacities (Kilograms) On Outriggers Fully Extended - 4 Section Boom

Main Boom Duties on Outriggers Fully Extended - Through Full 360° Slew

Radius in Meters	Main Boom Length (in Meters)								
	9.94	12.2	15.2	18.3	21.3	24.4	27.4	30.0	32.7
3	25,000 (64.6)	22,700 (69.6)	17,500 (73.8)						
3.5	22,000 (59.4)	20,000 (65.6)	17,000 (71.8)						
4	19,500 (55.9)	17,500 (63.0)	16,500 (68.7)	14,500 (72.5)					
4.5	18,000 (52.3)	16,500 (60.3)	15,900 (66.6)	14,000 (70.8)	11,500 (73.6)				
5	16,000 (48.4)	15,200 (57.5)	14,800 (64.5)	13,500 (69.1)	11,200 (72.2)				
6	13,000 (39.8)	13,000 (51.6)	13,000 (60.2)	12,000 (65.7)	10,800 (69.3)	10,175 (72.1)	8,410 (74.1)		
7	10,750 (28.9)	10,700 (45.1)	10,700 (55.7)	10,400 (62.2)	9,500 (66.4)	9,000 (69.5)	7,870 (71.9)		
8		9,250 (37.7)	9,000 (50.9)	8,680 (58.5)	8,300 (63.4)	7,750 (67.0)	7,250 (69.7)	6,200 (71.5)	6,000 (73.1)
9		7,220 (28.7)	7,460 (45.7)	7,500 (54.7)	7,300 (60.3)	7,250 (64.4)	6,500 (67.4)	5,750 (69.5)	5,500 (71.2)
10		5,750 (15.1)	6,000 (40.1)	6,170 (50.7)	6,250 (57.1)	6,250 (61.7)	5,900 (65.1)	5,200 (67.4)	5,000 (69.4)
12			4,100 (25.5)	4,270 (41.9)	4,350 (50.4)	4,420 (56.2)	4,400 (60.36)	4,300 (63.2)	4,540 (65.6)
14				3,060 (31.0)	3,150 (42.8)	3,220 (50.3)	3,270 (55.4)	3,300 (58.8)	3,330 (61.6)
16				2,220 (13.6)	2,320 (34.0)	2,390 (43.8)	2,440 (50.1)	2,470 (54.1)	2,500 (57.5)
18					1,710 (22.1)	1,780 (36.3)	1,830 (44.3)	1,870 (49.2)	1,870 (53.2)
20						1,320 (27.20)	1,370 (37.8)	1,400 (43.9)	1,430 (48.6)
22						940 (12.80)	1,000 (30.2)	1,000 (38)	1,000 (43.7)
24							700 (20.0)	700 (31.1)	750 (38.3)
26								500 (22.4)	500 (32.2)

9.94m to 32.7m Boom plus 7.9m lattice extension-outrigger fully extended

Radius in Meters	Capacity in Kgs	Laden Boom Angle
9.00	3500	74.9
10.00	3500	73.5
12.00	3500	70.5
14.00	3425	67.5
16.00	2650	64.4
18.00	2050	61
20.00	1570	58
22.00	1150	54.5
24.00	850	51
26.00	600	47.2
28.00	400	43.2
Total Length 40.6m.		

Weight Reduction for Load Handling Devices

7.9m Boom Extension	
Erected	1343 kg
Reduction of Main Boom Capacities	
Auxiliary Boom Nose	64 kg
Hookblocks & Headache Balls	
25 MT, 4 Sheaves	250 kg
Single Fall Hook Block	90 kg

Hook Block Capacities & Weights - Tonnes

No. of Falls	8	7	6	5	4	3	2	1
Permissible Load	25.0	22.0	19.0	16.0	13.0	10.2	6.9	3.5
Weight of Hookblock	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.09

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Notes

Notes for Lifting Capacities

WARNING: THIS CHART IS ONLY A GUIDE. The Notes below are for illustration only and should not be relied upon to operate the crane. The individual crane's load chart, operating instructions and other instruction plates must be read and understood prior to operating the crane.

1. All rated loads have been tested to and meet minimum requirements of IS:4573-1982, Specification for Power Driven Mobile Cranes, and do not exceed (85% of the tipping load on outrigger) as determined by SAEJ765 OCT 80 Crane Stability Test Code.
2. The weight of hook block, slings and all similarly used load handling devices must be added to the weight of the load. When more than minimum required reeving is used; the additional rope weight shall be considered part of the load.
3. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as capacity limitation.
4. All capacities are for crane on firm, level surface. It may be necessary to have structural supports under the outrigger floats or tires to spread the load to a larger bearing surface.
5. When either boom length or radius or both are between values listed, the smallest load shown at either the next larger radius or boom length shall be used.
6. For outrigger operation, all outriggers shall be fully stretched & jacks extended to raise tires free of ground & the slew plinth becomes horizontal before raising the boom or lifting loads.
7. Outrigger beams must be fully extended and stabilizers properly set while rotating superstructure over the side. Do not rotate superstructure over the side while on rubber.
8. Capacities shown in the duty chart must not be derricked below 12° boom angle.
9. When lattice extension is fitted the boom must be fully retracted for boom angles less than those shown in the duty chart.
10. 7.9m boom extension length may be used for single line lifting service.
11. Radii listed are for extended boom with the boom extension erected.
12. Capacities listed are with outriggers fully extended and vertical jacks set only.
13. For the main boom fully extended with 7.9m fixed extension in working position, the boom angle must not be less than 43.20°, since loss of stability will occur causing a tipping condition. This warning also applies for boom extension erection purposes.
14. When the lattice extension is fitted in the operating position, main boom capacities must be reduced by 0.78 tonne.
15. When lifting over swingaway and / or jib combinations, deduct total weight of all load handling devices reeved over main boom nose directly from swingaway or jib capacity.
16. Angle based capacities are determined by laden boom angles given and not by radius. Radii quoted refer only to fully extended booms.
17. Practical safe working loads are dependent on the supporting surface, wind and other factors affecting stability, hazardous surroundings, experience of personnel and proper handling of the load all of which must be taken into account by the operator.
18. Do not travel the crane with boom extension or jib erected.
19. Handling of other equipment with the boom is not authorized except with equipment furnished and installed by TIL Ltd.

Carrier Specification

CARRIER

6X4 wheel right hand drive, heavy duty truck chassis with integral outrigger housing and subframe fabricated from high strength steel plates and sections.

OUTRIGGERS

Four hydraulically operated outriggers with horizontal telescoping beams with inverted vertical jacks fitted with integral holding valves. Vertical jacks fitted with removable, stowable outrigger feet. Independent control can be made for all outriggers with individual beam and jack operation.

HYDRAULIC SYSTEM

Hydraulic relief valves protect pumps and crane structures from excessive pressure and the reservoir fitted with suitable hydraulic filter to maintain the desired level of cleanliness of hydraulic oil.

PUMP

Multi-section pump is driven through gear-box power take off unit.

FILTER

Return line type, full flow with bypass protection and service indicator. Replaceable cartridge.

RESERVOIR

Capacity 350 liters with spin-on breather filter, external sight gauge, oil temperature gauge, clean out access.

ENGINE

Ashok Leyland H6 Series 180 HP CRS ; 180 HP(132 Kw) @ 2400 RPM; Max Torque: 670 Nm @ 1300-1600 RPM.

CLUTCH

Diaphragm Type, Single Plate Dry Clutch, dia: 381 mm

GEAR BOX

ALGB 6 speed synchromesh gear box with easy gear shift mechanism.

DRIVE CONFIGURATION

6 X 4

AXLES

Front axle - Non - drive steer axle with semi elliptical multi-leaf spring suspension with shock absorbers.

Rear axle - Heavy duty, fully floating tandem axle fitted with bell crank suspension.

BRAKES

Service - Air operated, dual line brake on all wheels by means of foot operated pedal in driver's cab.

Parking - Flick-valve operated, spring actuated pneumatically released brake on front axle and leading rear axle.

STEERING

Re-circulation ball type power steering, controlled by steering wheel in driver's cab.

Turning circle dia. - 17.23 m.

FUEL TANK CAPACITY

300 liters

WHEELS & TYRES

Tyres 10.00 X 20 - 16 PR on all wheels (Single front and twin rear)

Spare wheel provided.

DRIVER'S CAB

Steel construction full width cab with electric fan, interior light, horn, operating windows fitted with toughened glass, two lockable doors, electric windscreen wiper and upholstered adjustable operator's seat. Automotive controls which include steering wheel, pedals for clutch, brake and accelerator

INSTRUMENTATION

Air pressure gauge, Engine oil pressure gauge, Voltmeter, Water temperature gauge, Speedometer, Warning lights and switches for control.

ELECTRICAL EQUIPMENT

24-Volt starting and lighting system includes two combined dipping head lamps, side, rear and stop lamp, flashing direction indicators.

TOOL BOX

With tool kit for normal maintenance.

TRAVELLING SPEED

60 km/hr (unladen).

GROSS VEHICLE WEIGHT & AXLE LOADS (approx)

GVW - 25.0 Te

Front axle - 6.0 Te

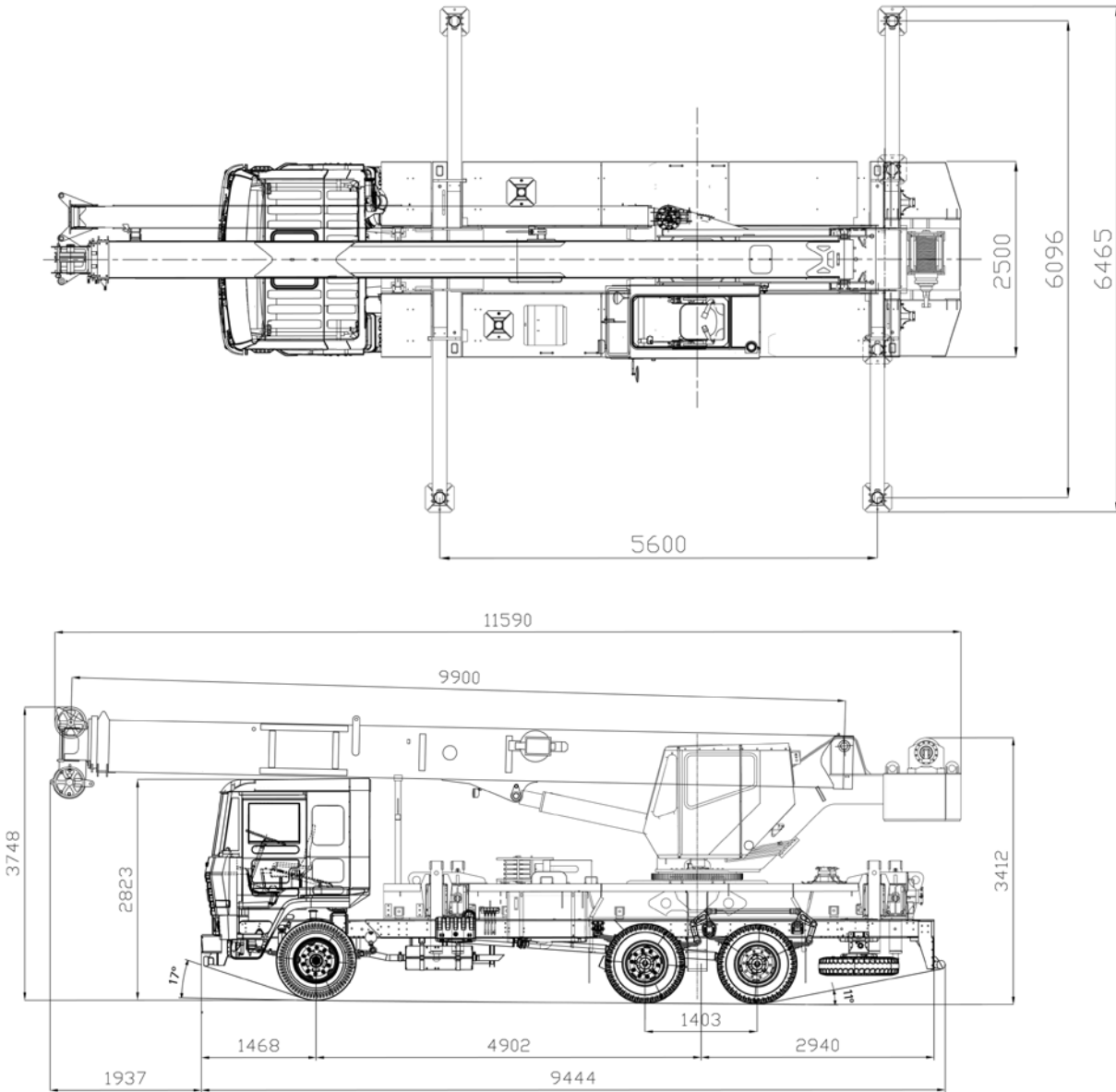
Rear axle - 19.0 Te

Optional Weights (approx.)

Fixed Lattice : 800 kg

G.A Drawing

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Dimensions in mm

Constant improvement and engineering progress make it necessary that we reserve the right to make specification, equipment and price changes without notice. The photographs/drawings in this document are just for illustrative purpose which may include optional equipment and accessories, which can be provided at an additional cost on request.

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