

TMS 830

Product Guide



HYDRAULIC TRUCK CRANE

Features

- **MAX. CAPACITY (Outriggers)** - 30 Tonnes at 2.5m Radius (85% Rating) 360° Slew
- **BOOM** - 4 Section full power boom 9.94m - 32.7m
- 7.9m Fixed lattice extension (optional)
- **CARRIER** - 6 X 4 Drive
- **MAX. ROAD SPEED** - 47 km/hr

Superstructure Specifications

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 : 35.0m for main boom
: 42.5m with 7.9m fixed lattice extension

BOOM ELEVATION

Single double-acting hydraulic cylinder 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

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

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: 16 mm dia. & length 138 m.

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

Maximum Permissible Line Pull: 4200 kg.

HOOK BLOCK

30.MT, 4 sheaves.

COUNTER WEIGHT

Pinned with superstructure. Weight- 5000 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 lockout 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

Pendant 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

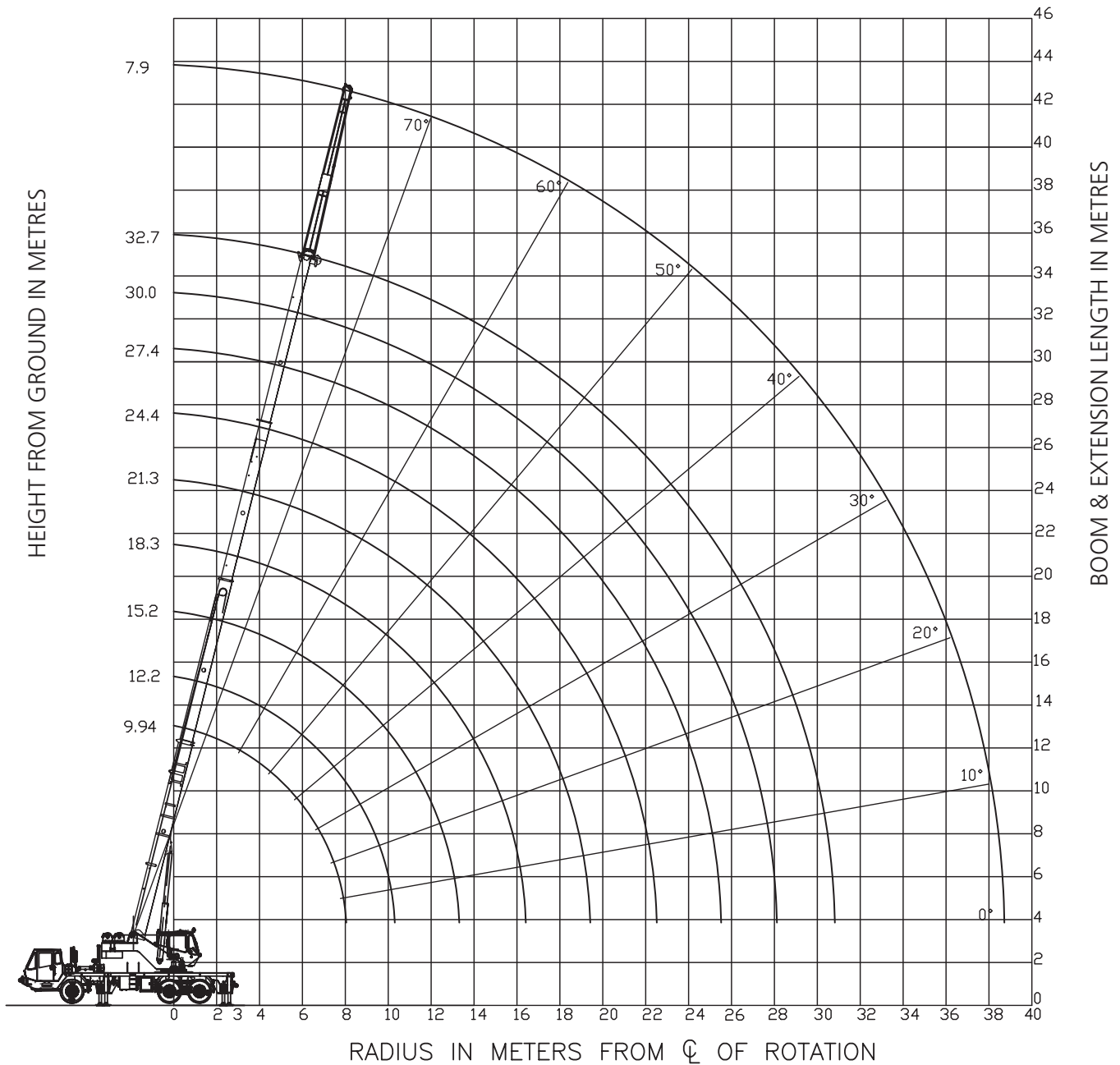
Totally enclosed steel construction, full vision type, windows fitted with toughened safety glass including front windscreen. Adjustable operator's seat, cab interior light, electric fan, electric horn, electric windshield wiper and lockable sliding door. Ergonomically designed cab and controller layout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

OPTIONAL EQUIPMENT

- Auxiliary Hoist Unit
- Air Conditioned super cabin
- Air Conditioned carrier cabin
- 7.9m Fixed Lattice
- Headache Ball
- 5 Kg Fire Extinguisher

Height of Lift : 4 Section 9.94m-32.7m Full Power Boom : 7.9m Fixed Lattice Extension

WORKING RANGE DIAGRAM
(BOOM DEFLECTION NOT SHOWN)



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.

Lifting Capacities (Metric) 85% Rating 4 Section Boom Duties (in Kilograms)

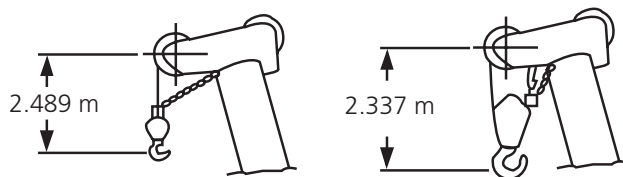
Main Boom Duties on Outriggers Fully Extended Through Full 360° Slew

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
2.5	30000 (66.4)								
3	25000 (64.6)	22700 (69.6)	17500 (73.8)						
3.5	22000 (59.4)	20000 (65.6)	17000 (71.8)						
4	19500 (55.9)	17500 (63.0)	16500 (68.7)	14500 (72.5)					
4.5	18000 (52.3)	16500 (60.3)	15900 (66.6)	14000 (70.8)	11500 (73.6)				
5	16000 (48.4)	15200 (57.5)	14800 (64.5)	13500 (69.1)	11200 (72.2)				
6	13000 (39.8)	13000 (51.6)	13000 (60.2)	12000 (65.7)	10800 (69.3)	10175 (72.1)	8410 (74.1)		
7	10750 (28.9)	10700 (45.1)	10700 (55.7)	10400 (62.2)	9500 (66.4)	9000 (69.5)	7870 (71.9)		
8		9250 (37.7)	9000 (50.9)	8680 (58.5)	8300 (63.4)	7750 (67.0)	7250 (69.7)	6200 (71.5)	6000 (73.1)
9		7220 (28.7)	7460 (45.7)	7500 (54.7)	7300 (60.3)	7250 (64.4)	6500 (67.4)	5750 (69.5)	5500 (71.2)
10		5750 (15.1)	6000 (40.1)	6170 (50.7)	6250 (57.1)	6250 (61.7)	5900 (65.1)	5200 (67.4)	5000 (69.4)
12			4100 (25.5)	4270 (41.9)	4350 (50.4)	4420 (56.2)	4400 (60.36)	4300 (63.2)	4540 (65.6)
14				3060 (31.0)	3150 (42.8)	3220 (50.3)	3270 (55.4)	3300 (58.8)	3330 (61.6)
16				2220 (13.6)	2320 (34.0)	2390 (43.8)	2440 (50.1)	2470 (54.1)	2500 (57.5)
18					1710 (22.1)	1780 (36.3)	1830 (44.3)	1870 (49.2)	1870 (53.2)
20						1320 (27.20)	1370 (37.8)	1400 (43.9)	1430 (48.6)
22						940 (12.80)	1000 (30.2)	1000 (38)	1000 (43.7)
24							700 (20.0)	700 (31.1)	750 (38.3)
26								500 (22.4)	500 (32.2)

Note: () Boom angles are in degree

HEIGHT TO BOOM HEAD -

(Add to hook height for head room calculations)



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Weight Reduction for Load Handling Devices

7.9m Boom Extension	
* Erected	1,343 kg.
Reduction of Main Boom Capacities	
Auxiliary Boom Nose	64 kg
Hookblocks and Headache Balls	
30MT, 4 Sheaves	300 kg
Single Fall Hook Block	153 kg

*Reduction of main boom capacities

NOTE: 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.

NOTE: All load handling devices & boom attachments are considered part of the load & suitable allowances MUST BE MADE for their combined weights.

Lifting Capacities (Metric) 85% Rating Boom Extension Duties (in Kilograms)

9.94m - 32.7m Boom plus 7.9m Lattice extension on Outriggers fully extended - 360 deg. slew

Radius (in Meters)	Capacity	Laden Boom Angle
9.00	3,500	74.9°
10.00	3,500	73.5°
12.00	3,500	70.5°
14.00	3,425	67.5°
16.00	2,650	64.4°
18.00	2,050	61°
20.00	1,570	58°
22.00	1,150	54.5°
24.00	850	51°
26.00	600	47.2°
28.00	400	43.2°
Total Length 40.6m		

Load Lifting Guide

Load (Te)	30.0	26.5	23.0	19.5	15.5	11.5	7.5	4
No. of Falls	8	7	6	5	4	3	2	1

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.

- All rated loads have been tested to 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 SAE J765 OCT80 Crane Stability Test Code.
- 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.
- Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as capacity limitation.
- 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.
- 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.
- 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.
- 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.
- Capacities shown in the duty chart must not be derricked below 12° boom angle.
- When lattice extension is fitted, the boom must be fully retracted for boom angles less than those shown in the duty chart.
- Angle based capacities are determined by laden boom angles given and not by radius. Radii quoted refer only to fully extended booms.
- 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.
- Do not move the crane with boom extension or jib erected.
- Handling of other equipment with the boom is not authorized except with equipment furnished and installed by TIL Ltd.

Carrier Specifications

CARRIER

6x4 drive right hand steer, purpose built heavy duty carrier frame of torsion box section with integral front & rear outrigger housing 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.

Outrigger controls located on both sides of the chassis. Crane level indicator adjacent to controls.

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

ENGINE

Ashok Leyland H6ETIC3RS23,
160 hp @ 2300 RPM,
Max. Torque : 590 Nm @ 1700 - 1900 RPM
Emission : BS III CEV

CLUTCH

Diaphragm Type, Single Plate Dry Clutch, dia: 380 mm

GEAR BOX

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 bogie beam 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 and rear axles.

STEERING

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

Turning Circle Diameter - 22.35m

FUEL TANK CAPACITY

273 liters

WHEELS & TYRES

Tyres 11.00 x 20 -16PR 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.

MISC. STANDARD EQUIPMENT

Beacon Lights
3 point seat belt in driver's cab
Boom base light
Front and Rear Tow Hook
Mobile charging point in driver's cabin
1 no. Fire Extinguisher
First-Aid box
Full Deck Platform
Lockable Tool Box
Tool Box with Tool Kit for normal maintenance

TRAVELLING SPEED

47 km/hr

GROSS VEHICLE WEIGHT & AXLE LOADS (approx)

GVW - 29405 kg (with 7.9m lattice extension)

Front Axle - 7055 kg (with 7.9m lattice extension)

Rear Axles - 22350 kg (with 7.9m lattice extension)

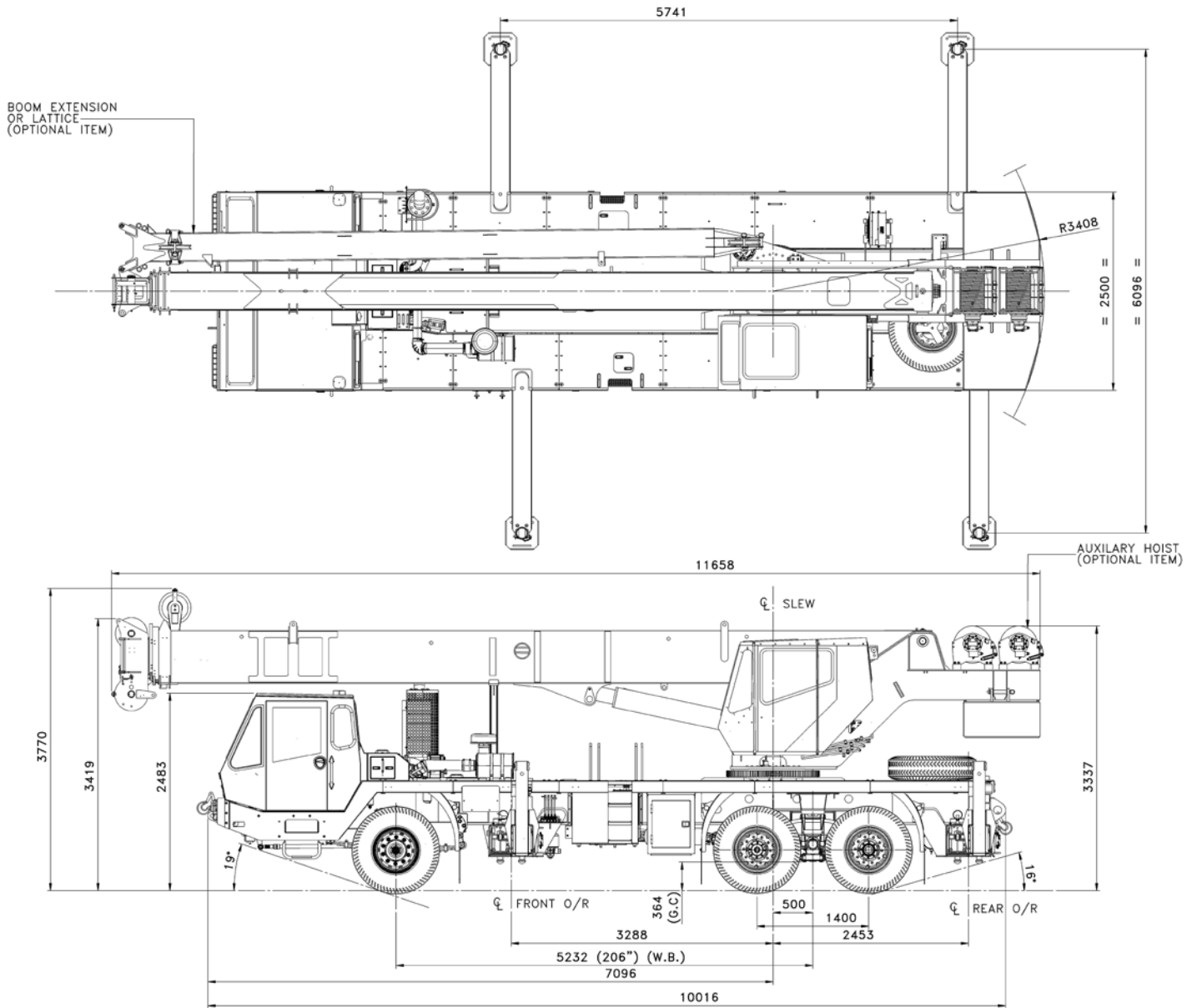
WEIGHTS FOR OPTIONAL ITEM (approx.)

- 7.9m Fixed Lattice 700 kg

- Auxiliary Hoist 650 kg

G.A Drawing

TMS 830



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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