

# HYDRA 830M

## Product Guide



HYDRAULIC TRUCK CRANE

### Features

- MAX. CAPACITY (Outriggers) - 30 Tonnes at 3m Radius (85% Rating) 360° Slew
- BOOM - 4 SECTION Rectangular - 8.8m to 29.0m
- MAX. ROAD SPEED - 45 km/hr.
- CARRIER - 6 X 4 Drive

# Superstructure Specification

## BOOM

8.8m - 29.0m four section, full power, rectangular section synchronized boom. Telescopic sections slide on adjustable and replaceable low friction wear pads.

**Maximum Tip Height:** 31.2m

## TELESCOPING SYSTEM

Single double acting two stage hydraulic ram provides proportional telescoping of boom sections with single lever control. Combined cartridge type lock & counterbalance valve fitted to sustain telescopic ram in the event of hydraulic failure and provides positively controlled boom retraction.

## BOOM NOSE

Four nylatron sheaves mounted on heavy duty tapered roller bearings with removable pin type rope guards.

## BOOM ELEVATION

Single double acting hydraulic cylinder with integral holding valve.

## BOOM ANGLE

Maximum: 76°, Minimum: -3°.

## SUPERSTRUCTURE FRAME

Fabricated from high tensile steel plates & sections.

## SLEW SYSTEM

Ball bearing swing circle with 360° continuous rotation. Planetary glide-swing with foot applied multi-disc brake. Spring applied hydraulically released parking brake. Mechanical house lock operated from cab. Free slew facility provided.

## SLEW SPEED

Maximum speed 2.0 rpm (Unladen)

## HOIST SYSTEM

Power up and down equal speed, planetary reduction with automatic spring applied multidisc brake.

**Non Spin Rope** - 16mm (5/8") dia. & length 137m.

**Permissible Line pull** - 4200 kg.

**Line Speed** - Top layer 110m/min (Unladen).

## HOOK BLOCK

30.0 Tonnes, 4 sheaves

## COUNTERWEIGHT

Bolted to superstructure. Weight - 3810 kg

## 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 horn, electric fan, windshield wiper & lockable sliding door. Ergonomically designed cab & controller layout to give fatigue free operator's comfort.

## CONTROL VALVES

Precision four way double acting pilot operated control valves, permit simultaneous control of multiple control functions.

## OIL COOLER

Remote mounted, thermostatically controlled electric motor driven fan maintaining recommended hydraulic oil temperature.

## LMI & A2B SYSTEM

Standard load moment indicator and anti-two block system with audio visual warning and control lever lock-out. This system provides electronic display of boom angle, length, radius, relative load moment, maximum permissible load, load indication and warning of impending two-block conditions. Motion cut off to ensure the safe operation with load for tele, derrick & hoist motion.

## OPTIONAL EQUIPMENT

Fixed Swingaway Boom Extension – 7.9m

Fixed Extension – offsetable at 0° & 30°

Maximum Tip Height : 39.0m

Telescopic Swingaway Extension – 7.9m – 13.7m

Telescopic extension – offsetable at 0° & 30°

Maximum Tip Height : 45.0m

Auxiliary Hoist

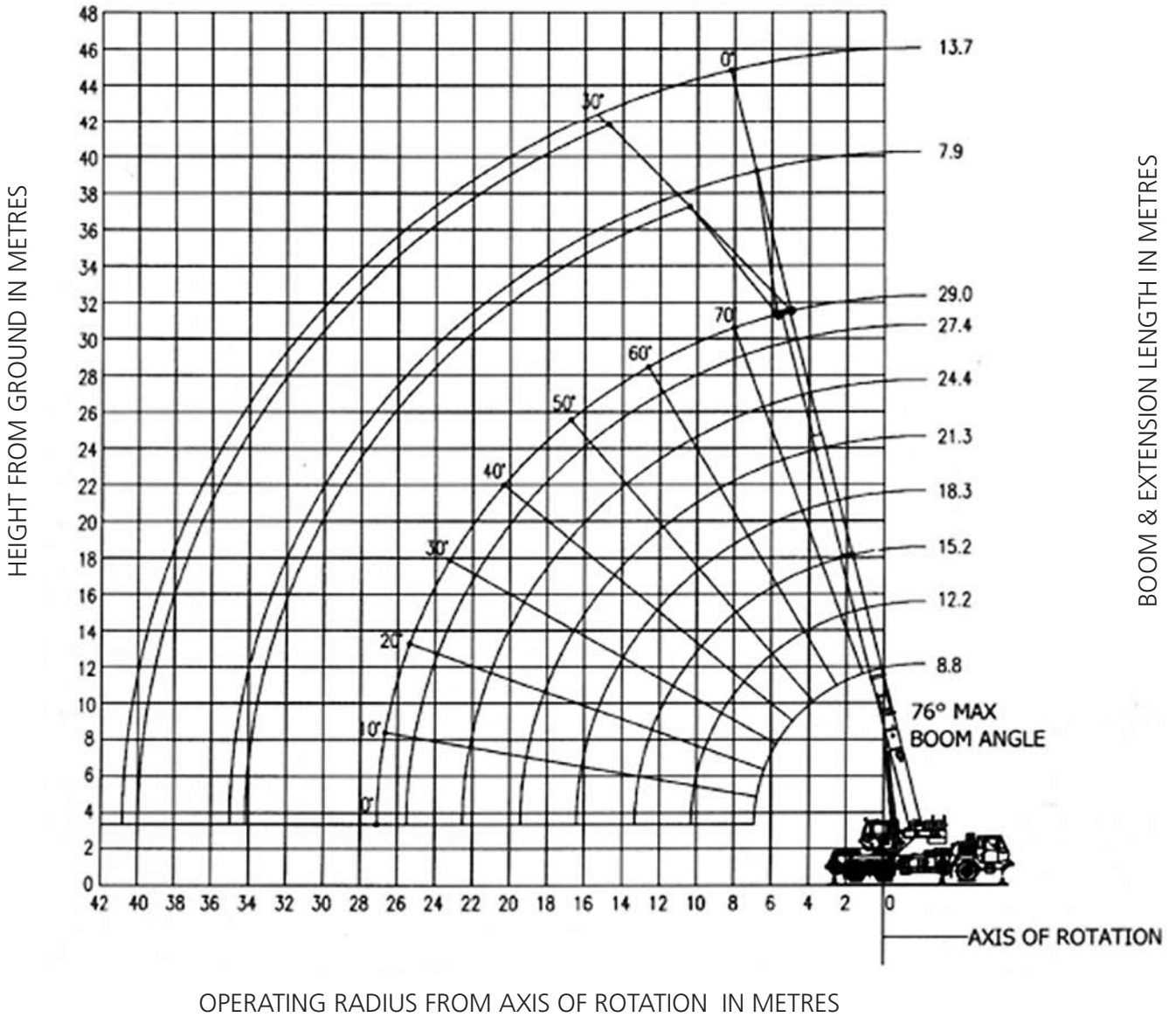
Work Light

360° Beacon Light

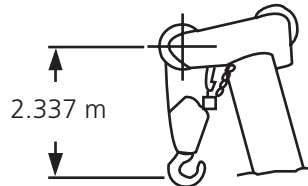
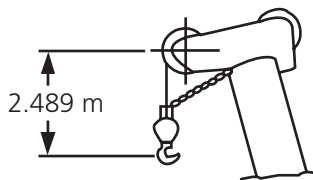
Cab spot Light

# Height of Lift : 4 Section 8.8m - 29.0m Full Power Boom

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.



Dimensions are for largest furnished Hookblock and Headache ball, with Anti - Two Block activated.

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# 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)							
	8.8	12.2	15.2	18.3	21.3	24.4	27.4	29.0
3.0	30,000 (61)	22,700 (70)	21,275 (74.5)					
3.5	25,650 (57)	22,700 (67.5)	20,625 (72.5)					
4.0	22,775 (53)	21,050 (64.5)	19,725 (70.5)	*17,600 (76)				
4.5	19,850 (48.5)	20,000 (62)	18,750 (68.5)	16,350 (72.5)	*13,350 (76)			
5.0	17,875 (43.5)	18,300 (59)	17,125 (66)	15,500 (71)	13,100 (74)	*10,175 (76)		
6.0	14,250 (31.5)	14,700 (53.5)	14,775 (62)	13,550 (67.5)	12,425 (71)	10,175 (74)	*8,410 (76)	
7.0		12,300 (47)	12,500 (57.5)	11,900 (64)	11,250 (66)	9,330 (71.5)	7,670 (74)	*7,030 (76)
8.0		10,300 (39.5)	10,500 (52.5)	10,375 (60)	10,075 (65)	8,465 (69)	7,245 (72)	6,700 (73)
9.0		8,750 (30.5)	8,955 (47.5)	9,055 (56.5)	9,040 (62)	7,755 (66)	6,630 (69.5)	6,075 (71)
10.0		7,530 (17)	7,765 (42)	7,925 (52.5)	7,970 (59)	7,145 (63.5)	6,100 (67.5)	5,555 (69)
12.0			5,650 (27.5)	5,650 (43.5)	5,650 (52)	5,650 (58)	5,065 (62.5)	4,620 (64.5)
14.0				4,320 (32.5)	4,320 (44.5)	4,320 (52)	4,295 (57.5)	4,020 (60)
16.0				3,300 (15)	3,300 (36)	3,300 (45.5)	3,300 (52.5)	3,300 (55)
18.0					2,630 (24)	2,630 (38)	2,630 (46.5)	2,630 (50)
20.0						2,120 (29)	2,120 (40)	2,120 (44)
22.0						1,660 (14.5)	1,660 (32.5)	1,660 (37.5)
24.0							1,330 (22.5)	1,330 (30)
26.0								1,050 (19)

Note: ( ) Boom angles are in degree

\* This capacity is based on maximum boom angle.

**WARNING-** Outrigger beams must be fully extended & stabilizers properly set when rotating superstructure over the side. Do not rotate superstructure over the side while on rubber.

### 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

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

## 7.9m - 13.7m Tele Offsettable Boom Extension On Outriggers Fully Extended - 360° Slew

Radius (in Meters)	**7.9m Length		13.7m Length	
	0° offset	30° offset	0° offset	30° offset
9.00	*3,715 (76)			
10.00	3,715 (75)		*2,380 (76)	
12.00	3,715 (71.5)	*2,620 (76)	2,380 (75.5)	
14.00	3,615 (68)	2,585 (73)	2,205 (72.5)	
16.00	3,110 (64.5)	2,290 (69.5)	1,970 (69.5)	*1,235 (76)
18.00	2,590 (61)	1,985 (65.5)	1,785 (66.5)	1,235 (75)
20.00	2,080 (57)	1,735 (62)	1,685 (63.5)	1,230 (71.5)
22.00	1,690 (53.5)	1,540 (58)	1,605 (60.5)	1,155 (68.5)
24.00	1,370 (49)	1,385 (53.5)	1,495 (57)	1,120 (65)
26.00	1,100 (44.5)	1,130 (48.5)	1,240 (54)	1,095 (61.5)
28.00	865 (39.5)	9,10 (43.5)	1,020 (50)	1,080 (57.5)
30.00	660 (34)	710 (37.5)	830 (46.5)	900 (53.5)
32.00			660 (42)	740 (49)
34.00			520 (37.5)	590 (43.5)

Note : ( ) Boom angles are in degrees.

\* This capacity is based upon the maximum boom angle.

### 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 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 well as on rubber) as determined by SAE J765 OCT 80 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 a 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 off the ground & the slew plinth becomes horizontal before raising the boom or lifting loads.

## On Rubber 11.00 x 20 - 16 PR (2.0 km/h) Main Boom Towards Rear

Radius in Meters (m)	8.8m Boom Over Rear
	Tyre Inflation Pressure 8.1 bar
3.00	6,500 (61)
3.50	6,000 (57)
4.00	5,850 (53)
4.50	4,900 (48.5)
5.00	3,950 (43.5)
6.00	2,300 (31.5)

NOTE: ( ) Boom angles are in degrees.

**WARNING:** Do not rotate superstructure over the sides while on rubber. Do not travel this crane with boom extension or jib erected.

## Weight Reduction (approx.) For Load Handling Devices

7.9m Offsettable Boom Extension	
* Erected	1,343 kg.
7.9m – 13.7m Tele Boom Extension	
* Erected (Retracted)	1,914 kg
*Erected (Extended)	2,622 kg

\*Reduction of main boom capacities

NOTE: When lifting load over swingaway deduct total weight of all load handling devices reeved over main boom nose directly from swingaway.

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

## Hookblock & Headache ball

30.0 MT 4 sheaves	400 kg.
4.5 MT Headache ball	70 kg.

NOTE:

MT refers to Metric Tonne

- Tires shall be inflated to the recommended pressure before lifting on rubber. Capacities must be reduced for lower tyre inflation. Damaged tyres are hazardous for safe operation of crane.
- For Pick & Carry operation, boom must be centered over rear of machine, mechanical swing lock engaged and load restrained from swinging.
- Lifting over-side on rubber is not permitted.
- Do not travel with crane boom extension or, jib erected.
- Load ratings are based on freely suspended loads. No attempt shall be made to move a load horizontally on the ground in any direction.
- Handling of other equipment with the boom is not authorized except with equipment furnished and installed by TIL Ltd.
- On rubber lifting with boom extension not permitted.
- 7.9m and 13.7m boom extension lengths may be used from the single line lifting service.
- Operation of the machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advanced warning.
- Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle.

# Carrier Specification

## CARRIER

6X4 wheel right hand drive purpose built heavy duty frame of torsion box construction with integral outrigger housing and fabricated from high strength steel plates and sections.

## OUTRIGGERS

Hydraulically operated outrigger system, comprising four independently controlled hydraulic telescopic horizontal beams with vertically 'inverted' jacks for over side and over rear operation. Plus one vertical jack mounted under front of carrier to permit full 360° lifting duties. All vertical jacks are fitted with positive lock valves. Easy fit outrigger feet are provided with stowage facility on carrier.

## HYDRAULIC SYSTEM

### Pump

Three section gear pump driven from power take off mounted on gear box.

### Filter

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

### Reservoir

Capacity 390 liters with spin on breather filter, external sight gauge, oil temperature gauge, clean out access.

## ENGINE

Ashok Leyland H6ETICRC3R325,  
165 Kw @ 2500 RPM,  
Max torque 800 Nm @ 1700 - 1900 RPM,  
Emission BSIII CEV

## CLUTCH

Ceramic disc 380 mm diameter with clutch booster.

## GEAR BOX

Nine speed synchromesh gear box with easy gear shift mechanism.

## FUEL TANK

Capacity 200 liters

## FRONT AXLE

Non drive steering axle mounted on semi - elliptical leaf spring.

## REAR BOGIE

Heavy duty, fully floating type drive axles, mounted on specially designed rocker beam to allow maximum articulation on uneven ground. Air operated inter-axle differential lock provided.

## DRIVE CONFIGURATION

6 X 4

## STEERING

Hydraulic power assisted steering on front axle, controlled by steering wheel from driver's cab.

Turning radius – 11.0m.

## BRAKES

### Service

Air operated on wheels by means of foot operated pedal in Driver's cab.

### Parking

Spring actuated, air released fail safe parking brake, on front axle & leading rear axle through Flick valve.

## WHEELS & TYRES

Pneumatic 11.00 x 20 – 16PR tyres, single front and twins rear. Spare wheel provided.

## DRIVER'S CAB

Steel construction full width cab with electric fan, interior light, horn, opening window fitted with toughened glass. Two lockable doors, electric windscreen wiper to front of windscreen & 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 light for alternator.

## ELECTRICAL EQUIPMENT

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

## TOOL BOX

Tool kit for normal maintenance.

## MAXIMUM SPEED

45 km/h.

## GROSS VEHICLE WEIGHT & AXLE LOADS (approx)

Front axle - 7770 kg (without lattice extension)  
8250 kg (with tele lattice extension)

Rear axle - 19800 kg (without lattice extension)  
19890 kg (with tele lattice extension)

GVW - 27570 kg (without lattice extension)  
28140 kg (with tele lattice extension)

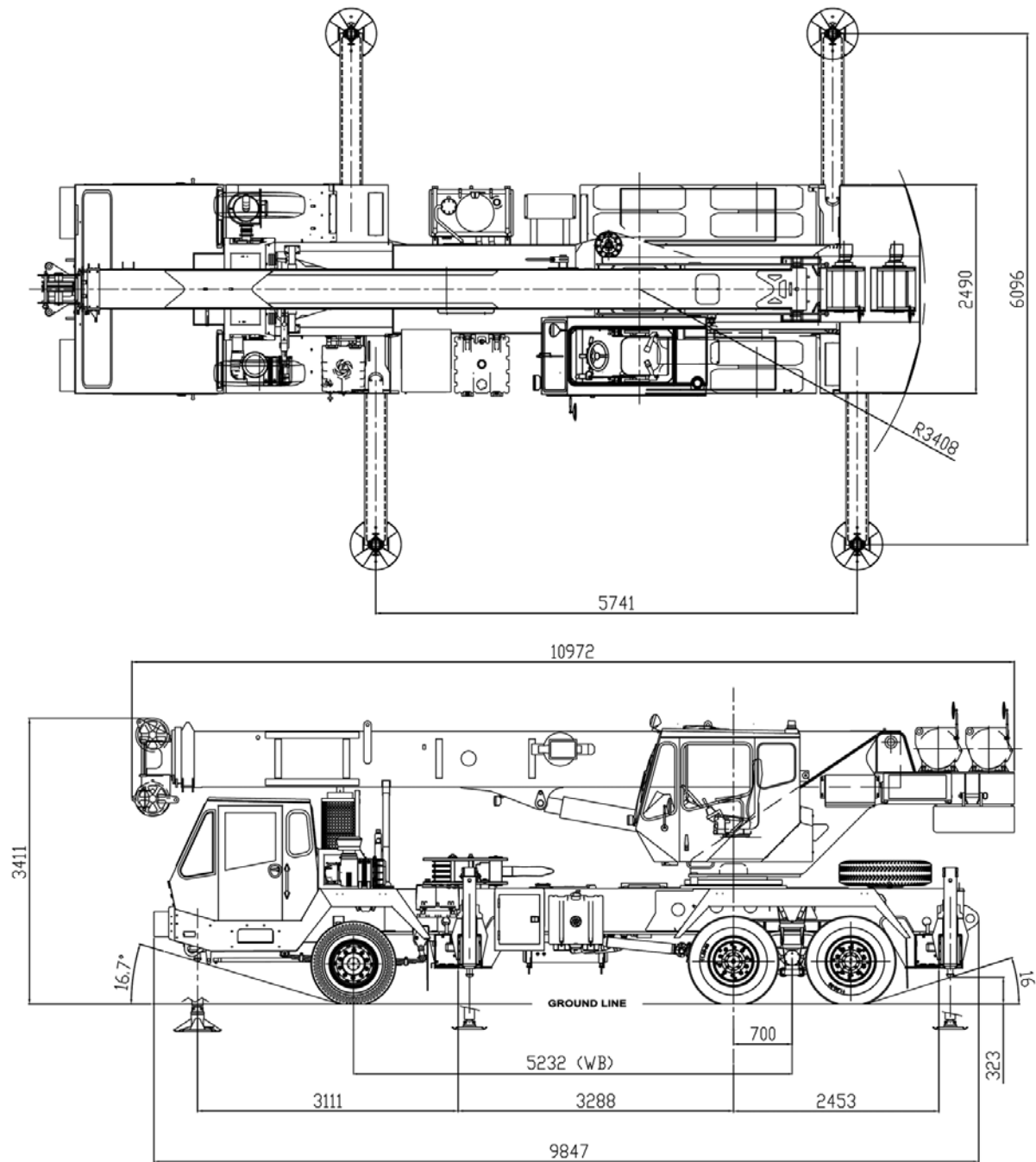
## Optional Weights (approx.)

Fixed Lattice : 600 kg

Tele Lattice : 750 kg

Auxiliary Hoist : 650 kg

# G.A Drawing



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.

**HYDRA 830M**

## TIL Limited

CIN: L74999WB1974PLC041725

### Registered & Corporate Office:

1, Taratolla Road, Garden Reach, Kolkata - 700024  
Phone: + 91 33 2469 3732-6 / 6497 | 6633 2000 / 2845  
Mobile: +91 9831839025 | +91 9831054573  
Fax: + 91 33 2469 2143 / 3731  
Email: Mhg.Er@tilindia.com | mktg-til@tilindia.com



### CHENNAI

TIL Limited  
Jhaver Plaza, 7th Floor 1-A Nungambakkam  
High Road  
Chennai 600 034, Tamil Nadu  
Phone: +91 044 6670 3000 / 3010  
Mobile: +91 9618562333 | +91 9790973502  
Fax: +91 44 2827 9681  
Email: chennai.til@tilindia.com

### DELHI NCR

TIL Limited  
Plot 11, Site No.IV  
Sahibabad Industrial Area  
Ghaziabad 201 010 U.P.  
Phone: +91 120 277 8735 / 8736 / 7468  
Mobile: +91 9971091610 | 9903842544  
Fax: +91 120 277 7467  
Email: MHGMarketing.Sahibabad@tilindia.com | mhgcs.Sahibabad@tilindia.com

### DELHI

TIL Limited  
302 Ansal Bhawan  
16, Kasturba Gandhi Marg, New Delhi 110 001  
Phone: +91 11 2331 1607 / 8046 / 9248 | 2335 0250 / 0255  
Fax: +91 11 2331 3263  
Email: til.delhi@tilindia.com

### KAMARHATTY

TIL Limited  
517, Barrackpore Trunk Road  
Kolkata 700 058  
Phone: +91 33 2553 1352 / 1882 | 6633 4000  
Fax: +91 33 2553 2546 / 5971  
Email: MktDept.KMT@tilindia.com | til.kmt@tilindia.com

### KHARAGPUR

TIL Limited  
Vill. & P.O. Changual, Kharagpur  
Dist: Paschim Medinipur 721 301, West Bengal  
Phone: +91 32 2266 1101

### MUMBAI

TIL Limited  
A - 606, A Wing, 6th Floor,  
215 Atrium, Andheri - Kurla Road,  
Andheri (East), Mumbai 400059, Maharashtra  
Phone: + 91 22 4969 1169  
Mobile: +91 8850971609  
Email: Mumbai.TIL@tilindia.com | Mumbai.Custsupp@tilindia.com

**TIL has a pan-India network of offices with service engineers located in the close proximity of jobsites.**

Toll Free No: **1800 266 1535**

**www.tilindia.in**

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