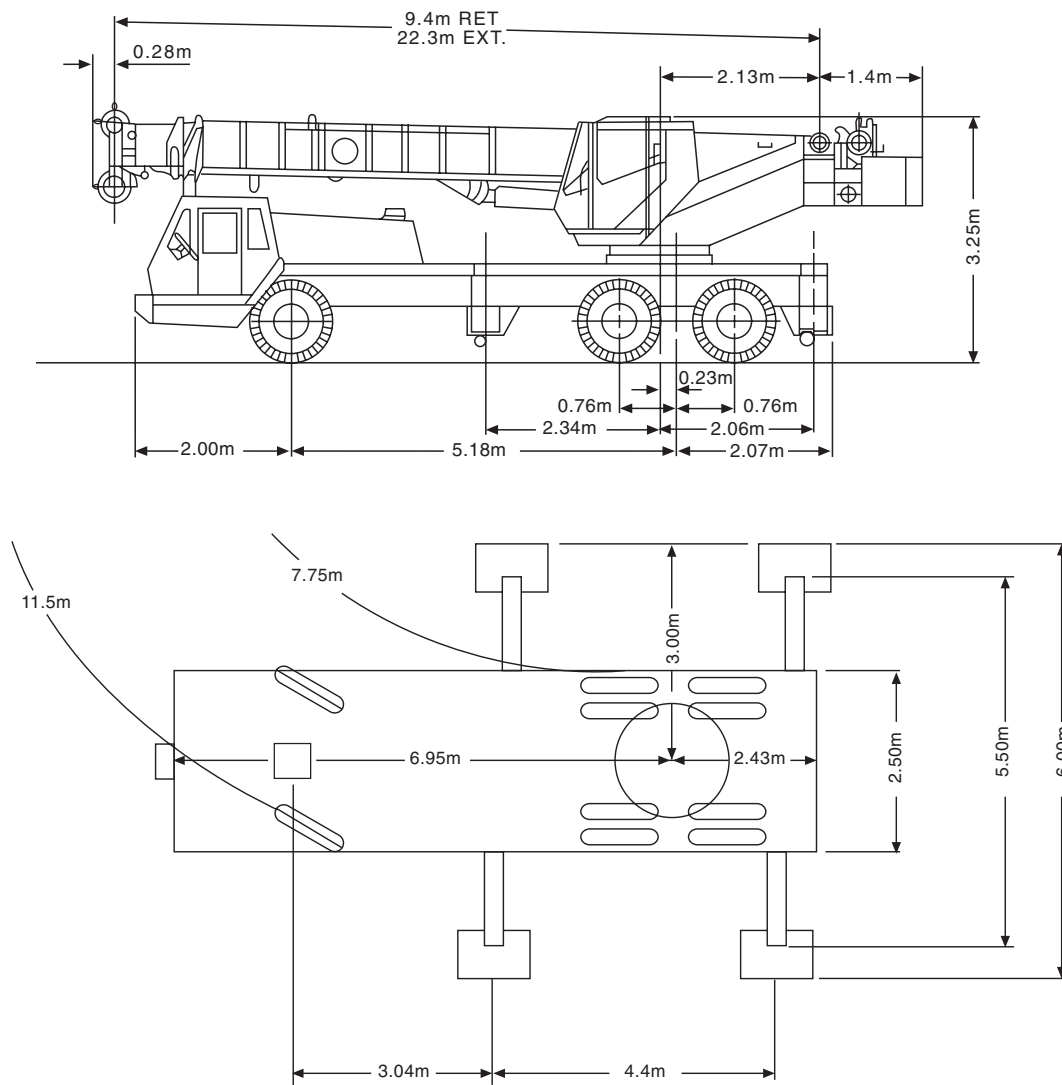


# TIL HYDRA 830(M) GROVE

TRUCK-MOUNTED HYDRAULIC CRANE

**HYDRA 830(M)**



- ▶ MAX. CAPACITY – 30.0 TONNES
- ▶ BOOM – 3 SECTION – 9.4M TO 22.3M
- ▶ MAXIMUM HOOK HEIGHT – 22M (3 SEC BOOM)
- ▶ MAXIMUM ROAD SPEED – 50 KM/HR
- ▶ CARRIER – 6 X 4



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Technical Specification TIL / 830(M) / 0699. This cancels Technical Specification TIL/830(M)/0796

## SUPERSTRUCTURE SPECIFICATION

<b>Superstructure Frame</b>	Fabricated from high tensile steel plates and sections.
<b>Boom Derricking System</b>	One double acting hydraulic cylinder with integral holding valve.
<b>Boom Angle</b>	Maximum 78°.
<b>Derricking Speed</b>	Maximum to minimum radius in 60 secs.
<b>Slew System</b>	Ball bearing swing circle with 360° continuous rotation. Planetary gearbox with foot applied multi-disc wet brake. Spring applied hydraulically released swing brake and mechanical house lock operated from cab.
<b>Slew Speed</b>	Maximum 2.0 RPM. (Unladen)
<b>Hoist System</b>	Power up and down, equal speed, planetary reduction with automatic spring applied multi-disc brake and hoist drum cable followers. 16 mm (5/8 in) dia non-rotating wire rope.
<b>Line Speed</b>	Top layer 110m/min. (Unladen)
<b>Max. Line Pull</b>	4100 kgs.
<b>Maximum Capacity Hookblock</b>	30 tonnes; 4 sheaves.
<b>Operator's Cab</b>	Totally enclosed steel construction, full vision type. Control levers for all craning functions. All windows fitted with toughened safety glass. Lockable sliding door, cab interior light, pantograph type electric wiper. Electric horn, circulating air fan.
<b>Load Moment &amp; Anti-Two Block System</b>	Standard load moment and anti-two block system with audio-visual warning and control lever lockout. These systems provide electronic display of boom angle, length, radius, relative load moment, maximum permissible load and load indication and warning of impending two-block conditions.
<b>Counterweight</b>	Integral with superstructure.

### HYDRAULIC SYSTEM

<b>Valves</b>	Precision four way double acting control valves. 3 individual valve banks permits simultaneous control of multiple crane functions.
<b>Oil Cooler</b>	Remote mounted with thermostatically controlled electric motor driven fan.
<b>Pressure Check Panel</b>	System pressure test panel with quick release type fitting for each circuit.

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## CARRIER SPECIFICATION

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

### HYDRAULIC SYSTEM

<b>Valves</b>	Hydraulic over-load valves automatically protect pumps and crane structure from excessive pressure.
<b>Pump</b>	Triple gear pumps driven from power-take-off mounted on gear box.
<b>Filter</b>	Return line type, full flow with bypass protection and service indicator. Replaceable cartridge.
<b>Reservoir</b>	Capacity 390 litres with spin-on breather filter, external sight, oil temperature gauge, clean out excess, strap mounted to frame.
<b>Engine</b>	Heavy duty, water cooled, diesel engine of adequate horse power.
<b>Clutch</b>	Single dry plate hydraulically operated servo assisted.
<b>Gear Box</b>	Constantmesh, five forward and one reverse, obtained via a single lever control. Plus four forward and one reverse with crawler arrangement.

<b>Fuel Tank</b>	Capacity 165 litres.
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### AXLES

<b>Front Axle</b>	Steering axle mounted on semi-elliptical leaf spring.
<b>Rear Bogie</b>	Heavy duty, fully floating type with hub reduction mounted on specially designed rocker beam to allow maximum articulation on uneven ground. Air operated interaxle differential lock.
<b>Axle Loading</b>	Front Axle – 6.7 tonnes Rear Bogie – 10.2 + 10.2 tonnes

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<b>Steering</b>	Hydraulic power assisted steering to front steering axle.
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### BRAKES

<b>Service</b>	Air operated on all wheels by means of foot operated pedal in operator's cab.
<b>Parking &amp; Emergency</b>	By means of air operated spring actuator through control valve in operator's cab on rear bogie, fail safe.

<b>Wheels &amp; Tyres</b>	Pneumatic 11.00x20x16 PR tyres, singles front and twins rear. Spare wheel rim provided.
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<b>Operator's Cab</b>	Steel construction full width cab with electric fan, cab with interior light, opening windows fitted with toughened glass. Two lockable doors, electric windscreen wiper to front of windscreen. Upholstered and adjustable operator's seat. Automotive controls include steering wheel, pedals for clutch, brake and accelerator.
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<b>Instrumentation</b>	Air pressure gauge, engine oil pressure gauge, ammeter, water temperature gauge, speedometer, warning light for alternator.
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<b>Electrical Equipment</b>	24 volt starting and lighting system includes two combined dipping head lamps, side, rear and stop lamp. Flashing direction indicators.
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<b>Tool Box</b>	Tool Kit for normal maintenance.
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### LIFTING CAPACITIES

**85% RATING**  
**MAIN BOOM CAPACITIES IN TONNES WITH OUTRIGGERS FULLY EXTENDED**  
**THROUGH FULL 360° SLEW**

Radius in Meters	Boom Length in Meters						
	9.4	12.2	15.2	15.9	18.3	21.3	22.3
3	30.0	27.0	22.5	18.5			
3.5	27.5	26.0	21.0	17.0	14.0		
4	24.5	24.4	20.5	16.0	13.1		
4.5	21.9	21.65	19.5	15.5	12.5	12.0	
5	19.65	19.4	18.35	15.0	12.0	11.0	
6	15.75	15.50	15.0	14.0	11.00	10.0	9.5
7	11.80	11.75	11.6	11.55	10.00	8.3	8.25
8		9.12	9.02	9.0	9.0	7.3	7.0
9		7.25	7.2	7.15	7.5	6.5	6.0
10		5.80	5.85	5.85	6.15	5.7	5.0
12			3.95	3.95	4.25	4.5	4.0
14					3.0	3.3	3.0
16					2.1	2.4	2.2
18						1.70	1.5
20							1.0

#### Lifting Capacities on Rubber

Radius in Meters	9.4m Boom
	11.00 x 20 x 16PR Tyre up to 2 km/hr
	Over Rear only
3.00	6.50
3.50	6.00
4.00	5.85
4.50	4.90
5.00	3.95
6.00	2.30
7.00	1.35

#### Important Notes

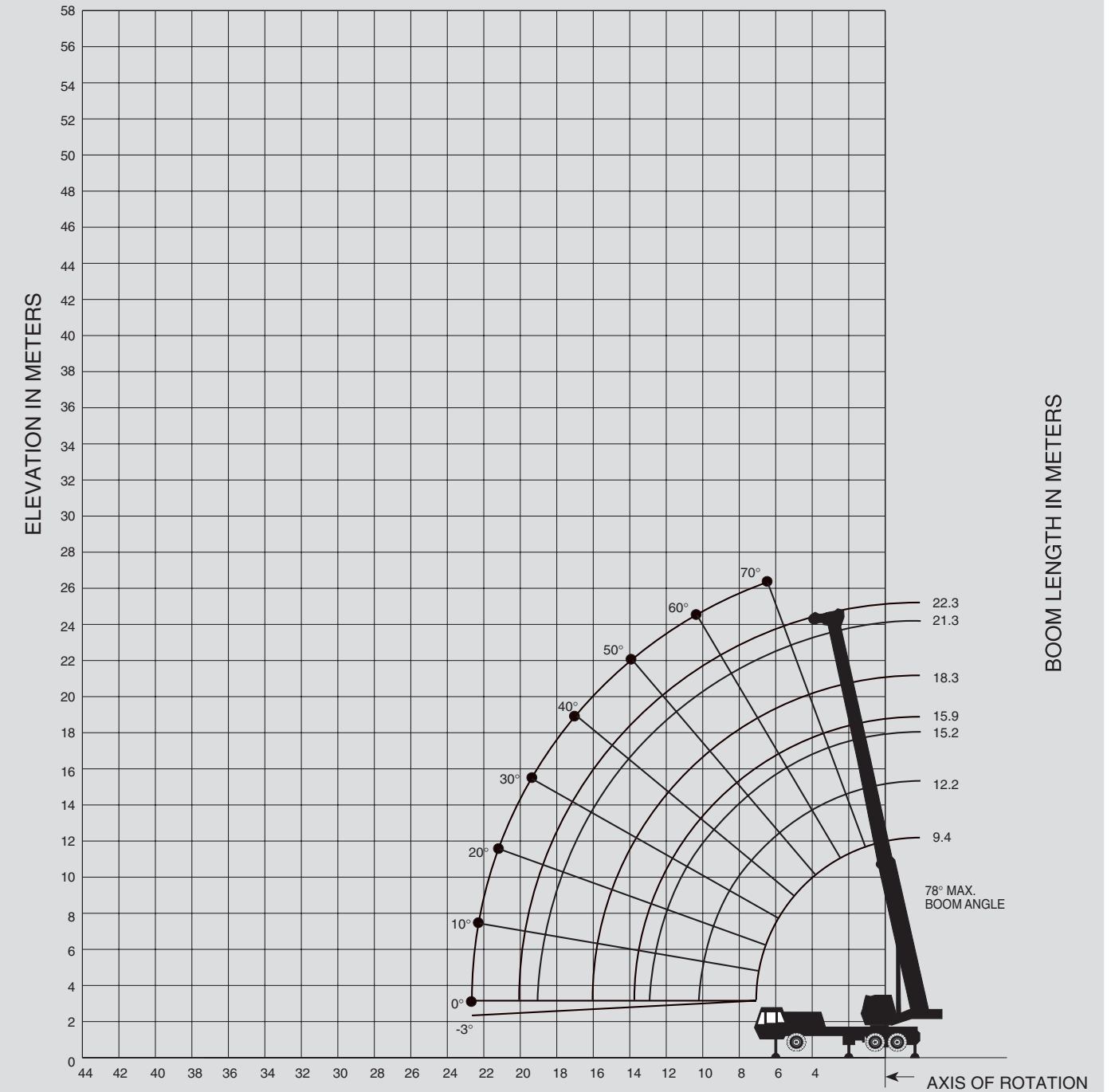
**WARNING : THIS CHART IS ONLY A GUIDE. The Notes below are for illustration only and should not be relied upon to operate the crane. The individual crane's load chart, operating instructions and other instruction plates must be read and understood prior to operating the crane.**

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 outriggers as determined by SAE J765 OCT80 Crane Stability Test Code.
2. The weight of hookblock, slings and all similarly used load handling devices must be added to the weight of the load.
3. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
4. All capacities are for crane on firm, level surface. It must 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 extended with tires raised free of ground before raising the boom or lifting device.

Technical Specification TIL / 830(M) / 0699.

### HEIGHT OF LIFT — 9.4M – 22.3M FULL POWER BOOM

#### WORKING RANGE DIAGRAM (BOOM DEFLECTION NOT SHOWN)



OPERATING RADIUS IN METERS FROM AXIS OF ROTATION  
 NOTE : LIMITS SHOWN ARE FOR OUTRIGGERS FULLY EXTENDED – 360° ONLY

Technical Specification TIL / 830(M) / 0699.

**METRIC 85% LIFTING CAPACITIES (TONNES)  
ON OUTRIGGERS FULLY EXTENDED**

**HEIGHT OF LIFT — 9.4M – 22.3M FULL POWER BOOM**

7.6M–13.1M TELE SWINGAWAY – 360°

Radius in Meters	7.6m Length		13.1m Length	
	0° Offset	30° Offset	0° Offset	30° Offset
7.00	5.75			
8.00	5.25		3.00	
9.00	4.75	2.90	2.90	
10.00	4.25	2.80	2.80	
12.00	3.45	2.70	2.60	1.95
14.00	2.85	2.50	2.40	1.85
16.00	2.40	2.15	2.20	1.75
18.00	1.90	1.80	1.90	1.65
20.00	1.35	1.40	1.70	1.50
22.00	0.95	1.00	1.30	1.35
24.00	0.60		1.00	1.15
26.00			0.75	0.90
28.00			0.50	

7.6M SWINGAWAY – 360° – NON-OFFSET TYPE

Radius in Meters	Boom Length
	29.9m
7.00	6.00
8.00	5.45
9.00	5.00
10.00	4.50
12.00	3.65
14.00	3.00
16.00	2.55
18.00	2.20
20.00	1.75
22.00	1.35
24.00	1.00

7.6M SWINGAWAY – 360° – OFFSET TYPE

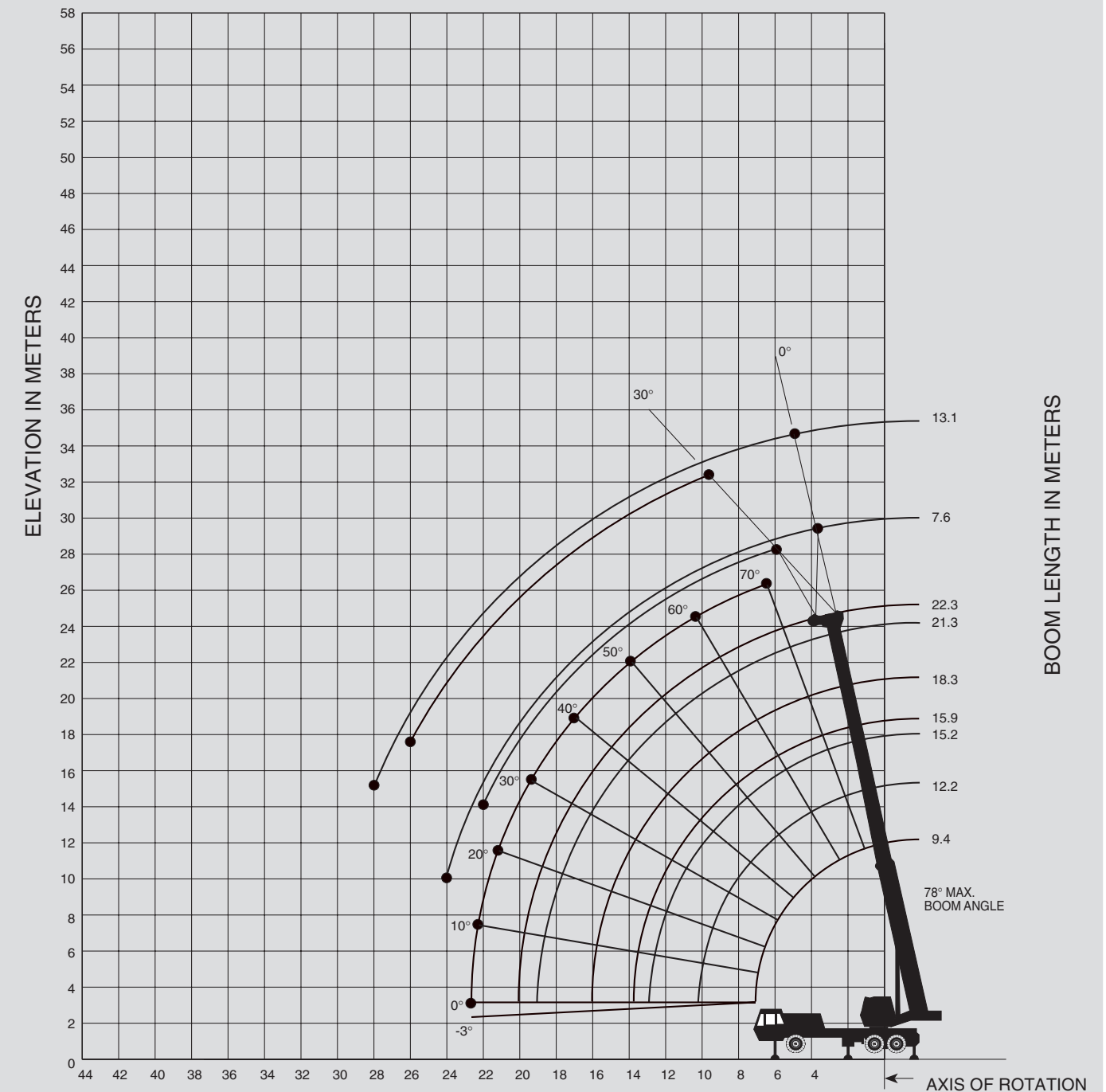
Radius in Meters	7.6m Length	
	0° Offset	30° Offset
7.00	5.85	
8.00	5.35	
9.00	4.85	3.00
10.00	4.35	2.90
12.00	3.50	2.80
14.00	2.90	2.60
16.00	2.45	2.30
18.00	2.05	2.00
20.00	1.55	1.60
22.00	1.10	1.20
24.00	0.80	

**Important Notes**

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**WORKING RANGE DIAGRAM  
(BOOM DEFLECTION NOT SHOWN)**



OPERATING RADIUS IN METERS FROM AXIS OF ROTATION  
NOTE : LIMITS SHOWN ARE FOR OUTRIGGERS FULLY EXTENDED – 360° ONLY