TM 825

MAX. CAPACITY (Outriggers) - 25 Tonnes at 3.0m Radius (85% Rating) 360° Slew

BOOM - 4 SECTION - 9.94m to 32.7m

CARRIER - 6 X 4

TRUCK MOUNTED HYDRAULIC CRANE

Tractors India

Superstructure Specification

TM 825

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 inthe 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 reductiongear unit. The pinion meshes with an externally cut slew ring for 360°smooth and precise continuous rotation. Spring applied hydraulicallyreleased 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. Limitswitch provided to prevent over-lowering.
Non-spin Hoist Rope: 13 mm dia. & length 115 m
Line Speed: Top layer 40 m/min. (Max) Unladen
Maximum Permissible Line Pull: 3000 kg (4^{th} Layer).

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.

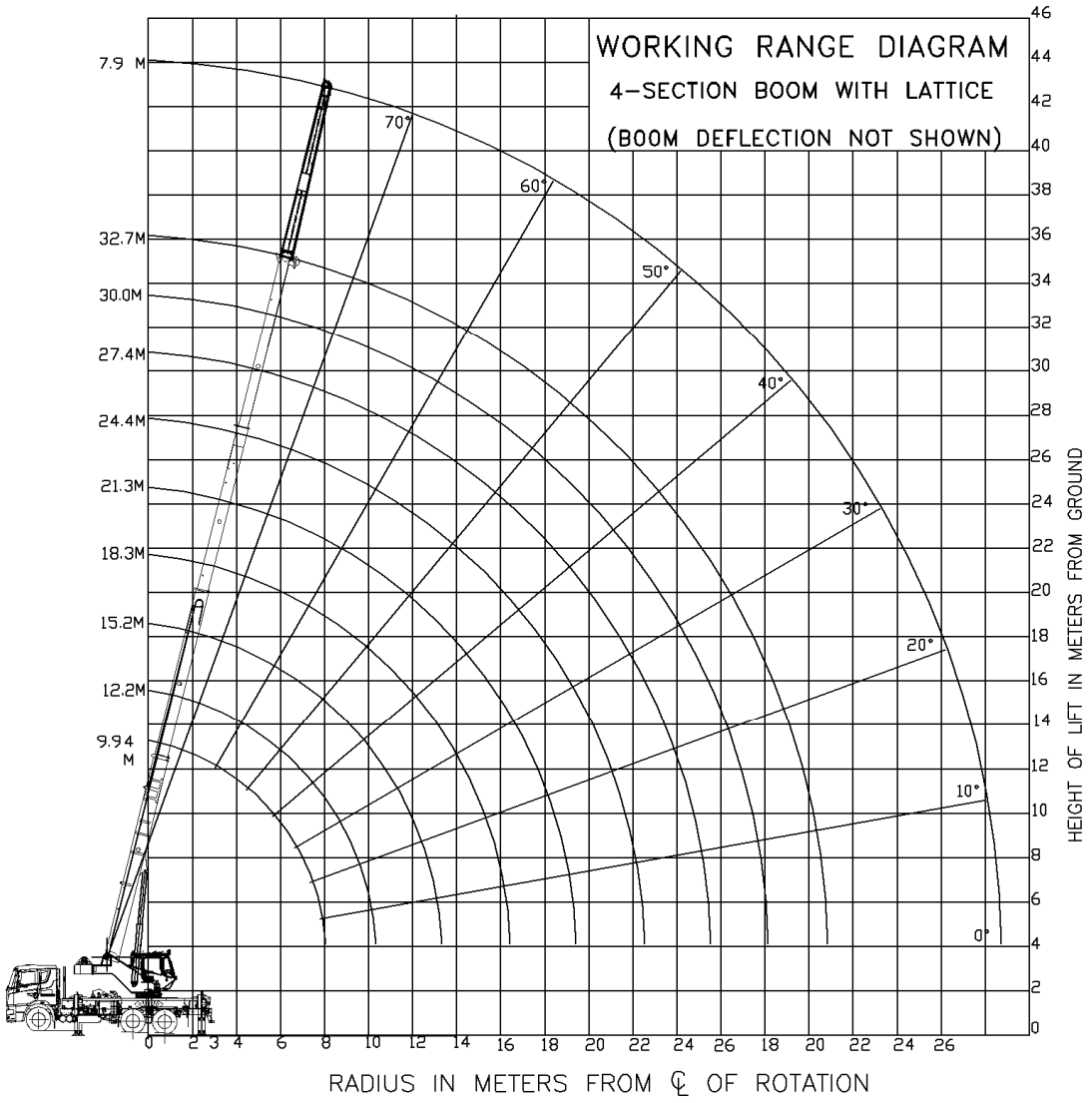
LOAD MOMENT INDICATOR & ANTI-TWO BLOCK SYSTEM
Electronic load moment indicator system with audio-visual warning & control lever lockout indicates electronic display of boom angle, length, radius, relative load moment, permissible load, load indication & warning of impending two block condition. Motion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

SAFETY SYSTEM
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 EQUIPMENTS
7.9m lattice extension on standard 4 section boom
Headache Ball

WORKING RANGE DIAGRAM
4 SECTION BOOM WITH LATTICE
(BOOM DEFLECTION NOT CONSIDERED)



OUTIGGERS FULLY EXTENDED AND TIRES LIFT OFF THE GROUND
(TIP HEIGHT SHOWN FOR 360° ROTATION ALL ROUND)

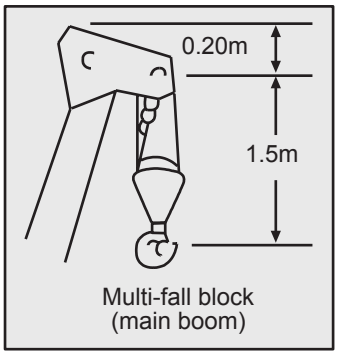
NOTE: The above heights of lift and boom angles are based on a straight (unladen) boom and allowance should be made for boom deflections obtained under laden conditions.

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

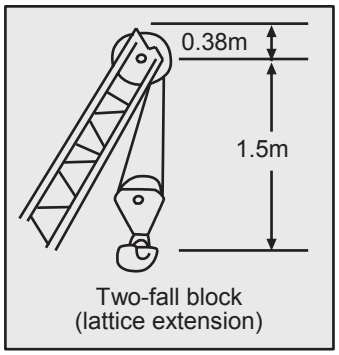
Main Boom Duties on Outrigger - Fully Extended Through Full 360° Slew

RAD (M)	9.94	12.2	15.2	18.3	21.3	24.4	27.4	30.0	32.7
3	25000	22700	17500						
3.5	22000	20000	17000						
4	19500	17500	16500	14500					
4.5	18000	16500	15900	14000	11500				
5	16000	15200	14800	13500	11200	10175			
6	13000	13000	13000	12000	10800	10175	8410		
7	10750	10700	10700	10400	9500	9000	7870		
8		9250	9000	8680	8300	7750	7250	6200	6000
9		7220	7460	7500	7300	7250	6500	5750	5500
10		5750	6000	6170	6250	6250	5900	5200	5000
12			4100	4270	4350	4420	4400	4300	4540
14				3060	3150	3220	3270	3300	3330
16				2220	2320	2390	2440	2470	2500
18					1710	1780	1830	1870	1870
20						1320	1370	1400	1430
22						940	1000	1000	1000
24							700	700	750
26								500	500

HEIGHT TO BOOM HEAD –
(Add to hook height for head room calculations)



Multi-fall block
(main boom)



Two-fall block
(lattice extension)

Weight Reductions for Load Handling Devices

Hook block and Headache ball	
4 Sheave Hook block – 25MT	276 kg
Headache ball	90 kg

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 thecrane. The individual crane's load chart, operating instructions and other instruction plates must be read and understood prior tooperating 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 SAE J765 OCT80 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. Angle based capacities are determined by laden boom angles given and not by radius. Radii quoted refer only to fully extended booms.

11. 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.

12. Do not travel the crane with boom extension or jib erected.

13. Handling of other equipment with the boom is not authorized except with equipment furnished and installed by TIL Ltd.

Carrier Specification

TM 825

CARRIER
6X4 wheel right hand drive, heavy duty truck chassis with integral outrigger housing and sub frame fabricated from high strength steelplates 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, stow able 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
Heavy duty water cooled diesel engine of adequate horsepower.

CLUTCH
Diaphragm Type, Single Plate Dry Clutch, dia: 395 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 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. – 19.6 m

FUEL TANK CAPACITY
350 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.

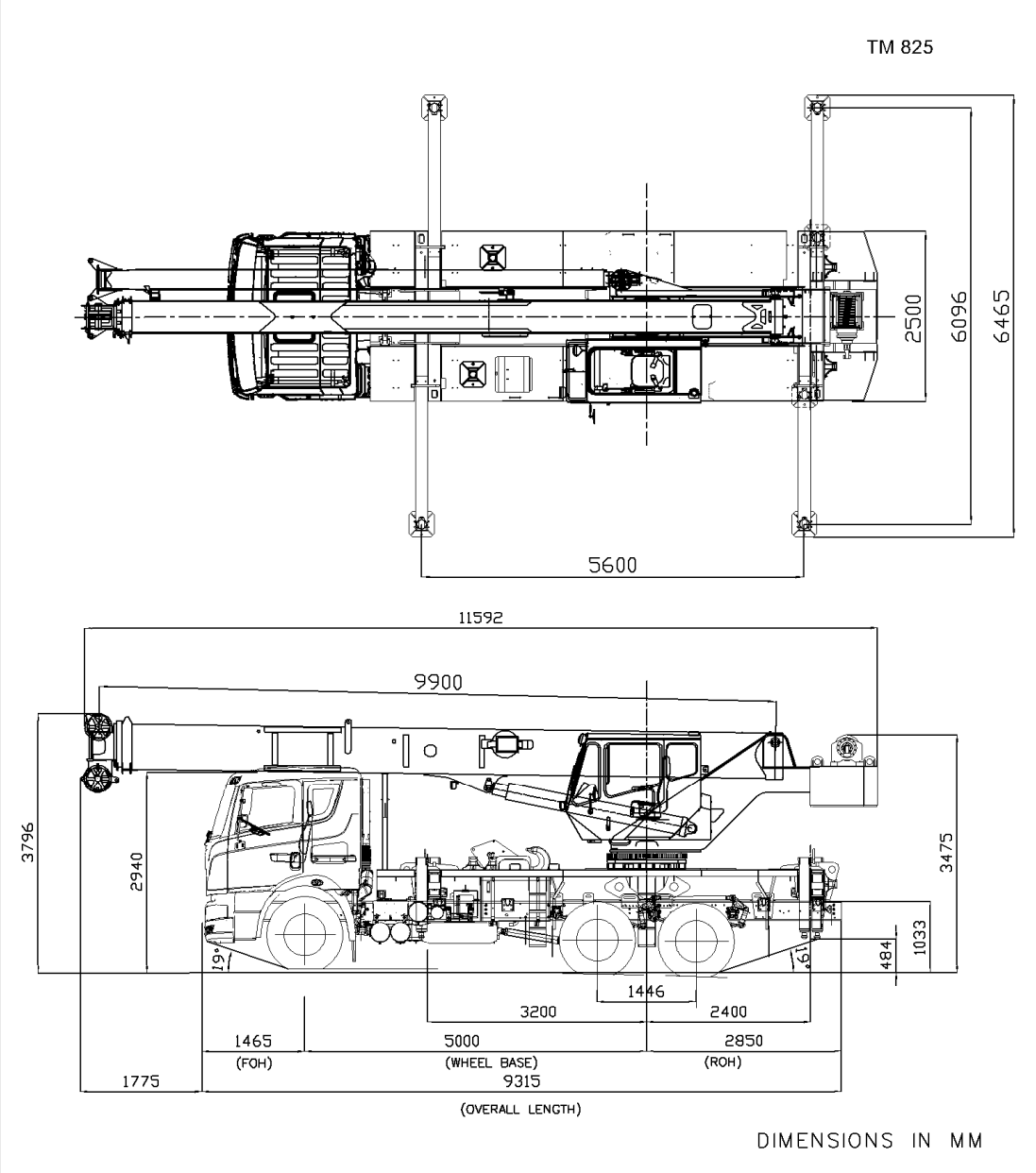
TOOL BOX
With tool kit for normal maintenance.

TRAVELLING SPEED
74 km/hr

GROSS VEHICLE WEIGHT & AXLE LOADS (approx)
GVW – 25.0 Te
Front axle – 6.0 Te
Rear axle – 19.0 Te

G. A. Drawing

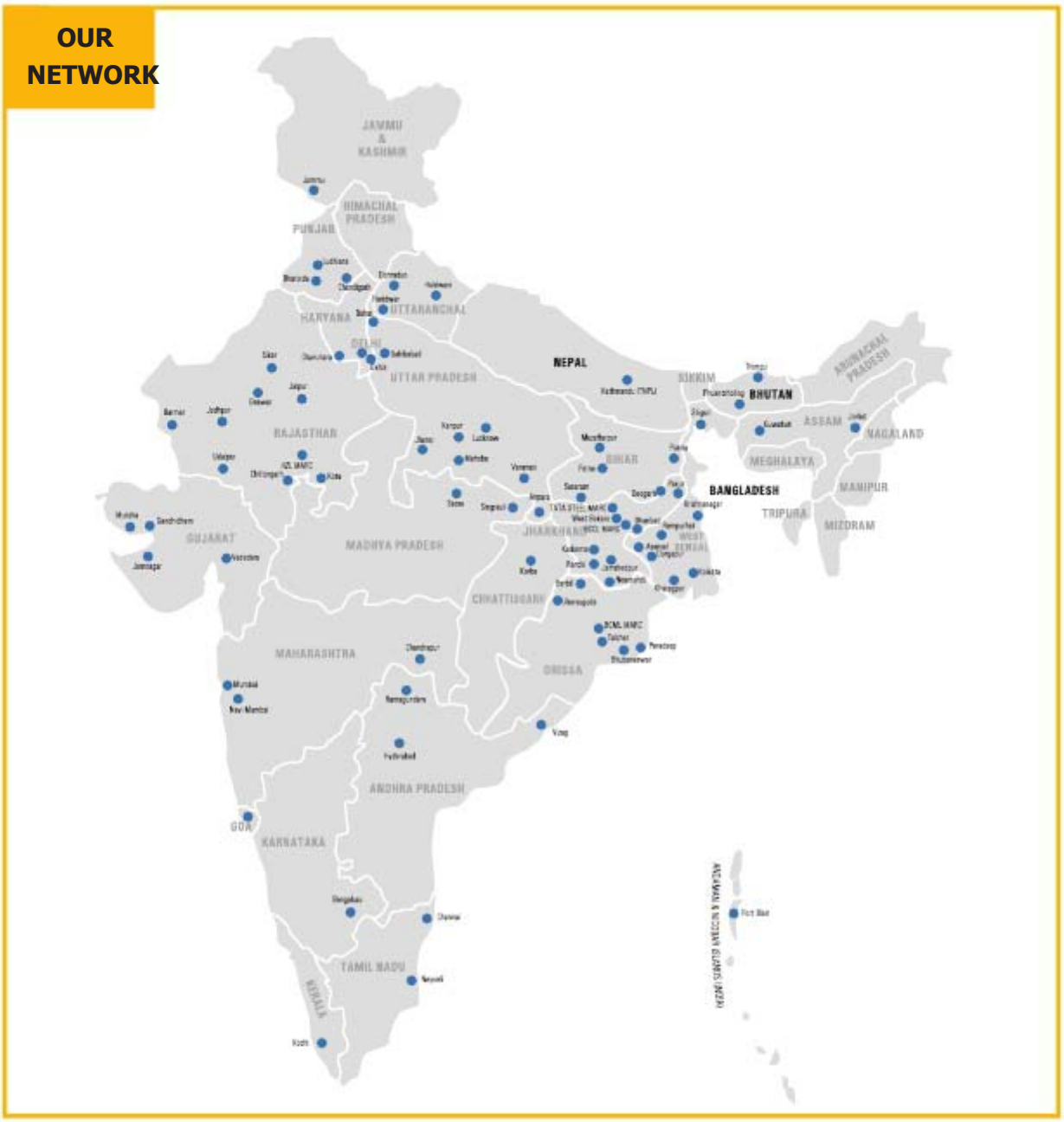
TM 825



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.

OUR NETWORK



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Technical Specification TIL/TM 825/ 0115. This cancels Technical Specification TIL/HYDRA 825/ 0314.