

RT20

ROUGH TERRAIN MOBILE CRANE



360°
slew

22 ton



pick &
carry

13.3 ton



21.2 m



4x4 drive



4x4 steer

**CARRY
CRANES** 

AFFORDABLE • RELIABLE • SAFE

CRANE UPPER

Super Structure Frame

All welded one piece fabricated structure. Counter weight is bolted to the frame.

Boom

- 3 part Boom fully powered & synchronized.
- Overall length Retracted - 8.45 m; Extended - 21.2 m.

Boom Lifting

- Double acting single cylinder with lowering brake valve.
- Angle of elevation -1 deg. to + 75 deg.

Hoisting

Hydraulic Winch with Bent Axis Motor & planetary reduction Gear Box. Winch is equipped with an integral automatic fail - safe spring applied hydraulic release multiple disc brake, together with counterbalance valve to control lowering speed. A grooved Drum, a spring-loaded Cable roller for improved rope spooling. Winch over lowering cut off is also available. Over hoist limit switch is provided with hydraulic cut-off in the hoisting of snatch block.

Slewing

360-degree nonstop rotation controlled by hydraulic Motor equipped with planetary gearbox on slewing ring having single ball ring and outer toothing. Automatic negative brake & dynamic brake. Slewing speed un-laden 0 - 2.5 rpm.

Safety Device

- Stop valves on to Extension/lifting boom jacks and outriggers.
- Max. pressure valves for each hydraulic circuit. Balancing braking valve for the slewing unit.
- Balancing braking valve for the winch.
- Limit switch on to boom head for hoisting block lift.
- Limit switch for having three winding turns around the winch.

Load limiting device with indicator for:

- Boom inclination
- Boom length
- Load weight
- Max. load which can be lift
- Load Radius
- No. of falls
- Hook height

Operator Cabin

One-man Revolving cab, sheet-metal structure, large-sized safety glass windows, adjustable driver's seat, rear emergency exit door, sliding door, wipers, ventilating fan, cab light, instrument panel with rpm/ hour meter, fuel gauge, water temperature gauge, Gear selector, crane controls via joystick, Transmission Temp. gauge, safe load system with audio-visual indication of safe/ overload, starter switch with key, combination switch for head light and horn, crane levelling gauge, parking brake Switch, foot brake and throttle, rear steer, parking brake and directional indicators. All controls for crane travelling operations within easy reach.

CRANE LOWER

Chassis:

High strength chassis with four-wheel drive and four-wheel steer (4X4X4). Has box beam type construction with reinforcing cross members, a precision machined turntable mounting plate and integrally welded outrigger boxes. Decking has skid-resistant surfaces, including tool storage compartment, and access steps and handles on left and right side and front corners.

Outriggers

Four nos. out and down type outriggers operated through horizontal and vertical hydraulic cylinders respectively. Vertical cylinders are fitted with dual pilot lock valves for total safety. Control via solenoid operated valves (different for front & rear outriggers), individually or simultaneously.

Engine

Suitable water cooled, turbo-charged diesel engine of adequate HP. Fuel tank - 310 Liters.

Transmission

Power shift Transmission with build in torque converter with Six forward and Six reverse speeds. Driven by engine directly and controlled through speed controller from the cabin.

Brakes

- Service: Foot operated, hydraulic brake acting on all wheels applied by Axle Brake valve thru foot operated pedal.
- Parking: Hand operated switch, electrically assisted and hydraulically applied fail-safe type on front & rear axle.

Steering

Fully independent power steering. Front: Full controlled by steering wheel. Rear: Separate steering of rear axle by rear steer switch in operator's cabin operated via solenoid valve block. Four steering modes: - 2-wheel (front), 2-wheel (rear), 4-wheel & Crab. Auto-reversal mechanism to the position of the superstructure in relation to the chassis. Rear wheel steer indicator in Cabin.

Axle

- Front Axle: Drive & steer, Rigid frame mounted.
- Rear Axle: Drive & steer centrally pivoted, lateral oscillating with hydraulic locking device.

Drive

- 4 x 4 for off-road movement, all wheel drive
- 4 x 2 for road travel, front axle drive

Electricals

24 volts system. 2 main head lamps, 2 brake and flashing trafficator lamps at rear, 2 flashing trafficator lamps at front, 1 work lamp.

Hydraulic Pumps

One single pump & one double pump mounted on Transmission PTO.

Hydraulic System

Joystick operated control valve for slew, telescoping, hoisting and derricking with independent or simultaneous crane Operations & progressive speed control. Hydraulic cylinders specially designed for sustaining all operating and shock loads. Safety valves in all hydraulic cylinders for protection against pipe and hose ruptures. Electro-hydraulic solenoid valves control hydraulic outriggers. Hydraulic tank capacity 490 litres.

Hook Block

3 sheaves reeved for 6 part line.

Optional Extra

- Spark arrestor
- Fire Extinguisher
- Digital data recorder
- Spare wheel & tyre
- Air conditioner
- Fog light

LIFTING CAPACITIES (IN METRIC TONNES) ON OUTHIGGERS FULLY EXTENDED AND SET SLEWING RANGE 360°

Radius (m)	BOOM LENGTH (m)					
	8.45	11.5	14.5	17.5	20	21.2
3.0	22.0	15.0	14.0			
3.5	20.0	15.0	13.7	9.20		
4.0	16.5	14.5	13.5	8.85	7.00	
4.5	14.5	14.0	13.0	8.65	6.80	
5.0	13.0	13.0	12.5	8.35	6.50	5.50
6.0	11.0	10.5	10.2	7.75	6.25	5.20
7.0		10.0	10.0	7.25	5.80	4.95
8.0		7.50	7.20	6.65	5.50	4.75
10			5.00	4.95	5.00	4.20
12			3.50	3.50	3.60	3.60
14				2.80	2.80	2.80
16				2.20	2.20	2.20
18						1.75

LIFTING CAPACITIES (IN METRIC TONNES) MOBILE UPTO 4 KMPH SPEED OVER FRONT

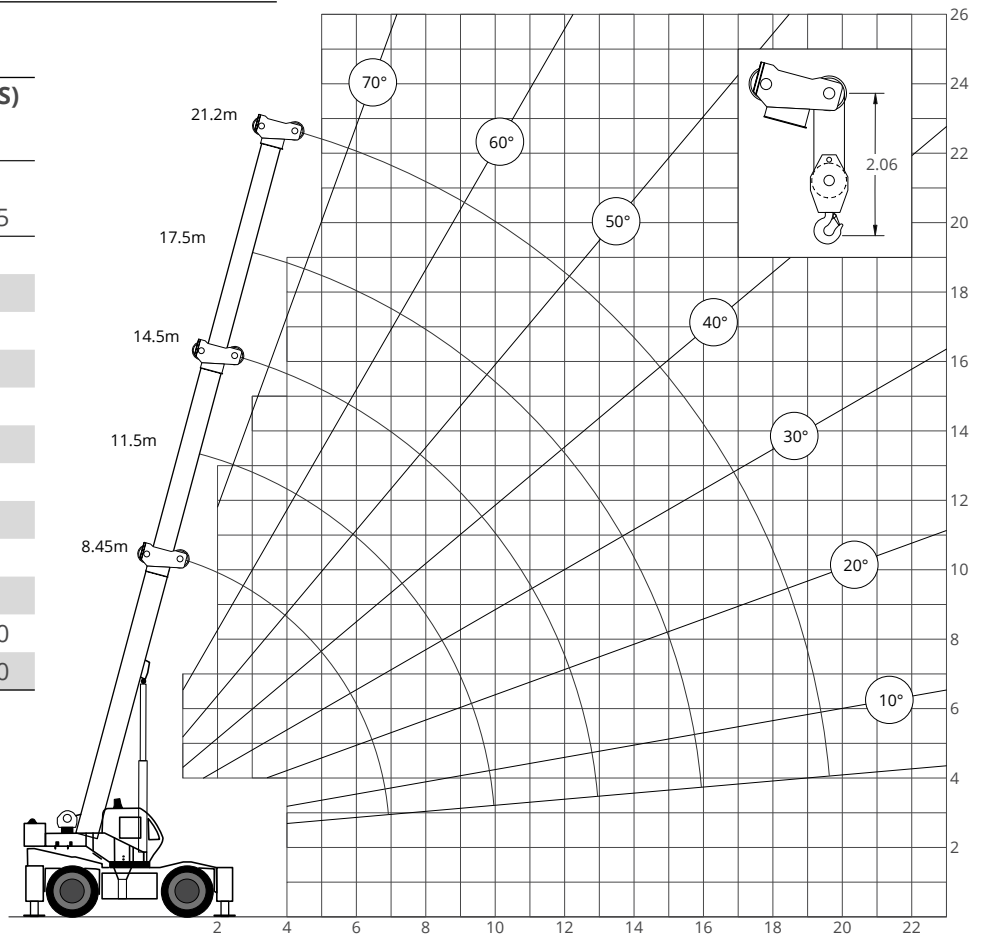
Radius (m)	BOOM LENGTH (m)				
	8.45	11.5	14.5	17.5	
2.75	13.3				
3.0	12.5				
3.5	11.1				
4.0	10.0				
4.5	8.50				
5.0	7.00				
6.0		5.05			
7.0		4.05			
8.0			3.15		
10			2.15		
12				1.40	
14					1.00

LIFTING CAPACITIES (IN METRIC TONNES) FREE ON WHEELS STATIC OVER FRONT

Radius (m)	BOOM LENGTH (m)			
	8.45	11.5	14.5	17.5
2.75	16.8			
3.0	15.5			
3.5	13.2			
4.0	10.8			
4.5	8.75			
5.0	6.70			
6.0		5.05		
7.0		4.00		
8.0			3.15	
10			2.15	
12				1.40
14				1.00

LIFTING CAPACITIES (IN METRIC TONNES) FREE ON WHEELS SLEWING RANGE 360°

Radius (m)	BOOM LENGTH (m)		
	8.45	11.5	14.5
2.75	11.8		
3.0	10.3		
3.5	8.00		
4.0	6.15		
4.5	5.00		
5.0	4.10		
6.0		2.85	
7.0		2.70	
8.0			1.75
10			1.10
12			0.55



NOTES TO LOAD CHARTS

- Working radii are measured from the slewing centre line
- For boom lengths and/or radii not listed use the smallest load given for the next longer boom length and/or radius.
- The capacities on outriggers are valid only if all outriggers beams are fully extended and the crane accurately levelled on a firm supporting surface.
- The capacities on tyres are valid only if the tyres are inflated to the recommended pressure and the crane works on flat, solid and horizontal surface.
- For 360° static capacities the front axle oscillation must be locked.
- For over front travelling capacities the swing lock pin must be fully engaged and travel with suspended load should be carried out with the load little raised from ground, close to the crane and avoiding load oscillation
- Lifting Capacities for supported operation only on firm level ground. Weight of hook block Assembly=300kg.
- Lifting capacity = actual load + hook load + lifting equipment. As part of the load rating shown above.
- These lifting capacities do not exceed 85% of the tipping load.

Permissible Hoist Line Load in kg

No. Of part line	1	2	3	4	5	6
Main winch Hook Load	4000	8000	12000	16000	20000	22000

