KATO CR-250RV CITY

PROVISIONAL BROCHURE

KATO

SPECIFICATIONS

MODEL CR-250RV KATO WORKS CO, LTD, Tokyo Japan | **SPEC.NO:** 47A0010100

KEY FEATURES

- **29m** fully powered main boom
- 2 winches
- **7.5ton** searcher hook
- Cummins QSB 6.7 Stage V European Compliant Engine (205kW Output)
- **5.3 - 8.2m** magic reach fly jib – fully hydraulic telescope and offset from 7°to 60° all under load
- **360 degree** bird's eye view camera system *as standard*
- ASB braking system *as standard*
- Axle weights of under 12,000kgs
- Newly adopted hydraulic pneumatic suspension
- Newly developed 12" touch screen controller for Crane Safe Load System
- Short tail swing of 2.42 meters

1. CRANE SPECIFICATION

Maximum lifting capacity	25 ton × 2.8 m
Boom length	6.7 m – 29.0 m (6 section)
Jib length	5.3 m – 8.2 m (2 section, offset 7°– 60°)
Searcher hook (option)	1.0 m (high and low position)
Boom derricking angle	-9°– 84°
Boom derricking time	38 s / -9°– 84°
Boom extending speed	6.7 m – 29.0 m / 67 s
Hoisting line speed (winch up)	
Main winch	115 m/min (at 4th layer)
Auxiliary winch	115 m/min (at 4th layer)
Hoisting hook speed (winch up)	
Main winch (parts of line 7)	16.4 m/min (at 4th layer)
Auxiliary winch (parts of line1)	115.0 m/min (at 4th layer)
Slewing speed	2.6 min-1
Speed/Time	Subject to no load
Wire rope for hoisting main winch	
Diameter	16 mm
Length	165 m
Auxiliary winch	
Diameter	16 mm
Length	85 m
Hydraulic system	
Oil pump	4 pumps, plunger & gear type
Hoisting motor	Axial plunger type
Slewing motor	Axial plunger type
Cylinder	Double acting type
Control valve	Double acting with integral check and relief valves
Oil reservoir capacity	370 L

WINCH SYSTEM

Main winch

Driven by axial plunger type.

Auxiliary winch

Hoisting motor through planetary gear reduction. Controlled independently by 2-speed (high / low) selection type respective operating lever. Equipped with automatic brake.

SAFETY DEVICES

ACS (Automatic Crane System with Voice alarm)

ACS outside indicator (LED)

Slewing automatic stop system

Working range limit mode

Outrigger status detector

Outrigger lock pins

Electronic horizontal detector

Boom derricking / telescoping holding valve

Jib derricking / telescoping holding valve

Over hoist prevention device

Winch holding valve

Automatic winch brake

Winch drum roller

Winch drum turning indication device

Winch over unwinding device

Hydraulic safety valves

Hydraulic oil temperature warning device

Hydraulic oil return filter warning device

Slewing warning lamp

Seat switch

Left front, Left rear and Right rear-view camera (With human detection function)

OPERATOR'S CAB

All steel welded construction, 1 person

Rubber mounted
Adjustable steering wheel

Adjustable seat with suspension

Air conditioner

Power window (external closing switch)

Front windscreen wiper & washer (2 speed wiper)

Roof window wiper & washer (2 speed wiper)

12-inch touch monitor

Bluetooth radio

Interior lamp (LED)

Step lamp (LED)

Accessory socket (24V)

USB & AUX port (USB output 5V-2A)

Floor mat

Entry key system

K-COR (KATO Crane Operation Recorder)

STANDARD EQUIPMENT

Working light (LED) on boom, table and cab

Winch view camera

Hook for 25 ton

Hook for 4 ton

OPTIONAL EQUIPMENT

PA system

Door visor

Tea table

Air heater

Searcher hook

Anemometer

2. CARRIER SPECIFICATION

Drive system	4 × 2, 4 × 4
Maximum traveling speed	54 km/h
Grade ability (tanø)	60% (computed at G.V.W. = 23795 kg)
Minimum turning radius (center of extreme outer tire	5.0 m (4-wheel steer) 8.3 m (2-wheel steer)

ENGINE

Maker	Cummins
Model	B6.7 (EU Stage 5)
Type	4 cycle, 6 cylinders, water cooled, direct injection turbo-charged diesel engine with intercooling
Piston displacement	6.690 L
Max. power	209 kW at 2200 min^{-1}
Max. torque	1152 N·m at 1500 min^{-1}
Torque converter	Engine mounted 3 elements 1 stage (with lock up clutch)
Transmission	Remote mounted fully automatic 4 forward & 1 reverse speed (with High-Low selector)
Axles	**Front & rear:** Planetary, drive/steer type
Suspension	**Front & rear:** Hydro-pneumatic suspension Hydraulic locking device with suspension cylinder
Steering	Full hydraulic power steering Completely independent front and rear steering (with automatic rear wheel steering lock system)
Brake system	**Service brake:** Air-over hydraulic disk brake on 4 wheels (front and rear independent circuit), ABS (Anti-lock Brake System) **Parking brake:** Spring applied, electrically air released parking brake mounted on front axle **Auxiliary brake:** Exhaust brake. Service brake lock
Electric system	24 V
Alternator	24 V – 70 A
Batteries	(12 V – 150 AH) × 2
Fuel tank capacity	300 L
Tyre size	**Front & Rear** 385 / 95 R25 170E ROAD

SAFETY DEVICES

Emergency steering device

Rear wheel steering lock system (automatic)

Brake fluid leak warning device

Service brake lock

Suspension lock

Engine overspeed alarm

Electrically retractable side view mirrors

Surround view system

Clearance sonar system

Radiator coolant level warning device

Air filter service warning device

Low air warning device

Boom front view camera

Boom guard

STANDARD EQUIPMENT

Hydraulic oil cooler

LED head lamp

OPTIONAL EQUIPMENT

Wheel stopper

Way side lamp

Side marker lamp

Storage box

Electrically retractable side view mirrors with defroster

Aluminium outrigger plate and storage

Resin outrigger plate and storage

3. GENERAL DIMENSIONS

Overall length	9195 mm
Overall width	2395 mm
Overall height	3495 mm
Wheelbase	3540 mm
Treads	Front: 1970 mm Rear:1970 mm
Outriggers type	Hydraulic H-beam type (with float and vertical cylinder in single unit)
Extension width	6000mm (Fully extended) 5200mm (Intermediately extended) 4400mm (Intermediately extended) 3400mm (Intermediately extended) 2085mm (Completely retracted)

Gross vehicle weight 23795 kg (without Optional equipment)
Front axle: 11895 kg (without Optional equipment)
Rear axle: 11900 kg (without Optional equipment)

NOTES FOR THE LIFTING CAPACITY CHART

When the outriggers are used

1. The lifting capacity chart indicates the maximum load which can be lifted by this crane provided it is level and standing on firm level ground. The values in the chart include the mass of the main hook and slings for boom operation, and auxiliary hook and slings for jib operation.

   The values in the chart are values with the main and auxiliary hooks removed and main and auxiliary wire ropes stowed for searcher hook operation.
   [25-ton hook (mass: 220kg), 4-ton hook (mass: 60kg)]

   Within the chart the figures in the area bordered with a thick line are based on structural limitations while other figures are determined by stability limitations.

2. The working radii are the actual values allowing for boom and jib deflection. Therefore, you must always operate the crane on the basis of working radius.

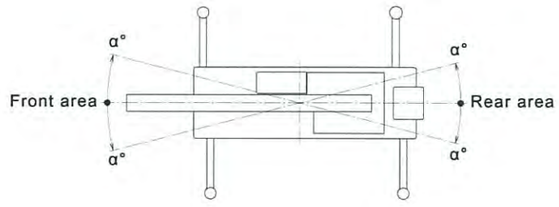
3. The jib working radii are based on the jib mounted on the end of 20.2m boom or the 29.0m boom. When operating the jib with the boom length 20.2m and 29.0m, refer the boom angle only at the 29.0m boom instead of its working radii.

   If the boom is at any other length (more than 20.2m and less than 29.0m), use the boom angle for the 29.0m boom alone as the criterion.

   If the boom length is less than 20.2m, use the boom angle for the 20.2m boom alone as the criterion.

4. Do not operate the jib when the outriggers are completely retracted.

5. The lifting capacities for the over sides vary with the outrigger's extension width. Therefore, for each outrigger's extension condition you should work according the lifting capacity chart.



Outrigger extension status	Intermediate extension (5.2m)	Intermediate extension (4.4m)	Intermediate extension (3.4m)	Complete Retraction
Area a∘	35	30	20	3

6. The lifting capacity of the rooster sheave is the lifting capacity of the boom minus the mass of all attached hook, slings etc. to the boom, with an upper limit of 4,000 kg. [The hook for use with the rooster sheave is the 4-ton hook (mass: 60 kg) with one part of line.]

7. If the boom length, boom angle, working radius and/or jib angle exceeds the rated value, use the lifting capacity for the rated value or for the next one, whichever gives the smaller lifting capacity.

8. If you are working with the boom while the jib is rigged, subtract 2000 kg plus the mass of all attached hook, slings, etc. to the boom from each lifting capacity of the boom, with an upper limit of 10 ton.

   Do not use the rooster sheave in this situation. And do not operate the boom while the jib is rigged, when the outriggers are completely retracted.

9. If you are working with the boom while the searcher hook is rigged, subtract 110 kg plus the mass of all attached hook, slings, etc. to the boom from each lifting capacity of the boom.

10. The lifting load with which you can extend or retract the boom during searcher hook operation may become smaller than the lifting capacity depending on the conditions such as the oil pressure, boom angle, lubricating state to the boom, etc.

11. In whatever working conditions the corresponding boom critical angle is shown in the chart. The crane can tip over if the boom is lowered below the critical angle even if unloaded. Therefore, never lower the boom below these angles.

12. The standard parts of line for each boom length are as indicated in the chart. If you work with a non standard number of parts of line, do not exceed 37.2 kN (3.8 tf) per wire rope respectively.

13. High-speed winch operation should only be performed to allow descent of the hook alone. Avoid sudden lever operation.

14. Crane operation is permissible up to a wind speed of 10m/s. Even in relatively light wind conditions, extra care should be taken when handling loads presenting large wind catching areas.

15. The boom guard must be removed during crane operation.

16. If you work with a load in excess of the lifting capacity or use incorrect working procedures, you are risking damaging the crane or tipping it over. In such cases, the crane will not be guaranteed.

NOTES FOR THE LIFTING CAPACITY CHART

When the outriggers are NOT used

1. The lifting capacity chart indicates the maximum load the crane can lift when its body is level on firm level ground with all tires inflated to the rated pressure and suspension cylinder completely retracted.

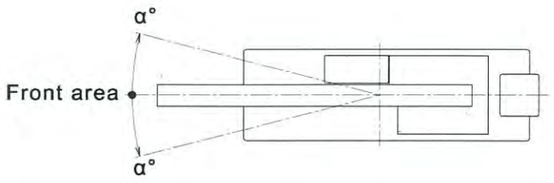
   The values in the chart include the mass of the main hook and slings.

   The values in the chart are values with the main and auxiliary hooks removed and main and auxiliary wire ropes stowed for searcher hook operation.

   Within the chart the figures in the area bordered with a thick line are based on structural limitations while other figures are determined by stability limitations. [Rated tire pressure: 900kPa (9.0 kgf/cm2)]

2. The working radii are the actual values allowing for boom deflection. Therefore, you must always operate the crane on the basis of the working radius.

3. The lifting capacity differs between the front area capacity and the full range capacity. When slewing from the front to the side, take care that the crane could not be over loaded.



Crane operation	Stationary crane-on-rubber operation	Pick and carry operation
Area aα	1	1

4. The lifting capacity of the rooster sheave is the lifting capacity of the boom minus the mass of all attached hook, slings etc. to the boom, with an upper limit of 4,000 kg.

   [The hook for use with the rooster sheave is the 4-ton hook (mass: 60 kg) with one part of line.]

5. Do not work with the jib or with a boom length of more than 20.2 m.

6. For stationary crane-on-rubber operation, the parking brake and service brake lock device must be engaged.

7. For pick and carry operation, the high/low speed switch must be switched to "ON" (low range) and the shift lever set to speed 1.

8. For pick and carry operation, lower the load to just above the ground and keep your speed strictly below 2 km/h to avoid swinging the load.

   Take particular care to avoid sharp turns, sudden starts and stops.

9. Never operate the crane during pick and carry operation. The slewing brake must be applied.

10. If the boom length, boom angle and/or working radius exceeds the rated value, use the lifting capacity for the rated value or for the next one, whichever gives the smaller lifting capacity.

11. The lifting load with which you can extend or retract the boom during searcher hook operation may become smaller than the lifting capacity depending on the conditions such as the oil pressure, boom angle, lubricating state to the boom, etc.

12. In whatever working conditions the corresponding boom critical angle is shown in the chart. The crane can tip over if the boom is lowered below the critical angle even if unloaded. Therefore, never lower the boom below these angles.

13. The standard parts of line for each boom length are as indicated in the chart. If you work with a non-standard number of parts of line, do not exceed 37.2 kN (3.8 tf) per wire rope respectively.

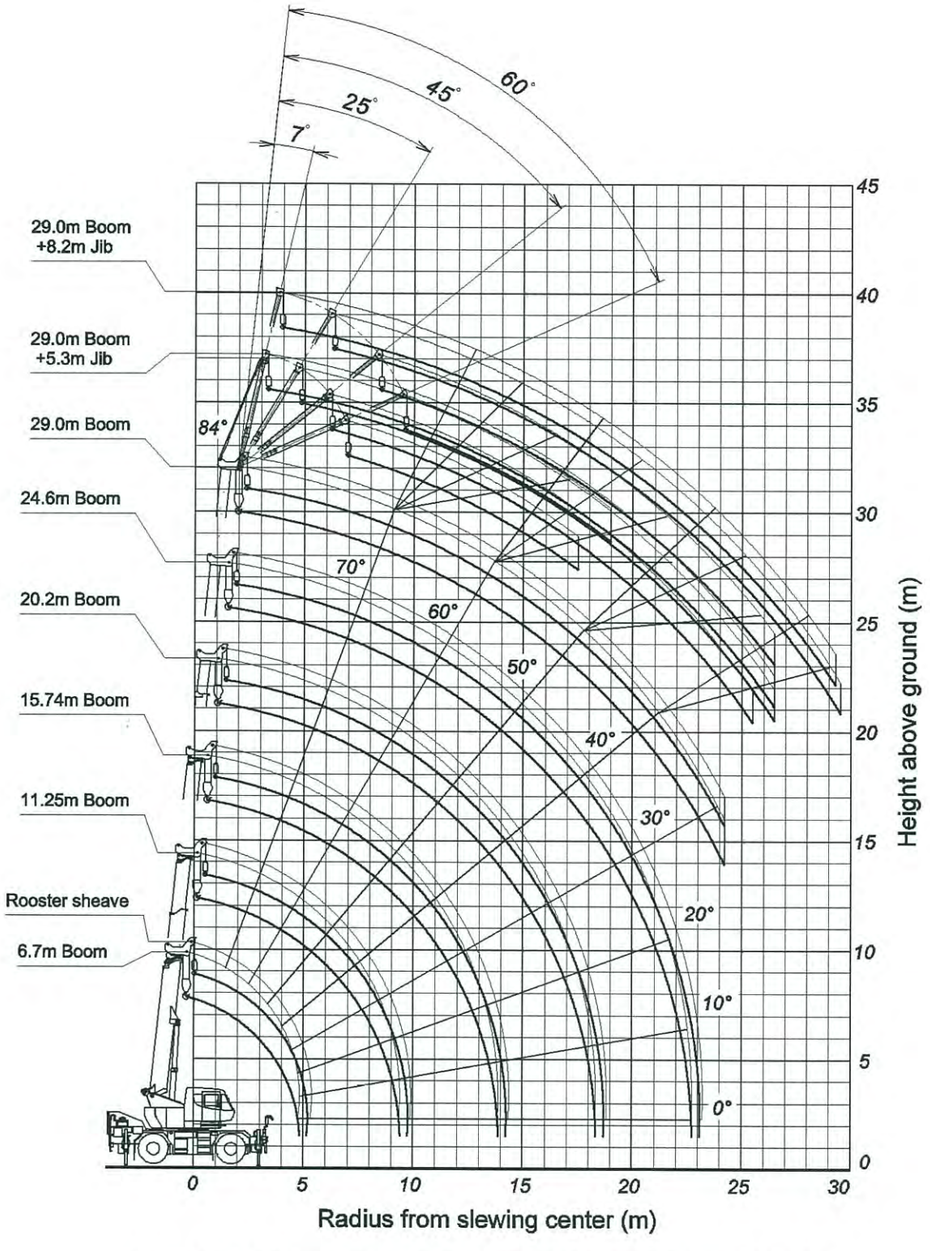
14. High-speed lowering operation should only be performed to allow descent of the hook alone. Avoid sudden lever operation.

15. Crane operation is permissible up to a wind speed of 10 m/s. Even in relatively light wind conditions, extra care should be taken when handling loads presenting large wind catching areas.

16. The boom guard must be removed during crane operation.

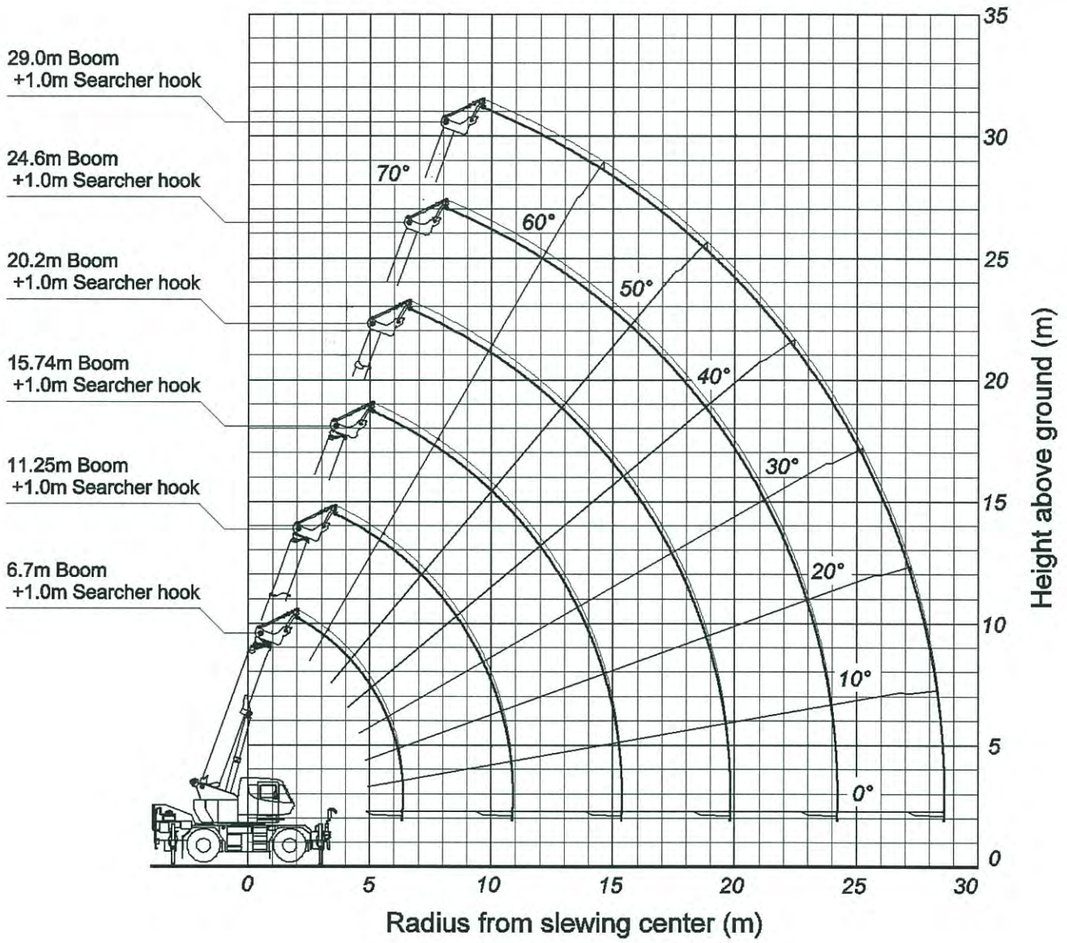
17. If you work with a load in excess of the rated lifting capacity or use incorrect working procedures, you are risking damaging the crane or tipping it over. In such cases, the crane will not be guaranteed.

WORKING RANGE



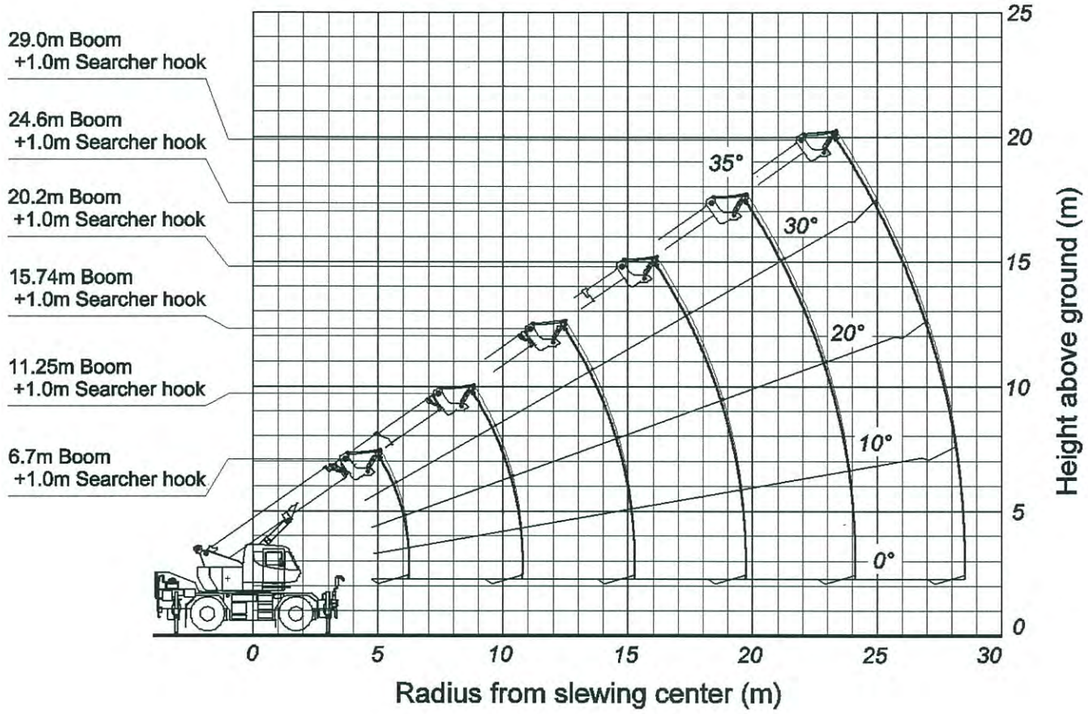
Note:1.This diagram does not include deflection of Boom and Jib.
2.The outriggers are fully extended.

WORKING RANGE – LOW POSITION

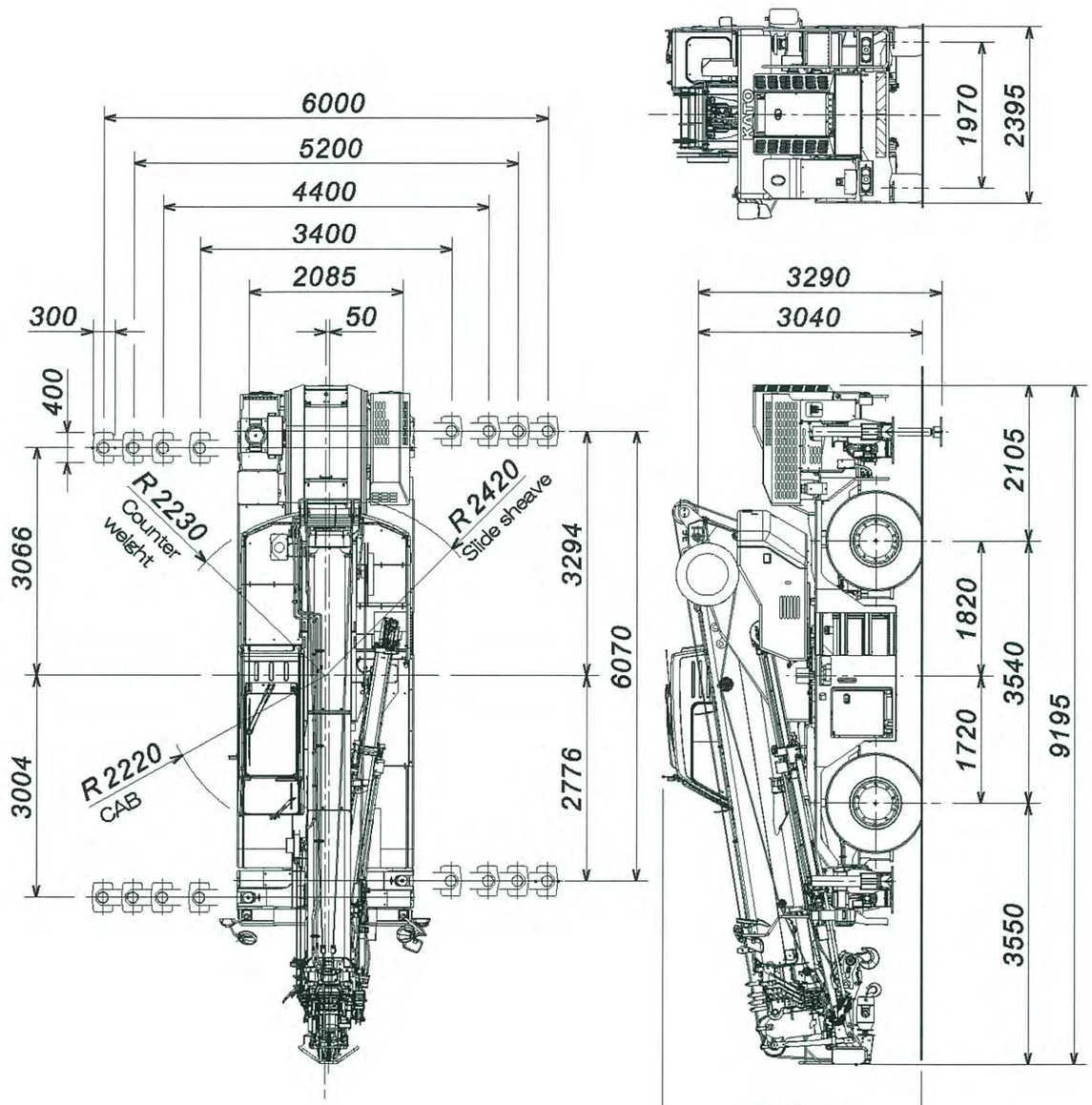


Note:1.This diagram does not include deflection of Boom and Searcher hook.
2.The outriggers are fully extended.

WORKING RANGE – HIGH POSITION



Note:1.This diagram does not include deflection of Boom and Searcher hook.
2.The outriggers are fully extended.



LIFTING CAPACITIES 1

Based on **ISO 4305** | Not exceed 75% of static tipping loads

[PROVISIONAL]

OUTRIGGERS FULLY EXTENDED (6.0m) 360° FULL RANGE						
Working radius (m)	**6.7m Boom**	**11.25m Boom**	**15.74m Boom**	**20.2m Boom**	**24.6m Boom**	**29.0m Boom**
2.8	25.00*	13.00	12.00	9.00	8.00	7.00
3.0	22.00	13.00	12.00	9.00	8.00	7.00
3.5	20.00	13.00	12.00	9.00	8.00	7.00
4.0	17.00	13.00	12.00	9.00	8.00	7.00
4.5	15.00	13.00	12.00	9.00	8.00	7.00
5.0		13.00	12.00	9.00	8.00	7.00
5.5		13.00	12.00	9.00	8.00	7.00
6.0		12.00	11.50	9.00	8.00	7.00
6.5		11.30	10.65	9.00	8.00	7.00
7.0		10.40	9.90	9.00	8.00	7.00
8.0		7.90	7.90	8.30	8.00	6.80
9.0		6.20	6.20	6.60	6.90	6.20
10.0			5.00	5.35	5.65	5.70
11.0			4.05	4.40	4.70	4.90
12.0			3.35	3.70	3.95	4.15
13.0			2.75	3.10	3.40	3.55
14.0				2.65	2.90	3.05
15.0				2.25	2.50	2.65
16.0				1.95	2.15	2.35
17.0				1.65	1.90	2.05
18.0				1.40	1.65	1.80
19.0					1.40	1.55
20.0					1.25	1.40
21.0					1.05	1.20
22.0					0.90	1.05
23.0						0.90
24.0						0.80
25.0						0.65
26.0						0.55
27.0						0.45
Critical boom angle (°)	–	–	–	–	–	–
Parts of line	7*, 6	6	4	4	4	4
Standard hook	For 25ton					
Hook mass (Kg)	220					

(Unit: Metric ton)

Based on **ISO 4305** | Not exceed 75% of static tipping loads

[PROVISIONAL]

OUTRIGGERS IMMEDIATELY EXTENDED (5.2m) OVER-SIDE						
Working radius (m)	**6.7m Boom**	**11.25m Boom**	**15.74m Boom**	**20.2m Boom**	**24.6m Boom**	**29.0m Boom**
2.8	25.00*	13.00	12.00	9.00	8.00	7.00
3.0	22.00	13.00	12.00	9.00	8.00	7.00
3.5	20.00	13.00	12.00	9.00	8.00	7.00
4.0	17.00	13.00	12.00	9.00	8.00	7.00
4.5	15.00	13.00	12.00	9.00	8.00	7.00
5.0		13.00	12.00	9.00	8.00	7.00
5.5		13.00	12.00	9.00	8.00	7.00
6.0		10.90	10.80	9.00	8.00	7.00
6.5		9.20	9.15	9.00	8.00	7.00
7.0		7.95	7.85	8.20	8.00	7.00
8.0		6.05	6.00	6.35	6.65	6.80
9.0		4.75	4.75	5.05	5.35	5.55
10.0			3.80	4.15	4.40	4.60
11.0			3.05	3.40	3.65	3.85
12.0			2.50	2.85	3.10	3.25
13.0			2.05	2.40	2.60	2.80
14.0				2.00	2.25	2.40
15.0				1.70	1.90	2.05
16.0				1.40	1.65	1.80
17.0				1.20	1.40	1.55
18.0				1.00	1.20	1.35
19.0					1.00	1.15
20.0					0.85	1.00
21.0					0.70	0.85
22.0					0.60	0.75
23.0						0.60
24.0						0.50
Critical boom angle (°)	–	–	–	–	–	28
Parts of line	7*, 6	6	4	4	4	4
Standard hook	For 25ton					
Hook mass (Kg)	220					

(Unit: Metric ton)

Based on **ISO 4305** | Not exceed 75% of static tipping loads

[PROVISIONAL]

OUTRIGGERS IMMEDIATELY EXTENDED (4.4m) OVER-SIDE						
Working radius (m)	**6.7m Boom**	**11.25m Boom**	**15.74m Boom**	**20.2m Boom**	**24.6m Boom**	**29.0m Boom**
2.8	22.00	13.00	12.00	9.00	8.00	7.00
3.0	22.00	13.00	12.00	9.00	8.00	7.00
3.5	20.00	13.00	12.00	9.00	8.00	7.00
4.0	17.00	13.00	12.00	9.00	8.00	7.00
4.5	14.30	13.00	12.00	9.00	8.00	7.00
5.0		11.40	11.35	9.00	8.00	7.00
5.5		9.35	9.35	9.00	8.00	7.00
6.0		7.85	7.85	8.15	8.00	7.00
6.5		6.70	6.70	7.00	7.30	7.00
7.0		5.80	5.75	6.10	6.40	6.60
8.0		4.40	4.40	4.70	5.00	5.20
9.0		3.45	3.45	3.75	4.00	4.20
10.0			2.70	3.05	3.25	3.45
11.0			2.15	2.45	2.70	2.90
12.0			1.70	2.00	2.25	2.40
13.0			1.35	1.65	1.90	2.05
14.0				1.35	1.55	1.75
15.0				1.10	1.30	1.45
16.0				0.90	1.10	1.25
17.0				0.70	0.90	1.05
18.0				0.50	0.75	0.85
19.0					0.60	0.70
20.0					0.45	0.60
21.0						0.45
Critical boom angle (°)	–	–	–	–	28	40
Parts of line	6	6	4	4	4	4
Standard hook	For 25ton					
Hook mass (Kg)	220					

(Unit: Metric ton)

Based on **ISO 4305** | Not exceed 75% of static tipping loads

[PROVISIONAL]

OUTRIGGERS IMMEDIATELY EXTENDED (3.4m) OVER-SIDE						
Working radius (m)	6.7m Boom	11.25m Boom	15.74m Boom	20.2m Boom	24.6m Boom	29.0m Boom
2.8	20.00	13.00	12.00	9.00	8.00	7.00
3.0	20.00	13.00	12.00	9.00	8.00	7.00
3.5	14.65	13.00	12.00	9.00	8.00	7.00
4.0	11.10	11.10	11.00	9.00	8.00	7.00
4.5	8.75	8.75	8.70	8.80	8.00	7.00
5.0		7.15	7.10	7.35	7.35	7.00
5.5		5.90	5.90	6.15	6.40	6.30
6.0		5.00	4.95	5.25	5.55	5.55
6.5		4.25	4.20	4.50	4.80	4.95
7.0		3.65	3.60	3.90	4.20	4.40
8.0		2.70	2.70	3.00	3.25	3.45
9.0		2.05	2.05	2.35	2.55	2.75
10.0			1.50	1.85	2.05	2.20
11.0			1.10	1.45	1.65	1.80
12.0			0.80	1.10	1.30	1.45
13.0			0.50	0.85	1.05	1.20
14.0				0.60	0.80	0.95
15.0					0.65	0.75
Critical boom angle (°)	–	–	–	39	48	56
Parts of line	6	6	4	4	4	4
Standard hook	For 25ton					
Hook mass (Kg)	220					

(Unit: Metric ton)

Based on **ISO 4305** | Not exceed 75% of static tipping loads

[PROVISIONAL]

OUTRIGGERS COMPLETELY RETRACTED (2.085m) OVER-SIDE						
Working radius (m)	6.7m Boom	11.25m Boom	15.74m Boom	20.2m Boom	24.6m Boom	29.0m Boom
2.8	9.70	9.70	8.85	8.30	7.85	6.25
3.0	8.55	8.55	8.00	7.60	7.25	5.80
3.5	6.40	6.40	6.35	6.15	6.00	4.90
4.0	5.00	5.00	4.95	5.05	5.00	4.20
4.5	3.95	3.95	3.95	4.20	4.25	3.60
5.0		3.20	3.20	3.50	3.60	3.15
5.5		2.60	2.60	2.90	3.10	2.70
6.0		2.15	2.10	2.45	2.65	2.35
6.5		1.75	1.75	2.05	2.25	2.05
7.0		1.40	1.40	1.70	1.95	1.80
8.0		0.90		1.20	1.40	1.30
9.0		0.55				
Critical boom angle (°)	–	–	57	62	68	72
Parts of line	6	4	4	4	4	4
Standard hook	For 25ton					
Hook mass (Kg)	220					

(Unit: Metric ton)

WE RESERVE THE RIGHT TO MAKE SPECIFICATION AND EQUIPMENT CHANGES WITHOUT NOTICE

This is the KATO CR-250RV specification, and should there be any further details you require information on, or any points you wish to have clarified, please do not hesitate to contact our Overseas Marketing Department where our staff will be happy to assist you.