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SPECIFICATION

CRANE

Description City range crane with maximum lifting capacity 25 ton

Crane specification

Maximum rated lifting capacity	6.7 m Boom	25,000kg × 2.8 m (Parts of line : 7)
	11.25m Boom	13,000kg × 5.5 m (Parts of line : 6)
	15.74m Boom	12,000kg × 5.5 m (Parts of line : 4)
	20.20m Boom	9,000kg × 7.0 m (Parts of line : 4)
	24.60m Boom	8,000kg × 8.0 m (Parts of line : 4)
	29.0 m Boom	7,000kg × 7.0 m (Parts of line : 4)
	5.3 m Jib	3,000kg × 76° (Parts of line : 1)
	8.2 m Jib	2,300kg × 84° (Parts of line : 1)
	Rooster	4,000kg (Parts of line : 1)
	Searcher hook	7,500kg
Boom length	6.5m — 29.0m (6 section)	
Jib length	5.3m — 8.2m (2 section, offset 7° — 60°)	
Searcher hook (option)	1.0m (High position and Low position)	
Maximum rated lifting height	30.0m (Boom) 38.4m (jib)	
Hoisting line speed (winch up)	Main winch	115m / min. (at 4th layer)
	Auxiliary winch	115m / min. (at 4th layer)
Hoisting hook speed (winch up)	Main winch	(Parts of line; 7) : 16.4m / min. (at 4th layer)
	Auxiliary winch	(Parts of line; 1) : 115.0m / min. (at 4th layer)
High-speed lowering Rope speed	Main winch	153m / min (at 4th layer)
	Auxiliary winch	153m / min (at 4th layer)
Boom derricking angle	-9° — 84°	
Boom derricking time	38s / -9° — 84°	
Boom extending speed	6.7m — 29.0m / 69s	
Slewing speed	2.3min ⁻¹	
Speed / Time	Subject to no load	
Tail slewing radius	2,420mm (Slide sheave)	
	2,230mm (Counter weight)	

Equipment and structure

Boom type	Round-shaped, 6-section hydraulically telescopic type (the 2nd and 3rd boom sections at the same time, the 4th, 5th and 6th boom sections at the same time)	
Jib type	2 sections (Hydraulically telescopic type) Hydraulic stepless tilting type (offset angles 7° — 60°)	
Searcher hook type	2 positions (high/low) selectable	
Boom extension/retraction equipment	Two hydraulic cylinders and wire ropes used together	
Boom derricking/lowering equipment	One hydraulic cylinder of direct acting type with pressure-compensated flow control valve	
Jib extension/retraction equipment	Hydraulic cylinder	
Jib derricking/lowering equipment	Two hydraulic cylinders	
Winch system Main & Auxiliary winches	Two units of Single winch, Planetary gear reduction type (built-in negative brake) with Automatic brake, High/Low speed switching system and Hydraulic compensated flow control valve.	
Slewing equipment	Equipped with Hydraulic motor drive and a planetary gear speed reducer (built-in negative brake), Free / Lock change-over type	
Slewing bearing	Ball bearing type	
Outriggers	Type	Hydraulic H-beam type (with float and vertical cylinder in single unit)
	Extension width	6,000mm (Fully extended)
		5,200mm (Intermediately extended)
		4,400mm (Intermediately extended)
		3,400mm (Intermediately extended)
2,085mm (Completely retracted)		
Wire rope for hoisting	Main winch	Diameter: 16mm × Length: 165m
	Auxiliary winch	Diameter: 16mm × Length: 85m

Hydraulic equipment

Oil pump	4 pumps, plunger and gear type	
Hydraulic motor	Hoisting motor	Axial plunger type
	Slewing motor	Axial plunger type
Control valve	Double acting with integral check and relief valves (With Hydraulic compensated flow control valve)	
Cylinder	Double acting type	
Oil reservoir capacity	370L	

Safety devices

	ACS (Automatic Crane System with Voice alarm), ACS outside indicator (LED), Slewing automatic stop system, Boom raise / lower dampening function, Boom extension / retraction dampening function, Working range limit mode, Outrigger status detector, Electronical horizontal detector, Boom derricking / telescoping holding valve, Jib derricking / telescoping holding valve, Overhoist prevention device, Winch holding valve, Automatic winch brake, Winch drum roller, Winch drum turning indication device, Winch over unwinding device, Hydraulic safety valves, Outrigger lock pins, Slewing warning lamp, Hydraulic oil temperature warning device, Slewing lock, Hydraulic oil return filter warning device, Seat switch,
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Standard equipment

	Working light (LED) on boom, table and cab, Winch view camera, Hook for 25 ton, Hook for 4 ton
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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 windshield wiper & washer (2 speed wiper), Roof window wiper & washer (2 speed wiper), 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)
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Optional equipment

	PA system, Door visor, Tea table, Air heater, Searcher hook, Anemometer, Hands free microphone, Camera cleaner for winch camera and boom front view camera
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Equipment by specifications

	Left front, Left rear and Right rear view camera (With human detection assist function), 12-inch touch monitor, Bluetooth radio
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*Note: Destination areas where hands free microphone can be used are limited by the Radio Act of each country, so please contact us if necessary.

*Note: Destination areas where bluetooth radio can be used are limited by the Radio Act of each country, so please contact us if necessary.

*Note: Bluetooth® is a registered trademark of the Bluetooth SIG, Inc.

CARRIER

Carrier specification

Maximum traveling speed	54km/h
Grade ability (tan θ)	60% (computed at G.V.W. = 23,795 kg)
Minimum turning radius (center of extreme outer tire)	8.3m (2 wheel steer) 5.0m (4 wheel steer)

Engine

Model	Cummins B6.7 (EU Stage V)
Type	4 cycle, 6 cylinders, water cooled, direct injection turbo-charged diesel engine with intercooling
Piston displacement	6.690L
Max. power	209kW at 2,000min ⁻¹
Max. torque	1,152N·m at 1,500min ⁻¹
Diesel Fuel recommended by KATO must be used	

Equipment and structure

Drive system	Switches between 2 wheel drive (4×2) and 4 wheel drive (4×4)	
Torque converter	Engine mounted 3 elements 1 stage (with lock up clutch)	
Transmission	Remote mounted full automatic	
Number of speeds	4 forward & 1 reverse speed (with High-Low selector)	
Axles	Front	Planetary, drive/steer type, Reverse "ELLIOT" type
	Rear	Planetary, drive/steer type, Reverse "ELLIOT" type
Suspension	Front	Hydro-pneumatic suspension, Hydraulic locking device with suspension cylinder
	Rear	Hydro-pneumatic suspension, Hydraulic locking device with suspension cylinder
Brake system	Service	Air-over hydraulic disk brake on 4 wheels (front and rear independent circuit), ABS (Anti-lock Brake System)
	Parking	Spring applied, electrically air released parking brake mounted on front axle
	Auxiliary	Exhaust brake, Service brake lock
Steering	Full hydraulic power steering, Front, coordinated, crab, rear, completely independent front and rear steering (with automatic rear wheel steering lock system)	
Tire size	Front	385 / 95 R25 170E ROAD
	Rear	385 / 95 R25 170E ROAD
Fuel tank capacity	300 L	
Batteries	(12V-120Ah) × 2	

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, Clearance sonar system, Radiator coolant level warning device, Air filter service warning device, Low air warning device, Boom front view camera, Boom guard
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Standard equipment

	Hydraulic oil cooler, LED head lamp
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Optional equipment

	Wheel stopper, Way side lamp, Side marker lamp, Electrically adjustable side view mirrors with defroster, Aluminum outrigger plate and storage, Resin outrigger plate and storage, Camera cleaner for surround view system, Tire pressure monitoring system
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Equipment by specifications

	Surround view system, Rear view camera on table (wired), Rear view camera (wireless, mounted on carrier)
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GENERAL Dimensions

Overall length	9,195mm	
Overall width	2,395mm	
Overall height	3,495mm	
Wheel base	3,540mm	
Treads	Front	1,970mm
	Rear	1,970mm
Passenger capacity	One person	
Gross vehicle weight	Gross weight	approx. 23,795kg (without Optional equipments)
	Front weight	approx. 11,895kg (without Optional equipments)
	Rear weight	approx. 11,900kg (without Optional equipments)

● Stow the hooks in place before traveling.

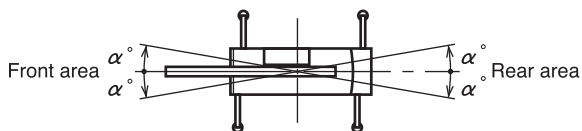
● Before you use this machine, read the precautions in the instruction manual thoroughly to operate it correctly.

● KATO products and specifications are subject to improvements and changes without notice.

Notes for the lifting capacity chart

When the outriggers are used

- 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: 220 kg), 4 ton hook (mass: 60 kg)]
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.
- The working radii are the actual values allowing for boom and jib deflection. Therefore, you must always operate the crane on the basis of the working radius.
- The jib working radii are based on the jib mounted on the end of the 20.2 m or 29.0 m boom. If the boom is at any other length (more than 20.2 m and less than 29.0 m), use the boom angle for the 29.0 m boom alone as the criterion.
If the boom length is less than 20.2 m, use the boom angle for the 20.2 m boom alone as the criterion.
- Do not operate the jib when the outriggers are completely retracted.
- The lifting capacities for the over sides vary with the outriggers extension width. Therefore, for each outriggers extension condition you should work according to the lifting capacity chart. Use the lifting capacity chart of outriggers full extension for both front and rear areas lifting capacities.

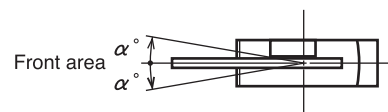


Outrigger extension status	Intermediate extension 5.2m	Intermediate extension 4.4m	Intermediate extension 3.4m	Complete retraction
Area α°	35	30	20	3

- 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.]
- If the boom length, boom angle, working radius, jib length 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.
- If you are working with the boom while the jib is rigged, subtract 2,000 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.
- 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.
- 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.
- 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.
- 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.
- If you are working with 7 parts of line on the hook, use the rooster sheave.
- High-speed winch operation should only be performed to allow descent of the hook alone. Avoid sudden lever operation.
- 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.
- 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.

When the outriggers are not used

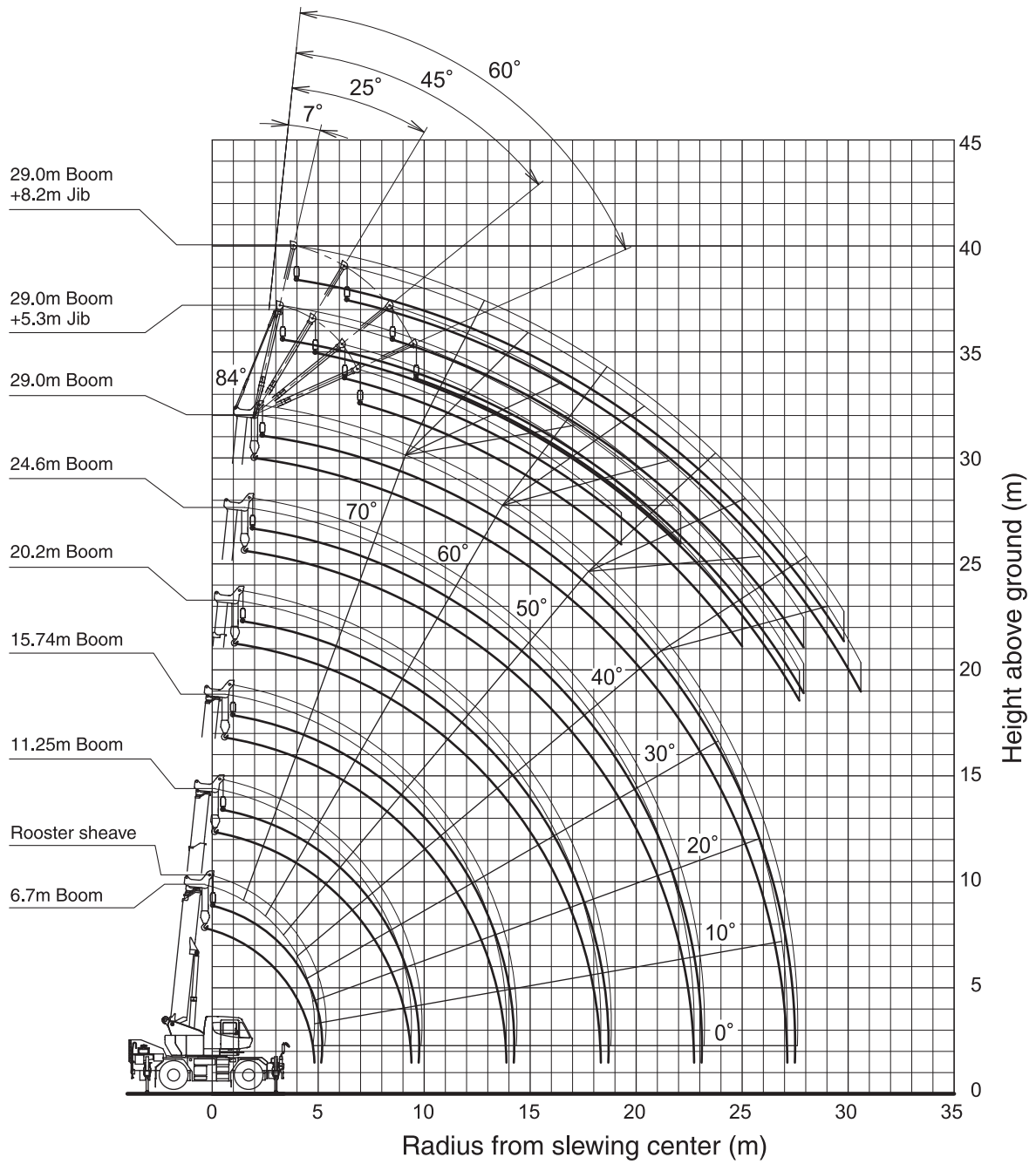
- The lifting capacity chart indicates the maximum load the crane can lift when its body is level on firm level ground with all tires inflated to the rated pressure and suspension cylinder completely retracted. The values in the chart include the mass of the main hook and slings.
The values in the chart 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: 900 kPa (9.0 bar)]
- 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.
- 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 α°	1	1

- Do not work with the jib or with a boom length of more than 20.2 m.
- For stationary crane-on-rubber operation, the parking brake and service brake lock device must be engaged.
- For pick and carry operation, the high/low speed switch must be switched to "ON" (low range) and the shift selector set to speed 1.
- 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.
- Never operate the crane during pick and carry operation. The slewing brake must be applied.
- 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.]
- If the boom length, boom angle, working radius, jib length 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.
- 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.
- 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.
- 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.
- 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.
- High-speed winch operation should only be performed to allow descent of the hook alone. Avoid sudden lever operation.
- 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.
- 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.

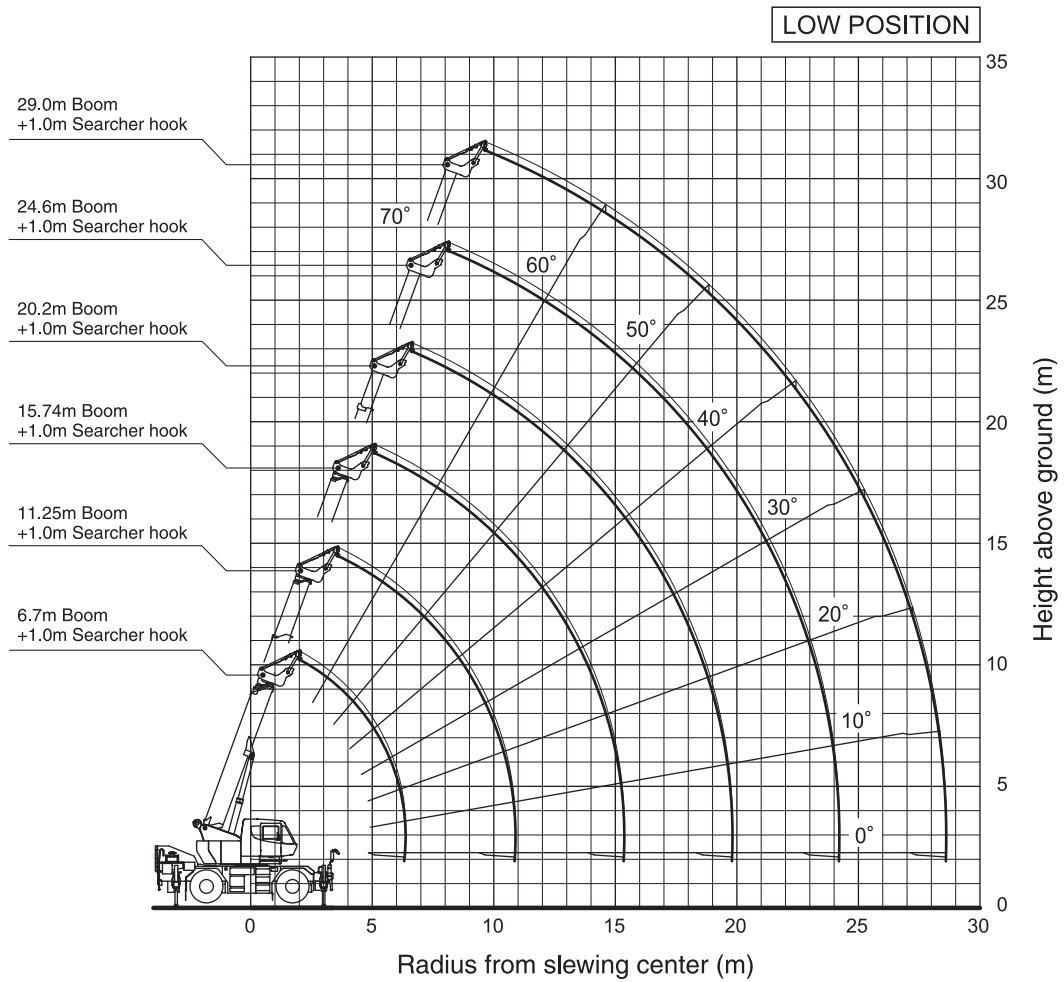
WORKING RANGE



Notes:

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

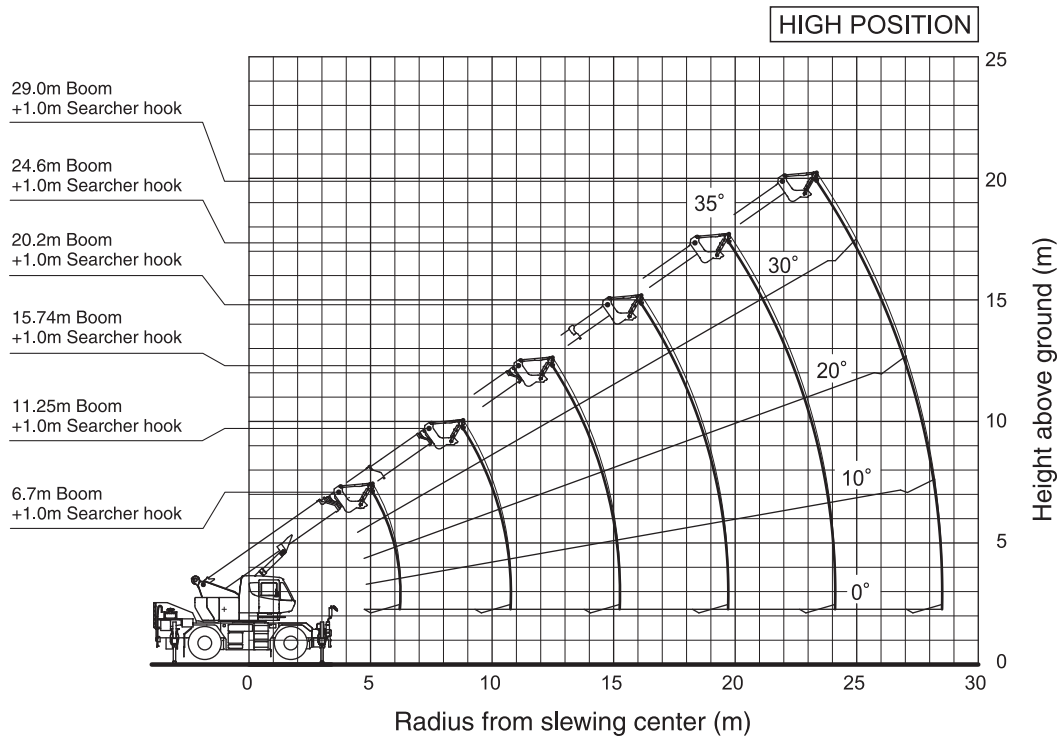
WORKING RANGE



Notes:

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

WORKING RANGE



Notes:

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



RATED LIFTING CAPACITY

■ When outriggers are not used

Working radius (m)	Stationary on rubber						Pick & carry (less than 2km/h)						Working radius (m)
	6.7m Boom		11.25m Boom		15.74m Boom		6.7m Boom		11.25m Boom		15.74m Boom		
	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	
3.0	8.50	6.00	8.50	5.50	7.50	5.20	6.80	4.80	6.40	4.40	5.90	4.00	3.0
3.5	8.50	4.50	8.50	4.10	7.50	3.80	6.80	3.60	6.40	3.30	5.90	3.00	3.5
4.0	8.50	3.30	8.50	3.20	7.50	3.00	6.80	2.65	6.40	2.55	5.90	2.40	4.0
4.5	7.50	2.55	7.20	2.55	6.50	2.40	6.00	2.05	5.50	2.05	5.00	1.90	4.5
5.0			6.10	2.00	5.40	1.90			4.75	1.50	4.30	1.40	5.0
5.5			5.10	1.55	4.55	1.50			4.10	1.05	3.65	1.00	5.5
6.0			4.25	1.20	3.85	1.15			3.40	0.65	3.10	0.60	6.0
6.5			3.55	0.90	3.30	0.85			2.85		2.65		6.5
7.0			3.00	0.65	2.80				2.40		2.25		7.0
8.0			2.15		2.05				1.65		1.60		8.0
9.0			1.55		1.50				1.00		1.00		9.0
10.0					1.00						0.50		10.0
11.0					0.60								11.0
Critical boom angle	—	—	—	37°	35°	61°	—	—	—	48°	42°	62°	Critical boom angle
Standard hook	For 25 ton						For 25 ton						Standard hook
Hook mass	220kg						220kg						Hook mass
Parts of line	4						4						Parts of line

(Unit: Metric ton)



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

RATED LIFTING CAPACITY searcher hook are used

When outriggers are not used

LOW POSITION

Working radius (m)	Stationary on rubber						Pick & carry (less than 2km/h)						Working radius (m)
	6.7m Boom		11.25m Boom		15.74m Boom		6.7m Boom		11.25m Boom		15.74m Boom		
	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	
2.8	7.50	6.80					7.50	5.20					2.8
3.0	7.50	6.00					7.50	4.60					3.0
3.5	7.50	4.60					7.50	3.50					3.5
4.0	7.50	3.60	7.50	3.45			7.00	2.80	7.00	2.65			4.0
4.5	7.30	2.95	7.30	2.80			5.60	2.25	5.60	2.10			4.5
5.0	6.00	2.40	6.00	2.25			4.65	1.85	4.60	1.75			5.0
5.5	5.05	2.00	5.00	1.85	4.95	1.80	3.90	1.55	3.85	1.40	3.80	1.35	5.5
6.0	4.35	1.65	4.30	1.55	4.25	1.45	3.35	1.25	3.30	1.20	3.25	1.10	6.0
6.5	3.95 (6.3m)	1.50 (6.3m)	3.70	1.30	3.65	1.20	3.05 (6.3m)	1.15 (6.3m)	2.85	1.00	2.80	0.90	6.5
7.0			3.20	1.05	3.15	1.00			2.45	0.80	2.45	0.75	7.0
8.0			2.50	0.70	2.45	0.60			1.90	0.55	1.85		8.0
9.0			1.95	0.35	1.90				1.50	0.35	1.45		9.0
10.0			1.55	0.10	1.50				1.20	0.10	1.15		10.0
11.0			1.25 (10.8m)		1.20				0.95 (10.8m)		0.90		11.0
12.0					0.95						0.70		12.0
13.0					0.70						0.55		13.0
14.0					0.50						0.40		14.0
15.0					0.30						0.30		15.0
16.0					0.25 (15.2m)						0.25 (15.2m)		16.0
Critical boom angle	—	—	—	19°	—	57°	—	—	—	19°	—	61°	Critical boom angle

Note: 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

(Unit: Metric ton)

HIGH POSITION

Working radius (m)	Stationary on rubber						Pick & carry (less than 2km/h)						Working radius (m)
	6.7m Boom		11.25m Boom		15.74m Boom		6.7m Boom		11.25m Boom		15.74m Boom		
	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	
2.8													2.8
3.0													3.0
3.5													3.5
4.0													4.0
4.5													4.5
5.0													5.0
5.5	5.05	1.85					3.85	1.45					5.5
6.0	4.30	1.55					3.30	1.20					6.0
6.5	4.05 (6.2m)	1.45 (6.2m)					3.15 (6.2m)	1.10 (6.2m)					6.5
7.0													7.0
8.0													8.0
9.0			1.85	0.30					1.45	0.30			9.0
10.0			1.50						1.15				10.0
11.0			1.25 (10.7m)						0.95 (10.7m)				11.0
12.0													12.0
13.0					0.65								13.0
14.0					0.45								14.0
15.0					0.25								15.0
16.0					0.20 (15.2m)								16.0
Critical boom angle	—	—	—	29°	—	—	—	—	—	29°	—	—	Critical boom angle

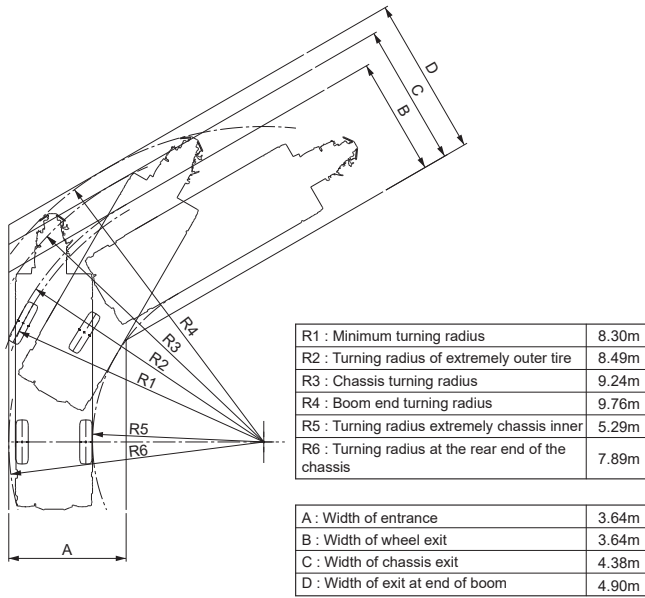
Note: The lifting load with which you can extend or retract the boom during searcher hook operation may become smaller than the lifting capacity depending on the conditions such as the oil pressure, boom angle, lubricating state to the boom, etc

(Unit: Metric ton)

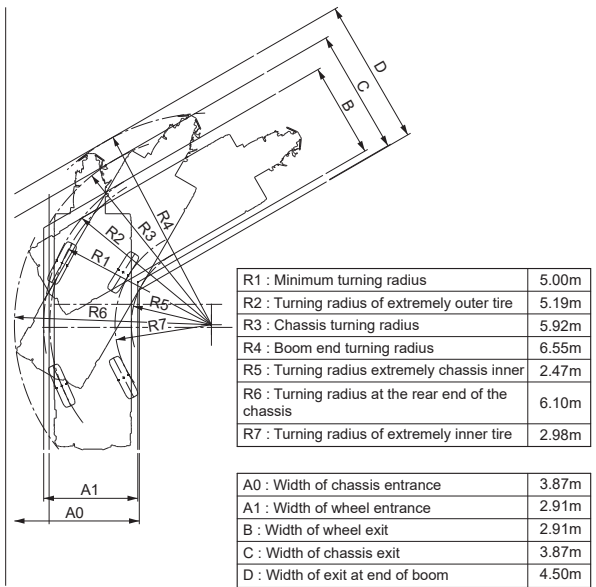
Minimum path width

● 60°

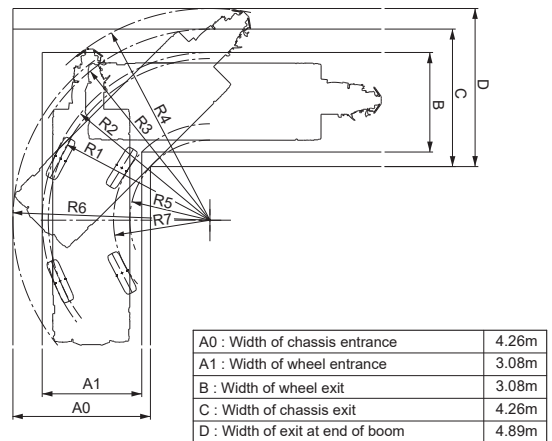
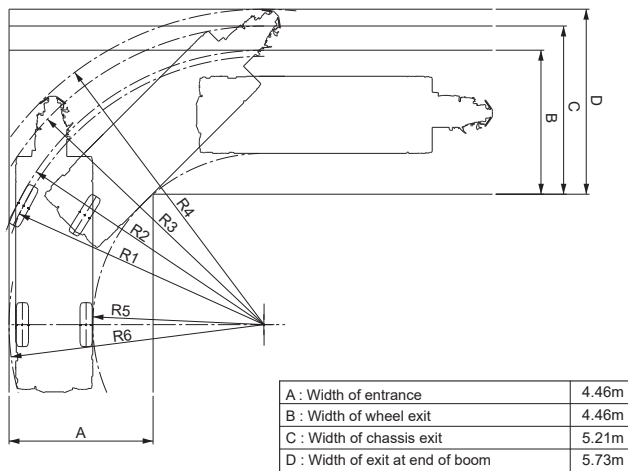
Right turn in two-wheel steering mode



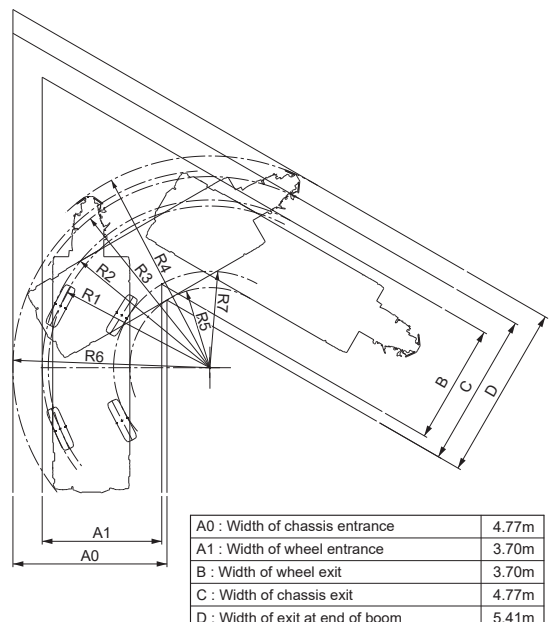
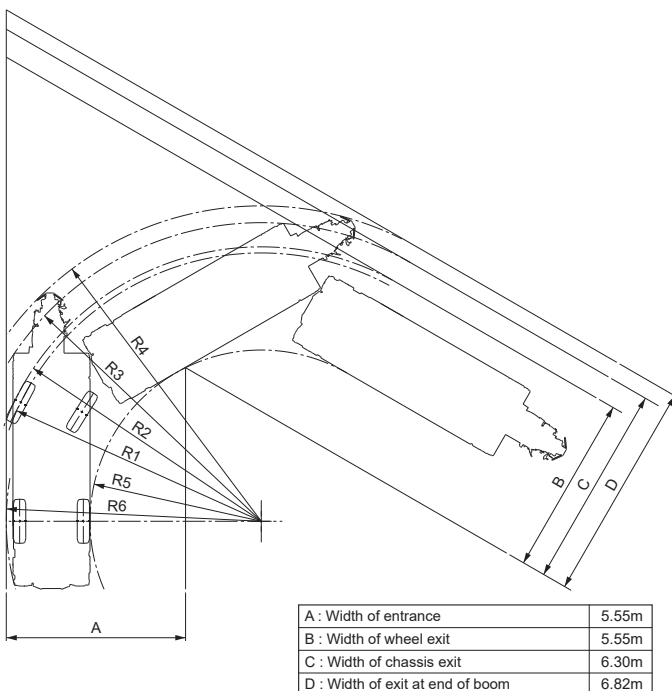
Right turn in 4-wheel steering mode



● 90°

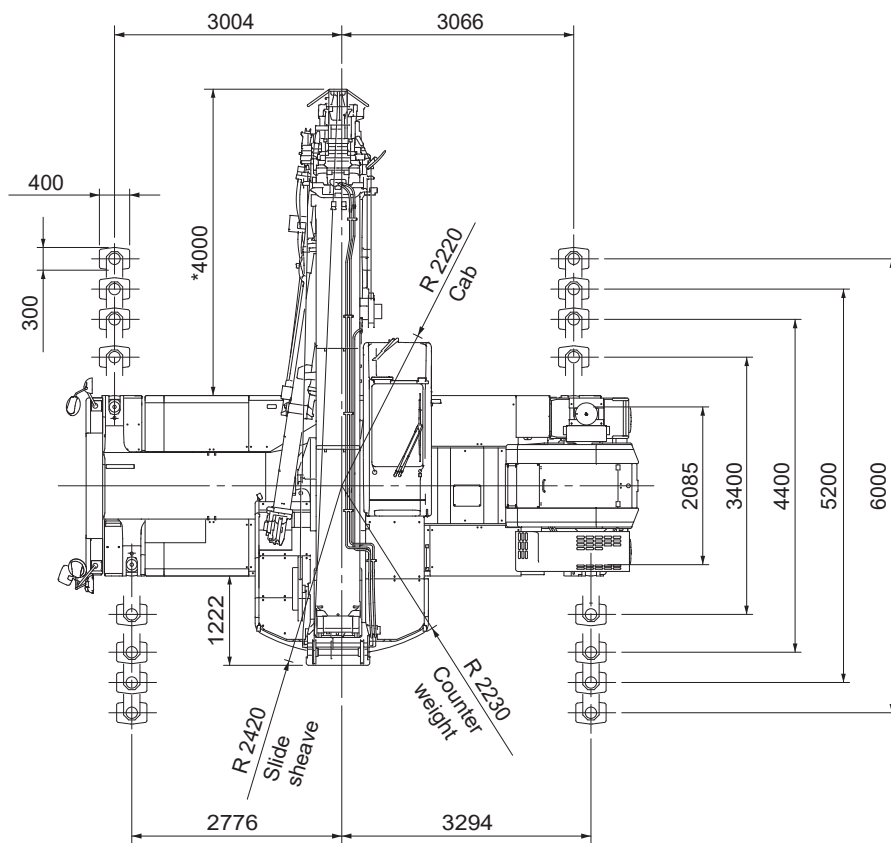
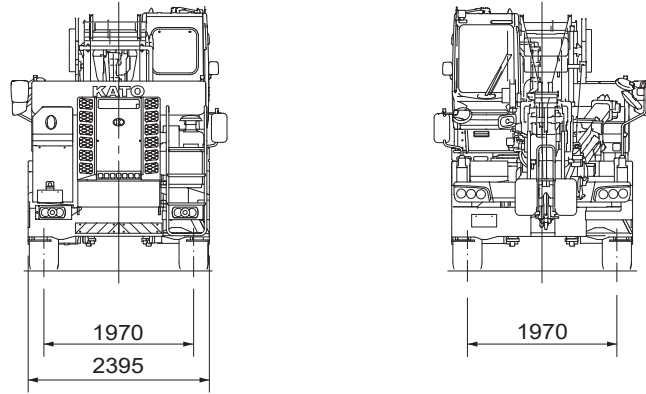


● 120°



Note: The above values are based on calculations.

Overall view

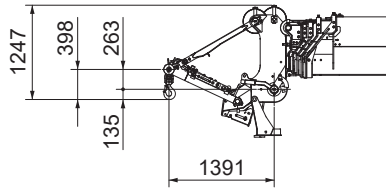


Reduced scale: 1/100 Unit (mm)

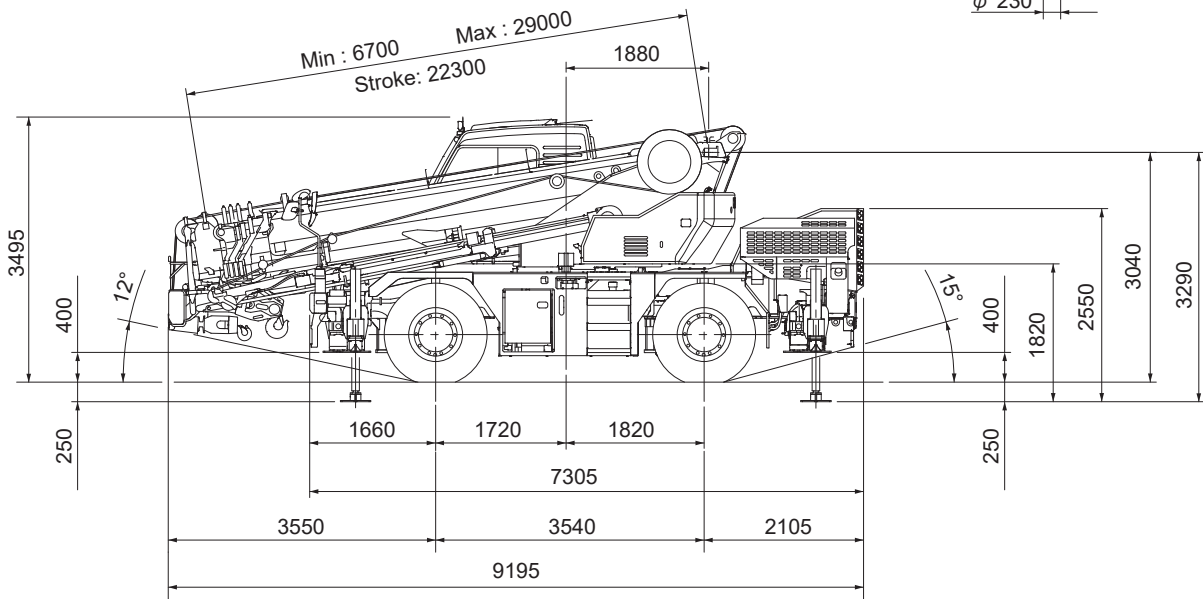
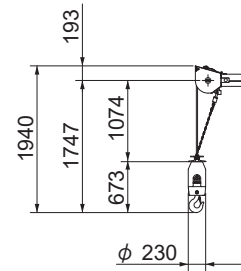
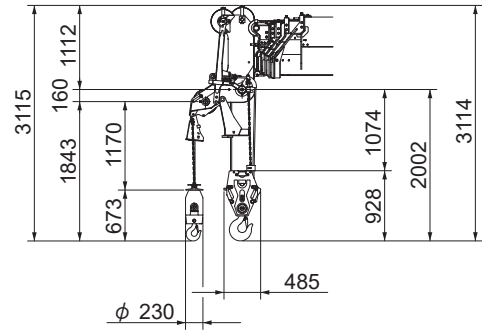
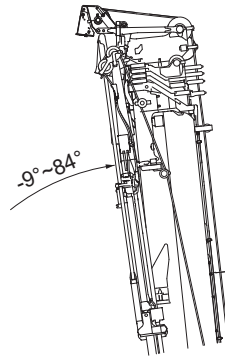
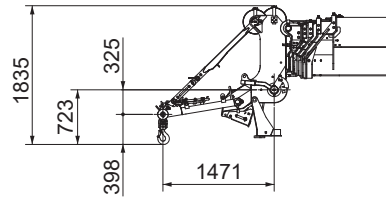
*Indicates the dimension when the boom is horizontal

Overall view

Searcher hook (Option)
High position



Low position



Ramp break over angle: 20.5°
When the suspension is locked, the height shall be the overall height: - 40 mm.
(Suspension cylinder completely retracted)

Reduced scale: 1/100 Unit (mm)

* KATO products and specifications are subject to improvements and changes without notice.

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