



Tadano Rough Terrain Crane

GR-600N

(5-section boom, 2-section full automatic jib, H-type outriggers)

Specifications

Spec. No. GR-600N-3-00101

TADANO LTD.

Control No. JA-01

GR-600N (III)

5-section boom
2-section full automatic jib
H-type outriggers



■ Specifications

● Crane

Crane capacity	10.3 m boom	60,000 kg × 1.8 m (13 parts of line)
	14.1 m boom	35,000 kg × 4.0 m (7 parts of line)
	17.8 m boom	35,000 kg × 3.5 m (7 parts of line)
	25.4 m boom	20,300 kg × 5.5 m (5 parts of line)
	33.6 m boom	14,000 kg × 6.5 m (4 parts of line)
	37.3 m boom	11,000 kg × 8.0 m (4 parts of line)
	40.0 m boom	7,600 kg × 12.0 m (4 parts of line)
	41.2 m boom	7,200 kg × 11.0 m (4 parts of line)
	8.5 m jib	3,800 kg × 16.0 m (1 part of line)
	13.7 m jib	2,500 kg × 20.0 m (1 part of line)
	Single top	5,000 kg (1 part of line)
	Maximum lifting height	Boom 42.6 m Jib 55.8 m
Maximum load radius	Boom	36.0 m (standard), 38.0 m (Smart Chart)
	Jib	40.0 m (standard), 42.0 m (Smart Chart)
Boom length		10.3 m to 41.2 m
Boom telescoping length		30.9 m
Boom extension speed		30.9 m/127 s
Jib length		8.5m to 13.7 m
Hoist up speed (rope speed)	Main	127 m/min (5th layer)
	Auxiliary	112 m/min (3rd layer)
Hook block hoist up speed	Main	18.1 m/min (7 parts of line)
	Auxiliary	112 m/min (1 part of line)
Hoist down speed (rope speed) [reference]	Main	Standard: 127 m/min (5th layer), high-speed: 195 m/min (5th layer)
	Auxiliary	Standard: 106 m/min (3rd layer), high-speed: 163 m/min (3rd layer)
Boom elevating angle		0 to 83.5°
Boom raising speed		0 to 83.5°/48 s
Slewing angle		360° continuous
Slewing speed		2.2 min⁻¹ (rpm)
Wire rope	Main	Dia. 16 mm x length 230 m rotation-resistant wire rope
	Auxiliary	Dia. 16 mm x length 120 m rotation-resistant wire rope
Boom		Round-construction, 5-section hydraulic telescoping type (2nd section sequential, 3rd/4th/5th sections synchronized)
Boom telescoping system		2 double-acting direct-pushing hydraulic cylinders, 2 wire-rope boom telescoping systems
Jib type		Quick-turn type (stored alongside and below boom) 2-section (hydraulically telescoping), offset (5-60°) Hydraulic stepless tilt type
Single top		Fixed to top boom
Hoisting system		Hydraulic motor driven planetary gear speed reducer, automatic brake, high-speed hoist down, 2 single winches, with pressure compensating flow control valve
Boom elevating system		1 double-acting direct-pushing hydraulic cylinder, with pressure compensating flow control valve
Slewing system		Hydraulic motor driven planetary gear speed reducer, ball bearing, slewing free/lock interchangeable, negative brake
Outriggers		Fully hydraulic H-type (floats mounted integrally), slides and jacks with independent operation device Extension width: maximum 7.6 m; middle 7.2 m, 6.5 m, 5.28 m, 4.28 m; minimum 2.36 m
Operation method		Electric operated
Maximum load of outrigger		35.8 t
Power take off		PTO wet multiplate clutch type
Hydraulic pump		Tandem variable piston pump, tandem gear pump
Safety devices		Lord moment indicator (LMI), slewing automatic stop device, elevation slow stop device, anti-two-block device, working range limiter, outrigger extension width detector, boom telescoping cylinder hydraulic lock, boom elevating cylinder hydraulic lock, power tilt cylinder hydraulic lock, level gauge, hydraulic safety valve, jack cylinder hydraulic lock, slewing lock, jib telescoping cylinder hydraulic lock, hook safety latch
Standard equipment		Full automatic air conditioner with dehumidifier, hydraulic oil temperature gauge, loudspeaker, AM/FM radio, oil cooler, visual drum rotation indicator, drum rotation beeper, slewing motion beeper Operating pedals...ISO layout: for boom telescoping and auxiliary winch Tadano layout: for boom elevating and boom telescoping Radio controller for work preparation, telematics, wireless LAN communication terminal, fuel consumption monitor, eco mode, hydraulic oil clogging alarm
Accessories		Wood blocks (4 pcs.), aluminum pads (4 pcs.)

● Carrier

Engine	Vehicle name/model	Tadano YDS-T016
	Model	Cummins QSL9-4B (with turbocharger, intake air cooling, urea SCR system)
	Type	Water-cooled, 4-cycle, 6-cylinder, direct injection diesel engine
	Displacement	8,849 L
	Maximum output	283 kW (385PS)/1,900min⁻¹ (rpm)
	Maximum torque	1,627 N·m (166kgf·m)/1,500min⁻¹ (rpm)
Torque converter		3-element 1-section (with automatic lockup mechanism)
Transmission		Automatic and manual transmission, power shift type (wet multiplate clutch) 4 forward and 1 reverse speeds (with Hi/Low settings)
Speed Reducer		Axle two-stage deceleration (2nd, 3rd axles)
Driving method		4WD (6 x 4)
Axe (all axles)		Full-floating type
Suspension (all axles)		Hydraulic pneumatic suspension (with hydraulic lock cylinder)
Steering		Fully hydraulic power steering
Brakes	Main brake	Hydro-pneumatic disk brake
	Parking brake	Air drive shaft internal expanding type (3rd axle)
	Auxiliary brake	Permanent-magnetic retarder, engine retarder, auxiliary operating brake
Frame		Welded box-shaped structure
Batteries		12V-120Ah x 2 (24V)
Fuel tank capacity		400 L
Urea water tank		38 L
Tires	Front wheels	385/95 R25 170E road
	Rear wheels	385/95 R25 170E road
Cab		Crew capacity: 1 person, with interior fittings, liquid-sealed rubber mounting type (viscous), fully adjustable seat (with headrest, armrests, seat belt), adjustable handle (tilt, telescoping), intermittent front and ceiling wipers (with washers), power windows, side visors
Safety devices		Emergency steering device, suspension lock unit, rear wheel steering lock device, engine over-run alarm, over-shift prevention device, parking brake alarm, boom left/right side cameras, radiator fluid level warning device, hydraulic oil leak warning device
Standard equipment		Electromotive retractable mirror with heater, overview video display, Immobilizer, tire chocks, LED headlamps, human alert

● Options

Winch drum monitoring camera, remote control searchlight, AML external warning lamp, position lamps, marker lamps, LED marker lamps, external auditory alarms, centralized lubrication system, halogen head lamps, rear monitoring work camera, anemometer, LED flood lamps

● Dimensions when traveling

Overall length	12,895 mm
Overall width	2,780 mm
Overall height	3,720 mm
Wheel base	1,850 mm + 4,450 mm
Wheel track	Front wheels 2,330 mm Rear wheels 2,330 mm

● Running performance

Maximum speed	49 km/h
Gradability (tanθ)	0.46
	6.7 m (6 wheel steering)
Minimum turning radius	11.0 m (front 4 wheel steering)

● Weight

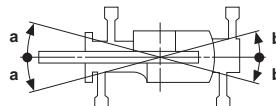
Gross vehicle weight	36,195 kg
Front/front axle load	11,705 kg
Front/rear axle load	10,745 kg
Rear axle load	13,745 kg

● Maximum jack reaction force (Maximum load of outrigger)

Boom	35.8 t
Jib	27.4 t

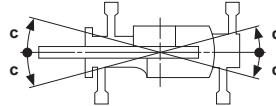
■ Precautions concerning rated lifting capacity table (when using outriggers)

- The rated lifting capacities assume that the crane is set horizontally on firm ground, and include the weight of the lifting devices and main winch hook block (35 t hook block: 310 kg) when working with the boom, and the weight of the lifting devices and auxiliary winch hook block (100 kg) when working with the jib. The values above the thick line are based on the structural strength while those below are based on the crane stability factor.
- The load radius is based on the actual figure including the boom deflection, so always use the load radius as the standard when working with the boom.
- When using the single top, the number of parts of line is 1.
The rated lifting capacity for the single top is the value obtained by subtracting 210 kg from the boom rated lifting capacity, and includes the weight of the lifting devices and auxiliary winch hook block (100 kg), and must not exceed 5.0 t.
- High-speed hoist down should only be used when only the hook block is being lowered. Also, sudden lever operations should be avoided.
- The standard hook block and standard number of parts of line for each boom length is listed in each rated lifting capacity chart for the boom. However, when using other number of parts of line, the load per line must not exceed 5.0 t for main winch wire rope, or 5.0 t for auxiliary wire rope.
- When using the jib, the number of parts of line is 1.
- The lifting capacity in the over-side area depends on the extension width of the outriggers. Perform work within the capacity according to the extension width. The lifting capacity for the over-front and over-rear areas is the rated lifting capacity of the "extension width of outriggers 7.6 m," but the range (angle a, b) in the over-front and over-rear areas depends on the combination for over-front and over-rear outrigger extension widths in use.



		Over-front area								Over-rear area							
		Front outrigger extension								Front outrigger extension							
Angle a°		Maximum extension	Middle extension			Minimum extension			Angle b°		Maximum extension	Middle extension			Minimum extension		
Rear outrigger extension	Maximum extension	7.6 m	90	35	25	15	10	5	Rear outrigger extension	Maximum extension	7.6 m	90	70	35	30	25	20
	7.2 m	70	30	25	15	10	5	7.2 m		70	30	30	25	20	20		
	6.5 m	35	30	20	15	10	5	6.5 m		25	25	20	20	15	15		
	5.28 m	30	25	20	10	5	5	5.28 m		15	15	15	10	10	10		
	4.28 m	25	20	15	10	5	5	4.28 m		10	10	10	5	5	5		
	Minimum extension	2.36 m	20	15	15	10	5	-		Minimum extension	2.36 m	5	5	5	5	5	

- In the Smart Chart capacity, the over-front and over-rear areas (angle c, d) in which work can be performed vary depending upon the combination of front and back outrigger extension widths in use. Additionally, the over-side lifting capability will be the standard capacity corresponding to the extension width of the outriggers.



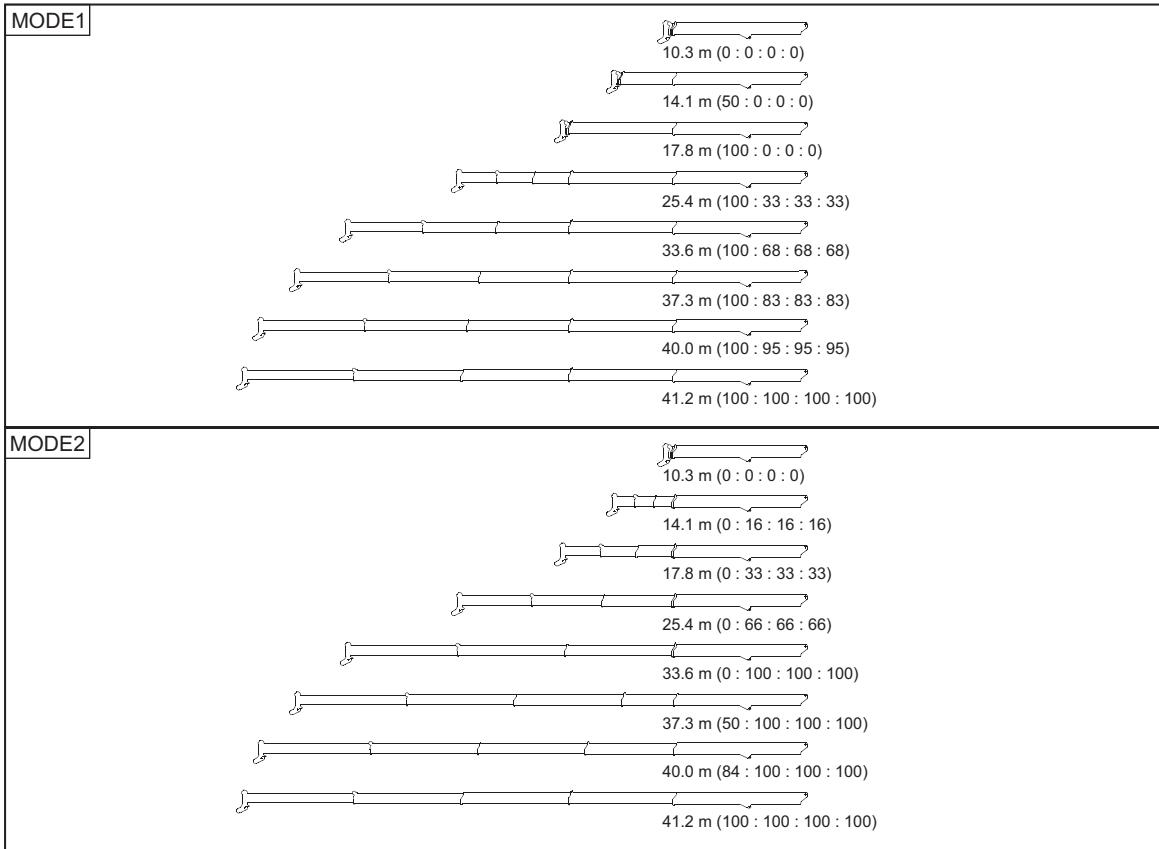
		Over-front area								Over-rear area							
		Front outrigger extension								Front outrigger extension							
Angle c°		Maximum extension	Middle extension			Minimum extension			Angle d°		Maximum extension	Middle extension			Minimum extension		
Rear outrigger extension	Maximum extension	7.6 m	45	30	20	15	10	5	Rear outrigger extension	Maximum extension	7.6 m	25	25	25	25	20	20
	7.2 m	45	25	20	10	10	5	7.2 m		25	25	25	20	20	15		
	6.5 m	30	25	20	10	5	5	6.5 m		20	20	20	15	15	10		
	5.28 m	25	20	15	10	5	5	5.28 m		15	10	10	10	5	5		
	4.28 m	20	20	15	10	5	5	4.28 m		10	10	5	5	5	5		
	Minimum extension	2.36 m	15	15	10	5	5	-		Minimum extension	2.36 m	5	5	5	5	-	

Explanation of symbols used in rated lifting capacity table

	Indicates boom rated lifting capacity.		Indicates load radius.
	Indicates full automatic jib (FAJ) rated lifting capacity.		Indicates boom telescoping condition (telescoping ratio %). MODE indicates boom telescoping mode.
	Indicates extension width of outriggers.		Indicates boom elevation angle range in which operation is possible without load.
	Indicates slewing range in which lifting may be performed.		Indicates jib length for full automatic jib (FAJ).
	Indicates that work can be performed with the Smart Chart capacity, if Smart Chart is available.		Indicates full automatic jib (FAJ) offset angle, which is the angle between the centerlines of the boom and jib.
	Indicates rated lifting capacity unit.		Indicates standard number of parts of line.
	Indicates boom length.		Indicates standard hook block.

■ Boom telescoping mode

There are two types of boom telescoping modes, "telescoping mode 1" (2nd boom section extends first) and "telescoping mode 2" (3rd/4th top boom section extends first). "Telescoping mode 1" prioritizes strength capacity zone, "telescoping mode 2" prioritizes stability zone. Boom lengths and telescoping ratio for each telescoping mode are as shown in the illustration below. The boom telescoping mode cannot be selected unless the boom is fully retracted or extended.

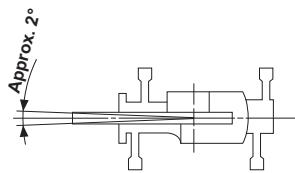


■ Boom rated lifting capacity table

			MB	Smart Chart	JPN											
			10.3	14.1	14.1											
m		17.8	17.8	25.4	25.4											
1.8		35.00	20.30	20.30	16.80											
2.1		35.00	20.30	35.00	20.30											
2.5		35.00	20.30	35.00	20.30											
3.0		50.00	35.00	20.30	20.30											
3.5		42.00	35.00	20.30	35.00											
4.0		39.20	35.00	20.30	34.50											
4.5		36.60	34.70	20.30	32.50											
5.0		34.10	32.60	20.30	30.70											
5.5		30.70	30.40	20.30	29.00											
6.0		27.70	27.50	20.30	27.20											
6.5		25.20	24.90	20.30	24.70											
7.0		23.10	22.80	20.30	22.60											
8.0		19.20	20.30	19.00	20.30											
9.0		15.80	17.10	15.60	17.50											
10.0		13.30	14.50	13.10	14.90											
11.0		11.30	12.50	11.10	12.90											
12.0				9.60	11.30											
14.0				7.20	8.90											
16.0					6.30											
18.0					4.80											
20.0					3.70											
22.0					2.80											
24.0					2.60											
26.0					2.10											
28.0					1.60											
30.0					1.30											
32.0																
34.0																
36.0																
38.0																
		0	50	0	100											
%		1	2	16	0											
MODE		2	3	4	1,2											
		[DEG]	0 - 83.5						[DEG]							
		*13/10	7	5	7	5	4	4	4	4	4	4	4	4		
		Heavy load lifting device	35 t													

■Precautions concerning rated lifting capacity table (when on-rubber)

- The rated lifting capacities assume that the crane is set horizontally on firm ground, the tires are at the standard pressure (900 kPa (9.00 kgf/cm²)) and the suspension cylinders are fully retracted, and for boom lift, include the weight of the lifting devices and main winch hook block (35 t hook block: 310 kg). The values above the thick line are based on the structural strength while those below are based on the crane stability factor. When performing actual work, use after considering the ground and operating conditions, etc.
- The load radius is based on the actual figure including boom and tire deflection, so always use the load radius as the standard.
- The standard number of parts of line on the hook block for each boom length is listed in each rated lifting capacity table for on-rubber operation. However, when using other number of parts of line, the load per line must not exceed 5.0 t for main winch wire rope or 5.0 t for auxiliary winch wire rope.
- Only perform crane operations in the front area while the AML "front position symbol" is lit. The front area is when the boom is within 2° of the front of the carrier.
- When using the single top, the standard number of parts of line is 1. The rated lifting capacity for the single top is the value obtained by subtracting 210 kg from the boom rated lifting capacity, and includes the weight of the lifting devices and auxiliary winch hook block (100 kg), and must not exceed 5.0 t.
- Do not perform high-speed hoist down, boom lift operation with a boom longer than 17.8 m, or use of a jib.
- Perform pick and carry with the "drive mode selector" switch set to "Lo differential lock" and the shift switch set to first gear.
- Perform pick and carry with the slewing brake on, the load close to the ground so it will not swing, and at a speed of 1.6 km or lower. In particular, abrupt steering, starting or braking must be avoided.
- Do not perform crane operations while performing pick and carry.



Explanation of symbols used in rated lifting capacity table

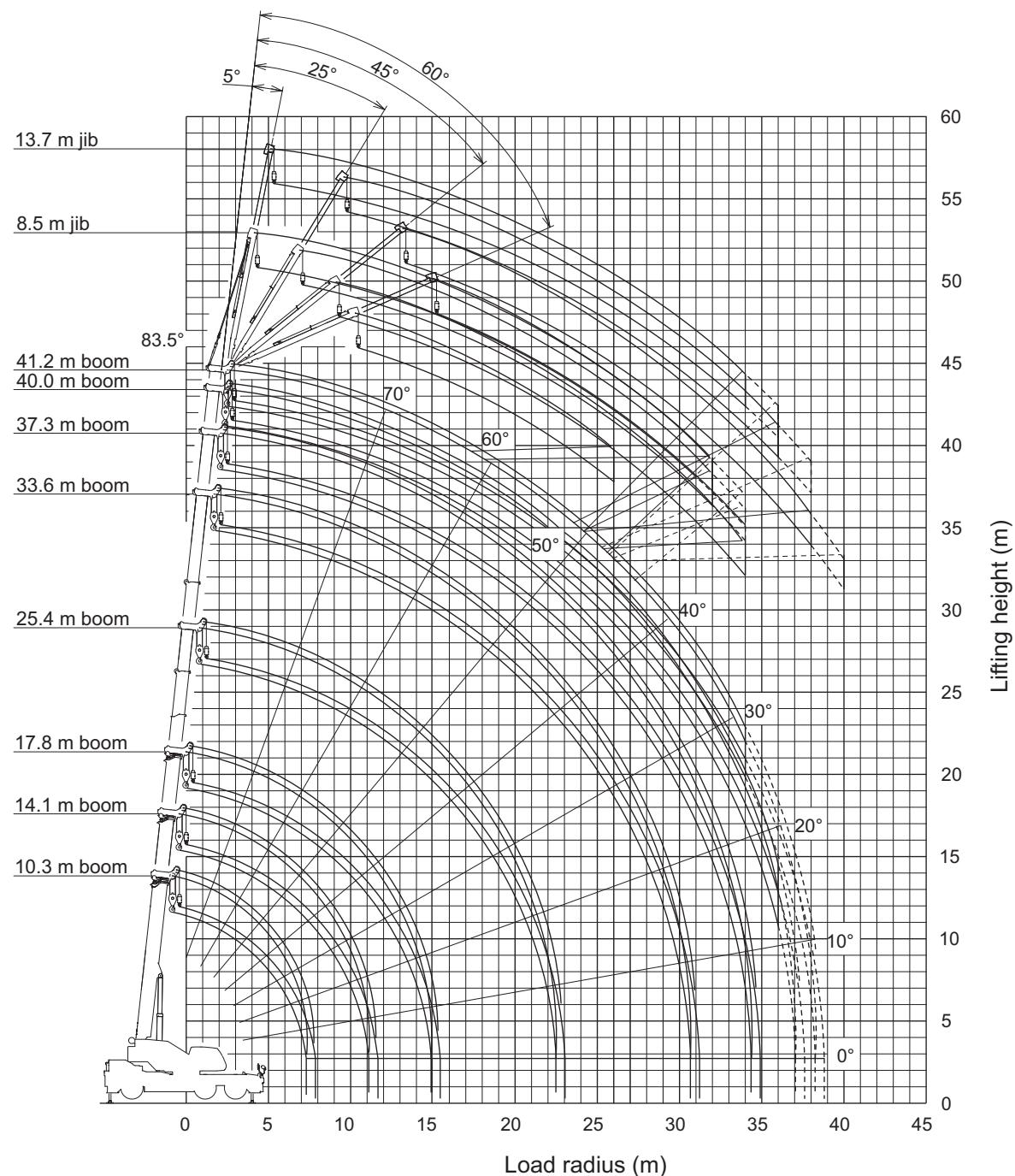
	Indicates boom rated lifting capacity.		Indicates rated lifting capacity unit.
	Indicates on-rubber stationary.		Indicates boom length.
	Indicates on-rubber creeping (1.6 km/h or less).		Indicates boom telescoping condition (telescoping ratio %). MODE indicates boom telescoping mode.
	Indicates slewing range in which lifting may be performed.		Indicates boom elevation angle range in which operation is possible without load.
Front	For front, indicates front-only.		Indicates standard number of parts of line.
			Indicates standard hook block.

■Rated lifting capacity table for on-rubber operation

	m	10.3	14.1	14.1	17.8	17.8					m
3.0	6.80	6.60	7.30	6.40	7.60						3.0
3.5	5.90	5.70	6.40	5.50	6.70						3.5
4.0	5.10	4.90	5.70	4.80	6.00						4.0
4.5	4.40	4.20	5.00	4.10	5.30						4.5
5.0	3.90	3.70	4.50	3.50	4.80						5.0
5.5	3.40	3.10	4.00	3.00	4.30						5.5
6.0	2.90	2.70	3.50	2.50	3.80						6.0
6.5	2.50	2.30	3.10	2.10	3.40						6.5
7.0	2.10	1.90	2.70	1.80	3.10						7.0
8.0		1.30	2.10	1.10	2.40						8.0
9.0		0.75	1.60	0.60	1.90						9.0
10.0			1.20		1.50						10.0
11.0			0.80		1.10						11.0
12.0					0.80						12.0
1	0	50	0	100	0						1
2	0	0	16	0	33						2
3	0	0	16	0	33						3
4	0	0	16	0	33						4
MODE	1,2	1	2	1	2						MODE
	[DEG]	0 - 83.5	32 - 83.5	5 - 83.5	60 - 83.5	23 - 83.5					[DEG]
	4	4	4	4	4						
						35 t					
	m	10.3	14.1	14.1	17.8	17.8					m
3.0	5.70	5.60	6.20	5.50	6.50						3.0
3.5	5.00	4.80	5.50	4.70	5.70						3.5
4.0	4.30	4.20	4.80	4.00	5.10						4.0
4.5	3.80	3.60	4.30	3.50	4.50						4.5
5.0	3.30	3.10	3.80	3.00	4.10						5.0
5.5	2.80	2.70	3.40	2.50	3.60						5.5
6.0	2.50	2.30	3.00	2.20	3.20						6.0
6.5	2.10	1.90	2.60	1.80	2.90						6.5
7.0	1.80	1.60	2.30	1.50	2.60						7.0
8.0		1.10	1.80	0.95	2.10						8.0
9.0		0.65	1.40	0.50	1.60						9.0
10.0			1.00		1.30						10.0
11.0			0.70		0.95						11.0
12.0					0.70						12.0
1	0	50	0	100	0						1
2	0	0	16	0	33						2
3	0	0	16	0	33						3
4	0	0	16	0	33						4
MODE	1,2	1	2	1	2						MODE
	[DEG]	0 - 83.5	31 - 83.5	5 - 83.5	51 - 83.5	29 - 83.5					[DEG]
	4	4	4	4	4						
						35 t					
	m	10.3	14.1	14.1	17.8	17.8					m
3.0	4.30	4.10	5.00								3.0
3.5	3.40	3.20	4.10	3.00	4.40						3.5
4.0	2.70	2.40	3.30	2.30	3.70						4.0
4.5	2.00	1.80	2.70	1.70	3.10						4.5
5.0	1.50	1.30	2.20	1.20	2.60						5.0
5.5	1.10	0.90	1.80	0.75	2.10						5.5
6.0	0.75	0.55	1.40		1.70						6.0
6.5			1.10		1.40						6.5
7.0			0.80		1.10						7.0
8.0					0.70						8.0
9.0											9.0
10.0											10.0
11.0											11.0
12.0											12.0
1	0	50	0	100	0						1
2	0	0	16	0	33						2
3	0	0	16	0	33						3
4	0	0	16	0	33						4
MODE	1,2	1	2	1	2						MODE
	[DEG]	32 - 66	54 - 70	45 - 70	65 - 73	53 - 73					[DEG]
	4	4	4	4	4						
						35 t					

■Working range chart

Scale: 1/400



Note 1.The above drawing does not include boom and jib deflection.
 2.The above drawing shows outrigger maximum (7.6 m) extension.
 3.The dotted lines in the above drawing show Smart Chart capacity use.

■Working area diagram

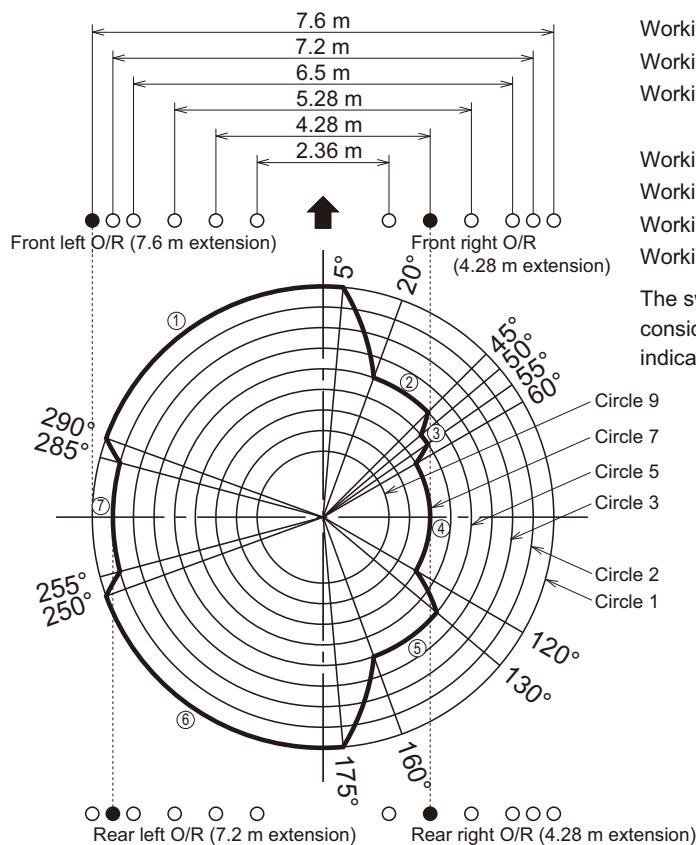
Standard capacity

The size of the circles shown in the drawing of working areas corresponds to performances as determined by outrigger extension widths.

		Applicable capacity (boom lift)	Applicable capacity (jib lift)
Circle 1	7.6 m	○	○
Circle 2	7.2 m	○	○
Circle 3	6.5 m	○	○
Circle 4	(6.0 m)	○	○
Circle 5	5.28 m	○	○
Circle 6	(4.8 m)	○	○
Circle 7	4.28 m	○	○
Circle 8	(3.5 m)	○	\\ \\
Circle 9	2.36 m	○	\\ \\

-Example-

When performing boom lift using the outrigger extension widths shown in the drawing, the capacity and range per each working area will be as listed below.



Working area ① Maximum extension (7.6 m) capacity

Working area ②: Middle extension (5.28 m) capacity

Working area ③: Interpolated capacity value based on extension width of outriggers (4.8 m)

Working area ④: Middle extension (4.28 m) capacity

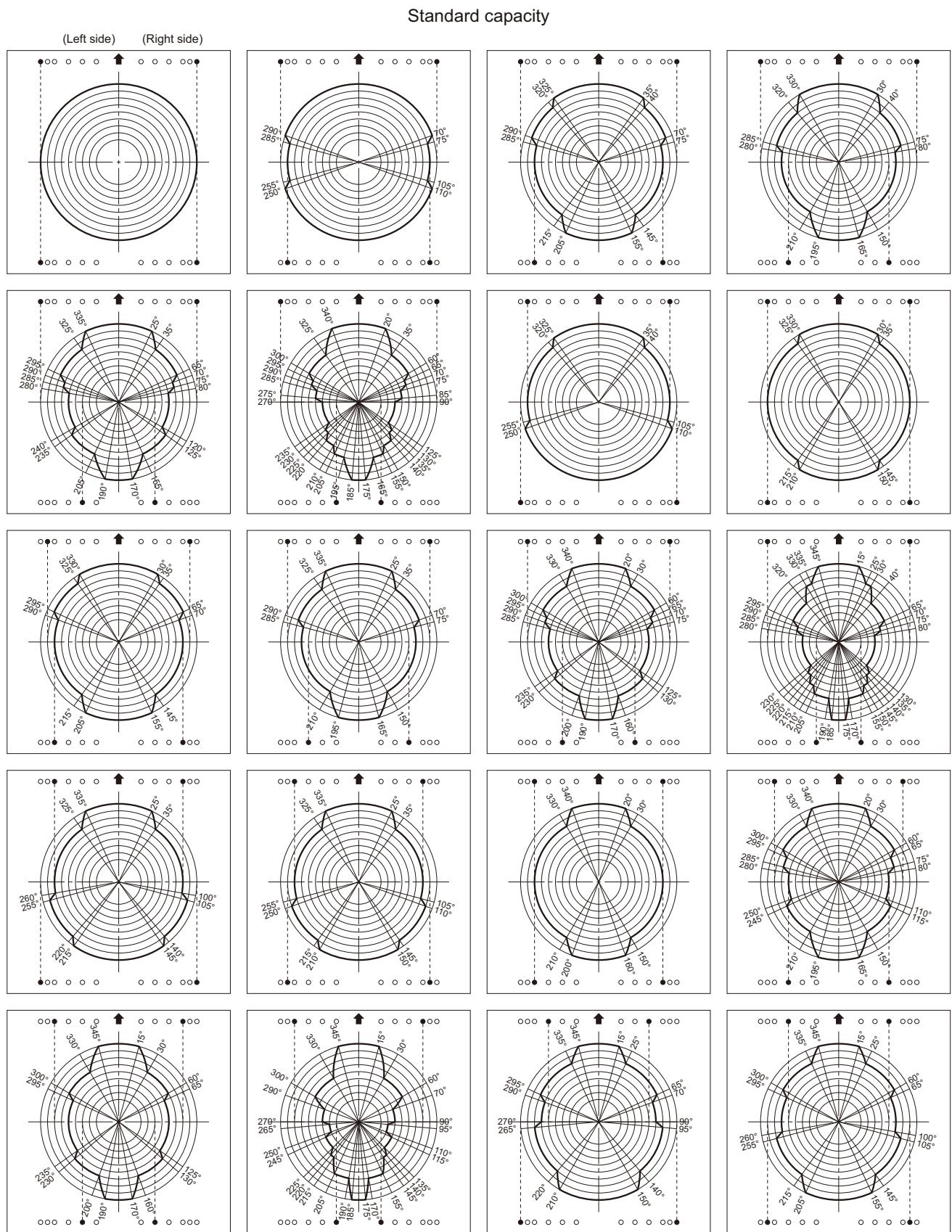
Working area ⑤: Middle extension (5.28 m) capacity

Working area ⑥: Maximum extension (7.6 m) capacity

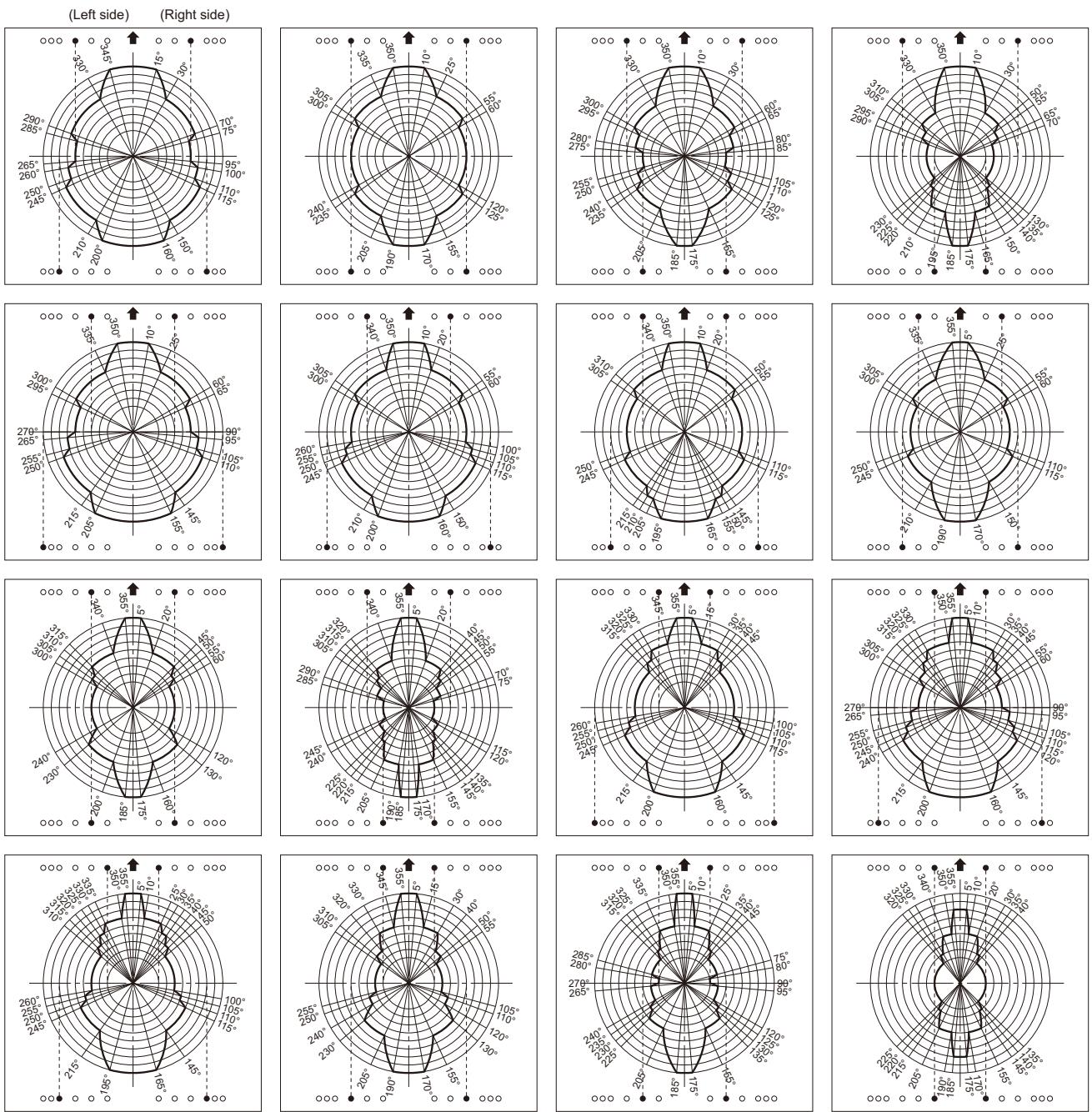
Working area ⑦: Middle extension (7.2 m) capacity

The switchover area connecting each capacity range is considered as 5°, with the increase/decrease in capacity indicated proportionally.

■Working area diagram



Standard capacity



■Working area diagram

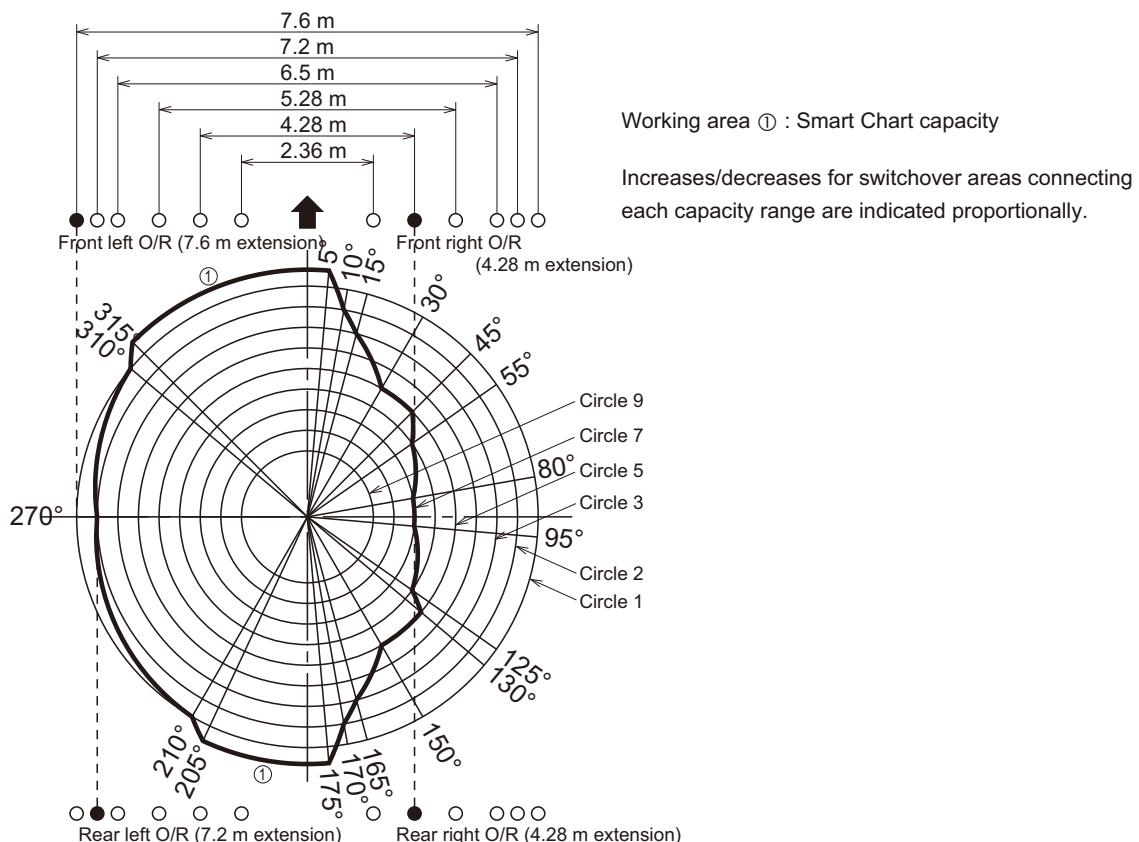
Smart Chart capacity

The size of the circles shown in the drawing of working area diagrams corresponds to capacities as determined by outrigger extension widths.

Area ①	Smart Chart	Applicable capacity (boom lift)	Applicable capacity (jib lift)
Circle 1	7.6 m	○	○
Circle 2	7.2 m	○	○
Circle 3	6.5 m	○	○
Circle 4	(6.0 m)	○	○
Circle 5	5.28 m	○	○
Circle 6	(4.8 m)	○	○
Circle 7	4.28 m	○	○
Circle 8	(3.5 m)	○	\\
Circle 9	2.36 m	○	\\\\

-Example-

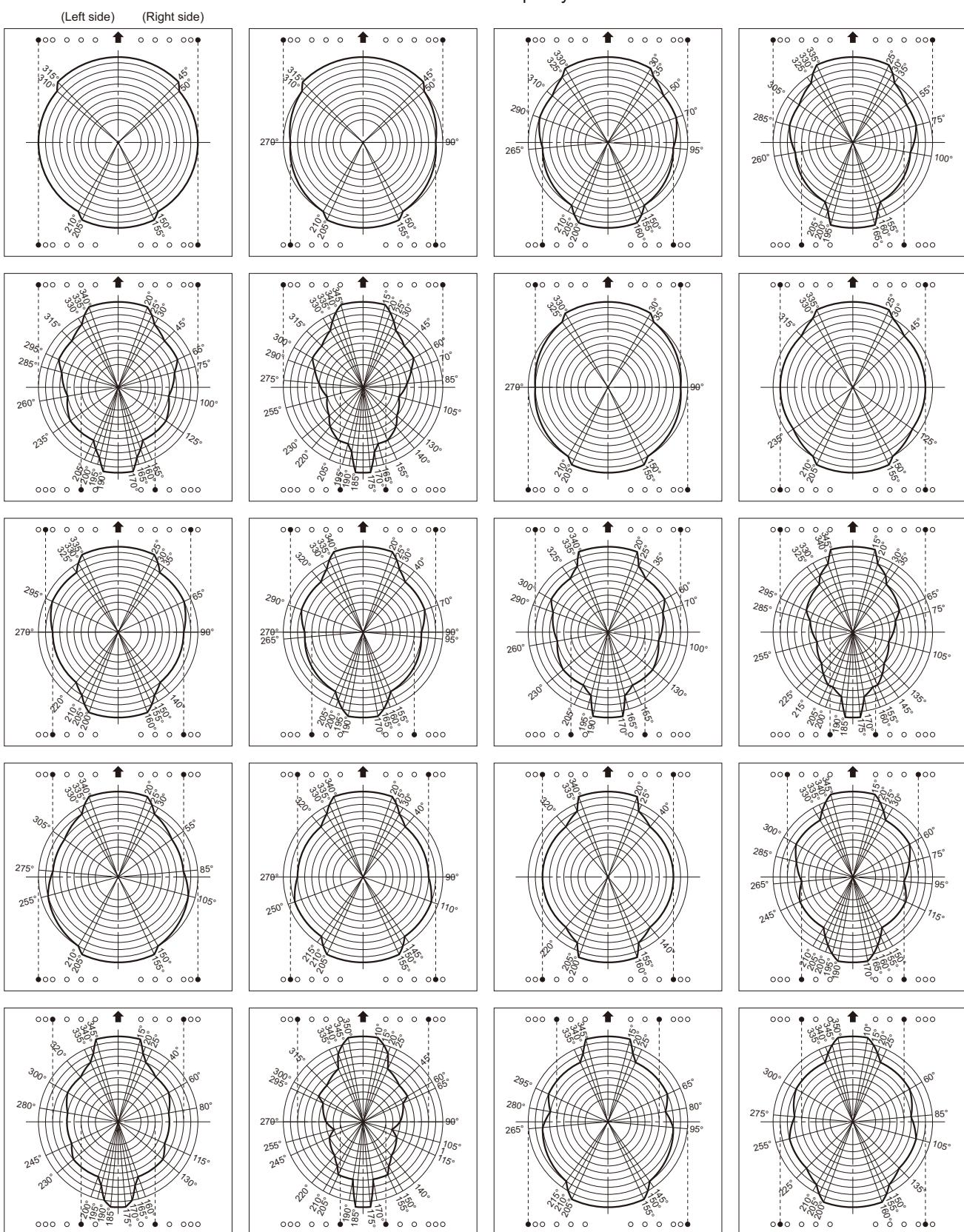
When performing boom lift using the outrigger extension widths shown in the drawing, the capacity and range per each working area will be as listed below.



■Working area diagram

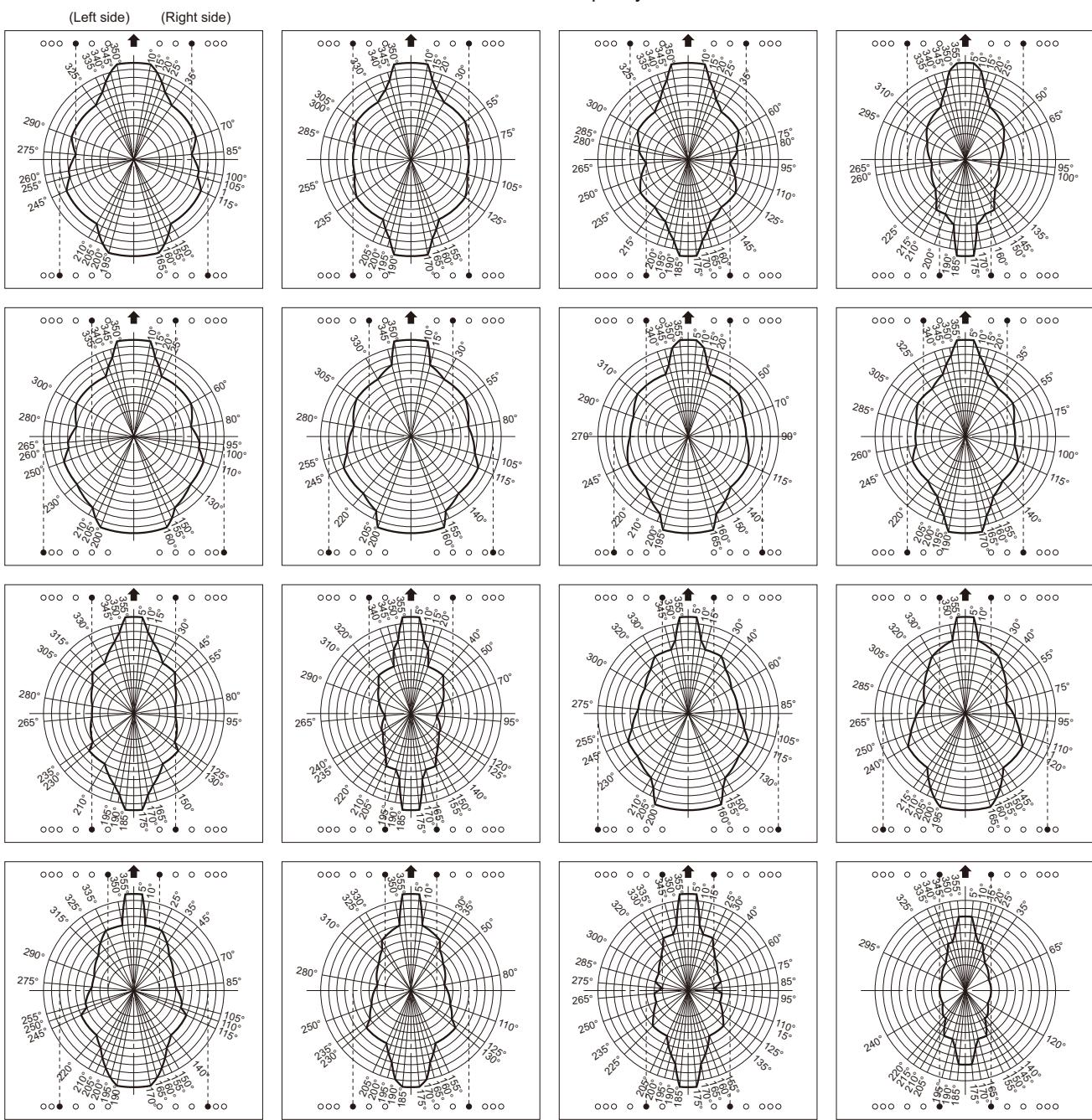


Smart Chart capacity



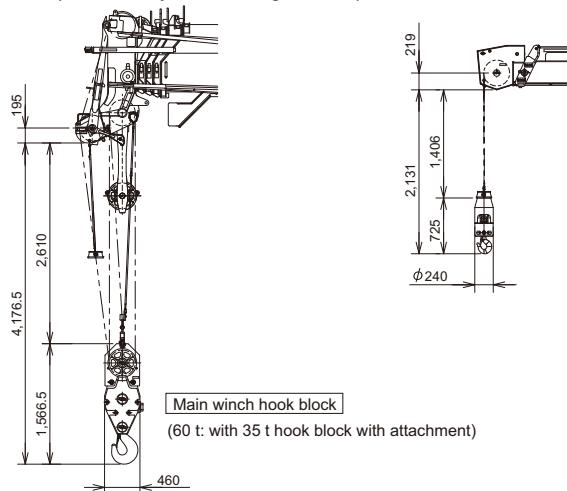


Smart Chart capacity



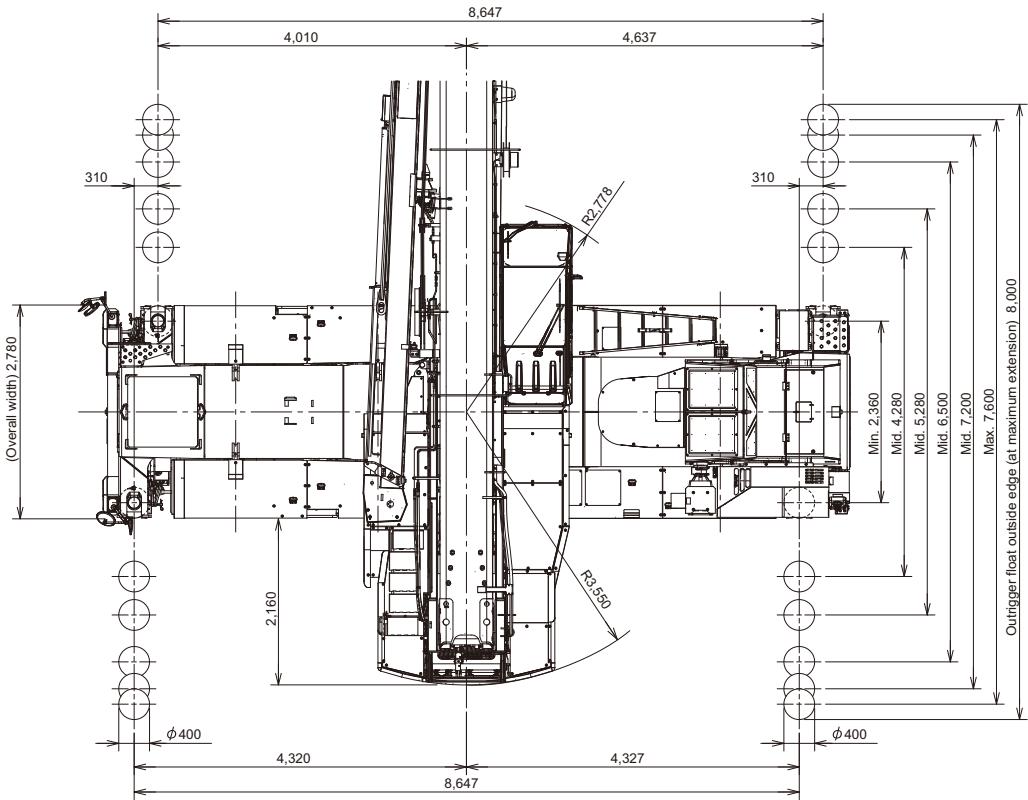
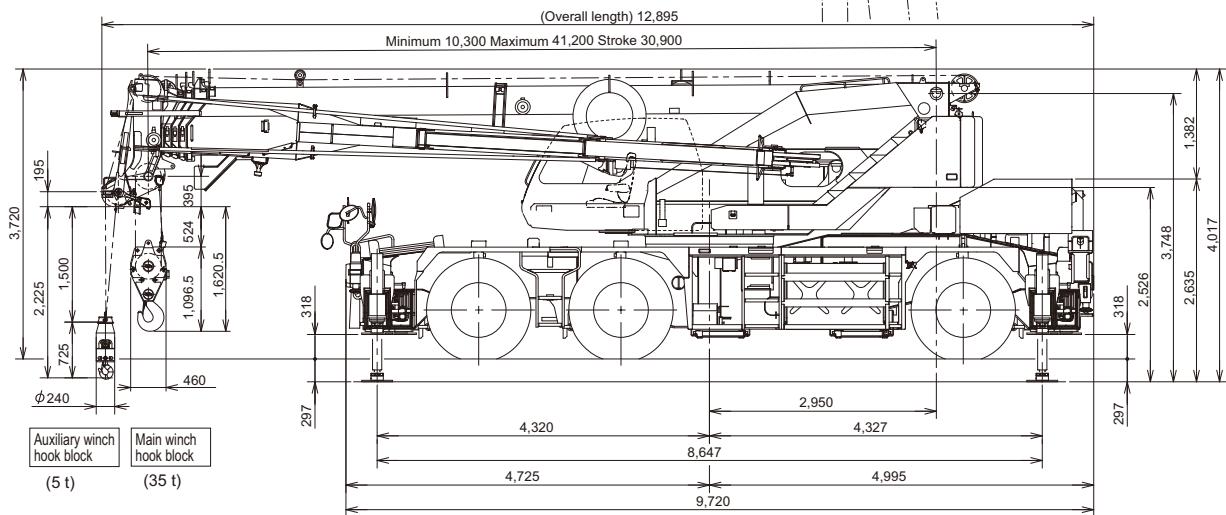
DIMENSIONS

Boom (with heavy-load lifting device)



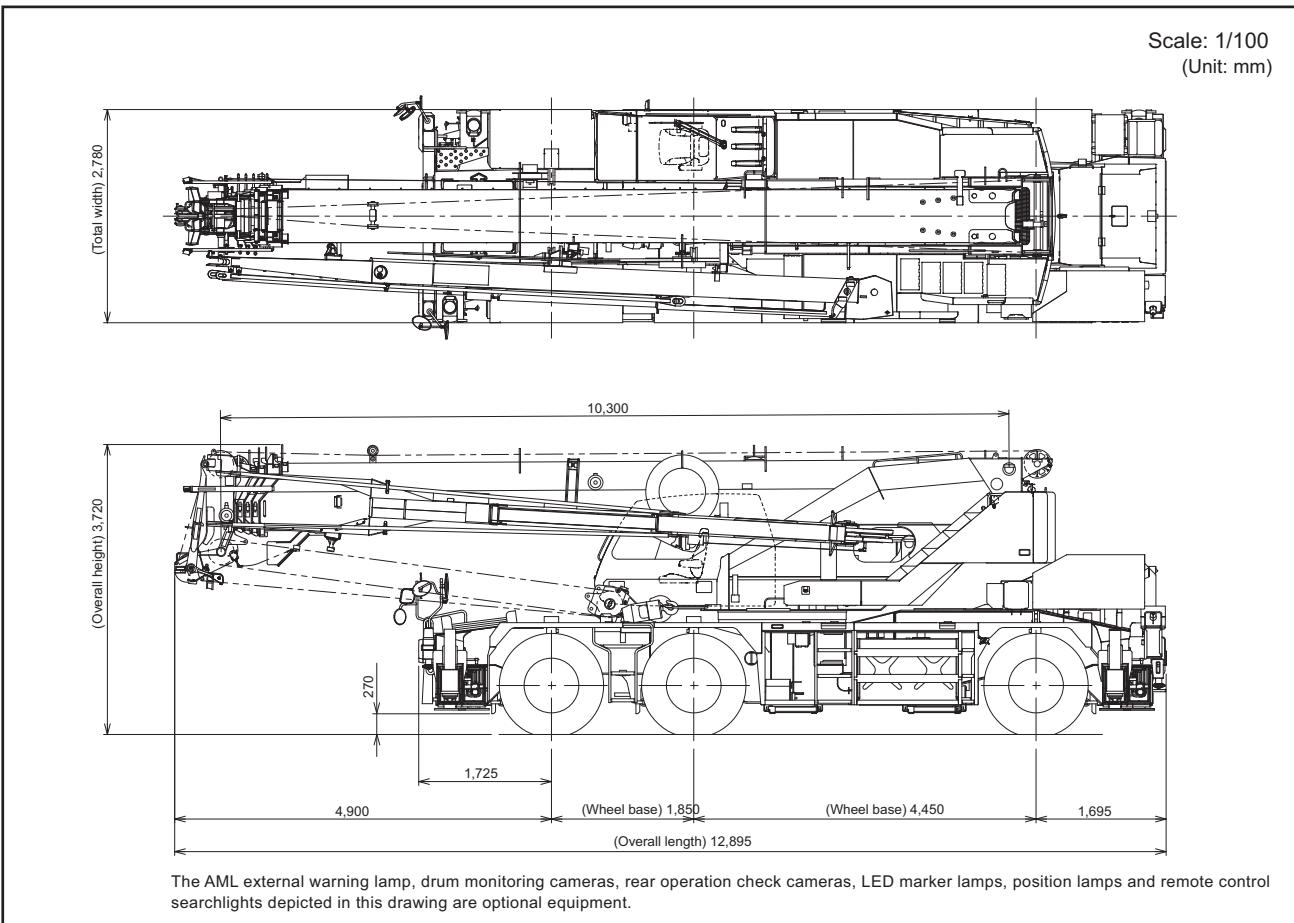
2-section full automatic jib

Scale: 1/100
(Unit: mm)



The AML external warning lamps, drum monitoring cameras, rear operation check cameras, LED marker lamps, position lamps and remote control searchlights depicted in this drawing are optional equipment.

DIMENSIONS



● This model has received a "Basic running conditions - weight: D" certificate of conformance under the Newly Developed Vehicle Certificate System, but the actual running conditions will be decided based on the calculations of the road administrator for each route.

Minimum right-angle passage width

When turning right using front 4-wheel steering

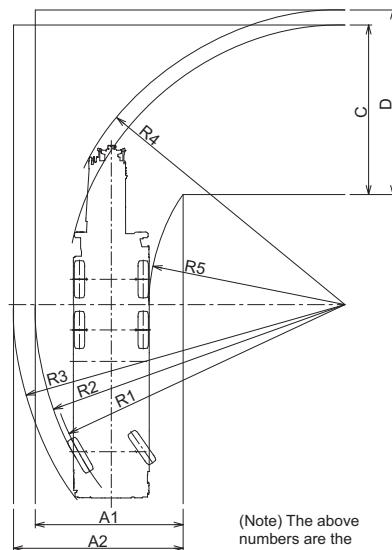
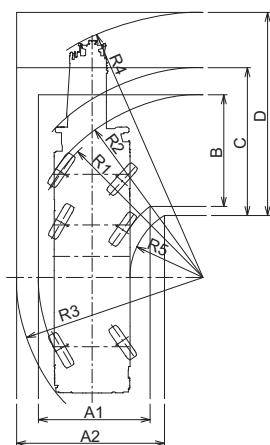
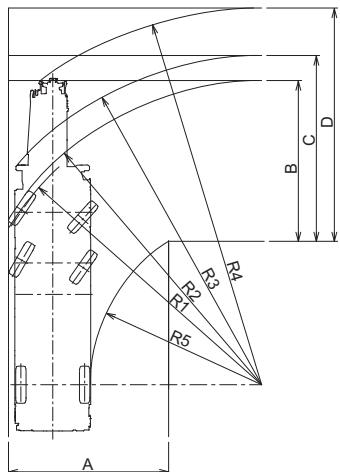
R1 = 11.00 m (minimum turning radius)
R2 = 11.19 m (outside tire edge turning radius)
R3 = 12.28 m (vehicle turning radius)
R4 = 13.85 m (boom head turning radius)
R5 = 6.25 m (vehicle inside turning radius)
A = 5.85 m (entrance passage width)
B = 5.85 m (tire exit passage width)
C = 6.77 m (vehicle exit passage width)
D = 8.50 m (boom head exit passage width)

When turning right using 6-wheel steering

R1 = 6.70 m (minimum turning radius)
R2 = 6.89 m (outside tire edge turning radius)
R3 = 7.14 m (vehicle turning radius)
R4 = 9.73 m (boom head turning radius)
R5 = 2.67 m (vehicle inside turning radius)
A1 = 4.08 m (tire entrance passage width)
A2 = 5.41 m (vehicle entrance passage width)
B = 4.08 m (tire exit passage width)
C = 5.41 m (vehicle exit passage width)
D = 7.43 m (boom head exit passage width)

When turning right using rear 2-wheel steering

R1 = 11.13 m (minimum turning radius)
R2 = 11.32 m (outside tire edge turning radius)
R3 = 12.11 m (vehicle turning radius)
R4 = 10.77 m (boom head turning radius)
R5 = 7.16 m (vehicle inside turning radius)
A1 = 5.42 m (tire entrance passage width)
A2 = 6.20 m (vehicle entrance passage width)
C = 6.20 m (vehicle exit passage width)
D = 6.75 m (boom head exit passage width)



Model name	Spec	Spec No.
GR-600N	60 t, 5-section boom 2-section full automatic jib, H-type outriggers	GR-600N-3-00101

Note: Due to improvements, specs for delivered products may differ slightly from those listed here.