

# GR-160N (III)

6-section boom  
1-section standard jib  
X-type/H-type outrigger



## SPECIFICATIONS

### ● CRANE

CRANE CAPACITY	6.5-m boom	16,000 kg x 3.0 m (6 parts of line)
	10.7-m boom	12,000 kg x 4.0 m (6 parts of line)
	14.9-m boom	9,000 kg x 4.5 m (4 parts of line)
	19.1-m boom	7,000 kg x 5.5 m (4 parts of line)
	23.3-m boom	5,000 kg x 6.0 m (4 parts of line)
	27.5-m boom	3,500 kg x 7.0 m (4 parts of line)
	3.8-m jib	2,000 kg x 70° (1 part of line)
MAXIMUM LIFTING HEIGHT	Single top	3,200 kg (1 part of line)
	Boom	28.2 m
MAXIMUM LOAD RADIUS	Jib	32.0 m
	Boom	24.0 m
BOOM LENGTH	Boom	21.0 m/83 s
	Jib	27.2 m
BOOM TELESCOPING LENGTH		21.0 m
BOOM EXTENSION SPEED		21.0 m/83 s
JIB LENGTH		3.8 m
WINDING SPEED (Rope speed)	Main winch	110 m/min (5 layers)
	Auxiliary winch	96 m/min (3 layers)
HOOK WINDING SPEED	Main winch	27.5 m/min (4 parts of line)
	Auxiliary winch	96 m/min (1 part of line)
UNWINDING SPEED (Rope speed) [Reference]	Main winch	Standard: 110 m/min (5 layers), high speed: 150 m/min (5 layers)
	Auxiliary winch	Standard: 96 m/min (3 layers), high speed: 130 m/min (3 layers)
BOOM ELEVATION ANGLE		-9°-82.5°
BOOM ELEVATION SPEED		-9°-82.5°/34 s
SLEWING ANGLE		360° continuous
SLEWING SPEED		2.6 min <sup>-1</sup> {rpm}
WIRE ROPE	Main winch	Dia. 14 mm x length 155 m rotation-resistant wire rope
	Auxiliary winch	Dia. 14 mm x length 70 m rotation-resistant wire rope
BOOM		Box-construction, 6-section, hydraulic telescoping type (2nd and 3rd sections synchronized, 4th, 5th and 6th sections synchronized)
BOOM TELESCOPING SYSTEM		2 double-acting hydraulic cylinders, 3 wire rope boom telescoping systems, pressure compensated flow control valve
JIB		Stowed below boom (1 section), offset 5°, 25°, 45°, 3-section tilt type
SINGLE TOP		Fixed on top boom section
HOISTING SYSTEM		Driven by hydraulic motor and via bevel gear reducer, automatic brake, high-speed unwind function, 2 single winches, pressure compensated flow control valve
BOOM ELEVATING SYSTEM		1 double-acting hydraulic cylinder, pressure compensated flow control valve
SLEWING SYSTEM		Driven by hydraulic motor and via bevel gear reducer, ball bearing type, free slewing/lock switchable type, negative brake
OUTRIGGER		Fully hydraulic X-type or H-type (floats mounted integrally), slides and jacks each provided with independent operation device, extension width: maximum: 5.2 m, middle: 4.8 m, 4.4 m, 3.2 m, minimum: 2.7 m (X-type), 1.79 m (H-type)
OPERATION METHOD		Hydraulic pilot operation type
MAXIMUM LOAD OF OUTRIGGER		18.4 t
POWER TAKE OFF		PTO wet multiplate clutch type
HYDRAULIC PUMP		Tandem variable piston pump, tandem gear pump
SAFETY DEVICES		Automatic moment limiter (AML), slewing automatic stop device, elevation slow down and stop device, over-winding cutout device, working area control device, outrigger extension width detector, boom telescoping cylinder hydraulic lock device, boom elevating cylinder hydraulic lock device, level gauge, hydraulic safety valve, jack cylinder hydraulic lock device, hook safety latch
STANDARD EQUIPMENT		Air conditioner with dehumidifier function, hydraulic oil temperature display lamp, AM/FM radio, oil cooler, visual drum indicator Operation pedals ... ISO arrangement: for telescoping and for auxiliary winch Tadano arrangement: for elevating and for telescoping Mobile communication device (HELLO-NET Owner's Site), fuel consumption monitor, eco mode
ACCESSORIES		Wood blocks (4), aluminum base blocks (4), loudspeaker

### ● CARRIER

NAME AND MODEL	Tadano UDS-T009	
ENGINE	Name	Cummins QSB6.7-4A (with turbocharger and air cooling)
	Model	Water-cooled, 4-cycle, 6-cylinder, direct injection diesel engine
	Piston displacement	6,690 L
	Maximum output	175 kW (238 PS)/2,300 min <sup>-1</sup> {rpm}
	Maximum torque	888 N·m (90.5 kgf·m)/1,500 min <sup>-1</sup> {rpm}
TORQUE CONVERTER	3-element, 1-section (with automatic lock-up 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	
DRIVING METHOD	2WD (4x2)/4WD (4x4) switchable type	
FRONT AXLE	Full-floating type	
REAR AXLE	Full-floating type	
SUSPENSION	Service brake	Parallel leaf spring suspension system (with hydraulic lock cylinder)
	Parking brake	Parallel leaf spring suspension system (with hydraulic lock cylinder)
STEERING	Fully hydraulic power steering	
BRAKE	Service brake	Hydro-pneumatic front/rear disc brakes
	Parking brake	Pneumatic drive shaft internal expanding spring brake
	Auxiliary brake	Exhaust brake, auxiliary braking device for operations
FRAME	Welded box-shaped structure	
BATTERY	Two 12 V, 120 Ah (24 V)	
FUEL TANK CAPACITY	250 L	
TIRES	Front	325/95 R24 162/160K
	Rear	325/95 R24 162/160K
CAB	Crew capacity: 1 person, with interior fittings, rubber mounted type, fully adjustable suspension seat (with head rest, arm rest and seat belt), adjustable handle (tilt, telescoping), intermittent front and ceiling wipers (with washers), power windows, side visor	
SAFETY DEVICES	Emergency steering device, suspension lock unit, rear wheel steering lock device, engine over-run alarm, over-shift prevention device, parking brake alarm, front-left monitor TV	
STANDARD EQUIPMENT	Tire chocks (4)	

### ● OPTIONS

Power retractable mirror, winch drum monitor camera, rear monitor camera, AML external warning lamp, road shoulder lamp, marker lamp, external voice alarm, discharge head lamp, toolbox

### ● DIMENSIONS WHEN TRAVELING

Overall length	8,310 mm	
Overall width	2,200 mm	
Overall height	3,150 mm	
Wheel base	3,200 mm	
Track	Front	1,820 mm
	Rear	1,820 mm

### ● TRAVELING CAPABILITY

Maximum traveling speed	49 km/h
Gradeability (tan $\theta$ )	0.6
Minimum turning radius	4.8 m (four-wheel steering mode)
	8.5 m (two-wheel steering mode)

### ● WEIGHT

Gross vehicle weight	19,915 kg
Front axle load	9,925 kg
Rear axle load	9,990 kg



## ■ RATED LIFTING CAPACITIES

### ① Using outriggers

[BOOM] Unit: (t)

OUTRIGGER MAXIMUM EXTENSION (5.2 m) - 360° -						
Boom length Load radius	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	16.0	12.0	9.0	7.0		
3.0 m	16.0	12.0	9.0	7.0		
3.5 m	14.0	12.0	9.0	7.0	5.0	3.5
4.0 m	12.5	12.0	9.0	7.0	5.0	3.5
4.5 m	11.7 (4.4 m)	11.1	9.0	7.0	5.0	3.5
5.0 m		10.25	8.9	7.0	5.0	3.5
5.5 m		9.4	8.2	7.0	5.0	3.5
6.0 m		8.8	7.6	6.6	5.0	3.5
7.0 m		6.75	6.4	5.8	4.7	3.5
8.0 m		5.3	5.0	5.2	4.15	3.4
9.0 m		4.5 (8.6 m)	4.0	4.3	3.7	3.1
10.0 m			3.25	3.5	3.3	2.8
11.0 m			2.65	2.95	3.0	2.55
12.0 m			2.15	2.45	2.65	2.35
13.0 m			1.8 (12.8 m)	2.05	2.25	2.15
14.0 m				1.75	1.95	2.0
15.0 m				1.45	1.7	1.75
16.0 m				1.25	1.45	1.5
17.0 m				1.05	1.25	1.3
18.0 m					1.05	1.1
19.0 m					0.9	0.95
20.0 m					0.75	0.8
22.0 m					0.6 (21.2 m)	0.6
24.0 m						0.45
A (°)	0-82.5					

A: boom angle range (with no load)

[BOOM] Unit: (t)

OUTRIGGER MIDDLE EXTENSION (4.8 m) - Over side -						
Boom length Load radius	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	16.0	12.0	9.0	7.0		
3.0 m	16.0	12.0	9.0	7.0		
3.5 m	14.0	12.0	9.0	7.0	5.0	3.5
4.0 m	12.5	12.0	9.0	7.0	5.0	3.5
4.5 m	11.7 (4.4 m)	11.1	9.0	7.0	5.0	3.5
5.0 m		10.25	8.9	7.0	5.0	3.5
5.5 m		9.2	8.2	7.0	5.0	3.5
6.0 m		7.9	7.6	6.6	5.0	3.5
7.0 m		5.85	5.85	5.8	4.7	3.5
8.0 m		4.55	4.5	4.85	4.15	3.4
9.0 m		3.9 (8.6 m)	3.55	3.9	3.7	3.1
10.0 m			2.8	3.15	3.3	2.8
11.0 m			2.25	2.6	2.8	2.55
12.0 m			1.8	2.15	2.35	2.35
13.0 m			1.5 (12.8 m)	1.75	1.95	2.1
14.0 m				1.45	1.65	1.75
15.0 m				1.2	1.4	1.5
16.0 m				1.0	1.2	1.3
17.0 m				0.85	1.0	1.1
18.0 m					0.85	0.95
19.0 m					0.7	0.8
20.0 m					0.55	0.65
22.0 m						0.45
A (°)	0-82.5					24-82.5

A: boom angle range (with no load)

[BOOM] Unit: (t)

OUTRIGGER MIDDLE EXTENSION (4.4 m) - Over side -							
Boom length Load radius	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m	
2.5 m	16.0	12.0	9.0	7.0			
3.0 m	16.0	12.0	9.0	7.0			
3.5 m	14.0	12.0	9.0	7.0	5.0	3.5	
4.0 m	12.5	12.0	9.0	7.0	5.0	3.5	
4.5 m	11.7 (4.4 m)	11.1	9.0	7.0	5.0	3.5	
5.0 m		9.5	8.9	7.0	5.0	3.5	
5.5 m		8.0	7.9	7.0	5.0	3.5	
6.0 m		6.8	6.7	6.6	5.0	3.5	
7.0 m		5.05	5.0	5.35	4.7	3.5	
8.0 m		3.85	3.85	4.15	4.15	3.4	
9.0 m		3.3 (8.6 m)	3.0	3.3	3.55	3.1	
10.0 m			2.35	2.65	2.9	2.8	
11.0 m			1.85	2.15	2.4	2.5	
12.0 m			1.45	1.75	2.0	2.1	
13.0 m			1.15 (12.8 m)	1.45	1.65	1.8	
14.0 m				1.15	1.4	1.55	
15.0 m				0.95	1.15	1.3	
16.0 m				0.75	0.95	1.1	
17.0 m				0.6	0.8	0.9	
18.0 m					0.65	0.75	
19.0 m					0.5	0.6	
20.0 m						0.5	
A (°)	0-82.5						32-82.5

A: boom angle range (with no load)

[BOOM] Unit: (t)

OUTRIGGER MIDDLE EXTENSION (3.2 m) - Over side -						
Boom length Load radius	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	16.0	12.0	9.0	7.0		
3.0 m	14.5	12.0	9.0	7.0		
3.5 m	10.5	10.4	9.0	7.0	5.0	3.5
4.0 m	8.0	8.25	7.9	7.0	5.0	3.5
4.5 m	6.8 (4.4 m)	6.6	6.5	7.0	5.0	3.5
5.0 m		5.45	5.4	5.8	5.0	3.5
5.5 m		4.6	4.5	4.9	5.0	3.5
6.0 m		3.9	3.9	4.2	4.4	3.5
7.0 m		2.9	2.85	3.15	3.3	3.4
8.0 m		2.15	2.1	2.4	2.6	2.75
9.0 m		1.8 (8.6 m)	1.55	1.85	2.05	2.2
10.0 m			1.1	1.45	1.65	1.8
11.0 m			0.75	1.1	1.3	1.45
12.0 m			0.5	0.8	1.0	1.15
13.0 m				0.55	0.8	0.9
14.0 m				0.4	0.6	0.7
15.0 m					0.4	0.55
A (°)	0-82.5			35-82.5	45-82.5	54-82.5

A: boom angle range (with no load)

[BOOM] (X-type)

Unit: (t)

OUTRIGGER MINIMUM EXTENSION (2.7 m) - Over side -						
Boom length / Load radius	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	13.5	12.0	9.0	7.0		
3.0 m	10.6	10.0	9.0	7.0		
3.5 m	8.0	7.8	7.7	7.0	5.0	3.5
4.0 m	6.2	6.2	6.1	6.4	5.0	3.5
4.5 m	5.3(4.4 m)	5.0	4.9	5.3	5.0	3.5
5.0 m		4.1	4.0	4.4	4.5	3.5
5.5 m		3.4	3.3	3.7	3.85	3.5
6.0 m		2.85	2.8	3.1	3.35	3.4
7.0 m		2.05	1.95	2.3	2.5	2.6
8.0 m		1.45	1.35	1.7	1.9	2.05
9.0 m		1.15(8.6 m)	0.9	1.25	1.45	1.6
10.0 m			0.55	0.9	1.1	1.25
11.0 m				0.6	0.8	0.95
12.0 m				0.4	0.6	0.7
A (°)	0-82.5		39-82.5	45-82.5	55-82.5	61-82.5

A: boom angle range (with no load)

[BOOM] (H-type)

Unit: (t)

OUTRIGGER MINIMUM EXTENSION (1.79 m) - Over side -						
Boom length / Load radius	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m
2.5 m	7.0	7.0	7.0	7.0		
3.0 m	5.9	5.6	5.6	5.75		
3.5 m	4.5	4.3	4.25	4.6	4.6	3.5
4.0 m	3.5	3.4	3.3	3.65	3.8	3.5
4.5 m	2.9(4.4 m)	2.7	2.65	3.0	3.15	3.2
5.0 m		2.2	2.1	2.45	2.65	2.75
5.5 m		1.8	1.65	2.0	2.2	2.3
6.0 m		1.4	1.3	1.65	1.85	1.95
7.0 m		0.85	0.75	1.1	1.3	1.45
A (°)	0-82.5	36-82.5	55-82.5	64-82.5	69-82.5	72-82.5

A: boom angle range (with no load)

[JIB] (27.5-m boom)

OUTRIGGER MAXIMUM EXTENSION (6.2 m) - 360° -						
Jib length	27.5-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	3.6	2.0	4.7	1.5	5.7	1.25
75°	8.0	2.0	8.9	1.5	9.6	1.25
70°	10.8	2.0	11.6	1.5	12.1	1.25
65°	13.2	1.6	14.0	1.35	14.5	1.25
60°	15.5	1.35	16.3	1.2	16.7	1.15
55°	17.7	1.1	18.4	1.1	18.8	1.05
50°	19.7	0.95	20.4	0.9	20.7	0.9
45°	21.6	0.75	22.2	0.7	22.4	0.7
40°	23.3	0.6	23.8	0.55		
35°	24.8	0.45	25.2	0.4		
30°	26.1	0.35	26.4	0.3		
25°	27.2	0.25				
A (°)	24-82.5		29-82.5		44-82.5	

A: boom angle range (with no load)

[JIB] (27.5-m boom)

OUTRIGGER MIDDLE EXTENSION (4.8 m) - Over side -						
Jib length	27.5-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	3.6	2.0	4.7	1.5	5.7	1.25
75°	8.0	2.0	8.9	1.5	9.6	1.25
70°	10.8	2.0	11.6	1.5	12.1	1.25
65°	13.2	1.6	14.0	1.35	14.5	1.25
60°	15.5	1.35	16.3	1.2	16.7	1.15
55°	17.7	1.05	18.4	1.0	18.8	0.95
50°	19.7	0.8	20.3	0.75	20.6	0.7
45°	21.5	0.55	22.1	0.55	22.3	0.5
40°	23.2	0.4	23.7	0.4		
35°	24.7	0.3	25.1	0.3		
A (°)	34-82.5			44-82.5		

A: boom angle range (with no load)

[JIB] (27.5-m boom)

OUTRIGGER MIDDLE EXTENSION (4.4 m) - Over side -						
Jib length	27.5-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	3.6	2.0	4.7	1.5	5.7	1.25
75°	8.0	2.0	8.9	1.5	9.6	1.25
70°	10.8	2.0	11.6	1.5	12.1	1.25
65°	13.2	1.6	14.0	1.35	14.5	1.25
60°	15.4	1.15	16.3	1.1	16.7	1.05
55°	17.6	0.85	18.4	0.85	18.7	0.8
50°	19.6	0.6	20.3	0.6	20.5	0.55
45°	21.5	0.4	22.1	0.4	22.3	0.4
40°	23.1	0.25	23.7	0.25		
A (°)	39-82.5			44-82.5		

A: boom angle range (with no load)

[JIB] (27.5-m boom)

OUTRIGGER MIDDLE EXTENSION (3.2 m) - Over side -						
Jib length	27.5-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	3.6	2.0	4.7	1.5	5.7	1.25
75°	8.0	2.0	8.9	1.5	9.6	1.25
72°	9.5	1.65	10.5	1.45	11.1	1.25
70°	10.5	1.4	11.5	1.3	12.1	1.15
65°	12.9	0.9	13.8	0.85	14.3	0.75
60°	15.2	0.55	16.0	0.55	16.4	0.45
55°	17.3	0.3	18.1	0.3	18.4	0.25
A (°)	54-82.5					

A: boom angle range (with no load)

[JIB] (23.3-m boom)

OUTRIGGER MAXIMUM EXTENSION (6.2 m) - 360° -						
Jib length	23.3-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	2.9	2.0	4.0	1.5	5.0	1.25
75°	6.5	2.0	7.5	1.5	8.3	1.25
70°	8.8	2.0	9.7	1.5	10.5	1.25
65°	11.0	2.0	11.8	1.5	12.5	1.25
60°	13.1	1.7	13.9	1.45	14.4	1.2
55°	15.1	1.5	15.9	1.4	16.1	1.15
50°	16.9	1.15	17.5	1.1	17.6	1.05
45°	18.5	0.9	19.0	0.85	19.1	0.85
40°	19.9	0.7	20.4	0.7		
35°	21.2	0.55	21.6	0.55		
30°	22.4	0.45	22.6	0.45		
25°	23.3	0.4	23.4	0.35		
20°	24.0	0.35				
15°	24.5	0.3				
10°	24.9	0.25				
5°	25.0	0.25				
A (°)	4-82.5		24-82.5		44-82.5	

A: boom angle range (with no load)

[JIB] (23.3-m boom)

OUTRIGGER MIDDLE EXTENSION (4.8 m) - Over side -						
Jib length	23.3-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	2.9	2.0	4.0	1.5	5.0	1.25
75°	6.5	2.0	7.5	1.5	8.3	1.25
70°	8.8	2.0	9.7	1.5	10.5	1.25
65°	11.0	2.0	11.8	1.5	12.5	1.25
60°	13.1	1.7	13.9	1.45	14.4	1.2
55°	14.9	1.25	15.7	1.15	16.1	1.15
50°	16.7	0.95	17.4	0.9	17.6	0.85
45°	18.3	0.7	18.9	0.7	19.0	0.65
40°	19.8	0.55	20.3	0.5		
35°	21.1	0.4	21.5	0.4		
30°	22.2	0.3	22.5	0.3		
25°	23.2	0.25	23.4	0.25		
A (°)	24-82.5			44-82.5		

A: boom angle range (with no load)

[JIB] (23.3-m boom)

OUTRIGGER MIDDLE EXTENSION (4.4 m) - Over side -						
Jib length	23.3-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	2.9	2.0	4.0	1.5	5.0	1.25
75°	6.5	2.0	7.5	1.5	8.3	1.25
70°	8.8	2.0	9.7	1.5	10.5	1.25
65°	11.0	2.0	11.8	1.5	12.5	1.25
60°	12.9	1.4	13.9	1.3	14.4	1.2
55°	14.8	1.0	15.6	0.95	16.0	0.9
50°	16.6	0.7	17.3	0.7	17.6	0.65
45°	18.3	0.5	18.8	0.5	19.0	0.5
40°	19.7	0.35	20.2	0.35		
35°	21.1	0.25	21.4	0.25		
A (°)	34-82.5			44-82.5		

A: boom angle range (with no load)

[JIB] (23.3-m boom)

OUTRIGGER MIDDLE EXTENSION (3.2 m) - Over side -						
Jib length	23.3-m boom + 3.8-m jib					
Offset	5°		25°		45°	
Boom angle	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)	Load radius (m)	Rated lifting capacity (t)
82.5°	2.9	2.0	4.0	1.5	5.0	1.25
75°	6.5	2.0	7.5	1.5	8.3	1.25
72°	7.8	2.0	8.8	1.5	9.6	1.25
70°	8.7	1.65	9.7	1.4	10.5	1.25
65°	10.8	1.0	11.8	0.9	12.5	0.85
60°	12.8	0.6	13.8	0.55	14.2	0.5
55°	14.8	0.3	15.5	0.3	15.9	0.3
A (°)	54-82.5					

A: boom angle range (with no load)

① Points to remember when using the outriggers

- The rated lifting capacities are shown for when the crane is set horizontally on firm ground, and include the weight of the slings and main winch hook (140 kg) when working with the boom, and the weight of the slings and auxiliary winch hook (60 kg) when working with the jib. The values above the bold line are based on the crane 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 this as the standard when working with the boom.
- The jib rated lifting capacity is different when the boom length is 23.3 m or less and when it exceeds 23.3 m.
- Use the boom angle as the standard when working with the jib. The reference load radii shown are those when the jib is mounted to a 23.3-m and 27.5-m boom.
- The rated lifting capacity for the single top is the value obtained by subtracting 80 kg from the boom rated lifting capacity, and includes the weight of the slings and auxiliary winch hook (60 kg), but must not exceed 3.2 t.
- High-speed unwinding should only be used when only the hook is being lowered. Also, sudden lever operations should be avoided at this time.
- The table below shows the hook wire rope standard number of parts of line for each boom length. However, when using other number of parts of line, the load per line should not exceed 2.9 t for the main winch or 3.2 t for the auxiliary winch.

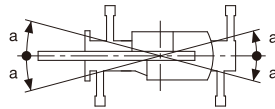
Boom length	6.5 m	10.7 m	14.9 m	19.1 m	23.3 m	27.5 m	Jib, single top
Number of parts of line	6	6	4	4	4	4	1

- It should be 1 part of line for the hook wire rope on the jib.
- The over-side lifting capability depends on the extension width of the outriggers. Perform work within the extension according to the extension width. The lifting capability for the front and rear areas is the rated lifting capacity of the "outrigger maximum extension", but the range (angle a) of the front and rear areas depends on the outrigger extension width.

X-type	Extension width	Middle extension (4.8 m)	Middle extension (4.4 m)	Middle extension (3.2 m)	Minimum extension (2.7 m)
	Angle a°	50	45	20	15

H-type	Extension width	Middle extension (4.8 m)	Middle extension (4.4 m)	Middle extension (3.2 m)	Minimum extension (1.79 m)
	Angle a°	45	40	20	5

(The angle a° in the table is the minimum value.)



② Not using outriggers

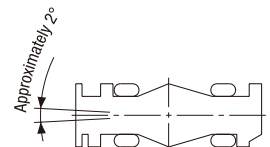
Load radius	When vehicle is stopped								When vehicle is traveling (1.6 km/h or slower)							
	6.5-m boom		10.7-m boom		14.9-m boom		19.1-m boom		6.5-m boom		10.7-m boom		14.9-m boom		19.1-m boom	
	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°	Front	360°
3.0 m	3.8	2.3	3.8	2.3	3.8	2.3	3.8	2.3	2.6	1.6	2.6	1.6	2.6	1.6	2.6	1.6
3.5 m	3.3	1.9	3.3	1.8	3.2	1.8	3.3	2.0	2.3	1.3	2.2	1.2	2.2	1.2	2.3	1.3
4.0 m	2.8	1.6	2.8	1.4	2.8	1.4	2.9	1.6	1.9	1.0	1.9	0.9	1.9	0.9	2.0	1.1
4.5 m	2.6 (4.4 m)	1.3 (4.4 m)	2.5	1.2	2.4	1.1	2.6	1.3	1.7 (4.4 m)	0.9 (4.4 m)	1.6	0.7	1.6	0.7	1.8	0.9
5.0 m			2.2	0.9	2.1	0.9	2.2	1.1			1.4	0.6	1.4	0.5	1.6	0.7
5.5 m			1.9	0.7	1.8	0.7	2.0	0.9			1.2	0.45	1.2	0.4	1.4	0.6
6.0 m			1.7	0.5	1.6	0.5	1.8	0.7			1.1		1.1		1.2	0.45
7.0 m			1.3		1.3		1.5	0.45			0.8		0.8		1.0	
8.0 m			1.0		1.0		1.2				0.6		0.6		0.8	
9.0 m					0.8		1.0						0.45		0.6	
10.0 m					0.6		0.8						0.35		0.45	
11.0 m					0.4		0.6								0.35	
12.0 m							0.45									
13.0 m							0.35									
A (°)	0-82.5		37-82.5		0-82.5	56-82.5	35-82.5	64-82.5	0-82.5		46-82.5		33-82.5	61-82.5	50-82.5	68-82.5

A: boom angle range (with no load)

② Points to remember when not using the outriggers

- The rated lifting capacities are shown for when the crane is set horizontally on firm ground, the tires are at the standard pressure (900 kPa (9.00 kgf/cm<sup>2</sup>)), the crane suspension is totally locked, and include the weight of the slings and main winch hook (140 kg) when working with the boom. The values above the bold line are based on the crane 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 the boom and tire deflection, so always use this as the standard.
- The table below shows the hook wire rope standard number of parts of line for each boom length. However, when using other number of parts of line, the load per line should not exceed 2.9 t for the main winch or 3.2 t for the auxiliary winch.

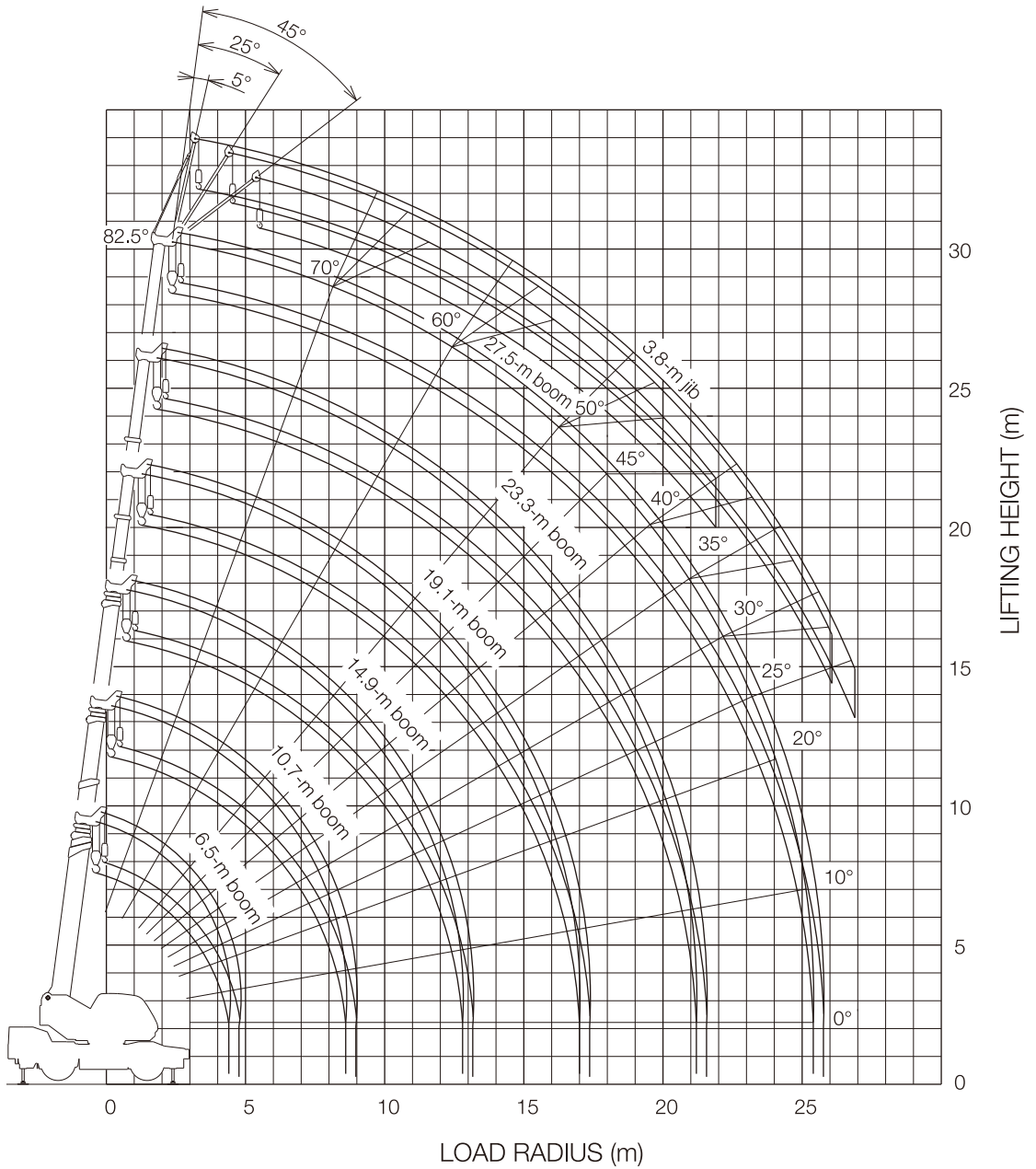
Boom length	6.5 m	10.7 m	14.9 m	19.1 m	Single top
Number of parts of line	4	4	4	4	1



- Do not perform high-speed unwinding with a boom longer than 19.1 m or a jib.
- Only perform "front" crane operations while the AML "front position symbol" is lit. The front range is when the boom is within 2° (1° to either the left or right) of the front of the carrier.
- The rated lifting capacity for the single top is the value obtained by subtracting 80 kg from the boom rated lifting capacity, and includes the weight of the slings and auxiliary winch hook (60 kg), but must not exceed 3.2 t.
- Perform pick and carry with the "drive select" switch set to "L/4D" and the shift lever 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/h or lower. In particular, abrupt steering, starting or braking must be avoided.
- Do not perform crane operations while performing pick and carry.

WORKING RANGE

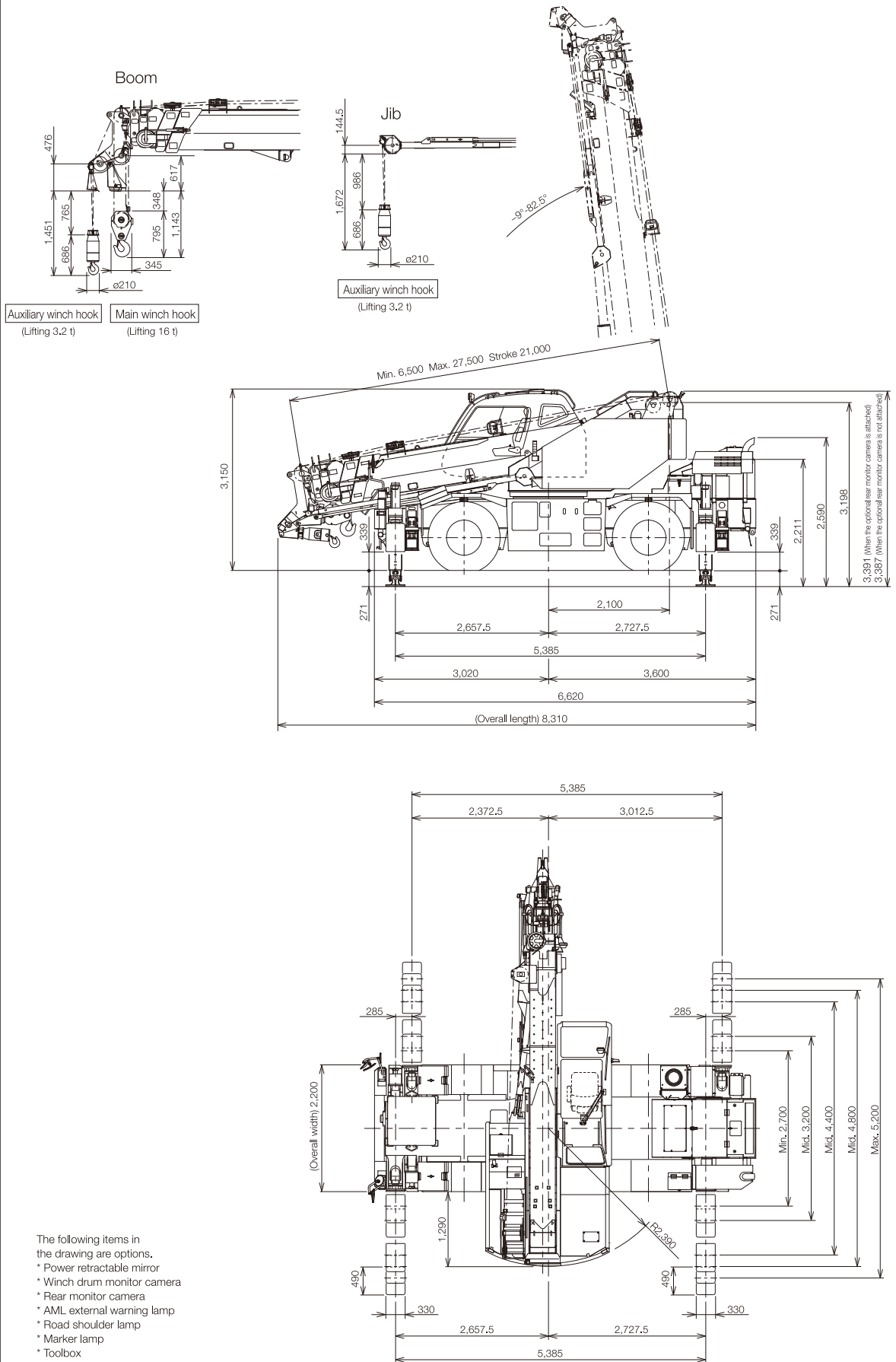
Scale: 1/250



(Note) 1. The above drawing doesn't include the boom deflection.  
 2. The above drawing shows the outrigger maximum (5.2 m) extension.

X-type outrigger

Scale: 1/100  
 (Unit: mm)



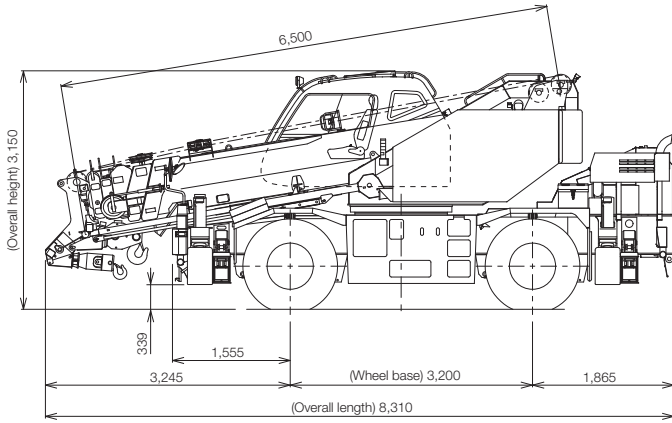
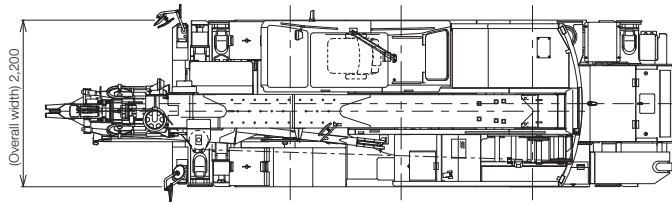
- The following items in the drawing are options.
- \* Power retractable mirror
  - \* Winch drum monitor camera
  - \* Rear monitor camera
  - \* AML external warning lamp
  - \* Road shoulder lamp
  - \* Marker lamp
  - \* Toolbox



## DIMENSIONS

### X-type outrigger

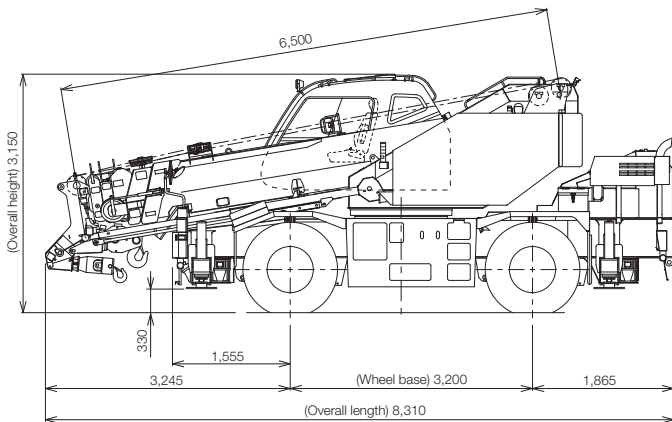
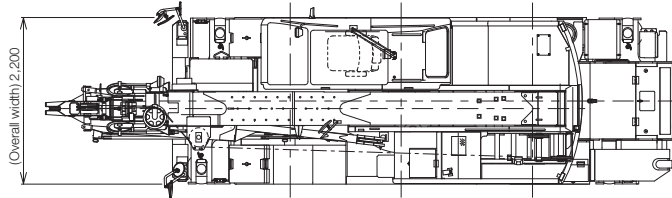
Scale: 1/100  
(Unit: mm)



The power retractable mirror, winch drum monitor camera, rear monitor camera, AML external warning lamp, road shoulder lamp, marker lamp, and toolbox in this drawing are options.

### H-type outrigger

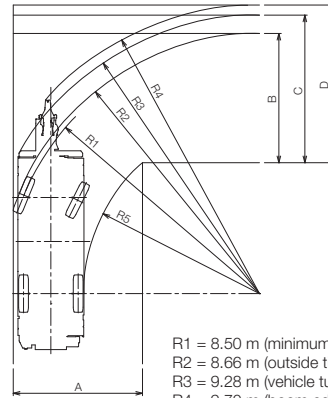
Scale: 1/100  
(Unit: mm)



The power retractable mirror, winch drum monitor camera, rear monitor camera, AML external warning lamp, road shoulder lamp, marker lamp, and toolbox in this drawing are options.

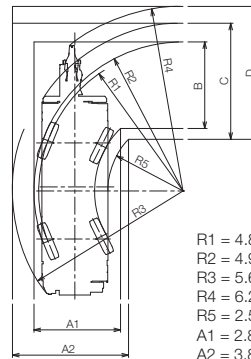
## MINIMUM RIGHT-ANGLE PASSAGE WIDTH

### While turning right in the front two-wheel steering mode



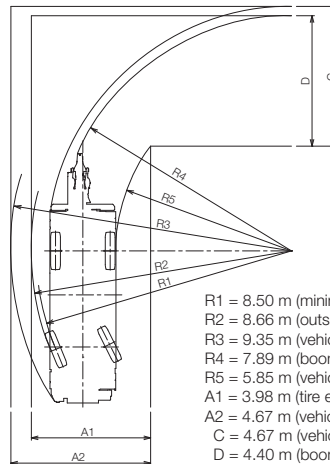
R1 = 8.50 m (minimum turning radius)  
R2 = 8.66 m (outside tire edge turning radius)  
R3 = 9.28 m (vehicle turning radius)  
R4 = 9.70 m (boom edge turning radius)  
R5 = 5.85 m (vehicle inside turning radius)  
A = 4.30 m (entrance passage width)  
B = 4.30 m (tire exit passage width)  
C = 4.92 m (vehicle exit passage width)  
D = 5.35 m (boom edge exit passage width)

### While turning right in the four-wheel steering mode



R1 = 4.80 m (minimum turning radius)  
R2 = 4.96 m (outside tire edge turning radius)  
R3 = 5.68 m (vehicle turning radius)  
R4 = 6.26 m (boom edge turning radius)  
R5 = 2.50 m (vehicle inside turning radius)  
A1 = 2.88 m (tire entrance passage width)  
A2 = 3.87 m (vehicle entrance passage width)  
B = 2.88 m (tire exit passage width)  
C = 3.87 m (vehicle exit passage width)  
D = 4.49 m (boom edge exit passage width)

### While turning right in the rear two-wheel steering mode



R1 = 8.50 m (minimum turning radius)  
R2 = 8.66 m (outside tire edge turning radius)  
R3 = 9.35 m (vehicle turning radius)  
R4 = 7.89 m (boom edge turning radius)  
R5 = 5.85 m (vehicle inside turning radius)  
A1 = 3.98 m (tire entrance passage width)  
A2 = 4.67 m (vehicle entrance passage width)  
C = 4.67 m (vehicle exit passage width)  
D = 4.40 m (boom edge exit passage width)

(Note) The above numbers are the calculated values.

Model name	Specifications	Specification no.
GR-160N	Lifting 16 t, 6-section boom, 1-section standard jib, X-type outrigger	GR-160N-3-00201
GR-160N	Lifting 16 t, 6-section boom, 1-section standard jib, H-type outrigger	GR-160N-3-00202

Note: Due to improvements, the delivered product may have specifications different from these.  
201309

# TADANO LTD.