

ROUGH TERRAIN CRANE

GR-120NL
GR-120N

(Power-tilt Jib)

JAPANESE SPECIFICATIONS

CARRIER MODEL	OUTLINE	SPEC. NO.
GR-120NL	12 t hook X-type Outrigger	GR-120N-2-00111
GR-120NL	12 t hook H-type Outrigger	GR-120N-2-00112
GR-120N	4.9 t hook X-type Outrigger	GR-120N-2-00113
GR-120N	4.9 t hook H-type Outrigger	GR-120N-2-00114

GR-120NL, GR-120N

1. Crane Specifications

☉ Crane

Crane Capacity

5.3 m boom	12,000 kg x 2.0 m (8-part line) --- GR-120NL
	4,900 kg x 4.0 m (4-part line) --- GR-120N
9.0 m boom	6,000 kg x 4.0 m (4-part line) --- GR-120NL
	4,900 kg x 4.5 m (4-part line) --- GR-120N
12.7 m boom	6,000 kg x 4.0 m (4-part line) --- GR-120NL
	4,900 kg x 4.5 m (4-part line) --- GR-120N
16.4 m boom	5,000 kg x 4.5 m (4-part line) --- GR-120NL
	4,900 kg x 4.5 m (4-part line) --- GR-120N
20.1 m boom	4,700 kg x 4.0 m (4-part line)
23.8 m boom	3,200 kg x 5.5 m (4-part line)
3.6 m jib	1,600 kg x 80° (single-part line)
5.5 m jib	1,000 kg x 70° (single-part line)
Single top	1,800 kg (single-part line)

Max. Lifting Height

Boom	24.5 m
Jib	30.0 m

Max. Working Radius

Boom	22.3 m
Jib	23.3 m

Boom Length

5.3 m to 23.8 m

Boom Extension

18.5 m

Boom Extension Speed

18.5 m/52 s

Jib Length

3.6 m, 5.5 m

Main Winch Single Line Winding Speed

125 m/min (5 layers)

Main Winch Hook Speed

31.3 m/min (4-part line)

Main Winch Single Line Unwinding Speed

<Reference>

Standard: 110 m/min (5 layers)

High-speed: 155 m/min (5 layers)

Auxiliary Winch Single Line Winding Speed

110 m/min (3 layers)

Auxiliary Winch Hook Speed

110 m/min (single-part line)

Auxiliary Winch Single Line Unwinding Speed

<Reference>

Standard: 100 m/min (3 layers)

High-speed: 145 m/min (3 layers)

Boom Elevation Angle

-3° to 82°

Boom Elevation Speed

-3° to 82°/29 s

Swing Angle

360° continuous

Swing Speed

2.4 min⁻¹ (rpm)

Wire Rope

Main winch

11.2 mm dia. x 132 m long

Spin-resistant wire rope

Auxiliary winch

11.2 mm dia. x 66 m long

Spin-resistant wire rope

Boom

6-section hydraulically telescoping boom of box construction (stages 2, 3: synchronized, stages 4, 5, 6: synchronized)

Boom Extension

2 double-acting hydraulic cylinders

3 wire rope-type telescoping devices

Jib

2-stage type stored below boom (pull-out 2nd stage)

Hydraulic non-stage offset (5° to 60°) type

Single Top

Mounted and fixed on the top boom section.

Hoist

Hydraulic motor driven planetary gear reducer

Automatic brake

With high-speed unwind function

2 single winches

With flow regulator valve with pressure compensation

Boom Elevation

Single double-acting hydraulic cylinder

With flow regulator valve with pressure compensation

Swing

Hydraulic motor driven planetary gear reducer

Swing bearing

Negative brake

Outriggers

Fully hydraulic X-type or H-type (floats mounted integrally)

Slides and jacks each provided with independent operation device.

Fully extended width 4.7 m

Middle extended width 4.3 m, 3.5 m, 2.5 m

Minimum extended width 1.7 m (X-type), 1.64 m (H-type)

Operation Method

Hydraulic pilot valve operation

Max. Vertical Load Capacity of Outrigger

13.1 t --- GR-120NL

10.6 t --- GR-120N

Power Take-Off

PTO wet multi-plate clutch

Hydraulic Pumps

2 variable piston pumps

2 gear pumps

Hydraulic Tank Capacity

172 L

Safety Devices

Automatic moment limiter (AML)

Swing automatic stop device

Elevation slow down and stop device

Over-winding cutout device

Working area control device

Outrigger extension width detector

Level gauge

Hook safety latch

Hydraulic safety valve

Telescoping cylinder check valve

Extension cylinder check valve

Power tilt counterbalance valve

Jack pilot check valve

Equipment

Air-conditioner with dehumidifier

Hydraulic oil temperature indication lamp

Radio

Oil cooler

Visual-type winch drum rotation indicator

Operation pedals

ISO arrangement: for telescoping/auxiliary hoisting

Tadano arrangement: for elevating/telescoping

Satellite communications equipment (HELLO-NET Owner's Site)

Ancillary Equipment

Wood blocks (x 4)

◎ Carrier

Manufacturer and Model

Tadano EDR-T005

Engine

Model Mitsubishi 4M50-TLE3A
(with turbo and air cooler)

Type Water-cooled 4-cycle, in-line 4-cylinder, direct-injection diesel

Piston displacement 4.899 L

Max. output 129 kw (175 PS)/2,700 min⁻¹ (rpm)

Max. torque 530 N.m (54.0 kgf.m)/1,600 min⁻¹ (rpm)

Torque Converter

3-element, 1-stage unit (with automatic lock-up mechanism)

Transmission

Automatic and manual transmission

Power shift type (wet multi-plate clutch)

3 forward gears, 1 reverse gear (with Hi and Lo)

Reducer

Spiral bevel gear with 2-speed reduction

Drive

2-wheel drive (4 x 2)/4-wheel drive (4 x 4) selection

Front Axle

Full floating type

Rear Axle

Full floating type

Suspension

Front Parallel leaf spring

Rear Parallel leaf spring

Steering

Fully hydraulic power steering

Brake System

Service Brake Composite pneumatic-hydraulic disk brake

Parking Brake Mechanically operated, internal expanding duo-servo shoe type acting on drum at transmission case rear.

Auxiliary Brake Electro-pneumatic operated exhaust brake
Auxiliary braking device for operations

Frame

Welded box structure

Electric System

12 V/100 Ah x 2 (24 V)

Fuel Tank Capacity

189 L

Tires

Front 275/80R22.5 151/148J

Rear 275/80R22.5 151/148J

Cab

One-man type

With interior equipment

Rubber mounted type

Fully adjustable suspension seat

(with head rest, arm rest, seat belt)

Adjustable wheel (tilt, telescoping)

Intermittent windshield/roof wiper (with washer)

Power window

Side visor

Safety Devices

Emergency steering device

Suspension lock device

Rear wheel steering lock device

Engine over-run alarm

Overshift prevention device

Parking brake alarm

TV monitor on left side of boom

Equipment

Centralized oiling device (Electric type is optional)

Electric mirror (Option)

◎ Dimensions

Overall length 7,540 mm

Overall width 2,000 mm

Overall height 2,815 mm

Wheel base 2,750 mm

Tread Front 1,680 mm

Rear 1,680 mm

◎ Weights

Gross vehicle weight 14,145 kg

Front 7,100 kg

Rear 7,045 kg

◎ Performance

Max. traveling speed 49 km/h

Gradeability (tanθ) 0.53

Min. turning radius 3.8 m (4-wheel steering)

6.5 m (2-wheel steering)

◎ Optional equipment

Loudspeaker

AML external warning lamp

Roadside lamp

Identification lamp

Toolbox

2. Total Rated Loads

2-(1) Outrigger Extension [Boom]

Unit: ton

Outriggers fully extended (4.7 m)							-360°-	
Working radius / Boom length	5.3 m	9.0 m	12.7 m	16.4 m	20.1 m	23.8 m		
1.0 m	12.0 (4.9)	6.0 (4.9)						
1.5 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)					
2.0 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)				
2.5 m	10.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7			
3.0 m	8.2 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7			
3.5 m	7.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7	3.2		
4.0 m	6.1 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7	3.2		
4.5 m		5.35 (4.9)	5.3 (4.9)	5.0 (4.9)	4.5	3.2		
5.0 m		4.7	4.65	4.6	4.05	3.2		
5.5 m		4.15	4.15	4.2	3.7	3.2		
6.0 m		3.75	3.7	3.8	3.4	3.0		
7.0 m		3.05	3.0	3.2	2.9	2.6		
8.0 m		2.7 (7.7 m)	2.45	2.65	2.5	2.25		
9.0 m			2.05	2.25	2.2	1.95		
10.0 m			1.7	1.9	1.95	1.75		
11.0 m			1.35	1.6	1.75	1.55		
12.0 m			1.25 (11.4 m)	1.35	1.45	1.4		
13.0 m				1.15	1.25	1.25		
14.0 m				0.98	1.05	1.15		
15.0 m				0.83	0.92	1.0		
16.0 m					0.79	0.86		
17.0 m					0.67	0.75		
18.0 m					0.58	0.65		
19.0 m					0.5 (18.7 m)	0.56		
20.0 m						0.48		
22.0 m						0.35		
22.3 m						0.32		
A (°)	0-82							

A= Boom angle range (for the unladen condition)

* Figures in brackets for GR-120N.

[Boom]

Unit: ton

		Outriggers middle extended (4.3 m)					-Over sides-
Working radius \ Boom length	5.3 m	9.0 m	12.7 m	16.4 m	20.1 m	23.8 m	
1.0 m	12.0 (4.9)	6.0 (4.9)					
1.5 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)				
2.0 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)			
2.5 m	10.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7		
3.0 m	8.2 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7		
3.5 m	7.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7	3.2	
4.0 m	6.1 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7	3.2	
4.5 m		5.35(4.9)	5.3 (4.9)	5.0 (4.9)	4.5	3.2	
5.0 m		4.7	4.65	4.6	4.05	3.2	
5.5 m		4.15	4.15	4.2	3.7	3.2	
6.0 m		3.75	3.7	3.8	3.4	3.0	
7.0 m		3.05	3.0	3.2	2.9	2.6	
8.0 m		2.6 (7.7 m)	2.4	2.65	2.5	2.25	
9.0 m			1.9	2.1	2.15	1.95	
10.0 m			1.5	1.7	1.75	1.75	
11.0 m			1.2	1.35	1.45	1.5	
12.0 m			1.1 (11.4 m)	1.1	1.2	1.3	
13.0 m				0.9	1.0	1.1	
14.0 m				0.75	0.85	0.95	
15.0 m				0.6	0.7	0.8	
16.0 m					0.6	0.7	
17.0 m					0.5	0.6	
18.0 m					0.4	0.5	
19.0 m					0.35 (18.7 m)	0.4	
20.0 m						0.35	
A (°)	0-82						

A= Boom angle range (for the unladen condition)

* Figures in brackets for GR-120N.

[Boom]

Unit: ton

		Outriggers middle extended (3.5 m)				-Over sides-	
Working radius \ Boom length	5.3 m	9.0 m	12.7 m	16.4 m	20.1 m	23.8 m	
1.0 m	12.0 (4.9)	6.0 (4.9)					
1.5 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)				
2.0 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)			
2.5 m	10.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7		
3.0 m	8.2 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7		
3.5 m	7.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7	3.2	
4.0 m	6.1 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7	3.2	
4.5 m		5.0 (4.9)	5.0 (4.9)	5.0 (4.9)	4.5	3.2	
5.0 m		4.05	4.05	4.4	4.05	3.2	
5.5 m		3.4	3.35	3.75	3.7	3.2	
6.0 m		2.9	2.85	3.15	3.3	3.0	
7.0 m		2.15	2.1	2.35	2.5	2.5	
8.0 m		1.75 (7.7 m)	1.55	1.8	1.9	2.0	
9.0 m			1.15	1.4	1.5	1.6	
10.0 m			0.85	1.1	1.2	1.3	
11.0 m			0.65	0.85	0.95	1.05	
12.0 m			0.55 (11.4 m)	0.65	0.75	0.85	
13.0 m				0.5	0.6	0.7	
14.0 m				0.35	0.45	0.55	
15.0 m				0.25	0.35	0.45	
16.0 m					0.25	0.35	
17.0 m						0.25	
A (°)	0-82				21-82	36-82	

A= Boom angle range (for the unladen condition)

* Figures in brackets for GR-120N.

[Boom]

Unit: ton

		Outriggers middle extended (2.5 m)				-Over sides-	
Boom length Working radius	5.3 m	9.0 m	12.7 m	16.4 m	20.1 m	23.8 m	
1.0 m	12.0 (4.9)	6.0 (4.9)					
1.5 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)				
2.0 m	12.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)			
2.5 m	8.0 (4.9)	6.0 (4.9)	6.0 (4.9)	5.0 (4.9)	4.7		
3.0 m	5.7 (4.9)	5.6 (4.9)	5.6 (4.9)	5.0 (4.9)	4.7		
3.5 m	4.25	4.4	4.4	4.5	4.5	3.2	
4.0 m	3.45	3.45	3.4	3.6	3.7	3.2	
4.5 m		2.7	2.7	2.95	3.1	3.0	
5.0 m		2.2	2.2	2.4	2.6	2.7	
5.5 m		1.8	1.8	2.0	2.2	2.3	
6.0 m		1.5	1.45	1.7	1.85	2.0	
7.0 m		1.0	1.0	1.2	1.3	1.45	
8.0 m		0.75 (7.7 m)	0.65	0.85	0.95	1.1	
9.0 m			0.4	0.6	0.7	0.85	
10.0 m			0.2	0.4	0.5	0.65	
11.0 m				0.25	0.35	0.45	
12.0 m					0.2	0.3	
13.0 m						0.2	
A (°)	0-82		19-82	33-82	44-82	50-82	

		Outrigger minimum extended (1.7 m X-type) (1.64 m H-type)				-Over sides-	
Boom length Working radius	5.3 m	9.0 m	12.7 m	16.4 m	20.1 m	23.8 m	
1.0 m	8.0 (4.9)	6.0 (4.9)					
1.5 m	7.0 (4.9)	6.0 (4.9)	6.0 (4.9)				
2.0 m	5.5 (4.9)	5.4 (4.9)	5.5 (4.9)	5.0 (4.9)			
2.5 m	3.7	3.8	3.55	3.2	3.2		
3.0 m	2.7	2.85	2.65	2.6	2.6		
3.5 m	2.1	2.0	2.0	2.05	2.1	2.1	
4.0 m	1.6	1.55	1.55	1.6	1.7	1.75	
4.5 m		1.2	1.2	1.25	1.4	1.45	
5.0 m		0.9	0.95	1.0	1.15	1.25	
5.5 m		0.7	0.75	0.8	0.95	1.05	
6.0 m		0.55	0.55	0.65	0.8	0.9	
7.0 m		0.25	0.2	0.4	0.55	0.6	
8.0 m						0.35	
A (°)	0-82	18-82	50-82	56-82	60-82	63-82	

A= Boom angle range (for the unladen condition)

* Figures in brackets for GR-120N.

[Jib (23.8 m Boom)]

Outriggers fully extended (4.7 m)																-360°-				
Boom angle (°)	23.8 m boom + 3.6 m jib								23.8 m boom + 5.5 m jib											
	Offset								Offset											
	5°		25°		45°		60°		5°		25°		45°		60°					
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)				
82	4.1	1.6	5.4	1.4	6.3	1.0	6.6	0.65	4.5	1.0	6.5	1.0	7.8	0.65	8.4	0.4				
80	5.1	1.6	6.4	1.4	7.2	1.0	7.5	0.65	5.6	1.0	7.6	1.0	8.8	0.65	9.3	0.4				
75	7.6	1.55	8.7	1.2	9.4	0.93	9.6	0.65	8.3	1.0	10.1	0.85	11.1	0.63	11.5	0.4				
70	9.9	1.25	11.0	1.0	11.6	0.85	11.7	0.65	10.8	1.0	12.4	0.72	13.3	0.58	13.5	0.4				
65	12.1	1.05	13.1	0.9	13.6	0.77	13.6	0.65	13.1	0.81	14.6	0.61	15.4	0.52	15.5	0.4				
60	14.2	0.9	15.1	0.8	15.5	0.7	15.5	0.65	15.3	0.69	16.7	0.55	17.3	0.48	17.3	0.4				
55	16.1	0.72	16.9	0.66	17.3	0.65			17.4	0.58	18.6	0.5	19.1	0.45						
50	17.9	0.55	18.6	0.53	18.9	0.52			19.3	0.49	20.4	0.44	20.7	0.4						
45	19.5	0.4	20.1	0.37	20.3	0.4			21.0	0.36	21.9	0.34	22.1	0.35						
40	21.0	0.28	21.5	0.27					22.5	0.23	23.3	0.24								
35	22.3	0.2	22.7	0.19																
A (°)	34-82				44-82				59-82				39-82				44-82		59-82	

Outriggers middle extended (4.3 m)																-Over sides-		
Boom angle (°)	23.8 m boom + 3.6 m jib								23.8 m boom + 5.5 m jib									
	Offset								Offset									
	5°		25°		45°		60°		5°		25°		45°		60°			
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)		
82	4.1	1.6	5.4	1.4	6.3	1.0	6.6	0.65	4.5	1.0	6.5	1.0	7.8	0.65	8.4	0.4		
80	5.1	1.6	6.4	1.4	7.2	1.0	7.5	0.65	5.6	1.0	7.6	1.0	8.8	0.65	9.3	0.4		
75	7.6	1.55	8.7	1.2	9.4	0.93	9.6	0.65	8.3	1.0	10.1	0.85	11.1	0.63	11.5	0.4		
70	9.9	1.25	11.0	1.0	11.6	0.85	11.7	0.65	10.8	1.0	12.4	0.72	13.3	0.58	13.5	0.4		
65	12.1	1.05	13.1	0.9	13.6	0.77	13.6	0.65	13.1	0.81	14.6	0.61	15.4	0.52	15.5	0.4		
60	14.2	0.85	15.1	0.8	15.5	0.7	15.5	0.65	15.3	0.69	16.7	0.55	17.3	0.48	17.3	0.4		
55	16.1	0.63	16.9	0.6	17.3	0.6			17.4	0.55	18.6	0.5	19.1	0.45				
50	17.8	0.46	18.6	0.43	18.8	0.43			19.2	0.4	20.3	0.38	20.6	0.36				
45	19.5	0.32	20.1	0.3	20.2	0.3			21.0	0.28	21.9	0.26	22.1	0.25				
40	20.9	0.2	21.4	0.19														
A (°)	39-82				44-82				59-82				44-82				59-82	

A= Boom angle range (for the unladen condition)

[Jib (23.8 m Boom)]

Outriggers middle extended (3.5 m)																-Over sides-	
Boom angle (°)	23.8 m boom + 3.6 m jib								23.8 m boom + 5.5 m jib								
	Offset								Offset								
	5°		25°		45°		60°		5°		25°		45°		60°		
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	
82	4.1	1.6	5.4	1.4	6.3	1.0	6.6	0.65	4.5	1.0	6.5	1.0	7.8	0.65	8.4	0.4	
80	5.1	1.6	6.4	1.4	7.2	1.0	7.5	0.65	5.6	1.0	7.6	1.0	8.8	0.65	9.3	0.4	
75	7.6	1.55	8.7	1.2	9.4	0.93	9.6	0.65	8.3	1.0	10.1	0.85	11.1	0.63	11.5	0.4	
70	9.9	1.25	11.0	1.0	11.6	0.85	11.7	0.65	10.8	1.0	12.4	0.72	13.3	0.58	13.5	0.4	
65	12.0	0.83	13.0	0.75	13.6	0.74	13.6	0.65	13.1	0.75	14.6	0.61	15.4	0.52	15.5	0.4	
60	14.0	0.56	15.0	0.52	15.5	0.5	15.4	0.49	15.1	0.49	16.6	0.42	17.3	0.4	17.3	0.38	
55	15.9	0.34	16.8	0.31	17.1	0.3			17.1	0.3	18.4	0.27	19.0	0.24			
A (°)	54-82						59-82		54-82						59-82		

Outriggers middle extended (2.5 m)																-Over sides-	
Boom angle (°)	23.8 m boom + 3.6 m jib								23.8 m boom + 5.5 m jib								
	Offset								Offset								
	5°		25°		45°		60°		5°		25°		45°		60°		
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	
82	4.1	1.6	5.4	1.4	6.3	1.0	6.6	0.65	4.5	1.0	6.5	1.0	7.8	0.65	8.4	0.4	
75	7.5	1.15	8.6	0.95	9.4	0.8	9.6	0.65	8.3	1.0	10.0	0.8	11.1	0.63	11.5	0.4	
70	9.7	0.61	10.8	0.53	11.5	0.48	11.6	0.48	10.5	0.52	12.2	0.44	13.2	0.38	13.5	0.37	
65	11.8	0.28	12.8	0.24	13.4	0.22	13.4	0.22	12.7	0.22							
A (°)	64-82						64-82		69-82								

A= Boom angle range (for the unladen condition)

[Jib (20.1 m Boom)]

Outriggers fully extended (4.7 m)																-360°-								
Boom angle (°)	20.1 m boom + 3.6 m jib								20.1 m boom + 5.5 m jib															
	Offset								Offset															
	5°		25°		45°		60°		5°		25°		45°		60°									
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)								
82	3.5	1.6	4.7	1.4	5.6	1.0	6.0	0.65	3.9	1.0	5.8	1.0	7.1	0.65	7.8	0.4								
80	4.3	1.6	5.5	1.4	6.4	1.0	6.7	0.65	4.8	1.0	6.7	1.0	8.0	0.65	8.6	0.4								
75	6.4	1.6	7.5	1.3	8.3	0.95	8.5	0.65	7.1	1.0	8.8	0.88	9.9	0.63	10.4	0.4								
70	8.4	1.45	9.4	1.15	10.1	0.9	10.2	0.65	9.2	1.0	10.8	0.79	11.8	0.58	12.1	0.4								
65	10.3	1.25	11.2	1.05	11.8	0.86	11.8	0.65	11.3	0.96	12.8	0.72	13.6	0.55	13.7	0.4								
60	12.1	1.1	12.9	0.95	13.4	0.8	13.4	0.65	13.2	0.84	14.5	0.67	15.2	0.52	15.3	0.4								
55	13.7	0.92	14.5	0.81	14.9	0.75			15.0	0.73	16.2	0.62	16.8	0.49										
50	15.3	0.74	16.0	0.68	16.2	0.62			16.7	0.64	17.8	0.56	18.1	0.45										
45	16.7	0.56	17.3	0.52	17.5	0.5			18.2	0.48	19.2	0.44	19.4	0.4										
40	18.0	0.42	18.5	0.39					19.6	0.35	20.3	0.32												
35	19.1	0.31	19.5	0.29					20.8	0.26	21.4	0.24												
30	20.1	0.23	20.4	0.22																				
A (°)	29-82				44-82				59-82				34-82				44-82				59-82			

Outriggers middle extended (4.3 m)																-Over sides-								
Boom angle (°)	20.1 m boom + 3.6 m jib								20.1 m boom + 5.5 m jib															
	Offset								Offset															
	5°		25°		45°		60°		5°		25°		45°		60°									
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)								
82	3.5	1.6	4.7	1.4	5.6	1.0	6.0	0.65	3.9	1.0	5.8	1.0	7.1	0.65	7.8	0.4								
80	4.3	1.6	5.5	1.4	6.4	1.0	6.7	0.65	4.8	1.0	6.7	1.0	8.0	0.65	8.6	0.4								
75	6.4	1.6	7.5	1.3	8.3	0.95	8.5	0.65	7.1	1.0	8.8	0.88	9.9	0.63	10.4	0.4								
70	8.4	1.45	9.4	1.15	10.1	0.9	10.2	0.65	9.2	1.0	10.8	0.79	11.8	0.58	12.1	0.4								
65	10.3	1.25	11.2	1.05	11.8	0.86	11.8	0.65	11.3	0.96	12.8	0.72	13.6	0.55	13.7	0.4								
60	12.0	1.05	12.9	0.95	13.4	0.8	13.4	0.65	13.2	0.84	14.5	0.67	15.2	0.52	15.3	0.4								
55	13.7	0.8	14.5	0.73	14.9	0.69			15.0	0.7	16.2	0.62	16.8	0.49										
50	15.2	0.57	15.9	0.52	16.2	0.51			16.7	0.49	17.8	0.44	18.1	0.41										
45	16.7	0.4	17.3	0.37	17.5	0.36			18.2	0.34	19.1	0.3	19.3	0.29										
40	18.0	0.27	18.5	0.26					19.5	0.23	20.3	0.2												
35	19.1	0.18	19.5	0.17																				
A (°)	34-82				44-82				59-82				39-82				44-82				59-82			

A= Boom angle range (for the unladen condition)

[Jib (20.1 m Boom)]

Outriggers middle extended (3.5 m)																-Over sides-	
Boom angle (°)	20.1 m boom + 3.6 m jib								20.1 m boom + 5.5 m jib								
	Offset								Offset								
	5°		25°		45°		60°		5°		25°		45°		60°		
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	
82	3.5	1.6	4.7	1.4	5.6	1.0	6.0	0.65	3.9	1.0	5.8	1.0	7.1	0.65	7.8	0.4	
80	4.3	1.6	5.5	1.4	6.4	1.0	6.7	0.65	4.8	1.0	6.7	1.0	8.0	0.65	8.6	0.4	
75	6.4	1.6	7.5	1.3	8.3	0.95	8.5	0.65	7.1	1.0	8.8	0.88	9.9	0.63	10.4	0.4	
70	8.4	1.45	9.4	1.15	10.1	0.9	10.2	0.65	9.2	1.0	10.8	0.79	11.8	0.58	12.1	0.4	
65	10.2	1.0	11.2	0.9	11.8	0.84	11.8	0.65	11.3	0.9	12.8	0.72	13.6	0.55	13.7	0.4	
60	11.9	0.67	12.9	0.59	13.4	0.55	13.4	0.55	13.1	0.58	14.5	0.49	15.2	0.44	15.3	0.4	
55	13.6	0.42	14.4	0.37	14.8	0.35			14.9	0.35	16.1	0.3	16.7	0.27			
50	15.2	0.24	15.9	0.21	16.2	0.2			16.5	0.19							
A (°)	49-82						59-82		49-82		54-82				59-82		

Outriggers middle extended (2.5 m)																-Over sides-	
Boom angle (°)	20.1 m boom + 3.6 m jib								20.1 m boom + 5.5 m jib								
	Offset								Offset								
	5°		25°		45°		60°		5°		25°		45°		60°		
	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	Working radius (m)	Total rated load (t)	
82	3.5	1.6	4.7	1.4	5.6	1.0	6.0	0.65	3.9	1.0	5.8	1.0	7.1	0.65	7.8	0.4	
75	6.3	1.15	7.5	0.95	8.3	0.8	8.5	0.65	7.1	1.0	8.8	0.8	9.9	0.63	10.4	0.4	
70	8.2	0.61	9.3	0.53	10.0	0.48	10.2	0.48	9.0	0.52	10.7	0.44	11.7	0.38	12.1	0.37	
65	10.1	0.28	11.1	0.24	11.7	0.22	11.8	0.22	11.0	0.22							
A (°)	64-82						64-82		69-82								

A= Boom angle range (for the unladen condition)

PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE EXTENDED:

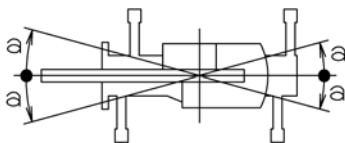
1. The total rated loads shown are for the case where the crane is set horizontally on firm level ground. They include the weights of the slings and main winch hook (90 kg) when using the boom, and the weights of the slings and auxiliary winch hook (25 kg) when using the jib. The values above the bold lines are based on the crane strength while those below are based on the crane stability.
2. Since the working radii are based on the actual values including deflection of the boom, boom operations should be performed in accordance with the working radii.
3. The total rated load for the jib differs for boom lengths of less than 20.1 m and more than 20.1 m.
4. Jib operation should be relative to the boom angle. The working radii are reference values for the case where a jib is mounted to a 23.8 m or 20.1 m boom.
5. The total rated load for the single top is obtained by subtracting 65 kg from total rated load of the boom. It includes the weight of the sling and auxiliary hook (25 kg), and must not exceed 1.8 t.
6. High-speed unwind should be performed only when lowering the hook alone, and sudden braking operations must be avoided.
7. The table below shows the standard number of part lines for each boom length.
When using with other than this number of part lines, the load per line should not exceed 1.8 t for both the main and auxiliary winches.

Boom length	5.3 m	9.0 m	12.7 m	16.4 m	20.1 m	23.8 m	Jib/Single top
Number of part lines	8(4)	4	4	4	4	4	1
Hook type	12 t hook (4.9 t hook)						1.8 t hook
Hook weight	90 kg (90 kg)						25 kg

* Figures in brackets for GR-120N.

8. A single-part line is used for the hook on the jib.
9. The hoisting performance for the "Over sides" range will differ according to the extended width of the outriggers. Operations should be performed in accordance with the performance corresponding to the extended width. Also, although the hoisting performances for the "Over front" and "Over rear" ranges are equivalent to those of the outriggers fully extended condition, the front and rear ranges (angle a) will differ according to the width to which the outriggers are extended in the left and right directions.

Extended width	Middle extended (4.3 m)	Middle extended (3.5 m)	Middle extended (2.5 m)	Minimum extended (1.7 m X-type) (1.64 m H-type)
Angle a°	45	35	25	15



2-(2) Outrigger Not Used

Unit: ton

Working radius (m)	Stationary						Vehicle moving (at 1.6 km/h or less)					
	5.3 m boom		9.0 m boom		12.7 m boom		5.3 m boom		9.0 m boom		12.7 m boom	
	Front	-360°-	Front	-360°-	Front	-360°-	Front	-360°-	Front	-360°-	Front	-360°-
1.0	3.6	2.8	3.6	2.8			3.2	2.0	3.2	2.0		
1.5	3.6	2.8	3.6	2.8	3.6	2.8	3.2	2.0	3.2	2.0	3.2	2.0
2.0	3.4	2.8	3.4	2.8	3.4	2.8	3.0	2.0	3.0	2.0	3.0	2.0
2.5	3.1	2.15	3.1	2.1	3.1	2.05	2.8	1.55	2.75	1.5	2.65	1.45
3.0	2.65	1.6	2.6	1.55	2.55	1.5	2.4	1.1	2.3	1.05	2.2	1.0
3.5	2.3	1.25	2.2	1.2	2.1	1.1	2.0	0.85	1.9	0.75	1.8	0.65
4.0	2.0	0.9	1.9	0.8	1.7	0.7	1.7	0.6	1.65	0.5	1.5	0.4
4.5			1.6	0.5	1.4	0.4			1.4	0.3	1.25	
5.0			1.3		1.1				1.15		1.0	
5.5			1.1		0.95				0.95		0.85	
6.0			0.9		0.8				0.8		0.7	
7.0			0.5		0.5				0.45		0.45	
A (°)	0-82		26-82	50-82	52-82	63-82	0-82		26-82	50-82	52-82	66-82

A= Boom angle range (for the unladen condition)

PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE NOT USED:

1. The total rated loads shown are for the case where the tire air pressure on firm level ground is as specified (900 kPa (9.00 kgf/cm²)) and the crane is completely spring-locked. They include the weights of the sling and main hook (90 kg) when using the boom.

The values above the bold lines are based on the crane strength while those below are based on the crane stability. The foundation, working conditions, etc. should be taken into consideration for actual work.

2. Since the working radii are based on the actual values including the deflection of the boom and the tires, operations should be performed in accordance with the working radii.

3. The table below shows the standard number of part lines for each boom length.

When using with other than this number of part lines, the load per line should not exceed 1.8 t for both the main and auxiliary winches.

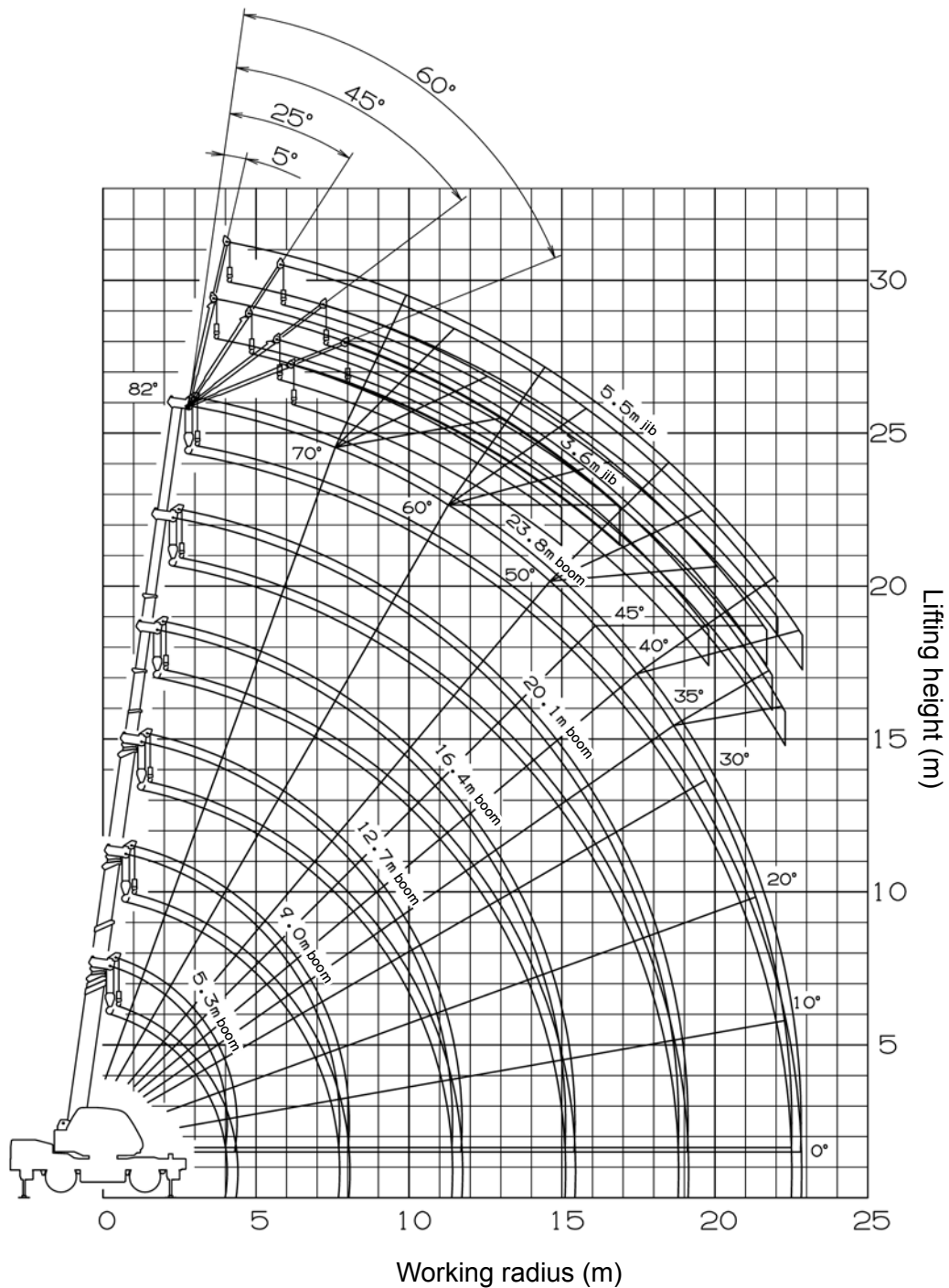
Boom length	5.3 m	9.0 m	12.7 m	Single top
Number of part lines	4	4	4	1

4. High-speed unwind function should not be performed without outriggers. Booms over 12.7 m in length and jibs should not be used without outriggers.
5. "Over front" crane operations should be performed only when the AML "over-front area indicator lamp" is lit. The boom must be kept inside a 2° area over front of the carrier when performing "Over front" crane operations without the outriggers.



6. The total rated load for the single top is obtained by subtracting 65 kg from total rated load of the boom. It includes the weight of the sling and auxiliary hook (25 kg), and must not exceed 1.8 t.
7. The "Drive Mode Selection" switch should be set to "4-wheel / Lo" for travelling while hoisting a load and the shift lever should be set to first.
8. When travelling while hoisting a load, the swing brake should be applied, the load should be kept as close to the ground as possible but not touching the ground and the speed should be kept at 1.6 km/h or less. In particular, any abrupt steering, starting or braking must be avoided.
9. Crane operations should not be performed when travelling while hoisting a load.

3. Working Radius - Lifting Height

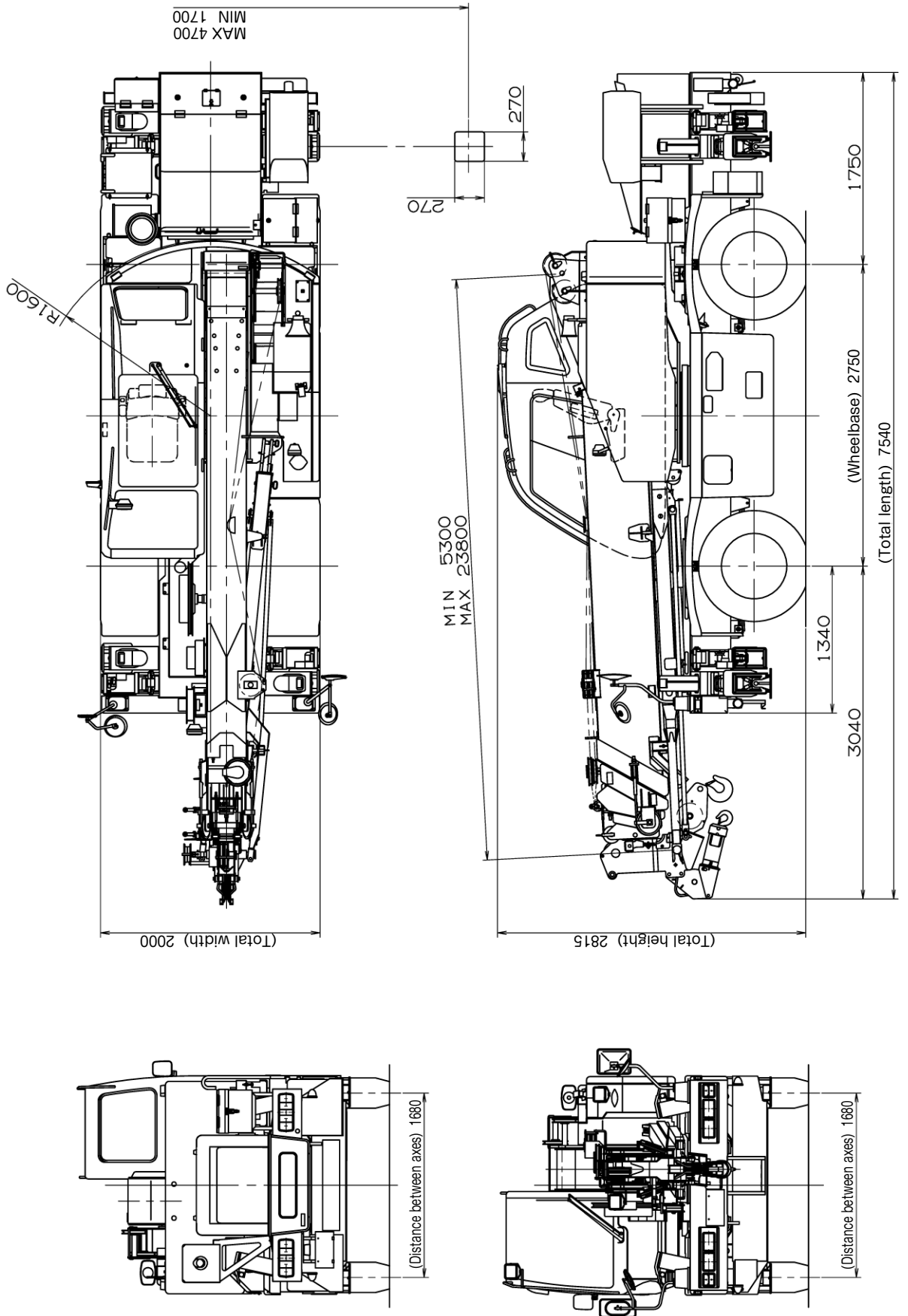


Note:

1. The deflection of the boom is not incorporated in the figure above.
2. The figure above shows the crane with the maximum outrigger extension (4.7 m).

4. Dimensions

(X-type outrigger specifications)



4. Dimensions

(H-type outrigger specifications)

