

CHARTS

KOBELCO RK160-2

2. GENERAL SPECIFICATIONS

2.1 SPECIFICATIONS

(1) CRANE PERFORMANCE

Max. Rated Crane Loads	6.7 m Boom	16,000 kg × 3.0 m (6 parts)
	11.3 m Boom	12,000 kg × 4.0 m (6 parts)
	15.9 m Boom	9,000 kg × 4.0 m (4 parts)
	20.4 m Boom	7,000 kg × 5.0 m (4 parts)
	25.0 m jib	5,000 kg × 5.0 m (4 parts)
	※5.5 m jib (option)	2,000 kg (1 part)
	Auxiliary Sheave	2,700 kg (1 part)
Main boom length	m	6.70 to 25.00
Max. lifting height: main hook/aux. hook	m	25.7/26.1 ※25.7/30.9 (option)
Main winch line speed	m/min	98 (4th layer)
Aux. winch line speed	m/min	85 (2nd layer)
Boom extending speed	sec/m	60/6.7 to 25.0
Boom raising speed	sec/deg	39/90° to 80°
Swing speed	rpm	2.45

(2) CRANE MAIN MECHANISM

Type of boom	Box type, 5 sections, 2nd/3rd simultaneously and 4th/5th simultaneously telescoping.
Boom telescopic system	Direct push by double act. hydr. cyls (2) with use of wire ropes.
Boom hoist system	Direct push by double act. hydr. cyl. (2)
※Type of jib (option)	Side stowing, under extending twist type jib. Single stage compressed truss, three steps tilt type. (5° · 17° · 30°)
Winch system	2 set hydr. motor drive, spur gear reduction. With flow control valve with pressure compensating type. High speed (2 pumps flow) and low speed (1 pump) automatic change. Independent 2 winchs with automatic brake and free fall.
Swing system	Hydr. motor drive, planetary gear reduction type with swing brake.
Out-riggers	Type Extending width m
	All hydraulic type 5.1/4.2/3.2/1.825

(3) WIRE ROPES

Main winch wire rope	mmØ × m	14 × 135 / IWRC 6 × Fi (29) C/O hard twist rope
Aux. winch wire rope	mmØ × m	14 × 55 / IWRC 6 × Fi (29) C/O hard twist rope ※ 14 × 65 / IWRC 6 × Fi (29) C/O hard twist type

(4) HYDRAULIC SYSTEM

Type of hydraulic pump	2 tandem (variable plunger) and 3 tandem gear pumps.
Capacity of hydr. oil tank	ℓ
	260

(5) SAFETY DEVICES

Load safety device, swing warning alarm device, overhoist preventive device, working range limit device (with swing range warning function), outrigger ext. width automatic detecting device, aux. parking brake, sling wire lock, hydraulic safety valve, boom telescope order wrong operation preventive device, outrigger safety device, boom hoist safety device, boom telescope safety device, free fall interlock device, anti-slip seat, swing warning flasher, check and safety monitor.

(6) PERFORMANCE OF CARRIER

Maximum traveling speed	km/h	49	
Min. turning radius 2W steer/4W steer	m	8.6/4.8	
Gradeability	tan θ (deg.)	0.6 (31°) ※ 0.64 (33°) option	
Engine	Model	Mitsubishi 6D14T	
	Kind	Water cooled, 4 cycle, 6 cyls, direct inject. type with turbo, diesel	
	Total displacement	cc	6.557
	Max. output	PS/rpm	185/2,800
	Max. torque	kg·m/rpm	58/1,600

(7) MAJOR MECHANISM OF CARRIER

Traveling drive type		4WD (4×4) / 2WD (4×2) selecting type	
Torque converter		3 element, 1 stage, 2 phases. Electronic control, full automatic with lock-up clutch.	
Transmission	Model	Electronic control, full automatic shift	
	No. of speed change gear	3 speed forward/1 speed reverse (with high/low shift)	
Reduction unit form		Axle 2 step reduction type	
Axle front wheel/rear wheel		All floating type	
Steering	Form	Engine rpm induction type all hydraulic type power steering. With emergency steering and reverse steering correcting device.	
	Mode	Normal (fr. 2 w.), cramp (4 w.), crab (4 w.) and rear (re.2 w.)	
Brake	Main service brake	With hydr. air booster, disc type 4 wheel brake, torque converter lock-up linked electro-control exhaust brake.	
	Parking brake	Propel shaft brake internal expansion type with aux. brake for work.	
Suspension		Leaf spring (with hydr. lock cylinder).	
Fuel tank capacity		ltr	250
Tires (front wheel and rear wheel)			13.00R24 ☆☆☆ (OR)

(8) CARRIER SAFETY DEVICES

Emergency steering device, rear steering auto. lock, suspension lock device, engine overrun warning device, check and safety monitor, reverse voice alarm, left turn voice alarm.

(9) DIMENSIONS WHEN TRAVELING

Overall length	mm	8,140
Overall width	mm	2,200
Overall height	mm	3,140
Wheel base (axle distance)	mm	2,950
Tread front wheel/rear wheel	mm	1,810/1,810

(10) TOTAL WEIGHT

Total load	kg	19,155 ※ 19,385 (option)
Front axle load	kg	9,270 ※ 9,500(option)
Rear axle load	kg	9,885 ※ 9,885(option)

(11) SEATING CAPACITY

		1 person
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2.3 RATED CRANE LOAD TABLE

(1) BOOM RATED LOADS (ton)/WITH OUTRIGGERS USED

Boom Length (m) Operating Radius (m)	Outriggers Max. (5.1m) Ext. (Whole around)					Outriggers Mid. (4.2m) Ext. (Over side)					Outriggers Mid. (3.2m) Ext. (Over side)					Outriggers Min. Ext. (Over side)					Boom Length (m) Operating Radius (m)						
	6.7	11.3	15.9	20.4	25.0	6.7	11.3	15.9	20.4	25.0	6.7	11.3	15.9	20.4	25.0	6.7	11.3	15.9	20.4	25.0		6.7	11.3	15.9	20.4	25.0	
2.5	16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		7.75	7.80	7.80	7.00	25.0		
3.0	16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		13.00	12.00	9.00	7.00		13.00	12.00	9.00	7.00		5.55	5.60	5.60	6.10			
3.5	14.00	12.00	9.00	7.00	5.00	14.00	12.00	9.00	7.00	5.00	10.00	10.00	9.00	7.00	5.00	10.00	10.00	9.00	7.00	5.00	4.20	4.30	4.25	4.70	4.70		
4.0	12.50	12.00	9.00	7.00	5.00	12.50	12.00	9.00	7.00	5.00	7.70	7.80	7.20	7.00	5.00	7.70	7.80	7.20	7.00	5.00	3.30	3.40	3.35	3.70	3.80		
4.5	11.50	11.10	8.50	7.00	5.00	11.20	10.55	8.30	7.00	5.00	5.40	6.20	6.10	6.45	5.00	5.40	6.20	6.10	6.45	5.00	2.65	2.70	2.70	3.00	3.10		
5.0		10.25	8.05	7.00	5.00		9.15	7.65	7.00	5.00		5.10	5.00	5.30	5.00		5.10	5.00	5.30	5.00		2.20	2.25	2.55	2.65	5.0	
5.5		9.40	7.60	6.60	4.75		7.75	6.95	6.55	4.75		4.30	4.20	4.50	4.70		4.30	4.20	4.50	4.70		1.80	1.85	2.10	2.25	5.5	
6.0		8.55	7.15	6.20	4.55		6.55	6.30	6.10	4.55		3.60	3.60	3.85	4.05		3.60	3.60	3.85	4.05		1.50	1.55	1.80	1.90	6.0	
6.5		7.70	6.70	5.80	4.35		5.65	5.60	5.70	4.35		3.10	3.10	3.35	3.55		3.10	3.10	3.35	3.55		1.25	1.30	1.55	1.65	6.5	
7.0		6.85	6.20	5.50	4.15		4.90	4.95	5.25	4.15		2.70	2.70	2.95	3.10		2.70	2.70	2.95	3.10		1.05	1.05	1.30	1.45	7.0	
7.5		6.00	5.70	5.15	3.90		4.30	4.40	4.70	3.95		2.40	2.35	2.60	2.80		2.40	2.35	2.60	2.80		0.85	0.85	1.15	1.30	7.5	
8.0		5.30	5.20	4.85	3.70		3.80	3.85	4.20	3.70		2.10	2.05	2.30	2.50		2.10	2.05	2.30	2.50		0.70	0.70	0.95	1.10	8.0	
9.0		4.25	4.25	4.30	3.30		3.05	3.10	3.40	3.30		1.65	1.60	1.85	2.00		1.65	1.60	1.85	2.00			0.45	0.70	0.85	9.0	
10.0			3.50	3.75	3.00			2.50	2.80	2.90								1.25	1.50	1.65				0.30	0.50	10.0	
11.0			2.90	3.20	2.70			2.05	2.35	2.50								1.00	1.20	1.35					0.29	0.50	11.0
12.0			2.45	2.75	2.50			1.70	1.95	2.15								0.80	1.00	1.15						0.30	12.0
13.0			2.05	2.35	2.30			1.40	1.65	1.85								0.63	0.80	0.95							13.0
14.0			1.85	2.05	2.10			1.25	1.45	1.60								0.50	0.65	0.80							14.0
15.0				1.75	1.90				1.20	1.40										0.55	0.65						15.0
16.0				1.50	1.70				1.00	1.20										0.40	0.55						16.0
17.0				1.32	1.50				0.80	1.00											0.45						17.0
18.0				1.15	1.30				0.65	0.85										0.35							18.0
19.0				1.15	1.15				0.60	0.70																	19.0
20.0					1.00					0.60																	20.0
21.0					0.90					0.50																	21.0
22.0					0.80					0.40																	22.0
24.0					0.74					0.35																	24.0
26.0																											26.0
28.0																											28.0
30.0																											30.0
Min. Boom Angle	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	45°	52°	57°	Min. Boom Angle

[Unit: ton]

(2) BOOM RATED LOADS (ton)/WITH OUTRIGGERS USED

[Unit: ton]

Operating Radius(m)	Stationary Lifting						Picking and Carrying (2 km/h and less)						Boom Length (m)			
	6.7		11.3		15.9		20.4		6.7		11.3			15.9		20.4
Boom Length (m)	Front	Whole Around	Front	Whole Around	Front	Whole Around	Front	Whole Around	Front	Whole Around	Front	Whole Around	Front	Whole Around	Front	Whole Around
3.0	9.50	4.40	9.50	4.50	8.50	4.65	6.50	5.00	7.00	4.35	7.20	4.40	6.50	4.45	6.00	3.00
3.5	8.30	3.50	8.30	3.65	8.30	3.70	6.50	4.00	6.15	3.30	6.30	3.35	5.75	3.60	6.00	3.00
4.0	7.30	2.80	7.30	2.90	7.30	3.00	6.50	3.30	5.40	2.60	5.60	2.65	5.00	2.85	5.60	3.00
4.5	6.60	2.20	6.40	2.40	6.60	2.45	6.50	2.75	4.75	2.10	4.70	2.10	4.15	2.30	4.80	2.50
5.0			5.45	1.90	5.65	2.00	5.35	2.30			3.90	1.75	3.50	1.90	4.10	2.10
5.5			4.60	1.60	4.70	1.65	4.45	2.00			3.30	1.45	3.00	1.55	3.50	1.80
6.0			3.95	1.30	4.00	1.35	3.90	1.70			2.80	1.20	2.65	1.30	3.00	1.50
6.5			3.40	1.05	3.50	1.10	3.60	1.40			2.40	1.00	2.30	1.10	2.60	1.30
7.0			3.00	0.85	3.00	0.90	3.25	1.20			2.10	0.80	2.00	0.90	2.30	1.10
7.5			2.60	0.65	2.70	0.70	2.95	1.00			1.85	0.65	1.80	0.70	2.05	0.90
8.0			2.30	0.50	2.30	0.50	2.65	0.80			1.60	0.50	1.65	0.50	1.80	0.77
9.0			1.80		1.85		2.15	0.55			1.30		1.30		1.50	0.50
10.0					1.50		1.75	0.35					1.00		1.20	0.30
11.0					1.20		1.45						0.70		1.00	
12.0					0.95		1.20						0.55		0.80	
13.0					0.75		1.00						0.40		0.65	
14.0							0.80								0.55	
15.0							0.65								0.45	
16.0							0.50								0.35	
17.0							0.35								0.30	
Min. Boom Angle	0°	0°	11°	29°	19°	48°	22°	55°	0°	0°	11°	29°	19°	48°	22°	55°
																Min. Boom Angle

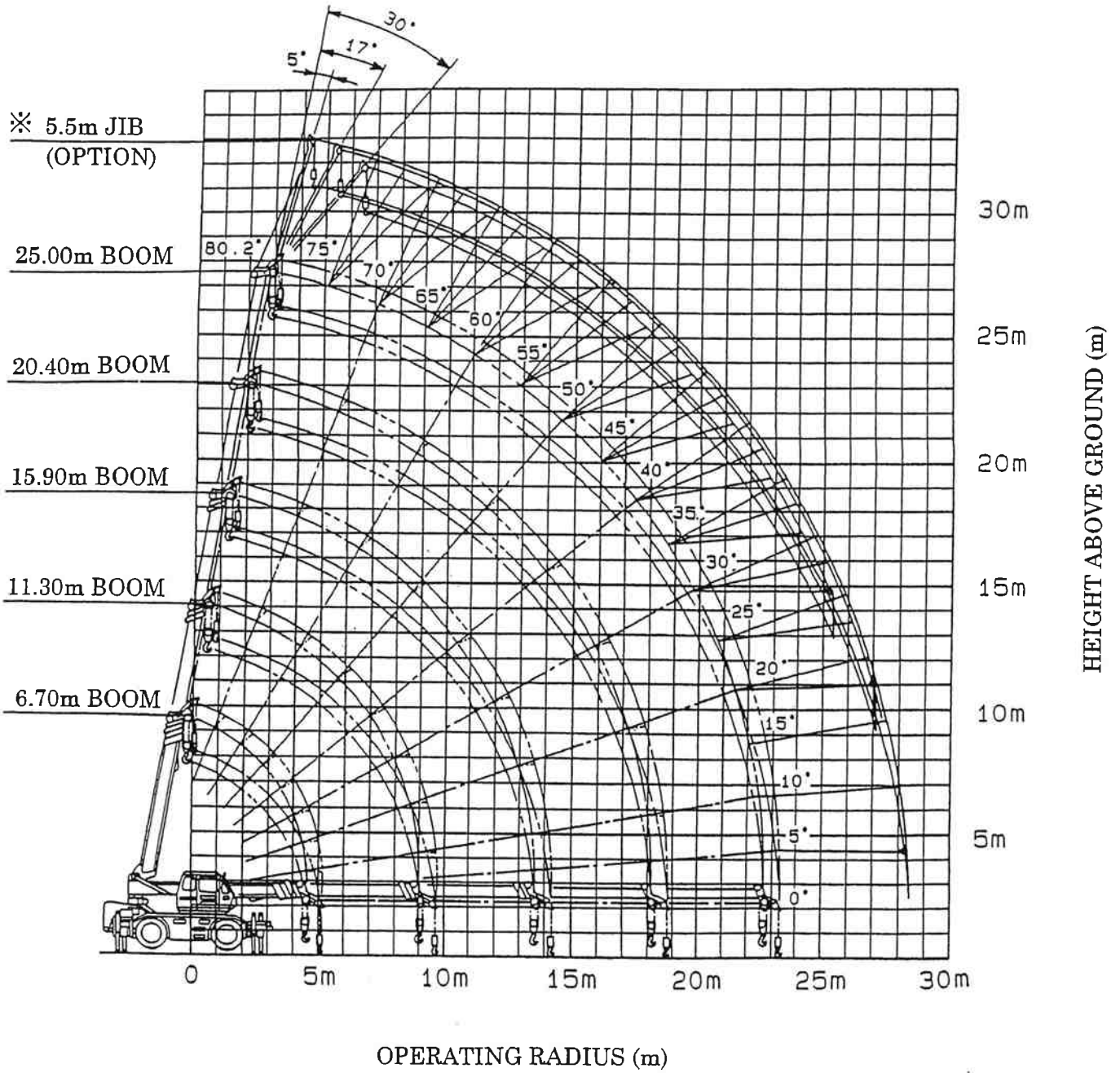
(3) JIB RATED LOADS (ton) WITH OUTRIGGERS USE (OPTIONAL)

Jib Angle Boom Angle	Outriggers Max. Extended (Whole around)			Outriggers Mid. (4.2m) Extended (Over side)			Outriggers Mid. (3.2m) Extended (Over side)		
	5°	17°	30°	5°	17°	30°	5°	17°	30°
80.0°	2.00	1.50	1.20	2.00	1.50	1.20	2.00	1.50	1.20
75.0°	2.00	1.50	1.20	2.00	1.50	1.20	2.00	1.50	1.20
70.0°	2.00	1.50	1.20	2.00	1.50	1.20	2.00	1.50	1.20
65.0°	1.62	1.25	1.12	1.60	1.25	1.06	1.50	1.15	1.00
60.0°	1.35	1.09	1.02	1.32	1.09	0.94	0.98	0.84	0.78
55.0°	1.15	0.98	0.91	1.07	0.93	0.82	0.65	0.58	0.56
50.0°	1.00	0.87	0.82	0.85	0.78	0.69	0.43	0.40	0.37
45.0°	0.87	0.78	0.75	0.65	0.63	0.57	0.22		
40.0°	0.75	0.70	0.68	0.50	0.49	0.45			
35.0°	0.65	0.62	0.60	0.35	0.35	0.32			
30.0°	0.56	0.54	0.52	0.25					
25.0°	0.48	0.46							
20.0°	0.41	0.38							
15.0°	0.35								
10.0°	0.30								
5.0°	0.25								
Min. Boom Angle	5°	20°	30°	30°	35°	35°	45°	50°	50°

2.2 WORKING RANGE DIAGRAM

H-TYPE OUTRIGGER

(Note) This diagram does not include deflection of the boom.



2.4 CAUTIONS FOR RATED CRANE LOAD TABLE

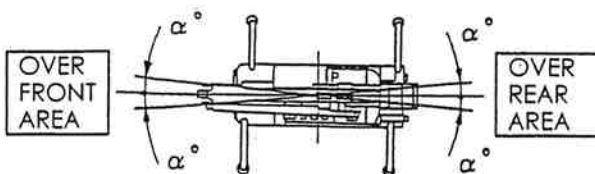
1. When the Outriggers are Used.

- ① The rated crane loads do not exceed 78% of tipping loads with the machine set horizontally on a firm and level ground, satisfy the specified stability overfront, and include weight of hook block (s) and other load handling accessories.

Ratings shown in are based on the machine's structural strength, and others are determined by the machine's stability.

Kind of hooks	16 ton	2.7 ton
Weight	140 kgs	45 kgs

- ② Since the operating radius given in the table includes allowances for laden boom deflection, the machine must always be operated on the basis of actual operating radius.
- ③ The outrigger maximum extended width is 5.1 meters, and mid extended widths are 4.2 meters and 3.2 meters. The minimum outrigger extended width is 1.825 meters.
- ④ Ratings in Over Side area vary according to the outrigger extended width condition. Therefore, operation must be based on the rating corresponding to each outrigger extended condition. Operation in Over Front and Over Rear areas must be as per the ratings when the outriggers are extended to the maximum.



Outrigger extended condition	Mid. extension (4.2 m)	Mid. extension (3.2 m)	Minimum extension (1.825 m)
Area α°	28°	20°	5°

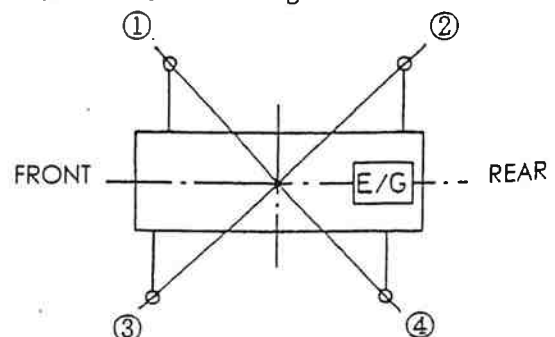
- ⑤ When the boom length exceeds the specified length shown in the rating table, operation must be performed basing on the smaller rating of the specified length or the rating for the next longer boom length shown.

- ⑥ Ratings with the use of the auxiliary sheave are the same as the ratings with the boom less weight of 16 ton hook (140 kgs), but the limit should be 2,700 kgs.
- ⑦ Jib operation must be based on the boom angle.
- ⑧ In jib operation, deduct the weight of the 2.7 ton hook block and the sling wire from the rated crane loads.
- ⑨ When operating with the boom with the jib extended, deduct 350 kgs besides weight of lifting sling, and etc. At this time, do not use the auxiliary sheave.
- ⑩ In such a condition not shown in the rating table, operation is impossible. Lowering the boom over critical degrees leads to overturn even with no load. Be careful extremely.
- ⑪ The minimum number of reeving part(s) of the hook block(s) is determined so that the single line load does not exceed 2.700 kgs.

The standard reeving of the hook block are shown below.

Boom length	6.7m	11.3m	15.9m	20.4m	25.0m	Jib, aux. sheave
Used hook	16 ton	16 ton	16 ton	16 ton	16 ton	2.7 ton
No. of reeving	6	6	4	4	4	1

- ⑫ In order to prevent a load from falling down due to mistake of operation, do not operate free fall in crane work.
- ⑬ In lifting load operation in an oblique direction (direction toward the outrigger), sometimes the outrigger float in the diagonal side against the lifted load may be raised depending on a condition. This is caused by torsional rigidity and deflection of the carrier frame, and stability is not lost. The stability of this machine in operation within the rating is secured in the condition that the machine is set horizontally on a level and firm ground. The oblique direction (direction toward the outrigger) is the directions of ①, ②, ③ and ④ in the figure.



2. When the Outriggers are not Used.

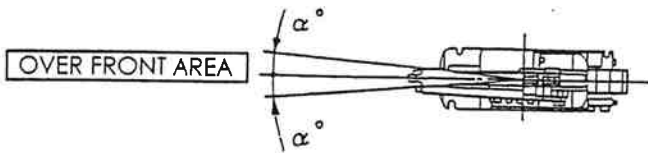
- ① The rated crane loads are the approved maximum lifting capacity with the specified air pressure of the tires and the suspension cylinders fully retracted on a firm and level ground, and include weight of hook block(s) and other load handling accessories.

The rated crane loads shown in are based on the machine's structural strength, and others are determined by the machine's stability.

Kind of hooks	16 ton	2.7 ton
Weight	140 kgs	45 kgs

(Tire specified tire air-pressure: 9.0 kgf/cm²)

- ② Since the operating radius given in the table includes allowance for laden boom deflection, the machine must always be operated on the basis of the actual operating radius.
- ③ The rated loads in Over Front and those in Over Side are different. Since when turning from the Over Front area to the Over Side area, there is possibility of overload, sufficiently be careful.



Crane work	Stationary lifting	Pick and carry
Area α°	1°	1°

- ④ The rated crane loads with the use of the auxiliary sheave are equal to the ratings with the boom less weight of the 16 ton hook block (140 kgs), but the limit must not exceed 2,700 kgs.
- ⑤ Do not operate the jib work and free falling work.
- ⑥ The stationary lifting crane work should be operated with the parking brake and auxiliary parking brake applied.
- ⑦ When performing picking and carrying operation, be sure to place the high speed/low speed selector switch in the low range.

- ⑧ When picking and carrying a load, hold the load near the ground and travel within 2 km per hour of speed not to allow the load to be swung. Especially, be very careful for cornering, sudden start and sudden stop.
- ⑨ Do not operate crane work while traveling with a load suspended.
- ⑩ The minimum number of reeving part of the hook is determined so that the single line load does not exceed 2,700 kgs. The standard reeving for each boom length is shown below.

Boom length	6.7m	11.3m	15.9m	20.4m	Auxiliary sheave
Used hook	16 ton	16 ton	16 ton	16 ton	2.7 ton
No. of reeving	4	4	4	4	1

SPECIFICATION OF JIB (OPTION)

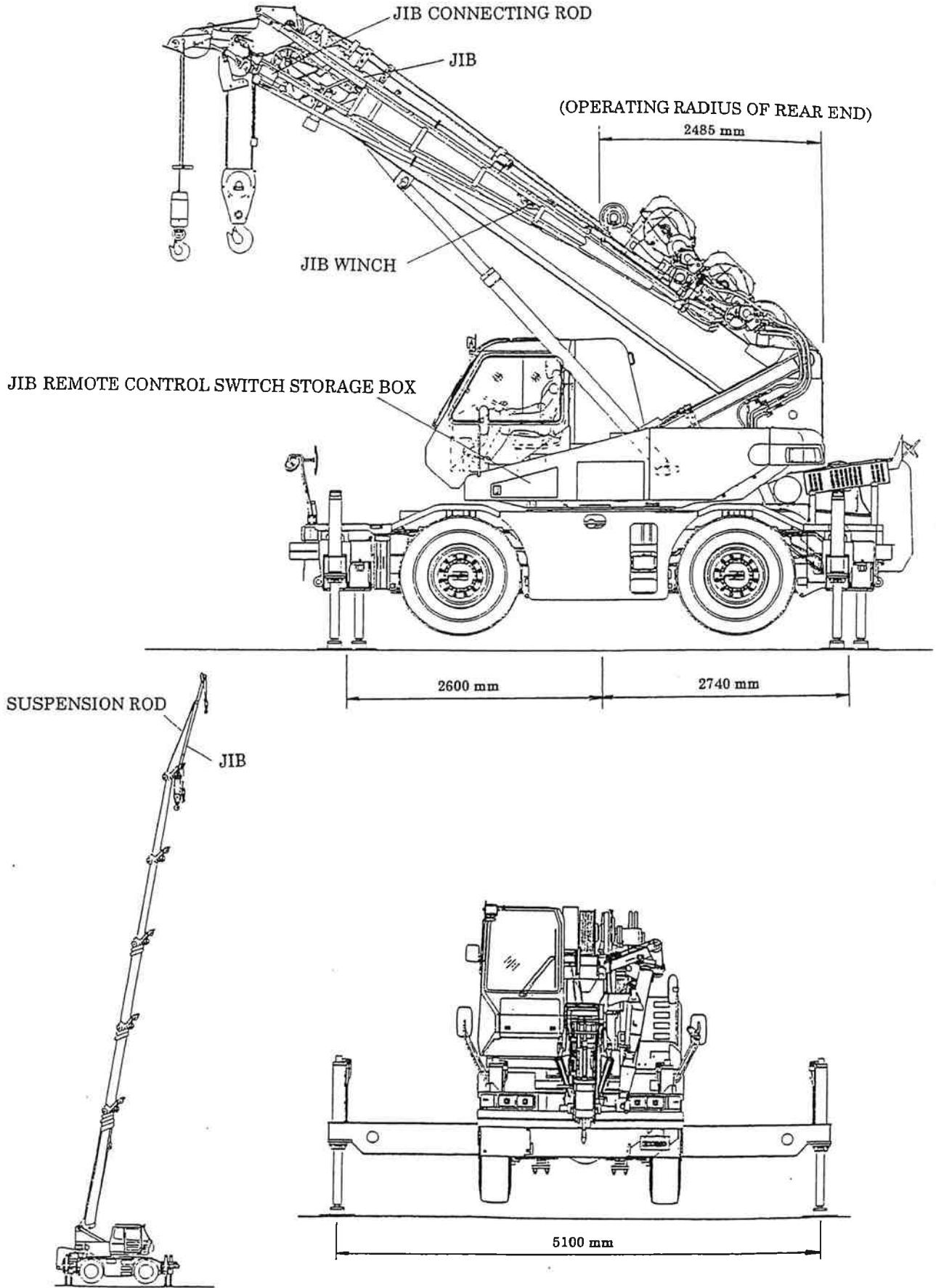


Fig. 1-1. Terminology (2/2)

2.5 GENERAL DIMENSIONS

(1) MACHINE WITH H-TYPE OUTRIGGERS

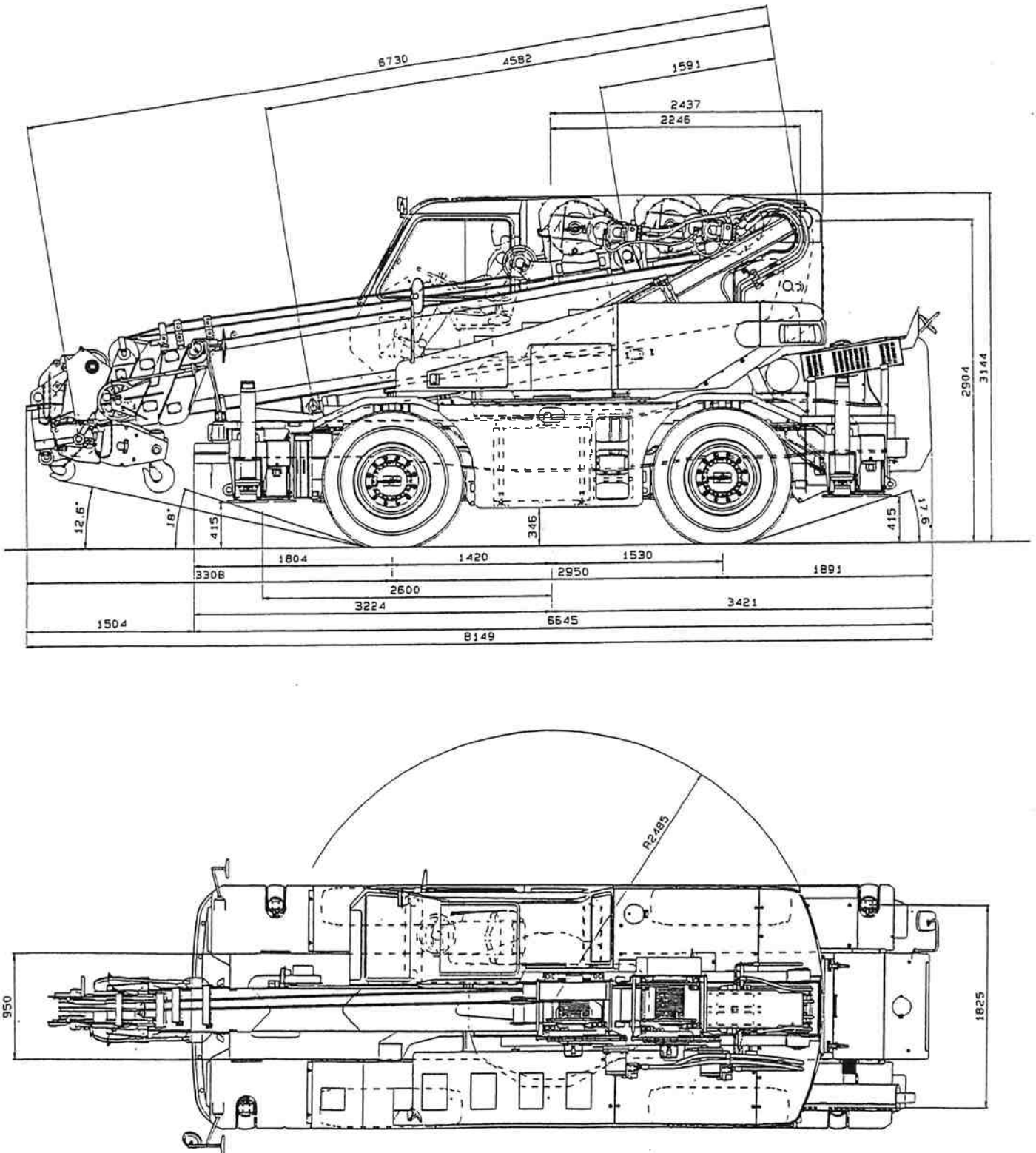


Fig.2.1 General Dimensions in mm (1/2)