

ROUGH TERRAIN CRANE

GR-300N

(Power Tilt Jib)

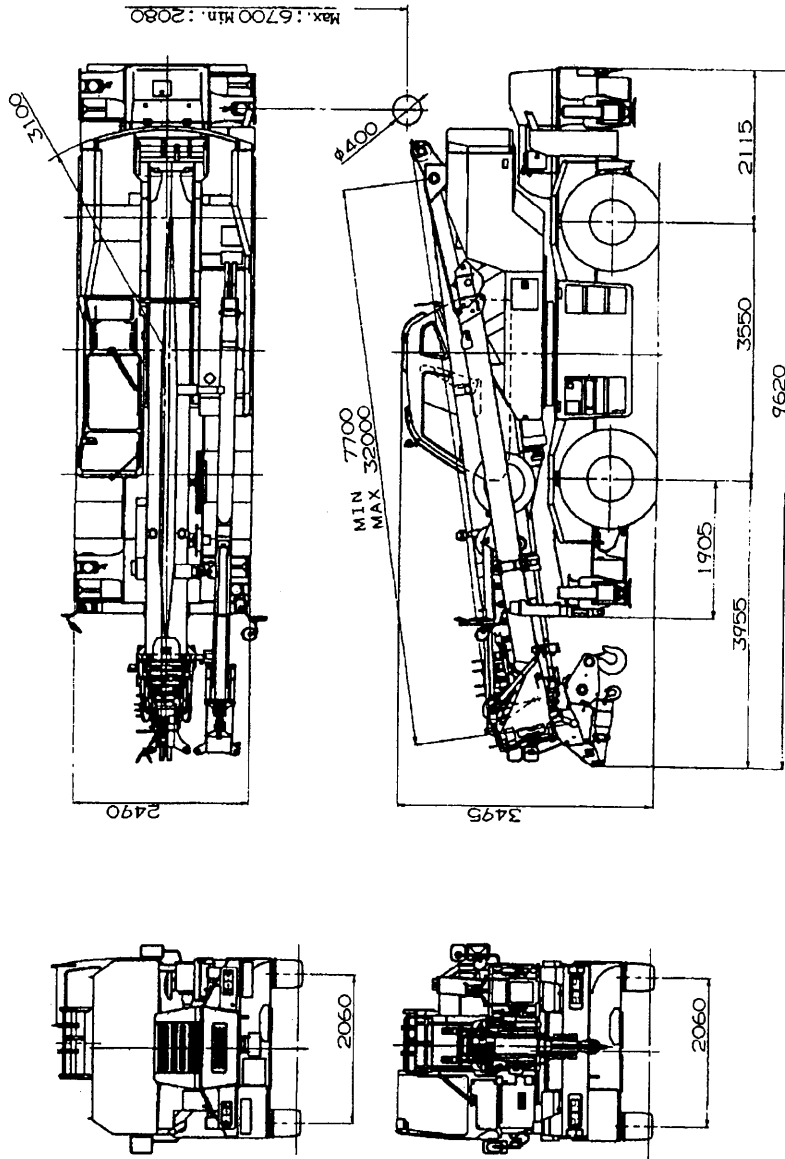
JAPANESE SPECIFICATIONS

GR

SPEC. NO.	OUTLINE
GR-300N-1-00101	Winch without free-fall device
GR-300N-1-00102	Winch with free-fall device

Control No. JA-02

DIMENSIONS (1/100)



TOTAL RATED LOADS

(1) With outriggers set
[BOOM]

Unit:ton

Outriggers fully extended (6.7m) -360°-							
A \ B	7.7m	12.7m	17.7m	22.7m	27.7m	30.5m	32.0m
2.5m	30.0	19.0	17.0	12.0			
3.0m	30.0	19.0	17.0	12.0			
3.5m	27.8	19.0	17.0	12.0	9.0		
4.0m	25.0	19.0	17.0	12.0	9.0		
4.5m	22.5	19.0	17.0	12.0	9.0	8.0	7.0
5.0m	20.3	19.0	16.2	12.0	9.0	8.0	7.0
5.5m		18.5	15.2	12.0	9.0	8.0	7.0
6.0m		17.0	14.3	12.0	9.0	8.0	7.0
6.5m		15.4	13.5	11.5	9.0	8.0	7.0
7.0m		14.0	12.8	11.0	9.0	8.0	7.0
8.0m		11.6	11.5	9.9	8.4	7.4	6.7
9.0m		9.2	9.25	8.9	7.7	6.8	6.4
10.0m		7.3	7.4	8.0	7.1	6.2	5.9
11.0m			6.1	6.7	6.55	5.7	5.4
12.0m			5.1	5.7	6.0	5.3	5.0
13.0m			4.25	4.8	5.2	4.9	4.55
14.0m			3.55	4.15	4.5	4.6	4.25
15.0m			3.0	3.6	3.9	4.0	3.95
16.0m				3.05	3.45	3.55	3.7
17.0m				2.65	3.0	3.15	3.3
18.0m				2.25	2.6	2.75	2.9
19.0m				2.0	2.3	2.4	2.55
20.0m				1.7	2.05	2.15	2.3
22.0m					1.55	1.7	1.8
24.0m					1.15	1.25	1.4
26.0m						0.95	1.1
28.0m						0.7	0.8
29.5m							0.6
a (°)	0 ~ 83						

A= Boom length B= Working radius
a= Boom angle range (for the unladen condition)

[BOOM]

Unit: ton

		Outriggers middle extended (6.3m)						-Over sides-		
A \ B		7.7m	12.7m	17.7m	22.7m	27.7m	30.5m	32.0m		
2.5m		30.0	19.0	17.0	12.0					
3.0m		30.0	19.0	17.0	12.0					
3.5m		27.8	19.0	17.0	12.0	9.0				
4.0m		25.0	19.0	17.0	12.0	9.0				
4.5m		22.5	19.0	17.0	12.0	9.0	8.0	7.0		
5.0m		20.3	19.0	16.2	12.0	9.0	8.0	7.0		
5.5m			18.5	15.2	12.0	9.0	8.0	7.0		
6.0m			17.0	14.3	12.0	9.0	8.0	7.0		
6.5m			15.0	13.5	11.5	9.0	8.0	7.0		
7.0m			13.2	12.8	11.0	9.0	8.0	7.0		
8.0m			10.5	10.7	9.9	8.4	7.4	6.7		
9.0m			8.5	8.4	8.9	7.7	6.8	6.4		
10.0m			6.7	6.8	7.6	7.1	6.2	5.9		
11.0m				5.55	6.3	6.55	5.7	5.4		
12.0m				4.6	5.3	5.7	5.3	5.0		
13.0m				3.8	4.5	4.9	4.9	4.55		
14.0m				3.2	3.8	4.2	4.35	4.25		
15.0m				2.65	3.25	3.6	3.75	3.85		
16.0m					2.8	3.1	3.3	3.5		
17.0m					2.35	2.7	2.85	3.05		
18.0m					2.05	2.35	2.5	2.7		
19.0m					1.75	2.05	2.2	2.4		
20.0m					1.5	1.7	1.9	2.1		
22.0m						1.3	1.45	1.65		
24.0m						0.95	1.05	1.2		
26.0m							0.8	0.9		
28.0m							0.6	0.65		
29.0m								0.55		
a (°)		0 ~ 83								

A= Boom length B= Working radius
a= Boom angle range (for the unladen condition)

[BOOM]

Unit:ton

		Outriggers middle extended (5.2m)					-Over sides-		
A \ B		7.7m	12.7m	17.7m	22.7m	27.7m	30.5m	32.0m	
2.5m		30.0	19.0	17.0	12.0				
3.0m		30.0	19.0	17.0	12.0				
3.5m		27.8	19.0	17.0	12.0	9.0			
4.0m		25.0	19.0	17.0	12.0	9.0			
4.5m		22.5	19.0	17.0	12.0	9.0	8.0	7.0	
5.0m		19.0	19.0	16.2	12.0	9.0	8.0	7.0	
5.5m			16.0	15.2	12.0	9.0	8.0	7.0	
6.0m			13.4	13.4	12.0	9.0	8.0	7.0	
6.5m			11.5	11.5	11.5	9.0	8.0	7.0	
7.0m			10.0	9.9	10.9	9.0	8.0	7.0	
8.0m			7.6	7.6	8.5	8.4	7.4	6.7	
9.0m			6.0	6.0	6.8	7.3	6.8	6.4	
10.0m			4.8	4.8	5.6	6.0	6.1	5.9	
11.0m				3.9	4.6	5.0	5.15	5.25	
12.0m				3.15	3.8	4.2	4.3	4.5	
13.0m				2.55	3.2	3.5	3.7	3.8	
14.0m				2.05	2.65	2.95	3.15	3.25	
15.0m				1.65	2.2	2.55	2.7	2.8	
16.0m					1.85	2.15	2.35	2.45	
17.0m					1.55	1.8	2.0	2.1	
18.0m					1.25	1.55	1.7	1.8	
19.0m					1.0	1.3	1.45	1.55	
20.0m					0.8	1.1	1.2	1.3	
22.0m						0.7	0.8	0.95	
24.0m						0.4	0.5	0.65	
26.0m								0.4	
a (°)		0 ~ 83				6 ~ 83	26 ~ 83	27 ~ 83	

A= Boom length B= Working radius
a= Boom angle range (for the unladen condition)

[BOOM]

Unit:ton

		Outriggers middle extended (3.8m)					-Over sides-	
B \ A		7.7m	12.7m	17.7m	22.7m	27.7m	30.5m	32.0m
2.5m		30.0	19.0	17.0	12.0			
3.0m		28.0	19.0	17.0	12.0			
3.5m		22.5	19.0	17.0	12.0	9.0		
4.0m		17.2	17.7	16.0	12.0	9.0		
4.5m		13.3	13.9	13.8	12.0	9.0	8.0	7.0
5.0m		10.8	11.4	11.4	11.5	9.0	8.0	7.0
5.5m			9.5	9.5	10.3	9.0	8.0	7.0
6.0m			8.1	8.1	8.8	9.0	8.0	7.0
6.5m			6.9	6.9	7.65	8.1	7.8	7.0
7.0m			5.95	5.95	6.6	7.1	7.15	7.0
8.0m			4.5	4.5	5.2	5.6	5.7	5.8
9.0m			3.45	3.45	4.05	4.5	4.6	4.7
10.0m			2.6	2.6	3.25	3.65	3.8	3.9
11.0m				2.0	2.6	3.0	3.1	3.2
12.0m				1.5	2.05	2.4	2.55	2.65
13.0m				1.1	1.6	1.95	2.1	2.2
14.0m				0.7	1.25	1.55	1.7	1.85
15.0m				0.4	0.95	1.25	1.4	1.5
16.0m					0.7	1.0	1.15	1.25
17.0m					0.45	0.75	0.9	1.0
18.0m						0.5	0.65	0.8
19.0m							0.5	0.65
20.0m								0.45
a (°)		0 ~ 83		34 ~ 83	45 ~ 83	48 ~ 83	48 ~ 83	

A= Boom length B= Working radius
a= Boom angle range (for the unladen condition)

[JIB]

Unit:ton

Outriggers fully extended (6.7m) -360°-																				
C	32.0m Boom + 6.5m Jib								32.0m Boom + 11.0m Jib											
	5°		25°		45°		60°		5°		25°		45°		60°					
E (°)	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M				
83	4.8	3.2	6.6	2.3	7.8	1.7	8.4	1.6	5.8	2.0	9.2	1.4	11.5	1.0	12.6	0.8				
76	9.9	3.2	11.4	2.3	12.4	1.7	12.9	1.6	11.9	2.0	14.8	1.4	16.5	1.0	17.2	0.8				
72	12.7	3.2	14.1	2.3	14.9	1.7	15.2	1.53	15.1	2.0	17.6	1.3	19.2	0.95	19.7	0.73				
70	14.0	2.9	15.4	2.3	16.1	1.7	16.3	1.5	16.6	2.0	19.0	1.25	20.4	0.94	20.8	0.7				
65	16.9	2.3	18.4	1.95	18.9	1.7	18.8	1.45	19.8	1.7	22.1	1.15	23.3	0.93	23.3	0.7				
60	20.2	1.85	21.2	1.65	21.6	1.5	21.5	1.4	23.0	1.35	25.2	1.1	26.1	0.92	25.9	0.7				
55	23.0	1.45	23.6	1.35	23.8	1.3			25.9	1.1	28.0	1.0	28.5	0.88						
50	25.6	0.95	25.8	0.9	26.0	0.9			28.6	0.8	30.4	0.7	30.7	0.7						
45	27.7	0.63	27.8	0.6	27.9	0.6			30.9	0.5	32.4	0.45	32.5	0.45						
40	29.7	0.35	29.8	0.33																
a (°)	39 ~ 83				44 ~ 83				59 ~ 83				44 ~ 83				59 ~ 83			

Unit:ton

Outriggers middle extended (6.3m) -Over sides-																
C	32.0m Boom + 6.5m Jib								32.0m Boom + 11.0m Jib							
	5°		25°		45°		60°		5°		25°		45°		60°	
E (°)	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M	B (m)	M
83	4.8	3.2	6.6	2.3	7.8	1.7	8.4	1.6	5.8	2.0	9.2	1.4	11.5	1.0	12.6	0.8
76	9.9	3.2	11.4	2.3	12.4	1.7	12.9	1.6	11.9	2.0	14.8	1.4	16.5	1.0	17.2	0.8
72	12.7	3.2	14.1	2.3	14.9	1.7	15.2	1.53	15.1	2.0	17.6	1.3	19.2	0.95	19.7	0.73
70	14.0	2.9	15.4	2.3	16.1	1.7	16.3	1.5	16.6	2.0	19.0	1.25	20.4	0.94	20.8	0.7
65	16.9	2.3	18.4	1.95	18.9	1.7	18.8	1.45	19.8	1.7	22.1	1.15	23.3	0.93	23.3	0.7
60	20.1	1.8	21.2	1.6	21.6	1.5	21.5	1.4	23.0	1.35	25.2	1.1	26.1	0.92	25.9	0.7
55	22.8	1.2	23.5	1.15	23.8	1.1			25.8	0.95	27.9	0.9	28.5	0.85		
50	25.4	0.8	25.8	0.75	26.0	0.75			28.5	0.6	30.3	0.55	30.7	0.55		
45	27.5	0.45	27.8	0.4	27.9	0.4			30.8	0.35	32.3	0.3	32.4	0.3		
a (°)	44 ~ 83				59 ~ 83				44 ~ 83				59 ~ 83			

B= Working radius C= Jib length D= Jib offset
E= Boom angle M= Total rated loads
a= Boom angle range (for the unladen condition)

[JIB]

Unit:ton

Outriggers middle extended (5.2m) -360°-																
C	32.0m Boom + 6.5m Jib								32.0m Boom + 11.0m Jib							
	5°		25°		45°		60°		5°		25°		45°		60°	
E (°)	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M
83	4.8	3.2	6.6	2.3	7.8	1.7	8.4	1.6	5.8	2.0	9.2	1.4	11.5	1.0	12.6	0.8
76	9.9	3.2	11.4	2.3	12.4	1.7	12.9	1.6	11.9	2.0	14.8	1.4	16.5	1.0	17.2	0.8
72	12.7	3.2	14.1	2.3	14.9	1.7	15.2	1.53	15.1	2.0	17.6	1.3	19.2	0.95	19.7	0.73
70	13.9	2.8	15.4	2.3	16.1	1.7	16.3	1.5	16.6	2.0	19.0	1.25	20.4	0.94	20.8	0.7
65	16.7	1.8	18.4	1.7	18.9	1.55	18.8	1.4	19.7	1.45	22.1	1.15	23.3	0.93	23.3	0.7
60	19.7	1.15	20.9	1.05	21.5	1.0	21.5	0.9	22.6	0.9	25.0	0.85	26.0	0.7	25.9	0.6
55	22.3	0.65	23.3	0.55	23.8	0.55			25.4	0.5	27.5	0.5	28.3	0.4		
52	23.8	0.35	24.7	0.33	25.2	0.3										
a (°)	51 ~ 83						59 ~ 83		54 ~ 83						59 ~ 83	

Unit:ton

Outriggers middle extended (3.8m) -Over sides-																
C	32.0m Boom + 6.5m Jib								32.0m Boom + 11.0m Jib							
	5°		25°		45°		60°		5°		25°		45°		60°	
E (°)	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M	B(m)	M
83	4.8	3.2	6.6	2.3	7.8	1.7	8.4	1.6	5.8	2.0	9.2	1.4	11.5	1.0	12.6	0.8
76	9.9	3.2	11.4	2.3	12.4	1.7	12.9	1.6	11.9	2.0	14.8	1.4	16.5	1.0	17.2	0.8
72	12.2	2.1	13.8	1.8	14.9	1.6	15.2	1.2	14.8	1.6	17.6	1.3	19.2	0.95	19.7	0.73
70	13.5	1.65	15.1	1.45	16.0	1.3	16.2	1.0	16.0	1.25	19.2	1.1	20.3	0.8	20.8	0.6
65	16.3	0.8	17.8	0.75	18.6	0.7	18.7	0.5	19.0	0.6	21.5	0.55	23.0	0.45	23.3	0.45
a (°)	64 ~ 83								64 ~ 83							

B= Working radius C= Jib length D= Jib offset
E= Boom angle M= Total rated loads
a= Boom angle range (for the unladen condition)

PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE EXTENDED:

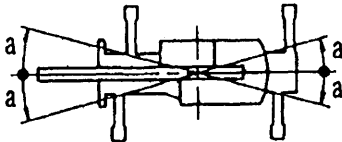
1. The total rated loads shown are for the case where the crane is set horizontally on firm level ground. They include the weights of the slings and hooks (main hook: 260kg, 12t hook: 170kg, auxiliary hook: 60kg). The values above the bold lines are based on the crane strength while those below are based on the crane stability.
2. Since the working radii are based on the actual values including the deflection of the boom, operations should be performed in accordance with the working radii.
3. Jib operations should be performed in accordance with the boom angle, Irrespective of the boom length. The working radii are reference values for the case where the jib is mounted on a 32.0m boom.
4. The total rated load for the single top shall be the value obtained by subtracting the weight of the hook mounted on the boom from the total rated load of the boom and must not exceed 4.0t.
5. High-speed unwind function (only on cranes fitted with winches without free-fall device) should be performed only when lowering the hook alone and sudden braking operations must be avoided.
6. As a rule, free-fall operation (only on cranes fitted with winches with free-fall device) should be performed only when lowering the hook alone. If a hoisted load must be lowered by free-fall operation, the load must be kept below 1/5th of the total rated load 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 3.75t for the main winch, and 4.0t for the auxiliary winch.

A	7.7m	12.7m	17.7m	22.7m	27.7m	30.5m	32.0m	J
H	8	6	6	4	4	4	4	1

A= Boom length H= No. of part-lines
J= Jib/Single top

8. 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 (6.3m)	Middle extended (5.2m)	Middle extended (3.8m)	Minimum extended (2.08m)
Angle a°	35	25	15	5



(2) Without outriggers

Unit:ton

B (m)	Stationary							
	7.7m Boom		12.7m Boom		17.7m Boom		22.7m Boom	
	K	G	K	G	K	G	K	G
3.0	14.0	8.2	11.5	6.3	8.0	6.3		
3.5	12.5	6.1	10.5	5.0	8.0	5.0	6.5	
4.0	11.0	4.7	9.7	4.1	8.0	4.1	6.5	5.0
4.5	10.0	3.75	8.8	3.3	8.0	3.3	6.5	4.1
5.0	9.0	2.8	8.0	2.7	7.5	2.7	6.5	3.45
5.5			6.5	2.2	6.5	2.2	6.0	2.9
6.0			5.8	1.8	5.8	1.8	5.5	2.45
6.5			5.1	1.4	5.1	1.4	5.1	2.0
7.0			4.4	1.0	4.4	1.0	4.7	1.6
8.0			3.4		3.4		3.9	1.0
9.0			2.55		2.55		3.15	
10.0			1.9		1.9		2.5	
11.0					1.3		1.85	
12.0					0.8		1.35	
13.0					0.5		0.9	
14.0							0.55	
a (°)	0~78		0~82	43~82	26~82	59~82	47~82	65~82

Unit:ton

B (m)	Creep (travelling at 1.6km/h or less)							
	7.7m Boom		12.7m Boom		17.7m Boom		22.7m Boom	
	K	G	K	G	K	G	K	G
3.0	10.5	6.9	9.5	5.3	6.7	5.3		
3.5	9.6	5.1	8.7	4.25	6.7	4.2	5.5	
4.0	8.5	3.9	8.0	3.4	6.7	3.4	5.5	4.2
4.5	7.5	3.1	7.2	2.8	6.7	2.75	5.5	3.4
5.0	6.7	2.35	6.3	2.25	6.3	2.25	5.5	2.9
5.5			5.5	1.8	5.5	1.8	5.0	2.4
6.0			5.0	1.45	5.0	1.5	4.6	2.0
6.5			4.3	1.1	4.3	1.15	4.3	1.7
7.0			3.7	0.8	3.7	0.8	3.9	1.3
8.0			2.8		2.8		3.3	0.8
9.0			2.1		2.1		2.6	
10.0			1.6		1.6		2.1	
11.0					1.0		1.5	
12.0					0.65		1.1	
13.0							0.7	
a (°)	0~78		0~82	43~82	33~82	59~82	50~82	65~82

B= Working radius K= Front G= 360°
a= Boom angle range (for the unladen condition)

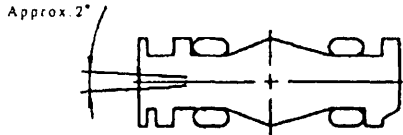
PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE NOT MOUNTED:

1. The total rated loads shown are for the case where the tire air pressure on firm level ground is as specified 900kPa (9.00kgf/cm²) and the suspension-lock cylinder is retracted as much as possible. They include the weights of the slings and hooks (main hook: 260kg, 12t hook: 170kg, auxiliary hook: 60kg).
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 3.75t for the main winch, and 4.0t for the auxiliary winch.

A	7.7m	12.7m	17.7m	22.7m	Single top
H	4	4	4	4	1

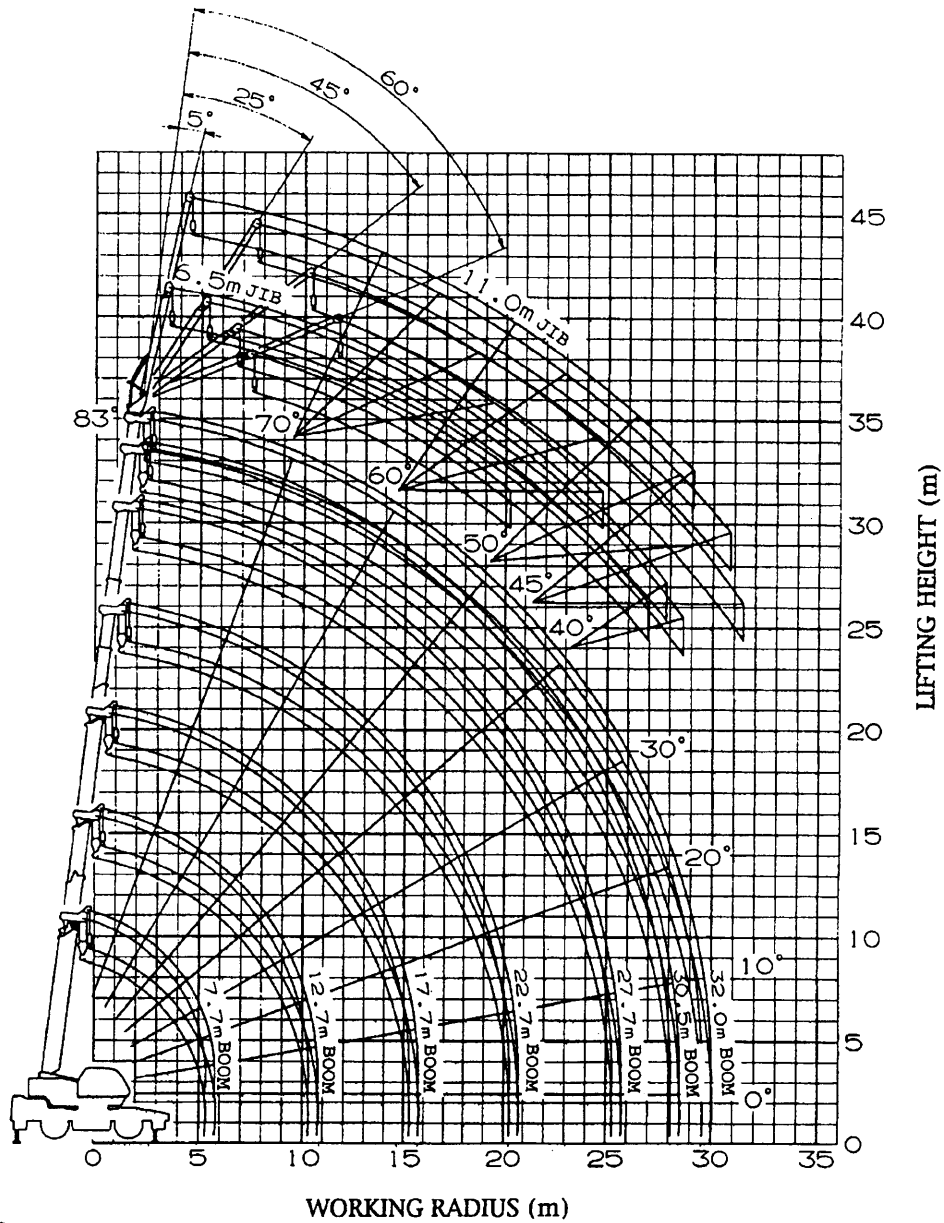
A= Boom length H= No. of part-lines

4. "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.



5. The total rated load for the single top shall be the value obtained by subtracting the weight of the hook mounted on the boom from the total rated load of the boom and must not exceed 4.0t.
6. High-speed unwind function (only on cranes fitted with winches without free-fall device) and free-fall operations (only on cranes fitted with winches with free-fall device) should not be performed without outriggers. Booms over 22.7m in length and jibs should not be used without outriggers.
7. The "Drive Mode Selection" switch should be set to "4-wheel / Lo" for creeping while hoisting a load and the shift lever should be set to first.
8. When creeping 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 1.6km/h or less. In particular, any abrupt steering, starting or braking must be avoided.
9. Crane operations should not be performed when creeping while hoisting a load.

WORKING RADIUS - LIFTING HEIGHT



NOTES:

1. The deflection of the boom and the jib are not incorporated in the figure above.
2. The figure above is for the case where the outriggers are fully extended (360°).