MAEDA

OPERATION MANUAL

MINI-CRAWLER CRANE

MODEL MC-274C
MC-275C

MAEDA SEISAKUSHO CO.,LTD.

1. GENERAL

1) Main Specifications of Crane

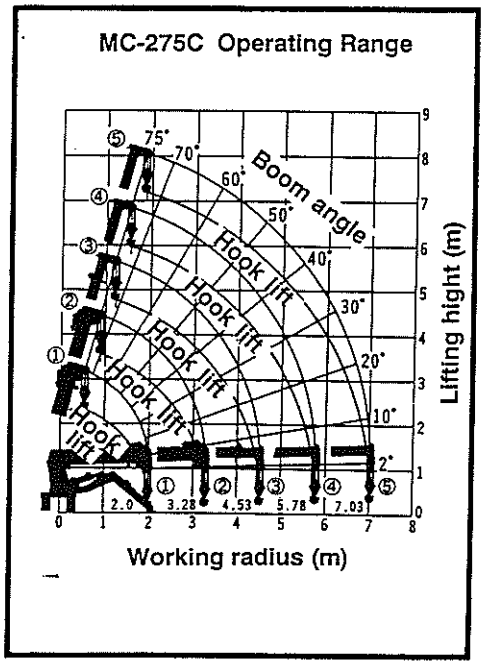
Crane model		MC-274C	MC-275C
Crane Capacity		2.52 t × 1.5 m	
Maximum working radius		5.7 m	7.03 m
Maximum lift above ground		About 5.9 m	About 7.2 m
Winch	Hook travel speed	6.0 m/min. (3 layers, 3 falls)	
	Winding speed (Rope speed)	18.0 m/min. (3 layers)	
	Wire rope (cable)	6 × Ws(26) ϕ 8 × 34 m	
	Type	Axial plunger motor drive; spur reduction gear; mechanical brake	
Extender	Boom length	2.12 m to 5.91m	2.2 m to 7.24 m
	Boom extending/ retracting speed	3.79 m/33 sec.	5.04m/33 sec.
	Type of boom	Pentagon-shaped, 4-boom type (4 hydraulic automatic telescoping booms)	Pentagon-shaped, 5-boom type (5 hydraulic automatic telescoping booms)
	Type of extender	Sequentially operated 2-cylinder type + 1 set of wire rope simultaneous extension/retraction device	Sequentially operated 2-cylinder type + 2 sets of wire rope simultaneous extension/retraction device
Raising	Raising angle/time	2° to 75°/14 sec.	
	Type	Double acting cylinder, direct drive	
Swivel	Swivel angle/speed	360° continuous/1.6 rpm	
	Type	Ball bearing supported, hydraulic motor drive, worm and spur gears reduction	
Outriggers		Double section extending, hydraulic cylinder direct drive	
Hydraulic oil tank capacity		15 liters	
Hydraulic pump		Gear pump, rated pressure 171.7 bar (175 kg/m²)	
Safety devices		Overwind alarm, loadmeter, hydraulic safety valve, sling wire rope holder, hydraulic automatic locking device Overturn alarm, level gauge	

2) Main Specification of Carrier

Model			MC-274C	MC-275C
Body Dimensions	Length		2536 mm	2675 mm
	Width		760 mm	
	Height		1480 mm	1530 mm
Crawlers	Ground contact length		1052 mm	
	Width		180 mm	
	Center distance		570 mm	
	Ground pressure		0.4 kg/cm²	
Engine	Model		KAWASAKI FE250G-SX	
	Rated horsepower		6.0 ps/1800 rpm	
	Maximum horsepower		8.2 ps	
	Start		Electric/Recoil start	
Transmission			3 forward 1 reverse	
	No. of speeds	Fast gear	1.55 km/h	
		Second gear	2.68 km/h	
		Third gear	4.50 km/h	
		Rear	1.71 km/h	
Main clutch			Belt extension	
Drive clutch			Side clutch	
Brake			Internal expansion	
Battery			12N24-3	
Weight			1535 kg	1580 kg

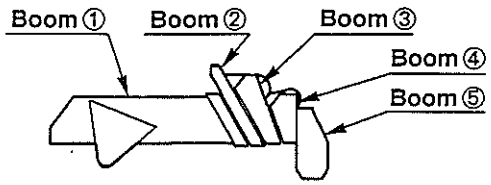
(2) MC-275C (5-section boom)

MC-275C OPERATING RANGE



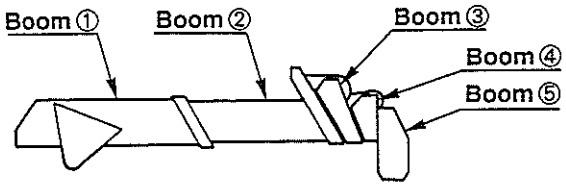
The boom positions, boom ①, boom ① + ②, boom ① + ② + ③, boom ① ② + ③ + ④ and boom ⑤ extended in the rated load table show the following states:

(1) Boom ①



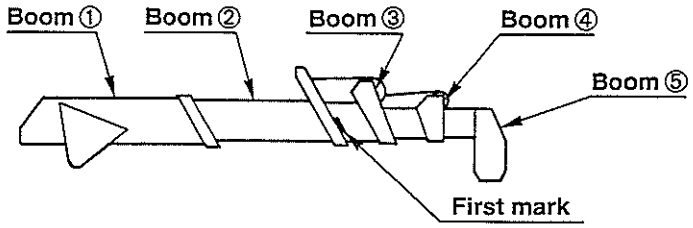
(All booms retracted)

(2) Booms ① + ②



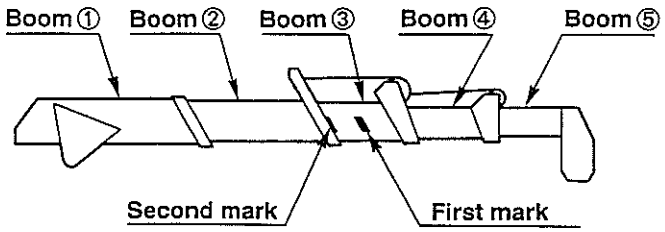
(Booms ③, ④ and ⑤ fully retracted, boom ② fully extended)

(3) Booms ① + ② + ③



Alternate : If first mark ▮ can be seen, be sure to operate within the limit of booms ① + ② + ③.

(4) Booms ① + ② + ③ + ④



Alternate : If second mark ▮ can be seen, be sure to operate within the limit of booms ① + ② + ③ + ④.

MC-275C OVERALL LOAD RATING TABLE

1. When using the crane in the state shown in Figure 1, with the outriggers not streched to their outermost position, make sure of working in conformity with the "Load Rating Table with the Outriggers not Stretched to their Outermost Position" shown below.
2. It is prohibited to work in the "Crane Operation Prohibition Area" when the outriggers are arranged as shown in Figures 2, 3, 4 and 5.

Figure 1

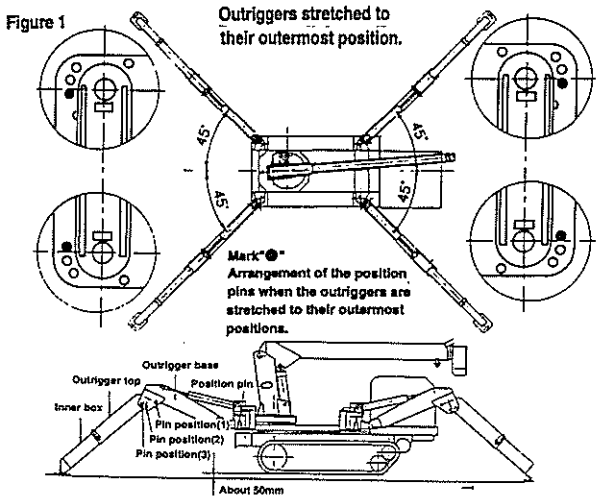


Figure 2

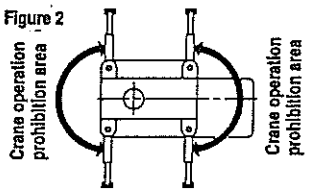


Figure 3

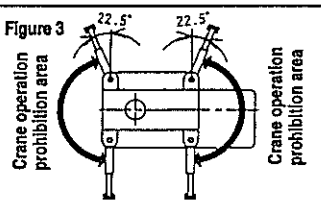


Figure 4

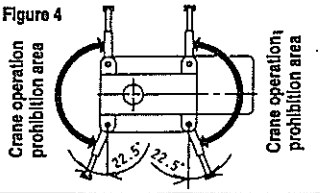
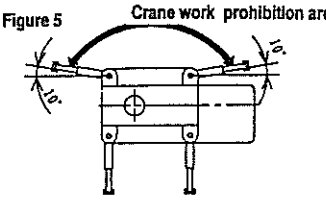


Figure 5



1. The outrigger setting method shown in Figure 1 is the outermost stretching state. (The inner box is stretched to its outermost state. The OR top shall be set at the pin position (3), and the rubber crawlers shall be lifted appoximately 50 mm above the ground).
2. The stability gets poor when rotating 360 degrees by hanging a load. Therefore, make sure of shortening the working radius, and work with utmost care.
3. When working with the crane, make sure of using the outriggers, and keeping the vehicle body in horizontal position.

Load rating table with the outriggers stretched to their outermost position

Boom ①, ①+②		Boom ①+②+③		Boom ①+②+③+④		Boom ①+②+③+④+⑤	
Working radius (m)	Overall load rating (kg)	Working radius (m)	Overall load rating (kg)	Working radius (m)	Overall load rating (kg)	Working radius (m)	Overall load rating (kg)
1.5 or less	2520	2.5 or less	1570	3.8 or less	700	4.0 or less	550
1.8	2080	3.0	1020	4.0	550	4.5	400
2.0	1920	3.5	760	4.5	400	5.0	330
2.5	1570	4.0	550	5.0	330	5.5	290
2.7	1270	4.536	400	5.5	290	6.0	260
3.0	1020			5.78	270	6.5	220
3.28	880					7.03	180

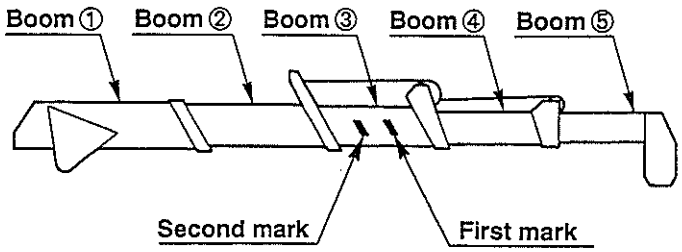
Load rating table with the outriggers stretched to their outermost position

Boom ①, ①+②		Boom ①+②+③		Boom ①+②+③+④		Boom ①+②+③+④+⑤	
Working radius (m)	Overall load rating (kg)	Working radius (m)	Overall load rating (kg)	Working radius (m)	Overall load rating (kg)	Working radius (m)	Overall load rating (kg)
1.5 or less	1160	2.0 or less	850	3.0 or less	410	3.0 or less	410
1.8	970	2.2	740	3.6	320	3.5	320
2.0	850	2.5	600	4.0	230	4.0	230
2.5	600	3.0	410	4.5	200	4.5	200
2.7	520	3.5	320	5.0	150	5.0	150
3.0	410	4.0	230	5.5	130	6.5	The use of crane is forbidden.
3.28	300	4.536	150	5.87	120	7.03	

NOTES

1. The overall load ratings mentioned above are for firm horizontal ground. Work with utmost care, because the crane may overturn depending on the outrigger setting conditions, the ground surface conditions and other relevant factors.
2. The overall load rating is based on the actual working radius taking into consideration the bending of the boom when a load is applied on it.
3. When the boom is stretched even slightly, make sure of working with the overall load rating of the boom ①+②+③.
4. When more than a half of the part bearing the mark ▙ is stretched out of the boom ②, make sure with working with the performance of the boom ①+②+③+④.
5. When more than a half of the second part bearing the mark ▙ is stretched out the boom ②, make sure with working with the performance of the boom ①+②+③+④+⑤.
6. The overall load rating indicates the load including the weight of the hook block (20 kg).

(5) Boom ⑤ in use



Alternate : If second mark ◥ is miduray between booms ② and ④ or boom ③, operate within the limit of booms ①+②+③+④+⑤.