

## 2. GENERAL

### 1) Main Specifications of Crane

Crane model		MC-354C	MC-355HC
Lifting load		3.0 t	
Maximum working radius		9.8 m	12.135 m
Maximum lift above ground		9.5 m	11.8 m
Winch	Hook travel speed	11.5 m/min. (4 Booms, 4 lines)	
	Winding speed (Rope speed)	46 m/min. (4 Booms)	
	Wire rope (cable)	6 × Ws(26) φ 8 × 63 m	6 × Ws(26) φ 8 × 73 m
	Type	Axial plunger motor drive; spur reduction gear; mechanical brake	
Extender	Boom length	3.39 m to 10.0 m	3.525 m to 12.335 m
	Boom extending/ retracting speed	6.61 m/28 sec.	6.61 m/28 sec. (full ext 4 boom)
	Type of boom	Pentagon-shaped, 4-boom type (4 hydraulic automatic telescoping booms)	Pentagon-shaped, 4 hexagon-shaped, 1-boom (4 hydraulic automatic + 1 semiautomatic)
	Type of extender	Sequentially operated 2-cylinder type + 1 set of wire rope simultaneous extension/retraction device	Sequentially operated 2-cylinder type + 1 set of wire rope simultaneous extension/retraction device + OMS hydraulic extension/retraction derrick
Raising	Raising angle/time	3° to 76° /13 sec.	
	Type	Double acting cylinder, direct drive	
Swivel	Swivel angle/speed	360° continuous/2.8 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		76 liters	
Hydraulic pump		Twin gear pump, rated pressure 206bar (210 kg/m <sup>2</sup> )	
Safety devices		Overwind alarm, loadmeter, hydraulic safety valve, sling wire rope holder, hydraulic automatic locking device	

## 2) Main Specifications of Carrier

Crane model		MC-354C	MC-355HC
Body Dimensions	Length	4150 mm	4290 mm
	Width	1300 mm	
	Height	1845 mm	
Crawlers	Ground contact length	1720 mm	
	Width	280 mm	
	Crawlers	Rubber crawlers	
	Ground pressure	0.3 kg/cm <sup>2</sup>	
Engine	Model	Water-cooled diesel engine 3TNA72L (Yanmar)	
	Output/rpm	19ps/3000 rpm	
	Starting system	Electric starting motor	
Travel systems	Gradeability	20°	
	Travel speed	Forward	1.28 km/h
		Reverse	1.28 km/h
	Travel system	Hydraulic motor with integrated left and right independent parking brake, planetary reduction gear type	
	Brake system	Disc brake integrated with hydraulic motor	
	Swivel system	Left and right independent traveling motors	
Fuel	Diesel Fuel		
Fuel tank capacity	35 liters		
Battery	NX100-S6		
Weight	3120 kg	3170 kg	

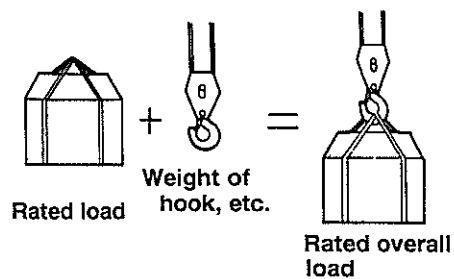
### 3) Definitions of Terms

#### (1) Rated overall load

The maximum load that can be applied according to boom length and angle. The load includes the weight of the hook and slings.

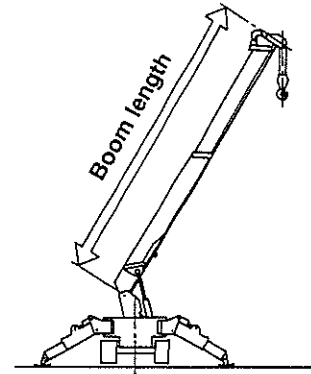
#### (2) Rated load

The rated overall load minus the weight of the hook, which can be lifted.



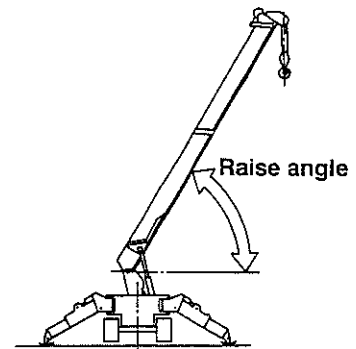
#### (4) Boom length

The distance from the root of the bottom boom to the sheave pin on the top boom.



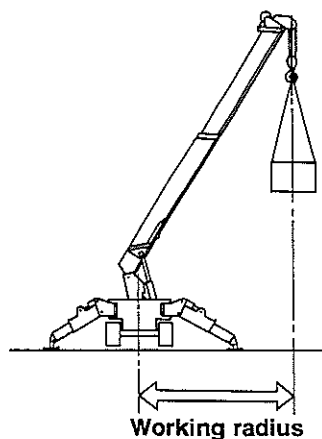
#### (5) Raise angle

The boom angle from the horizontal angle.



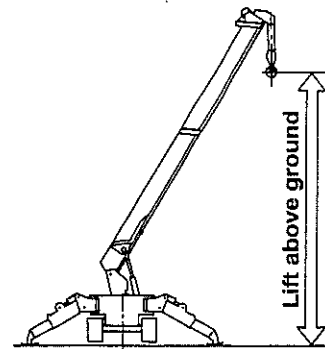
#### (3) Working radius

The horizontal distance from the center of the swivel to the center of the hook.



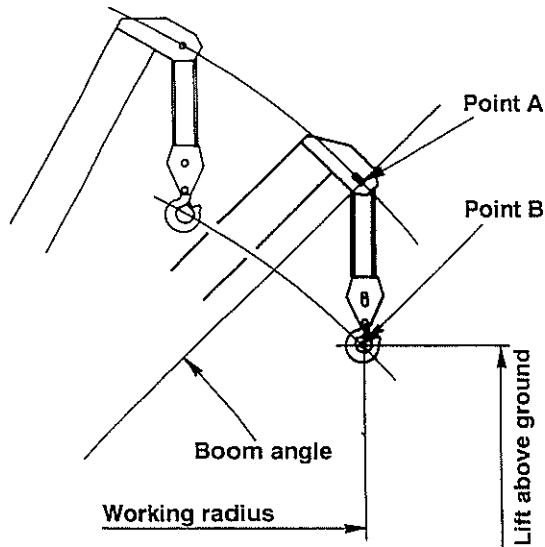
#### (6) Lift above ground

The vertical distance from the bottom end of the hook to the ground when the hook is raised to the highest point (upper limit).

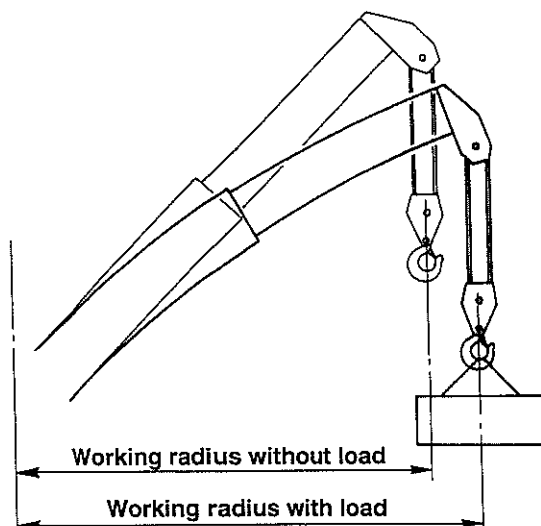


#### 4) How to Read Operating Range Chart and Rated Load Table

The operating range chart shows the working radius of the machine, and the relationship between boom angle and lift above ground.



**Note:** Point A indicates boom angle, and point B lift above ground. The working radius up to the point A and B is the same.



**Note:** The operating range chart applies in cases where no load is lifted, and does not include boom deflections. If a load is lifted, the booms deflect so that the working radius increases slightly. Allow a margin for safety from the figures shown in the operating range chart.

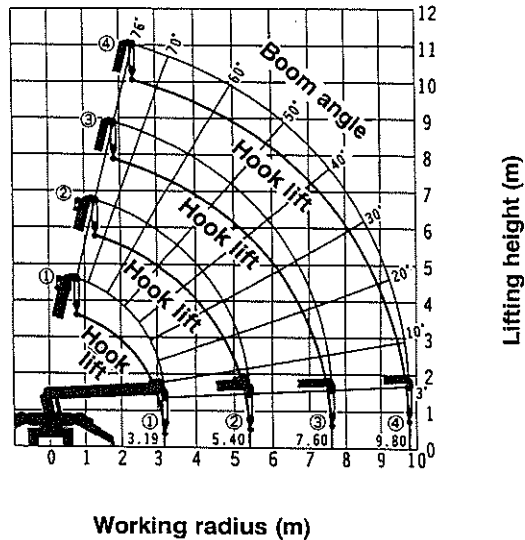
As working radius increases, rated load decreases.




## 5) Operating Range Chart and Rated Load Table

### (1) MC-354C (4-section boom)

The operating range chart shows the working radius of the machine, and the relationship between boom and lift above ground.

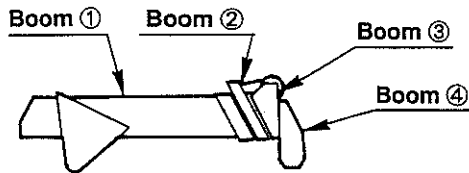
### MC-354C OPERATING RANGE



MC-354C RATED LOAD TABLE											
Outriggers shall be used in the standard extension width.	Boom ①, Booms ① + ②										
	Working radius (m)	0.2 or less	2.25	2.5	2.7	3.0	3.5	4.0	4.5	5.0	5.4
	Rated load (kg)	2900	2900	2900	2600	2300	1950	1650	1370	1080	900
	Booms ① + ② + ③	If mark  can be seen, be sure to operate within the limit of booms ① + ② + ③.									
	Working radius (m)	2.3 or less	2.7	3.0	3.5	4.0	4.5	5.0	6.0	7.0	7.6
	Rated load (kg)	2300	2300	2100	1700	1400	1200	1050	780	590	490
	Booms ① + ② + ③ + ④	If mark  is midway between booms ② and ④ on boom ③, operate within the limit of booms ① + ② + ③ + ④.									
	Working radius (m)	4.0 or less	4.5	5.0	5.5	6.0	7.0	8.0	9.0	9.8	
	Rated load (kg)	1000	900	800	750	700	590	480	390	290	
	<b>CAUTION:</b> 1. Working range chart does not include boom deflections. 2. Rated load table is based on actual working radius that takes into account boom deflections under load. Rough crane operation is quite risky even if the work is within the rated load. 3. In some cases there is a fear that the crane turns over according to the extension condition or width of outriggers even if the rated load lifted. Therefore, be careful! 4. The case that more than a half of the mark  comes out from boom ② is applicable to 3. above.										

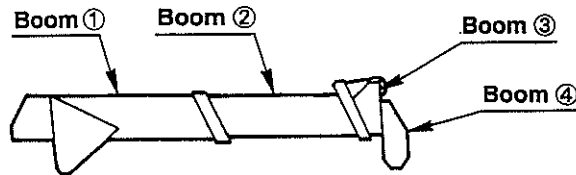
The boom positions, boom ①, boom ① + ②, boom ① + ② + ③ and boom ① + ② + ③ + ④ in the rated load table show the following states:

(1) Boom ①



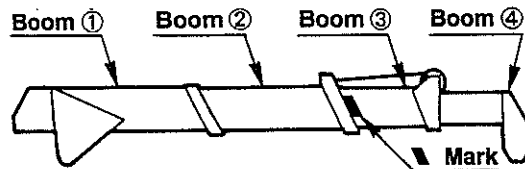
(All booms retracted)


(2) Booms ① + ②



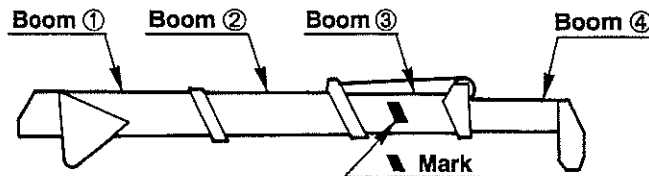
(Booms ③ and ④ fully retracted; boom ② fully extended)


(3) Booms ① + ② + ③



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

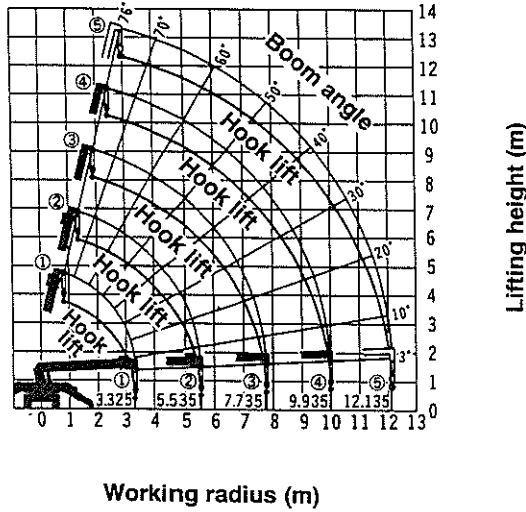
(4) Booms ① + ② + ③ + ④



Alternative : If mark  is midway between booms ② and ④ on boom ③, operate within the limit of booms ① + ② + ③ + ④.

(2) MC-355HC (5-section boom)

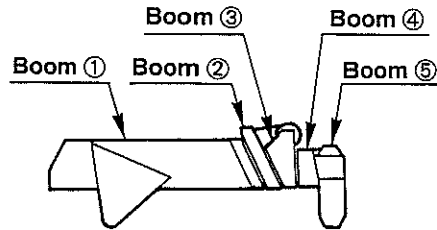
MC-355HC OPERATING RANGE



MC-354C RATED LOAD TABLE												
Outriggers shall be used in the standard extension width.	Boom ①, Booms ①+②											
	Working radius (m)	0.2 or less	2.25	2.5	2.7	3.0	3.5	4.0	4.5	5.0	5.53	
	Rated load (kg)	2900	2900	2900	2600	2300	1950	1650	1370	1080	900	
	Booms ①+②+③	If mark  can be seen, be sure to operate within the limit of booms ①+②+③.										
	Working radius (m)	2.25 or less	2.7	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0	7.73
	Rated load (kg)	2300	2300	2100	1700	1400	1200	1050	920	780	590	490
	Booms ①+②+③+④	If mark  is midway between booms ② and ④ on boom ③, operate within the limit of booms ①+②+③+④.										
	Working radius (m)	4.0 or less	4.5	5.0	5.5	6.0	7.0	8.0	9.0	9.93		
	Rated load (kg)	1000	900	800	750	700	590	480	390	290		
	Boom ⑤ extended	If boom ⑤ is extended, be sure to operate within the figures specified below for boom ⑤.										
	Boom angle ( ° )	70 or more	65	60	50	40	30	20	10	3		
	Rated load (kg)	600	500	400	300	250	220	200	200	200		
<b>CAUTION:</b> 1. Working range chart does not include boom deflections. 2. Rated load table is based on actual working radius that takes into account boom deflections under load. Rough crane operation is quite risky even if the work is within the rated load. 3. In some cases there is a fear that the crane turns over according to the extension condition or width of outriggers even if the rated load lifted. Therefore, be careful! 4. The case that more than a half of the mark  comes out from boom ② is applicable to 3.												

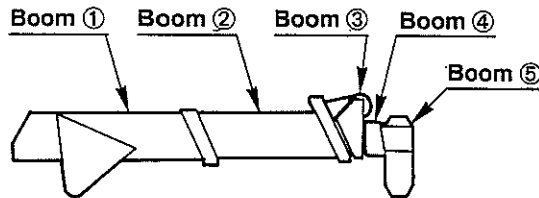
The boom positions, boom ①, boom ① + ②, boom ① + ② + ③, boom ① ② + ③ + ④ and boom ⑤ extended in the rated load table show the following states:

**(1) Boom ①**



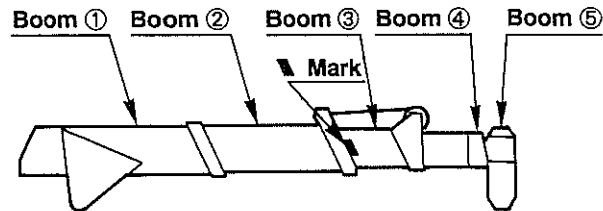
(All booms retracted)


**(2) Booms ① + ②**



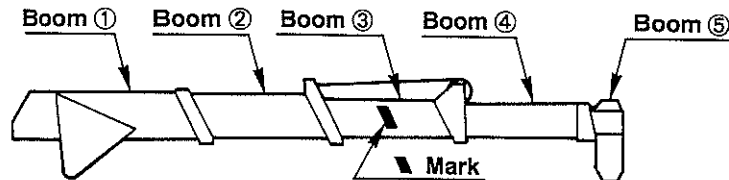
(Booms ③, ④ and ⑤ fully retracted, boom ② fully extended)


**(3) Booms ① + ② + ③**



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

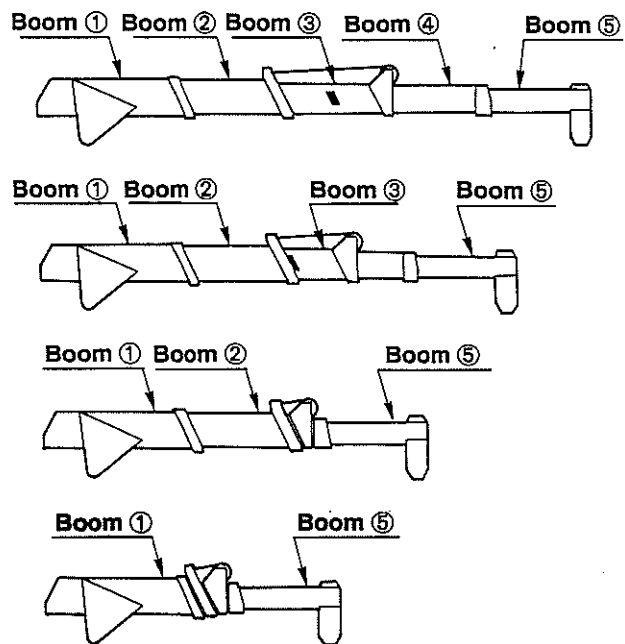
**(4) Booms ① + ② + ③ + ④**



Alternate : If mark  is midway between booms ② and ④ on boom ③, operate within the limit of booms ① + ② + ③ + ④.



**(5) Boom ⑤ in use**



**When boom ⑤ is in use, operate within the limits specified for the case when boom ⑤ is extended irrespective of the state of whether booms ②, ③ and ④ are extended or retracted.**