

MK500

MK500 Spec

LATTICE BOOM WHEEL CRANE

Max. Lifting Capacity: 50.0 metric ton at 3.4 m

UPPER STRUCTURE

CRANE PERFORMANCE		
Max. rated load	50.0metric ton x 3.4 m	
Basic boom length	5.6m	
Max. boom length	33.0m	
Max. hook height	31.7m (main hook)	
Max. operating radius (main hook)	30m	
Operating weight (basic configuration)	44.1 metric tons	
Line speed	Main (hoisting/lowering): *100/70/50/35m/min	
	Aux. (hoisting/lowering): *100/70/50/35m/min	
	Boom (hoisting/lowering): *65m/min	
Rated line pull	(main) 64.7kN [6.6 tf]	
	(aux.) 64.7kN [6.6 tf]	
Swing speed	3.7min ⁻¹ [rpm]	
MAJOR STRUCTURE		
Boom hoisting system	Hydraulic motor drive with one-step planetary gear and one-step spur gear reductions, with disc-brake	
Load hoisting system	Hydraulic motor drive with two-step planetary gear, with auto-brake, independent 2 winches with Free-Fall	
Swing device	Hydraulic motor drive with planetary gear reduction with brake, swing-in neutral free	
Outrigger	Hydraulic X-type	
	Extension width 7.4m	
WIRE ROPE		
Main winch	IWRC 6 x Fi (29) c/o anti-twist rope, 22mm dia. X 167m	
Aux. winch	IWRC 6 x Fi (29) c/o anti-twist rope, 22mm dia. X 78m	
Boom (12-line)	IWRC 6 x WS (31)c/o anti-twist rope, 16mm dia. X 135m	
Boom guy line (2-line)	IWRC 6 x Fi (29) c/o anti-twist rope, 30mm dia.	
HYDRAULIC DEVICE		
Hydraulic pump	Twin variable plunger pump + triple pump (one plunger pump + two gear)	
Hydraulic oil tank	300 liters	
ENGINE		
ENGINE	Model	MITSUBISHI 6D16-TLE2A
	Type	Water-cooled, 6 cylinders, direct injection, turbo-charged diesel, with intercooler
	Total displacement	7.545L
	Max. output	147kW/2,150min ⁻¹ [200PS/2,150rpm]
	Max. torque	780N·m/1,600min ⁻¹ [80kgf·m/1,600rpm]
Fuel tank capacity	300 liters	

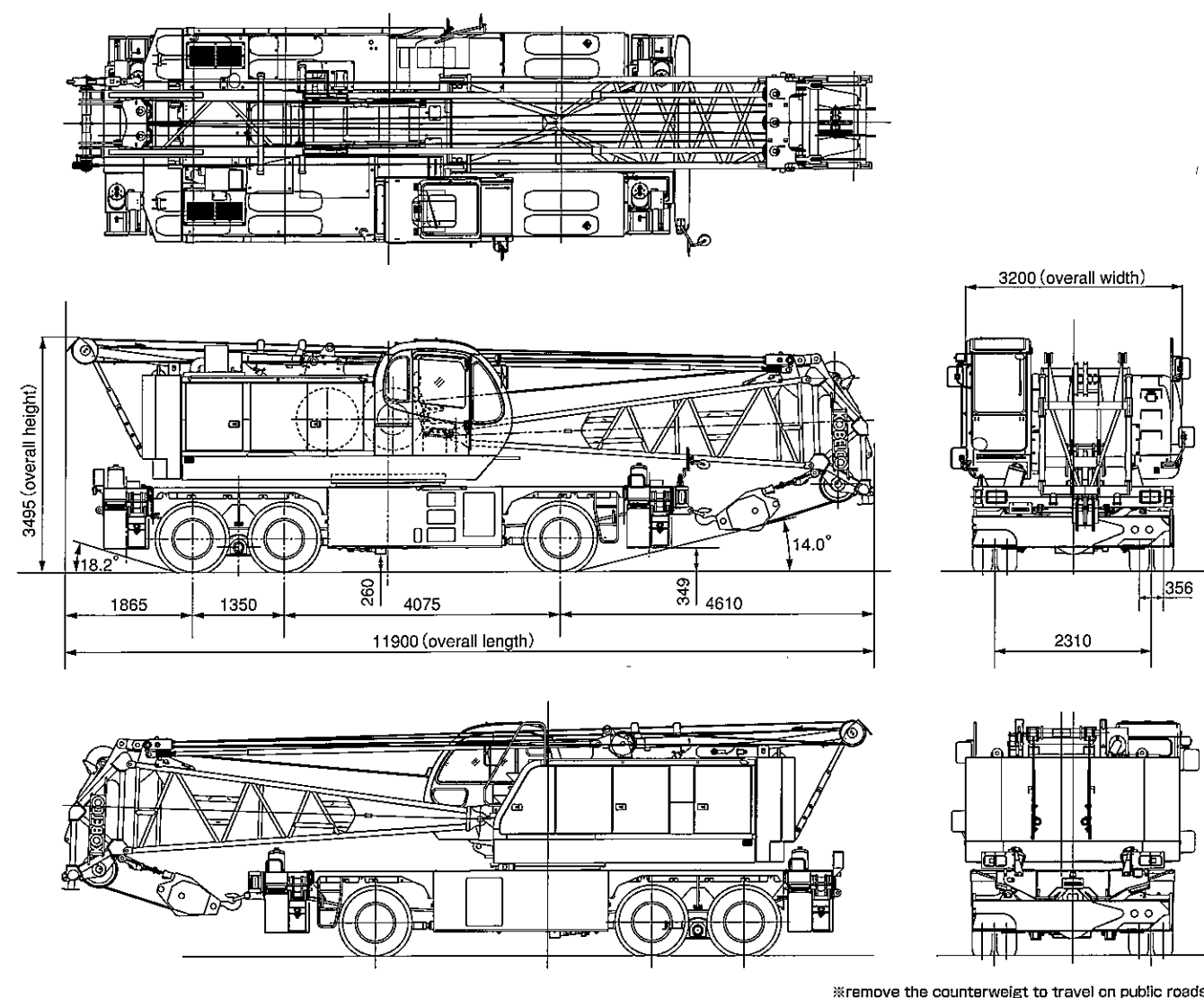
CARRIER

CARRIER		
Max. travel speed		15km/h
Gradeability		20% (11.3 degrees)
Min. turning radius		11.6m
STEERING		
Travel drive type		Hydraulic motor drive, 6 x 2 (rear front axle), 6 x 4 (front and rear front axle) selecting type
Transmission		Hydraulic control, F1R1 (with high/low shift)
Reduction unit		1 step spur gear reduction unit
Axle and suspension		All floating type, front: fixed, rear tranion-type
Steering	Type	Hydraulic power steering with emergency steering device
	Mode	Normal (front 1W)
Brake	Main service brake	Air brake, leading trailing (all axle)
	Parking brake	Spring-type, leading trailing (rear front and rear rear axle)
Tires (front and rear)		11.0-20-16PR (I) double tires for all axle
DIMENSIONS		
Overall length		11,900mm
Overall width		3,200mm
Overall height		3,495mm
Wheel base		4,075 + 1,350 = 5,425mm
Tread		2,310mm
Front overhang		4,610mm
Rear overhang		1,865mm
TOTAL WEIGHT(at Travel)		
Total load		35,075kg
Front axle load		15,175kg
Rear axle load	9,950kg (rear front)	
	9,950kg (rear rear)	
PASSENGER		
		1 person

Note:
Each line speed shows the value at first layer.
Line speed marked * shows the value at light load, and varies according to the load.

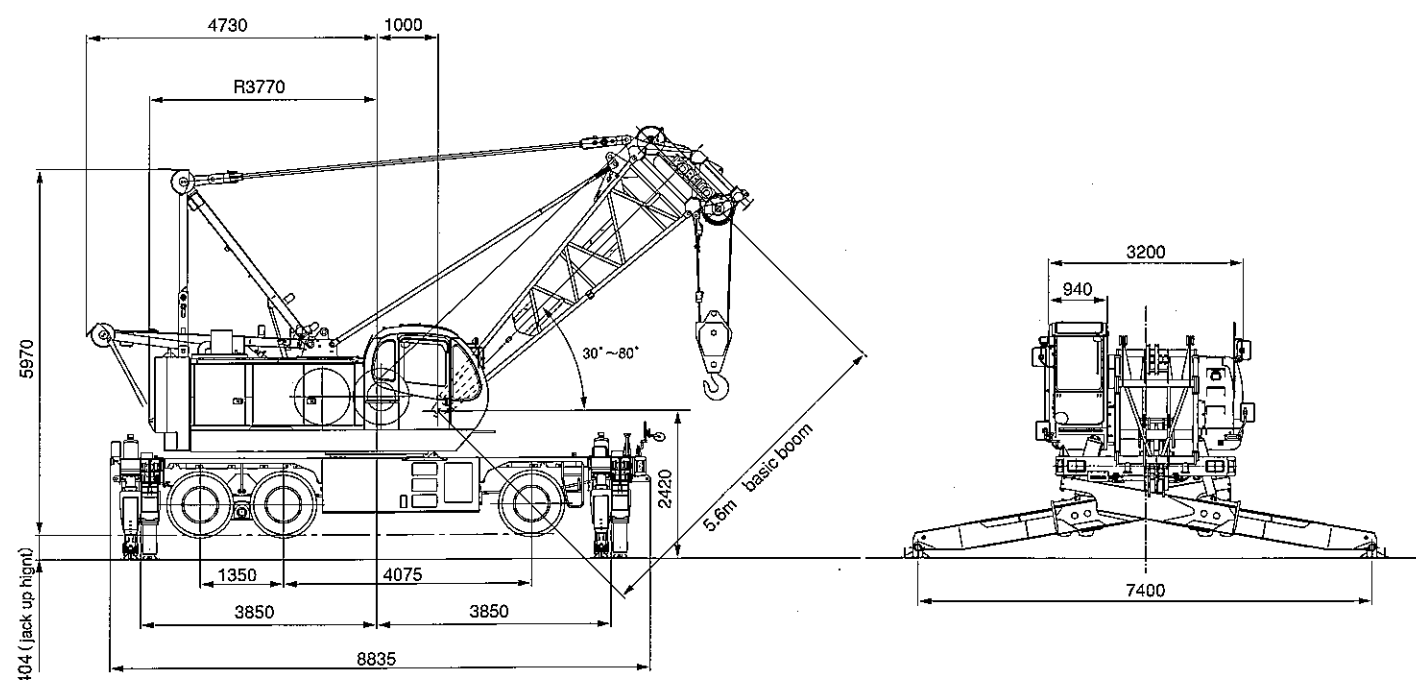
GENERAL DIMENSION (at Travel) unit: mm

scale=aprox.1/100



GENERAL DIMENSION (at Work) unit: mm

scale=aprox.1/100



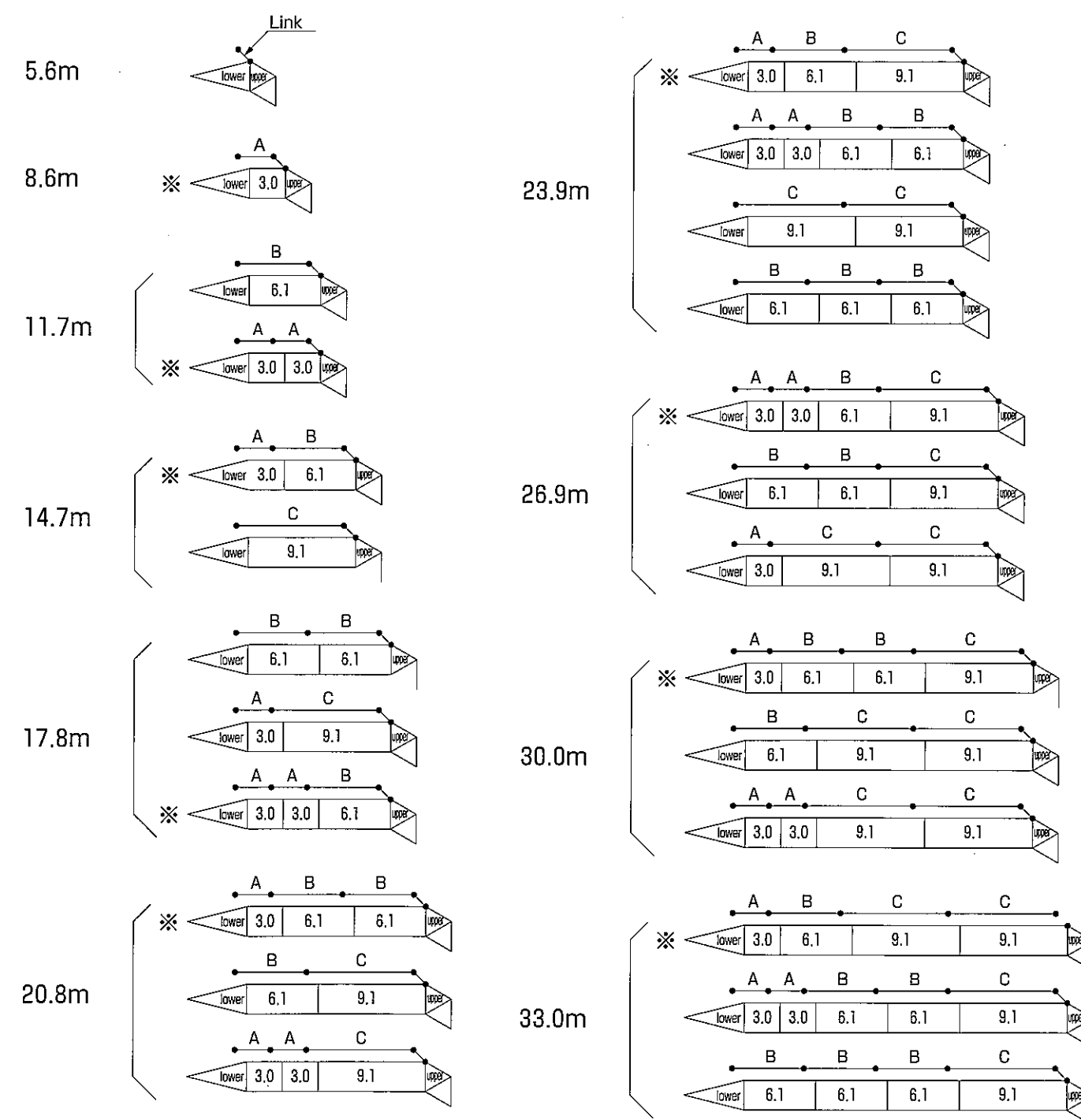
Boom and guy line arrangement

Insert boom		
Sign	Length	Spec.
3.0	3.0m	without lug
6.1	6.1m	without lug
9.1	9.1m	without lug

Guyline		
Sign	Dia. (mm)	Length (m)
A	φ30	3.05
B	φ30	6.10
C	φ30	9.14

Insert (3.0 m + 6.1 m + 9.1m) boom arrangement

* Shorter boom arrangement is possible





**RATED LOAD
OPERATION WITH OUTRIGGERS**

1.Total rated loads shown on the chart are the maximum allowable crane capacities and are based on the machine standing level on firm supporting surface under ideal operating conditions. Capacities do not exceed 78% of minimum tipping loads. Weight of hook blocks, slings and other lifting devices are a part of the total load.

Ratings shown in are determined by the machine strength, others, by machine stability.

Hook	50t	32t	19t	6.6t
Weight	650kg	500kg	400kg	160kg

Total rated loads are based on freely suspended load and make no allowance for such factors as the effect of wind on lifted load, out-of-level ground conditions, operating speeds or any other condition that could be detrimental to the safe operation of this equipment.

2.Working radius is the horizontal distance from the center of rotation to the center of gravity of the load.

3.No operation is possible in the range indicated by blank spaces in the chart.

4.For outrigger operation, outriggers shall be fully extended with tires free of supporting surface before operating crane.

5.The value of 5.6 m boom length is same as rated load without regard to the fixation of counterweight.
Must install counterweight for other boom length(8.8 tons).

6.Always have the gantry fully raised during operations.

7.Boom inserts and guy lines must be arranged as shown in the "Boom and Guy Line Arrangement".

8.Auxiliary sheave rating is determined by deduction weight of auxiliary sheave (0.3 ton) and weight of main hook from main boom rating. It must not exceed 6.6 tons.
Actual hoistable loads using auxiliary sheave can be calculated by deducting weight of auxiliary hook and weight of slings from the rating calculated above.

9.Auxiliary sheave can be fitted to all of boom length.

10.Main boom rating when it is equipped with auxiliary sheave is determined by deducting 0.46ton(including weight of aux. hook) from the rating for main boom. Actual hoisting loads can be calculated by deducting weight of main hook and weight of slings from the rating calculated above.

11.To prevent the fall of lifting materials by missing operation, free fall operations must not be used in crane operation.

12.In lifting operation in oblique direction (direct for outrigger), sometimes the outrigger float in the diagonal side against the lifted load 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.

13.Single-line load must not exceed 6,600 kg.

No. of part line

Boom length	5.6m	8.6m	11.7m	14.7m	17.8m	20.8m	23.9m	26.9m	30.0m	33.0m	Aux sheave
Hook	50-ton										6.6-ton
No. of line	8	8	7	6	6	6	5	5	4	3	1

Max. hoisting load by number of reeving

No. of part line	1	2	3	4	5	6	7	8
Max. load (ton)	6.6	13.2	19.8	26.4	33.0	39.6	46.2	50.0

**RATED LOAD
OPERATION WITHOUT OUTRIGGERS (ON TIRES)**

1.Load ratings are allowable maximum lifting capacities on a firm supporting surface, with tires filled to prescribed pressure. Ratings include hook block and all other load handling accessories.

Prescribed pressure of tires: 775 kPa (7.75 kgf/cm²)

2.Working radius is the horizontal distance from the center of rotation to the center of gravity of the load.

3.Areas on rated charts where no ratings are shown, operation is not intended or approved.

4.Counterweight (8.8 tons) should be required for all of boom length.

5.Always have the gantry fully raised during crane operations.

6.Stationary operation and pick & carry operation must be done in the front of machine.

7.Boom inserts and guy lines must be arranged as shown in the "Boom and Guy Line Arrangement".

8.Auxiliary sheave rating is determined by deduction weight of auxiliary sheave (0.3 ton) and weight of main hook from main boom rating. It must not exceed 6.6 tons.
Actual hoistable loads using auxiliary sheave can be calculated by deducting weight of auxiliary hook and weight of slings from the rating calculated above.

9.Auxiliary sheave can be fitted to all of boom length.

10.Main boom rating when it is equipped with auxiliary sheave is determined by deducting 0.46ton(including weight of aux. hook) from the rating for main boom. Actual hoisting loads can be calculated by deducting weight of main hook and weight of slings from the rating calculated above.

11.Do not use free fall.

12.Parking brake must be applied during stationary load lifting.

13.Pick and carry operations must be done in the low travel mode.

14.During pick and carry operations, keep the load close to the ground to avoid swaying, and travel no faster than 2.0 km/h. Avoid cornering, sudden starts (acceleration), and sudden braking. Boom must be centered over the front area.

15.Do not operate the crane functions while carrying the load.

16.Single-line load must not exceed 6,600 kg.

No. of part line

Boom length	5.6m	8.6m	11.7m	14.7m	17.8m	20.8m	23.9m	Aux. sheave
Hook	50-ton							6.6-ton
No. of line	8	8	7	6	6	6	5	1

RATED LOAD OPERATION WITH OUTRIGGERS (unit: metric tons)

Outrigger fully extended(360°working area)											
<div>Boom length (m) Working radius (m)</div>	5.6m	8.6m	11.7m	14.7m	17.8m	20.8m	23.9m	26.9m	30.0m	33.0m	
3.4	50.0	50.0	42.5/3.9m								
4.0	35.0	42.9	42.5	38.0/4.5m							
5.0	15.0	37.0	36.8	36.6	36.4	34.0/5.5m					
6.0	10.0	32.2	32.2	32.0	31.8	31.5	31.4	29.1/6.6m			
7.0	9.0/6.3m	27.5	27.6	27.4	27.2	27.0	26.9	26.9	26.2/7.2m	19.8/7.6m	
8.0		22.6	24.0	24.0	23.8	23.6	23.5	23.4	23.3	19.8	
9.0		19.0/8.9m	20.5	21.1	21.1	20.9	20.9	20.8	20.7	19.8	
10.0			17.7	18.6	18.9	18.7	18.6	18.5	18.4	18.3	
12.0			14.1/11.6m	14.4	15.0	15.0	15.0	14.9	14.8	14.7	
14.0				11.4	12.0	12.4	12.4	12.3	12.2	12.1	
16.0				11.1/14.2m	9.8	10.3	10.3	10.2	10.1	10.0	
18.0					9.0/16.9m	8.7	9.0	8.8	8.7	8.6	
20.0						7.5/19.5m	7.5	7.4	7.3	7.2	
22.0							6.4	6.3	6.2	6.1	
24.0							6.3/22.1m	5.7	5.6	5.5	
26.0								5.5/24.7m	5.0	4.8	
28.0									4.6/27.4m	4.3	
30.0										3.8	

RATED LOAD OPERATION WITHOUT OUTRIGGERS (unit: metric tons)

Stationary operation and pick & carry (over-the-front) (Within 2.0 km/h)							
<div>Boom length (m) Working radius (m)</div>	5.6m	8.6m	11.7m	14.7m	17.8m	20.8m	23.9m
3.4	7.00	6.70					
3.9	7.00	6.70	6.70				
4.0	7.00	6.70	6.70				
4.5	6.70	6.50	6.50	6.50			
5.0	6.50	6.30	6.10	6.00	5.80		
5.5	6.00	5.80	5.60	5.50	5.30	5.20	
6.0	5.40	5.30	5.10	5.00	4.80	4.70	4.50
7.0		4.40	4.30	4.20	4.00	3.90	3.70
8.0		3.80	3.65	3.55	3.35	3.30	3.05
8.9		3.30	3.20	3.10	2.95	2.85	2.65
9.0			3.10	3.00	2.85	2.75	2.55
10.0			2.65	2.60	2.40	2.30	2.10

Working Ranges



STANDARD EQUIPMENT

FRONT ATTACHEMENTS	Tinted glass
0.4 m Upper boom	Floor mat (cloth)
5.2 m Lower boom	Brake pedal cover (rubber)
50-ton hook (4-sheave)	Shoe-clean tray
UPPER AND LOWER STRUCTURE	SAFETY DEVICE
Counterweight 8.8t	Over-load prevention device (with boom lowering slow stop function)
Battery, 170F51 (120AH)	release-prevention key for over-load prevention device
Gantry raising cylinder	Boom overhoist prevention device (auto-stop)
Electric hand throttle	Boom back stop
Variable boom speed controller	Hook overhoist prevention device (auto-stop)
Variable main/aux. line speed controller	Check & Safety Monitor
Step for left-side guard	Working range limit device
Anti-slip sheet (upper-guard)	Safety lever lock
Tools and lubrication tools	Function lock lever (main/aux. hoist, boom hoist)
Tool box	Hydraulic drum pawl (main/aux. hoist, boom hoist)
Two working lights	Negative brake in lever neutral position (main/aux. hoist, boom hoist)
Four rearview mirrors	Service brake pedal lock (main/aux.)
Mirror for drum	Lamp for neutral-free/brake select switch (main/aux.)
CAB	Neutral-free/brake select switch (main/aux.)
Air conditioner	Release-prevention key for neutral-free prevention (main/aux.)
Compartment for luggage	Hydraulic safety valves (main/aux. hoist, boom hoist, and travel)
Cup holder	Sling wire lock
Radio (AM/FM)	Horn
Ashtray	Swing lock pin
Cigarette lighter	Swing flasher lamps
Intermittent wiper and window washer (top-window/front window)	Multi-voice alarm
Sunviser	level
Sunshade	

Note: Due to our policy of continual product improvements all designs and specifications are subject to change without advance notice.

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