

# MODEL : TM-20110

## CRANE SPECIFICATIONS

### MAXIMUM LIFTING CAPACITY

18,000 kg @ 1.5m (6-part lines)

### BOOM

5-sectioned, fully powered synchronized telescoping boom of pentagonal box construction

Retracted length 8.3 m  
Extended length 33.5 m  
Extended speed 25.2 m / 73 s  
Elevation Elevated by a double-acting hydraulic cylinder  
Elevation speed  $-5^{\circ}$  to  $80^{\circ}$  / 23 s

NOTE : Extended speed and elevation speed are calculated under the condition that the flow is 95 L/min

Boom point 2 sheaves

### WINCH

Hydraulic motor driven, Planetary gear speed reduction, provided with automatic brake

Single line pull 3,265 kg  
Single line speed approx. 85 m/min (@ 3rd layer)

NOTE : Single line speed is calculated under the condition that the flow is 216 L/min

Wire rope  
diameter x length 14 mm x 96 m  
breaking strength 145 kN  
Hook block Swivel hook with safety latch for single line use  
- 3,200 kg capacity

### SWING

Hydraulic motor driven, Planetary gear speed reduction, Non-continuous  $375^{\circ}$  rotation on ball bearing slew ring (Optional) (TM-2000-1-104)

Swing speed  $375^{\circ}$  /38 s

Continuous  $360^{\circ}$  full circle swing (TM-2000-1-114)



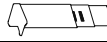
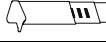
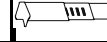
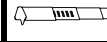
Swing speed  $360^{\circ}$  /37 s

<u>OUTRIGGERS</u>	Hydraulically extended sliders and hydraulically extended jacks, Integral with crane frame
	Extended width           Min. 2.18 m Mid. 4.0 m Max. 5.7 m
<u>REAR STABILIZERS</u>	Hydraulically extended sliders and hydraulically extended jacks, Integral with chassis frame
	Extended width           Min. 2.25 m Max. 3.5 m
<u>HYDRAULICS</u>	Hydraulic motor           For winch and swing Control valves           Multiple control valves with integral safety valve Hydraulic pump           3-section gear pump Winch system : 121L/min (20.6 MPa) Boom and outriggers system : 95 L/min (21.1 MPa) Swing system : 25 L/min (12.1 MPa) Reserve tank           295 L capacity * PTO / mounting not included
<u>ELECTRICAL SYSTEM</u>	Power supply           DC12V
<u>SAFETY DEVICES</u>	Hoist limiter with alarm Hook safety latch Level gauge Hydraulic safety valves, check valves and holding valves Over load shutoff with load indicator Load / Boom angle indication Audible warning External warning lamps
<u>BOOM REST</u>	Removable
<u>TORSION BOX</u>	(You must select a torsion box according to the length of the flatbed and have it installed) The box must provide torsional stiffness in accordance with factory requirements The box must be installed in accordance with factory requirements The mass of standard torsion box for 6.7 m flat bed : approx. 1,800 kg
<u>CRANE MASS</u>	Approx. 6,900 kg (crane bare:375° non-continuous swing) Approx. 8,100 kg (includes all items except torsion box and hook (crane,tank,oil,front stabilizer,rear stabilizer,boom rest,etc.))

OPTIONAL EQUIPMENT

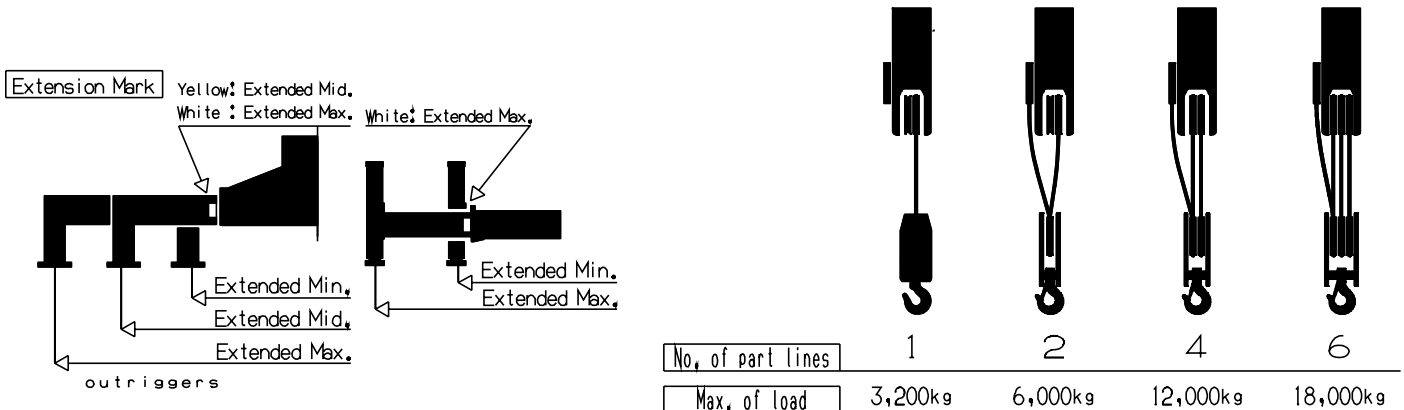
- Hook block - 18,000 kg capacity
  - 3 sheaves, swivel type hook with safety latch
- Hook block - 12,000 kg capacity
  - 2 sheaves, swivel type hook with safety latch
- Hook block - 6,000 kg capacity
  - 1 sheave, swivel type hook with safety latch
- Front stabilizer (hydraulic extended jack)
  - Necessary for full capacity 360° around the truck
- Boom angle alarm

### RATED LIFTING CAPACITIES (IN KILOGRAMS)

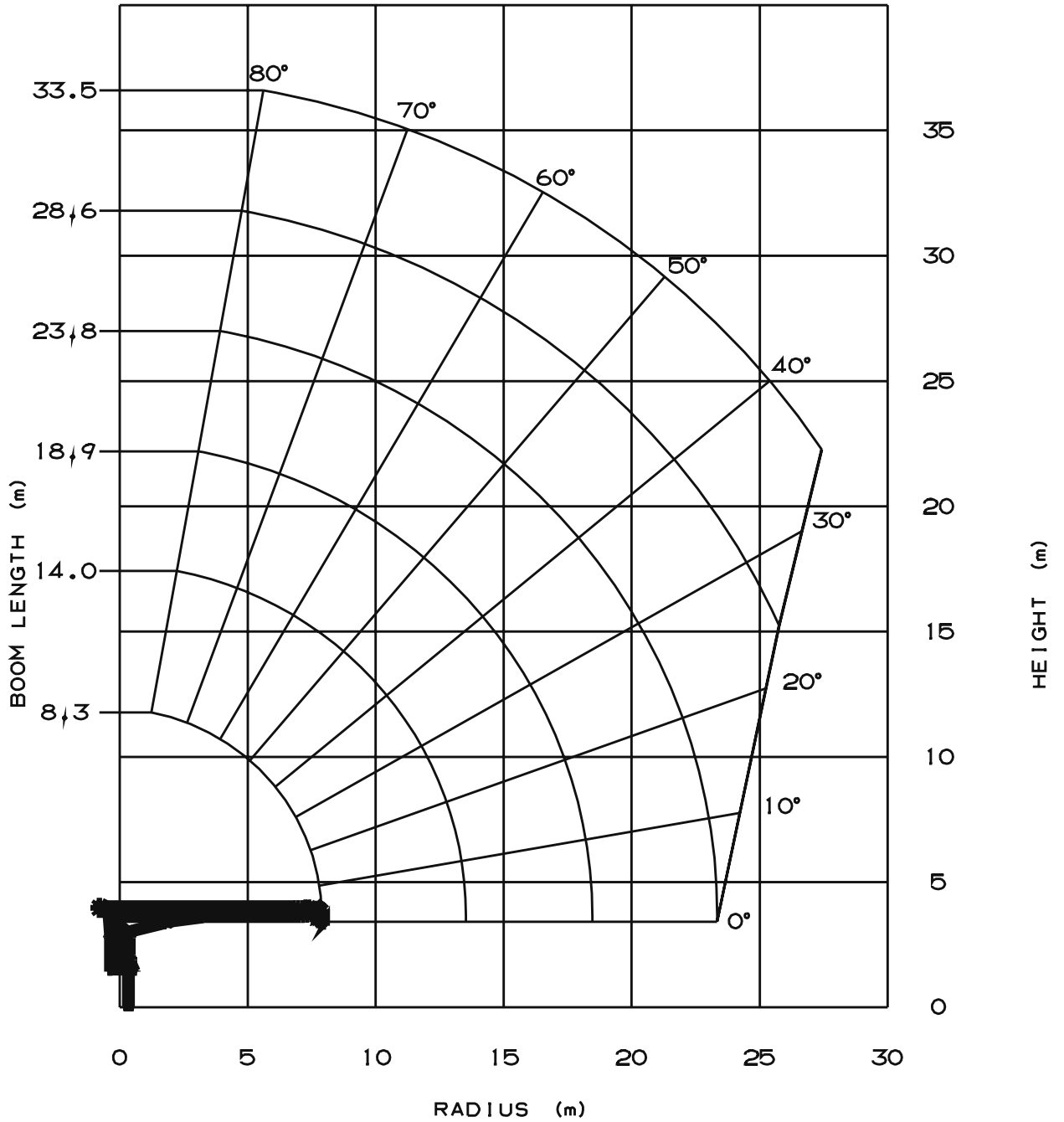
Load Radius (m)	8.3m Boom 			14m Boom 			18.9m Boom 		23.8m Boom 		28.6m Boom 		33.5m Boom 				
	Loaded Boom Angle	Outriggers Extended			Loaded Boom Angle	Outriggers Extended			Loaded Boom Angle	Outriggers Extended		Loaded Boom Angle	Outriggers Extended		Loaded Boom Angle	Outriggers Extended	
		Max.	Mid.	Min.		Max.	Mid.	Min.		Max.	Mid.		Max.	Mid.		Max.	Mid.
1.5	79°	18,000	12,700	9,000													
2.5	73°	11,300	11,300	6,500													
3	68°	9,900	9,900	4,700	78°	7,200	7,200	4,300									
3.5	64°	8,800	8,800	3,500	76°	7,200	7,200	3,400									
4	60°	7,900	7,800	2,750	73°	7,200	7,200	2,700									
5	51°	6,400	5,400	1,800	69°	6,200	5,400	1,850	75°	5,700	5,200						
6	41°	5,200	3,750	1,200	65°	5,100	3,800	1,300	73°	4,700	3,600	77°	4,300	3,800			
8					55°	3,700	2,200	650	66°	3,300	2,250	72°	3,200	2,250	77°	2,400	
10					44°	2,600	1,450	300	59°	2,500	1,500	67°	2,400	1,500	72°	2,300	
12					29°	1,800	900		51°	2,000	1,000	61°	2,000	1,050	67°	1,900	
14									44°	1,500	650	56°	1,600	700	64°	1,600	
16									32°	1,100	400	50°	1,250	450	58°	1,300	
18									10°	750		41°	950	250	52°	1,000	
20												35°	700		48°	750	
22												21°	500		42°	550	
24															35°	400	
26															42°	250	
	0°	2,900	2,100	550	0°	1,000	650		0°	250							
		(7.88 m)				(13.57 m.)				(18.44 m)							

NOTE :

1. Rated lifting capacities on this chart show maximum allowable loads with all outriggers and stabilizers properly extended on a firm surface and the crane leveled and mounted on a factory recommended truck.  
The rated lifting capacities in shaded areas are based on crane strength and others, on its stability.
2. The mass of handling devices such as hook block, slings, etc., must be considered part of the load and must be deducted from the rated lifting capacities.
3. Mass of any accessories attached to the boom or loadline must be deducted from the rated lifting capacities.
4. The operator must reduce loads to allow for such factors as wind, ground conditions, operating speed and the effects of freely suspended loads such as boom deflection.
5. For full capacity 360° around the truck, the chassis requires the front stabilizer and additional counterweight in the underside of the bed.
6. When making lifts at a load radius not shown, use next longer radius to determine allowable capacity.  
When boom length is between values listed, refer to rated lifting capacities of next longer and next shorter booms for same radius. Lesser of the two rated lifting capacities be used.
7. Max. outriggers extended means, as shown below, both outriggers and both rear stabilizers fully extended to the Max. position are properly jacked up.  
Mid. outriggers extended means, both outriggers extended to the Max. and both rear stabilizers extended to the Min. are properly jacked up, or otherwise, both outriggers extended to the Mid. and both rear stabilizers extended to the Max. or Min. are properly jacked up.  
Min. outriggers extended means, both outriggers extended to the Min. and both rear stabilizers extended to the Max. or Min. are properly jacked up.
8. For boom lengths longer than 14 m., extend outriggers to the Max. or Mid. extended.  
For boom lengths longer than 18.9 m., extend outriggers to the Max. extended.
9. 14 m boom means 1st ◻ mark on 2nd boom section side plate is half visible.  
18.9 m boom means 2nd ◻ mark on 2nd boom section side plate is half visible.  
23.8 m boom means 3rd ◻ mark on 2nd boom section side plate is half visible.  
28.6 m boom means 4th ◻ mark on 2nd boom section side plate is half visible.
10. Winch wire rope: diameter x length 14 mm x 96 m, breaking strength 145 kN.
11. Keep at least 3 wraps of loadline on winch drum.
12. Rated lifting capacities depends on outriggers and rear stabilizers extended width.



### WORKING RANGE CHART



NOTE :  
 The above lifting heights and boom angles are based on a straight (unladen) boom, and allowance should be made for boom deflection obtained under laden condition.

## TRUCK CHASSIS DATA (TRUCK MOUNT)

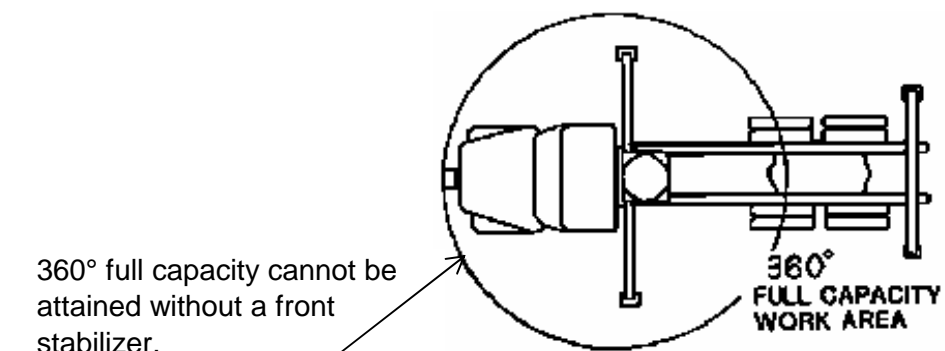
### Recommended requirements for TM-20110, full capacity 360° around the truck.

This mount requires front stabilizer, rear stabilizers, torsion resisting box and additional counterweight in the underside of the bed for full capacity 360° around the truck.

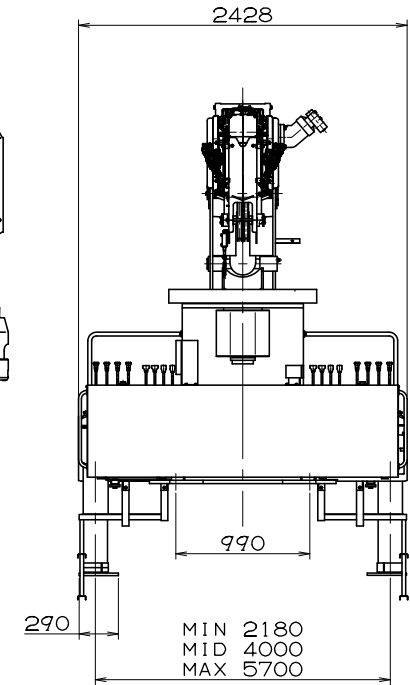
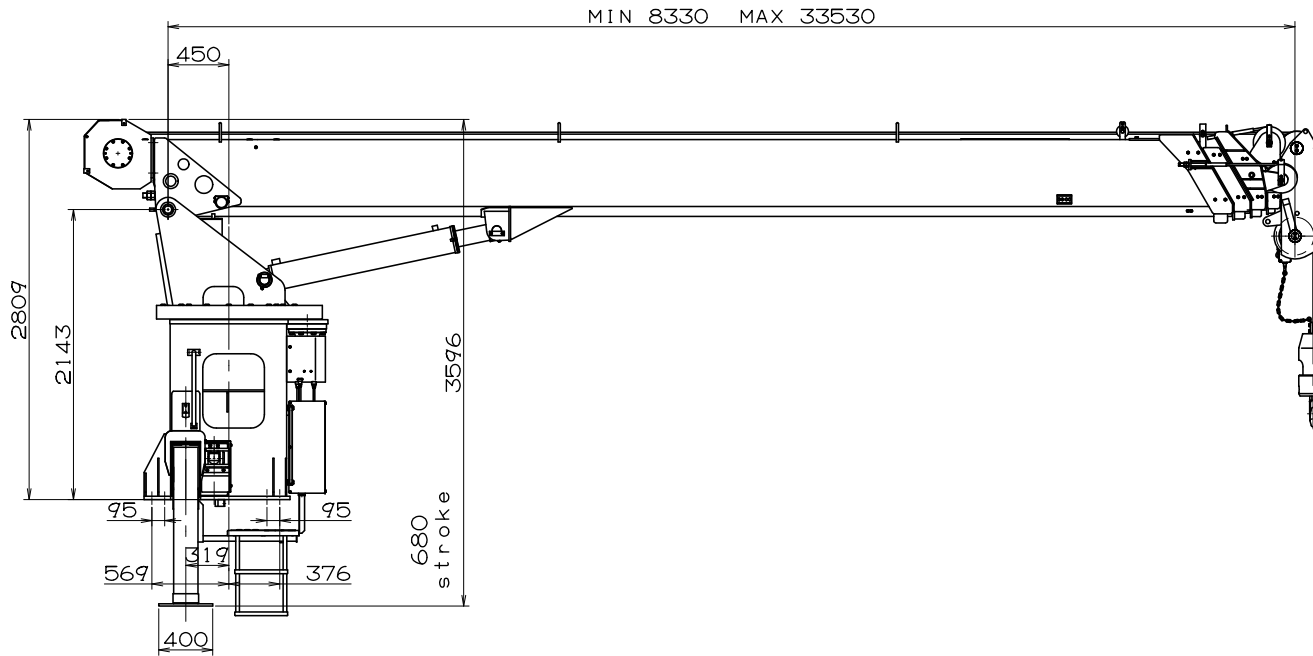
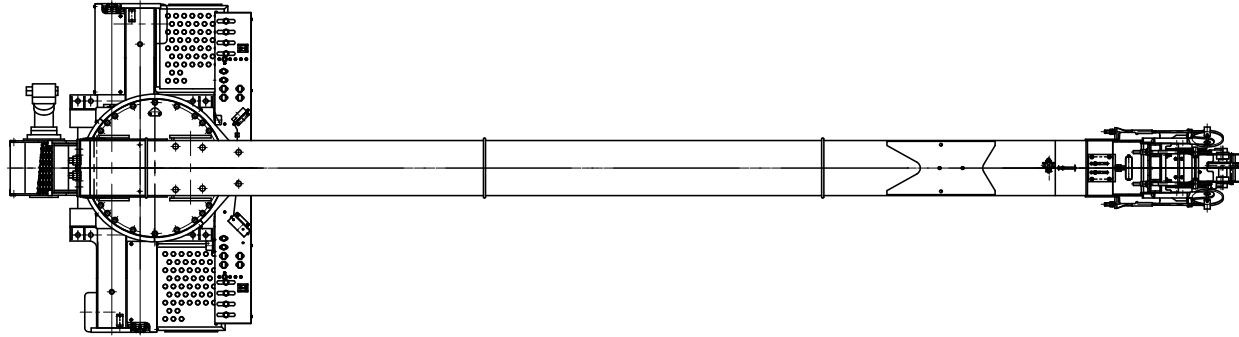
Gross Axle Mass Rating(GAMR),front	approx. 7,200 kg
Gross Axle Mass Rating(GAMR),rear	approx. 15,400 kg
Gross Vehicle Mass Rating	approx. 22,600 kg
Wheelbase(WB)	5,900 to 6,600 mm
Cab to axle	4,000 to 4,800 mm
Stability mass, front	4,000 kg Min (*)
Stability mass, rear	4,500 kg Min (*)
Frame Section Modulus(SM) under crane, front spring hunger of front spring to rear spring hunger of rear spring 758 MPa steel	328 cm <sup>3</sup> Min. per rail
Frame Section Modulus(SM) at the front stabilizer attachment point, 758 MPa steel	35 cm <sup>3</sup> Min. per rail
Frame Section Modulus(SM) over rear stabilizers, 758 MPa steel	213 cm <sup>3</sup> Min. per rail
PTO torque	Approx. 390 N-m Min.
PTO revolution	Approx. 550 to 2,400 min <sup>-1</sup>
Width for crane mounting	Approx. 1,400 mm Min.
Frame width (outside)	Approx. 915 mm Max.
Frame height (ground to frame top)	Approx. 1,060 mm Max. (Height of crane mounting base can be changed by combination of jack floats and crane bases)

(\*)Estimated axle scale mass prior to installation of crane, stabilizers and torsion resisting box for ISO stability. Include counterweight.

The complete unit must be installed in accordance with factory requirements and a test performed to determine actual stability and counterweight requirements since individual truck chassis vary.



# DIMENSIONAL SPECIFICATIONS



Unit : mm



D I M E N S I O N A L   S P E C I F I C A T I O N

