

LOAD CHART

MANTIS Model 10010MX

50 Ton Hydraulic Crawler Crane

as originally manufactured and equipped by Tadano Mantis Corporation.

with Standard 111.5 ft Main Boom

Capacity Limitations and General Conditions.

This **MANTIS CRANE** as manufactured by **Tadano Mantis Corporation** meets the requirements of **ASME B30.5**. Structure and stability have been tested in accordance with **SAE J1063** and **SAE J765**, respectively. Lifting capacities as determined by boom length, angle or radius, apply only to machines as originally equipped by manufacturer and in a properly maintained condition. Capacities given are maximum covered by the manufacturers warranty and are based on a freely suspended load with **NO** allowance for factors as out-of-level operation, supporting surface conditions, hazardous surroundings, experience of personnel, etc. The operator shall establish practical working loads based on prevailing operating conditions, such as, but not limited to the above.

When making lifts where capacities may be within a zone limited by structural strength, the operator shall determine that the weight of the load is known within plus or minus (+/-) ten percent (10%) before making lift. **DO NOT** lift load or extend boom without counterweight in place. Deductions from rated capacities must be made for the weight of the hook block, hook/ball, slings, spreader bar, or other suspended equipment.

Side pull on boom is extremely dangerous and must be avoided.

DO NOT exceed manufacturers maximum specified reeving.

DO NOT use this chart if wind speed exceeds 20 mph. Consult the manufacturer for specialized load ratings.

Load radius is defined as the horizontal distance from the axis of rotation (with no load) to the center of the lifting device after load is applied.

Boom angle is the included angle between the Longitudinal axis of the boom base section and the Horizontal axis, after lifting load. The boom angle before lifting should be slightly greater than desired to account for boom deflection.

Boom angle/boom length relationships given are an approximation of the resulted load radius, which should be an accurate measurement.

Boom height dimensions are measured from ground to center of lower boom head sheave.

It is permissible to attempt to telescope boom with a load within the limits of rated capacities. However, boom angle system hydraulic pressure, and/or boom lubrication may affect operation.

It is permissible to travel with loads within the rated capacity of the crane. Travel speeds should be greatly reduced to reflect terrain limitations and minimize dynamic loads applied to the crane structure.

LOAD CHART SELECTION & LOAD MOMENT INDICATOR SETTING INFORMATION

Each Load Chart in this document corresponds to a particular crane configuration. The Load Moment Indicator system must be set to match the configuration in use. If it is set improperly, the crane may function poorly or not at all

The chart below shows the Operating Modes and corresponding crane configurations available.

NOTE:

If you are certain that a load is within load chart limits but the crane will not lift it, check the selected reeving and crane configuration.

Crane Configuration	Track Position	Counter-weight (lb)	Allowable Reeving (Parts of Line)	Load Chart Number
Main Boom	Fully Extended	20,000	1 to 10	1
Main Boom	Retracted	20,000	1 to 10	2
Auxiliary Boom Nose Sheave	Fully Extended	20,000	1	3
30ft Extension	Fully Extended	20,000	1 or 2	4
20ft Jib - 0° Offset	Fully Extended	20,000	1	5
20ft Jib - 15° Offset	Fully Extended	20,000	1	5
20ft Jib - 30° Offset	Fully Extended	20,000	1	5
Work Platform on Main Boom	Fully Extended	20,000	NA	See Operating Range Chart
Work Platform on 30ft Extension	Fully Extended	20,000	NA	See Operating Range Chart

**LIFTING CAPACITY DEDUCTIONS FOR
LOAD HANDLING DEVICES**

**MANTIS Model 10010MX
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Weight Reductions for Load Handling Devices	
Hookblocks	
55 Ton - 5 Sheave	1540 lb.
12 Ton Overhaul Ball w/Swivel	220 lb.
Optional Load Handling Devices	
30 ft. Extension - Stowed*	350 lb.
30 ft. Extension - Erected*	2000 lb.
30 ft. Ext. and 20 ft. Jib - Stowed*	750 lb.
30 ft. Ext. and 20 ft. Jib - Erected*	3500 lb.
Auxillary Nose Sheave*	250 lb.
Auger Ready Package*	225 lb.
Auger Package Complete - Stowed*	560 lb.
Auger Package Complete - Erected*	1200 lb.
*Reduction of main boom capacities	

NOTE:

All values shown apply to original equipment as supplied by Tadano Mantis Corporation. The above deductions should be taken into account when calculating the load to be lifted.

A properly calibrated and maintained Load Moment Indicating (LMI) system will indicate boom mounted and other suspended equipment.

CHART #1**MANTIS Model 10010MX****50 Ton Crawler Crane**

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360 DEGREE RATING - LOADS= lb. x 1000

MAIN BOOM with TRACKS FULLY EXTENDED									
20,000 lb. COUNTERWEIGHT									
RADIUS (ft)	MAIN BOOM LENGTH (ft)								RADIUS (ft)
	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	
10	100.0	90.0	86.0	79.0					10
12	82.5	80.0	76.0	72.0					12
15	66.0	64.0	61.0	59.5	48.0	44.0			15
20	53.2	51.1	49.1	51.4	43.0	40.0	38.0		20
25	39.6	38.7	37.3	38.0	38.6	39.0	36.0	35.0	25
30	29.5	29.0	28.7	28.5	29.2	29.9	30.2	30.5	30
35		22.3	22.0	21.8	22.5	23.3	23.7	24.1	35
40			16.8	16.6	17.3	17.9	18.6	19.1	40
45			12.8	13.2	13.7	14.3	15.0	15.5	45
50				10.5	11.1	11.7	12.4	13.0	50
55				8.4	8.9	9.7	10.4	10.8	55
60					8.0	8.4	8.7	9.0	60
65					6.7	7.0	7.3	7.6	65
70						5.7	6.0	6.3	70
75						4.6	5.0	5.3	75
80						3.7	4.1	4.4	80
85							3.2	3.6	85
90							2.7	3.0	90
95							2.1	2.4	95
100								1.9	100
105								1.1	105

NOTE:

Capacities appearing above the bold line are based on structural strength; tipping should not be relied upon as a capacity limitation. Capacities appearing below the bold line are based on stability and do not exceed 75% of tipping.

CHART #2**MANTIS Model 10010MX****50 Ton Crawler Crane**

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360 DEGREE RATING - LOADS= lb. x 1000

MAIN BOOM with TRACKS RETRACTED		
11,500 lb COUNTERWEIGHT		
RADIUS (ft)	MAIN BOOM LENGTH (ft)	RADIUS (ft)
	37.5 to 111.5	
15	42.6	15
17	34.3	17
19	28.2	19
21	23.7	21
23	20.2	23
25	17.4	25
27	15.1	27
29	13.1	29
30	12.3	30
32	10.8	32
34	9.5	34
36	8.3	36
38	7.4	38
40	6.4	40
42	5.7	42
44	5.0	44
46	4.3	46
48	3.7	48
50	3.2	50
52	2.7	52
54	2.3	54
56	1.8	56
58	1.5	58
60	1.2	60

WARNING

WITH TRACKS RETRACTED AND BOOM POSITIONED "OVER THE SIDE", THIS EQUIPMENT IS LIMITED BY **BACKWARD STABILITY!**

BACKWARD STABILITY OF THIS EQUIPMENT IS ITS ABILITY TO RESIST OVERTURNING IN THE DIRECTION OPPOSITE THE BOOM POINT WHILE IN THE UNLOADED CONDITION.

DO NOT EXCEED A BOOM ANGLE GREATER THAN 60 DEGREES (LESS THAN A 15 FOOT RADIUS) WITH BOOM UNLOADED AND FULLY RETRACTED AS THE PUBLISHED LIMITS OF BACKWARD STABILITY WILL BE EXCEEDED AND BACKWARD OVERTURNING MAY OCCUR !!!!

NOTE:

Capacities appearing above the bold line are based on structural strength; tipping should not be relied upon as a capacity limitation. Capacities appearing below the bold line are based on stability and do not exceed 75% of tipping.

CHART #3

MANTIS Model 10010MX

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360 DEGREE RATING - LOADS= lb. x 1000

AUXILIARY BOOM NOSE SHEAVE with TRACKS FULLY EXTENDED									
20,000 lb. COUNTERWEIGHT									
RADIUS (ft)	MAIN BOOM LENGTH (ft)								RADIUS (ft)
	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	
10	11.0	11.0	11.0	11.0					10
12	11.0	11.0	11.0	11.0					12
15	11.0	11.0	11.0	11.0	11.0	11.0			15
20	11.0	11.0	11.0	11.0	11.0	11.0	11.0		20
25	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	25
30	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	30
35		11.0	11.0	11.0	11.0	11.0	11.0	11.0	35
40			11.0	11.0	11.0	11.0	11.0	11.0	40
45			11.0	11.0	11.0	11.0	11.0	11.0	45
50				10.5	11.0	11.0	11.0	11.0	50
55				8.4	8.9	9.7	10.4	10.8	55
60					8.0	8.4	8.7	9.0	60
65					6.7	7.0	7.3	7.6	65
70						5.7	6.0	6.3	70
75						4.6	5.0	5.3	75
80						3.7	4.1	4.4	80
85							3.2	3.6	85
90							2.7	3.0	90
95							2.1	2.4	95
100								1.9	100
105								1.1	105

NOTE:
 Capacities appearing above the bold line are based on structural strength; tipping should not be relied upon as a capacity limitation.
 Capacities appearing below the bold line are based on stability and do not exceed 75% of tipping.

CHART #4

MANTIS Model 10010Mx

as originally manufactured and equipped by Tadano Mantis Corporation.

360 DEGREE RATING - LOADS IN lb. x 1000

30' EXTENSION with TRACKS FULLY EXTENDED				
20,000 lb. COUNTERWEIGHT				
BOOM ANGLE	Total Boom Length		Total Boom Length	BOOM ANGLE
	<110'-0		>110'-0	
78	18.0		18.0	78
75	13.6		13.6	75
72	11.5		11.5	72
70	10.1		10.1	70
68	8.9		8.9	68
65	8.0		7.8	65
62	7.2		6.0	62
60	6.7		4.8	60
58	6.1		3.9	58
55	5.8		3.0	55
52	5.3		2.4	52
50	5.1		2.1	50
48	4.9		1.7	48
45	4.6		1.3	45

NOTE:
NEVER use extension without counterweight in place.

NOTE:
Capacities appearing above the bold line are based on structural strength; tipping should not be relied upon as a capacity limitation.
Capacities appearing below the bold line are based on stability and do not exceed 75% of tipping.

CHART #5**MANTIS Model 10010Mx**

as originally manufactured and equipped by Tadano Mantis Corporation.

360 DEGREE RATING - LOADS IN lb. x 1000

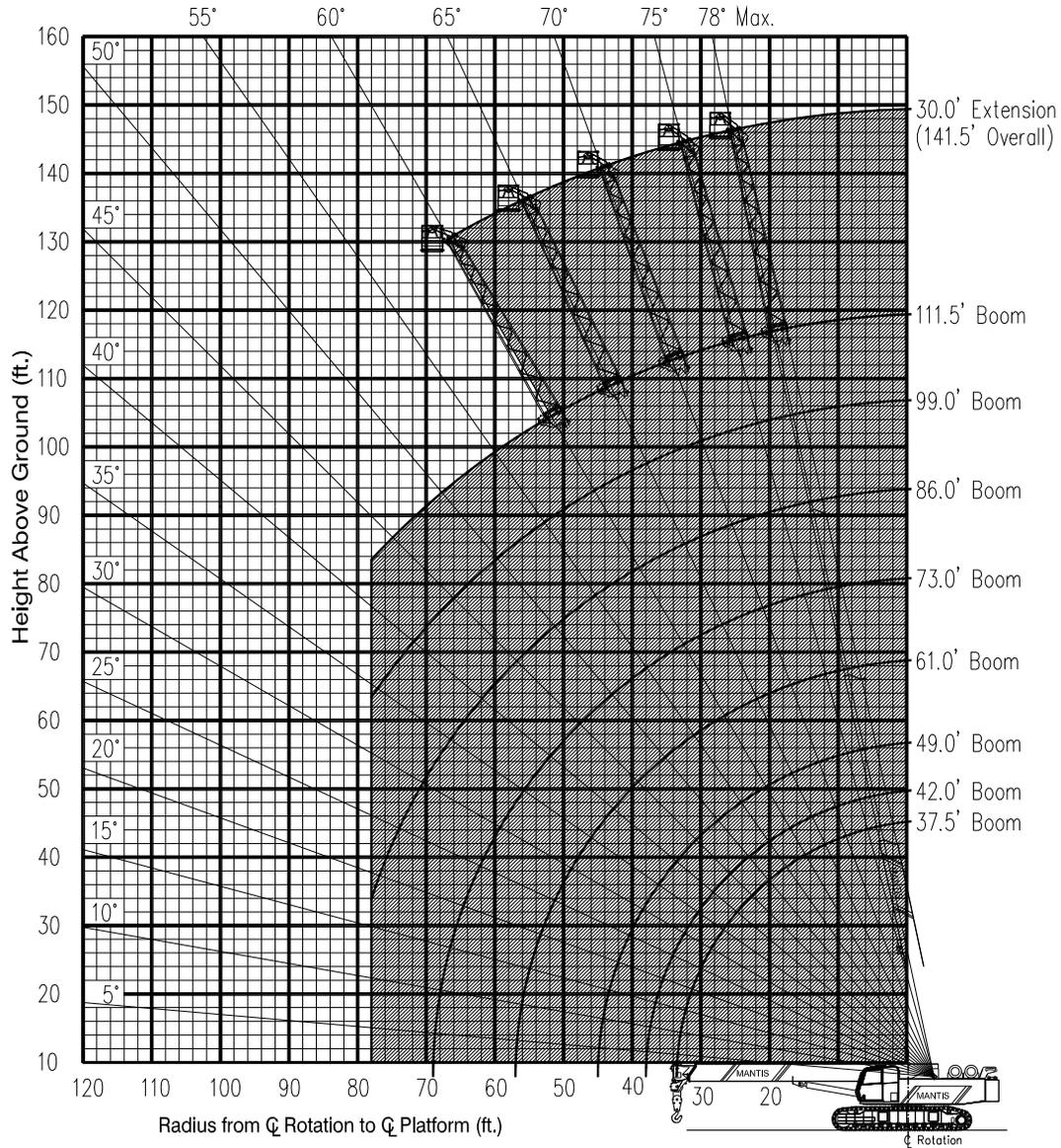
30' EXTENSION + 20' JIB with TRACKS FULLY EXTENDED 20,000 lb. COUNTERWEIGHT				
Boom Angle	Jib Offset Angles			Boom Angle
	0°	15°	30°	
78°	6.6	4.0	2.2	78°
75°	6.5	4.0	2.1	75°
72°	5.6	3.5	2.0	72°
70°	5.1	3.2	1.9	70°
68°	4.6	3.0	1.8	68°
65°	4.2	2.8	1.8	65°
62°	3.9	2.6	1.7	62°
60°	3.5	2.4	1.7	60°
58°	3.2	1.9	1.4	58°
55°	2.6	1.3	1.0	55°
52°	2.0	0.6	0.4	52°
50°	1.5	0.3	0.2	50°

NOTE:**NEVER** use jib without counterweight in place.

RANGE CHART

750 WORK PLATFORM

Installed on MANTIS MODEL 10010MX
as originally manufactured and equipped by Tadano Mantis Corporation.



Shaded Area is Allowable Operating Range
Limits of operation:
Maximum load capacity = 750 lb
Maximum radius when mounted on main boom = 78 ft
Minimum boom angle when mounted on 30 ft extension = 60°

RANGE CHART

MANTIS MODEL 10010MX

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