

LOAD CHART

MANTIS Model 9010

45 Ton Hydraulic Crawler Crane

as originally manufactured and equipped by Tadano Mantis Corporation

with Standard 105'-0" Main Boom

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 such 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 considering counterweights, amount of track extension, and the appropriate **LOAD CHART**. 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 resulting 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	15,000	1 to 8	1
Main Boom	Fully Extended	NO CWT	1 to 8	2
Main Boom	Retracted	15,000	1 to 8	3
Auxiliary Boom Nose Sheave	Fully Extended	15,000	1	4
30ft Extension	Fully Extended	15,000	1 or 2	5
30ft Jib - 0° Offset	Fully Extended	15,000	1	6
30ft Jib - 15° Offset	Fully Extended	15,000	1	6
30ft Jib - 30° Offset	Fully Extended	15,000	1	6
Work Platform on Main Boom	Fully Extended	15,000	NA	See Operating Range Chart
Work Platform on 30ft Extension	Fully Extended	15,000	NA	See Operating Range Chart

**LIFTING CAPACITY DEDUCTIONS FOR
LOAD HANDLING DEVICES**

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Weight Reductions for Load Handling Devices	
Hook blocks	
45 Ton - 4 Sheave	1090 lb.
12 Ton Overhaul Ball w/Swivel	245 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.
Auxiliary Nose Sheave*	200 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 9010 45 Ton Crawler Crane

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360 DEGREE RATING - LOADS= lb. x 1000

MAIN BOOM with TRACKS FULLY EXTENDED									
15,000 lb COUNTERWEIGHT									
RADIUS (ft)	MAIN BOOM LENGTH (ft)								RADIUS (ft)
	34.0	41.9	49.8	57.7	69.5	81.3	93.2	105.0	
10	90.0	80.0	70.0	60.8					10
12	85.0	78.0	64.0	55.0	48.0				12
15	66.0	64.0	57.0	48.3	45.0	39.3			15
20	45.0	44.7	44.4	40.0	36.6	31.9	30.0	27.7	20
25	33.2	33.0	32.7	32.1	30.6	26.5	25.0	22.7	25
30	24.9	24.5	24.1	23.3	23.6	22.7	21.2	19.0	30
35		18.2	17.8	16.7	17.9	18.5	18.1	16.2	35
40			13.1	12.5	14.1	14.7	15.1	14.0	40
45			10.2	9.8	11.3	11.9	12.3	12.2	45
50				8.2	9.0	9.5	10.3	10.7	50
55					7.9	8.4	8.8	9.0	55
60					6.2	6.8	7.2	7.5	60
65					5.1	5.7	6.1	6.4	65
70						4.7	5.1	5.3	70
75						3.9	4.2	4.4	75
80							3.3	3.5	80
85							2.5	2.7	85
90								2.0	90
95								1.5	95
100								1.1	100

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 9010 45 Ton Crawler Crane

as originally manufactured and equipped by Tadano Mantis Corporation.

360 DEGREE RATING - LOADS= lb. x 1000

MAIN BOOM with TRACKS FULLY EXTENDED									
NO COUNTERWEIGHT									
RADIUS (ft)	MAIN BOOM LENGTH (ft)								RADIUS (ft)
	34.0	41.9	49.8	57.7	69.5	81.3	93.2	105.0	
10	90.0	80.0	70.0	60.8					10
12	74.5	72.0	64.0	55.0	48.0				12
15	52.2	51.5	50.1	47.9	45.0	39.3			15
20	30.4	28.5	26.9	24.6	25.8	26.5	30.0	27.7	20
25	20.0	19.6	19.2	18.8	19.5	20.2	20.7	21.0	25
30	14.4	14.2	14.0	13.8	14.6	15.2	15.7	16.0	30
35		10.7	10.3	9.9	10.2	10.5	10.9	11.8	35
40			7.5	7.1	7.4	8.3	9.1	9.8	40
45			5.9	5.6	6.2	6.7	7.2	7.6	45
50				4.5	4.9	5.2	5.4	5.6	50
55					3.0	3.4	3.8	4.0	55
60					2.0	2.3	2.6	2.8	60
65					1.1	1.4	1.6	1.9	65
70						NR	NR	NR	70
75						NR	NR	NR	75
80							NR	NR	80
85							NR	NR	85
90								NR	90
95								NR	95
100								NR	100

NOTE:

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CHART #3

MANTIS Model 9010 45 Ton Crawler Crane

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360 DEGREE RATING - LOADS= lb. x 1000

MAIN BOOM with TRACKS RETRACTED									
15,000 lb COUNTERWEIGHT									
RADIUS (ft)	MAIN BOOM LENGTH (ft)								RADIUS (ft)
	34.0	41.9	49.8	57.7	69.5	81.3	93.2	105.0	
10	75.0	79.8	70.0	60.8					10
12	54.4	55.9	55.4	55.0	48.0				12
15	43.0	42.5	41.2	39.5	40.4	39.3			15
20	27.9	26.7	25.6	24.7	25.8	27.2	28.4	27.7	20
25	18.8	18.5	18.2	18.0	18.6	18.9	19.8	20.7	25
30	13.2	13.1	12.9	12.7	13.0	13.4	13.6	14.0	30
35		9.0	8.9	8.7	9.4	10.1	10.9	11.6	35
40			6.4	6.2	6.8	7.5	8.7	9.4	40
45			5.3	5.1	5.8	6.2	6.9	7.5	45
50				3.9	4.3	4.9	5.4	5.8	50
55					3.3	3.8	4.1	4.4	55
60					2.1	2.6	2.9	3.2	60
65					1.2	1.7	2.0	2.3	65
70						1.0	1.2	1.5	70
75						NR	NR	NR	75
80							NR	NR	80
85							NR	NR	85
90								NR	90
95								NR	95
100								NR	100

NOTE:
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CHART #4

**MANTIS Model 9010
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360 DEGREE RATING - LOADS= lb. x 1000

AUXILIARY BOOM NOSE SHEAVE with TRACKS FULLY EXTENDED									
15,000 lb COUNTERWEIGHT									
RADIUS (ft)	MAIN BOOM LENGTH (ft)								RADIUS (ft)
	34.0	41.9	49.8	57.7	69.5	81.3	93.2	105.0	
10	11.0	11.0	11.0	11.0					10
12	11.0	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	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			10.2	9.8	11.0	11.0	11.0	11.0	45
50				8.2	9.0	9.5	10.3	10.7	50
55					7.9	8.4	8.8	9.0	55
60					6.2	6.8	7.2	7.5	60
65					5.1	5.7	6.1	6.4	65
70						4.7	5.1	5.3	70
75						3.9	4.2	4.4	75
80							3.3	3.5	80
85							2.5	2.7	85
90								2.0	90
95								1.5	95
100								1.1	100

CHART #5
MANTIS Model 9010
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360 DEGREE RATING - LOADS= lb. x 1000

30' EXTENSION			
with TRACKS FULLY EXTENDED			
15,000 lb. COUNTERWEIGHT			
BOOM ANGLE	Total Boom < 105 ft	Total Boom > 105 ft	BOOM ANGLE
78	18.0	14.0	78
75	13.6	12.4	75
72	11.5	10.0	72
70	10.1	9.1	70
68	8.9	8.0	68
65	8.0	7.5	65
62	7.2	6.0	62
60	6.7	4.4	60
58	6.1	3.9	58
55	5.8	3.0	55
52	5.3	2.4	52
50	5.1	1.9	50
48	4.9	1.5	48
45	4.6	1.0	45

NOTE:
NEVER use extension without counterweight in place.

NOTE:
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CHART #6
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360 DEGREE RATING - LOAD= lb. x 1000

30' EXTENSION + 20' JIB				
with TRACKS FULLY EXTENDED				
15,000 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°	1.3	0.3	0.2	50°

NOTE:

NEVER use extension without counterweight in place.

NOTE:

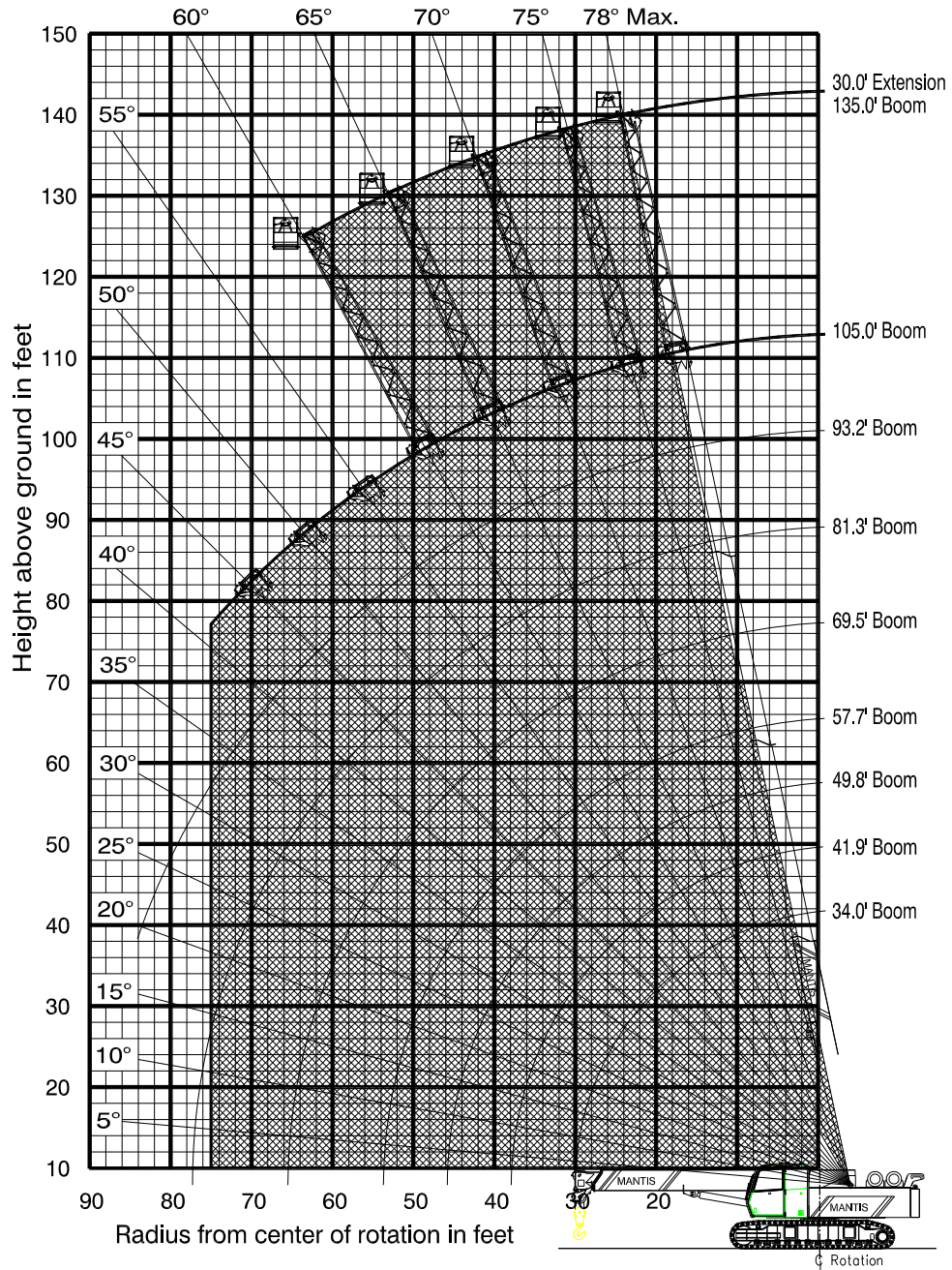
Capacities are based on structural strength; tipping should not be relied upon as a capacity limitation.

RANGE CHART

750 WORK PLATFORM

Installed on MANTIS MODEL 9010

as originally manufactured and equipped by Tadano Mantis Corporation.



Limits of operation:
Maximum load capacity = 750 lb
Maximum radius when mounted on main boom = 75 ft
Minimum boom angle when mounted on 30 ft extension = 60°

RANGE CHART

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