

LOAD CHART

MANTIS Model 10010

50 Ton Hydraulic Crawler Crane with STANDARD BOOM

Limitations and General Conditions.

This MANTIS CRANE as manufactured by SpanDeck, Inc., meets the requirements of ANSI B30.5c (1992) , (When specifically equipped). 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.

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.

Specifications subject to change without notice.

LOAD CHART SELECTION & LOAD MOMENT INDICATOR SETTING INFORMATION

Each Load Chart in this Appendix 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 LMI has two switches that correspond to critical setup factors, as follows:

Counterweight Toggle Switch*

This side mounted switch selects how much counterweight is being used: Both (30,000 lb.), Rear (the rearmost 15,000 lb.) or None.

*Control #2, Section 3

Operating Code Switch**

This rotary switch selects the crane operating mode, or boom configuration.

The chart below shows the permissible combinations of settings for the Operating Code Switch, Counterweight Toggle Switch, and Reeving Switch,** as well as the proper load charts to use for each mode. No other combinations are allowed.

** Control #17 Section 3

*** Control #4, Section 3

NOTE:

If you are certain that a load is within load chart limits but the crane will not lift it, check the settings of these two switches, as well as the reeving switch.

Operating Code Switch Position	Operating Mode Indicator	Crane Operating Mode	Counter-weight.	Counter-weight Toggle Switch	Load Chart Number
01	0501	Mainboom	Both	Up	1
01	1501	Mainboom	Rear	Mid	2
01	2501	Mainboom	None	Down	3
02	0521	30' Extension	Both	Up	4
02	1521	30' Extension	Rear	Mid	5
03	0171	20' Jib - 0° Offset	Rear or Both		6
04	0172	20' Jib - 15° Offset	Rear or Both		6
05	0173	20' Jib - 30° Offset	Rear or Both		6
06	0598	Auxiliary Boom Nose Sheave	Both	Up	7
06	1598	Auxiliary Boom Nose Sheave	Rear	Mid	8
06	2598	Auxiliary Boom Nose Sheave	None	Down	9

CHART #1: MAIN BOOM LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 1**BOTH COUNTERWEIGHTS (30,000 lb.)****TRACKS FULLY EXTENDED - 360 DEGREE RATING - LOADS IN lb. x 1000**

RADIUS	MAIN BOOM LENGTH (ft)								30'-0 EXT.	50'-0 JIB	RADIUS
(ft)	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	141.5	161.5	(ft)
10	100.0	90.0	86.0	79.0							10
12	100.0	88.0	84.0	72.0							12
15	84.0	83.0	78.0	64.0	48.0	40.0					15
20	65.0	64.0	62.0	53.0	43.0	38.0	36.0				20
25	45.2	44.8	44.3	43.7	38.0	35.3	34.0	33.1			25
30	33.2	32.9	32.4	31.9	32.9	32.0	31.5	30.8			30
35		25.4	24.9	24.5	25.4	24.5	23.7	22.5			35
40			19.8	19.3	20.2	19.5	19.0	18.5			40
45				15.6	16.5	17.1	17.6	18.0			45
50				12.8	13.6	14.2	14.7	15.1			50
55				10.5	11.3	12.0	12.4	12.8			55
60					9.5	10.1	10.6	10.9			60
65					8.0	8.6	9.1	9.4			65
70						7.4	7.8	8.1			70
75						6.3	6.7	7.0			75
80							5.3	6.1			80
85							5.0	5.3			85
90							4.3	4.6			90
95								4.0			95
100								3.4			100
105											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: MAIN BOOM LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 1**REAR COUNTERWEIGHT (15,000 lb.)****TRACKS FULLY EXTENDED - 360 DEGREE RATING - LOADS IN lb. x 1000**

RADIUS	MAIN BOOM LENGTH (ft)								30'-0 EXT.	50'-0 JIB	RADIUS
(ft)	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	141.5	161.5	(ft)
10	100.0	90.0	86.0	79.0							10
12	100.0	88.0	84.0	72.0							12
15	84.0	83.0	78.0	64.0	48.0	40.0					15
20	65.0	64.0	62.0	53.0	43.0	38.0	36.0				20
25	32.4	32.0	31.5	30.9	32.0	32.8	33.4	33.1			25
30	23.4	23.0	22.5	22.0	23.0	23.8	24.3	24.7			30
35		17.3	16.9	16.4	17.4	18.0	18.6	19.0			35
40			13.0	12.6	13.4	14.1	14.6	15.0			40
45				9.7	10.6	11.3	11.7	12.1			45
50				7.6	8.4	9.1	9.5	9.9			50
55				5.9	6.7	7.4	7.8	8.2			55
60					5.4	6.0	6.4	6.7			60
65					4.2	4.8	5.2	5.6			65
70						3.9	4.3	4.5			70
75						3.0	3.5	3.8			75
80							2.8	3.1			80
85							2.2	2.5			85
90							1.6	1.9			90
95								1.5			95
100								1.0			100
105											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 #3: MAIN BOOM LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 1**NO COUNTERWEIGHT****TRACKS FULLY EXTENDED - 360 DEGREE RATING - LOADS IN lb. x 1000**

RADIUS	MAIN BOOM LENGTH (ft)								30'-0 EXT.	50'-0 JIB	RADIUS
(ft)	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	141.5	161.5	(ft)
10	100.0	90.0	86.0	79.0							10
12	100.0	88.0	84.0	72.0							12
15	56.1	55.5	54.6	53.8	48.0	40.0					15
20	29.7	29.2	28.6	27.9	29.2	30.1	30.8				20
25	18.8	18.4	17.9	17.3	18.4	19.2	19.8	20.3			25
30	12.8	12.5	12.0	11.5	12.5	13.2	13.8	14.2			30
35		8.7	8.8	7.8	8.7	9.4	10.0	10.4			35
40			5.3	5.3	6.2	6.9	7.4	7.7			40
45				3.5	4.3	5.0	5.4	5.8			45
50				2.1	2.9	3.5	4.0	4.4			50
55				0.9	1.8	2.4	2.9	3.2			55
60					0.9	1.5	1.9	2.3			60
65						0.7	1.2	1.5			65
70							0.5	0.9			70
75											75
80											80
85											85
90											90
95											95
100											100
105											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: 30' EXTENSION LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 2

**BOTH COUNTERWEIGHTS (30,000 lb.)
TOTAL BOOM LENGTH LESS THAN 129'-0"
TRACKS FULLY EXTENDED - 360 DEGREE
RATING - LOADS IN lb. x 1000**

BOOM ANGLE	LOAD
78	18.0
75	13.6
72	11.5
70	10.1
68	8.9
65	8.0
62	7.2
60	6.7
58	6.1
55	5.8
52	5.3
50	5.1
48	4.9
45	4.6

**BOTH COUNTERWEIGHTS (30,000 lb.)
TOTAL BOOM LENGTH GREATER THAN 129'-0"
TRACKS FULLY EXTENDED - 360 DEGREE
RATING - LOADS IN lb. x 1000**

BOOM ANGLE	LOAD
78	18.0
75	13.6
72	11.5
70	10.1
68	8.9
65	8.0
62	7.2
60	6.7
58	6.1
55	5.8
52	5.3
50	5.1
48	4.6
45	4.0

NOTE:

NEVER use extension without rearmost 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: 30' EXTENSION LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 2

**REARMOST COUNTERWEIGHT (15,000 lb.)
TOTAL BOOM LENGTH LESS THAN 103'-0
TRACKS FULLY EXTENDED - 360 DEGREE
RATING - LOADS IN lb. x 1000**

BOOM ANGLE	LOAD
78	18.0
75	13.6
72	11.5
70	10.1
68	8.9
65	8.0
62	7.2
60	6.7
58	6.1
55	5.8
52	5.3
50	5.1
48	4.9
45	4.6

**REARMOST COUNTERWEIGHT (15,000 lb.)
TOTAL BOOM LENGTH GREATER THAN 103'-0
TRACKS FULLY EXTENDED - 360 DEGREE
RATING - LOADS IN lb. x 1000**

BOOM ANGLE	LOAD
78	18.0
75	13.6
72	11.5
70	10.1
68	8.9
65	8.0
62	6.3
60	5.4
58	4.5
55	3.6
52	2.8
50	2.3
48	1.9
45	1.4

NOTE:**NEVER use extension without rearmost 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 #6: 20' JIB LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

REAR OR BOTH COUNTERWEIGHTS IN PLACE
TRACKS FULLY EXTENDED - 360 DEGREE RATING - LOADS IN lb. x 1000

OPERATING CODE SWITCHPOSITION -3

JIB @ 0°

BOOM ANGLE	LOAD
78	6.6
75	6.3
72	5.6
70	5.1
68	4.6
65	4.2
62	3.9
60	3.5
58	3.2
55	2.6
52	2.0
50	1.5

OPERATING CODE SWITCHPOSITION -4

JIB @ 15°

BOOM ANGLE	LOAD
78	4.0
75	4.0
72	3.5
70	3.2
68	3.0
65	2.8
62	2.6
60	2.4
58	1.9
55	1.3
52	0.6
50	0.3

OPERATING CODE SWITCHPOSITION -5

JIB @ 30°

BOOM ANGLE	LOAD
78	2.2
75	2.1
72	2.0
70	1.9
68	1.8
65	1.8
62	1.7
60	1.7
58	1.4
55	1.0
52	0.4
50	0.2

NOTE:**NEVER use extension without rearmost counterweight in place.****NOTE:****Capacities are based on structural strength; tipping should not be relied upon as a capacity limitation.**

CHART #7: AUXILIARY BOOM NOSE SHEAVE LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 6**BOTH COUNTERWEIGHTS (30,000 lb.)****TRACKS FULLY EXTENDED - 360 DEGREE RATING - LOADS IN lb. x 1000**

RADIUS	MAIN BOOM LENGTH (ft)								RADIUS
(ft)	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	(ft)
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	45
50				11.0	11.0	11.0	11.0	11.0	50
55				10.5	11.0	11.0	11.0	11.0	55
60					9.5	10.1	10.5	10.9	60
65					8.0	8.6	9.1	9.4	65
70						7.4	7.8	8.1	70
75						6.3	6.7	7.0	75
80							5.8	6.1	80
85							5.0	5.3	85
90							4.3	4.6	90
95								4.0	95
100								3.4	100
105									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 #8: AUXILIARY BOOM NOSE SHEAVE LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 6**REAR COUNTERWEIGHT (15,000 lb.)****TRACKS FULLY EXTENDED - 360 DEGREE RATING - LOADS IN lb. x 1000**

RADIUS	MAIN BOOM LENGTH (ft)								RADIUS
(ft)	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	(ft)
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				9.7	10.6	11.0	11.0	11.0	45
50				7.6	8.4	9.1	9.5	9.9	50
55				5.9	6.7	7.4	7.8	8.2	55
60					5.4	6.0	6.4	6.7	60
65					4.2	4.8	5.2	5.6	65
70						3.9	4.3	4.5	70
75						3.0	3.5	3.8	75
80							2.8	3.1	80
85							2.1	2.5	85
90							1.6	1.9	90
95								1.5	95
100								1.0	100
105									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 #9: AUXILIARY BOOM NOSE SHEAVE LOAD CHART**MANTIS Model 10010**

as originally manufactured and equipped by SpanDeck, Inc.

OPERATING CODE SWITCH POSITION - 6**NO COUNTERWEIGHT****TRACKS FULLY EXTENDED - 360 DEGREE RATING - LOADS IN lb. x 1000**

RADIUS	MAIN BOOM LENGTH (ft)								RADIUS
(ft)	37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5	(ft)
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		8.7	8.3	7.8	8.7	9.4	10.0	10.4	35
40			5.8	5.3	6.2	6.9	7.4	7.7	40
45				3.5	4.3	5.0	5.4	5.8	45
50				2.1	2.9	3.5	4.0	4.4	50
55				0.9	1.8	2.4	2.9	3.2	55
60					0.9	1.5	1.9	2.3	60
65					0.1	0.7	1.2	1.5	65
70						0.1	0.5	0.9	70
75								0.3	75
80									80
85									85
90									90
95									95
100									100
105									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.

RANGE CHART

MANTIS Model 10010

as originally manufactured and equipped by SpanDeck, Inc.

