Manitowoc Cranes, Inc.
Manitowoc, Wisconsin 54220 U.S.A.

Wire Rope Specifications 999 Series 1, 2, 3

Liftcrane - Boom No. 82 or 22EL
Luffing Jib No. 135 Attached

WIRE ROPE LENGTHS - FRONT DRUM

Boom Length		Hoist Line Front Drum		Maximum Required Parts of Line		
				999 SERIES		
Ft.	Meters	Ft.	Meters	1	2	3
70	21.3	1175	358	13	14	14
80	24.4	1225	373	12	13	13
90	27.4	1275	389	11	12	12
100	30.5	1300	396	10	11	11
110	33.5	1300	396	9	10	10
120	36.6	1425	434	9	10	10
130	39.6	1425	434	9	9	9
140	42.7	1500	457	8	8	9
150	45.7	1500	457	7	7	8
160	48.8	1500	457	7	7	7
170	51.8	1500	457		6	7
180	54.9	1500	457		6	6
190	57.9	1500	457		4	4

HOIST REEVING FOR MAIN LOAD BLOCK FRONT DRUM

Parts of Line	Maximum Load		Parts of Line	Maximum Load	
	Lbs.	kg		Lbs.	kg
1	29,500	13 380	**8**	236,000	107 050
2	59,000	26 760	**9**	265,500	120 430
3	88,500	40 140	**10**	295,000	133 810
4	118,000	53 520	**11**	324,500	147 190
5	147,500	66 900	**12**	354,000	160 570
6	177,000	80 290	**13**	383,500	173 950
7	206,500	93 670	**14**	394,200	178 800

WIRE ROPE LENGTHS - AUXILIARY DRUM

Boom Length		Hoist Line Auxiliary Drum		Maximum Required Parts of Line		
				999 SERIES		
Ft.	Meters	Ft.	Meters	1	2	3
80	24.4	1475	450	14	14	16
90	27.4	1650	503	14	14	16
100	30.5	1825	556	14	14	16
110	33.5	1900	579	14	14	15
120	36.6	2025	617	14	14	15
130	39.6	2025	617	12	13	13
140	42.7	2025	617	11	12	12
150	45.7	2025	617	11	11	11
160	48.8	2025	617	10	10	11
170	51.8	2025	617		9	10
180	54.9	2025	617		8	9
190	57.9	2025	617		4	4

HOIST REEVING FOR MAIN LOAD BLOCK AUXILIARY DRUM

Parts of Line	Maximum Load		Parts of Line	Maximum Load	
	Lbs.	kg		Lbs.	kg
1	20,000	9 070	**9**	180,000	81 650
2	40,000	18 140	**10**	200,000	90 720
3	60,000	27 220	**11**	220,000	99 790
4	80,000	36 290	**12**	240,000	108 860
5	100,000	45 360	**13**	260,000	117 930
6	120,000	54 430	**14**	280,000	127 010
7	140,000	63 500	**15**	300,000	136 080
8	160,000	72 570	**16**	320,000	145 150

Note: Hoist line lengths given in tables will allow hook to touch ground. When block travel below ground is required, add additional rope equal to parts of line times added travel distance. Hoisting distance or line pull may be limited when block travel below ground is required.

Maximum block travel will be restricted when hoist line length exceeds 1,600 Ft. (488m) using auxiliary drum. Auxiliary drum can not be used with 70 Ft. (21.3m) boom length.

Capacity chart restrictions will occur when auxiliary drum is used. Maximum capacity is 320,000 Lbs. (145 150 kg) with 16 parts line.

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Wire Rope Specifications

Rotation Resistant Wire Rope - 5:1 Safety Factor

Hoist Line:	26 mm -	2 160 N/mm^2 Wire Rope With Pad Eye (MCC Part No. 719430) Right Hand Regular Lay Minimum Breaking Strength Required = 147,500 Lbs. (656.1 kN) Maximum Load = 29,500 Lbs. (13 380 kg) Per Line Approx. Weight = 2.13 Lbs Per Ft. (3.17 kg/m) No Load Dia. = 1.033 in. (26.24 mm) to 1.045 in. (26.54 mm)
		Or
	26 mm -	Wire Rope With Pad Eye (MCC Part No. 719432) Right Hand Lang Lay Minimum Breaking Strength Required = 147,500 Lbs. (656.1 kN) Maximum Load = 29,500 Lbs. (13 380 kg) Per Line Approx. Weight = 2.39 Lbs Per Ft. (3.56 kg/m) No Load Dia. = 1.034 in. (26.26 mm) to 1.054 in. (26.77 mm)
Hoist Line: (Auxiliary Drum)	26 mm -	1 960 N/mm^2 Wire Rope (MCC Part No. 719378) Right Hand Regular Lay Minimum Breaking Strength Required = 100,000 Lbs. (445.0 kN) Maximum Load = 20,000 Lbs. (9 070 kg) Per Line Approx. Weight = 2.13 Lbs. Per Ft. (3.17 kg/m) No Load Dia. (required for lagging) = 1.033 in. (26.24 mm) to 1.045 in. (26.54 mm)
		Or
	26 mm -	Wire Rope With Pad Eye (MCC Part No. 719432) Right Hand Lang Lay Minimum Breaking Strength Required = 100,000 Lbs. (445.0 kN) Maximum Load = 20,000 Lbs. (9 070 kg) Per Line Approx. Weight = 2.39 Lbs. Per Ft. (3.56 kg/m) No Load Dia. (required for lagging) = 1.034 in. (26.26 mm) to 1.054 in. (26.77 mm)
		Or
	1 in. -	1 960 N/mm^2 Wire Rope (MCC Part No. 719393) Right Hand Regular Lay Minimum Breaking Strength Required = 100,000 Lbs. (445.0 kN) Maximum Load = 20,000 Lbs. (9 070 kg) Per Line Approx. Weight = 2.03 Lbs. Per Ft. (3.02 kg/m) No Load Dia. (required for lagging) = 1.012 in. (25.70 mm) to 1.028 in. (26.11 mm)
		Or
	1 in. -	Wire Rope (MCC Part No. 719436) Right Hand Lang Lay Minimum Breaking Strength Required = 100,000 Lbs. (445.0 kN) Maximum Load = 20,000 Lbs. (9 070 kg) Per Line Approx. Weight = 2.26 Lbs. Per Ft. (3.26 kg/m) No Load Dia. (required for lagging) = 1.020 in. (25.91 mm) to 1.036 in. (26.31 mm)

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Wire Rope Specifications		
Optional Wire Rope - 3.5 : 1 Safety Factor		
Hoist Line:	26 mm -	6 X 25 Filler Wire, Extra Improved Plow Steel Right Hand Regular Lay, IWRC (MCC Part No. 719387) Minimum Breaking Strength Required = 103,250 Lbs. (459.5 kN) Maximum Load = 29,500 Lbs. (13 380 kg) Per Line Approx. Weight = 1.94 Lbs. Per. Ft. (2.89 kg/m) No Load Dia. = 1.034 in. (26.26 mm) to 1.054 in. (26.77 mm)
Hoist Line: (Auxiliary Drum)	26 mm -	6 X 25 Filler Wire, Extra Improved Plow Steel Right Hand Regular Lay, IWRC (MCC Part No. 719387) Minimum Breaking Strength Required = 70,000 Lbs. (311.5 kN) Maximum Load = 20,000 Lbs. (9 070 kg) Per Line Approx. Weight = 1.94 Lbs. Per. Ft. (2.89 kg/m) No Load Dia. (required for lagging) = 1.034 in. (26.26 mm) to 1.054 in. (26.77 mm)
		Or
	1 in. -	6 X 25 Filler Wire, Improved Plow Steel Right Hand Regular Lay, IWRC (MCC Part No. 719433) Minimum Breaking Strength Required = 70,000 Lbs. (311.5 kN) Maximum Load = 20,000 Lbs. (9 070 kg) Per Line Approx. Weight = 1.85 Lbs. Per. Ft. (2.75 kg/m) No Load Dia. (required for lagging) = 1.020 in. (25.91 mm) to 1.038 in. (26.37 mm)

Note: Block spin may occur with 6 X 25 construction wire rope under certain operating conditions.

Maximum Spooling Capacities		
Front Drum: (Hoist Line)	26 mm Wire Rope -	7 Layers - 1,727 Ft. (526m)
Auxiliary Drum: (Hoist Line)	26 mm Wire Rope -	6 Layers - 1,323 Ft. (403m) 6 Layers - 1,415 Ft. (431m) with 21-1/4 in. (540 mm) Dia. Lagging
	1 in. Wire Rope -	6 Layers - 1,335 Ft. (407m) 6 Layers - 1,428 Ft. (435m) with 21-1/4 in. (540 mm) Dia. Lagging
17 Ft. (5m) is deducted from maximum spooling capacities for 3 dead wraps per drum or lagging.		

Note: When optional laggings are used, the recommended lagging for specific wire rope dia. must be used.

Refer to drum and lagging chart **No. 8222-A**.