Luffing Jib Raising Procedure 999 SERIES 2, 3

Luffing Jib No. 149 On Boom No. 82

Recommended boom and luffing jib raising and lowering procedure

999 SERIES 2 equipped with 184,600 Lb. (83 730 kg) crane counterweight and 44,000 Lb. (19 960 kg) carbody counterweight and 999 SERIES 3 equipped with 219,600 Lb. (99 610 kg) crane counterweight and 80,000 Lb. (36 290 kg) carbody counterweight for raising and lowering boom and luffing jib combinations. Refer to luffing jib rigging assembly **No. A01031** for proper make-up of inserts, straps, pendants and miscellaneous parts, etc.

Two methods may be used to raise and lower boom and luffing jib combinations.

A. Layout In-Line Method

Boom and luffing jib are assembled in layout, end to end, position. Boom and luffing jib must be inline over end of blocked crawlers prior to raising boom and luffing jib. Slowly raise boom until luffing jib stop strut is just clear of ground. Attach luffing jib stop pendants and unpin luffing jib stop inner strut from retracted position. Slowly raise boom until luffing jib stop strut is fully extended and pins engaged (approximately 168 degree boom to luffing jib angle). Tighten luffing jib suspension with luffing jib hoist. Boom and luffing jib can then be raised simultaneously using only the boom hoist. Reverse this procedure when lowering boom and luffing jib.

Boom and luffing jib combinations in table below may be raised and lowered using layout in-line method.

WITH OR WITHOUT BOOM CATWALKS

LAYOUT IN-LINE METHOD - 999 SERIES 2, 3

Maximum Boom and Luffing Jib Lengths Lifted Unassisted Over End Of Blocked Crawlers

Boom Length		Luffing Jib No. 149			
		Without Intermediate Fall		**With Intermediate Fall**	
Feet	Meters	Feet	Meters	Feet	Meters
80	24.4	70 - 170	21.3 - 51.8	70 - 160	21.3 - 48.8
90	27.4	70 - 160	21.3 - 48.8	70 - 150	21.3 - 45.7
100	30.5	70 - 150	21.3 - 45.7	70 - 130	21.3 - 39.6
110	33.5	70 - 130	21.3 - 39.6	70 - 120	21.3 - 36.6
120	36.6	70 - 120	21.3 - 36.6	70 - 110	21.3 - 33.5
130	39.6	70 - 110	21.3 - 33.5	70 - 90	21.3 - 27.4
140	42.7	70 - 90	21.3 - 27.4	70 - 80	21.3 - 24.4
150	45.7	70	21.3		

Load blocks, hook and weight ball on ground until boom and luffing jib are erected.

Luffing Jib Raising Procedure 999 SERIES 2, 3

Luffing Jib No. 149 On Boom No. 82

B. Layout Jack-Knife Method

Longer boom and luffing jib combinations must be raised and lowered using this method.

Caution: Anytime luffing jib point rollers are in contact with ground during raising or lowering procedure, disengage swing lock and release swing brake.

Raising:

Boom and luffing jib are assembled in layout, end to end, position. Boom and luffing jib must be inline over end of blocked crawlers prior to raising boom and luffing jib. Luff up jib strut until straps on insert next to butt are clear of strap brackets (jib strut at approximately 60 degrees). Slowly raise boom until luffing jib stop strut is just clear of ground. Attach luffing jib stop pendants and unpin luffing jib stop inner strut from retracted position. Slowly raise boom until luffing jib stop strut is fully extended and pins engaged (approximately 168 degree boom to luffing jib angle). Boom is then raised while luffing jib point rollers roll on ground. Tension should be applied to luffing jib hoist to keep luffing jib strut off luffing jib during boom raising. Boom up until boom to luffing jib angle reaches value specified in tables or vertical, whichever occurs first. Tighten luffing jib suspension with luffing jib hoist. Boom and luffing jib are then raised together using boom hoist until boom reaches 85 degrees. Luffing jib radius must be within capacity chart before swinging over side of machine. Boom may then be adjusted to desired operating angle.

Lowering:

Position boom at 85 degrees with boom and luffing jib inline over end of blocked crawlers prior to lowering luffing jib. Set load blocks, hook and weight ball on ground before lowering boom and luffing jib to ground. Lower luffing jib until boom to luffing jib angle reaches value specified in tables. Lower boom until luffing jib point rollers contact ground. If luffing jib is hanging at or near vertical, raise luffing jib a few degrees forward of vertical to allow luffing jib to roll out. ***Caution***: Be careful not to damage upper jib point after contacting ground by booming down and rollers not wanting to roll out. Continue to lower boom while luffing jib rollers roll on ground. Keep enough tension on luffing jib hoist to keep luffing jib strut off luffing jib. Stop lowering boom when luffing jib stop pendants start to go into tension (approximately 168 degree boom to luffing jib angle). Disengage luffing jib stop strut pins and lower boom to retract luffing jib stop inner strut. Pin strut in retracted position and unpin luffing jib stop pendants. Rotate luffing jib stop struts to rear and lower boom onto blocking.

Boom and luffing jib combinations in following tables require layout jack knifing to a specified boom to luffing jib angle for raising and lowering.

Refer to column A for Maximum Number of Lower Boom Point Sheaves allowed. Boom length shown with (a) requires only the middle two sheaves in lower boom point. All other sheaves must be removed from lower boom point. Boom lengths shown with (b) require lower boom point to be removed. When equipped with boom catwalks, jib length shown with (c) requires lower boom point to be removed from 190 Ft. boom, and jib length shown with (d) cannot be raised on 200 Ft. boom.

Luffing Jib Raising Procedure 999 SERIES 2, 3

Luffing Jib No. 149 On Boom No. 82

WITH OR WITHOUT BOOM CATWALKS

LAYOUT JACK-KNIFE METHOD - 999 SERIES 2

Maximum Boom and Luffing Jib Lengths Lifted Unassisted Over End Of Blocked Crawlers

Boom Length		Luffing Jib No. 149 Without Intermediate Fall		Boom To Luffing Jib Angle	A Maximum Number of Lower Boom Point Sheaves	Boom Length		Luffing Jib No. 149 With Intermediate Fall		Boom To Luffing Jib Angle	A Maximum Number of Lower Boom Point Sheaves
Feet	Meters	Feet	Meters	Degrees		Feet	Meters	Feet	Meters	Degrees	
80	24.4	180 - 240	54.9 - 73.2	90	8	80	24.4	170 - 240	51.8 - 73.2	90	8
90	27.4	170 - 240	51.8 - 73.2	90	8	90	27.4	160 - 240	48.8 - 73.2	90	8
100	30.5	160 - 240	48.8 - 73.2	90	8	100	30.5	140 - 240	42.7 - 73.2	90	8
110	33.5	140 - 240	42.7 - 73.2	90	8	110	33.5	130 - 240	39.6 - 73.2	90	8
120	36.6	130 - 240	39.6 - 73.2	90	8	120	36.6	120 - 240	36.6 - 73.2	90	8
130	39.6	120 - 240	36.6 - 73.2	90	8	130	39.6	100 - 240	30.5 - 73.2	90	8
140	42.7	100 - 240	30.5 - 73.2	90	8	140	42.7	90 - 240	27.4 - 73.2	60	8
150	45.7	80 - 240	24.4 - 73.2	60	8	150	45.7	70 - 240	21.3 - 73.2	60	8
160	48.8	70 - 240	21.3 - 73.2	60	8	160	48.8	70 - 240	21.3 - 73.2	60	8
170	51.8	70 - 210	21.3 - 64.0	60	8	170	51.8	70 - 190	21.3 - 57.9	60	8
(a) 170	51.8	220 - 230	67.1 - 70.1	60	2	(a) 170	51.8	200 - 210	61.0 - 64.0	60	2
(b) 170	51.8	240	73.2	60	0	(b) 170	51.8	220 - 230	67.1 - 70.1	60	0
180	54.9	70 - 150	21.3 - 45.7	60	8	180	54.9	70 - 130	21.3 - 39.6	60	8
(a) 180	54.9	160 - 170	48.8 - 51.8	60	2	(a) 180	54.9	140 - 150	42.7 - 45.7	60	2
						(b) 180	54.9	160	48.8	60	0

Load blocks, hook and weight ball on ground until boom and luffing jib are erected.

Luffing Jib Raising Procedure 999 SERIES 2, 3

Luffing Jib No. 149 On Boom No. 82

WITH OR WITHOUT BOOM CATWALKS

LAYOUT JACK-KNIFE METHOD - 999 SERIES 3

Maximum Boom and Luffing Jib Lengths Lifted Unassisted Over End Of Blocked Crawlers

Boom Length		Luffing Jib No. 149			**A** Maximum Number of Lower Boom Point Sheaves	Boom Length		Luffing Jib No. 149			**A** Maximum Number of Lower Boom Point Sheaves
		Without Intermediate Fall		Boom To Luffing Jib Angle				**With Intermediate Fall**		Boom To Luffing Jib Angle	
Feet	Meters	Feet	Meters	Degrees		Feet	Meters	Feet	Meters	Degrees	
80	24.4	180 - 240	54.9 - 73.2	90	8	80	24.4	170 - 240	51.8 - 73.2	90	8
90	27.4	170 - 240	51.8 - 73.2	90	8	90	27.4	160 - 240	48.8 - 73.2	90	8
100	30.5	160 - 240	48.8 - 73.2	90	8	100	30.5	140 - 240	42.7 - 73.2	90	8
110	33.5	140 - 240	42.7 - 73.2	90	8	110	33.5	130 - 240	39.6 - 73.2	90	8
120	36.6	130 - 240	39.6 - 73.2	90	8	120	36.6	120 - 240	36.6 - 73.2	90	8
130	39.6	120 - 240	36.6 - 73.2	90	8	130	39.6	100 - 240	30.5 - 73.2	90	8
140	42.7	100 - 240	30.5 - 73.2	90	8	140	42.7	90 - 240	27.4 - 73.2	90	8
150	45.7	80 - 240	24.4 - 73.2	90	8	150	45.7	70 - 240	21.3 - 73.2	90	8
160	48.8	70 - 240	21.3 - 73.2	90	8	160	48.8	70 - 240	21.3 - 73.2	90	8
170	51.8	70 - 240	21.3 - 73.2	60	8	170	51.8	70 - 240	21.3 - 73.2	60	8
180	54.9	70 - 230	21.3 - 70.1	60	8	180	54.9	70 - 210	21.3 - 64.0	60	8
(a) 180	54.9	240	73.2	60	2	(a) 180	54.9	220 - 230	67.1 - 70.1	60	2
						(b) 180	54.9	240	73.2	60	0
(a) 190	57.9	70 - 190	21.3 - 57.9	60	2	(a) 190	57.9	70 - 180 (c)	21.3 - 54.9	60	2
(b) 190	57.9	200 - 210	61.0 - 64.0	60	0	(b) 190	57.9	190	57.9	60	0
(b) 200	61.0	70 - 170 (d)	21.3 - 51.8	60	0	(b) 200	61.0	70 - 130	21.3 - 39.6	60	0

Load blocks, hook and weight ball on ground until boom and luffing jib are erected.

200 Ft. (61.0m) boom without boom catwalks with 140 - 170 Ft. (42.7 - 51.8m) luffing jib with intermediate fall, requires luffing jib Assemble-In-Air raising procedure **No. 8411-A** and luffing jib rigging assembly **No. A01426**.