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

Luffing Jib Raising Procedure 888 SERIES 2

Fixed Jib No. 138 On Luffing Jib No. 135 On Boom No. 22EL

Recommended boom, luffing jib and fixed jib raising and lowering procedure

888 SERIES 2 must be equipped with 179,100 Lb. (81 240 kg) crane counterweight and 44,000 Lb. (19 960 kg) carbody counterweight for raising and lowering various boom, luffing jib and fixed jib combinations. Refer to fixed jib assembly **No. 179361** and luffing jib rigging assembly **No. 177063** or **No. 177354** (without intermediate fall) or **No. A07691** (with intermediate fall) for boom, luffing jib and fixed jib make-up of inserts, pendants, backstays and miscellaneous parts, etc.

Three methods may be used to raise and lower boom, luffing jib and fixed jib combinations, depending on length.

A. Fold Under Jack-Knife Method

Raising:

Boom and luffing jib are assembled in fold under position. Boom and luffing jib must be inline over front of blocked crawlers prior to raising boom and luffing jib. Slowly raise boom, luffing jib point wheels will roll along ground. When luffing jib hinge pin is 30 Ft. (9.1m) off ground, attach luffing jib pendants and fixed jib backstays. Place fixed jib backstays on ground clear of luffing jib point wheels. Move luffing jib top wire rope guide to working position. Tighten luffing jib suspension with luffing jib hoist. Slowly raise boom until luffing jib is vertical and luffing jib point wheels are still on ground. Slowly raise luffing jib to 10 degrees ahead of vertical with luffing jib hoist leaving wheels on ground. Attach assembled fixed jib to luffing jib top. Attach fixed jib backstay pendants to fixed jib strut. Attach fixed jib stop to fixed jib butt and temporarily tie off to fixed jib strut. Boom and luffing jib are raised together using boom hoist while fixed jib point wheel rolls on ground. Continue raising until fixed jib suspension tightens. Attach fixed jib stop to luffing jib top. Boom, luffing jib and fixed jib are then raised together using boom hoist until boom reaches desired boom operating angle. Fixed jib radius must be within capacity chart before swinging over side of machine.

Lowering:

Position boom at 75 degrees with boom, luffing jib and fixed jib inline over front of blocked crawlers prior to lowering luffing jib. Lower luffing jib until luffing jib angle reaches 10 degrees ahead of vertical. Maintain 10 degrees ahead of vertical angle with luffing jib while lowering boom until fixed jib point wheel contacts ground. Remove fixed jib stop from luffing jib top and temporarily tie off to fixed jib strut. Lower boom as fixed jib point wheel rolls on ground. Maintain 10 degrees ahead of vertical luffing jib angle and lower boom until luffing jib point wheels contact ground. Remove fixed jib from luffing jib. Raise boom slightly, and slowly lower luffing jib to vertical. Slowly boom down and assist luffing jib point wheels in fold under direction. Continue to lower boom while luffing jib point wheels roll along ground. Boom down until luffing jib hinge pin is 30 Ft. (9.1m) off ground. Disconnect luffing jib pendants and fixed jib backstays (if still attached). Move luffing jib top wire rope guide to stowed position. Raise luffing jib strut with luffing jib hoist until luffing jib strut is in line with luffing jib. Lower boom and luffing jib to ground.

Boom, luffing jib and fixed jib combinations in **Table 1** and **Table 2** may be raised and lowered using fold under jack-knife method. Boom lengths shown with asterisk (*) require lower boom point to be removed. Boom length shown with pound sign (#) requires only the middle two sheaves in lower boom point. All other sheaves must be removed from lower boom point.

TABLE 1 - 888 SERIES 2 Without Intermediate Fall

Maximum Boom, Luffing Jib And Fixed Jib Lengths Lifted Unassisted Over Front Of Blocked Crawlers Using Fold Under Jack-Knife Method

Boom Length		Luffing Jib No. 135		Fixed Jib No. 138	
Feet	Meters	Feet	Meters	Feet	Meters
160	48.8	140	42.7	30 - 60	9.1 - 18.3
180	54.9	140 - 160	42.7 - 48.8	30 - 60	9.1 - 18.3
#190	57.9	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3
*200	61.0	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3

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

TABLE 2 - 888 SERIES 2 With Intermediate Fall

Maximum Boom, Luffing Jib And Fixed Jib Lengths Lifted Unassisted Over Front Of Blocked Crawlers Using Fold Under Jack-Knife Method

Boom Length		Luffing Jib No. 135		Fixed Jib No. 138	
Feet	Meters	Feet	Meters	Feet	Meters
160	48.8	140	42.7	30 - 60	9.1 - 18.3
180	54.9	140 - 160	42.7 - 48.8	30 - 60	9.1 - 18.3
*190	57.9	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3
*200	61.0	140 - 150	42.7 - 45.7	30 - 60	9.1 - 18.3

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

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Fixed Jib No. 138 On Luffing Jib No. 135 On Boom No. 22EL

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

B. Layout Jack-Knife Method With Fixed Jib Attached

Raising:

Boom, luffing jib and fixed jib are assembled in layout, end to end, position. Raise fixed jib strut and attach pendants and backstays. Attach fixed jib stop to fixed jib butt and temporarily tie off to fixed jib strut. Boom, luffing jib and fixed jib must be inline over front 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). Boom is then raised while luffing jib point and fixed jib point wheels are allowed to 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 and **Table 3** and **Table 4**. Tighten luffing jib suspension with luffing jib hoist. Boom and luffing jib are then raised together using boom hoist while fixed jib point wheel rolls on ground. Continue raising until fixed jib suspension tightens. Attach fixed jib stop to luffing jib top. Boom, luffing jib and fixed jib are then raised together using boom hoist until boom reaches desired boom operating angle. Fixed jib radius must be within capacity chart before swinging over side of machine.

Lowering:

Position boom at 75 degrees with boom and luffing jib and fixed jib inline over front of blocked crawlers prior to lowering luffing jib. Lower luffing jib until boom to luffing jib angle reaches value specified in **Table 3** and **Table 4**. Lower boom until fixed jib point wheel contacts ground. Remove fixed jib stop from luffing jib top and temporarily tie off to fixed jib strut. Lower boom as fixed jib point wheel rolls on ground. Lower boom until luffing jib point wheels contact ground. Continue to lower boom while luffing jib and fixed jib roll along 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 forward and lower boom and luffing jib to ground.

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Fixed Jib No. 138 On Luffing Jib No. 135 On Boom No. 22EL

C. Layout Jack-Knife Method With Fixed Jib Attached Before Luffing Jib Lift-Off

Raising:

Boom and luffing jib are assembled in layout, end to end, position. Boom and luffing jib must be inline over front of blocked crawlers prior to raising boom and luffing jib. Attach fixed jib backstay pendants to luffing jib insert and place on ground. 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 wheels are allowed to 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 **Table 3** and **Table 4**. Tighten luffing jib suspension with luffing jib hoist. Attach fully assembled fixed jib to luffing jib. Attach fixed jib backstays to fixed jib strut. Attach fixed jib stop to fixed jib butt and temporarily tie off to fixed jib strut. Boom and luffing jib are raised together using boom hoist while fixed jib point wheel rolls on ground. Continue raising until fixed jib suspension tightens. Attach fixed jib stop to luffing jib top. Boom, luffing jib and fixed jib are then raised together using boom hoist until boom reaches desired boom operating angle. Fixed jib radius must be within capacity chart before swinging over side of machine.

Lowering:

Position boom at 75 degrees with boom and luffing jib and fixed jib inline over front of blocked crawlers prior to lowering luffing jib. Lower luffing jib until boom to luffing jib angle reaches value specified in **Table 3** and **Table 4**. Lower boom until fixed jib point wheel contacts ground. Remove fixed jib stop from luffing jib top and temporarily tie off to fixed jib strut. Lower boom as fixed jib point wheel rolls on ground. Lower boom until luffing jib point wheels contact ground. Remove fixed jib from luffing jib. Lower boom while luffing jib rolls along 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 forward and lower boom and luffing jib to ground.

Luffing Jib Raising Procedure 888 SERIES 2

Fixed Jib No. 138 On Luffing Jib No. 135 On Boom No. 22EL

Boom, luffing jib and fixed jib combinations in **Table 3** and **Table 4** require layout jack knifing to a specified boom to luffing jib angle for raising and lowering. Boom lengths shown with asterisk (*) require lower boom point to be removed. Boom length shown with pound sign (#) requires only the middle two sheaves in lower boom point. All other sheaves must be removed from lower boom point.

TABLE 3 - 888 SERIES 2 Without Intermediate Fall

Maximum Boom, Luffing Jib And Fixed Jib Lengths Lifted Unassisted Over Front Of Blocked Crawlers Using Layout Jack-Knife Method

Boom Length		Luffing Jib No. 135		Fixed Jib No. 138		Boom To Luffing Jib Angle
Feet	Meters	Feet	Meters	Feet	Meters	Degrees
160	48.8	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3	90
180	54.9	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3	60
#190	57.9	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3	60
*200	61.0	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3	60

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

TABLE 4 - 888 SERIES 2 With Intermediate Fall

Maximum Boom, Luffing Jib And Fixed Jib Lengths Lifted Unassisted Over Front Of Blocked Crawlers Using Layout Jack-Knife Method

Boom Length		Luffing Jib No. 135		Fixed Jib No. 138		Boom To Luffing Jib Angle
Feet	Meters	Feet	Meters	Feet	Meters	Degrees
160	48.8	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3	90
180	54.9	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3	60
*190	57.9	140 - 170	42.7 - 51.8	30 - 60	9.1 - 18.3	60
*200	61.0	140 - 150	42.7 - 45.7	30 - 60	9.1 - 18.3	60

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