

OUTSIDE ASSIST PROCEDURE

4600

TOWER NO. 27B WITH BOOM NO. 22B WITH LIGHT TAPERED TOP

SERIES - 4

RECOMMENDED PROCEDURE FOR RAISING AND LOWERING LONG TOWERS WITH OUTSIDE ASSIST

The Model 4600-4 with 123,000 lbs. (55.8Tm) counterweight (120,000 lbs (54.4Tm) with counterweight assembly No. 49667) Requires outside assist for raising and lowering long towers. Assist is required with tower lengths over 194' (59.1m).

TOWER AND BOOM PREPARATION

A. TOWER AND BOOM RIGGING

Refer to tower crane rigging No. 65156 and No. 183226 or No. 66235 and No. 184667 for make up of inserts, pendants and instructions for raising and lowering tower and boom.

B. POSITION CRANE

Lift must be made over the front end of the crawlers with drive chains to the rear.

C. BLOCK CRANE

Front crawler roller must be blocked with crane in a level position on a firm surface.

D. ATTACH LIFTING BRACKET

Lifting bracket should be attached to jib backstay lugs on a 40' (12.2m) insert. Refer to tower crane rigging drawing for location of lifting bracket.

E. ATTACH HOOK

Attach hook from assisting crane to lifting bracket.

F. ASSIST MACHINE

The assist machine should have capacities of at least those shown under 'MAX. ASSIST' when raising tower. The assist machine could experience these loads if the two machines are not lifting in unison and the tower crane machine is allowed to lag behind. Capacities shown under 'MIN. ASSIST' are those required of the assist machine to supplement the raising ability of the 4600-4 operating within 85% of machine moment over front of blocked crawlers. Assist machine should be operating at a boom angle approximately 70-78 degrees. Recommended assist crane boom lengths may vary depending on type and placement of machine and skill of the operator.

RAISING AND LOWERING OF TOWER AND BOOM

A. TOWER AND BOOM RAISING

1. To raise tower and boom, assist machine should be alongside of tower with crawlers parallel to tower and upperworks facing in the direction of tower top. When lifting tower, assist machine should hoist and crawl backwards simultaneously in order to keep hoist line vertical. Also, the hoist line of the assisting machine should not put any side load into the tower. Both cranes must lift together in unison, slowly and cautiously. This is very important. Deflection of the tower should be held to a minimum but should always be held to a down position at the center. For safety reasons it is of utmost importance to assist tower and boom to the 'angle to which tower must be assisted' shown in the table. Tower and boom must be raised to vertical before swinging to side.
2. Load block, hook and weight ball must be left on the ground until the boom is raised to the maximum working radius shown on the capacity chart.

B. TOWER AND BOOM LOWERING

Instructions for machine preparation, limiting tower angles and the reverse procedure for raising tower and boom apply when lowering tower and boom. For safety reasons it is of utmost importance that the tower not be lowered beyond same angle shown in table until assist machine has taken over.

NOTE: Manitowoc Engineering Co. cautions the user that utmost care must be exercised when raising and lowering this tower and boom. During raising and lowering this tower and boom combination, it is very important to follow the raising instructions carefully, and a successful operation depends entirely on the personnel and outside assist equipment performing the task. A caution tag shall be attached to the boom hoist control and to the boom angle indicator noting that the tower and boom combination may not be raised or lowered without outside assistance. Also, reference shall be made to all information shown on M.E.C. specifications for this tower and boom combination.

TOWER LENGTH		BOOM LENGTH		ANGLE TO WHICH TOWER MUST BE ASSISTED	CAPACITY REQUIRED OF ASSIST CRANE				RECOMMENDED ASSIST CRANE BOOM LENGTH	
					*MAX. ASSIST		*MIN. ASSIST			
Feet	Meters	Feet	Meters	Degree	Lbs.	Tm	Lbs.	Tm	Feet	Meters
204.5	62.3	100-190	30.5-57.9	38	96,100	43.6	6,900	3.1	130	39.6
214.5	65.4	100-200	30.5-61.0	43	96,300	43.7	15,100	6.8	150	45.7
224.5	68.4	100-200	30.5-61.0	47	96,000	43.5	21,600	9.8	160	48.8
234.5	71.5	100-200	30.5-61.0	50	96,400	43.7	28,000	12.7	180	54.9
244.5	74.5	100-200	30.5-61.0	53	95,300	43.2	31,800	14.4	190	57.9
254.5	77.6	100-200	30.5-61.0	55	96,100	43.6	37,300	16.9	200	61.0

*See explanation of assist machine under section "F" listed below. Tm = metric tons = 2,205 lbs.; m = meters = 3.281 ft.

CAUTION TAGS ARE AVAILABLE FROM THE MANITOWOC ENGINEERING CO. OR FROM THE MANITOWOC DISTRIBUTOR IN YOUR AREA.