OUTSIDE ASSIST PROCEDURE _____ 3900T SERIES-2

TOWER NO. 9A WITH BOOM NO. 18 OVER REAR ON EXTENDED OUTRIGGERS

RECOMMENDED PROCEDURE FOR RAISING AND LOWERING LONG TOWERS WITH OUTSIDE ASSIST

The Model 3900T with 61,200 lb. (27.8 Tm) crane counterweight and 10,500 lb. (4.8 Tm) front bumper counterweight requires outside assist for raising and lowering long towers. Assist is required with tower lengths over 164' (50.0 m) when using rigging No. 65136 and over 154' (46.9 m) when using rigging No. 66015.

TOWER AND BOOM PREPARATION:

A. TOWER AND BOOM RIGGING:
Refer to tower crane rigging No. 65136 and No. 66015 for make up of inserts, pendants and instructions for raising and lowering tower and boom. If jib is to be added, rigging No. 66015 must be used.

B. POSITION CRANE:
Lift must be made over the rear end of the carrier.

C. BLOCK CRANE:
Outriggers must be fully extended, with outrigger jacks set (tires must not contact ground) and 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' (12.2 m) 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 3900T operating within 85% of machine moment over rear on extended outriggers. 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
164	50.0	100-150	30.5-45.7	33	41,800	19.0	10,200	4.6	110	33.5
174	53.0	100-150	30.5-45.7	40	41,800	19.0	13,000	5.9	130	39.6
184	56.1	100-150	30.5-45.7	46	41,900	19.0	15,400	7.0	140	42.7
194	59.1	100-150	30.5-45.7	49	41,400	18.8	16,900	7.7	150	45.7

*See explanation of assist machine under section "F" listed above. 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.