

# WIND PROCEDURE \_\_\_\_\_ 4600 SERIES 4

## TOWER NO. 27B WITH BOOM NO. 22B

### RECOMMENDED PROCEDURE FOR OPERATING UNDER VARIOUS WIND CONDITIONS

#### A. RAISING OR LOWERING OF TOWER AND BOOM

1. MACHINE MUST BE ASSEMBLED AS SHOWN ON RIGGING DRAWING NO. 65156 AND NO. 183226 OR NO. 66235 AND NO. 184667.
2. MACHINE MUST BE ON A FIRM SURFACE AND WITHIN THE LEVEL TOLERANCE SHOWN ON THE CAPACITY CHART.
3. WIND LIMITS DURING ERECTION.
  - a. TOWERS OF 194' (59.1M) OR LESS.
    - 1.) WHEN RAISING OR LOWERING TOWER WITH BOOM ATTACHED, IT IS RECOMMENDED THAT WINDS FROM ANY DIRECTION NOT EXCEED 30 MILES PER HOUR (48 KM/HR).
    - 2.) WHEN TOWER IS IN A VERTICAL POSITION AND BOOM IS BEING RAISED FROM THE LATCHED POSITION OR LOWERED FOR LATCHING, THE WINDS SHOULD NOT EXCEED 20 MILES PER HOUR (32 KM/HR) ON THE FRONT OR SIDE OF THE TOWER AND BOOM. WINDS OF GREATER VELOCITY MAY PRESENT DIFFICULTIES WHEN TRYING TO LATCH THE BOOM.
  - b. TOWERS OF 204' (62.2M) THROUGH 254' (77.4M).
    - 1.) WHEN ERECTING OR LOWERING TOWER WITH BOOM ATTACHED FOLLOW CHART NO. 6580 FOR RECOMMENDED PROCEDURE FOR RAISING AND LOWERING LONG TOWERS WITH OUTSIDE ASSIST. WINDS FROM ANY DIRECTION SHOULD NOT EXCEED 25 MILES PER HOUR (40 KM/HR).
    - 2.) WHEN TOWER IS IN A VERTICAL POSITION AND BOOM IS BEING RAISED FROM THE LATCHED POSITION OR LOWERED FOR LATCHING, THE WINDS SHOULD NOT EXCEED 20 MILES PER HOUR (32 KM/HR) ON THE FRONT OR SIDE OF THE TOWER AND BOOM. WINDS OF GREATER VELOCITY MAY PRESENT DIFFICULTIES WHEN TRYING TO LATCH THE BOOM.

#### B. WIND LIMITS DURING OPERATION

1. TOWERS - 194' (59.1M) OR LESS.
  - a. ALL TOWER AND BOOM COMBINATIONS SHOWN ON RIGGING DRAWING NO. 65156 OR NO. 66235 MAY REMAIN IN THE OPERATING POSITION UNDER THE FOLLOWING CONDITIONS.
  - b. MACHINE MUST BE ON A FIRM LEVEL SURFACE AND WITHIN THE LEVEL TOLERANCE SHOWN ON THE CAPACITY CHART.
  - c. MACHINE MAY BE OPERATED IN WINDS UP TO 25 MILES PER HOUR (40 KM/HR) PROVIDED CRANE OPERATOR'S JUDGMENT IS USED TO ALLOW FOR WIND EFFECT ON THE LIFTED LOAD AND OTHER CONSIDERATIONS NOTED ON THE CAPACITY CHART ARE FOLLOWED. WIND WILL HAVE A CONSIDERABLE EFFECT ON A LOAD WITH A LARGE 'SAIL AREA' AND MUST BE COMPENSATED FOR ACCORDINGLY BY REDUCING LOAD RATINGS, REDUCING OPERATING SPEEDS OR BY A COMBINATION OF BOTH.

NOTE:  
REFER TO FOLIO 747 'TOWER TWIST INDICATOR' FOR AN INDICATION OF MAXIMUM ALLOWABLE TOWER TWIST WHILE OPERATING.
2. TOWERS - 204' (62.2M) THROUGH 254' (77.4M).
  - a. ALL TOWER AND BOOM COMBINATIONS SHOWN ON RIGGING DRAWING NO. 65156 AND NO. 183226 OR NO. 66235 AND NO. 184667 MAY REMAIN IN THE OPERATING POSITION UNDER THE FOLLOWING CONDITIONS.
  - b. MACHINE MUST BE ON A FIRM LEVEL SURFACE AND WITHIN THE LEVEL TOLERANCE SHOWN ON THE CAPACITY CHART.
  - c. MACHINE MAY BE OPERATED IN WINDS UP TO 20 MILES PER HOUR (32 KM/HR) PROVIDED CRANE OPERATOR'S JUDGMENT IS USED TO ALLOW FOR WIND EFFECT ON THE LIFTED LOAD AND OTHER CONSIDERATIONS NOTED ON THE CAPACITY CHART ARE FOLLOWED. WIND WILL HAVE A CONSIDERABLE EFFECT ON A LOAD WITH A LARGE 'SAIL AREA' AND MUST BE COMPENSATED FOR ACCORDINGLY BY REDUCING LOAD RATINGS, REDUCING OPERATING SPEEDS OR BY A COMBINATION OF BOTH.

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REFER TO FOLIO 747 'TOWER TWIST INDICATOR' FOR AN INDICATION OF MAXIMUM ALLOWABLE TOWER TWIST WHILE OPERATING.

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### RECOMMENDED PROCEDURE FOR OPERATING UNDER VARIOUS WIND CONDITIONS

#### C. NON-OPERATION (WINDS EXCEEDING LIMITS IN A. & B. ABOVE)

1. WINDS UP TO 50 MILES PER HOUR (80 KM/HR) FOR TOWER LENGTHS OF 194' (59.1M) OR LESS AND 40 MILES PER HOUR (64 KM/HR) FOR TOWER LENGTHS OF 204' (62.2M) THROUGH 254' (77.4M).

a. WEATHER VANING (CHECK FOR SITE INTERFERENCE TO FREE SWING OF BOOM).

- 1.) TOWER ATTACHMENT CAN REMAIN ERECTED AND IN OPERATING POSITION.
- 2.) BOOM SHOULD BE POSITIONED FROM 20 DEGREES TO 30 DEGREES ABOVE HORIZONTAL.
- 3.) SWING LOCK AND SWING BRAKE MUST BE DISENGAGED.

NOTE:

THE FOLLOWING PROCEDURE SHOULD BE PERFORMED TO ALLOW THE MACHINE TO WEATHER VANE.

REFER TO FOLIO 791 'SWING BRAKE 4600 SERIES 4' (SEE FIGURE 1183). WITH SWING BRAKE CONTROL IN THE APPLIED POSITION (NO AIR TO BRAKE CYLINDER) BACK OFF ADJUSTING NUT (1) TO LOOSEN BRAKE BAND AND LINING, SO BRAKE FREE WHEELS DURING WEATHER VANING.

**WARNING** THIS PROCEDURE PREVENTS THE SWING BRAKE FROM APPLYING. PRIOR TO RETURNING TO NORMAL OPERATION, THE SWING BRAKE MUST BE ADJUSTED ACCORDING TO FOLIO 791.

b. TIE DOWN (WHERE SITE INTERFERENCE PRECLUDES WEATHER VANING).

- 1.) TOWER ATTACHMENT CAN REMAIN ERECTED AND IN OPERATING POSITION.
- 2.) BOOM SHOULD BE POSITIONED FROM 20 DEGREES TO 30 DEGREES ABOVE HORIZONTAL.
- 3.) SWING LOCK AND SWING BRAKE MUST BE ENGAGED.
- 4.) LOAD LINE FROM BOOM POINT (NOT JIB POINT) MUST BE TIED OFF TO A SUITABLE POINT ON EXISTING STRUCTURE OR AN ANCHORAGE AT GROUND LEVEL. ELIMINATE SLACK AFTER TIE OFF.

NOTE:

TIE-OFF POINT ON STRUCTURE OR GROUND ANCHORAGE POINT MUST BE LOCATED ON AN IMAGINARY PLUMB LINE DIRECTLY UNDER BOOM POINT.

2. WINDS ABOVE 50 MILES PER HOUR (80 KM/HR) UP TO 75 MILES PER HOUR (121 KM/HR) FOR TOWER LENGTHS OF 194' (59.1M) OR LESS AND 40 MILES PER HOUR (64 KM/HR) UP TO 75 MILES PER HOUR (121 KM/HR) FOR TOWER LENGTHS OF 204' (62.2M) THROUGH 254' (77.4M).

a. IF WIND VELOCITIES ARE EXPECTED IN THE RANGE AS MENTIONED ABOVE, TOWER SHOULD BE LOWERED TO GROUND OR TOWER MAY REMAIN IN THE VERTICAL POSITION PROVIDED THE FOLLOWING CONDITIONS ARE MET.

- 1.) BOOM MUST BE FOLDED AND LATCHED TO TOWER. IF JIB IS ATTACHED AND IT PREVENTS LATCHING, JIB POINT MUST BE SUPPORTED ON GROUND.
- 2.) SLACK IN BOOM HOIST WIRE ROPE SHOULD BE REMOVED. CAUTION: DO NOT OVER TIGHTEN.
- 3.) GUY LINES MUST BE ATTACHED TO TOWER CAP AND SECURED TO A SUITABLE ANCHORAGE. SLACK IN GUY LINES MUST BE REMOVED. REFER TO PAGE 3 FOR RECOMMENDED GUY LINE TIE DOWN LOCATIONS AND PAGE 4 FOR RECOMMENDED PARTS FOR GUYING TOWER TO ANCHORAGE.

3. WINDS ANTICIPATED ABOVE 75 MILES PER HOUR (121 KM/HR).

a. TOWER ATTACHMENT MUST BE LOWERED TO GROUND AND SECURED. REFER TO LOWERING INSTRUCTIONS ON RIGGING NO. 65156 AND NO. 183226 OR NO. 66235 AND NO. 184667 AND CHART NO. 6580.

# MANITOWOC ENGINEERING CO.

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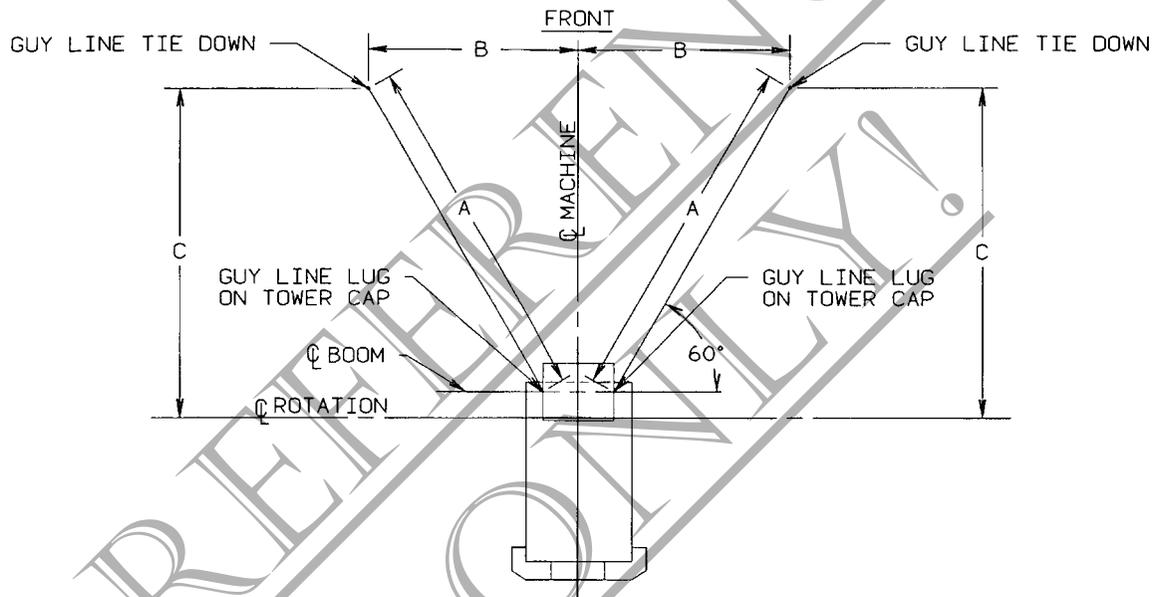
## WIND PROCEDURE \_\_\_\_\_ 4600 SERIES 4

TOWER NO. 27B WITH BOOM NO. 22B

### RECOMMENDED PROCEDURE FOR OPERATING UNDER VARIOUS WIND CONDITIONS

#### RECOMMENDED GUY LINE TIE DOWN LOCATIONS

#### PLAN VIEW OF 4600 SERIES 4 TOWER



TOWER LENGTH		A		B		C	
FT.	METERS	FT.	METERS	FT.	METERS	FT.	METERS
124 - 164	37.8 - 50.0	35	10.7	22	6.7	37	11.3
174 - 194	53.0 - 59.1	40	12.2	24	7.3	41	12.5
204 - 224	62.2 - 68.3	45	13.7	27	8.2	46	14.0
234 - 254	71.3 - 77.4	50	15.2	30	9.1	50	15.2

MINIMUM RECOMMENDED GUY LINE TIE DOWN DISTANCES ARE GIVEN IN TABLE. IF ROOM IS AVAILABLE, INCREASING DISTANCE 'A' IS RECOMMENDED.

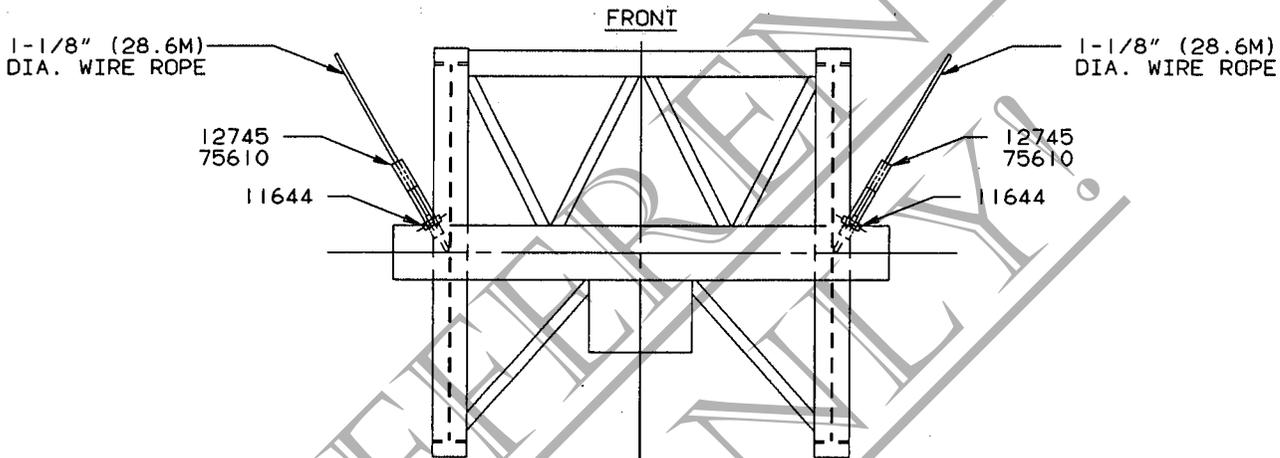
**WIND PROCEDURE \_\_\_\_\_ 4600 SERIES 4**

**TOWER NO. 27B WITH BOOM NO. 22B**

**RECOMMENDED PROCEDURE FOR OPERATING UNDER VARIOUS WIND CONDITIONS**

RECOMMENDED PARTS FOR GUYING TOWER TO GROUND

PLAN VIEW OF TOWER CAP



GUY LINE: 1-1/8" (28.6M) - 6 X 25 FILLER WIRE, IMPROVED PLOW STEEL, REGULAR LAY, IWRC. MINIMUM BREAKING STRENGTH 113,000 LBS. (51,250KG).

RECOMMENDED PROCEDURE FOR GUYING TOWER TO GROUND

NO. REQ'D.	DESCRIPTION	DRWG. NO.	REMARKS
2	PIN	11644	
2	WEDGE SOCKET	12745	
2	WEDGE	75610	
2	1-1/8" (28.6M) WIRE ROPE - 200' (61.0M) LONG		124' - 164' (37.8M) - (50.0M) TOWER
2	1-1/8" (28.6M) WIRE ROPE - 230' (70.1M) LONG		174' - 194' (53.0M) - (59.1M) TOWER
2	1-1/8" (28.6M) WIRE ROPE - 260' (79.2M) LONG		204' - 224' (62.2M) - (68.3M) TOWER
2	1-1/8" (28.6M) WIRE ROPE - 290' (88.4M) LONG		234' - 254' (71.3M) - (77.4M) TOWER

NOTE: WIRE ROPE LENGTHS BASED ON 'RECOMMENDED GUY LINE TIE DOWN LOCATIONS' ABOVE AND ON SAME LEVEL AS BOTTOM OF MACHINE CRAWLERS.