

# RECOMMENDED PROCEDURE FOR OPERATING **4100W** UNDER VARIOUS WIND CONDITIONS **4100W SERIES 1** NO. 22A TOWER WITH NO. 23 BOOM

## A. RAISING OR LOWERING OF TOWER AND BOOM

1. Machine must be assembled as shown on rigging drawing No. 50805 or No. 65998 or No. 66262.
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 183 ft. (55.8m) 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 193 ft. (58.8m) — 253 ft. (77.1m).

- 1.) When erecting or lowering tower with boom attached follow chart No. 5393 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 latch 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 — 183 ft. (55.8m) or less.

- a. All towers and boom combinations shown on rigging drawing No. 50805 or No. 65998 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 — 193 ft. (58.8m) through 253 ft. (77.1m).

- a. All tower and boom combinations shown on rigging drawing No. 50805 or No. 65998 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.

**NOTE** Refer to Folio 747 'Tower Twist Indicator' for an indication of maximum allowable tower twist while operating.

## 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 183 ft. (55.8m) or less and 40 miles per hour (64 km/hr) for tower lengths of 193 ft. (58.8m) through 253 ft. (77.1m).

- 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** For machines with spring applied air released swing brakes, the following procedure should be performed to allow the machine to weather vane.

Refer to Folio 994 'Swing Brake 4100W' (see figure 1). With swing brake control in the applied position (no air to brake cylinder) loosen jam nut (a) then back off adjusting nut (b) 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 994.**

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 plum 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 183 ft. (55.8m) or less and 40 miles per hour (64 km/hr) up to 75 miles per hour (121 km/hr) for tower lengths of 193 ft. (58.8m) through 253 ft. (77.1m).

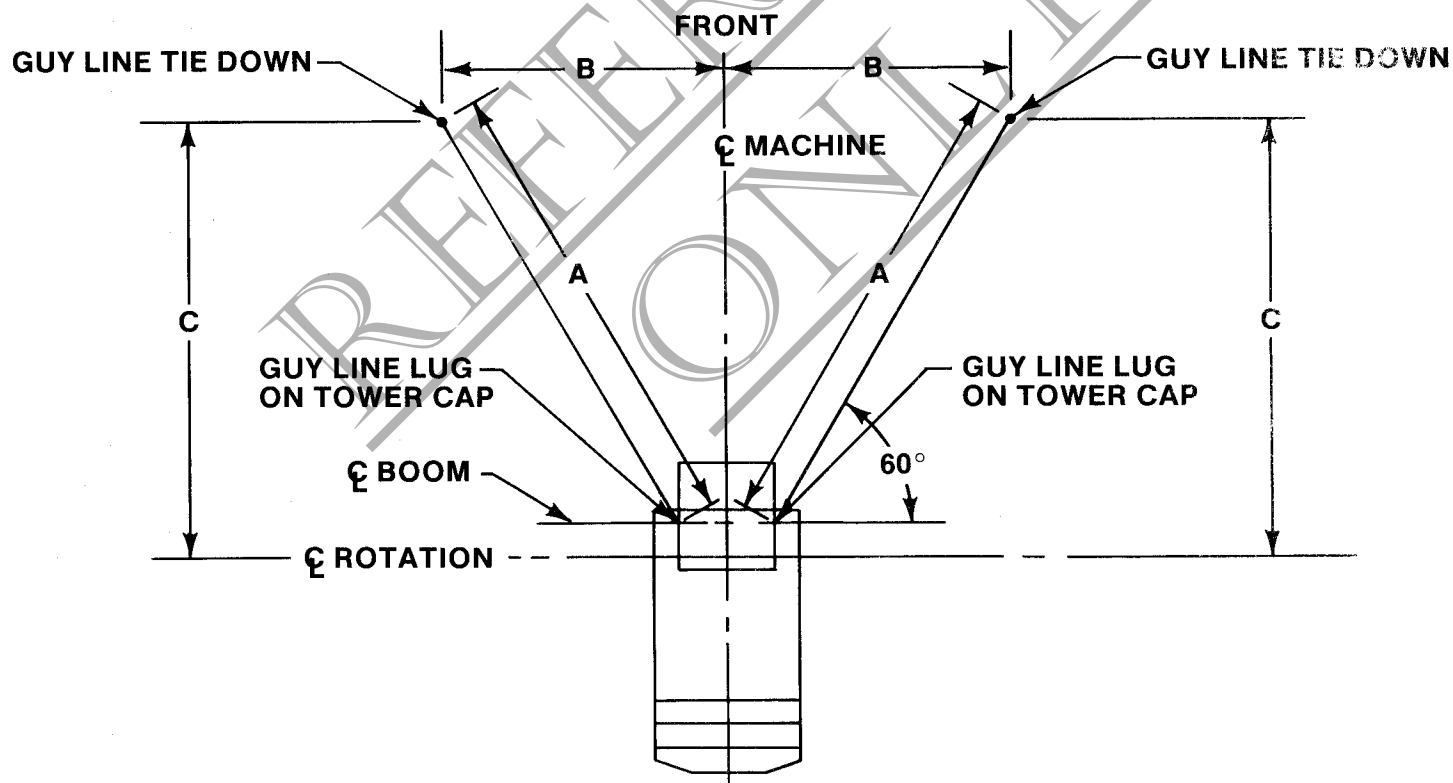
a. If wind velocities are expected in the range as mentioned above, tower should be lowered to ground or tower may remain in the vertical position provided the following conditions are met.

- 1.) Boom must be folded and latched to tower. If jib is attached and it prevents latching, jib wheel assembly should be connected to jib to support jib point 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 recommended guy line tie down locations and 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. 50805 or No. 65998 and chart No. 5393.

### RECOMMENDED GUY LINE TIE DOWN LOCATIONS PLAN VIEW OF 4100W, 4100W SERIES 1 TOWER

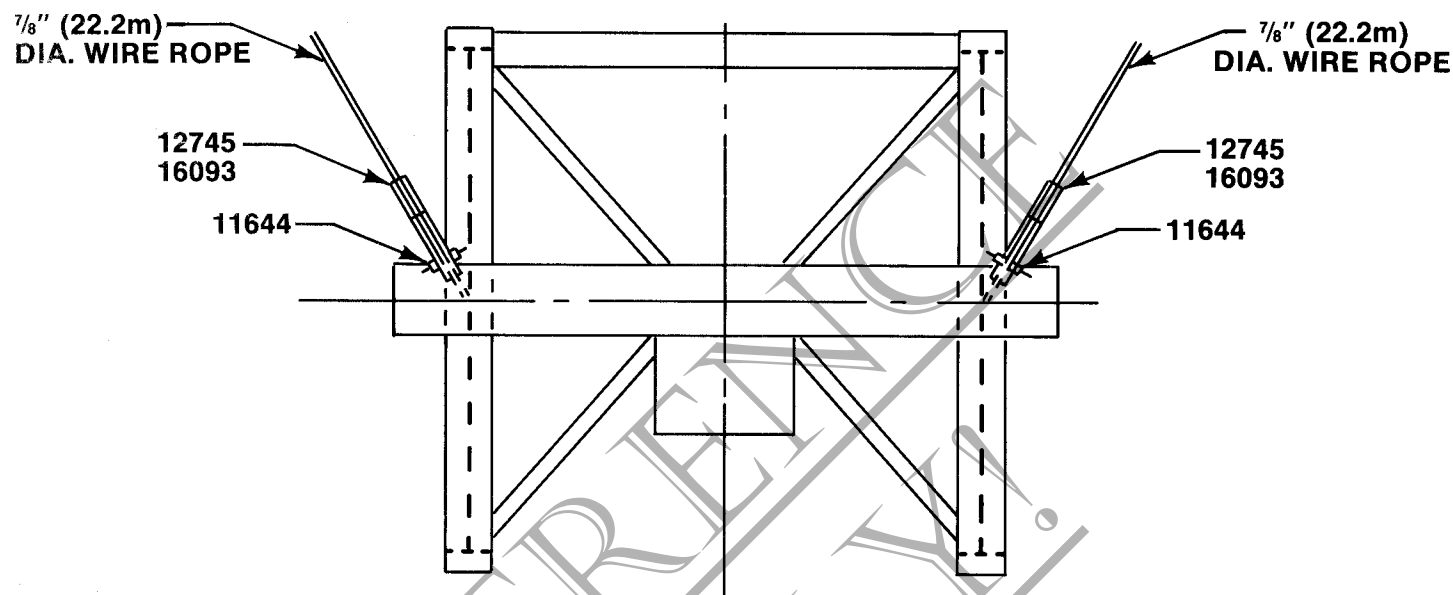


TOWER LENGTH		A		B		C	
Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters
123 - 183	37.5 - 55.8	35	10.7	22	6.7	35	10.7
193 - 213	58.8 - 64.9	40	12.2	24	7.3	39	11.9
223 - 253	68.0 - 77.1	50	15.2	29	8.8	48	14.6

Minimum recommended guy line tie down distances are given in table. If room is available, increasing distance 'A' is recommended.

# **RECOMMENDED PARTS FOR GUYING TOWER TO GROUND PLAN VIEW OF TOWER CAP**

**FRONT**



**GUY LINE:**  $\frac{7}{8}$ " (22.2m) — 6 x 25 Filler Wire, Improved Plow Steel, Regular Lay, IWRC. Minimum Breaking Strength 69,200 lbs. (31,380 kg).

RECOMMENDED PROCEDURE FOR GUYING TOWER TO GROUND				
No. Req'd.	Description	Drwg. No.	Remarks	
2	Pin	11644		
2	Wedge Socket	12745		
2	Wedge	16093		
2	$\frac{7}{8}$ " (22.2m) Wire Rope — 215' (65.5m) long		123' — 183' (37.5m) — (55.8m) Tower	
2	$\frac{7}{8}$ " (22.2m) Wire Rope — 245' (74.7m) long		193' — 213' (58.8m) — (64.9m) Tower	
2	$\frac{7}{8}$ " (22.2m) Wire Rope — 290' (88.4m) long		223' — 253' (68.0m) — (77.1m) Tower	

**NOTE:** Wire rope lengths based on 'Recommended Guy Line Tie Down Locations' above and on same level as bottom of machine crawlers.