

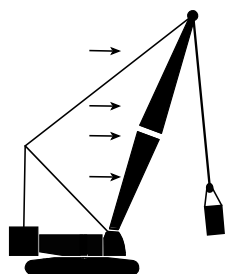
Wind Conditions

Boom No. B85:505-500
with Mast No. M11:503 and
7,0 m (23.0 ft) Extended Upper Boom Point

General Information

- A. Judgment and experience of qualified operators, job planners, and supervisors must be used to compensate for affect of wind on lifted load and boom by reducing ratings, reducing operating speeds, or a combination of both. Failing to observe this precaution can cause crane to tip or boom to collapse. Death or serious injury to personnel can result.
- B. Wind speed (to include wind gusts) must be monitored by job planners and supervisors. *Be aware that wind speed at boom point can be greater than wind speed at ground level.*
- C. Lifted loads are analyzed using an effective sail area of 1,2 m²/1 000 kg (5.86 ft²/1,000 lb). *Be aware that the larger the sail area of the load, the greater the wind's affect on the load.*
- D. Wind adversely affects lifting capacity and stability as shown below. The result could be loss of control over the load and crane, even if the load is within the crane's capacity.
- E. As a general rule, ratings and operating speeds must be reduced when: **Wind causes load to swing forward past allowable operating radius or sideways past either boom hinge pin.**

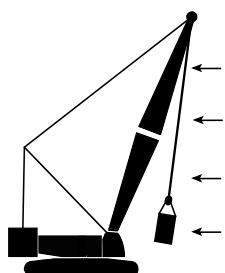
How Wind Affects a Crane



Forward stability is affected by wind on the rear of the boom. Wind applies a force to the boom and load that adds to the crane's overturning moment. This action has the same effect as adding load to the hook.

The wind's affect on the rear of the load increases load radius. This condition can result in an overload hazard, possibly causing the crane to tip or the boom to collapse.

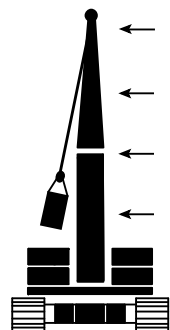
To avoid this hazard, reduce operating speeds and load (see appropriate table for maximum wind speed).



Backward stability is affected by wind on the front of the boom. This condition is especially dangerous when the boom is at or near the maximum angle when operating without load.

Wind forces on the front of the boom reduce the normal forward tipping effect of the boom. The crane can tip or the boom can collapse if this condition is not avoided.

The boom can buckle and collapse if the load contacts the boom.



Boom strength is affected the most when the wind acts on the side of the boom.

The wind's affect on the side of the load can cause the load to swing out past the boom hinge pin. This condition can result in excessive side load forces on the boom, possibly causing the crane to tip or the boom to collapse.

To avoid this hazard, reduce operating speeds and load (see appropriate table for maximum wind speed).

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In Service

Operation is permitted in steady winds or gusts up to the maximum wind speed given in the ***In Service*** portion of Table 1, provided the lifted load does not exceed capacity chart percentage. Raising and lowering is permitted within ***In Service*** wind speeds.

Wind speed to be measured at boom point elevation.

Refer to boom capacity chart for specific backward stability conditions.

Out of Service

Operation is not permitted and ***Out of Service Conditions*** must be followed when anticipated wind speed exceeds maximum value listed in the ***In Service*** portion of Table 1 for given configuration.

Out of Service Conditions

Parking Position - Park crane (upper in-line with crawlers) with load blocks, hooks, and weight ball on ground or secured and position boom at 70°.

Ground Position - Lower boom onto blocking at ground level before ***In Service*** wind speed is exceeded.

Mast

- **Above 22 m/s (50 mph)** -
Haul in boom hoist wire rope just enough to tension mast straps. Do not raise boom off blocking. ***Wind can cause mast stops to collapse if this step is not performed.***
- **Above 34 m/s (75 mph)** -
Lower mast onto blocking at ground level.

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Table 1

Boom Length m (ft)	83,0 (272.3)	86,0 (282.2)	89,0 (292.0)	92,0 (301.8)	95,0 (311.7)	98,0 (321.5)	101,0 (331.4)	104,0 (341.2)	107,0 (351.0)
Percent of Capacity Chart	Maximum Permitted In Service Wind Speed m/s (mph)								
100	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)
95	11 (25)	11 (25)	11 (25)	9 (20)	9 (20)	9 (20)	9 (20)	7 (15)	9 (20)
90	16 (35)	16 (35)	14 (30)	11 (25)	9 (20)	11 (25)	9 (20)	9 (20)	9 (20)
80	16 (35)	16 (35)	16 (35)	14 (30)	11 (25)	14 (30)	11 (25)	11 (25)	11 (25)
70	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	14 (30)	14 (30)	14 (30)
60	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)
Condition	Maximum Permitted Out of Service Wind Speed m/s (mph)								
Parking Position	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	20 (45)	20 (45)	20 (45)	20 (45)

Table 1 (continued)

Boom Length m (ft)	110,0 (360.9)	113,0 (370.7)	116,0 (380.6)	119,0 (390.4)	122,0 (400.3)	125,0 (410.1)	128,0 (419.9)	131,0 (429.8)
Percent of Capacity Chart	Maximum Permitted In Service Wind Speed m/s (mph)							
100	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)
95	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)	7 (15)
90	9 (20)	9 (20)	9 (20)	9 (20)	9 (20)	9 (20)	9 (20)	7 (15)
80	11 (25)	11 (25)	11 (25)	11 (25)	11 (25)	11 (25)	9 (20)	9 (20)
70	14 (30)	14 (30)	11 (25)	11 (25)	14 (30)	11 (25)	11 (25)	11 (25)
60	16 (35)	16 (35)	16 (35)	16 (35)	14 (30)	14 (30)	14 (30)	14 (30)
Condition	Maximum Permitted Out of Service Wind Speed m/s (mph)							
Parking Position	18 (40)	18 (40)	18 (40)	18 (40)	16 (35)	16 (35)	16 (35)	16 (35)