

Wind Conditions

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GENERAL



WARNING

TIPPING CRANE HAZARD!

Judgment and experience of qualified operators, job planners and supervisors must be used to compensate for affect of wind on lifted load and boom and/or jib by reducing ratings, reducing operating speeds, boom/jib combination or both.

Failing to observe this precaution can cause crane to tip or boom and/or jib to collapse. Death or serious injury to personnel can result.

Wind adversely affects lifting capacity and stability as shown in Figure 1. The result could be loss of control over the load and crane, even if the load is within the crane's capacity.

Wind speed (to include wind gusts) must be monitored by job planners and supervisors.

Beware that wind speed at the boom or jib point can be greater than wind speed at ground level. Also beware that the larger the sail area of the load, the greater the wind's affect on the load.

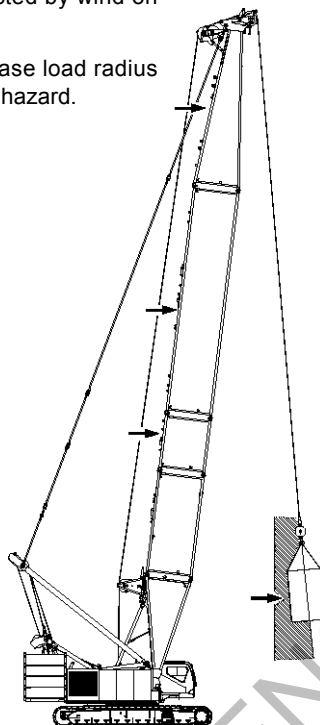
As a general rule, ratings and operating speeds must be reduced when:

Wind causes load to swing forward past allowable operating radius or sideways past either boom hinge pin.

Wind Conditions

Forward stability is affected by wind on the rear of the boom.

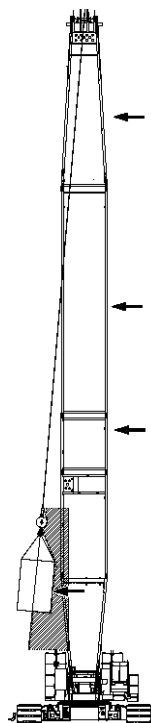
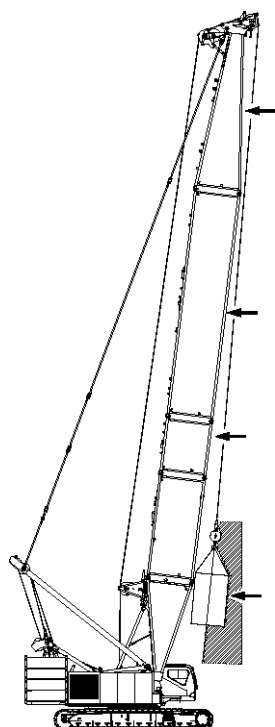
This condition can increase load radius and result in an overload hazard.



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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.



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.

FIGURE 1

Wind Conditions

Boom

Operation Permitted

Operation is permitted in steady winds or gusts up to the maximum speed given in Table 1 provided the lifted load does not exceed capacity chart percentage.

Wind speed to be measured at boom point elevation.

Operation Not Permitted

Operation is not permitted when the wind speed exceeds the values listed in Table 1 for a given capacity chart percentage.

When wind exceeds 36 mph (16 m/s), lower the boom to the ground.

Table 1: Allowable Wind Speeds and Gusts for Various Capacity Chart Percentages

| Boom Length ft (m) | 40 - 110 (12,2 - 33,5) | 120 - 160 (36,6 - 48,8) | 170 - 200 (51,8 - 61,0) |
|---|---------------------------------|----------------------------|----------------------------|
| Percent of Capacity Chart | Maximum Wind Speed mph (m/s) | | |
| 100 | 27 (12) | 22.5 (10) | 22.5 (10) |
| 90 | 36 (16) | 27 (12) | 22.5 (10) |
| 80 | 36 (16) | 36 (16) | 33.8 (14) |
| 70 | 36 (16) | 36 (16) | 36 (16) |
| Operation Not Permitted above 36 mph (16 m/s) | | | |

Wind Conditions

Boom with Jib

Operation Permitted

Operation is permitted in steady winds or gusts up to the maximum speed given in Table 2 provided the lifted load does not exceed capacity chart percentage.

Wind speed to be measured at jib point elevation.

Operation Not Permitted

Operation is not permitted when the wind speed exceeds the values listed in Table 2 for a given capacity chart percentage.

When wind exceeds 36 mph (16 m/s), lower the boom and jib to the ground.

Table 2: Allowable Wind Speeds and Gusts for Various Capacity Chart Percentages

| Boom Length ft (m) | 80 - 130 (24,4 - 39,6) | 140 - 170 (42,7 - 51,8) | 180 - 190 (54,9 - 57,9) |
|---|---------------------------------|----------------------------|----------------------------|
| Jib Length ft (m) | 30 - 60 (9,1 - 18,3) | | |
| Percent of Capacity Chart | Maximum Wind Speed mph (m/s) | | |
| 100 | 27 (12) | 22.5 (10) | 22.5 (10) |
| 90 | 36 (16) | 33.8 (14) | 27 (12) |
| 80 | 36 (16) | 36 (16) | 33.8 (14) |
| 70 | 36 (16) | 36 (16) | 36 (16) |
| Operation Not Permitted above 36 mph (16 m/s) | | | |