Table of Contents

General....1
Manitowoc Recommendations....2
Operation Permitted....2
Without Max-Er Attachment....2
With Max-Er Attachment....3
Operation Not Permitted....4

General

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.

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 by reducing ratings, reducing operating speeds, or a combination of 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 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.

Manitowoc Recommendations

Operation Permitted

Operation is permitted in steady winds or wind gusts up to 35 mph (16 m/s). However, ratings must be reduced the amount given in Table 1 or 2 when the corresponding wind speed is reached.

Without Max-Er Attachment

Tables 1and 2 are for cranes without a Max-Er Attachment. For cranes equipped with a Max-Er Attachment, refer to Tables 3 and 4.

Table 1
Rating Reductions for Various Wind Speeds and Wind Gusts
WHEN EQUIPPED WITH #80 OR #80-81 BOOM

Boom Length ft (m)		100–340 (30.5–103.6)	360 (109.7)	380–400 (115.8–121.9)
Maximum Wind Speed		**Percent Rating Reduction**		
mph	m/s			
15	7	0	0	0
20	9	0	0	10
25	11	0	0	10
30	13	0	0	20
35	16	0	10	20
Above 35 mph (16 m/s)		**OPERATION NOT PERMITTED**		

Table 2
Rating Reductions for Various Wind Speeds and Wind Gusts
WHEN EQUIPPED WITH #80 BOOM AND #81 LUFFING JIB

Jib Length ft (m)		120–180 (36.6–54.9)	200–260 (61–79.2)	280–300 (85.3–91.4)
Boom ft (m)		180–200 (54.9–61)	180–200 (54.9–61)	180 (54.9)
Maximum Wind Speed		**Percent Rating Reduction**		
mph	**m/s**			
15	7	0	0	0
20	9	0	0	0
25	11	0	10	30
30	13	0	50	
35	16	0	**OPERATION NOT PERMITTED**	
Above 35 mph (16 m/s)				

Wind speed must be measured at boom point elevation.
Load block must weigh at least 37,000 lb (16 800 kg). ***Luffing jib may be blown over backwards if this precaution is not observed.***
Refer to luffing jib capacity chart for specific backward stability conditions.

With Max-Er Attachment

Tables 1and 2 are for cranes without a Max-Er Attachment. For cranes equipped with a Max-Er Attachment, refer to Tables 3 and 4.

Table 3
Rating Reductions for Various Wind Speeds and Wind Gusts
WHEN EQUIPPED WITH #80 BOOM WITH MAX-ER ATTACHMENT

Boom Length ft (m)		140–180 (42.7–54.9)	200–260 (61–79.2)	280–380 (85.3–115.8)
Maximum Wind Speed		**Percent**		
mph	m/s	**Rating Reduction**		
15	7	0	0	0
20	9	0	0	10
25	11	0	10	10
30	13	0	10	20
35	16	0	10	20
Above 35 mph (16 m/s)		**OPERATION NOT PERMITTED**		

Table 4
Rating Reductions for Various Wind Speeds and Wind Gusts
WHEN EQUIPPED WITH #80 BOOM AND #81 LUFFING JIB WITH MAX-ER

Jib Length ft (m)		120–180 (36.6–54.9)			200–260 (61–79.2)			280–300 (85.3–91.4)		
Boom ft (m)		180–240 (54.9–73.2)	260–300 (79.2–91.4)	320–340 (97.5–103.6)	180–240 (54.9–73.2)	260–300 (79.2–91.4)	320–340 (97.5–103.6)	180–240 (54.9–73.2)	260–300 (79.2–91.4)	320–340 (97.5–103.6)
Maximum Wind Speed		**Percent Rating Reduction**								
mph	**m/s**									
15	7	0	0	0	0	0	0	0	0	0
20	9	0	0	0	0	0	10	0	30	50
25	11	0	0	0	10	40	50	30		
30	13	0	0	10	50					
35	16	0	20	40						
Above 35 mph (16 m/s)										

OPERATION NOT PERMITTED

Wind speed must be measured at boom point elevation.
Load block must weigh at least 37,000 lb (16 800 kg). ***Luffing jib may be blown over backwards if this precaution is not observed.***
Refer to luffing jib capacity chart for specific backward stability conditions.

Operation Not Permitted

Operation is not permitted when wind speed is above the following limits or wind gusts above these limits are expected:

Boom only with or without MAX-ER Attachment

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom no higher than 70°.
- **Above 50 mph (22 m/s)** — Lower boom onto blocking at ground level.

Boom with 120' – 180' Luffing Jib with MAX-ER Attachment

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 75° and luffing jib at 45°.
- **Above 50 mph (22 m/s)** — Lower boom and jib onto blocking at ground level.

Boom with 200' – 300' Luffing Jib with MAX-ER Attachment

- **Up to 40 mph (18 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 75° and luffing jib at 60°.
- **Above 40 mph (18 m/s)** — Lower boom and jib onto blocking at ground level.

Boom and Luffing Jib without MAX-ER Attachment

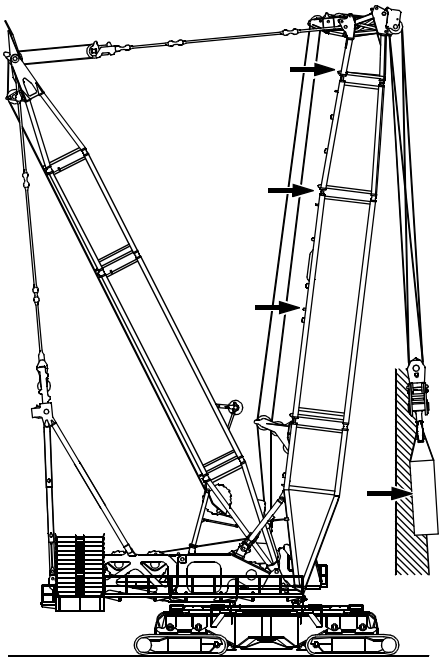
- **Up to 45 mph (20 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 85° and luffing jib at 50°.
- **Above 45 mph (20 m/s)** — Lower boom and jib onto blocking at ground level.

NOTE: Above 50 mph (22 m/s), 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 75 mph (34 m/s), lower mast onto blocking at ground level.

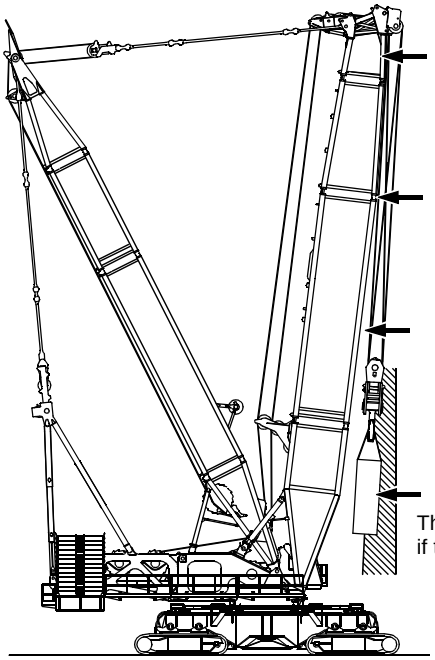
A1140

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.

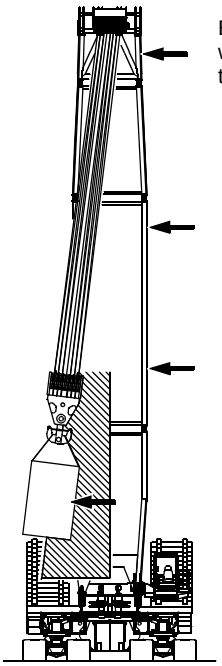
To avoid this hazard, reduce operating speeds and load (see Tables 1-4 for recommended capacity reductions).



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 Tables 1-4 for recommended capacity reductions).

FIGURE 1