

OPERATOR'S MANUAL

This manual has been prepared for and is considered part of -

3330F/FL & YB4409/XL

Crane Model Number

Crane Serial Number

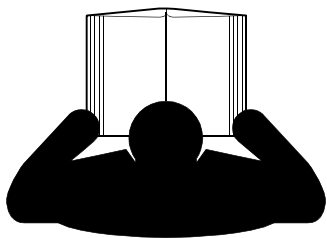
This Manual is divided into the following sections:

SECTION 1	INTRODUCTION
SECTION 2	SAFETY INFORMATION
SECTION 3	OPERATING CONTROLS AND PROCEDURES
SECTION 4	CAPACITY CHART
SECTION 5	ATTACHMENTS
SECTION 6	MAINTENANCE
SECTION 7	ADJUSTMENTS
SECTION 8	SPECIFICATIONS

NOTICE

The crane serial number is the only method your distributor or the factory has of providing you with correct parts and service information.

The crane serial number is identified on the builder's decal attached to the operator's cab. **Always furnish crane serial number** when ordering parts or communicating service problems with your distributor or the factory.



WARNING

To prevent death or serious injury:

- Avoid unsafe operation and maintenance.
- This crane must be operated and maintained by trained and experienced personnel. Manitowoc is not responsible for qualifying these personnel.
- Do not operate or work on this crane without first reading and understanding Operator's Manual and Rating Plate supplied with crane.
- Store Operator's Manual in holder provided on crane.
- Attach laminated Capacity Charts supplied with crane to chain in operator's cab.
- If Operator's Manual or Capacity Charts are missing from cab, contact your distributor for new ones.

SECTION 2

SAFETY INFORMATION

SAFETY PRACTICES

Your safety and the safety of others in the work area depends upon your knowledge and understanding of all correct operating practices and procedures for this machine

Safety Alert Symbol



This safety alert symbol means **ATTENTION!** Become alert — **your safety is involved!** Obey all safety messages that follow this symbol to avoid possible death or injury.

Signal Words



DANGER

Identifies **immediate hazards** that will result in death or serious injury if the message is ignored.



WARNING

Identifies **potential hazards** that could result in death or serious injury if the message is ignored.



CAUTION

Identifies **potential hazards** that could result in minor or moderate injury if the message is ignored.

CAUTION

Without the safety alert symbol, identifies **potential hazards** that could result in property damage if the message is ignored.

NOTE: Highlights operation or maintenance procedures.

GENERAL

It is impossible to compile a list of safety precautions covering all situations. However, there are basic safety precautions that **must** be followed during your daily routine. Safety is **your prime responsibility**, since any piece of equipment is only as safe **as the person at the controls**.

With this thought in mind, this information has been provided to assist you, the operator, in promoting a safe working atmosphere for yourself and those around you. It is not meant to cover every conceivable circumstance which could arise. It is intended to present basic safety precautions that should be followed in daily operation.

NOTE: The information in this manual does not replace any safety rules and laws used in your area. Before operating this crane, learn the rules and laws in your area. Make sure the machine has the correct equipment according to those rules and laws.

TRAINED OPERATORS

NOTE: This crane should only be operated by personnel who have met the requirements of ASME B30.5 (Latest Revision).

Because you, the operator, are the only part of the crane that can think and reason, your responsibility is not lessened by the addition of operational aids or warning devices. Indeed, you must guard against acquiring a false sense of security when using them. They are there to assist, **NOT** direct the operation. Operational aids or warning devices can be mechanical, electrical, electronic, or a combination thereof. They are subject to failure or misuse.

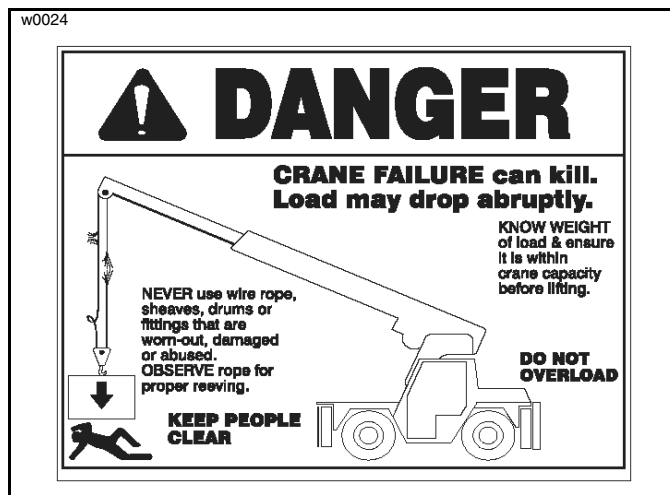
You are the only person who can be relied upon to ensure the safety of yourself and those around you. Be a **professional** and follow the **rules** of safety.

Remember failure to follow just one safety precaution can cause an accident to people or equipment.

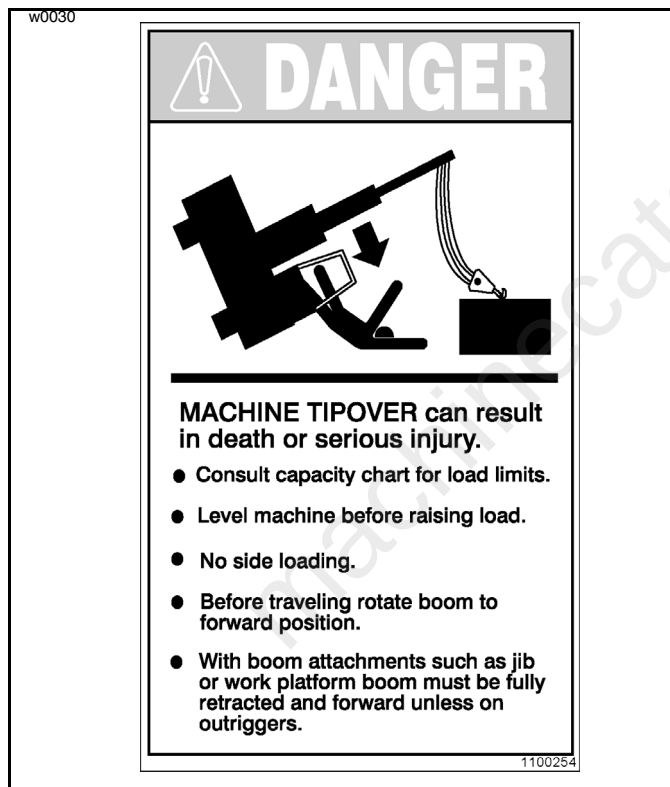
Ensure that you and those working with you are aware of any special dangers when you are operating the crane. Be especially careful of dangerous ground objects, including buildings, near the crane.

CAUTION

DO NOT attempt to operate the crane under the influence of alcohol or drugs. Persons involved in the operation of heavy equipment must possess sound judgement. Persons whose judgement is impaired due to mind altering substances may cause damage to the crane, it's load and yard facilities, as well as themselves. An accident could be fatal.

Winch Hoist Operation

- Before making a lift, be sure all persons are clear of the load. A falling load can cause injury or death.



- Know the capacity of the crane. The operator must be familiar with the crane's capacity chart before lifting a load. See how to read the capacity chart in Section 4. A falling load or machine tip-over can cause injury or death.

WARNING

When lifting a load, keep your eyes on the load at all times. If you must look away, stop the movement of the load first. A moving load can cause injury or death.

WARNING

Always have a flagman give assistance if you can not see a moving load. Be sure you can see the flagman at all times. Agree in advance to hand signals to be used (see Section 2). A moving load can cause injury or death and/or property damage.

CAUTION

Do not let the drop block touch the boom head. An automatic cutout device is installed on this crane to inhibit the drop block from being pulled into the boom head. When the drop block touches the anti-double blocking bracket (Figure 3-44) hanging from the boom head, a switch is activated and the hydraulic flow to raise the drop block is stopped. A horn will sound, warning the operator that the block has touched the bracket. The operator must then lower the drop block to stop the horn and allow for other boom functions.

The above information also pertains when a boom extension is attached to the boom.

To Raise the Drop Block

Press the accelerator pedal to increase the engine speed to maximum rpm. Slowly pull back on the hoist control lever (Figure 3-48) until the desired raising speed is obtained. The further the control is pulled back the faster the drop block will raise

To Stop Drop Block Movement

Slowly move the control lever to the neutral position and decrease the engine speed to idle.

To Lower the Drop Block

Press the accelerator pedal to increase the engine speed to maximum rpm. Slowly push forward on the hoist control lever (Figure 3-48) until the desired lowering speed is obtained. The further the control is pushed forward the faster the drop block will lower.

SECTION 4

CAPACITY CHART

USING THE CAPACITY CHART

The capacity chart for this crane with an open cab is located on both sides of the mast. On cranes with an enclosed cab the capacity chart is located on the inside of the operator's cab to the right of the seat. The chart provides maximum loads that can be safely lifted and gives conditions under which these maximum lifts can be made.

DETERMINING OPERATING RADIUS

Operating radius is the distance from the centerline of rotation to the center of the drop block hook or the down haul weight, depending on which is installed.

Located on both sides of the boom is an indicator that gives the angle at which the boom is positioned (see Figure 4-1). This angle along with the amount the boom is extended can be applied to the range diagram in the Load Rating Chart to determine the approximate lifting operating radius of the boom. For example, if the boom is at a 60° angle and is fully extended with the 4th section extended, the lifting radius is approximately 17 feet (5.181 m). See sample chart in Figure 4-3.

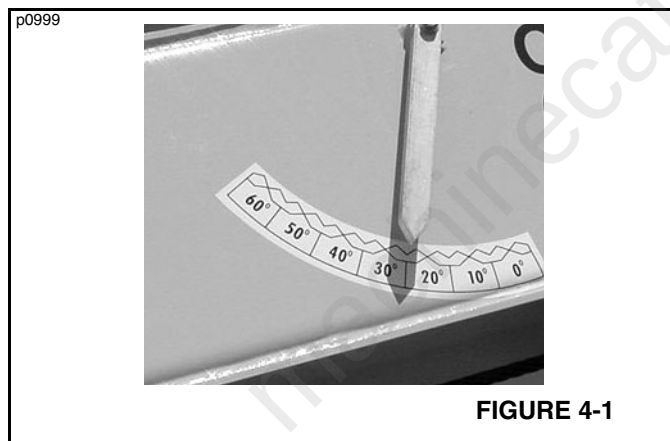


FIGURE 4-1

NOTE: To determine the exact lifting radius, use a tape measure and measure from the center rotation of the mast to the center of the hook on either the drop block or the down haul weight, depending on which is installed.

DETERMINING LIFT CAPACITY

Lift capacity is the weight that can safely be raised or lowered by the crane. It is determined by two factors; structural strength of the boom and boom extension, and crane stability.

Located on the Load Rating and Range Diagram Chart are the Main Boom Load and Boom Extension Ratings. Find the approximate radius in the chart. Always use the next highest radius if the actual radius is not on the chart. Read across the line to the appropriate column to determine what can be lifted at that radius.

NOTE: Exceeding the capacity is dangerous and voids the crane's warranty.

CONSIDERATIONS

1. The rated loads are the maximum lift capacities as determined by operating radius, boom length and boom angle. The operating distance is the horizontal distance from a projection of the axis of rotation to the supporting surface, before loading, to the center of the vertical hoist line or tackle with load applied.
2. The rated loads shown in the Load Rating and Range Diagram Chart **on outriggers** do not exceed **85%** of actual tipping. The rated loads shown **on rubber** do not exceed **75%** of actual tipping. These ratings are based on freely suspended loads with the crane leveled, standing on a firm, uniform supporting surface. Practical working loads depend on supporting surface, operating radius and other factors affecting stability. Hazardous surroundings, climatic conditions, experience of personnel and proper handling must all be taken into account by the operator.
3. The weights of all load handling devices such as hooks, hook blocks, slings, etc., except the hoist rope, shall be considered as part of the load. The weights for these items is stated on the Load Rating and Range Diagram chart.
4. Rating on outriggers are with the outriggers fully extended.
5. Ratings on rubber depend on tire capacity, condition of the tires and proper inflation pressure of 100 psi (689 kPa). Loads on rubber may be transported at a maximum speed of 2.5 mph (4 km/h) on a smooth, hard level surface with the boom retracted to the shortest length possible and centered over the front. Do not use the boom extension with the crane on rubber.
6. For operating radius not shown on the Load Rating and Range Diagram Chart, use load rating of the next larger radius.
7. With a load both on the boom (pick and carry) and on the crane's deck the maximum combined load is 12,000 lb. (5443 kg). The maximum load that can be placed on the deck only is 14,000 lb. (6350 kg).

Filters	10 micron return line filter 30 mesh suction filter in tank
Weight	
Crane with short boom	13,400 lb. (6078 kg)
Crane with long boom	15,180 lb. (6885 kg)
Travel Speeds	
Two-wheel steer:	
1st gear	4.62 mph (7.44 km/hr)
2nd gear	7.26 mph (11.68 km/hr)
3rd gear	13.35 mph (21.48 km/hr)
4th gear	22.15 mph (35.65 km/hr)
Turning Dimensions	
Two-wheel steer:	
Outside turning radius (to center line of outside tires)	14' 8" (4.47 m)
Four-wheel steer:	
Outside turning radius (to center line of outside tires)	10' 2" (3.10 m)
Maximum Gradeability (Paved Surface)	
No load	57%
12,000 lb. (5443 kg) load	31%

NOTE: Gradeability is a measure of tractive effort only and does not represent grades on which the machine can operate.

Full Version Available

Grove 3330F/FL and YB4409/XL Rough Terrain Crane Operator Manual

Grove 3330F/FL, YB4409/XL rough terrain crane operator manual covering controls, safe operation, setup and daily checks. Instant PDF download.

[VIEW THE FULL MANUAL](#)

Book No: CTRL044-00 · File Pages: 126 · File Count: 1 · File Language: English