### MANITOWOC ENGINEERING, CO.

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TRAVEL CONDITIONS 4600 Series-4, RINGER® Series-3 No. 65 Boom without Boom Travel Support Assembly

## GENERAL

This folio describes the travel conditions (counterweight and boom angle requirements) for those No. 65 boom lengths that can be traveled without the Boom Travel Support Assembly installed (see Tables A and B).

NOTE Refer to Folio 1131 for travel conditions when the Boom Travel Support Assembly is installed.

## PREPARING MACHINE FOR TRAVEL

1. Swing the crane upperworks in line with the crawlers so the counterweight carrier is over the travel chains. Engage the swing lock and apply the swing brake.

# CAUTION

DO NOT swing crane upperworks unless ring is supported on pedestals and level; structural damage to ring can result, possibly allowing boom and mast to collapse.

2. When using Table A, the load can be freely suspended below the boom point or tied off to the front roller carrier when traveling with 140 feet of boom.

For boom lengths of 180 feet and 200 feet the load block must be removed or carried on a transport vehicle directly below the boom point.

3. When using Table B, remove the load block, the boom point and the hanger block assemblies.

4. For travel on a level surface, position the boom at the angle given in Table A or B for the boom length being used.

NOTE For travel on a grade, readjust the boom angle in Tables A and B, as follows, before traveling onto a grade:

> -boom facing up the grade, SUBTRACT the degrees in Table C for the grade to be traveled from those in Table A or B.

> -boom facing down the grade, ADD the degrees in Table C for the grade to be traveled to those in Table A or B.



If boom is raised from ground, ring segment below front roller carrier must be supported; otherwise, structural damage to ring can result, possibly allowing boom and mast to collapse.

5. Add or remove auxiliary counterweight boxes to obtain the required amount of counterweight indicated in Table A or B for the boom length being used.

NOTE Auxiliary counterweight must be centered on counterweight carrier.

**IMPORTANT** Remove auxiliary counterweight boxes one at a time alternating from side to side, or structural damage to ring can result.

6. Jack the machine and remove the ring support pedestals. Lower the machine to the ground and fully retract the ring jacking cylinders.

7. If side-to-side clearance is required, remove the ring side segments and the side beams. Assemble the front ring stops to the ring segment under the front roller carrier; assemble the rear stub segments to the ring segment below the counterweight carrier.

8. Lubricate the crawlers before and during travel operation as described in the RINGER Lubrication Guide found in the LUBRICATION Section of the RINGER Service Manual.

## TRAVEL CONDITIONS

1. Plan the travel route, it must be free of ground and overhead obstructions.

CAUTION Grade conditions that follow shall be adhered to when traveling!

Travel route must be firm, smooth and uniformly supporting.

Grade must not exceed 5 percent front to rear and 2 percent side to side; no turning allowed on grade.

2. Warn all personnel to stand clear of the travel route. DO NOT travel without a signalman.

3. Travel in a forward direction with the drive chains to the rear.



Do not swing while traveling! Structural damage to ring can result, possibly allowing boom and mast to collapse.

If cutting (steering) is difficult due to ground build-up. next to the crawlers, steel plates placed below the crawler which is locked will make steering easier and help prevent ground build-up next to the crawler.

**IMPORTANT** Avoid damage to crawlers from digging into travel surface and accumulating excessive piles of dirt at crawler drive chain and front roller ends of crawlers.

Cut a few degrees. Then slowly travel forward a short distance so dirt falls away from crawler drive chain, idlers and front end roller. Continue this procedure until desired turn has been made.

**IMPORTANT** Avoid shock loading boom, mast and rigging! Perform travel functions — starting, stopping, and cutting - slowly and smoothly.

## **RETURNING MACHINE TO** NORMAL OPERATION

1. After the machine has been traveled to the desired location, support and level the ring per the conditions given in the Capacity Chart to be used (see RINGER Assembly Folio in the Service Manual for ring supporting and leveling instructions).

Add the required amount of auxiliary counterweight to the counterweight carrier per the conditions given in the Capacity Chart to be used.

BOOM LENGTH (feet)	BOOM ANGLE (degrees)	RADIUS (feet)	AUXILIARY COUNTERWEIGHT (pounds)	AUXILIARY CTWT. BOXES
140	66	87	84.700	2
180	71	88	129,400	3
200	70	99	174,100	4

## TABLE B. Load Block, Boom Point and Hanger Block Assemblies Removed.

BOOM LENGTH (feet)	BOOM ANGLE (degrees)	RADIUS (feet)	AUXILIARY COUNTERWEIGHT (pounds)	AUXILIARY CTWT. BOXES*
140	63	93	40,000	1
180	69	94	84,700	2
200	67	108	129,400	3
220	66	122	174,100	4
240	70	113	174,100	4

\*Bottom center auxiliary counterweight weighs 40,000 pounds; each remaining auxiliary counterweight weighs 44,700 pounds.

TABLE C

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3 4 5



1 2 2-1/2 3