

INSPECTION AND MAINTENANCE CHECKLIST

Lattice-Boom Crawler Cranes — Models 111 - 21000 & MLC Series

Does Not Apply to Small Crawler Models or Model 31000

This record applies to the following crane:

Crane Model: _____ Crane Serial Number: _____ Year: _____ Shift: _____

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SAFETY INFORMATION



To prevent serious or fatal injury while servicing crane:

- Before performing any inspection on the crane the service person must read and understand the Safety Section of the Operator's manual.
- Lower all loads to ground.
- Move all controls to off.
- Stop engine(s) and wait until all moving parts stop before servicing crane.
Use extreme care to avoid contact with moving parts when servicing crane with engine(s) running.
- Attach WARNING sign to engine start controls to warn personnel that crane is being serviced and must not be started.
- Do not operate crane until all safety guards and covers are securely reinstalled and all maintenance equipment is removed.
- Do not place crane into service until all defects are corrected.

Federal regulations require that written, dated, and signed inspection records be maintained.

This checklist is not intended to replace any preoperational checks required by an owner or local or state safety board.

One checklist is needed for each shift of operation.

MAINTENANCE NOTES

NOTE 1 **Seat Safety Switch:** When operator is out of seat, all control handles and corresponding functions should be inoperable.

NOTE 2 **Park Switches:** When park switches are ON, corresponding functions (load drums, boom hoist, luffing hoist, swing, travel, etc.) must be inoperable. If equipped, drum pawls must be engaged.

NOTE 3a **Drum Brakes - Without Free Fall or with Free Fall OFF:** Test each drum brake for proper operation with load lifted 1-2 ft (0.3-0.6 m) off ground. While slowly hoisting or lowering load, move control handle to OFF. Load must come to a complete stop and not slip through brake. Brake must hold load in position.

NOTE 3b **Drum Brakes - With Free Fall:** Test each free fall drum clutch/brake for proper operation with FREEFALL ON and load lifted 1-2 ft (0.3-0.6 m) off ground:

- FREEFALL indicator light for corresponding drum should be illuminated or FREEFALL symbol for corresponding drum should appear in display.
- While hoisting or lowering with brake pedal raised fully (brake released) load must not slip through clutch.
- When FULLY APPLIED, working brake must hold load (parking brake released and control handle off).

NOTE 3c Inspect latch on each **drum brake pedal** (if equipped) for proper operation, wear or other damage. Each latch must hold pedal down. Check for full engagement of latch teeth. Check for worn surfaces on latch teeth and latch bar.

NOTE 4 **Boom Hoist Brake (Luffing Hoist Brake):** Test while slowly raising or lowering boom or luffing jib (if equipped). When handle is released to OFF, boom (luffing jib) must come to a complete stop and not slip through brake. Brake must hold boom (luffing jib) in position.

NOTE 5 **Travel Brakes:** Test while slowly traveling in either direction. When handles are released to OFF, crane must come to a complete stop and not slip through brakes. Brakes must hold crane in position.

NOTE 6 **Swing Holding Brake:** Test with swing control handle in OFF. When holding brake is depressed, swing handle should be inoperable and upperworks should be held in position. Test with caution when MAX-ER is attached.

NOTE 7 **Drum Pawls:** Check for proper operation. Should fully engage and disengage drums when engaged and disengaged.

NOTE 8 **Engine Clutches:** Engage and disengage engine clutch several times with engine running to clean discs, except for models 111, 222, 180, M250 and 2250. For models 111, 222, 180, M250 and 2250, engage and disengage engine clutch with engine off.

NOTE 9 Replace **hydraulic hoses** after 4,000 to 8,000 hours as recommended in Section 2 of the Service Manual.

NOTE 10 Replace **electrical harnesses and cables** after 8,000 to 10,000 hours as recommended in Section 3 of the Service Manual.

NOTE 11 Check that **jacking cylinder rods** (18000) have not extended more than one inch (25 mm). See decal on cylinders for instructions. Check at start of each shift and mid-way through each shift.

NOTE 12 Check **operating limit and system fault alerts** for proper operation – red and yellow lights, buzzer, and beeper should come on for an instant (up to 3 seconds) when ignition switch is moved to RUN position. Operating limit and system fault alerts (lights, buzzer and beeper) will stay on if a limit has been reached or a fault exists.

NOTE 13 Replace **hydraulic filters** if display (depending on model) indicates any filter number or name and fault alert is on (oil at operating temperature) OR, for models 2250 and M250, replace suction filters if digital display indicates 7 psia and system faults alert is on (oil at operating temperature).

NOTE 14 Check **swing and travel alarm** (if equipped) for proper operation. Must sound when swing and travel handles are moved in either direction.

NOTE 15 Check that all pins and bolts are in place and tight in **rotating bed, carbody, crawlers and all beams** (see separate checks for turntable bolts). All cotter pins must be spread.

NOTE 16 Do not open **filter** housing unless **service indicator** clearly indicates need to change elements.

NOTE 17 Perform magnetic particle or other suitable crack detecting inspection for each **hook**.

NOTE 18 Accumulated ash must be removed from the Diesel Particulate Filter (DPF) periodically. Remove Diesel Particulate Filter and inspect per engine manufacturer's instructions, then have it cleaned or replaced by engine manufacturer, depending on outcome of inspection. In the United States, this service is required by the Environmental Protection Agency. Check regulations applicable in other countries.

NOTE 19 For non-metallic sheaves, check for wear and separation of bushing and bearing.

MAINTENANCE INTERVALS

Perform the checks either at the calendar interval or the hourly interval, whichever comes first. At each interval, perform all previous checks in addition to the ones listed.

- Every 8 hours of operation or daily
- Every 40 hours of operation or weekly
- Every 200 hours of operation or monthly
- Every 500 hours of operation or quarterly
- Every 1,000 hours of operation or semiannually
- Every 2,000 hours of operation or annually
- Every 4,000 hours of operation or every two years

NOTE: Depending on the options your crane has, some checks given in this checklist may not apply.

HOW TO USE THIS PUBLICATION

This publications includes the following:

- Inspection and Maintenance Checklists
- Maintenance Staff Record
- Service and Repair Log

Inspection and Maintenance Checklists

Daily, weekly, monthly, quarterly, semiannual and annual checklists follow. Each checklist contains a list of inspection and maintenance items and the recommended interval at which each item should be performed. Performing each item at its recommended interval will help maintain the safety, dependability, and productivity designed into your crane.

Completed checklists and repair receipts may be required for warranty claims. Keep these items on file at all times. Give the checklists to the new owner if the crane is sold.

Check the box for each item that is satisfactory.

If further service of any item is required, indicate so in the appropriate box (for example: 'S' indicates Service Required). Additionally, make a detailed report of the type of service required (parts replacement, adjustment, overhaul, etc.) in the Service and Repair Log starting on

page 61. A black box in any column indicates that the item does not require service at the corresponding interval.

The intervals are based on average operating conditions and should be used only as a guide until adequate experience is obtained to establish intervals which meet the specific operating conditions of your crane (frequency and duration of operation, loadings involved, dusty or corrosive atmosphere, outside air temperature, etc.).

Before lengthening or shortening the recommended intervals, study the crane's performance. Carefully examine previous checklists and service records to determine if past component failures have been caused by inadequate maintenance.

Perform an oil analysis at regular intervals for each fluid used in the crane to determine oil-change intervals.

This checklist covers a full year of operation, assuming the crane is in operation for a typical 40 hour work week (one shift per day). Therefore, a new checklist should be started at the beginning of each calendar year.

Maintenance Staff Record

Workers performing maintenance checks should sign the Maintenance Staff Record and initial the appropriate column in the checklist after performing the designated maintenance checks.

Service and Repair Log

After each maintenance or service action is completed, the person who maintained or serviced the crane must make an entry in this log.

Record engine hour meter or individual component hours of operation readings as required.

The person who marked an item as unsatisfactory should perform the inspection after repair or adjustment has been made.

Reference Manuals

- See the crane's Operator's and Service Manuals for specific operation, maintenance, and adjustment procedures.
- See the crane's Lubrication Guide for lubrication intervals, types of fluids, and lube point locations.
- See the crane's Operator's, Service, and Parts Manuals for specific torque values of nuts, bolts, and screws.
- Service and maintain the engines and generators according to the original equipment manufacturer's manuals.

INITIAL RUN-IN SERVICES

The gearboxes and pump drive must be serviced after the first 200 hours of operation (see Lubrication Guide).

ORDERING NEW INSPECTION AND MAINTENANCE CHECKLISTS

You can order new Inspection and Maintenance Checklists from your Manitowoc distributor by requesting part number **9828221046**.

Code	Action	Code	Action
1	Check for leaks: oil, hydraulic fluid, fuel, coolant, air	19	Check for excessive wear
2	Check for cleanliness; remove all dirt, grease, and debris	20	Check for damaged, frayed, or broken strands
3	Check for proper lubrication and/or lubricate as required	21	Check torque or tension
4	Check for cracks, deformed or broken structure, excessive wear, excessive corrosion, and other damage (to include cracks in welds)	22	Change fluid (drain and fill)
5	Check for proper fluid level and fill if needed	23	Check for proper calibration
6	Check for proper inflation/pressure	24	Check for deformed members or cracked chords and lacings
7	Check for proper operation	25	Check for corrosion, loose connectors, and loose mounting hardware
8	Check for proper installation	26	Check for corrosion, rust and condition of paint
9	Service per manufacturer's instructions (also see Crane Service Manual)	27	Check that catwalks, handrails, steps, ladders are in place and secure (gates closed)
10	Verify digital display corresponds with mechanical display	28	Drain moisture
11	Check for proper spooling on drums and reeving through sheaves	29	Check for proper charge
12	Check for proper readings (engine running)	30	Check for loose or damaged wiring
13	Replace if required or indicated	31	Perform magnetic particle or other suitable crack detecting inspection
14	Check for proper adjustment	32	Check visually for obvious signs of damage (includes, but is not limited to structure, hoses, tubes, cables, harnesses, etc.)
15	Check that all pins and bolts are in place, tight, and properly retained	33	Verify crane is properly positioned on a level, uniformly supporting surface
16	Check for leaks, swelling, kinking, or abrasion	34	Check that crane configuration matches capacity chart selected in RCI/RCL
17	Check for excessive wear, deterioration, abrasion, or other damage	35	Replace missing, defaced, and unreadable safety and information signs
18	Clean as needed or indicated		

8 Hours of Operation or Daily – Jan.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1	Entire Crane	1, 2, 26, 32, 33																																
2	Grease Points (See Lubrication Manual)	5																																
3	All Crane Guards and Covers (enclosures)	8, 15																																
Lowerworks (Engine OFF)																																		
4	Visual Inspection of Lowerworks	32																																
5	Catwalks, Steps, and Ladders	27																																
6	Crawler Gearbox (if equipped with sight glass)	5																																
7	Autolube System (if equipped)	5																																
8	Ring Gear Teeth	3																																
9	MAX-ER Tires (if equipped)	6, 17																																
10	Carbody Counterweight (if equipped)	8, 34																																
11	Guards on Rotating Parts	8																																
Upperworks (Engine OFF)																																		
12	Visual Inspection of Upperworks	32																																
13	Catwalks, Steps, and Ladders	27																																
14	Engine	9																																

8 Hours of Operation or Daily – Jan.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
15	Cooling System	5																															
16	Drum Gear Cases (if equipped) and Gearboxes (pump drives, drums, and swing drives with a sight glass)	5																															
17	Pump Drive Dipstick (not on MLC165)	5																															
18	Engine Air Cleaner Indicator	13																															
19	Hydraulic Tank Sight Gauge	5																															
20	Hydraulic Tank	28																															
21	Fuel Tank with Sight Gauge (see also item 52)	5, 28																															
22	Jacking Cylinders (18000, NOTE 11)	14																															
23	Optional Equipment (air compressor, air dryer, electric motors, light plant, arctic heaters, etc.)	9																															
24	Rotating Bed Counterweight	8, 34																															
Cab (Engine OFF)																																	
25	Visual Inspection of Cab	32																															
26	Catwalks, Steps, and Ladders	27																															
27	Windshield Washer Fluid	5																															
28	Windows and Mirrors	2, 4																															
29	Sheet Metal or Fiberglass Covers	2, 4, 8																															
30	Operator's Manual and Capacity Charts	8																															
31	Fire Extinguisher(s)	6, 8																															
32	Sliding Door (check latch in open position)	7																															
Cab (Engine RUNNING)																																	
33	Seat Safety Switch (NOTE 1)	7																															
34	Operating Limit-System Fault Alerts (NOTE 12)	7																															
35	Swing Lock (if equipped)	7																															
36	Park Switches (NOTE 2)	7																															
37	Operating Controls	7																															
38	Drum Rotation Indicators	7																															
39	Drum Pressure Rollers (if equipped)	7																															
40	Load Drum Brakes (NOTES 3a, 3b, 3c)	7																															
41	Boom & Luffing Hoist Brake (NOTE 4)	7																															
42	Travel Brakes (NOTE 5)	7																															
43	Swing Holding Brake (NOTE 6)	7																															

8 Hours of Operation or Daily – Jan.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
61																																	
62																																	
63																																	
64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	

8 Hours of Operation or Daily – Feb.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
61																																	
62																																	
63																																	
64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	
1	Entire Crane	1, 2, 26, 32, 33																															

8 Hours of Operation or Daily – Mar.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
57	Hooks and Latches	4, 8																																	
58	Wire Rope	3, 11, 20																																	
59	Sheaves (NOTE 19)	7, 11																																	
60	Boom Electronics (lights, wind indicator, etc.)	7																																	
61																																			
62																																			
63																																			
64																																			
65																																			
66																																			
67																																			
68																																			
Checked by (initials)																																			
1	Entire Crane	1, 2, 26, 32, 33																																	

8 Hours of Operation or Daily – Apr.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
15	Cooling System	5																															
16	Drum Gear Cases (if equipped) and Gearboxes (pump drives, drums, and swing drives with a sight glass)	5																															
17	Pump Drive Dipstick (not on MLC165)	5																															
18	Engine Air Cleaner Indicator	13																															
19	Hydraulic Tank Sight Gauge	5																															
20	Hydraulic Tank	28																															
21	Fuel Tank with Sight Gauge (see also item 52)	5, 28																															
22	Jacking Cylinders (18000, NOTE 11)	14																															
23	Optional Equipment (air compressor, air dryer, electric motors, light plant, arctic heaters, etc.)	9																															
24	Rotating Bed Counterweight	8, 34																															
Cab (Engine OFF)																																	
25	Visual Inspection of Cab	32																															
26	Catwalks, Steps, and Ladders	27																															
27	Windshield Washer Fluid	5																															
28	Windows and Mirrors	2, 4																															
29	Sheet Metal or Fiberglass Covers	2, 4, 8																															
30	Operator's Manual and Capacity Charts	8																															
31	Fire Extinguisher(s)	6, 8																															
32	Sliding Door (check latch in open position)	7																															
Cab (Engine RUNNING)																																	
33	Seat Safety Switch (NOTE 1)	7																															
34	Operating Limit-System Fault Alerts (NOTE 12)	7																															
35	Swing Lock (if equipped)	7																															
36	Park Switches (NOTE 2)	7																															
37	Operating Controls	7																															
38	Drum Rotation Indicators	7																															
39	Drum Pressure Rollers (if equipped)	7																															
40	Load Drum Brakes (NOTES 3a, 3b, 3c)	7																															
41	Boom & Luffing Hoist Brake (NOTE 4)	7																															
42	Travel Brakes (NOTE 5)	7																															
43	Swing Holding Brake (NOTE 6)	7																															

8 Hours of Operation or Daily – Apr.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
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62																																	
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64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	
1	Entire Crane	1, 2, 26, 32, 33																															

8 Hours of Operation or Daily – May

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
15	Cooling System	5																																
16	Drum Gear Cases (if equipped) and Gearboxes (pump drives, drums, and swing drives with a sight glass)	5																																
17	Pump Drive Dipstick (not on MLC165)	5																																
18	Engine Air Cleaner Indicator	13																																
19	Hydraulic Tank Sight Gauge	5																																
20	Hydraulic Tank	28																																
21	Fuel Tank with Sight Gauge (see also item 52)	5, 28																																
22	Jacking Cylinders (18000, NOTE 11)	14																																
23	Optional Equipment (air compressor, air dryer, electric motors, light plant, arctic heaters, etc.)	9																																
24	Rotating Bed Counterweight	8, 34																																
Cab (Engine OFF)																																		
25	Visual Inspection of Cab	32																																
26	Catwalks, Steps, and Ladders	27																																
27	Windshield Washer Fluid	5																																
28	Windows and Mirrors	2, 4																																
29	Sheet Metal or Fiberglass Covers	2, 4, 8																																
30	Operator's Manual and Capacity Charts	8																																
31	Fire Extinguisher(s)	6, 8																																
32	Sliding Door (check latch in open position)	7																																
Cab (Engine RUNNING)																																		
33	Seat Safety Switch (NOTE 1)	7																																
34	Operating Limit-System Fault Alerts (NOTE 12)	7																																
35	Swing Lock (if equipped)	7																																
36	Park Switches (NOTE 2)	7																																
37	Operating Controls	7																																
38	Drum Rotation Indicators	7																																
39	Drum Pressure Rollers (if equipped)	7																																
40	Load Drum Brakes (NOTES 3a, 3b, 3c)	7																																
41	Boom & Luffing Hoist Brake (NOTE 4)	7																																
42	Travel Brakes (NOTE 5)	7																																
43	Swing Holding Brake (NOTE 6)	7																																

8 Hours of Operation or Daily – May

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
57	Hooks and Latches	4, 8																																
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63																																		
64																																		
65																																		
66																																		
67																																		
68																																		
Checked by (initials)																																		
1	Entire Crane	1, 2, 26, 32, 33																																

8 Hours of Operation or Daily – Jun.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
57	Hooks and Latches	4, 8																																
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67																																		
68																																		
Checked by (initials)																																		
1	Entire Crane	1, 2, 26, 32, 33																																

Code	Action	Code	Action
1	Check for leaks: oil, hydraulic fluid, fuel, coolant, air	19	Check for excessive wear
2	Check for cleanliness; remove all dirt, grease, and debris	20	Check for damaged, frayed, or broken strands
3	Check for proper lubrication and/or lubricate as required	21	Check torque or tension
4	Check for cracks, deformed or broken structure, excessive wear, excessive corrosion, and other damage (to include cracks in welds)	22	Change fluid (drain and fill)
5	Check for proper fluid level and fill if needed	23	Check for proper calibration
6	Check for proper inflation/pressure	24	Check for deformed members or cracked chords and lacings
7	Check for proper operation	25	Check for corrosion, loose connectors, and loose mounting hardware
8	Check for proper installation	26	Check for corrosion, rust and condition of paint
9	Service per manufacturer's instructions (also see Crane Service Manual)	27	Check that catwalks, handrails, steps, ladders are in place and secure (gates closed)
10	Verify digital display corresponds with mechanical display	28	Drain moisture
11	Check for proper spooling on drums and reeving through sheaves	29	Check for proper charge
12	Check for proper readings (engine running)	30	Check for loose or damaged wiring
13	Replace if required or indicated	31	Perform magnetic particle or other suitable crack detecting inspection
14	Check for proper adjustment	32	Check visually for obvious signs of damage (includes, but is not limited to structure, hoses, tubes, cables, harnesses, etc.)
15	Check that all pins and bolts are in place, tight, and properly retained	33	Verify crane is properly positioned on a level, uniformly supporting surface
16	Check for leaks, swelling, kinking, or abrasion	34	Check that crane configuration matches capacity chart selected in RCI/RCL
17	Check for excessive wear, deterioration, abrasion, or other damage	35	Replace missing, defaced, and unreadable safety and information signs
18	Clean as needed or indicated		

8 Hours of Operation or Daily – Jul.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Entire Crane	1, 2, 26, 32, 33																															
2	Grease Points (See Lubrication Manual)	5																															
3	All Crane Guards and Covers (enclosures)	8, 15																															
Lowerworks (Engine OFF)																																	
4	Visual Inspection of Lowerworks	32																															
5	Catwalks, Steps, and Ladders	27																															
6	Crawler Gearbox (if equipped with sight glass)	5																															
7	Autolube System (if equipped)	5																															
8	Ring Gear Teeth	3																															
9	MAX-ER Tires (if equipped)	6, 17																															
10	Carbody Counterweight (if equipped)	8, 34																															
11	Guards on Rotating Parts	8																															
Upperworks (Engine OFF)																																	
12	Visual Inspection of Upperworks	32																															
13	Catwalks, Steps, and Ladders	27																															
14	Engine	9																															

8 Hours of Operation or Daily – Jul.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
61																																	
62																																	
63																																	
64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	
1	Entire Crane	1, 2, 26, 32, 33																															

8 Hours of Operation or Daily – Aug.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
61																																	
62																																	
63																																	
64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	
1	Entire Crane	1, 2, 26, 32, 33																															

Code	Action	Code	Action
1	Check for leaks: oil, hydraulic fluid, fuel, coolant, air	19	Check for excessive wear
2	Check for cleanliness; remove all dirt, grease, and debris	20	Check for damaged, frayed, or broken strands
3	Check for proper lubrication and/or lubricate as required	21	Check torque or tension
4	Check for cracks, deformed or broken structure, excessive wear, excessive corrosion, and other damage (to include cracks in welds)	22	Change fluid (drain and fill)
5	Check for proper fluid level and fill if needed	23	Check for proper calibration
6	Check for proper inflation/pressure	24	Check for deformed members or cracked chords and lacings
7	Check for proper operation	25	Check for corrosion, loose connectors, and loose mounting hardware
8	Check for proper installation	26	Check for corrosion, rust and condition of paint
9	Service per manufacturer's instructions (also see Crane Service Manual)	27	Check that catwalks, handrails, steps, ladders are in place and secure (gates closed)
10	Verify digital display corresponds with mechanical display	28	Drain moisture
11	Check for proper spooling on drums and reeving through sheaves	29	Check for proper charge
12	Check for proper readings (engine running)	30	Check for loose or damaged wiring
13	Replace if required or indicated	31	Perform magnetic particle or other suitable crack detecting inspection
14	Check for proper adjustment	32	Check visually for obvious signs of damage (includes, but is not limited to structure, hoses, tubes, cables, harnesses, etc.)
15	Check that all pins and bolts are in place, tight, and properly retained	33	Verify crane is properly positioned on a level, uniformly supporting surface
16	Check for leaks, swelling, kinking, or abrasion	34	Check that crane configuration matches capacity chart selected in RCI/RCL
17	Check for excessive wear, deterioration, abrasion, or other damage	35	Replace missing, defaced, and unreadable safety and information signs
18	Clean as needed or indicated		

8 Hours of Operation or Daily – Sep.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Entire Crane	1, 2, 26, 32, 33																															
2	Grease Points (See Lubrication Manual)	5																															
3	All Crane Guards and Covers (enclosures)	8, 15																															
Lowerworks (Engine OFF)																																	
4	Visual Inspection of Lowerworks	32																															
5	Catwalks, Steps, and Ladders	27																															
6	Crawler Gearbox (if equipped with sight glass)	5																															
7	Autolube System (if equipped)	5																															
8	Ring Gear Teeth	3																															
9	MAX-ER Tires (if equipped)	6, 17																															
10	Carbody Counterweight (if equipped)	8, 34																															
11	Guards on Rotating Parts	8																															
Upperworks (Engine OFF)																																	
12	Visual Inspection of Upperworks	32																															
13	Catwalks, Steps, and Ladders	27																															
14	Engine	9																															

8 Hours of Operation or Daily – Sep.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
15	Cooling System	5																																	
16	Drum Gear Cases (if equipped) and Gearboxes (pump drives, drums, and swing drives with a sight glass)	5																																	
17	Pump Drive Dipstick (not on MLC165)	5																																	
18	Engine Air Cleaner Indicator	13																																	
19	Hydraulic Tank Sight Gauge	5																																	
20	Hydraulic Tank	28																																	
21	Fuel Tank with Sight Gauge (see also item 52)	5, 28																																	
22	Jacking Cylinders (18000, NOTE 11)	14																																	
23	Optional Equipment (air compressor, air dryer, electric motors, light plant, arctic heaters, etc.)	9																																	
24	Rotating Bed Counterweight	8, 34																																	
Cab (Engine OFF)																																			
25	Visual Inspection of Cab	32																																	
26	Catwalks, Steps, and Ladders	27																																	
27	Windshield Washer Fluid	5																																	
28	Windows and Mirrors	2, 4																																	
29	Sheet Metal or Fiberglass Covers	2, 4, 8																																	
30	Operator's Manual and Capacity Charts	8																																	
31	Fire Extinguisher(s)	6, 8																																	
32	Sliding Door (check latch in open position)	7																																	
Cab (Engine RUNNING)																																			
33	Seat Safety Switch (NOTE 1)	7																																	
34	Operating Limit-System Fault Alerts (NOTE 12)	7																																	
35	Swing Lock (if equipped)	7																																	
36	Park Switches (NOTE 2)	7																																	
37	Operating Controls	7																																	
38	Drum Rotation Indicators	7																																	
39	Drum Pressure Rollers (if equipped)	7																																	
40	Load Drum Brakes (NOTES 3a, 3b, 3c)	7																																	
41	Boom & Luffing Hoist Brake (NOTE 4)	7																																	
42	Travel Brakes (NOTE 5)	7																																	
43	Swing Holding Brake (NOTE 6)	7																																	

8 Hours of Operation or Daily – Sep.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
61																																	
62																																	
63																																	
64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	
1	Entire Crane	1, 2, 26, 32, 33																															

8 Hours of Operation or Daily – Oct.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
61																																	
62																																	
63																																	
64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	
1	Entire Crane	1, 2, 26, 32, 33																															

Code	Action	Code	Action
1	Check for leaks: oil, hydraulic fluid, fuel, coolant, air	19	Check for excessive wear
2	Check for cleanliness; remove all dirt, grease, and debris	20	Check for damaged, frayed, or broken strands
3	Check for proper lubrication and/or lubricate as required	21	Check torque or tension
4	Check for cracks, deformed or broken structure, excessive wear, excessive corrosion, and other damage (to include cracks in welds)	22	Change fluid (drain and fill)
5	Check for proper fluid level and fill if needed	23	Check for proper calibration
6	Check for proper inflation/pressure	24	Check for deformed members or cracked chords and lacings
7	Check for proper operation	25	Check for corrosion, loose connectors, and loose mounting hardware
8	Check for proper installation	26	Check for corrosion, rust and condition of paint
9	Service per manufacturer's instructions (also see Crane Service Manual)	27	Check that catwalks, handrails, steps, ladders are in place and secure (gates closed)
10	Verify digital display corresponds with mechanical display	28	Drain moisture
11	Check for proper spooling on drums and reeving through sheaves	29	Check for proper charge
12	Check for proper readings (engine running)	30	Check for loose or damaged wiring
13	Replace if required or indicated	31	Perform magnetic particle or other suitable crack detecting inspection
14	Check for proper adjustment	32	Check visually for obvious signs of damage (includes, but is not limited to structure, hoses, tubes, cables, harnesses, etc.)
15	Check that all pins and bolts are in place, tight, and properly retained	33	Verify crane is properly positioned on a level, uniformly supporting surface
16	Check for leaks, swelling, kinking, or abrasion	34	Check that crane configuration matches capacity chart selected in RCI/RCL
17	Check for excessive wear, deterioration, abrasion, or other damage	35	Replace missing, defaced, and unreadable safety and information signs
18	Clean as needed or indicated		

8 Hours of Operation or Daily – Nov.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
1	Entire Crane	1, 2, 26, 32, 33																																	
2	Grease Points (See Lubrication Manual)	5																																	
3	All Crane Guards and Covers (enclosures)	8, 15																																	
Lowerworks (Engine OFF)																																			
4	Visual Inspection of Lowerworks	32																																	
5	Catwalks, Steps, and Ladders	27																																	
6	Crawler Gearbox (if equipped with sight glass)	5																																	
7	Autolube System (if equipped)	5																																	
8	Ring Gear Teeth	3																																	
9	MAX-ER Tires (if equipped)	6, 17																																	
10	Carbody Counterweight (if equipped)	8, 34																																	
11	Guards on Rotating Parts	8																																	
Upperworks (Engine OFF)																																			
12	Visual Inspection of Upperworks	32																																	
13	Catwalks, Steps, and Ladders	27																																	
14	Engine	9																																	

8 Hours of Operation or Daily – Nov.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
57	Hooks and Latches	4, 8																															
58	Wire Rope	3, 11, 20																															
59	Sheaves (NOTE 19)	7, 11																															
60	Boom Electronics (lights, wind indicator, etc.)	7																															
61																																	
62																																	
63																																	
64																																	
65																																	
66																																	
67																																	
68																																	
Checked by (initials)																																	
1	Entire Crane	1, 2, 26, 32, 33																															

8 Hours of Operation or Daily – Dec.

Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
57	Hooks and Latches	4, 8																																
58	Wire Rope	3, 11, 20																																
59	Sheaves (NOTE 19)	7, 11																																
60	Boom Electronics (lights, wind indicator, etc.)	7																																
61																																		
62																																		
63																																		
64																																		
65																																		
66																																		
67																																		
68																																		
		Checked by (initials)																																
1	Entire Crane	1, 2, 26, 32, 33																																

Time to REORDER new Inspection and Maintenance Checklists
(see page 3)

40 Hours of Operation or Weekly — Weeks 1-26

40 Hours of Operation or Weekly — Weeks 1-26		DATE																										
			Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Item	Description (see page 2 or 65 for Notes)	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
14	Drum Brake (111, 222, 250, 777, 777T, 888, 2250, MLC165)	1, 2, 14, 19																										
15	Drum Gear Case Breathers (if equipped)	18																										
16	Free Fall Disc Brake Wear Indicator (999, 14000, 15000)	7, 14, 19																										
17	Batteries	5, 18																										
18	Hydraulic Tank Breather (none on MLC165)	18																										
19	Desiccant Filter/Breather (hydraulic tank, if equipped)	13																										
20	Pump Drive Breather (none on MLC165)	18																										
21	Rotating Bed (NOTE 15)	15																										
22	Rotating Bed Counterweight and Mounting (NOTE 15)	15																										
23	Exhaust System (engine running)	4,8,32																										
Cab (Engine OFF)																												
24	Alternate Egress Window	7																										
Cab (Engine ON)																												
25	Boom Up/ Boom Down Limit Switches	7,14																										
26	Jib Up/Down Limit Switches	7,14																										
27	Minimum Bail/Maximum Bail Limit Switches (each load line)	7,14																										
28	Block Up Limit Switch (each load line)	7,14																										
29	Any other Limit crane is equipped with	7,14																										
30	Disc Brakes (travel, boom hoist, load drums, swing)	7																										
Boom (Engine OFF)																												
31	Hook and Hook Block	4																										
32	Hook & Weight Ball Swivels (if equipped)	4																										
33	Rope Anchors (wedge sockets, button sockets)	4, 8																										
34	Pins (for parts not equipped with grease fittings) (boom, jib, gantry, mast)	2, 3																										
Boom (Engine RUNNING)																												
35	Sheaves, Rollers, and Drums	7																										
36																												
Checked by (initials)																												

40 Hours of Operation or Weekly — Weeks 27-52

40 Hours of Operation or Weekly — Weeks 27-52		DATE																												
			Code	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Item	Description (see page 2 or 65 for Notes)	Code	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52		
14	Drum Brake (111, 222, 250, 777, 777T, 888, 2250, MLC165)	1, 2, 14, 19																												
15	Drum Gear Case Breathers (if equipped)	18																												
16	Free Fall Disc Brake Wear Indicator (999, 14000, 15000)	7, 14, 19																												
17	Batteries	5, 18																												
18	Hydraulic Tank Breather (none on MLC165)	18																												
19	Desiccant Filter/Breather (hydraulic tank, if equipped)	13																												
20	Pump Drive Breather (none on MLC165)	18																												
21	Rotating Bed (NOTE 15)	15																												
22	Rotating Bed Counterweight and Mounting (NOTE 15)	15																												
23	Exhaust System (engine running)	4,8,32																												
Cab (Engine OFF)																														
24	Alternate Egress Window	7																												
Cab (Engine ON)																														
25	Boom Up/ Boom Down Limit Switches	7,14																												
26	Jib Up/Down Limit Switches	7,14																												
27	Minimum Bail/Maximum Bail Limit Switches (each load line)	7,14																												
28	Block Up Limit Switch (each load line)	7,14																												
29	Any other Limit crane is equipped with	7,14																												
30	Disc Brakes (travel, boom hoist, load drums, swing)	7																												
Boom (Engine OFF)																														
31	Hook and Hook Block	4																												
32	Hook & Weight Ball Swivels (if equipped)	4																												
33	Rope Anchors (wedge sockets, button sockets)	4, 8																												
34	Pins (for parts not equipped with grease fittings) (boom, jib, gantry, mast)	2, 3																												
Boom (Engine RUNNING)																														
35	Sheaves, Rollers, and Drums	7																												
36																														
Checked by (initials)																														

Code	Action	Code	Action
1	Check for leaks: oil, hydraulic fluid, fuel, coolant, air	19	Check for excessive wear
2	Check for cleanliness; remove all dirt, grease, and debris	20	Check for damaged, frayed, or broken strands
3	Check for proper lubrication and/or lubricate as required	21	Check torque or tension
4	Check for cracks, deformed or broken structure, excessive wear, excessive corrosion, and other damage (to include cracks in welds)	22	Change fluid (drain and fill)
5	Check for proper fluid level and fill if needed	23	Check for proper calibration
6	Check for proper inflation/pressure	24	Check for deformed members or cracked chords and lacings
7	Check for proper operation	25	Check for corrosion, loose connectors, and loose mounting hardware
8	Check for proper installation	26	Check for corrosion, rust and condition of paint
9	Service per manufacturer's instructions (also see Crane Service Manual)	27	Check that catwalks, handrails, steps, ladders are in place and secure (gates closed)
10	Verify digital display corresponds with mechanical display	28	Drain moisture
11	Check for proper spooling on drums and reeving through sheaves	29	Check for proper charge
12	Check for proper readings (engine running)	30	Check for loose or damaged wiring
13	Replace if required or indicated	31	Perform magnetic particle or other suitable crack detecting inspection
14	Check for proper adjustment	32	Check visually for obvious signs of damage (includes, but is not limited to structure, hoses, tubes, cables, harnesses, etc.)
15	Check that all pins and bolts are in place, tight, and properly retained	33	Verify crane is properly positioned on a level, uniformly supporting surface
16	Check for leaks, swelling, kinking, or abrasion	34	Check that crane configuration matches capacity chart selected in RCI/RCL
17	Check for excessive wear, deterioration, abrasion, or other damage	35	Replace missing, defaced, and unreadable safety and information signs
18	Clean as needed or indicated		

Initial 50 Hours of Operation		DATE												
Item	Description	Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Turntable Bearing Bolts	21												
200 Hours of Operation or Monthly		DATE												
Item	Description (see page 2 or 65 for Notes)	Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Perform 8 and 40 Hour Checks	—												
2	Grease Points (See Lubrication Manual)	5												
3	MAX-ER Wheel Lug Nuts	21												
4	Air Cleaner (NOTE 16)	2												
5	Crawler Track Shoe Bolts	8, 21												
6	Gearboxes — pump drives, drums, swing drives and crawlers	22 Initial Only												
7	Gearboxes — pump drives, drums, swing drives and crawlers without a sight glass	5												
8	Gearbox Cooling Blower (2250, independent drum drive only, operating in extremely dusty and humid climate)	2, 7												

9	Hydraulic Hoses and Tubes	1, 4, 16												
10	Air Hoses and Tubes	1, 4, 16												
11	Hydraulic and Air Valves and Cylinders	1, 32												
12	Air Filters (if equipped)	9												
13	Engine Clutch Discs (see NOTE 8)	7, 14												
14	Electric Cables and Harnesses	25, 30												
15	CAN Nodes and Junction Boxes	25, 30												
16	Hour Meter(s)	7												
17	Pump Drive Cooling Fan (1015, 18000)	2, 7												
18	Crawlers	4												
19	Carbody Counterweight and Mounting	4												
20	Carbody	4												
21	Rotating Bed	4												
22	Rotating Bed Counterweight and Mounting	4												
23	Mast, Boom, Gantry, Jib Sections (whichever apply)	4, 15, 24												
24	Mast, Boom, Jib Straps	4												
25														
26														
27														
28														
		Hourmeter Reading												
		Checked by												

Code	Action	Code	Action
1	Check for leaks: oil, hydraulic fluid, fuel, coolant, air	19	Check for excessive wear
2	Check for cleanliness; remove all dirt, grease, and debris	20	Check for damaged, frayed, or broken strands
3	Check for proper lubrication and/or lubricate as required	21	Check torque or tension
4	Check for cracks, deformed or broken structure, excessive wear, excessive corrosion, and other damage (to include cracks in welds)	22	Change fluid (drain and fill)
5	Check for proper fluid level and fill if needed	23	Check for proper calibration
6	Check for proper inflation/pressure	24	Check for deformed members or cracked chords and lacings
7	Check for proper operation	25	Check for corrosion, loose connectors, and loose mounting hardware
8	Check for proper installation	26	Check for corrosion, rust and condition of paint
9	Service per manufacturer's instructions (also see Crane Service Manual)	27	Check that catwalks, handrails, steps, ladders are in place and secure (gates closed)
10	Verify digital display corresponds with mechanical display	28	Drain moisture
11	Check for proper spooling on drums and reeving through sheaves	29	Check for proper charge
12	Check for proper readings (engine running)	30	Check for loose or damaged wiring
13	Replace if required or indicated	31	Perform magnetic particle or other suitable crack detecting inspection
14	Check for proper adjustment	32	Check visually for obvious signs of damage (includes, but is not limited to structure, hoses, tubes, cables, harnesses, etc.)
15	Check that all pins and bolts are in place, tight, and properly retained	33	Verify crane is properly positioned on a level, uniformly supporting surface
16	Check for leaks, swelling, kinking, or abrasion	34	Check that crane configuration matches capacity chart selected in RCI/RCL
17	Check for excessive wear, deterioration, abrasion, or other damage	35	Replace missing, defaced, and unreadable safety and information signs
18	Clean as needed or indicated		

500, 1,000, 2,000, Hours of Operation Description (see page 2 or 65 for Notes)		Code	Quarterly (500 Hours)	Semiannually (1,000 Hours)	Annually (2,000 Hours)
			Date	Date	Date
Item	500 Hours of Operation or Quarterly				
1	Perform 8, 40, and 200 Hour Checks	—			
2	Grease Points (See Lubrication Manual)	5			
3	Engine Serpentine Belt / V-belt	9, 21			
4	Gearbox Cooling Blower (2250, independent drum drive only, normal operating conditions)	2, 7			
5	Battery	18, 29			
6	Air Dryer (if equipped)	9			
7	Boom Stop Cylinders (2250) (oil per Service Manual)	3			
Item	1,000 Hours of Operation or Semiannually				
1	Perform 8, 40, 200, and 500 Hour Checks	—			
1	Grease Points (See Lubrication Manual)	5			
2	Crawler Gearboxes	22			
3	Swing Gearboxes	22			
4	Drum Gearboxes	22			

5	Boom Hoist Gearbox	22		
6	Luffing Hoist Gearbox	22		
7	Rated Capacity Indicator (RCI)/Rated Capacity Limiter (RCL)	23		
8	Controls and Pressure Senders	23		
9	Boom Angle Indicator	23		
10	Engine Cooling Systems	2, 9, 22		
11	Pump Drive	22		
12	Hydraulic System	2, 22		
13	Hydraulic Filters and Breathers	13		
14	Hydraulic Tank Diffusers/Suction Screens (if equipped)	13		
Item	2,000 Hours of Operation or Annually			
1	Perform 8, 40, 200, 500, and 1,000 Hour Checks	—		
2	Review Inspection & Maintenance, Service and Repair Records	—		
3	Review Wire Rope Inspection Records	—		
4	Grease Points (See Lubrication Manual)	5		
5	Turntable Bearing Bolts	21		
6	Rigging Winch(es)	22		
7	Hook(s) (NOTE 17)	31		
8	Hydraulic Hoses (NOTE 9)	13		
9	Electric Harnesses and Cables (NOTE 10)	13		
		Hourmeter Reading		
		Checked by		

4,000 Hours of Operation or Every Two Years			6,000 Hours of Operation or Every Three Years				
Item	Description (see page 2 or 65 for Notes)	Code	Date	Item	Description (see page 2 or 65 for Notes)	Code	Date
1	Diesel Particulate Filter (Tier 4 cranes, NOTE 18)	9		1	Air Dryer (if equipped)	9	
			Hourmeter Reading				Hourmeter Reading
			Checked by				Checked by

MAINTENANCE NOTES

- NOTE 1** **Seat Safety Switch:** When operator is out of seat, all control handles and corresponding functions should be inoperable.
- NOTE 2** **Park Switches:** When park switches are ON, corresponding functions (load drums, boom hoist, luffing hoist, swing, travel, etc.) must be inoperable. If equipped, drum pawls must be engaged.
- NOTE 3a** **Drum Brakes - Without Free Fall or with Free Fall OFF:** Test each drum brake for proper operation with load lifted 1-2 ft (0.3-0.6 m) off ground. While slowly hoisting or lowering load, move control handle to OFF. Load must come to a complete stop and not slip through brake. Brake must hold load in position.
- NOTE 3b** **Drum Brakes - With Free Fall:** Test each free fall drum clutch/brake for proper operation with FREEFALL ON and load lifted 1-2 ft (0.3-0.6 m) off ground:
- FREEFALL indicator light should be illuminated for corresponding drum or FREEFALL symbol for corresponding drum should appear is display.
 - While hoisting or lowering with brake pedal raised fully (brake released) load must not slip through clutch.
 - When FULLY APPLIED, working brake must hold load (parking brake released and control handle off).
- NOTE 3c** Inspect latch on each **drum brake pedal** (if equipped) for proper operation, wear or other damage. Each latch must hold pedal down. Check for full engagement of latch teeth. Check for worn surfaces on latch teeth and latch bar.
- NOTE 4** **Boom Hoist Brake:** Test while slowly raising or lowering boom. When handle is released to OFF, boom must come to a complete stop and not slip through brake. Brake must hold boom in position.

- NOTE 5** **Travel Brakes:** Test while slowly traveling in either direction. When handles are released to OFF, crane must come to a complete stop and not slip through brakes. Brakes must hold crane in position.
- NOTE 6** **Swing Holding Brake:** Test with swing control handle in OFF. When holding brake is depressed, swing handle should be inoperable and upperworks should be held in position. Test with caution when MAX-ER is attached.
- NOTE 7** **Drum Pawls:** Check for proper operation. Should fully engage and disengage drums when engaged and disengaged.
- NOTE 8** **Engine Clutches:** Engage and disengage engine clutch several times with engine running to clean discs, except for models 111, 222, 180, M250 and 2250. For models 111, 222, 180, M250 and 2250, engage and disengage engine clutch with engine off.
- NOTE 9** Replace **hydraulic hoses** after 4,000 to 8,000 hours as recommended in Section 2 of the Service Manual.
- NOTE 10** Replace **electrical harnesses and cables** after 8,000 to 10,000 hours as recommended in Section 3 of the Service Manual.
- NOTE 11** Check that **jacking cylinder rods** (18000) have not extended more than one inch (25 mm). See decal on cylinders for instructions. Check at start of each shift and mid-way through each shift.
- NOTE 12** Check **operating limit and system fault alerts** for proper operation – red and yellow lights, buzzer, and beeper should come on for an instant (up to 3 seconds) when ignition switch is moved to RUN position. Operating limit and system fault alerts (lights, buzzer and beeper) will stay on if a limit has been reached or a fault exists.

- NOTE 13** Replace **hydraulic filters** if display (depending on model) indicates any filter number or name and fault alert is on (oil at operating temperature) OR, for models 2250 and M250, replace suction filters if digital display indicates 7 psia and system faults alert is on (oil at operating temperature).
- NOTE 14** Check **swing and travel alarm** (if equipped) for proper operation. Must sound when swing and travel handles are moved in either direction.
- NOTE 15** Check that all pins and bolts are in place and tight in **rotating bed, carbody, crawlers and all beams** (see separate checks for turntable bolts). All cotter pins must be spread.
- NOTE 16** Do not open **filter** housing unless **service indicator** clearly indicates need to change elements.
- NOTE 17** Perform magnetic particle or other suitable crack detecting inspection for each **hook**.
- NOTE 18** Accumulated ash must be removed from the Diesel Particulate Filter (DPF) periodically. Remove Diesel Particulate Filter and inspect per engine manufacturer's instructions, then have it cleaned or replaced by engine manufacturer, depending on outcome of inspection. In the United States, this service is required by the Environmental Protection Agency. Check regulations applicable in other countries.
- NOTE 19** For non-metallic sheaves, check for wear and separation of bushing and bearing.

