Maintenance Manual May 2020

Maintenance Procedures

Maintenance Schedule

The maintenance procedures have been divided into subsections that include: Commissioning, Quarterly, Annually and Programmed maintenance intervals. The maintenance inspection report has been divided into general areas of the machine that include: Drive Chassis, Booms and Platform, Functions and Controls, Engine and Turntable.

Failure to perform these procedures may result in poor performance, component damage and unsafe operating conditions. They are essential to safe operation, machine performance and service life.

Commissioning: A series of required one time maintenance procedures to be performed at 50 and 150 hour intervals.

Quarterly and Annually: A series of maintenance procedures to be performed guarterly or annually.

Programmed: A series of maintenance procedures to be performed during a Pre-Delivery Preparation or based on machine operating hours.

Maintenance Inspection Report

The maintenance inspection report contains checklists for each type of scheduled inspection.

Make copies of the *Maintenance Inspection Repor*t to use for each inspection. Maintain completed forms for a minimum of 4 years or in compliance with your employer, jobsite and governmental regulations and requirements.

Instruction Examples

Commissioning Example:

Commissioning		1 50	150
2 Engine - all models	3 PO-1	4	4

Quarterly and Annually Example:

6 Drive Chassis	1 Intervals	Q	Α
Inspect the tires, wheels and Lug Nut Torque	<u>3</u> Q-4	4	Ś ^Ø

Programmed Example (under 1000 HRS):

Programmed Maintenance - Under 1000 HRS	Status	Enter Hours
Check Track Tension/Fastener 3 P0-1	4	7 50
Engines - Deutz Under 1000 HRS (3) P0-2	4	\triangle

Programmed Example:

	Programmed Maintenance		lours	s are	In ti	nous	ands
	All models	1	2	3	4	6	12
Ī	2Engine - all models, 1000 hrs 3 P1-1	4	ø	ø	ø	ø	ø

Instructions Legend

Use the following detailed descriptions to identify the intended use of the maintenance inspection reports.



Specific Interval: blank box is the interval to be completed and the Ø marks the interval as not required.



The description of the procedure or checklist to be completed.



The procedure number or checklist to be completed.



Check box to indicate status of inspection.



Specific interval is not required for this procedure.



General area of the machine to complete the procedure.



If this box has a designated time interval: this is the specific time interval to complete the procedure or checklist.

If this box is empty: the maintenance checklist will include multiple time intervals, use this box to write in the specific interval for the inspection completed.

May 2020 Maintenance Manual

Pre-Delivery Preparation Report

Fundamentals

It is the responsibility of the owner or dealer to perform the Pre-delivery Preparation.

The Pre-delivery Preparation is performed prior to each delivery. The inspection is designed to discover if anything is apparently wrong with a machine before it is put into service.

A damaged or modified machine must never be used. If damage or any variation from factory delivered condition is discovered, the machine must be tagged and removed from service.

Repairs to the machine may only be made by a qualified service technician, according to the manufacturer's specifications.

Scheduled maintenance inspections shall be performed by qualified service technicians, according to the manufacturer's specifications and the requirements listed in the responsibilities manual.

Instructions

Use the operator's manual on your machine.

The Pre-delivery Preparation consists of completing the Pre-operation Inspection, the Maintenance items and the Function Tests.

Use this form to record the results. Place a check in the appropriate box after each part is completed. Follow the instructions in the operator's manual.

If any inspection receives an N, remove the machine from service, repair and re-inspect it. After repair, place a check in the R box.

Legend

Y = yes, acceptable

N = no, remove from service

R = repaired

Comments

Pre-delivery Preparation	Υ	N	R
Pre-operation inspection completed			
Maintenance items completed			
Function tests completed			



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Model	
Serial number	
Date	
Machine owner	
Inspected by (print)	
Inspector signature	
Inspector title	
Inspector company	



Scheduled - Quarterly Maintenance Inspection Report - Booms

Model			Hour me	eter		Date	
Serial number		Inspector company		Machine owner			
Inspected by (print)			Inspecto	or signature			
Inspection Type Q = quarterly or frequent	Legend	Y = yes, acceptab	le	N = no, remove from service	inspection		
inspections		R = repai	red	Ø = not applicable		e appropriate procedures for the type of appropriate proc	

Drive Chassis		✓
Inspect the Tires, Wheels and Lug Nut Torque	Q-6	
Check the Oscillate Valve Linkage (if equipped)	Q-8	
Confirm the Proper Brake Configuration	Q-20	
Turntable Mechanicals and Hydraulics		
Visual Inspection of the Hydraulic Oil	Q-9	
Inspect the Hydraulic Filters	Q-10	
Electrical		
Inspect Electrical Contactors - DC / Bi-Energy Models	Q-4	
Battery Inspection	Q-2	
Inspect the Electrical Wiring	Q-3	
Engine		
Check the Exhaust System	Q-5	
Check Generator Belts/Pulleys - Bi-Energy Models	Q-7	
Check and Adjust the Engine RPM	Q-11	
Boom(s) and Platform		
Inspect and Adjust Boom Cables - All Models (for first 12 months of ownership)	Q-36	
Functions and Controls		✓
Check for Open Bulletins and Owner Registration	Q-1	
Test the Ground Control Override	Q-12	
Test the Alarm Package (if equipped)	Q-13	
Test the Emergency Power System	Q-14	
Test the Engine Idle Select Operation	Q-15	
Test Fuel Select Operation - Gas/LPG Models	Q-16	
Inspect the Calibration Decal - ALC1000 Models	Q-17	
Test the Recovery System - ALC-1000 Models	Q-18	
Test the Platform Self-leveling	Q-19	

Functions and Controls, continued		✓
Test the Drive Brakes	Q-21	
Test the Drive Speed – Stowed Position	Q-22	
Test the Drive Speed – Raised or Extended Position	Q-23	
Test the Drive Speed – Raised and Extended Position - ALC1000 Models	Q-24	
Test the Turntable Level Sensor - Z-135/70, ZX-135/70, SX-105XC, SX-125XC, SX-135XC, SX-150, SX-180	Q-25	
Test the Secondary Boom Angle Sensor - Z-135/70, ZX-135/70	Q-26	
Test the Primary Boom Angle Sensor - Z-135/70 and ZX-135/70	Q-27	
Test the Primary Boom Angle Sensor - SX-105XC, SX-125XC, SX-135XC, SX-150, SX-180	Q-28	
Test the Safety Envelope Limit Switches - Z-135/70, ZX-135/70, SX-105XC, SX-125XC, SX-135XC, SX-150, SX-180	Q-29	
Test the Primary Boom Angle Sensor - Z-80/60	Q-30	
Test the Safety Envelope and Circuits - Z-80/60	Q-31	
Check the Safety Envelope Limit Switches and Angle Sensor - S-60X, S-80X, to S60XCH-45000	Q-32	
Test the Safety Envelope and Circuits - S-100, S-105, S-120, S-125	Q-33	
Test the Aircraft Protection System (if equipped)	Q-34	
Test the Operator Protection Alarm (if equipped)	Q-35	
Test the Recovery System - ALC600 models	Q-37	
Test the Turntable Level Sensor - S-40HF, S-45HF, S-40XC, S-45XC, S-60HF, S-65HF, S-60J, S-60XC from S60XCH-45001, S-65XC, S-80HF, S-85HF, S-80XC, S-85XC	Q-38	
Test the Primary Boom Angle Sensor - S-40HF, S-45HF, S-40XC, S-45XC, S-60HF, S-65HF, S-60J, S-60XC from S60XCH-45001, S-65XC, S-80HF, S-85HF, S-80XC, S-85XC	Q-39	



Scheduled - Annual Maintenance Inspection Report - Booms

			I
	Inspector company		Machine owner
	Inspector signature		
Y = yes, acceptable R = repaired	N = no, remove from service Ø = not applicable		of this report to use for each inspection. opropriate procedures for the type of to perform.
	3	end Y = yes, acceptable N = no, remove from service	end Y = yes, acceptable N = no, remove from service P = repaired

Confirm all applicable quarterly maintenance pro have been included and completed with the annuinspection.		s
Drive Chassis		✓
Extendable Axle Wear Pads (if equipped)	A-4	
Check Drive Hub Oil Level and Fastener Torque	A-14	
Turntable Mechanicals and Hydraulics		
Grease the Turntable Rotation Bearing	A-1	
Check Turntable Bearing Bolts	A-2	
Inspect for Turntable Bearing Wear	A-3	
Boom(s) and Platform		
Jib Rotate Bearing (if equipped)	A-5	
Grease the Platform Overload Mechanism	A-7	
Test Platform Overload - All Models, Except ALC1000 and S-60HC Models	A-8	
Test Platform Overload - (ALC1000 models)	A-9	
Test Platform Overload - (S-60 HC models)	A-10	
Test Platform Overload - S-40HF, S-45HF, S-60J, Z-45HF, Z-45 DC/FE from Z45EM-101	A-18	
Test Dual Capacity / Overload - SX-105XC, SX-125XC, SX-135 XC	A-15	
Test Dual Capacity / Overload - Z-45XC	A-16	
Test Dual Capacity / Overload - S-40XC, S-45XC, S-60HF, S-65HF, S-60XC from S60XCH-45001, S-65XC, S-80HF, S-85HF, S-80XC, S-85XC	A-17	
Inspect Boom Cables - All S-60, S-80 Models	A-11	
Inspect Boom Cables - S-100 to S-125, S-100HD, S- 120HD, SX-105XC, SX-125XC	A-12	
Inspect Boom Cables - SX-135XC, SX-150, SX-180	A-13	
Functions and Controls		
Test the Bypass/Recovery Key Switch	A-6	
Engines		
Perform Engine Maintenance - Kubota D1803	A-19	

A	Confirm all applicable quarterly and annual maintenance procedures have been included and completed with the 2 year inspection.						
Perf	orm Every 2 Years						
Engi	nes		✓				
Perfo	rm Engine Maintenance - Kubota D1803	A-20					



Programmed Maintenance Inspection Report – Booms

Model	Hour meter		Date		
Serial number	Inspector company		Machine owner		
Inspected by (print)	Inspector	Inspector signature]	
Programmed maintenance will be completed based on machine hours. This program includes the onetime or commissioning procedures for new products. The onetime procedures will be completed at 50 or 150 hours.		Y = yes, acceptable N = no, remove from service R = repaired Ø = not applicable	pies of this report to use for each n. e appropriate procedures for the type tion(s) to perform.		

Commissioning			150	
50 Hour Service - all models	C-1		Ø	
Engines - Ford, Kubota, Perkins Models	C-2		Ø	
Perform 150 Hour Service	C-3	Ø		

Programmed Maintenance - Under 1000 HRS			Enter Hours
Check the Track Tension and Fastener Torque - S-60, S-65 and Z-62 Models	P0-1		50
Check the Track Tension and Fastener Torque - S-40 and S-45 Models			50
Grease the Extendable Axles - (if equipped)	P0-3		50
Engines - Continental Under 1000 HRS	P0-4		
Engines - Cummins Under 1000 HRS	P0-5		
Engines - Deutz Under 1000 HRS	P0-6		
Engines - Ford Under 1000 HRS	P0-7		
Engines - Kubota Under 1000 HRS	P0-8		
Engines - Perkins Under 1000 HRS	P0-9		
Engines - GM .998L Under 1000 HRS	P0- 10		
Engines - GM 3.0L Under 1000 HRS	P0- 11		

Programmed Maintenance			Hours are in thousands						
All models Perform every:		1	2	3	4	5	6	12	
Engines - all models, 1000 Hours	P1-1		Ø	Ø	Ø	Ø	Ø	Ø	
Replace the Drive Hub Oil	P1-2		Ø	Ø	Ø	Ø	Ø	Ø	
Engines - Kubota D1803, 1500 Hours	P1-3		Ø	Ø	Ø	Ø	Ø	Ø	
Engines - all models, 2000 Hours	P2-1	Ø		Ø	Ø	Ø	Ø	Ø	
Test or Replace the Hydraulic Oil	P2-2	Ø		Ø	Ø	Ø	Ø	Ø	
Replace the Hydraulic Filters	P2-3	Ø		Ø	Ø	Ø	Ø	Ø	
Check the Free-wheel Configuration	P2-4	Ø		Ø	Ø	Ø	Ø	Ø	
Check the Boom Wear Pads	P2-5	Ø		Ø	Ø	Ø	Ø	Ø	
Check the Extendable Axle Wear Pads	P2-6	Ø		Ø	Ø	Ø	Ø	Ø	
Check Turntable Gear Backlash - ALC1000 Models	P2-7	Ø		Ø	Ø	Ø	Ø	Ø	
Grease the Steer Axle Wheel Bearings, 2WD Models (except Z- 62, S-60, S-65)	P2-8	Ø		Ø	Ø	Ø	Ø	Ø	
Grease the Steer Axle Wheel Bearings, 2WD Models - Z-62, S- 60, S-65	P2-9	Ø		Ø	Ø	Ø	Ø	Ø	
Engines - all models, 3000 Hours	P3-1	Ø	Ø		Ø	Ø	Ø	Ø	
Engines - Perkins models, 4000 Hours	P4-1	Ø	Ø	Ø		Ø	Ø	Ø	
Engines - GM models, 5000 Hours	P5-1	Ø	Ø	Ø	Ø		Ø	Ø	
Engines - Perkins models, 6000 Hours	P6-1	Ø	Ø	Ø	Ø	Ø		Ø	
Engines - Perkins models, 12000 Hours	P12-1	Ø	Ø	Ø	Ø	Ø	Ø		
Remove and Inspect Boom cables	P12-2	every 12 years or every 3 years after first 12 years if not replaced							