Maintenance and Lubrication

General

A machine that receives regular care from its operators and mechanics generally rewards them with decreased downtime and greater reliability. With the help of the information in this section, you should be able to maintain your **machine** at top operating efficiency. The maintenance and lubrication procedures given here can be performed with a minimum of shop tools.

Safety Precautions

Before performing any maintenance or lubrication, review the following safety precautions. They're included for your protection.

1. Read This Manual

   Be sure you understand the procedures outlined in this manual before attempting to carry them out. Pay particular attention to any safety warnings presented. If you have any questions, don't hesitate to ask your WAGNER dealer.

2. Perform Maintenance on Level Ground

   The machine should be on level ground and clear of traffic lanes whenever possible. The parking brake should be set and the wheels blocked.

3. Remove Loads

   The machine should be unloaded, with the carriage down.

   ⚠ WARNING

   Never rely on the hydraulics to support any part of the machine during maintenance or lubrication. If necessary, support components with appropriate safety stands. NEVER stand under a component that is supported only by the hydraulics. Make sure it is resting on its mechanical stops or safety stands.

4. Stop the Engine

   Before performing any maintenance or lubrication, remove the key from the switch, or tag the key switch **"DO NOT START"**, to ensure that the engine is not inadvertently started.

5. Use Safe Ladders/Scaffolding

   Due to the extreme height of the upper lube points, it is essential to personnel safety that safe ladders, personnel lifts and/or scaffolding be used while servicing. These areas can be dangerously slick under conditions of rain, frost or oil smears.

Preventive Maintenance

Preventive maintenance is a system that is designed to detect problem areas and prevent equipment failure before trouble can develop to a critical point. The system is based on a series of maintenance checks and servicing points. To be effective, a preventive maintenance program demands strict adherence to a planned schedule of maintenance.

Benefits of Preventive Maintenance

Time spent making the required periodic checks is a real investment in working equipment and efficient use of man hours. Valuable benefits can be realized, all of which mean savings in time and resources.

Preventive Maintenance

- **Promotes Safety** - properly maintained equipment is better able to operate within its design specifications and react positively to the operators control.
- **Improves Equipment Availability** - by minimizing the chances of breakdown.
- **Reduces Unexpected Downtime** - crash repairs are expensive and detract from normal scheduled maintenance.
- **Reduces Equipment Abuse** - provides the ability to predict component life and helps avoid operating equipment to destruction, by replacing parts before they fail.
- **Allows Planning of Daily Production** - by knowing the condition of available equipment.
- **Allows Planning of Maintenance Man Hours** - by distribution of duties and necessary lead time for parts ordering.
- **Provides Complete History of Equipment** - based on performance, frequency and type of repairs and actual man hours expended on maintenance.

Establishing a Preventive Maintenance Program

The key to an effective preventive maintenance program is diligence in following a maintenance schedule set at regular planned intervals. Such intervals should be made compatible with the nature of operation of the equipment and with the capabilities of the maintenance facility. In any event, the intervals and inspection requirements must be planned, regular, and consistent.

This program proposes the following basic schedule which is based on intervals generally used and accepted in the wood products industry.

Specific maintenance should be completed using the following intervals:

- 10 hours (each shift or daily)
- 50 hours (weekly)
- 250 hours (monthly)
- 500 hours (quarterly)
- 1000 hours (semi-annually)
- 2000 hours (annually)

Each successive schedule (e.g. weekly, monthly, quarterly, etc) builds on the former and is accumulative in nature. For example, when performing monthly maintenance, the mechanic will first take note of the shift maintenance reports and remedy any discrepancy; then comply with the shift and weekly maintenance, and in addition will perform the checks specified in the monthly schedule.

Maintenance Record Keeping

The importance of good record keeping cannot be overemphasized. Each scheduled maintenance form should be checked off as the inspections and service is performed. Quantities of replenished lubricants should be recorded, as well as hydraulic pressure readings. All discrepancies should be recorded whether remedied or pending. Operators and mechanics should sign off forms and return them to the maintenance supervisor for approval and retention in an equipment unit file.

Accurately recorded maintenance forms will give the maintenance personnel an overall view of how particular equipment is holding up under normal operating conditions. Good records, and the ease by which they can be reviewed also enable maintenance personnel to identify and evaluate problem areas and allow adjustment in the maintenance scheduling for their particular operation.

Shift Maintenance

Shift maintenance is where preventive maintenance begins. The operator normally completes this inspection. It consists of the routine servicing and lubrication of the machine's major systems. On a daily basis, the operator is in a position to identify, remedy and/or record potential problem areas and is able to quickly recognize any change in the performance of his machine. The comments he records on the shift maintenance report become a valuable tool to the maintenance department, and is an important ingredient to the overall success of a preventive maintenance program.

Shift Maintenance Checklist

A recommended checklist is given here as an aid in developing a practical shift maintenance program if one has not been developed by your company. A shift maintenance report, based on this checklist, should be used to report defects found when making maintenance checks at the beginning of each shift.

Your company may have a different reporting method, however, it is usually a requirement that this form be

filled out at the end of each shift. Accurate shift maintenance reports can help your company anticipate maintenance problems and take action to prevent costly failures.

Using the Checklist

The reference numbers in the left-hand column of the checklist indicate the physical location of each check point or lubrication point as it appears on the shift maintenance diagram. Circled reference numbers on the diagram indicate lubrication points. Boxed numbers indicate maintenance check points.

Shift maintenance details are provided in section 5.10, Maintenance Procedures. These procedures consist of checks that can be performed by the operator.

Scheduled Maintenance

Periodic scheduled maintenance is intended to be performed in a complete maintenance facility by trained mechanics. The timely scheduling and completion of these periodic inspections by the maintenance department will determine the length of downtime of a particular machine. Therefore, maintenance scheduling becomes a critical factor in the effective use of man hours and the availability of serviceable equipment.

Scheduled Maintenance Checklist

Actual operating environment governs the maintenance schedule. Some checks should be performed more often under severe conditions, such as heavy dust, extreme temperatures or extremely heavy loads.

These maintenance checklists are designed to be used as a guide until adequate experience is obtained in establishing a schedule to meet your specific needs.

A detailed list of component checks is provided with a suggested schedule basis given in hours of operation, or calendar time.

The engine manufacturer's operation and maintenance manual should be consulted for additional engine related checks and/or details.

A maintenance schedule should be established using these checklists as a guide. The result will be a maintenance program to fit your specific operation.

Using the Checklist

Although specific maintenance is identified in these checklists, location and procedure references are not provided in the columns.

Scheduled maintenance is normally carried out by trained mechanics, who are knowledgeable of the equipment systems and component locations. Scheduled maintenance procedures can be found by referring to the appropriate section of the service manual.

Scheduled Oil Sampling

Use scheduled oil sampling (SOS) to monitor machine condition and maintenance requirements. Oil samples from engine, transmission, axles, and hydraulic system should be taken when the oil is hot and well mixed to ensure an accurate analysis. Contact your Wagner dealer for complete information and assistance in establishing a scheduled oil sampling analysis program for your equipment.

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SHIFT MAINTENANCE CHECKLIST

EVERY 10 HOURS OR DAILY

Note general vehicle condition. Clear away all collected debris — steam clean if necessary. Check for mechanical damage and loose or leaking components. Report faults to maintenance department.

Before Starting Engine - Check The Following:

REF	ITEM	OK	NO	ADD
1.	ENGINE (Check oil level - check for leaks)	☐	☐	____
2.	FUEL TANK (Drain off moisture & sediment)	☐	☐	____
3.	HYDRAULIC TANK (Check oil level - check for leaks)	☐	☐	____
4.	RADIATOR (Check coolant level - check for leaks)	☐	☐	____
5.	AIR CLEANER (Check indicator - clean or change A/R)	☐	☐	
6.	ENGINE BELTS (Check for adjustment and wear)	☐	☐	
7.	FUEL FILTER (Drain off water & sediment)	☐	☐	
8.	AIR TANKS (Drain off water & sediment)	☐	☐	
9.	RADIATOR & OIL COOLER (Are fins clean & unobstructed?)	☐	☐	
10.	WHEEL & TIRE ASSEMBLIES (Check condition & pressure)	☐	☐	____
11.	HYDRAULIC BRAKE RESERVOIRS (Check Fluid Level)	☐	☐	____
12.	LUBRICATE CHASSIS (Refer to Lube Chart)	☐	☐	

After Starting Engine - Check The Following:

13.	ENGINE (Does it sound normal?)	☐	☐	
14.	INSTRUMENTS (Check for normal readings)	☐	☐	
15.	CONTROLS (Check for normal operation)	☐	☐	
16.	AIR INTAKE SYSTEM (Check for leaks and damage)	☐	☐	
17.	EXHAUST SYSTEM (Check for leaks & excessive smoke)	☐	☐	
18.	TRANSMISSION (Check oil level - Check for leaks)	☐	☐	____

Note Anything Abnormal Or In Need Of Repair:

LIGHTS _____ DEFROSTER _____ REVERSE W/HORN _____

HORN _____ WINDSHIELD WIPERS _____ _____

HEATER _____ AIR CONDITIONER _____ _____

OPERATOR _____ SUPERVISOR _____ DATE _____

MODEL _____ SERIAL NO. _____ HOUR METER _____

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MAINTENANCE CHECKLIST

EVERY 50 HOURS OR WEEKLY

1.	REPEAT THE 10 HOUR/DAILY CHECK	OK_____	NO_____
2.	CHECK FOR FLUID LEAKS - OIL, FUEL, WATER	OK_____	REPAIR_____
3.	CHECK BRAKES FOR ADJUSTMENT & WEAR . . .	OK_____	REPAIR_____
4.	CHECK WHEEL NUTS & STUDS - MECHANICALLY	OK_____	REPAIR_____
5.	CHECK BATTERY ELECTROLYTE	OK_____	ADD_____
6.	LUBRICATE CHASSIS - REFER TO LUBE CHART .	OK_____	NO_____
7.	RECORD ENGINE RPM	HIGH_____	STALL_____
8.	CHECK FOR STRUCTURAL DAMAGE - INSPECT CHASSIS & ATTACHMENTS FOR BENDING, CRACKING, & BROKEN WELDS	OK_____	REPAIR_____

EVERY 250 HOURS OR MONTHLY

1.	REPEAT THE 50 HOUR/WEEKLY CHECK	OK_____	NO_____
2.	CHANGE ENGINE OIL & FILTERS*	OK_____	ADDED_____
3.	TAKE ENGINE OIL SAMPLE FOR ANALYSIS* . . .	OK_____	NO_____
4.	CHECK AXLE DIFFERENTIAL OIL LEVEL	OK_____	ADDED_____
5.	CHECK AXLE PLANETARY OIL LEVEL	OK_____	ADDED_____
6.	CHECK COOLING SYSTEM HOSES.	OK_____	REPLACE_____
7.	CHECK ALL HYDRAULIC PRESSURES & RECORD. .	OK_____	NO_____
8.	CHECK FIRE SUPPRESSION ACTUATOR	OK_____	NO_____

EVERY 500 HOURS OR QUARTERLY

1.	REPEAT THE 250 HOUR/WEEKLY CHECK	OK_____	NO_____
2.	SERVICE FUEL FILTERS	OK_____	REPLACE_____
3.	SERVICE HYDRAULIC FILTERS*	OK_____	REPLACE_____
4.	SERVICE TRANSMISSION FILTERS*	OK_____	REPLACE_____
5.	TAKE OIL SAMPLES FROM TRANSMISSION, AXLE AND HYDRAULIC SYSTEM FOR ANALYSIS* . . .	OK_____	NO_____
6.	INSPECT BRAKE SYSTEM & COMPONENTS	OK_____	REPAIR_____

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MAINTENANCE CHECKLIST

1000 HOURS OR SEMI-ANNUALLY

1.	REPEAT 500 HOUR/SEMI-ANNUAL CHECK	OK_____	NO_____
2.	CHANGE TRANSMISSION OIL & FILTERS* . . .	OK_____	ADDED_____
3.	CLEAN & FLUSH COOLING SYSTEM	OK_____	ADDED_____
4.	CHECK PINS & BUSHINGS FOR WEAR	OK_____	REPLACE_____

2000 HOURS OR ANNUALLY

1.	REPEAT 1000 HOUR/SEMI-ANNUAL CHECK . . .	OK_____	NO_____
2.	DRAIN, FLUSH & REFILL DIFFERENTIALS*. . .	OK_____	ADDED_____
3.	DRAIN, FLUSH & REFILL PLANETARIES*. . . .	OK_____	ADDED_____
4.	CHANGE HYDRAULIC OIL & FILTERS*	OK_____	ADDED_____

*Normal drain period & filter change intervals are for average environmental and duty-cycle conditions. Severe or sustained high operating temperatures or very dusty atmospheric conditions will cause accelerated deterioration and contamination.

Change intervals should be adjusted according to the results of oil sampling analysis. Consult your dealer for assistance in establishing an oil sampling program for your equipment.

REPAIRS:

PROBLEM: _____

PARTS: _____

_____

HOURS LABOR _____

REPAIRS:

PROBLEM: _____

PARTS: _____

_____

HOURS LABOR _____

OPERATOR: _____

SUPERVISOR: _____

PARTS: _____

MODEL: _____ SERIAL NUMBER: _____ HOUR METER: _____