

wagner

a division of allied systems company

MAINTENANCE & LUBRICATION

L-130B

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GENERAL

The regular care a machine receives by its operators and mechanics is generally rewarded by 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 on the job site with a minimum of shop tools.

SAFETY PRECAUTIONS

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

PERFORM MAINTENANCE ON LEVEL GROUND

The machine should be on level ground and free of traffic lanes whenever possible.

SUPPORT THE BOOM

Before doing any work under a raised boom or bucket, first do the following:

1. Empty the load.
2. Support the boom with a safety stand - don't rely on the hydraulics.
3. Shutdown the engine.
4. Set the parking brake and block the wheels.

INSTALL SWIVEL LOCKING BAR

A swivel locking bar is provided on 4-wheel drive models. Before working in the hinge area of the machine make sure this bar is installed. Place the machine on a level surface so that the locking bar can be aligned for pin insertion.

TAG KEY SWITCH

Before doing maintenance or lubrication remove the key from the switch, or tag the key switch "DO NOT START", to insure that the engine is not started inadvertently.

WHAT IS PREVENTIVE MAINTENANCE

Preventive maintenance is a system that is intended 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

The time that is diligently expended to make the required periodic checks is a real investment in working equipment and efficient use of manhours. Valuable benefits can be realized; all of which means savings in time and resources.

PREVENTIVE MAINTENANCE:

- 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 MANHOURS - by distribution of duties and necessary lead time for parts ordering.
- PROVIDES COMPLETE HISTORY OF EQUIPMENT - based on performance, frequency and type of failure and actual manhours expended on maintenance.
- PROMOTES SAFETY - well maintained equipment is more able to operate within its design specifications and react positively to the operator's control.

SHIFT MAINTENANCE

Shift maintenance is where preventive maintenance begins. The operator of the machine normally completes this inspection. It consists of the routine servicing and lubrication of the machines major systems. On a daily basis, the operator is in the best 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 are 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 necessary 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

Actual operating environment governs the maintenance schedule. Some checks should be performed more often under heavy dust or other special conditions.

The maintenance schedule checklist is designed as a guide until adequate experience is obtained to establish a schedule to meet your specific operation.

A detailed list of component checks is provided through several check periods; also a suggested schedule basis is given for hours of operation, or calendar of time.

A maintenance schedule should be established using the checklist as a guide; the result will be a maintenance program to fit your specific operation.

OIL ANALYSIS SAMPLING PROGRAM

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.

Consult your dealer for complete information and assistance in establishing a scheduled oil sampling program for your equipment.



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
9	ENGINE (Check oil level - check for leaks)	<input type="checkbox"/>	<input type="checkbox"/>	___
3 & 4	FUEL TANK (Drain off moisture & sediment)	<input type="checkbox"/>	<input type="checkbox"/>	___
12 & 13	HYDRAULIC TANK (Check oil level - check for leaks)	<input type="checkbox"/>	<input type="checkbox"/>	___
2	RADIATOR (Check coolant level - check for leaks)	<input type="checkbox"/>	<input type="checkbox"/>	___
22	AIR CLEANER (Check indicator - clean or change A/R)	<input type="checkbox"/>	<input type="checkbox"/>	
42	ENGINE BELTS (Check for adjustment and wear)	<input type="checkbox"/>	<input type="checkbox"/>	
7	FUEL FILTER (Drain off water & sediment)	<input type="checkbox"/>	<input type="checkbox"/>	
21	AIR TANKS (Drain off water & sediment)	<input type="checkbox"/>	<input type="checkbox"/>	
2	RADIATOR & OIL COOLER (Are fins clean & unobstructed?)	<input type="checkbox"/>	<input type="checkbox"/>	
39 & 47	WHEEL & TIRE ASSEMBLIES (Check condition & pressure)	<input type="checkbox"/>	<input type="checkbox"/>	___
13	HYDRAULIC BRAKE RESERVOIRS (Check Fluid Level)	<input type="checkbox"/>	<input type="checkbox"/>	___
—	LUBRICATE CHASSIS (Refer to Lube Chart)	<input type="checkbox"/>	<input type="checkbox"/>	

After Starting Engine - Check The Following:

8	ENGINE (Does it sound normal?)	<input type="checkbox"/>	<input type="checkbox"/>	
25	INSTRUMENTS (Check for normal readings)	<input type="checkbox"/>	<input type="checkbox"/>	
25	CONTROLS (Check for normal operation)	<input type="checkbox"/>	<input type="checkbox"/>	
23	AIR INTAKE SYSTEM (Check for leaks and damage)	<input type="checkbox"/>	<input type="checkbox"/>	
—	EXHAUST SYSTEM (Check for leaks & excessive smoke)	<input type="checkbox"/>	<input type="checkbox"/>	
27	TRANSMISSION (Check oil level - Check for leaks)	<input type="checkbox"/>	<input type="checkbox"/>	___

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 _____



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 |



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: _____

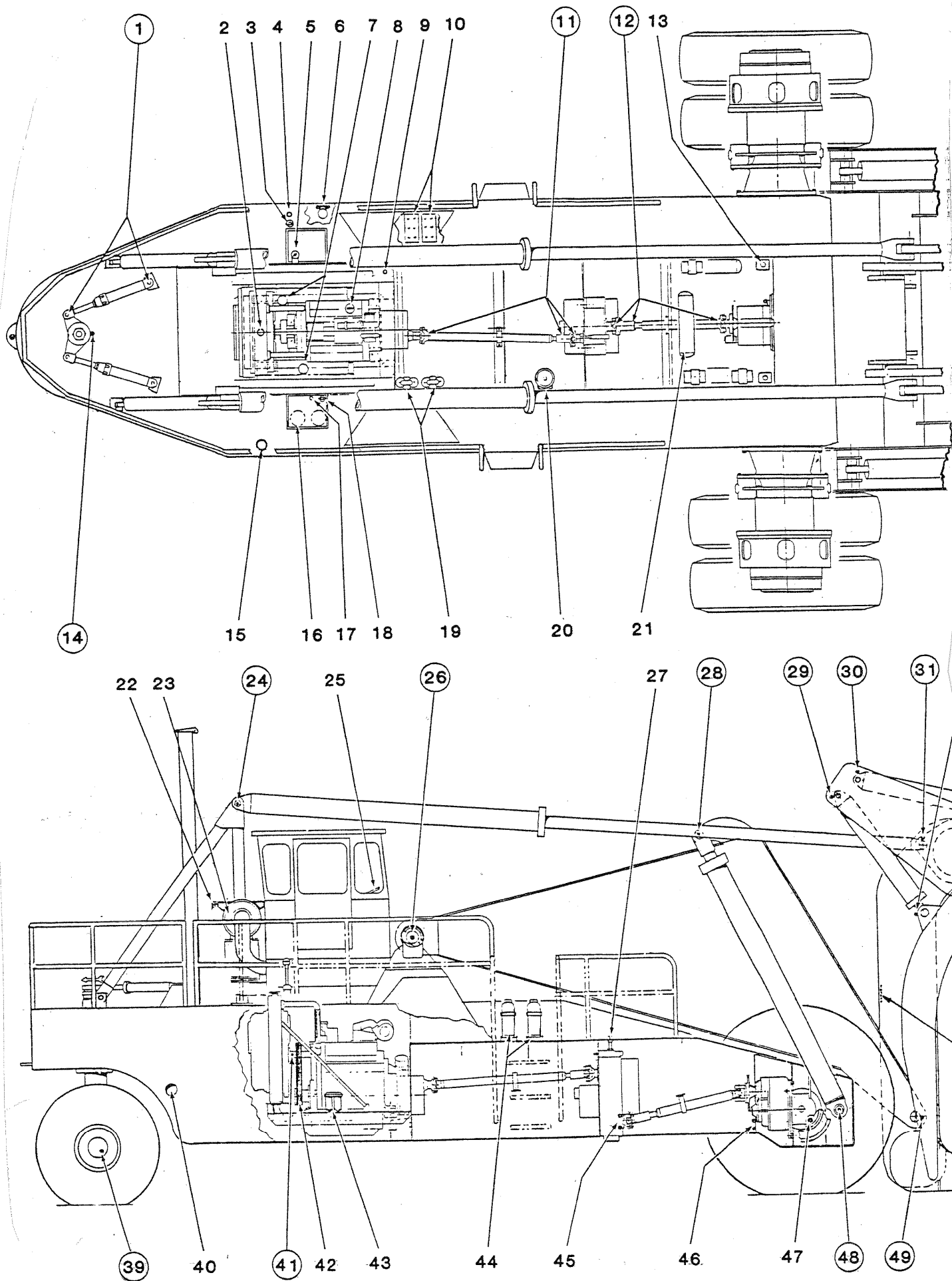
SUPERVISOR: _____

PARTS: _____

MODEL: _____ SERIAL NUMBER: _____ HOUR METER: _____

LUBRICANT SPECIFICATIONS

	MANUFACTURER & SPECIFICATION	RECOMMENDED VISCOSITY	PREVAILING AMBIENT TEMPERATURES	
			(FAHRENHEIT)	(CELSIUS)
ENGINE	<u>CUMMINS</u>	SAE 10W-30	-13°F to 95°F	-25°C to 35°C
	MIL-L-2104D	SAE 15W-40	14°F and ABOVE(Normal)	-10°C and ABOVE(Normal)
	(API CD/SE)	SAE 20W-40	32°F and ABOVE	0°C and ABOVE
	<u>DETROIT DIESEL</u>	SAE 30	BELOW 32°F	BELOW 0°C
	MIL-L-46152	SAE 40	ABOVE 32°F	ABOVE 0°C
	API CC/SF	Note: Multi-grade oils are not recommended in Detroit Diesel Engines.		
	<u>CATERPILLAR</u>	SAE 5W-20	-13°F to 50°F	-25°C to 10°C
	MIL-L-2104D	SAE 10W-30	-4°F to 104°F	-20°C to 40°C
	(API CD or CD/TO-2)	SAE 15W-30	5°F to 122°F(Normal)	-15°C to 50°C(Normal)
TRANSMISSION	<u>CLARK</u>	MIL-L-46167	-65°F to 0°F	-54°C to -18°C
	MIL-L-2104D	SAE 10W	-10°F to 140°F(Normal)	-23°C to -60°C(Normal)
	(API SE) Type C-3	SAE 30	30°F to 140°F	-1°C to 60°C
	<u>ALLISON</u>	SAE 5W-20	BELOW -10°F	BELOW -23°C
		SAE 10W	BELOW 10°F(Normal)	BELOW -12°C(Normal)
	MIL-L-2104D	SAE 15W-40	BELOW 30°F	BELOW -1°C
	(API SE) TYPE C-3	SAE 30	BELOW 35°F	BELOW 2°C
		Note: Preheat transmission fluid to indicated minimum temperature before operating transmission. . . or if preheating equipment is not available, operate transmission in NEUTRAL for minimum of 20 minutes prior to engaging Forward or Reverse ranges.		
	<u>TWIN-DISC</u>	SAE 5W-20	-60°F to 0°F	-51°C to -18°C
AXLE	MIL-L-2104D	SAE 10W	-10°F to 140°F(Normal)	-23°C to 60°C(Normal)
	(API SE) TYPE C-3	SAE 30	30°F to 140°F	-1°C to 60°C
	<u>CLARK</u>	SAE 75W	-40°F to -10°F	-40°C to -23°C
		SAE 75W-80	-40°F to 0°F	-40°C to -18°C
	MIL-L-2105C	SAE 80W-90	-13°F to 100°F(Normal)	-27°C to 37°C(Normal)
	(API GL-5)	SAE 85W-140	ABOVE 10°F	ABOVE -12°C
	<u>BRYAN</u>	SAE 20	BELOW 0°F	BELOW -18°C
	MIL-L-2104C	SAE 30	-20°F to 120°F(Normal)	-29°C to 49°C(Normal)
	(API CD)	SAE 40	ABOVE 100°F	ABOVE 37°C
HYDRAULIC	<u>RIMPULL</u>	SAE 75W-90	-65°F to 20°F	-54°C to -29°C
	MIL-L-2105C	SAE 80W-90	-20°F and above(Normal)	-29°C and above(Normal)
	(API GL-5)	SAE 120	-90°F to 120°F	-32°C to 49°C
	<u>WAGNER</u>	ISO VG32	-10°F to 120°F	-23°C to 49°C
	Premium Grade Hydraulic Oil	Note: Hydraulic Oil must include the following: Anti-Wear Agents; Rust, Foam and Oxidation Inhibitors; High Demulsibility; High Viscosity Index; Cold Weather Properties; Minimum Pour Point of -40°F and Minimum viscosity Index of 140.		
	<u>WAGNER</u>			
	Multipurpose	NLGI-1	BELOW 10°F	BELOW -12°C
	Chassis Grease	NLGI-2	ABOVE 10°F	ABOVE -12°C
	w/EP & MoS ₂			



LUBRICATION POINTS L-130B

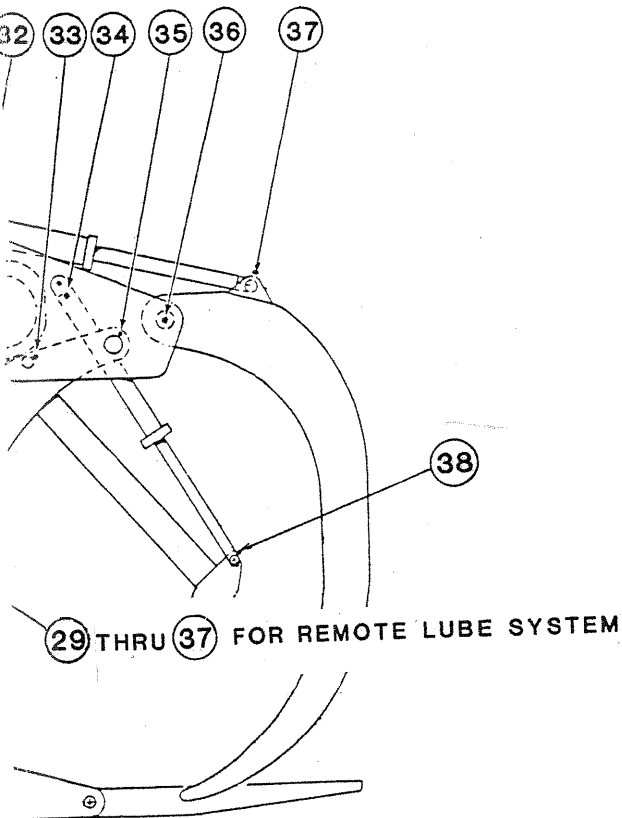
CAUTION!

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

Before lubricating - always lower carriage to ground and extend/retract holddown arms/carriage to obtain the lowest possible configuration.

OPTIONAL PRESSURIZED AXLE:

Front axle housing is under 3 psi air pressure. Before checking axle oil level, first shut off air supply to axle, then open air drain cock located on axle housing bulkhead.



REF

FTGS.

10 HOURS

(1)	STEERING CYLINDER PINS	4
(26)	BOOM TO CHASSIS PIN	2
(49)	*BOOM TO CARRIAGE PIN	2
(28) & (48)	*HOIST CYLINDER PINS	4

* WHEN OPERATING IN WATER, LUBRICATE SUBMERGED POINTS MORE FREQUENTLY.

50 HOURS

(24) & (31)	TILT CYLINDER PINS	4
(36)	HOLDDOWN ARM PINS	2
(35)	KICKOFF ARM PINS	2
(30) & (37)	HOLDDOWN CYLINDER PINS	4
(29) & (32)	KICKOFF CYLINDER PINS	4
(33)	AUX HOLDDOWN ARM PINS	2
(34) & (38)	AUX HOLDDOWN CYLINDER PINS	4
(11)	**DRIVELINE - CONV TO TRANS	3
(12)	**DRIVELINE - TRANS TO AXLE	3

** USE HANDGUN OR LOW PRESSURE ADAPTER; LUBRICATE SPARINGLY.

250 HOURS

(41)	FAN DRIVE BEARING	1
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500 HOURS

(39)	TAILWHEEL BEARINGS	2
(14)	TAILPOST	1

NOTE: Due to variations in engine types and models, the indicated location of engine filters (fuel - oil - coolant) may not be exact. Consult your specific engine Service Manual for exact location.

COMPONENT CAPACITIES & LUBRICANTS **L-130B**

COMPONENT OR SYSTEM	REFILL CAPACITY (APPROX)		LUBRICANT TYPE*
	U.S. GAL	LITERS	
ENGINE CRANKCASE W/FILTERS	13	49	HD ENGINE OIL
FUEL TANK	450	1703	DIESEL FUEL
COOLING SYSTEM	22.6	85	WATER/ANTIFREEZE
HYDRAULIC SYSTEM	350	1324	HYDRAULIC OIL
TRANSMISSION	--	--	TRANSMISSION OIL
DIFFERENTIAL	50	189	GEAR LUBRICATION
PLANETARY HUBS (Each)	12	45	GEAR LUBRICATION
BRAKE RESERVOIRS	AS REQUIRED		MINERAL OIL
CHASSIS GREASE FITTINGS	AS REQUIRED		CHASSIS GREASE

*SEE LUBRICANT SPECIFICATIONS, PAGE 9.

MAINTENANCE SPECIFICATIONS **L-130B**

<u>HYDRAULIC PRESSURE RELIEF SETTINGS</u>	<u>MAIN</u>	<u>CIRCUIT</u>	
(1) Steering	2050 psi	2500 psi	
(2) Holddown & Kickoff, LH	2500 psi	2750 psi	2550 psi
(3) Holddown & Kickoff, RH	2500 psi	2750 psi	2550 psi
(4) Diverter Valve (HD & KO)	NONE	2750 psi	
(5) Auxiliary Holddown	NONE	NONE	
(6) Hoist	2400 psi	2750 psi	
(7) Tilt (Base End @ 1000 RPM)	NONE	900 psi	
(8) Tilt (Stem End)	2400 psi	NONE	
(9) Pressure Reducing Valve (Steering)	150 psi	NONE	
(10) Pump Port Relief (Bench Set)	2800 psi		

NOTE: Set main reliefs at 1500 RPM.
Circuit reliefs are pre-set at factory.

WHEEL LUGNUT TORQUE

Front 300 Ft/Lbs

TIRE INFLATION PRESSURE

Front 27.0 x 49-42PR 90-95 psi
Rear 60-65 psi

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COMPONENT OR SYSTEM	REFILL CAPACITY (APPROX)		LUBRICANT TYPE*
	U.S. GAL	LITERS	
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FUEL TANK	450	1703	DIESEL FUEL
COOLING SYSTEM	22.6	85	WATER/ANTIFREEZE
HYDRAULIC SYSTEM	350	1324	HYDRAULIC OIL
TRANSMISSION	--	--	TRANSMISSION OIL
DIFFERENTIAL	50	189	GEAR LUBRICATION
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BRAKE RESERVOIRS	AS REQUIRED		MINERAL OIL
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(6) Hoist	2400 psi	2750 psi	
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			(FAHRENHEIT)	(CELSIUS)
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	MIL-L-2104D	SAE 15W-40	14°F and ABOVE(Normal)	-10°C and ABOVE(Normal)
	(API CD/SE)	SAE 20W-40	32°F and ABOVE	0°C and ABOVE
	<u>DETROIT DIESEL</u>	SAE 30	BELOW 32°F	BELOW 0°C
	MIL-L-46152	SAE 40	ABOVE 32°F	ABOVE 0°C
	API CC/SF	Note: Multi-grade oils are not recommended in Detroit Diesel Engines.		
	<u>CATERPILLAR</u>	SAE 5W-20	-13°F to 50°F	-25°C to 10°C
	MIL-L-2104D	SAE 10W-30	-4°F to 104°F	-20°C to 40°C
	(API CD or CD/TO-2)	SAE 15W-30	5°F to 122°F(Normal)	-15°C to 50°C(Normal)
TRANSMISSION	<u>CLARK</u>	MIL-L-46167	-65°F to 0°F	-54°C to -18°C
	MIL-L-2104D	SAE 10W	-10°F to 140°F(Normal)	-23°C to -60°C(Normal)
	(API SE) Type C-3	SAE 30	30°F to 140°F	-1°C to 60°C
	<u>ALLISON</u>	SAE 5W-20	BELOW -10°F	BELOW -23°C
		SAE 10W	BELOW 10°F(Normal)	BELOW -12°C(Normal)
	MIL-L-2104D	SAE 15W-40	BELOW 30°F	BELOW -1°C
	(API SE) TYPE C-3	SAE 30	BELOW 35°F	BELOW 2°C
		Note: Preheat transmission fluid to indicated minimum temperature before operating transmission. . . or if preheating equipment is not available, operate transmission in NEUTRAL for minimum of 20 minutes prior to engaging Forward or Reverse ranges.		
	<u>TWIN-DISC</u>	SAE 5W-20	-60°F to 0°F	-51°C to -18°C
	MIL-L-2104D	SAE 10W	-10°F to 140°F(Normal)	-23°C to 60°C(Normal)
	(API SE) TYPE C-3	SAE 30	30°F to 140°F	-1°C to 60°C
AXLE	<u>CLARK</u>	SAE 75W	-40°F to -10°F	-40°C to -23°C
		SAE 75W-80	-40°F to 0°F	-40°C to -18°C
	MIL-L-2105C	SAE 80W-90	-13°F to 100°F(Normal)	-27°C to 37°C(Normal)
	(API GL-5)	SAE 85W-140	ABOVE 10°F	ABOVE -12°C
	<u>BRYAN</u>	SAE 20	BELOW 0°F	BELOW -18°C
	MIL-L-2104C	SAE 30	-20°F to 120°F(Normal)	-29°C to 49°C(Normal)
	(API CD)	SAE 40	ABOVE 100°F	ABOVE 37°C
	<u>RIMPULL</u>	SAE 75W-90	-65°F to 20°F	-54°C to -29°C
	MIL-L-2105C	SAE 80W-90	-20°F and above(Normal)	-29°C and above(Normal)
	(API GL-5)	SAE 120	-90°F to 120°F	-32°C to 49°C
HYDRAULIC	<u>WAGNER</u>	ISO VG32	-10°F to 120°F	-23°C to 49°C
	Premium Grade Hydraulic Oil	Note: Hydraulic Oil must include the following: Anti-Wear Agents; Rust, Foam and Oxidation Inhibitors; High Demulsibility; High Viscosity Index; Cold Weather Properties; Minimum Pour Point of -40°F and Minimum viscosity Index of 140.		
CHASSIS	<u>WAGNER</u>			
	Multipurpose Chassis Grease w/EP & MoS ₂	NLGI-1	BELOW 10°F	BELOW -12°C
		NLGI-2	ABOVE 10°F	ABOVE -12°C