MODEL HC68.
BOOK 137
SERIAL NO. _____

MACHINE SERIAL NUMBER

The machine serial number is stamped on the serial number plate which is located inside the machine cab, to the right of the operator. The machine model and serial number should always be furnished when ordering parts and corresponding regarding your machine. The serial number is the only means the distributor or factory has of ensuring that the correct parts will be furnished.

In the event that the serial number plate is lost, there is another number stamped on the right hand boom foot mounting lug on the upper revolving frame. This number, C_____should then be furnished as this will enable us to determine the machine serial number.

☆☆ Warranty ☆☆

Be it known that hereinafter Link-Belt Speeder Company of Cedar Rapids, Iowa is to be known as the Company.

The products manufactured by the Company, exclusive of used or re-built machinery or equipment, are subject to the following warranty:

"The Company warrants that its products are of good material and workmanship and agrees to replace without charge f.o.b. its factory any parts proving defective within six months from date of shipment from the factory, or within 1,000 hours of operation, whichever period shall expire first, or, at the option of the Company, the parts will be repaired; provided investigation by the Company shows such replacements or repairs are made necessary by inherent defect of material or workmanship, but it is agreed that the Company's liability under this warranty is limited to furnishing such parts f.o.b. factory or making such repairs. The Company will make no allowances for repairs or alterations unless the same be authorized in writing by the Company, and any claims of defective material or workmanship must be made within six months from the date of shipment from the factory. It is the intention of this paragraph to limit the Company's liability solely to the cost of the replacement parts f.o.b. factory, or, at the option of the Company, to its cost of repairing the defective parts, and no claim for damage, lost time, or anything elese, will be recognized by the Company. It is understood that engines, motors, and any other accessories furnished with the Company's equipment, are not warranted by the Company, but are sold only with the standard warranty of the manufacturer thereof".

The Company reserves the right to make alterations or modifications in their equipment at any time, which, in their opinion, may improve the performance and efficiency of the machine. They shall not be obliged to make such alterations or modifications to machines already in service. Any operation beyond rated capacity, or the improper use, application, neglect or alteration of said product, or the substitution upon the product of parts not made or approved by the Manufacturer shall void such warranty.

LINK-BELT SPEEDER SERVICE MANUAL

QUICK REFERENCE SYSTEM

Book No. 137 4C68

FORM NO. 68-A-750-61 Always give machine number when ordering parts PRINTED IN U.S.A.

PREFACE

The productive life of any machine depends largely on the care and consideration given it. This especially holds true of such equipment as cranes and excavators.

Link-Belt Speeder machines embody the best of engineering knowledge, years of experience, and construction in accordance with the high standards of the Company. The present machine age and universal use of the automobile has taught most people to appreciate that systematic, periodical inspection and maintenance will be repaid with a longer period of satisfactory service.

This instruction book was compiled to explain the adjustments necessary for proper operation of the machine. A study of this book will acquaint operator or serviceman with the construction of this equipment and enable him to readily diagnose and remedy most troubles which may arise. It is advisable to correct minor troubles before they develop into costly major shut-downs.

Right hand and left hand parts, as referred to in this book, are determined by facing boom from rear of machine. Operator's position is located on left hand side of machine.

We do not attempt to outline what part or parts of the cab it might be necessary to remove to perform your particular job as this will vary depending upon what equipment or tools are available.

Disassembly procedures are outlined using in all cases possible OTC tools and prescribed methods. In all cases, standard tools were used except where otherwise indicated. Number and description of tools are shown in the text.

Any questions pertaining to the care and upkeep of this equipment which have not been covered in this book should be directed to your nearest Link-Belt Speeder distributors, or Link-Belt Speeder Corporation.

Link-Belt Speeder Corporation reserves the right to make alterations or modifications in this equipment at any time, which in their opinion may improve the performance or efficiency of the machine. The manufacturer shall not be obliged to make such alterations or modifications to machines already in service.

SECTION 1 - PROTECTIVE MAINTENANCE AND LUBRICATION TRUCK CARRIER UNIT

BEFORE STARTING OPERATIONS

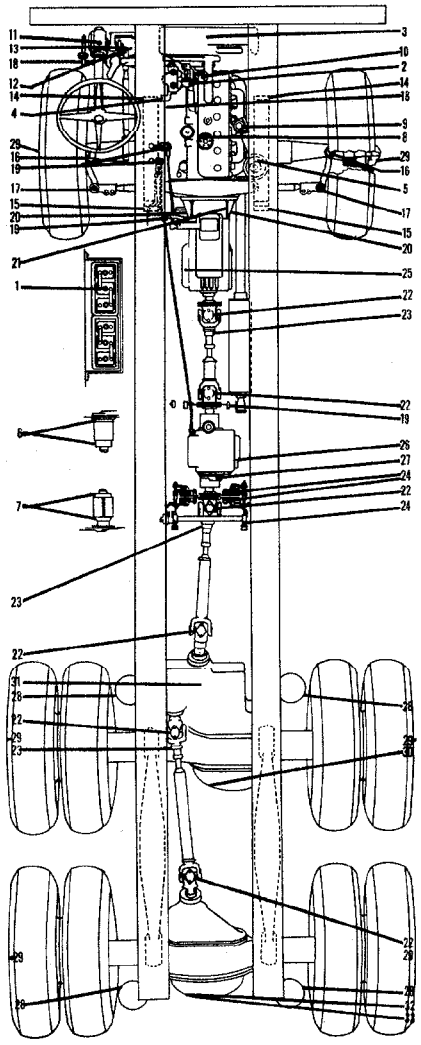
OPERATION	REMARKS
Fuel Tank	Check fuel supply and fill tank if necessary.
Engine	Check oil and water levels, and other items recommended by engine manufacturer.
	Check fan belt, compressor and power steering pump belts for proper tension.
Master Clutch	Observe operation of clutch and check the adjustment. The clutch should engage freely, hold when engaged and not drag when disengaged.
Tires	Test for proper inflation pressure for type of operating conditions.
Wheels	Check rim studs and tighten if necessary.
Brakes	Check air pressure 100-110 psi maximum. Check air warning buzzer for operation at 60 psi. Check hand emergency brake operation and adjustment. Check foot brake operation. Drain accumulated water from air reservoir tanks.
Steering	Check ease of turning. Number of revolutions of steering wheel from center to extreme right and left must be equal.
Electrical	Check head lights, clearance lights, turn signals, park lights, tail and stop light, windshield wiper, and horn. Check instrument panel gauges. Check battery water level and fill if necessary.
	Daily
Engine	Provide 8 hour lubrication and maintenance as outlined by manufacturer.
Radiator	Check coolant level. Test anti freeze in Winter.
Battery	Check water level.
Tires	Test for proper inflation pressure for type of operating conditions.
Brakes	Check air pressure 100-110 psi maximum. Check air warning buzzer for operation at 60 psi. Check hand emergency brake operation and adjustment. Check foot brake. Check hand air brake.
Air Reservoirs	Drain accumulated water.
Power Steering	Check oil level in reservoir. Change filter if oil discolored.
	Weekly
Main Transmission Auxiliary Transmission Rear Axles	Check lubricant level and fill if necessary with specified lubricant.
Crankcase Breather	Clean and oil breather.

PROTECTIVE MAINTENANCE AND LUBRICATION (Continued)

OPERATION	REMARKS
	Monthly or 1000 Miles
Crankcase Breather Air Cleaner	Clean and oil. Clean oftener under adverse conditions, dust, sand, etc.
Air Compressor	Place a few drops of oil on unloading valve mechanism.
Steering Gear	Check lubricant level and fill if necessary.
Cab Door Hinges, Latch	Lubricate with light oil.
Clutch Pedal Rod	Lubricate pillow bearings.
Spring Pins and Shackles Steering Linkage Steering Knuckles	When lubricating, force lubricant into the fitting until the old lubricant, dirt and water are expelled.
Brake Camshaft	Avoid overlubricating to prevent grease from entering brakes.
Shift Linkage	Use engine oil.
Emergency Brake Linkage	Use engine oil.
Carburetor Linkage	Use engine oil.
Clutch Release Bearing	Avoid overlubricating.
Generator	Engine oil. Avoid overlubrication.
Starter	Engine oil. Eight to ten drops each cup.
	Semi-Annually or 5,000 Miles
Wheel Bearings	Repack with grease. Refer to Section 2 for packing and reassembly instructions.
Distributor	Lubricate cam post.
Power Steering Reservoir	Drain, flush and refill. Change filter.
Universal Joints	Lubricate with low pressure grease gun to avoid damaging seals.
Front Rear Axle	Drain and refill.
Rear Rear Axle	Drain and refill.
Power Divider	Drain and refill.
Main Transmission	Drain and refill.
Auxiliary Transmission	Drain and refill.
	Annually or 10,000 Miles
Water Pump	Remove plug and lubricate with wheel bearing grease. Fill housing using short-fiber grease in low pressure gun.
Window Regulator	Remove door panel and lubricate regulator slide with light grease.
Air Compressor	Remove cylinder head and clean carbon from discharge and unloading valves. Adjust valve clearance .010" to .015" inches. Inspect governor for proper operation.

TRUCK LUBRICATION CHART

KEEP GREASE, OIL, CONTAINERS AND GUNS CLEAN. WIPE ALL FITTINGS BEFORE LUBRICATING.



No.	Description	No. Points	Daily	Weekly	Monthly or 1000 Mi.	Semi Annually or 5000 Mi.
1	Batteries	6	Check & Fill			
2	Crankcase	1	Check & Fill		Oil & Filter	
3	Cooling System	1	Check & Fill		Clean Breather	
4	Compressor Unloader Valve	1			EO	
5	Air Cleaner	1			Clean-EO	
6	Generator	2			EO	
7	Starter	2			EO	
8	Distributor	2			EO	
9	Carburetor Linkage	4			EO	
10	Power Steer Reservoir	1	Check & Fill			
11	Steering Gear	1			Check & Fill	
12	Steer Linkage	2			CG	
13	Drag Link	2			CG	
14	Spring Bolt	4			CG	
15	Spring Shackle	2			CG	
16	Steer Knuckle	2			CG	
17	Tie Rod	2			CG	
18	Clutch Pedal Rod	3			CG	
19	Control Linkage	5			CG	
20	Clutch Shaft	2			CG	
21	Clutch Release Brg.	1			CG	
22	Universal Joint	6			CG	
23	Slip Joint	3			CG	
24	Emergency Brake	6			CG	
25	Main Transmission	1		Check & Fill		Change
26	Aux. Transmission	1		Check & Fill		Change
27	Speedometer Adapter	1				CG
28	Brake Camshaft	4 or 6			CG	
29	Wheel Bearing	4				WG
30	Front Rear Axle	1		Check & Fill		Change
31	Power Divider	1		Check & Fill		Change
32	Rear Rear Axle	1		Check & Fill		Change
33	Axle Vents (Rear Axles)	2			Clean	

KEY

CG=Chassis Grease
WG=Wheel Bearing Grease } See Note 5
GL=Gear Lubricant
EO=Engine Oil

Note 1: A heavy duty refined petroleum product (with detergent and anti-oxidant additives), to meet or exceed MIL-O-2104A. Mobil Delvac Special, or equal.

Note 2: Type A-Suffix A (Armour Research Qualified) Aniline point must be between 200°-250°. (test method ASTM No. D611) Mobilfluid #200, or equal.

Note 3: A straight mineral gear oil. Mobilube C140, or equal.

Note 4: An extreme pressure lubricant containing defoamant additives. It must meet or exceed MIL-L-2105. Mobilube EP90, or equal.

Note 5: Mobilgrease Special (with Moly), or equal.

Capacities:	TRUCK MODELS HC68	HC68A	RECOMMENDATIONS
Fuel Tank	35 Gal	35 Gal	
Cooling System:			
IHC Engine With Radiator	28 Qts.	28 Qts.	Clean and flush radiator and block seasonally. Anti freeze in winter.
GM Engine With Radiator	24 Qts.	24 Qts.	
Crankcase IHC Engine & Filter	10-1/2 Qts.	10-1/2 Qts.	Use SAE 10W30 Detergent Engine Oil See Note 1.
Crankcase GM Engine & Filter	12-1/2 Qts.	12-1/2 Qts.	
IHC Engine Air Cleaner	3-1/2 Pts.	3-1/2 Pts.	
GM Engine Air Cleaner	13 Pts.	13 Pts.	
Power Steer Pump Reservoir	2 Qts.	2 Qts.	Automatic Transmission Fluid. See Note 2.
Main Transmission	16 Pts.	16 Pts.	Use SAE140 Gear Lubricant.
Auxiliary Transmission	7 Pts.	7 Pts.	See Note 3.
Steering Gear	1 Pt.	1 Pt.	Use SAE 90 E.P. Gear Lube See Note 4.
Front Rear Axle	28 Pts.	24 Pts.	
Rear Rear Axle	31 Pts.	22 Pts.	
Power Divider	3 Pts.	----------	

STORAGE INSTRUCTIONS AND TOOLS

SPECIAL TOOLS - TRUCK	PART NO.
Wheel Wrench	PC332
Tire Lug Wrench	PC242
Tire Gauge	PC244
Tire Inflation Hose Assy.	PC245
Consisting of the following:	
Air Chuck	PC246
Air Hose	PC248
Hose Clamps	PC249
Service Plug	AC3692
Male Coupling	PC247

STORING A TRUCK

When a truck is not to be used for a period of time, it should be parked in a dry and protected place and the following procedure should be observed:

1. Wash the truck and completely lubricate the chassis (refer to lubrication chart).

2. Drain the engine oil and flush with flushing oil. Refill with new oil. Run the engine until the oil is thoroughly circulated.

3. CAUTION: Drain the fuel tank, fuel lines,fuel pump, and carburetor fuel bowl. Run the engine until the carburetor is dry. If gasoline is allowed to remain in the fuel system a gummy substance will form in the carburetor jets and passages, causing serious trouble. Be sure to drain the system thoroughly. The gum deposits can be dissolved with a mixture of 1 part alcohol and 1 part benzol, or with acetone.

4. Remove the battery and store in a dry place.

5. Drain and flush the radiator and cooling system. BE SURE all drains are open.

6. After the engine has cooled, remove the spark plugs and pour a small quantity of SAE-50 engine oil in each cylinder through the plug holes. Then turn the engine over by hand a few times to thoroughly distribute the heavy oil over the pistons and cylinder walls. BE SURE to replace the spark plugs. Remove the valve cover and flush the valves, rocker arms, and push rods with SAE-50 engine oil. Replace the valve cover.

7. Clean the air cleaner and refill to indicated level with new oil.

8. Block up the truck so that the weight is off the tires.

9. If the storage is to be less than thirty days and complete storage preparations are not made, the principle hazard is gum formation in the fuel system. If the fuel system is not drained, the engine should be run for short periods at operating temperatures during the storage interval. This will flush out the fuel lines and carburetor, reducing the danger of gum formation. CAUTION: Due to the formation of poisonous gases, make certain that the storage area is well ventilated before running the engine.

SERVICING A TRUCK AFTER STORING

When a truck is returned to service the following procedure should be followed:

1. Close the drains and fill the cooling system with clean water (use antifreeze if required). Inspect all hose and water pump connections for water leaks.

2. Fill the fuel tank and examine the condition of fuel filter glass bowl gasket. The gasket must form a good seal, otherwise the pump will not supply fuel to the carburetor.

3. Test and install the battery. IMPORTANT: Before starting the engine, see "Generator Polarity" instructions shown under Electrical System Maintenance in engine manufacturers manual.

4. Check the oil level in the air cleaner and refill if necessary.

5. Check the oil level in the engine. Remove the spark plugs and pour a small quantity of light engine oil in each cylinder through the spark plug holes. Turn the engine over by hand a few times and then replace the spark plugs. Remove the valve cover and flush the valves, and push rods with SAE-50 engine oil. Replace the valve cover.

6. Check the oil level in the transmission, in the rear axle, and in any auxiliary unit.

7. Check the air pressure in all tires and be sure to replace the valve caps.

PROTECTIVE MAINTENANCE AND LUBRICATION
UPPER MACHINE UNIT

IMPORTANT

Read the following instructions before attempting to operate a new machine:

1. Operate at half throttle during first 16 hours (two shifts) of operation--a "break-in" period under moderate loads will assist in providing long and trouble-free performance.

2. Inspect clutch and brake linings periodically during "break-in" period--poor lining contact or misadjustment will create excessive heat which is detrimental to both lining and drum surfaces.

3. Lubricate bearings frequently. Intervals of lubrication for all bearings can be obtained from the lubrication chart.

4. Lubricate open gears at frequent intervals. A special molybdenum sulphide base grease has been applied at the factory, which, because of its special qualities, protects the tooth surfaces during the important "break-in" period. This grease should not be removed, but allowed to be absorbed by the normal gear lubricant being used.

5. Follow engine manufacturer's recommendations for proper engine care.

6. Disengage master clutch before attempting to work on machine. Replace all guards before starting machine.

BEFORE STARTING OPERATIONS

OPERATION	REMARKS
Hydraulic System	Check for correct operating pressures. Check for external leaks. Check Accumulator Pre-charge on Hydraulic Gauge, use method outlined in Section 9.
Fuel Tank	Check fuel supply and refill if necessary.
Engine	Check oil and water levels, and other items recommended by engine manufacturer.

EVERY 8 HOURS

OPERATION	REMARKS
Lubricate the following:	
Center Pin Bushing	
Open Gears	Maintain a film of clean grease on gear teeth at all times.
Conical Rollers	Use Engine Oil.
Mast and Boom Hoist Bridle Sheaves	Lubricate 8 hour fittings as specified on lubrication chart.
Rocker Arm Cams on Control Stand	Lubricate 8 hour fittings as specified on lubrication chart.
Attachments	Adjust for climatic conditions to regulate flow.
Vertical Shaft Bushings	Check for proper oil level. Drain Accumulator of hydraulic pressure or compensate for quantity which it may hold.
Chain Case Oiler	
Speed-O-Matic Sump Tank	
Engine	Provide 8 hour lubrication and maintenance as outlined by manufacturer.

PROTECTIVE MAINTENANCE AND LUBRICATION (Continued)

EVERY 40 HOURS

OPERATION	REMARKS
FIRST PERFORM ALL OPERATIONS LISTED UNDER "EVERY 8 HOURS"	
Lubricate the following:	
Turntable Gear Control Linkage Attachment Fittings	
Check Clutch Lining and Adjustment	Greasy, aged, or worn clutch lining should be cleaned or replaced if necessary. Check lining for proper lining contact and adjust if required.
Check Brake Bands	Inspect lining for wear and proper contact.
Turntable Roller Path	Keep path free of excess grease.
Pump Belt	Check for proper tension to prevent slippage.
Boom	Inspect Boom Angles and Connections for damage or wear.
Boom Cables	Check Boom Cables and Connections for wear. Prevent rust and corrosion by proper lubrication.
Engine	Provide 40 hour lubrication and maintenance as outlined by engine manufacturer.

EVERY 80 HOURS

OPERATION	REMARKS
FIRST PERFORM ALL OPERATIONS LISTED UNDER "EVERY 40 HOURS"	
Lubricate the following:	
Horizontal Shaft Bearings Vertical Shaft Bearings	Lubricate sufficiently to fill bearing with grease. Over-Lubrication could allow excess grease to collect on clutch or brake surfaces.
Control Stand Arm Cams	Use SAE30 Oil
Master Clutch Bearings	Caution, do not over-lubricate.
Engine	Provide 80 hour lubrication and maintenance as outlined by engine manufacturer.

EVERY 250 HOURS

OPERATION	REMARKS
FIRST PERFORM ALL OPERATIONS LISTED UNDER "EVERY 80 HOURS"	
S-O-M Oil Filter	Change Filter Cartridge. Wash and clean housing in clean solvent and reassemble.
Grease Tubes	Inspect lines for damage, be sure grease is reaching Bushing.
Fairleader Sheaves	Inspect grooving for wear. Replace broken or damaged sheaves.
Dipper Stick Racks and Pinions	Inspect for wear and need for adjustment.
Engine	Provide 250 hour lubrication and maintenance as outlined by engine manufacturer.

PROTECTIVE MAINTENANCE AND LUBRICATION (Continued)

EVERY 500 HOURS

OPERATION	REMARKS
FIRST PERFORM ALL OPERATIONS LISTED UNDER "EVERY 250 HOURS"	
Master Clutch	Check and adjust if necessary.
Counterweight	Check Bolts for looseness, Bolts should be tightened to 400 foot pounds of torque.
Engine	Provide 500 hour lubrication and maintenance as outlined by engine manufacturer.

EVERY 1000 HOURS OR SEASONAL

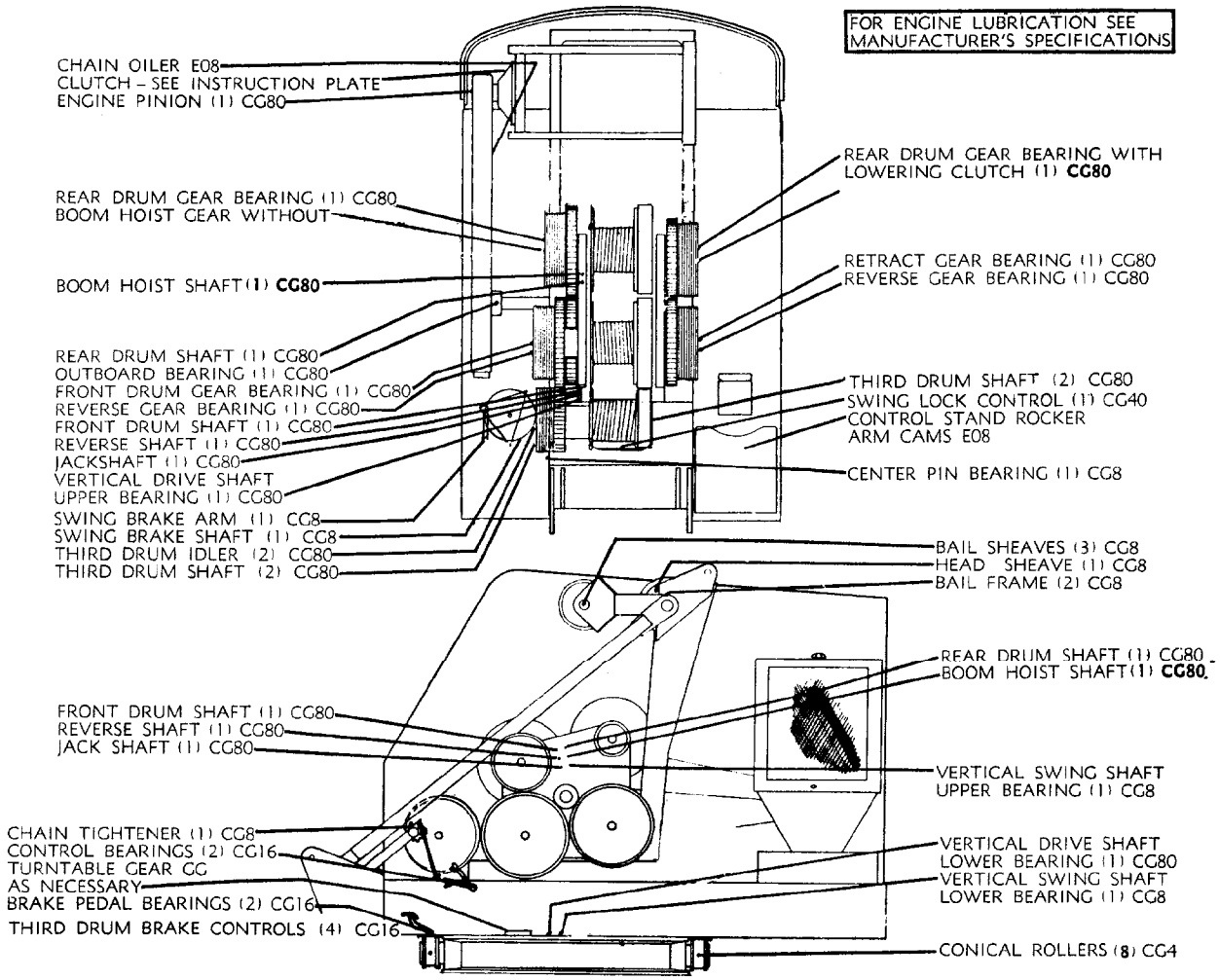
OPERATION	REMARKS	1000 Hrs.	SEASONAL
FIRST PERFORM ALL OPERATIONS LISTED UNDER "EVERY 500 HOURS"			
Reverse Bevel Gears	Inspect bevel gears for proper backlash	*	
Turntable Gear	Inspect turntable gear and swing pinion for normal wear.	*	
Engine Drive Chain	Check engine drive chain for correct adjustment and wear.		*
Turntable Rollers	Inspect rollers and path for wear. Adjust if required.	*	
Speed-O-Matic Sump Tank	Drain, Clean and refill, make seasonal changes as required.	*	*
Cable Sheaves	Inspect sheaves for signs of wear or damage.	*	
Engine	Provide 1000 hr. lubrication and maintenance as outlined by engine manufacturer.		

Listed below are a number of important points that should be followed when putting machine in storage. Machines stored outside must be thoroughly protected or serious deterioration will result.

1. Machines should be stored under cover to reduce possibility of rust and deterioration.
2. If stored outside, certain procedures should be followed to protect machine as much as possible from weather elements.
   (a) Turntable roller path and roller machined surfaces should be protected with heavy oil.
   (b) All clutch and brake machined facings must be protected with covers of waterproof paper or suitable material to protect these surfaces from rust.
   (c) Open spaces around mast struts and boom hoist cables should be covered with waterproof paper to eliminate water coming in on machinery parts.
   (d) Levers should be in neutral position; foot brakes in off position.
   (e) Refer to engine and clutch manual for instructions on storage of power unit.
   (f) Grease all points of lubrication with grease gun. Oil other points, levers, linkage etc., with oil before storing machine.

MACHINE LUBRICATION CHART

KEEP GREASE, OIL, CONTAINERS AND GUNS CLEAN. WIPE ALL FITTINGS BEFORE LUBRICATING.



DISENGAGE MASTER CLUTCH BEFORE ATTEMPTING TO WORK ON MACHINE. REPLACE ALL GUARDS BEFORE STARTING MACHINE.

CAPACITIES

FUEL TANK	36 GAL.
HYDRAULIC SUMP TANK – SPEED-O-MATIC OIL	7 GALLONS
EXTRA LIGHT	JH1660
LIGHT MEDIUM	JH893
MEDIUM HEAVY	JH1007
EXTRA HEAVY	JH1033
EXTRA EXTRA HEAVY	JH1557
OIL FILTER ELEMENT (PKG OF 6)	PX105

TO DETERMINE PROPER GRADE OF OIL FOR EXISTING CONDITIONS REFER TO RECOMMENDATIONS IN SPEED-O-MATIC CONTROL SECTION IN SERVICE MANUAL.

USE ENGINE OIL ON ALL OILING POINTS