NEW HOLLAND

Service Manual

FORD
NEW HOLLAND

Skid-Steer Loaders
L-781, L-784, L-785

40078130



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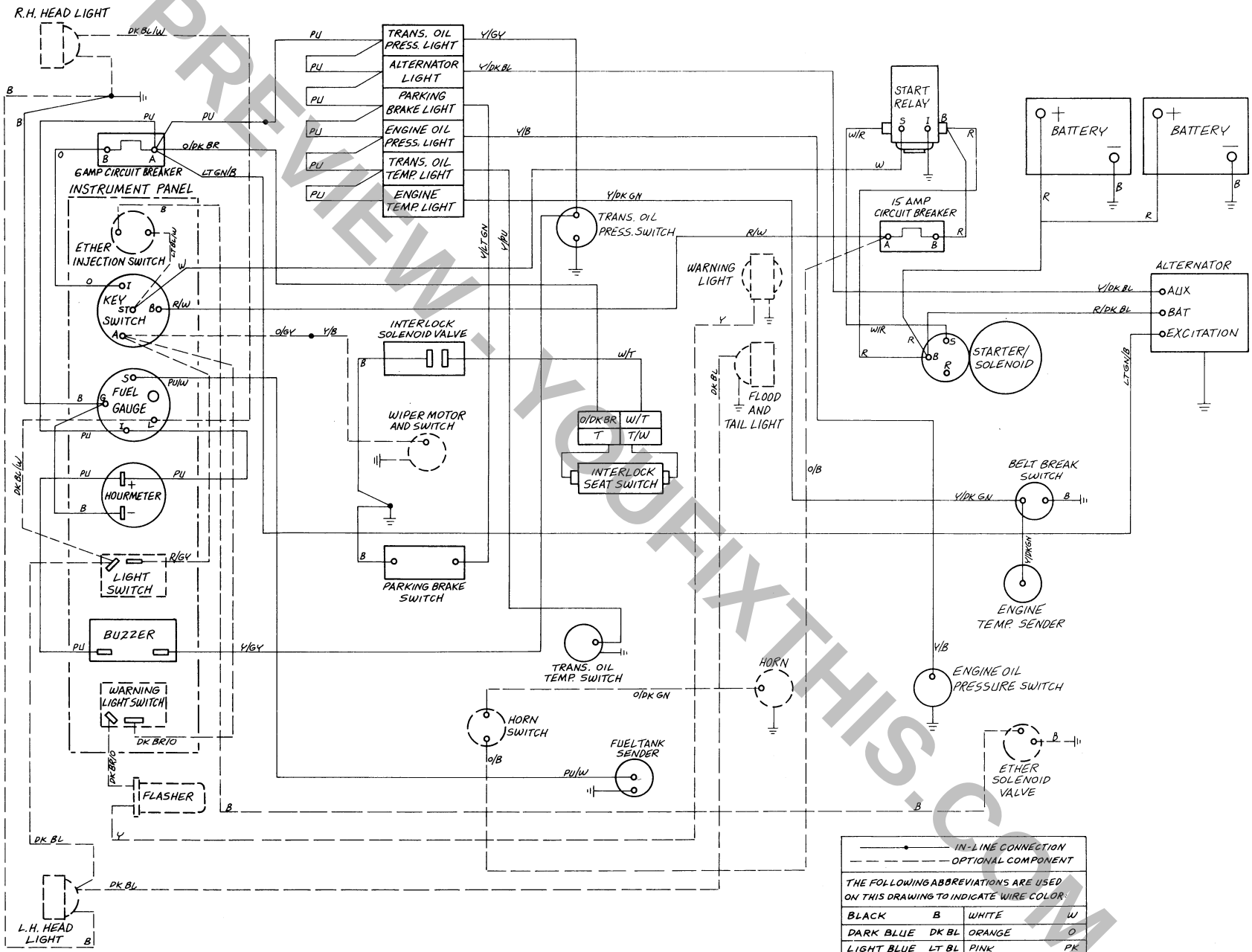
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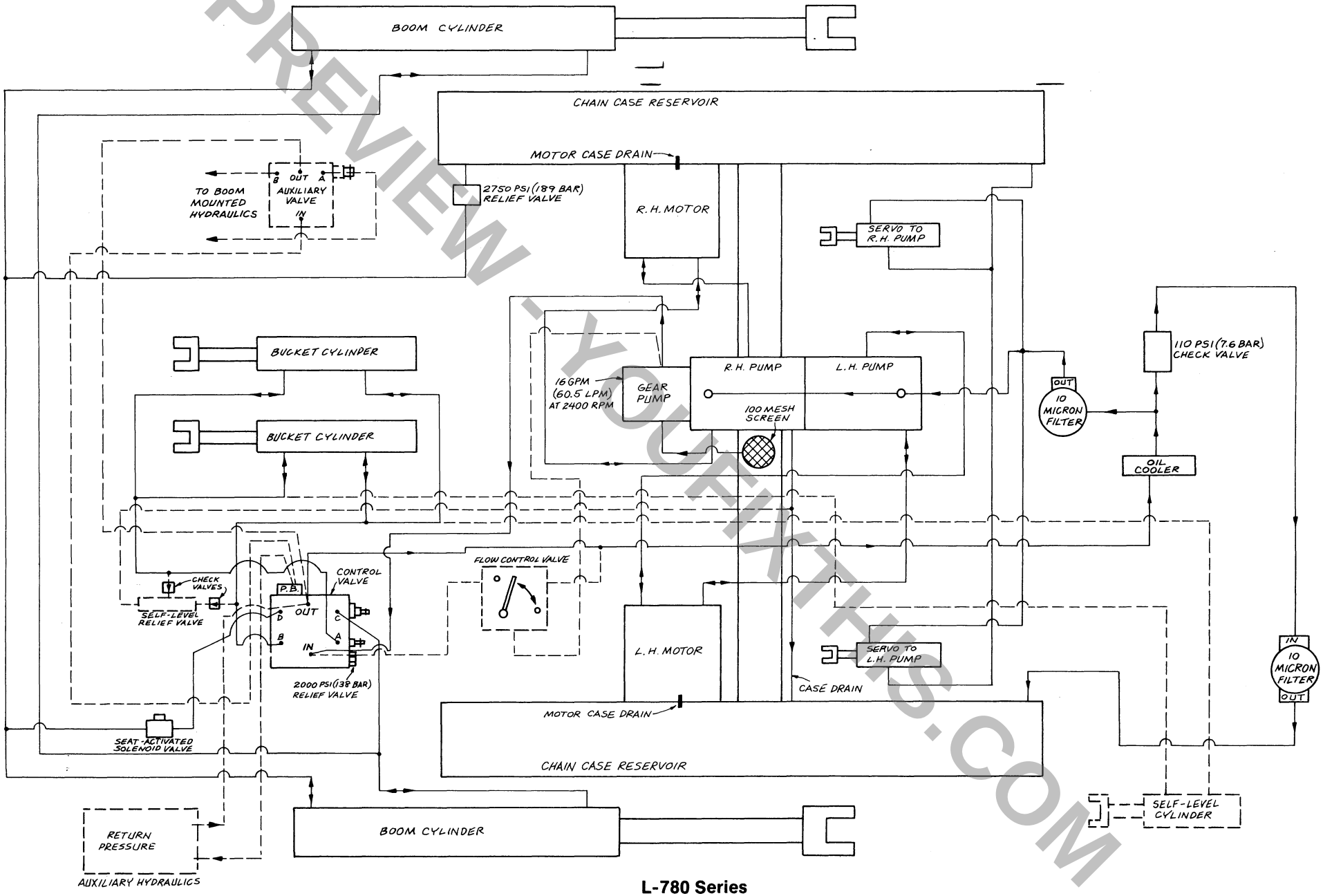


L-781 DIESEL WIRING DIAGRAM

FIGURE 13-2

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L-780 Series

LOADER HYDRAULIC DIAGRAM

– – – – – OPTIONAL EQUIPMENT

FIGURE 13-8

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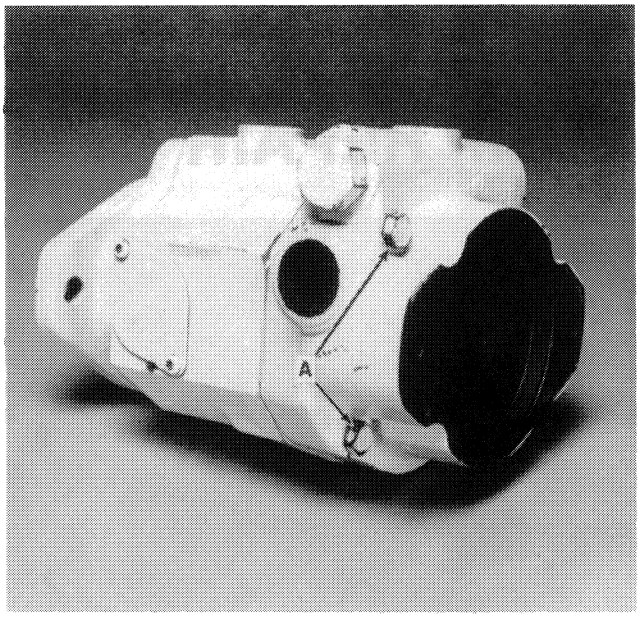


FIGURE 4-4

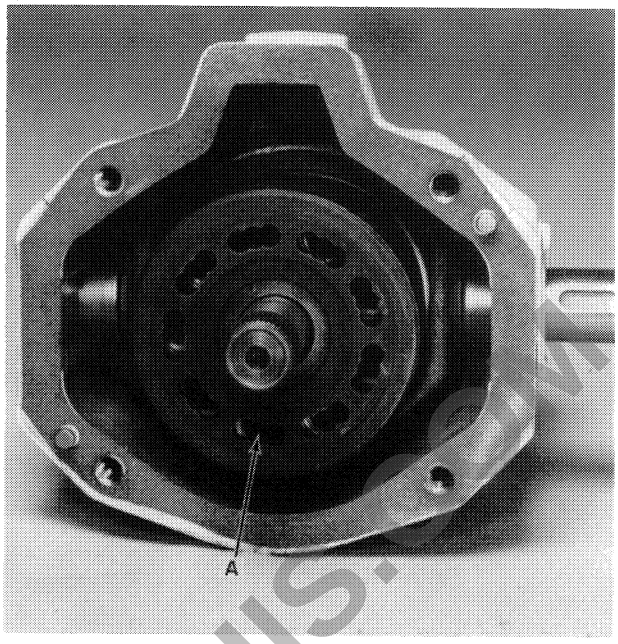


FIGURE 4-6

5. To separate the valve plate from the pump housing, remove four bolts, A, Figures 4-4 and 4-5, and tap valve plate, B, with a plastic or rubber mallet to separate it from pump housing, C, Figure 4-5.

   NOTE: The pump housing has two alignment dowel pins, D, Figure 4-5.

6. Hold the rotating piston block, A, Figure 4-6, in one hand and tilt the open end of the housing down. Turn the rotating piston block and pull it out as a complete unit without scratching or burring the parts.

7. The rotating group parts are shown in Figure 4-7.

   A Piston block

   B Piston and shoe assembly (also shown in Figure 4-8)

   C Shoe plate

   D Spherical washer

   Lift these parts out of the pump rotating block and carefully lay them on cardboard to avoid damage.

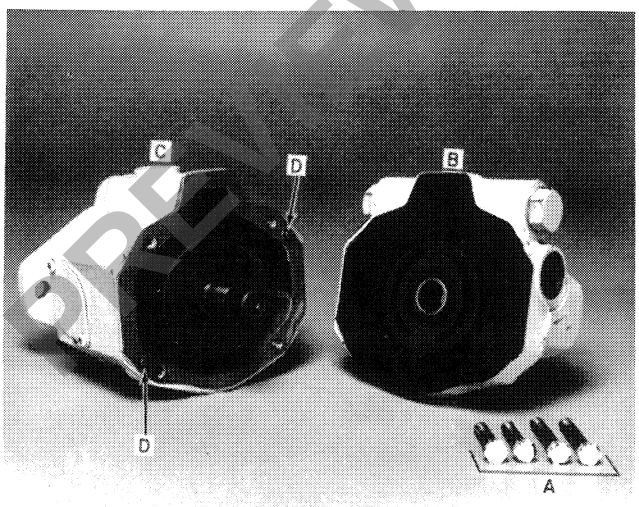


FIGURE 4-5

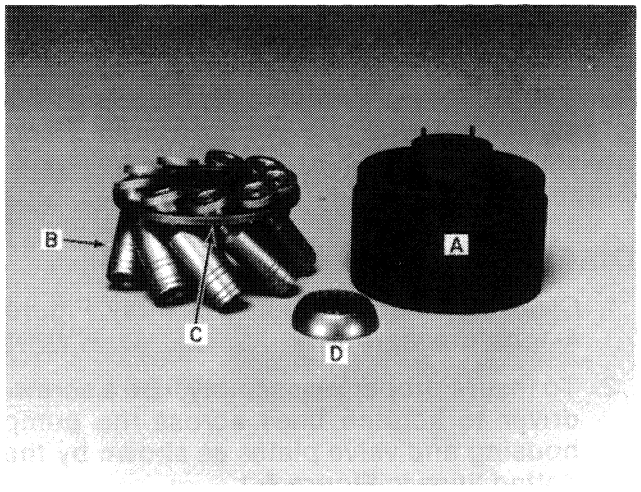
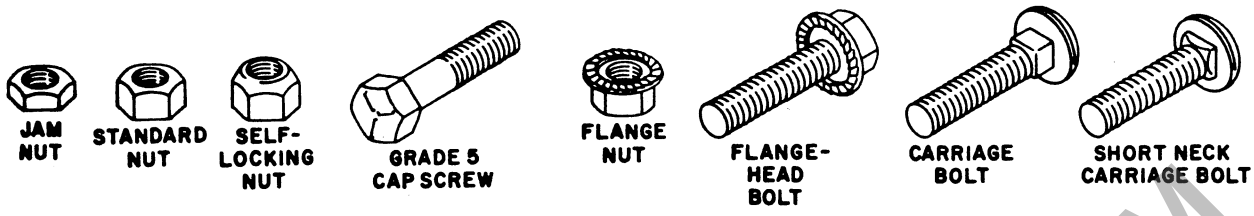


FIGURE 4-7

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HARDWARE KEY



Cap Screw — CS
Carriage Bolt — CB
Short Neck Carriage Bolt — SNCB
Flat Washer — FW
Lock Washer — LW
Lock Nut — LN
Regular Nut — N
Jam Nut — JN

National Fine Thread — N.F.
Grade 5 — GR. 5
Grade 8 — GR. 8
Cotter Pin — CP
Machine Screw — MS
Flange Nut — FN
Flange Head Bolt —FHB



STAINLESS STEEL BOLT
(TORQUE-USE GRADE 5 SPECIFICATIONS)

MINIMUM HARDWARE TIGHTENING TORQUES

IN FOOT POUNDS (NEWTON-METRES) FOR NORMAL ASSEMBLY APPLICATIONS

	GRADE 2 SAE	GRADE 5 SAE		GRADE 8 SAE	
Bolt Size	Unplated or Plated	Unplated	Plated	Unplated	Plated
1/4"	5 (7)	8 (11)	7 (9)	12 (16)	10 (13)
5/16"	10 (13)	18 (24)	15 (20)	26 (35)	21 (28)
3/8"	18 (24)	31 (42)	25 (34)	48 (65)	39 (53)
7/16"	31 (42)	53 (72)	43 (58)	75 (101)	60 (81)
1/2"	45 (61)	82 (111)	66 (89)	115 (155)	92 (124)
5/8"	82 (111)	170 (230)	140 (189)	235 (317)	190 (256)
3/4"	155 (209)	290 (392)	230 (310)	415 (560)	330 (445)
7/8"	165 (223)	430 (580)	340 (459)	600 (810)	480 (648)
1"	250 (337)	640 (864)	510 (688)	900 (1215)	720 (972)

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PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine lacks power.	Bad fuel.	Drain fuel tank and change fuel filters.
	Fuel filter plugged.	Change fuel filters.
	Injectors fouled (Diesel engines).	Have diesel service check and calibrate injectors.
	Ignition system (Gas engines).	See engine operator's manual.
Loader creeps with control levers in neutral position.	Neutralizing spring mechanism not adjusted.	See Section 2.
	Pintle lever loose on pump pintle shaft.	Check key and tighten clamp bolt.
	Pintle shaft broken.	Remove and repair transmission.
Loader does not run straight when both control levers are in the forward position.	Steering lever stop bolts not adjusted correctly.	See Section 2.
Engine runs but no ground drive.	Parking brake engaged.	Release parking brake.
	Hydraulic oil low.	Fill hydraulic reservoir with proper oil.
	Final drive gear or chain broken.	Replace gear or chain on side not driving.
Boom arms will not rise or rise slowly.	Low oil flow from pump.	Clean inlet screen.
	Low relief valve pressure.	Check pressure and replace relief cartridge if pressure is not correct.
	Seat switch unplugged.	Plug in wiring at seat or solenoid.
	Control linkage binding.	Free linkage.
	Bucket is overloaded.	Reduce load.
	Cylinder shafts are bent.	Replace.
	Cylinder seals are leaking.	Repair cylinders.
	Boom arms are binding at pivot points.	Locate and correct.
	Bucket tilt valve spool is not returning to center position.	Correct binding control linkage. Spool centering spring or spacers are damaged.
	Incorrect oil used in hydraulic system.	Change oil.
	Lift check plug sticking.	Clean check plug.

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SECTION 13
SPECIFICATIONS

AIR CLEANER

Dry-Type Filter
- Primary Element ..... N.H. 221409
- Safety Element ..... N.H. 266222

CAPACITIES

- Fuel Tank ..... 20 ga. (75.8 l)
- Engine Crankcase, L-785 ..... 6 qts. (5.7 l) + 1 with filter
- Engine Crankcase, L-784 ..... 4½ qts. (4.3 l) + ¾ (.70 l) with filter
- Engine Crankcase, L-781 ..... 8.5 qts. (8.0 l) + 1 with filter
- Hydraulic Reservoir ..... 88 qts. (83.3 l)
- Cooling System ..... 16 qts. (15.1 l)

OIL TYPES (Engine)

Perkins diesel engine crankcase oil API services SE-CC

Ambient temperature	Viscosity
Above 8°F (27°C)	SAE 30
30°F (-1°C) to 80°F (27°C)	SAE 20W-20
0°F (-18°C) to 30°F (-1°C)	SAE 10W
0°F (-18°C) and below	SAE 10W

OIL TYPE (Hydraulics)

Hydraulic Fluid ..... Universal Tractor Fluid Meeting J20A Specifications

ELECTRICAL SYSTEM

Batteries —

BCI 24, 12-volt battery having minimum cold cranking ability of 445 amps at 0°F (-18°C). Overall dimensions are 10¼" long x 6-13/16" wide x 8⅞" high. (260 mm long x 173 mm wide x 225 mm high). Anchored elements required.

STARTER SWITCH ..... Key start and solenoid

Alternator
1. Capacity ..... Standard alternator 37 amp
   Enclosed alternator 30 amp
2. Supplier ..... Motorola RA Series
3. Rectifier ..... Solid State
4. Regulator ..... Solid State

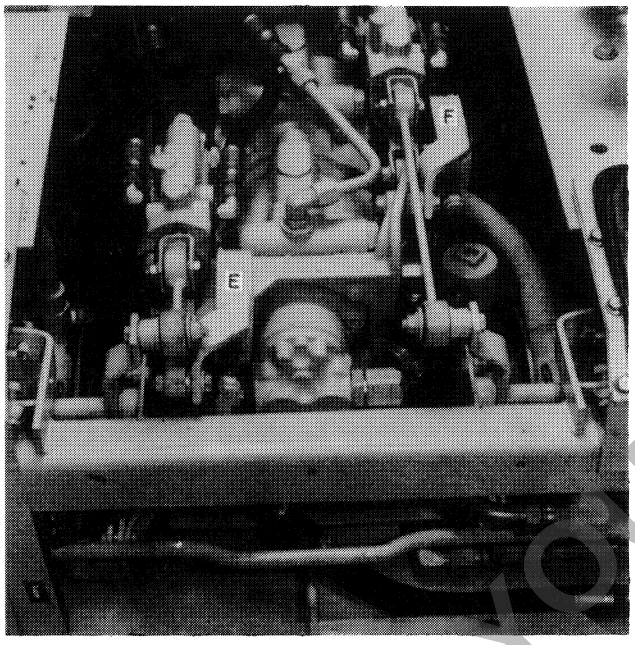
Headlights (optional) ..... Sealed beam, N.H. 636887 (G.E. 4406-1)

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SECTION 2
STEERING ADJUSTMENTS

CAUTION: MAKE ALL ADJUSTMENTS WITH THE ENGINE STOPPED UNLESS OTHERWISE SPECIFIED.



SHIELDS REMOVED FOR CLARITY. **FIGURE 2-1**

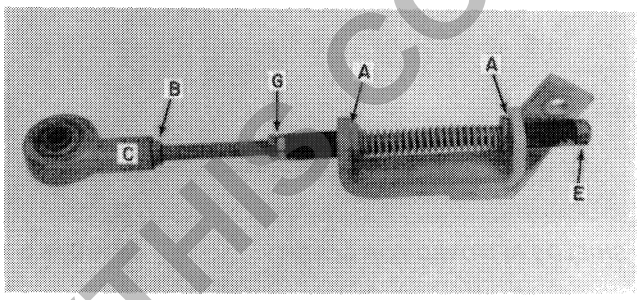


FIGURE 2-2

DRIVE CONTROL ADJUSTMENT PROCEDURE

If the machine creeps or the transmissions make a noise indicating they are being slightly stroked, a neutralizing adjustment is required.

CAUTION: TO MAKE A NEUTRALIZER ADJUSTMENT, BLOCK THE MACHINE OFF THE GROUND SO THE WHEELS TURN FREELY. RAISE THE BOOM AND PLACE IT ON THE BOOM LOCK PINS. WHEN THE ENGINE IS RUNNING, STAY CLEAR OF THE ROTATING WHEELS.

Neutralizer, E, Figure 2-1, controls the right drive wheels. Neutralizer, F, controls the left drive wheels. Check for free play in the neutralizer spring assembly first at A, Figure 2-2. If free play is found, adjust nuts, G, until no free play is present. Tighten the nuts securely.

If end play is present in the neutralizer, the loader will creep forward when the steering lever is moved forward and released. When the steering lever is pulled in reverse and released, the loader will creep in reverse. This indicates the neutralizer is not returning to the same position each time.

Clean all paint from the nylatron bushings to eliminate any binding in the brackets.

If the loader only creeps in one direction after moving the steering levers in forward and reverse, there is no free play in the neutralizer and only the following creep adjustments should be made.

NOTE: Remove all free play from the neutralizer assembly before adjusting the creep to insure that the steering levers return to the set position each time.

Loosen nut, B, Figure 2-2, retaining the neutralizer bushing assembly, C. Start the engine. If the wheels creep forward, thread one or both neutralizers to the rear at E. Thread the neutralizers to the front if the unit creeps rearward. Stop the engine. Retighten the hardware.

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PLEASE READ CAREFULLY!

INCLUDED THROUGHOUT THIS MANUAL AND ON MACHINE DECALS YOU WILL FIND PRECAUTIONARY STATEMENTS SUCH AS "CAUTION", "WARNING" AND "DANGER", FOLLOWED BY SPECIFIC INSTRUCTIONS.

THESE PRECAUTIONS ARE INTENDED FOR THE PERSONAL SAFETY OF YOU AND THOSE WORKING WITH YOU. PLEASE TAKE THE TIME TO READ THEM.

PERSONAL SAFETY!

CAUTION: THE WORD "CAUTION" IS USED WHERE A SAFE BEHAVIORAL PRACTICE ACCORDING TO OPERATING AND MAINTENANCE INSTRUCTIONS AND COMMON SAFETY PRACTICES WILL PROTECT THE OPERATOR AND OTHERS FROM ACCIDENT INVOLVEMENT.

WARNING: THE WORD "WARNING" DENOTES A POTENTIAL OR HIDDEN HAZARD WHICH HAS A POTENTIAL FOR SERIOUS INJURY. IT IS USED TO WARN OPERATORS AND OTHERS TO EXERCISE EVERY APPROPRIATE MEANS TO AVOID A SURPRISE INVOLVEMENT WITH MACHINERY.

DANGER: THE WORD "DANGER" DENOTES A FORBIDDEN PRACTICE IN CONNECTION WITH A SERIOUS HAZARD.

ADDITIONAL PRECAUTIONARY STATEMENTS SUCH AS "ATTENTION" AND "IMPORTANT" ARE FOLLOWED BY SPECIFIC INSTRUCTIONS. THESE STATEMENTS ARE INTENDED FOR MACHINE SAFETY.

MACHINE SAFETY!

ATTENTION: THE WORD "ATTENTION" IS USED TO WARN THE OPERATOR OF POTENTIAL MACHINE DAMAGE IF A CERTAIN PROCEDURE IS NOT FOLLOWED.

IMPORTANT: THE WORD "IMPORTANT" IS USED TO INFORM THE READER OF SOMETHING HE NEEDS TO KNOW TO PREVENT MINOR MACHINE DAMAGE IF A CERTAIN PROCEDURE IS NOT FOLLOWED.

IMPORTANT!

FAILURE TO FOLLOW THE "CAUTION", "WARNING", AND "DANGER" INSTRUCTIONS MAY POSSIBLY RESULT IN SERIOUS BODILY INJURY OR DEATH.

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6. Liberally oil the piston and place it inside the barrel, being careful not to damage the seals.
7. Slide the piston and cylinder head far enough into the barrel to install the snap ring.
8. Pull the piston outward far enough to seat the bearing against the snap ring.
9. Thread the spanner nut onto the cylinder head and torque it to 160-180 ft. lbs. (216-244 N·m).
10. Install the cylinder on the machine. Cycle the cylinder and check for leaks.

LABOR GUIDE

The following labor amounts are listed as a guide only. Working conditions and experience will vary the time it actually takes to complete each job.

Job	Man-Hours
Remove, repair, and replace one boom lift cylinder	1½ hrs.
Remove, repair, and replace one bucket cylinder	1½ hrs.

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