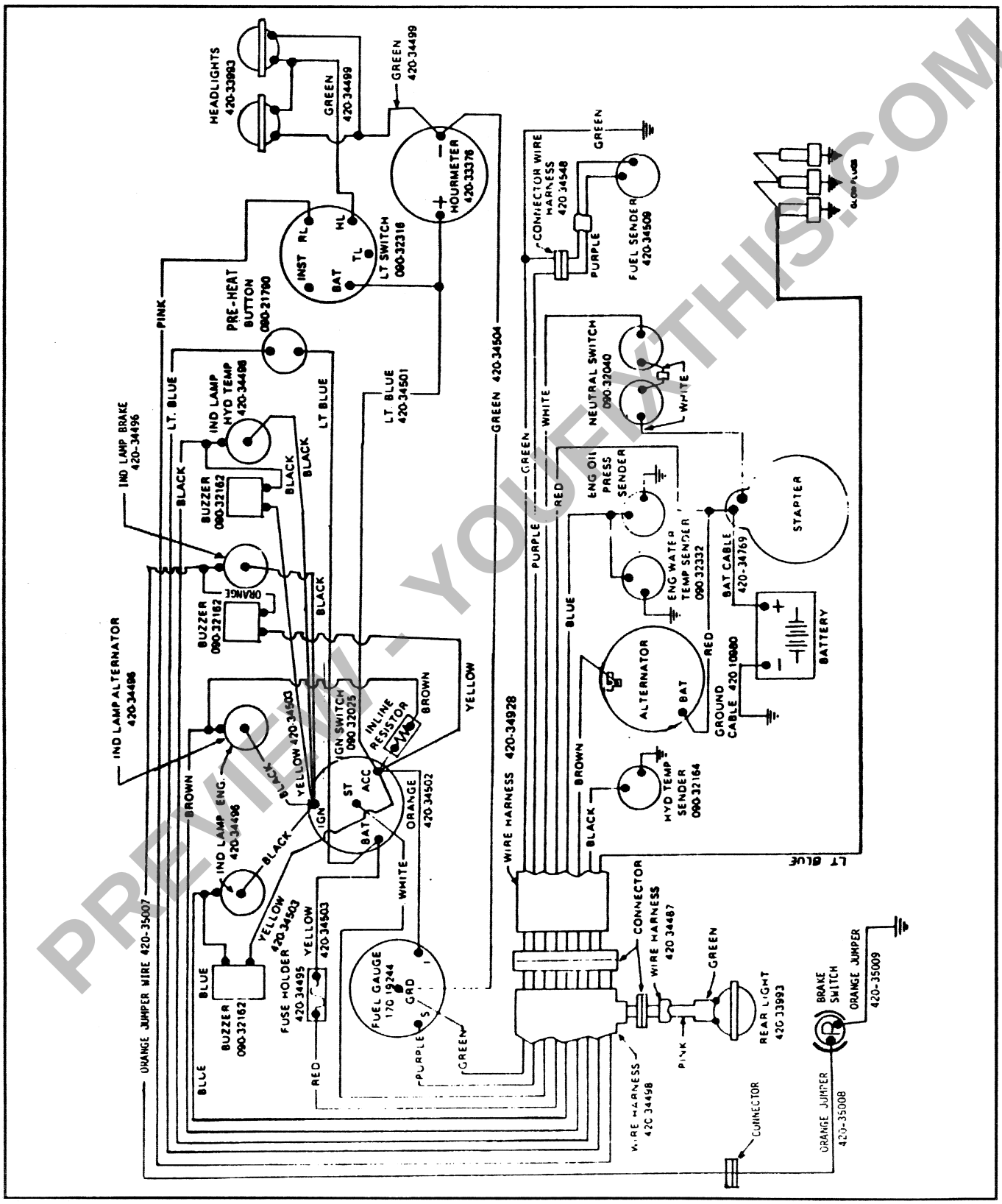
ELECTRICAL SYSTEM

WIRING DIAGRAM (DIESEL)

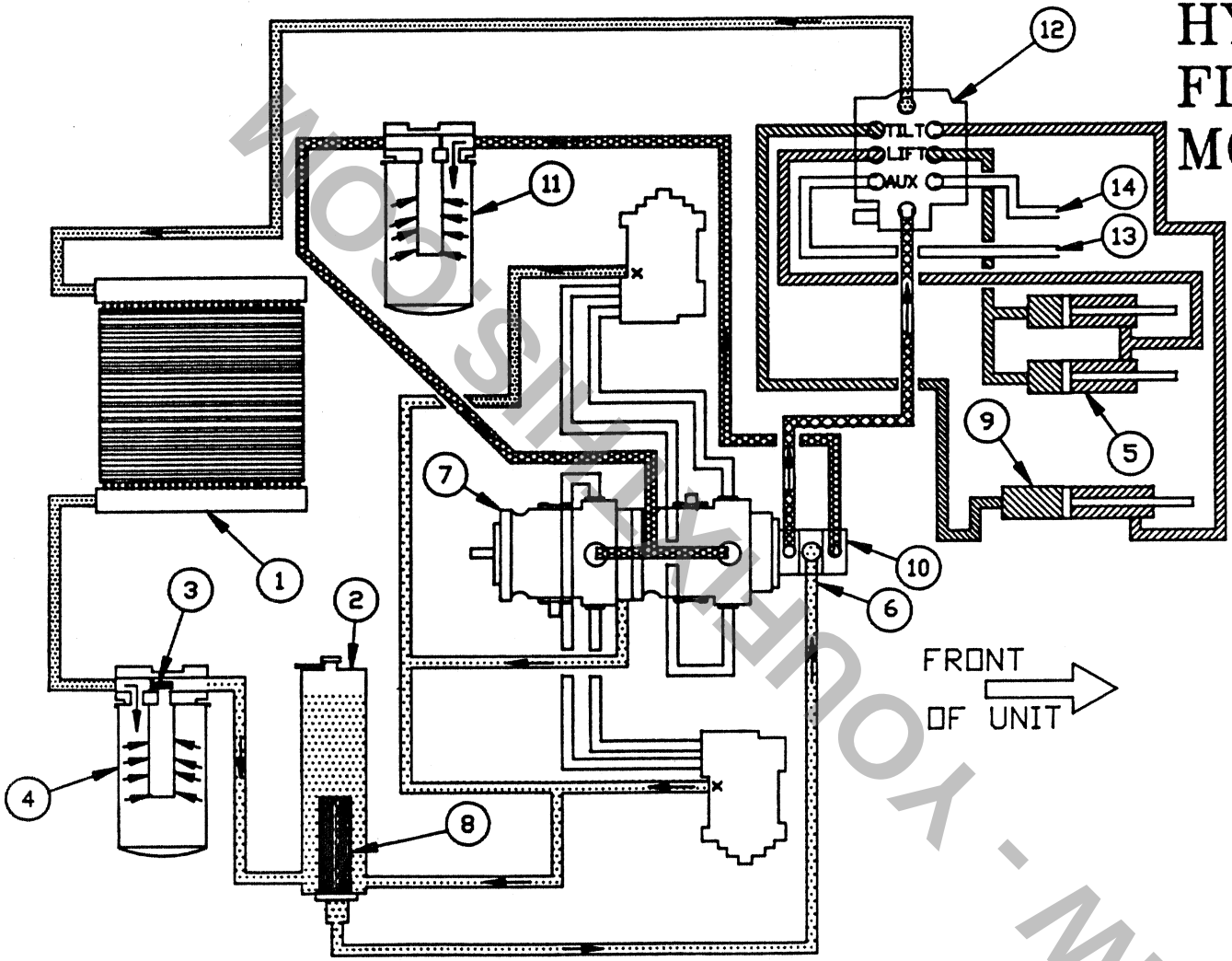
920



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HYDRAULIC FLOW CHART MODEL 920/930A

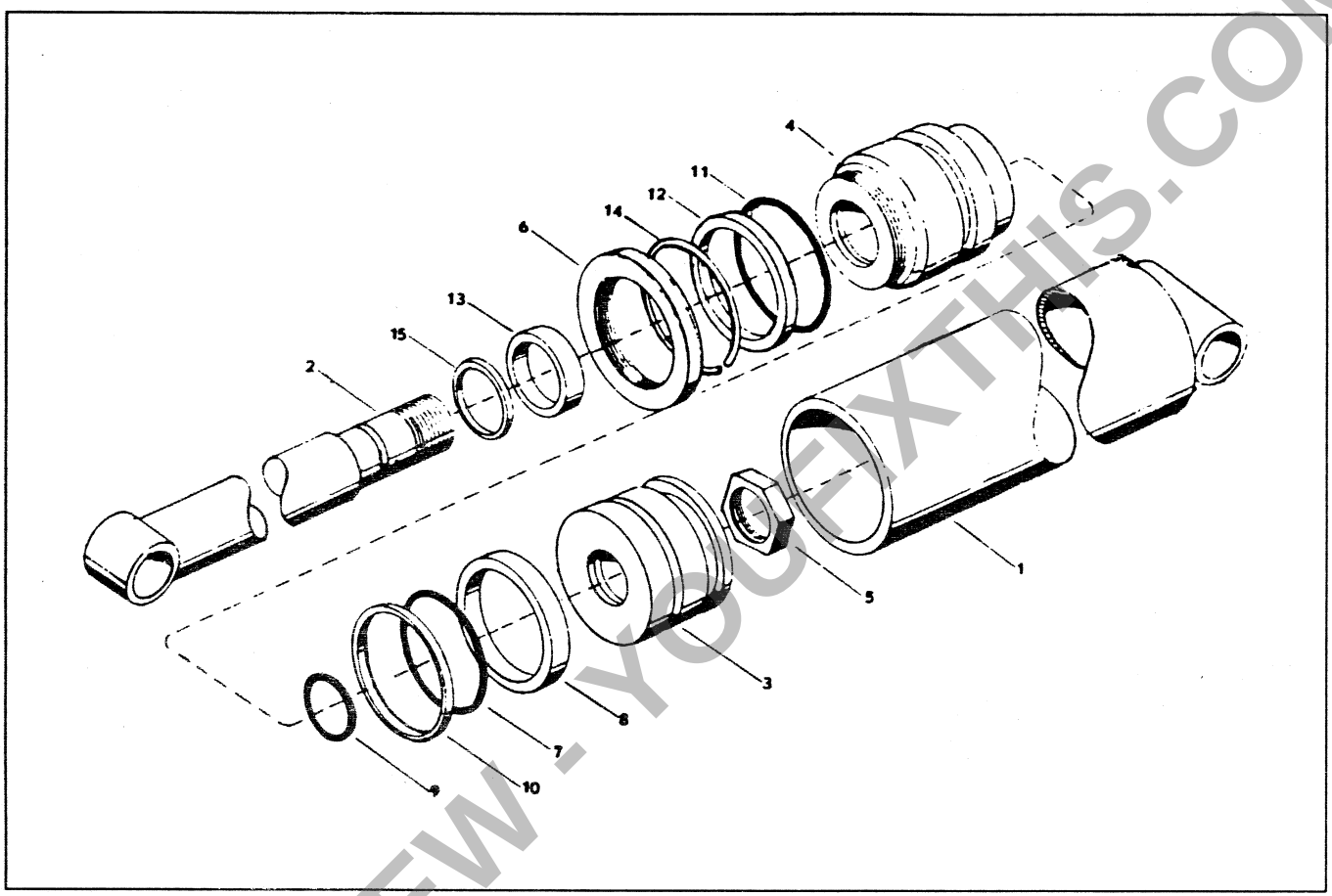


1. OIL COOLER
2. RESERVOIR
3. BY-PASS VALVE 25 PSI (1.7 bar)
4. RETURN FILTER 7 MICRON
5. LIFT CYLINDERS
6. TEMPERATURE SWITCH HYDRAULIC OIL 225° F (107° C)
7. TANDEM PISTON PUMP
8. SUCTION SCREEN
9. TILT CYLINDER
10. TANDEM GEAR PUMP
11. CHARGE FILTER 7 MICRON
12. CONTROL VALVE
13. AUXILIARY PORT
14. AUXILIARY PORT

- EXTEND CYL
- RETRACT CYL
- CASE DRAIN AND RESERVIOR
- CHARGE PRESSURE
- CONTROL VALVE SUPPLY PRESSURE

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HYDRAULIC SYSTEM
HYDRAULIC CYLINDERS
Diagram



1. Barrel
2. Rod
3. Piston
4. Gland
5. Special Nut
6. Special Nut
7. "O" Ring
8. Wear Ring, Piston
9. "O" Ring
10. Seal, Piston
11. "O" Ring
12. Backup Seal
13. Seal, Rod
14. Snap Ring
15. Wiper, Rod

Exploded View of Hydraulic Cylinder

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GENERAL INFORMATION
STANDARD TORQUE VALUE SPECIFICATIONS

NOTE: Some fasteners have torque specifications other than those shown below. Use this chart only for unspecified torques.

Torque value listed for both unplated and hex-head capscrews.

Screw Dia. Thread Pitch	Plain Head S.A.E. Grade 2 Foot - Pounds		3 Radial Dashes S.A.E. Grade 5 Foot - Pounds		6 Radial Dashes S.A.E. Grade 8 Foot - Pounds	
1/4 - 20	5		8		12	
1/4 - 28	6		10		14	
5/16 - 18	11		17		24	
5/16 - 24	13		19		27	
3/8 - 16	18		31		44	
3/8 - 24	20		35		49	
7/16 - 14	28		49		70	
7/16 - 20	30		55		78	
1/2 - 13	39		75		105	
1/2 - 20	41		85		120	
9/16 - 12	51		110		155	
9/16 - 18	55		120		170	
5/8 - 11	83		150		210	
5/8 - 18	95		170		240	
3/4 - 10	105		270		375	
3/4 - 16	115		295		420	
7/8 - 9	160		395		605	
7/8 - 14	175		435		675	
1" - 8	235		590		910	
1" - 14	250		660		990	

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HYDRAULIC SYSTEM
CONTROL VALVE
Service and Repair - Dukes Valve

RELIEF VALVE (See figure 4-8)

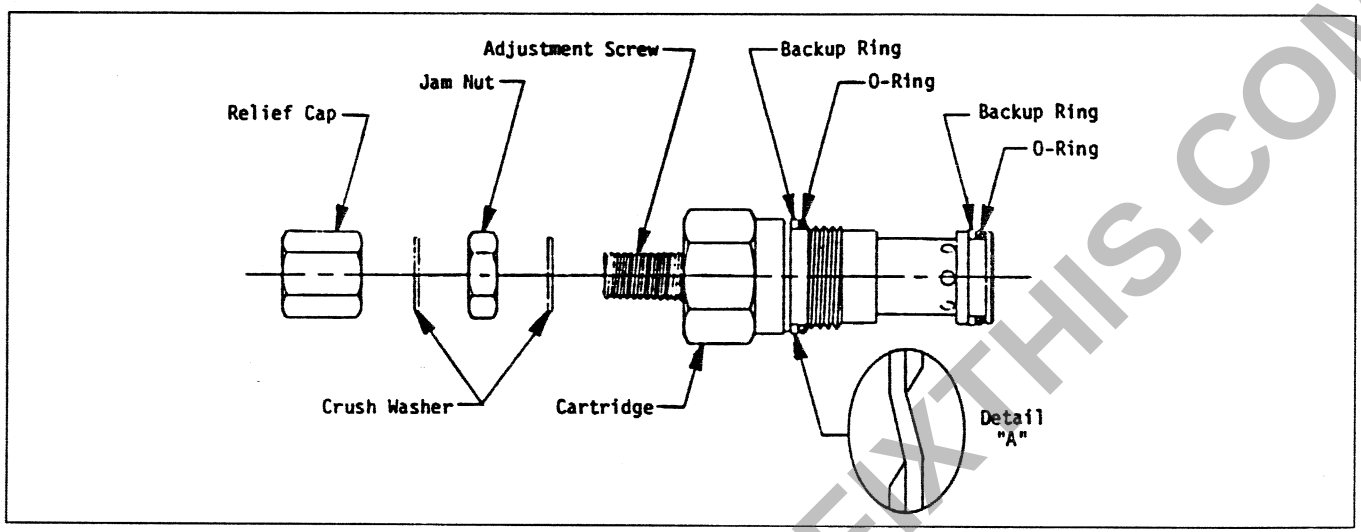


Figure 4-8

Procedure For Seal Replacement

1. Remove relief valve assembly from valve body. Remove and discard O-rings and backup ring from relief valve with a brass tool. Care must be taken not to scratch or nick relief valve cartridge.
2. Clean and dry the cartridge with a suitable solvent. Lubricate new O-rings and spiral-cut backup rings.
3. Install large backup ring over threaded area first. Detail "A" shows proper position of scarf - cuts of backup ring. This must be done to prevent backup ring from spiraling out of groove when installed. Next install large O-ring next to backup ring. Care must be taken not to cut or over stretch O-rings.
4. Install smaller backup ring in groove at end of cartridge as per instruction #3. Then install O-ring next to backup ring.
5. Insert cartridge in valve body and torque to 25-30 ft. lbs. (34-41 Nm).

Procedure for Crush Washer Replacement and Resetting Relief Valve Pressure

NOTE: Do not attempt without proper test equipment. This could result in damage to valve assembly or other components within the systems.

1. Remove relief cap, crush washer and jam nut. Discard old crush washer.
2. Install new crush washer over adjustment screw, screw on jam nut, but leave loose.
3. At this point, relief valve setting should be checked and readjusted if necessary. With 3/16" hex key, turn adjustment screw (clockwise to increase pressure setting, or counterclockwise to decrease setting) to proper setting.
4. After setting is reached, tighten down jam nut against crush washer and cartridge, using 3/16" hex key to prevent adjustment screw from turning. Torque jam nut to 16-20 ft. lbs (22-27 Nm).
5. Add the other crush washer and screw on the relief cap against crush washer and jam nut. Torque relief cap to 16-20 ft. lbs. (22-27 Nm). If oil leakage occurs, re-apply torque to jam nut and/or relief cap until leakage stops.

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HYDRAULIC SYSTEM
TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE
Hydraulic action is slow or has jerky movement in either lift or tilt functions	Check Hydraulic fluid level Cold oil Check control pedals for binding interference Insufficient engine speed Oil leaking past cylinder packings (See procedure for checking cylinders on pages 4-7, 8 & 9) Oil leaking within control valve Air leak in suction line Dirty hydraulic oil filter Restriction in suction line Hydraulic relief valve cartridge sticking, leaking internally, or pressure exceeds specification (See procedure for checking lift relief psi on page 4-4)
Hydraulic action in only one (1) circuit	Check control pedal linkage for binding or interference Check hydraulic cylinders for external damage and/or leakage (See checking procedure for cylinders on pages 4-6, 7 & 8) Control valve or parts of valve may need replacement
No hydraulic action	Check hydraulic fluid level Pedal lock is holding pedals in “neutral” Check to see if auxiliary lever is in “detent” Check for loose or leaking suction hoses or filters Check for obstruction in oil lines or valve Control valve or parts of valve need replacement Hydraulic relief valve cartridge is sticking or leaking internally (see procedure for checking lift relief psi on page 4-4) Hydraulic pump malfunctioning

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SPECIFICATIONS
920 GENERAL SPECIFICATIONS

UNIT DESCRIPTION

Model:	920 Mustang
Manufacturer:	MUSTANG MANUFACTURING COMPANY INC.

ENGINE SPECIFICATIONS

Make:	Yanmar Diesel
Model:	3TNA72-E
Displacement:	53.64 CID (879 cc)
Max. HP (Mfg. rating):	
HP @ Governed RPM:	19 HP (14 kw) @ 3000 RPM
Max. No-Load RPM	3000 RPM
Fuel Injection:	Indirect
Number of Cylinders:	3
Bore and Stroke:	2.83 x 2.83 (72 x 72 mm)
Cooling Medium:	Liquid
Torque (ft. lbs.)	37.8 @ 2600 RPM (57 nm)
Electrical System:	12 Volt
Alternator:	35 Amp
Battery (Group Class):	24
(Cold crank rating):	500 Amps
Fuel Shut Off:	Manual
Air Cleaner:	Replaceable dry cartridge type

FLUID CAPACITIES

Cooling System:	4 qts. (3.79 L)
Fuel Tank:	9 gal. (34.1 L)
Engine Oil:	3 qts. (2.8 L)
Oil spec.	SAE Class CC 15W-40
Chain Case:	4 gal. (15.1 L) (2 per side)
Oil spec.	ISO 32 or 68
Hydraulic System	7.5 gal. (28.4 L)
Oil spec.	ISO 32 or 68

HYDRAULIC SYSTEM

Pressure Relief:	1900 PSI (131 Bar)
Control Valve Make:	Victor Dukes
Spool Sections:	3 Spool
Pump Make:	Eaton
Pump Type:	Double Gear
Pump Output:	10 GPM (37.9 L/m)
Filters:	(1) screen - 100 mesh (1) 7 micron return (1) 7 micron charge inlet
Auxiliary Control:	Hand Lever
Auxiliary Hydraulic Power @ 90% Relief Pressure	10 HP (7.4 kw)

TRANSMISSION and FINAL DRIVES

Type:	Hydrostatic
Make:	Eaton
Model:	78116RAK
System Relief Setting:	3550 PSI (241 Bar)
Charge Pressure Relief Setting:	100 PSI (6.9 Bar)
Drive Motors (type):	Geroller
Make:	Eaton
Model:	4000
Final Drive Chains	
Reduction from motors:	None
Reduction to axles:	#80 H
Travel Speed:	0-4.5 MPH (7.26 km/h)
Steering:	T-Bar (Single Lever)
Turning Radius:	360 degrees in its own length
Axle Type:	Forged
Diameter:	1.625" (41.3 mm)
Axle Torque:	2800 ft. lbs. (3796 nm)

HYDRAULIC CYLINDERS

	LIFT	TILT
Number:	2	1
Cylinder Type:	Double Acting	Double Acting
Bore Diameter:	2" (50.8 mm)	3" (76.2 mm)
Rod Diameter:	1.125" 28.6 mm)	1.25" (31.8 mm)
Stroke:	28.38" (721 mm)	9.8" (248 mm)

OPERATING SPECIFICATIONS

Load Rating (SAE):	850 lbs (386 kg)
Tipping Load (SAE):	1700 lbs. (772 kg)
Breakout (Lift):	2200 lbs (998 kg)
(Tilt):	1800 lbs (816 kg)
Raising time:	4.75 seconds
Lowering time:	3.0 seconds
Dumping time:	1.5 seconds
Roll back time:	1.4 seconds
Operating Weight:	3516 lbs (1595 kg)
Shipping Weight:	3112 lbs. (14120 kg)
Weight Distribution	
Rear:	2634 lbs (1195 kg) 75%
Front	882 lbs. (400 kg) 25%
Braking System:	2 way braking system, hydrostatic, and wet disc type parking brake activated by hand lever. (Positive lock used prior to S/N 0207002.)

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GENERAL INFORMATION

MAINTENANCE CHART

Recommended Intervals for Normal Operating Conditions

MAXIMUM HOURLY INTERVAL				COMPONENTS	SERVICE REQUIRED	CAPACITY OR MEASUREMENT
10	100	500	1000 or year			
■				Air Cleaner	Check Indicator Empty Dust Cap	Clean or replace as needed
■				Cooling System	Check Coolant Level	See Cooling System Section
■				Engine Crankcase	Check Oil Level	Between marks on Dipstick
■				Loader Pivot Pins	Lubricate Grease Fittings	
■				Loader Hydraulic System	Check fluid Level	Between marks on Dipstick when cold
■				General Conditions	Safety Devices; Loose, Missing or Damaged Parts	
	■			Belt	Tighten to Proper Deflection	
	■			Radiator and Oil Cooler	Clean Fins	
	■			Tires	Check Air Pressure	*See Tires & Wheels Maintenance Section
		■		Battery	Clean Terminals and Battery Top	
	■			Brakes	Check	
	■			Spark Arrestor Muffler	Remove Plug and Clean Out	*See Maintenance Section
□	■			Engine Oil and Filter	Change Oil and Filter	See Fuels & Lubrication & Specifications Section
□		■		Hydraulic Filters	Replace Elements	
□		■		Drive Chains	Tighten to Proper Deflection Check Fluid Level	
		■		Liquid Cooled Engine	Flush cooling System	See Specifications
			■	Hydraulic Reservoir	Drain and Refill	See Specifications
□			■	Chain Cases	Drain and Refill	See Specifications
		■		Fuel Filters	Change Filters	Drain as needed

NOTE: Hourly interval must be decreased under very hot, dusty, cold or corrosive conditions.

□ Perform the initial time at 50 hours, then at ■ intervals

*Refer to Operator's Manual Maintenance Section.

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