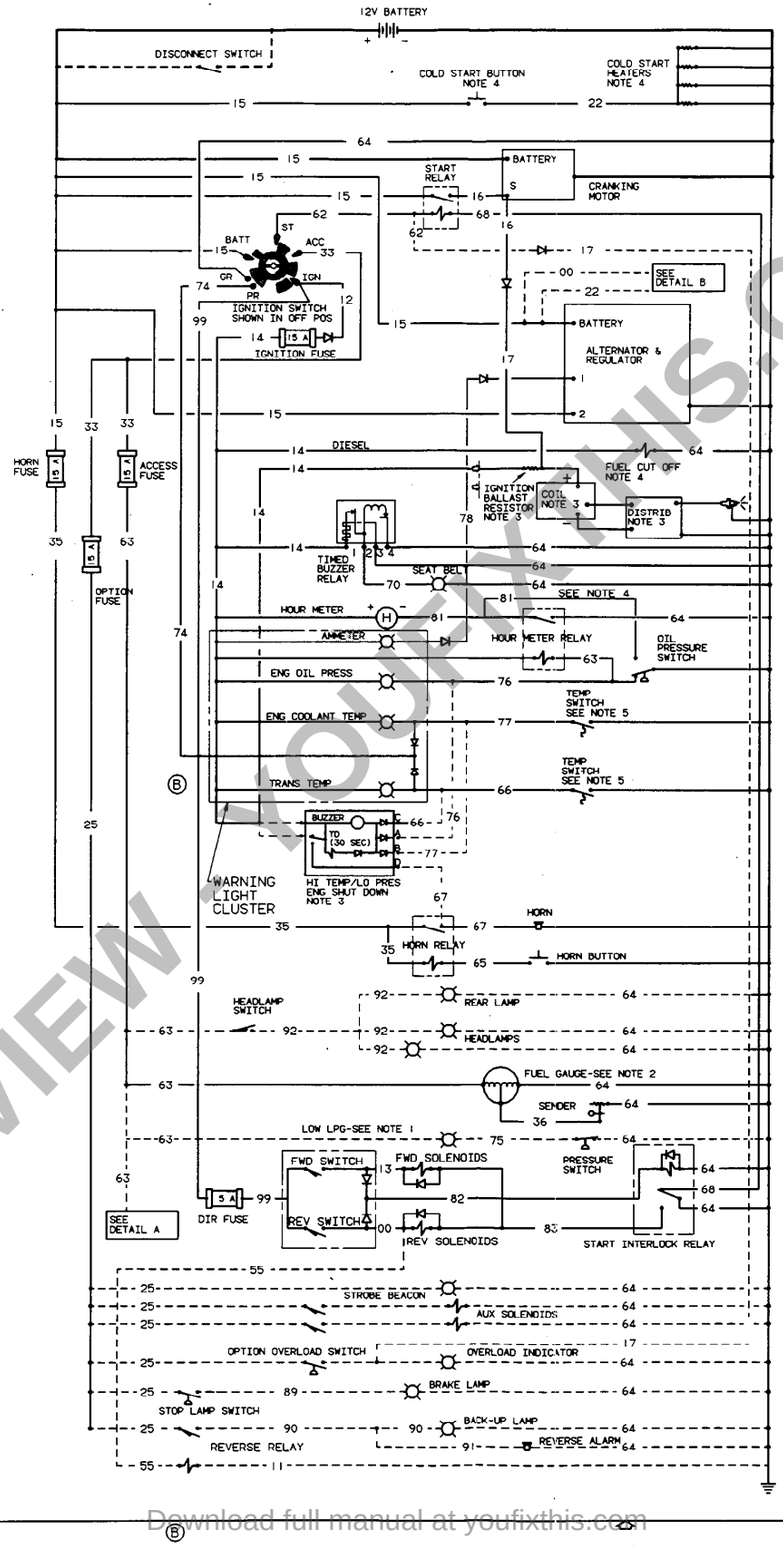
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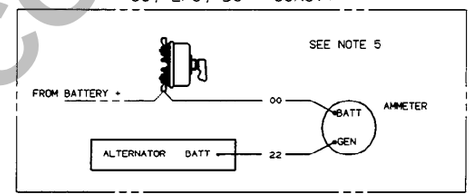
IN-24141



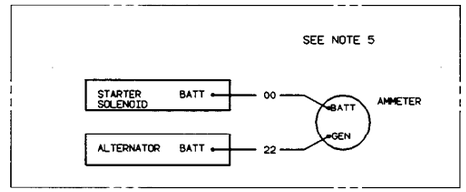
LEGEND

———	STANDARD EQUIPMENT
- - - - -	OPTIONAL EQUIPMENT

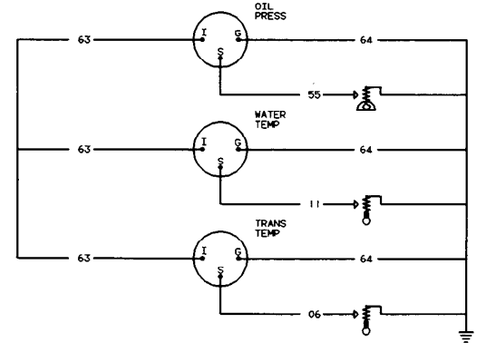
CS, LPS, DS - CONST



G, LP, D - CONST



DETAIL B



DETAIL A GAGE CIRCUIT

1 THIS ITEM USED ON LPG TRUCKS ONLY

2 THIS ITEM USED ON GAS AND DIESEL TRUCKS ONLY

3 THIS ITEM USED ON GAS AND LPG TRUCKS ONLY

4 THIS ITEM USED ON DIESEL TRUCKS ONLY

5 FOR UL TYPE GS,DS,OR LPS CONSTRUCITON TRUCKS, CONNECT WIRE 00 TO THE POSITIVE (+) OF THE DISCONNECT SWITCH

ORIGINAL AT F

REV	DESCRIPTION	CHG NOTICE	DATE	APPROVAL
B	REVISED WARNING LIGHT CLUSTER	F911125	18FEB93	MAYTUM
A	RELEASED	F920413	15JUL92	GORMER

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METRIC — DIM ARE IN MM UNITS ARE ISO METRIC EXCEPT AS NOTED

DRW	GORMER	22APR92
CHK	GORMER	22APR92
APPL	F920413	15JUL92

DIAGRAM-CIRCUIT

CLARK — IN-24141

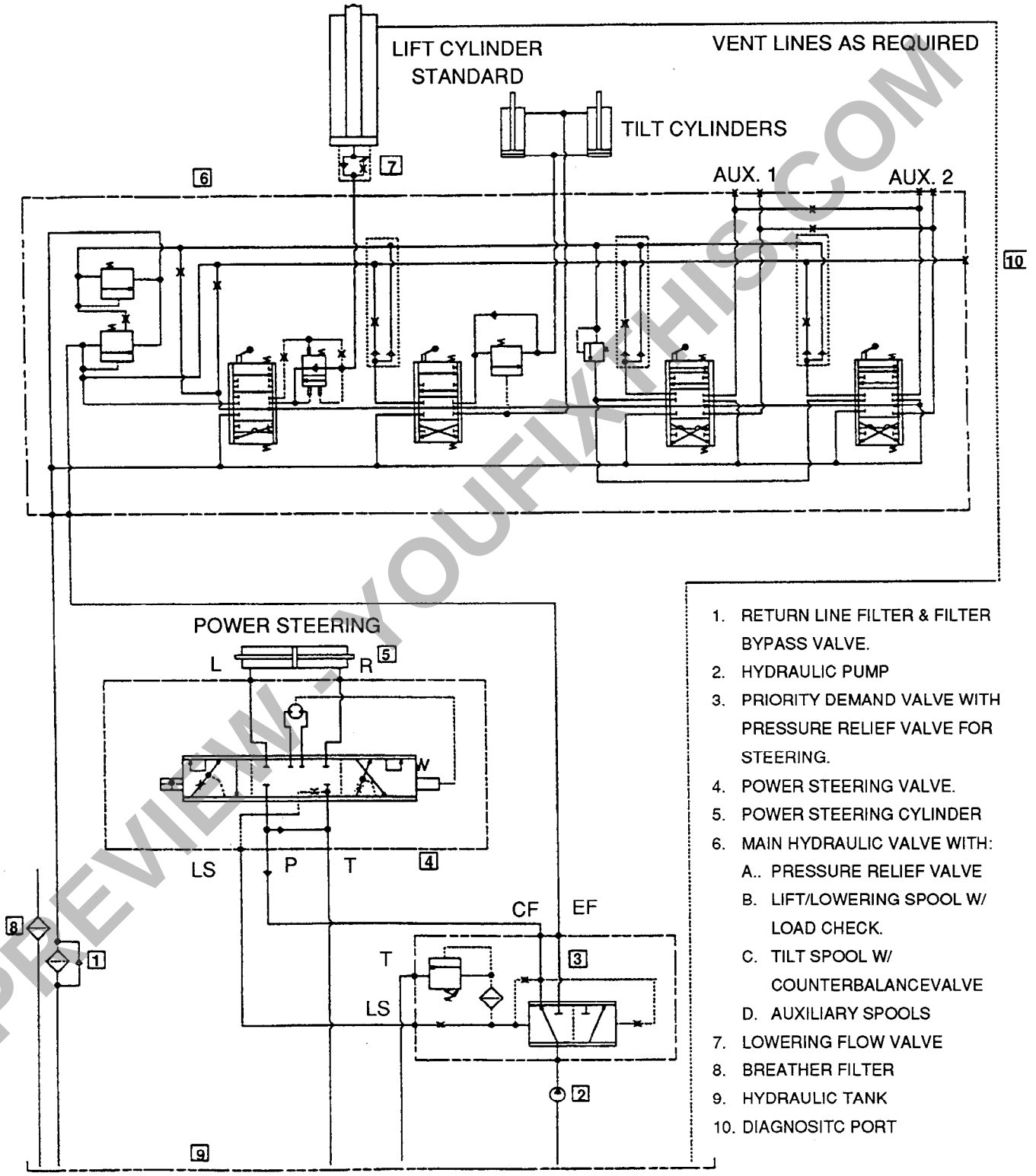
GCPX20/30E

NONE — MT — SHEET 1 OF 1

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GROUP 40 SECTION 03
HYDRAULIC AND ELECTRICAL DIAGRAMS



1. RETURN LINE FILTER & FILTER BYPASS VALVE.
2. HYDRAULIC PUMP
3. PRIORITY DEMAND VALVE WITH PRESSURE RELIEF VALVE FOR STEERING.
4. POWER STEERING VALVE.
5. POWER STEERING CYLINDER
6. MAIN HYDRAULIC VALVE WITH:
   - A.. PRESSURE RELIEF VALVE
   - B. LIFT/LOWERING SPOOL W/ LOAD CHECK.
   - C. TILT SPOOL W/ COUNTERBALANCEVALVE
   - D. AUXILIARY SPOOLS
7. LOWERING FLOW VALVE
8. BREATHER FILTER
9. HYDRAULIC TANK
10. DIAGNOSITC PORT

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CRITICAL FASTENER TORQUE SPECIFICATIONS

ITEM	TIGHTENING TORQUE, (DRY): [N.m]	lbf.ft
Engine cylinder head bolts (cold)	69-73	51-54
(warm)		77-83 57-61
Valve cover mounting bolts	5-7	3.5-5
Int/exh manifold mtg nuts	15-20	11-14
Crankshaft pulley bolt	108-127	80-94
Flywheel mounting bolts	127-137	94-101
Oil pan mounting bolts	6-8	4.4-5-8
Oil pan drain plug	48-58	36-43
Oil filter	10.8-12.7	8-9
Spark plugs	24-30	18-22
Starter mounting bolts	22-31	16-23
Engine mounting bolts	70-74	52-55
Transaxle to eng. mtg bolts	40-50	30-35
Torque conv. mtg bolts	20-25	15-18
Alternator adj. brkt. bolt	20-25	15-18
Drive axle trunnion mtg bolts	75-80	55-59
Drive wheel lug nuts	637-718	470-530
Steer wheel lug nuts	359-458	265-338
Steer axle mtg bolts	570-650	420-480
Steering handwheel retaing. nut	47-54	35-40
Steering col. mtg bolts (to bracket)	8-10	6-7
(to cowl)	20-25	15-18
Hydraulic valve mtg bolts	40-50	30-35
Main hydraulic pump mtg bolts	68-74	50-55
Control lever knob mtg bolts	8-10	6-7
Tilt cyl. yoke clamp bolts	170-190	125-140
Tilt cyl. pin retainer bolts	8-10	6-7
Upright trunnion cap bolts	75-80	55-59
Upright cyl. retaining bolts	72-80	53-59
Load backrest extension mtg bolts	240-270	177-199
Seat mtg bolts	20-30	15-22
Counterweight mtg bolts (bottom)	320-360	240-265
(top)	65-75	47-55
Overhead guard mounting bolts	65-75	50-55

NOTE:

When checking tightness of major fasteners on new trucks, the values may be less than the recommended specification due to metal deformation and fastener stretch. This is a normal occurrence and does not indicate that the fasteners were not correctly tightened during assembly. Tighten to recommended specifications.

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00-02 ENGINE TUNE-UP

Engine tune-up consists of:

1) preliminary checks to be sure that all engine systems are functioning correctly, and
2) tune-up procedures, which include performing tests, making minor adjustments and replacing minor components as necessary to bring an engine up to its peak level of performance.

TOOLS REQUIRED:

Tachometer
Voltmeter
Timing light
Vacuum gauge
Torque wrenches
Jumper lead

⚠ CAUTION

To perform this service procedure, it is recommended that you:

Put blocks under the upright rails. Raise the drive wheels off the floor. Return all controls to neutral, apply the parking brake, and turn key switch to the OFF position.

Open and remove both side doors, and raise the seat deck. BE SURE THAT THE SEAT DECK SUPPORT IS SECURELY LATCHED.

PRELIMINARY CHECKS

Also refer to Engine Troubleshooting section.

Check the engine coolant level.
Check the engine oil level.
Check the engine air filter. A clogged filter will cause engine power loss. Replace, if needed.

Check coil polarity to be sure that the primary wire from the distributor is connected to the negative terminal on the coil.

Start the engine. Perform a spark test with each spark plug wire, or use a spark indicator to check the coil and spark plug wires to be sure the coil is producing adequate voltage to all plugs. At the same time, check all the spark plug wire connections for tightness.

With the engine running, look at the battery charge indicator. The light should not be illuminated, indicating voltage output from the alternator.

If the battery has been "running down" (discharging) or if the engine cranking speed is low, check the alternator circuit and battery.

Check the battery for damage and cleanliness of terminals. Clean the battery terminals and cable connections if they are dirty and corroded.

Check the battery terminal cable connections for tightness.

Be sure the battery negative (ground) cable is securely connected to the engine block.

If there is indication of a faulty battery, or if the engine cranking speed is slow, perform a cranking test:

1) Disconnect the high tension coil wire from the distributor cap, clip a jumper lead onto the coil wire and ground it on the engine block.

2) Then, connect a voltmeter across the battery terminals. Now push the accelerator pedal fully down (to open the throttle and obtain higher compression) and crank the engine for a few seconds.

During cranking the battery voltage should exceed 9.6 volts. Battery voltage of less than 9.4-9.6 volts indicates trouble in the battery, cables, or starter.

Immediately after cranking, battery no-load voltage should be 12 volts, minimum. The voltmeter should show a quick response. If the voltage is less than 12 volts or the voltmeter has a sluggish response it is an indication of a battery problem.

Remove the jumper lead, connect the coil wire to the distributor cap and start and accelerate the engine to a steady speed of 1800-2000 rpm.

Charging system output voltage should be between 12.5-13.5 volts.

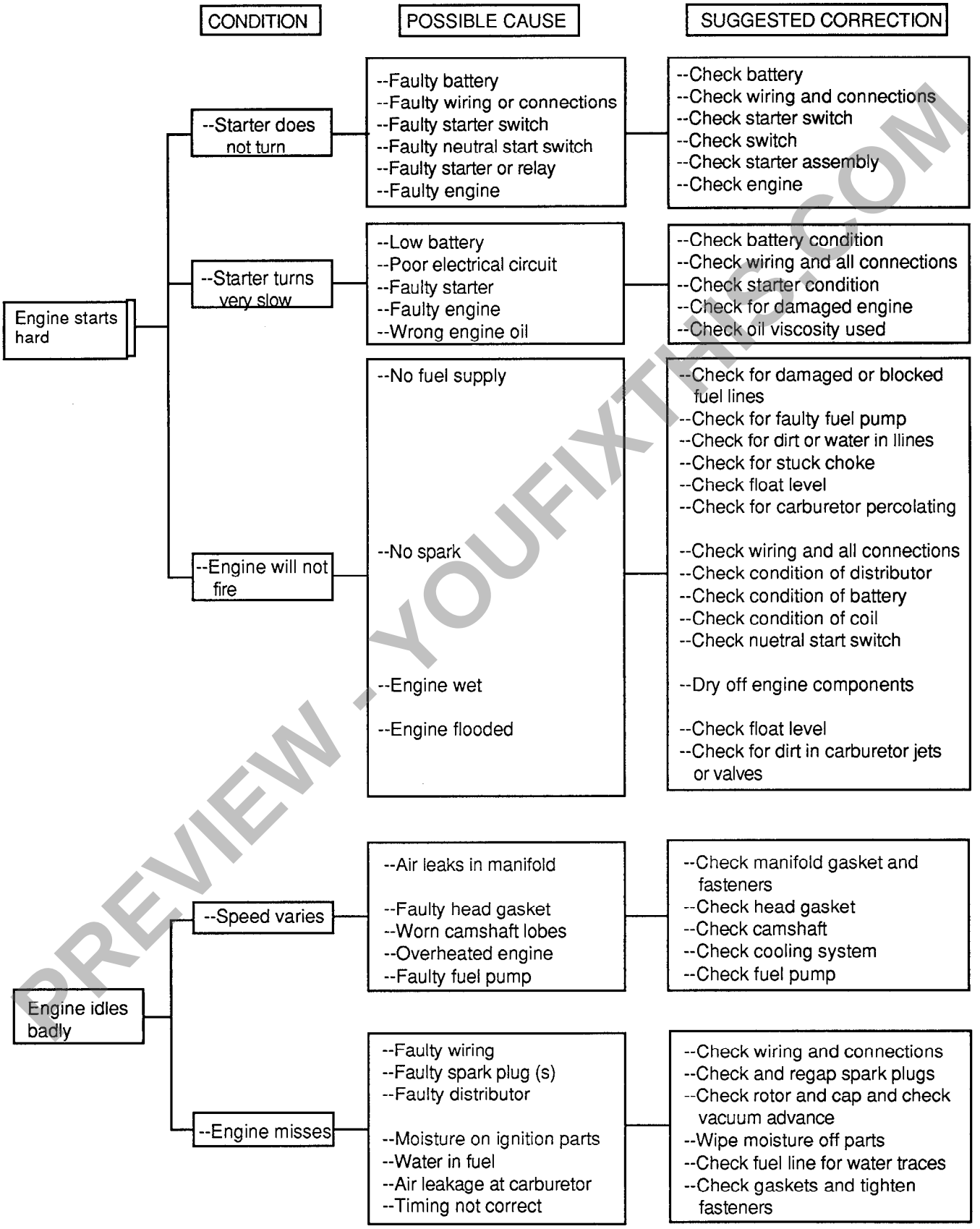
These preliminary tests show whether charging and cranking systems are okay or in need of repair. Remove the voltmeter after these tests are made.

Then, check the fuel gauge to be sure fuel level is adequate, to ensure that low fuel level will not affect other tests of engine performance.

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ENGINE TROUBLESHOOTING



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GROUP 40 SECTION 02
SPECIFICATIONS

FILL CAPACITIES - Fluid volumes (Approximate):

Fuel Tank - Gasoline:	[30.3 L] 8 gal
LPG (ICC Horizontal Tank):	[15 kg] 33.5 lb
Engine Oil - w/Filter:	[4.5 L] 4.8 qt
Transaxle (Transmission & Drive Axle):	[15.4L] 32 pints
Hydraulic Sump Tank - (Total Volume):	[30.3 L] 8 gal
Cooling System:	[8.5 L] 9 qt
Cooling System Pressure (Radiator Cap):	14 psi (12-16 psi)

FLUID RECOMMENDATIONS

Fuel: Gasoline — Regular Grade, 85 Octane Minimum (Motor Method)
LP Gas — HD-5 Propane

Engine Oil: Single viscosity motor oil per API Service Classification CC, SC, SE, SF; or MIL-B Motor Oil; or MIL-L-46152

Ambient Temperature (Average)	Viscosity
32 °F to 110 °F [0 °C to 43 °C]	SAE 30
70 °F to 0 °F [21 °C to -17 °C]	SAE 20W
0 °F to -30 °F [-17 °C to -34 °C]	SAE 10W

Engine Coolant: Use a mixture of 50% water and 50% ethylene glycol permanent-type antifreeze containing rust and corrosion inhibitors, only. (NOTE - This mixture gives antifreeze protection level of [-37 °C] -34 °F approximately.)

Transmission Fluid: Use Clark #2776236 transaxle fluid only.

Hydraulic Fluid: Use CLARK Specification MS-68 Hydraulic Oil, w/antiwear additives, or equivalent, only.

Hydraulic Brake Fluid: Heavy-duty hydraulic brake fluid, SAE J1703b specification; or Type DOT, Grade DOT 3.

TRUCK WEIGHTS - Approximate, with typical upright:

	GCS 12	GCS 15	GCS 17s
Service Weight (w/o load), lbs	**5440 [2468 kg]**	**5980 [2713 kg]**	**6440 [2922 kg]**
Axle Loading: w/o load, front, lbs	2610 [1184 kg]	2440 [1107 kg]	2283 [1036 kg]
rear, lbs	2830 [1284 kg]	3540 [1606 kg]	4157 [1886 kg]
w/load, front, lbs	7210 [3270 kg]	7970 [3615 kg]	8722 [3956 kg]
rear, lbs	730 [331 kg]	1020 [463 kg]	1218 [552 kg]

COUNTERWEIGHT WEIGHTS, Minimum:	GCS 12	GCS15	GCS 17s
[kg] lbs	[703]1550	[948]2090	[1157]2550

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PLANNED MAINTENANCE INTERVALS

Recommended PM Intervals

The maintenance time intervals referred to in this manual relate to truck operating hours as recorded on the hourmeter and based on experience which Clark has found to be convenient and suitable under typical (normal or average) operating conditions, as follows:

A= 8 - 10 hours, or daily
B= 50 - 250 hours, or every month (Typical PM interval)
C= 450 - 500 hours, or every 3 months
C= 900 -1000 hours, or every 6 months
E= 2000 hours, or every year

DAILY MAINTENANCE CHECKS	A	B	C	D	E
Check truck for obvious damage and leaks.	X				
Check fuel system for leaks, etc.	X				
Check capacity, warning plates, decals	X				
Check condition of tiresand wheels. Remove embedded objects. Check air pressure.	X				
Check wheel lug nuts.	X				
Check engine oil level.	X				
Check engine coolant level.	X				
Check fuel level.	X				
Check hydraulic sump oillevel.	X				
Check gauges and instruments.	X				
Check warning lights andhourmeter.	X				
Check overhead guard condtion and bolts.	X				
Check horn operation andother warning devices.	X				
Check steering operation.	X				
Check service brake operation.	X				
Check parking brake operation.	X				
Check directional and speed controls operation.	X				
Check accelerator and engine speed operation.	X				
Check lift, tilt, and auxoperation.	X				
Check upright, lift chains, and fasteners.	X				
Check load backrest extension and forks.	X				

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IN-24283

1 REFER TO WIRING HARNESS DETAILS FOR MORE INFORMATION

2 OPTIONAL CONNECTIONS ARE MARKED WITH RED TAPE FOR EASY IDENTIFICATION

FUEL GAUGE SENDER UNIT

12 VOLT BATTERY

NEG −

POS +

64E

36

OPTIONAL POWER

SPLICE

OPTIONAL BRAKE/TAIL LIGHTS

25B

92

89

64
64E
64F
64G

76B

ENG OIL PRESS SW.

ALTERNATOR

GROUND ON ENG BLOCK

78A,15

ENGINE COMPARTMENT LEFT SIDE

ENGINE COMPARTMENT RIGHT SIDE

DISTRIBUTOR

COIL

SPARK PLUG

RESISTOR

ENGINE COOLANT TEMP SWITCH

77

14P

FUEL CUT-OFF SOLENOID (GASOLINE)

16A

START BATTERY

STARTING MOTOR

15F

17

14G/14N

SPLICE A

SPLICE H

HORN BUTTON

65

DIRECTIONAL CONTROL

99A 99
13A 13
82A 82
00A 00
FWD
REV

TRANSMISSION DIRECTIONAL CONTROL SOLENOIDS

SPLICE E

83B
13
83A
00
FWD
REV

25A
89

OPTIONAL BRAKE PRESSURE SWITCH

67

HORN

66A

TRANSMISSION OIL TEMP

IN GAUGE PANEL

SEAT BELT WARNING LAMP

70
64B
64C

92
92A
92B
92B
92A
63C
63A
63C

OPTIONAL LIGHTS

IGNITION SWITCH

BATT
ST
PR
GRD
ACC
IGN

15D
62
74
64/64A
33/33A
12
99

SEAT BELT BUZZER

14K
70
64C
64D
64D

FUSES

33A 99
12 33
15C
14 25 35
63 99A

START INTERLOCK RELAY

SPLICE F

83 64H
82 64J 68

A = TRANS OIL TEMP - 66
B = ENGINE OIL PRESS - 76
C = COMMON HOT - 14E
D = LAMP TEST CIRCUIT - 74
E = ENGINE WATER TEMP - 77B
F = ALTERNATOR CHARGE - 78C

SPLICE D

SPLICE C

SPLICE B

HOUR METER RELAY

64F
14N
81
76C

WARNING LIGHT CLUSTER

ABCDEF

ALTERNATOR CHARGE
WATER TEMP
TRANS TEMP
ENG OIL PRESS

STARTER RELAY

16
68
62
15A

FUEL GAUGE

63/63A
64A/64B
36

HORN RELAY

35A
35/35A
65
67A/67

HOUR METER

81
14M

DISCONNECT FOR ENGINE SHUTDOWN

OPTIONS

76D
25A
25

14F
14G
67A
66B
76A
77A

OPTIONAL ENGINE SHUTDOWN

REV	(ECN#) DESCRIPTION	ENG NOTICE	DATE	APPROVAL
E	SEE SHEET 2	F940827	10CT94	HEPLER
E	(A7) REMOVED DIODE ON 62-78 WIRE	F940827	10CT94	HEPLER
D	(A12 THRU A67)ADDED SPLICE INFO	F940479	30MAY94	KJH
C	ADDED PAGE 2	F940479	30MAY94	KJH
B	(C10)SWAPPED 15 & 1G	F940479	30MAY94	KJH
A	RELEASE	F930225	01OCT93	KJH/BMG

DESIGN CONTROL F

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METRIC

DIM ARE IN MM UNLESS ARE ISO METRIC EXCEPT AS NOTED

DRN	HAYES	16JUN93
CH	GORNER	30JUL93
ENG	F930225	01OCT93

(MITSUBISHI GAS) DIAGRAM-WIRING

CLARK IN-24283

GCPX12/30E

SHEET 1 OF 2

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Reconnect the steer valve discharge line.

Remove and discard the old oil filter. Replace with new filter. Replace the sump breather with a new breather.

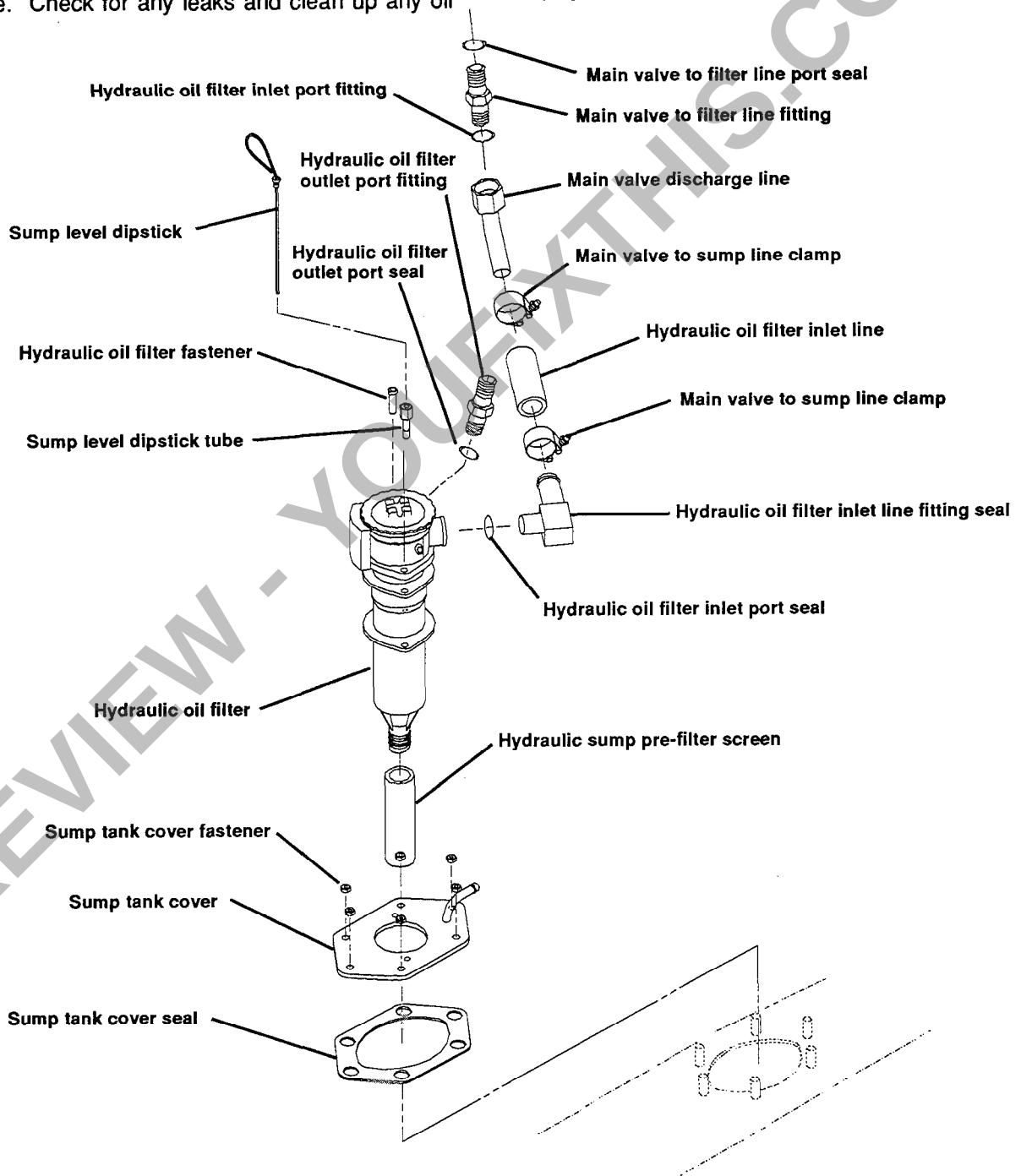
Fill the sump tank to the correct level with the specified hydraulic fluid. The dipstick may be pulled partway out of the seat to vent the air as the tank is filled..

Operate the truck to be sure all hydraulic systems are operable. Check for any leaks and clean up any oil spills.

Replace the engine compartment side door.

REVISED FILTER SYSTEM

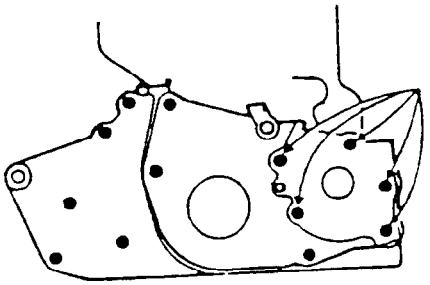
Beginning with Cushion tired trucks, serial numbers 01-9345 and Pneumatic tired trucks, serial numbers 01-9350, the hydraulic filter system was redesigned. The spin-on filter system was replaced with a replaceable element system which is described below and on the next page.



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Insert the fasteners and tighten to the specified torque. Tighten the 6 mm bolts first, then tighten the 8mm bolts which fasten both the front cover and the oil seal cover.



OIL COVER FASTENER TORQUE

DESCRIPTION	SPEC	
Bolt torque	8mm	[1,5-1,8]
[kg.m] lbf.ft.		11-13
	6mm	[0,8-1,0]
		5-7

13. Apply a layer of oil to the lips of the oil seal cover seal and to the seal face of the boss on the oil pump drive sprocket.

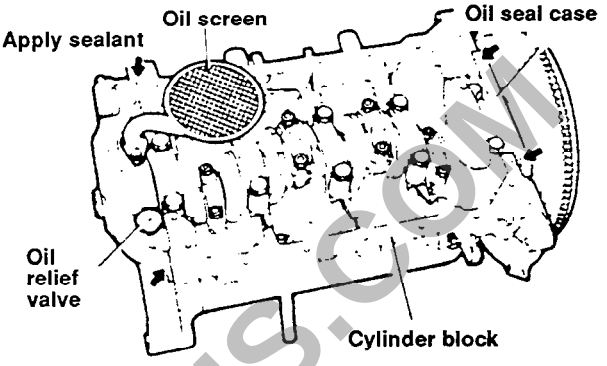
Put the oil pump drive sprocket on the drive shaft and secure with the nut. When tightening the nut, prevent the sprocket from turning by clamping the sprocket, using waste material to cushion the clamping device.

OIL PUMP NUT TORQUE

DESCRIPTION	SPECIFICATION
Oil pump sprkt. nut	[3,4-4,0]
torque [kg.m] lbf.ft.	33-39

14. Install the oil screen

15. Install the oil relief valve.



16. Coat the four portions of the oil pan mounting surface of the engine block with gasket sealant.

Install a new gasket on the surface making sure it is aligned with the bolt holes.

Install the oil pan and fasteners. Tighten the fasteners to the specified torque.

IMPORTANT

USE CARE NOT TO OVERTIGHTEN THESE FASTENERS AND CAUSE THE HEADS TO TWIST OFF THE BOLTS.

OIL PAN BOLT TORQUE

DESCRIPTION	SPECIFICATION
Oil pan bolt torque	[0,6-0,8]
[kg.m] lbf.in.	52-69

17. Install the new cylinder head gasket and the cylinder head. (Refer to the previous section for details.)

18. Install the camshaft oil seal (Refer to the previous section for details.)

19. Install a new water pump gasket and install the water pump.

20. Install the rear timing case upper cover.

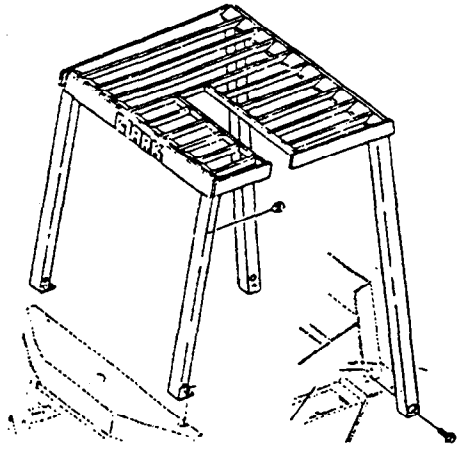
21. Install the crankshaft sprocket and pulley and flange guides. Tighten the fasteners to the specified torque.

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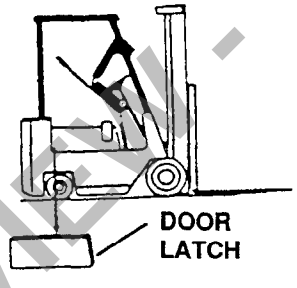
00-06 ENGINE REMOVAL

1. Remove the overhead guard (OHG). Fasten a chain hoist of proper capacity to the top portion of the OHG and lift slightly to remove all chain slack.



Remove the two fasteners connecting the rear legs of the OHG to the counterweight. Then, remove the four fasteners (two per leg) connecting the front legs to the cowl. Lift the OHG off the truck and store in a safe place.

2. Open and remove the engine compartment side doors by lifting upward and off the pivot pins.



SIDE DOOR MAY BE REMOVED BY LIFTING DOOR AFTER OPEN

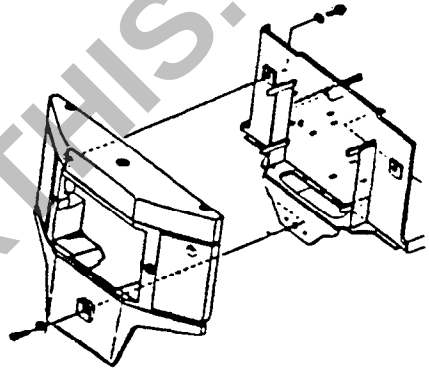
3. Remove the counterweight. First insert eyebolts into the holes provided in the top surface of the counterweight.

Connect a short length of chain of correct capacity between the eyes using bolts to connect the chain to the eyes. Connect the hook of a chain hoist to the lifting chain connecting the eyes and raise the hoisting chain slightly to remove all slack.

Remove the two fasteners at the lower end of the counterweight (near the tow-pin). Remove the two fasteners attaching the counterweight to the frame stanchions in the engine compartment.

NOTE

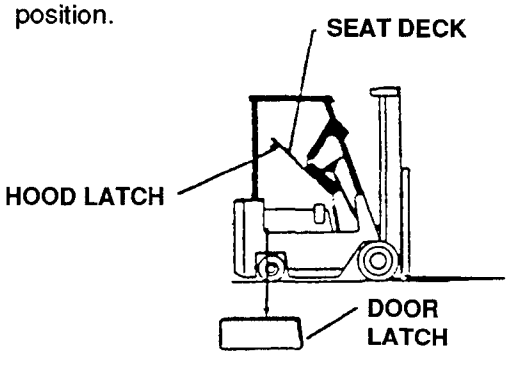
The counterweight rests on hooks on the frame which will normally hold the counterweight in position when these bolts are removed. Carefully lift and move the counterweight from the truck and store in a safe position.



4. Remove the seat deck and seat as an assembly. The seat deck is retained by two pivot pins and a gas assist (support) cylinder.

First lift the seat to the fully-raised position. Use a chain hoist or similar holding means to support the seat deck in this position. Remove the clips retaining the pivot pins. Remove the nut holding the gas cylinder to the seat deck and disconnect the gas cylinder.

Lift the seat deck off the truck and store in a safe position.

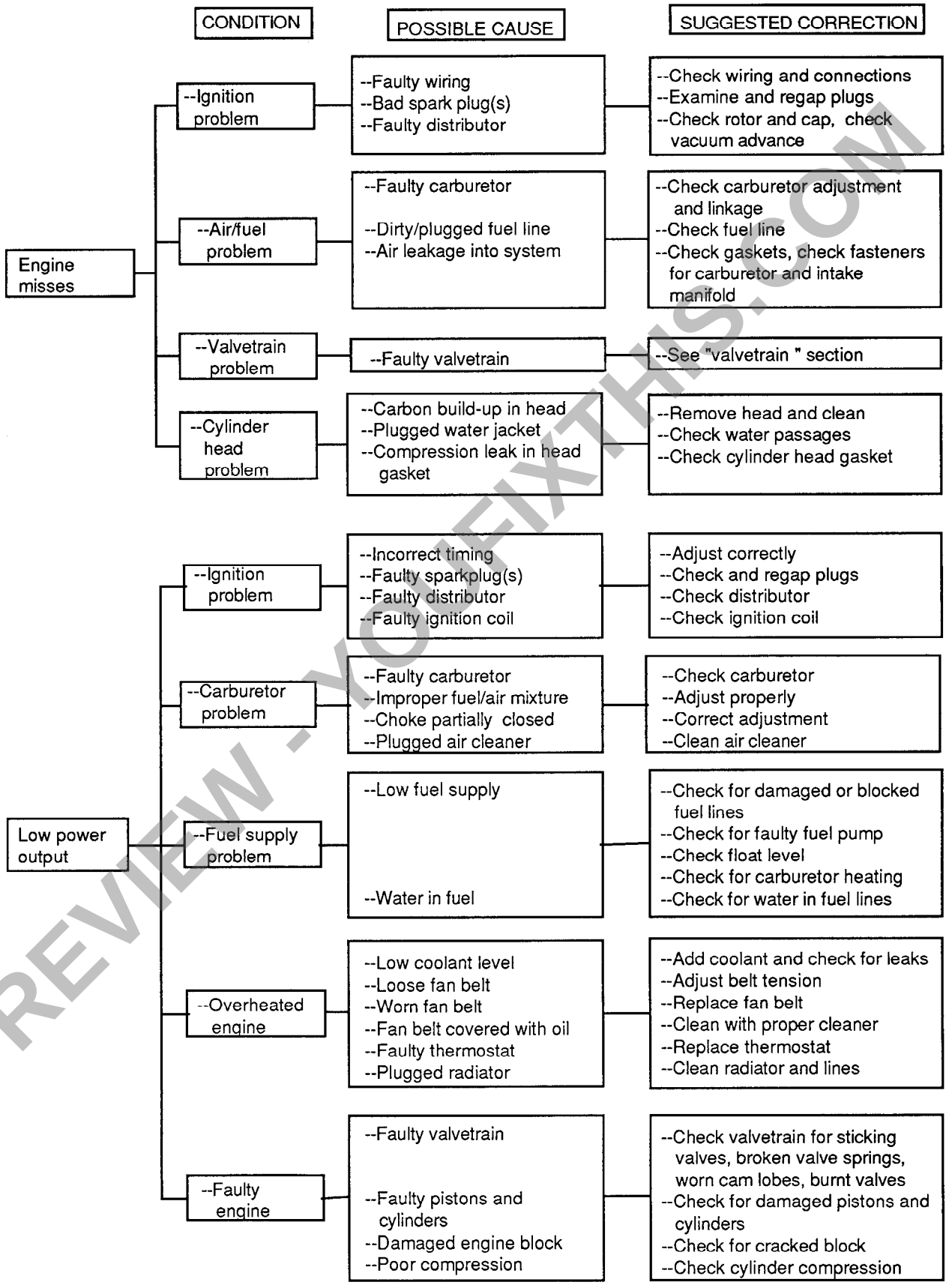


SIDE DOOR MAY BE REMOVED BY LIFTING DOOR AFTER OPEN

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ENGINE TROUBLESHOOTING



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HYDRAULIC SYSTEM

Steering System Relief Pressure Setting: [8274-8963 kPa] 1200-1300 psi

Hydraulic System Main Relief Valve Pressure Setting:

GCS 12	[16893-17582 kPa] 2450-2550 psi
GCS 15	[18616-19306 kPa] 2700-2800 psi
GCS 17s	[20340-21030 kPa] 2950-3050 psi

UPRIGHT SPEEDS: - Nominal performance for UPR at cut-off MFH:

		STD		TSU		HILO	
	(fpm)	Lift	Lower	LIft	Lower	Lift	Lower
GCS 12	Loaded	107	70	105	67	72	98
	Empty	115	80	112	77	75	85
GCS 15	Loaded	106	70	103	67	71	99
	Empty	115	80	112	77	75	85
GCS 17s	Loaded	105	70	102	67	70	102
	Empty	115	80	112	77	75	85

MAXIMUM FORK DRIFT - in 5 minutes with capacity load, new truck:

	Temperature	STD	TSU	HILO
GCS 12	[26.7 °C} 80 °F	12.5	11.0	4.0
	[37.8 °C] 100 °F	21.0	17.5	6.5
	[48.9 °C] 120 °F	31.5	25.0	9.5
GCS 15	[26.7 °C} 80 °F	14.5	12.5	4.5
	[37.8 °C] 100 °F	24.5	20.0	7.5
	[48.9 °C] 120 °F	36.5	29.5	11.0
GCS 17s	[26.7 °C} 80 °F	16.5	14.0	5.0
	[37.8 °C] 100 °F	28.5	22.5	8.5
	[48.9 °C] 120 °F	41.5	33.5	13.5

TILT DRIFT - in 5 minutes, w/rated load, new truck:

Temperature	Drift [mm]
[26.7 °C] 80 °F	[7.0]
[37.8 °C] 100 °F	[11.5]
[48.9 °C] 120 °F	[17.0]

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PLANNED MAINTENANCE INTERVALS

A= 8 - 10 hours, or daily
B= 50 - 250 hours, or every month (Typical PM interval)
C= 450 - 500 hours, or every 3 months
C= 900 -1000 hours, or every 6 months
E= 2000 hours, or every year

	Nominal Maintenance Interval				
PERIODIC CHECKS AND PLANNED MAINTENANCE	A	B	C	D	E
Check truck visually and inspect components		X			
Test drive truck -- Check functional performance		X			
Air clean truck and radiator		X			
Check torque on critical fasteners		X			
Lubricate truck (See component)		X			
Drain and replace engine oil		X			
Replace engine oil filter		X			
Clean/replace engine air filter			X		
Inspect/adjust fan belts			X		
Drain/flush radiator coolant					X
Check engine ignition and timing			X		
Perform engine tune-up					X
Check battery			X		
Check transmission (transaxle) fluid lev el		X			
Drain and replace transmission fluid				X	
Replace transmission oil filter				X	
Clean drive axle air vent		X			
Check brake condition and wear					X
Check drive axle mounting and fasteners		X			
Lubricate steer axle linkage		X			
Check/lubricate steer axle wheel bearings					X
Replace hydraulic sump fluid and filter					X
Clean/replace hydraulic sump breather				X	
Lubricate tilt cylinder rod ends		X			
Lubricate upright fittings		X			
Check lift chain adjustment and wear		X			
Check/lubricate lift chains		X			

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IN-24283

1 GASOLINE ENGINE ONLY

2 LPG ENGINE ONLY

12V BATTERY

ALTERNATOR

S-CONST DISCONNECT SWITCH

STARTER

IGNITION SWITCH

DISTRIBUTOR

SPARK PLUGS

IGN COIL

BALLAST RESISTOR

START RELAY

ENGINE SHUTDOWN

BUZZER

THERM TDC 30SEC

SEAT SWITCH

FUEL SHUT OFF

NOTE 1

CHARGE

ENG OIL PRESS

COOLANT TEMP

TRANS OIL TEMP

BULB TEST

HR RELAY

FUEL GAUGE

SENDER

SEAT BELT BUZZER W/TDC

SEAT BELT LAMP

HORN

HORN RELAY

HORN BUTTON

CONT. NEXT COLUMN

FWD SWITCH

REV SWITCH

FWD SOLENOIDS

REV SOLENOIDS

START INTERLOCK RELAY

LAMP SWITCH

REAR LAMP

HEAD LAMP

HEAD LAMP

STROBE LIGHT

OVER-LOAD SWITCH

OVER-LOAD LAMP

TO 74 PR ON KEY SWITCH

LOW FUEL LAMP NOTE 2

LOW PRESSURE SWITCH

REVERSE RELAY

BACK-UP LAMP

BACK-UP ALARM

BRAKE PRESSURE SWITCH

BRAKE LAMP

AUX SOLENOID

AUX SWITCH ON VALVE

AMMETER

TO ALTERNATOR BAT TERMINAL

TO BATTERY(+) OR ENGINE SIDE OF DISCONNECT SWITCH

OIL PRESS

SENDER

WATER TEMP

SENDER

TRANS TEMP

SENDER

LEGEND

STANDARD EQUIPMENT

OPTIONAL EQUIPMENT

REV	ZONE	DESCRIPTION	CHG NOTICE	DATE	APPROVAL
E	(J10)	REMOVED DIODE	F940827	10CT94	HEPLER
D	SEE SHT 1		F940479	30MAY94	K.J.H
C	RELEASE AS PS2		F940479	30MAY94	K.J.H

DESIGN CONTROL F

METRIC

DIM ARE IN MM UNITS ARE ISO METRIC EXCEPT AS NOTED

UNPUBLISHED WORK. ALL RIGHTS RESERVED

DRN	K.J.H	14MAY94
CHK	K.J.H	16MAY94
ENG	F940479	30MAY94

ELECTRICAL SCHEMATIC

IN-24283

GCPX12E

SIZE C | NONE | WT. | SHEET 2 OF 2

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14. Put a NEW governor gasket and the governor into position on the intake manifold.

15. Install a NEW carburetor gasket and the carburetor on the governor assembly and tighten the fasteners to the correct torque.

16. Put the fuel pump and NEW gasket on the engine. Make sure the plunger arm on the pump is in correct contact with the cam on the camshaft. Tighten the fasteners to the proper torque.

17. Install the fuel line between carburetor and fuel pump.

18. Install the distributor in the correct position. and tighten the clamping fastener.

19. Install the vacuum hose between the carburetor and distributor.

20. Install the breather hose.

21. Check the gap of each spark plug and adjust to the specified gap of [0,7-0,8 mm] .028-.031 in. Install the spark plugs and tighten to the specified torque of [2.5-3.0 kg.m] 18-21 lbf.ft.

22. Install the spark plug and ignition cables. Avoid bending them sharply which will severely damage them. Make sure the ends are correctly seated in the distributor cap and on the spark plugs.

23. After the engine has been "run-in", the head bolts should be retorqued and the valve clearance rechecked.

Refer to the ADJUSTMENT SECTION for this procedure.

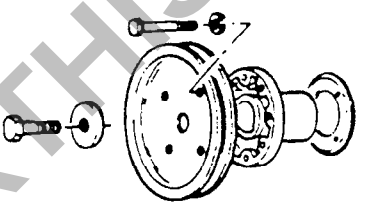
00-07-E ENGINE BLOCK DISASSEMBLY

NOTE

BEFORE STARTING DISASSEMBLY OF THE ENGINE, BE SURE THAT:

a. All fluids have been drained.
b. The engine has been securely blocked to prevent overturning.

1. Be sure to keep all parts in correct order and to identify each part as removed. This will assure that parts are assembled in correct order.

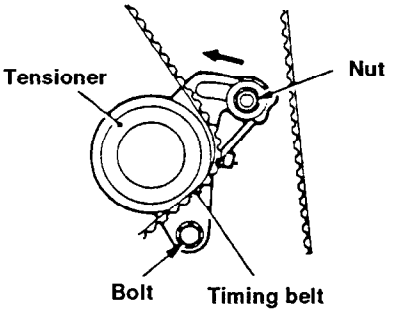


2. Remove the crankshaft pulley.

3. Remove the timing belt upper and lower front covers.

4. Remove the crankshaft sprocket mounting bolt.

5. Loosen (but do not remove the timing belt tensioner nut and bolt) and push the tensioner assembly in the direction shown until fully against sot end giving maximum slack to belt. Retighten the nut to maintain this position of the tensioner.



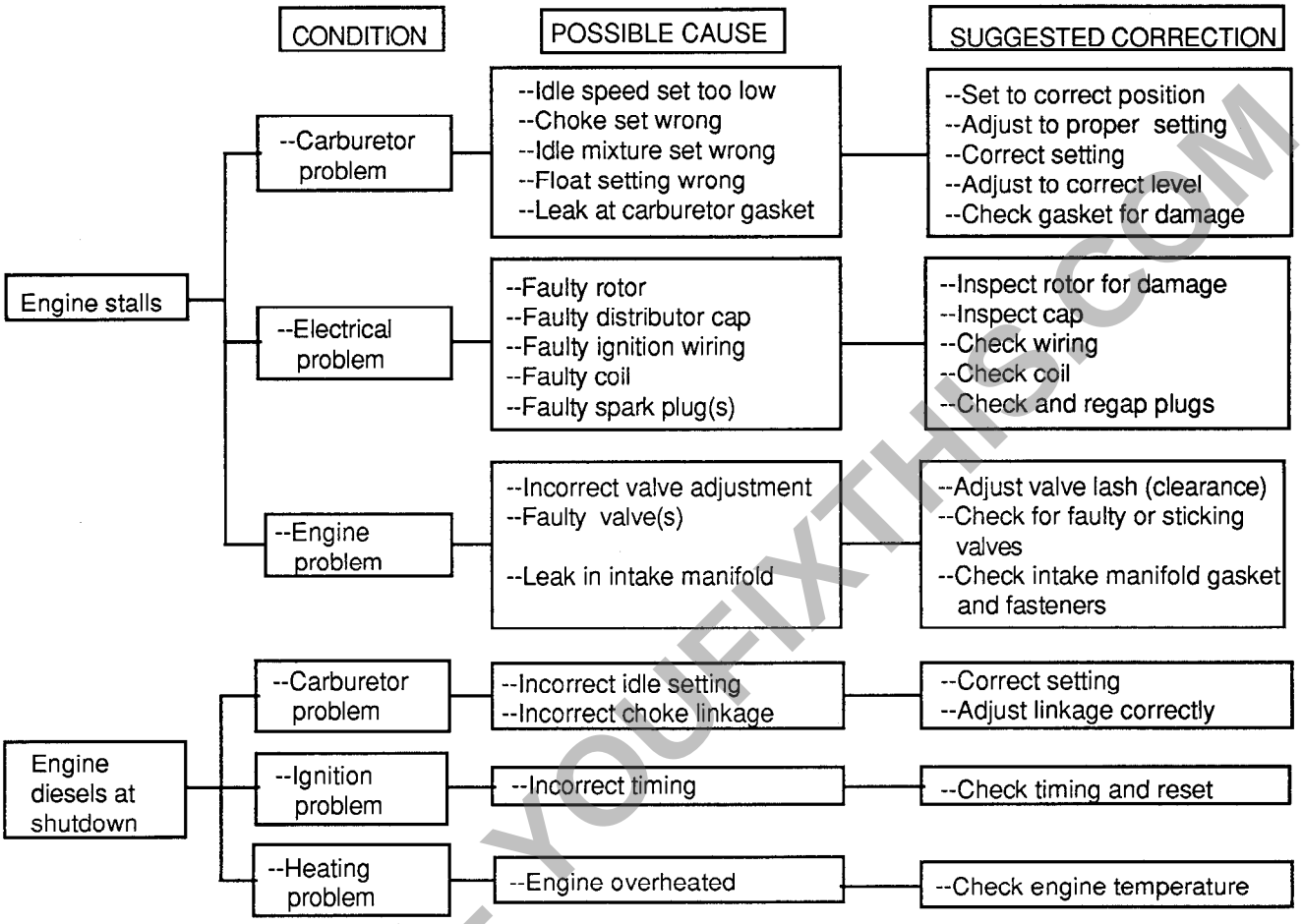
6. Mark an arrow on the timing belt to indicate the direction it moves when the crankshaft turns clockwise. This will make sure the belt is correctly installed.

7. Remove the timing belt.

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ENGINE TROUBLESHOOTING



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LUBRICANT SPECIFICATIONS

Engine Crankcase Oil

Gasoline and LPG engines, Upright latch, Control rods, Miscellaneous linkage	Motor oil per API Service Classification CC, SC, SE, SF; or MIL-L-2104B; or MIL-L-46152

Transmission Fluid

Powershift transmission, Torque converter and Drive axle	CLARK #2776236 Automatic Transmission Fluid

Hydraulic Fluid

Hydraulic Sump Normal application	CLARK Specification MS-68 Hydraulic Oil, w/antiwear additives
Cold Storage or low temperature	CLARK Specification MS-226 Hydraulic Oil

Multi-purpose grease

Axle ends, Wheel bearings	NLGI Grade No. 1, Lithium soap base grease, CLARK Specification MS-9B and MS-107B, or equivalent.
Steer linkage, Upright mast & carriage rollers, Trunnion bushings, Tilt cylinder rod ends, Brake pedal shaft	NLGI Grade No. 2, Lithium soap base grease, CLARK Specification MS-107C, or equivalent.

Chain Lube

Upright lift chains	CLARK #886399 Chain and Cable Lube, or equal

Dry-film lubricant

Side shifter, Attachments, Clamp slides	Dow Corning Molykote 321 Bonded Lubricant; Graph-O-Kote #22; Molub-Alloy #369 Dry Lube, or equivalent.

Hydraulic brake fluid

Brake reservoir	Heavy duty hydraulic brake fluid, SAE J1703B specification; or Type DOT, Grade DOT 3.

Battery service

Unsealed batteries	Distilled water

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