

LUBRICATION ORDER**LO 10 3930-621 12**

10 February 84

(Supersedes LO 10-3930-621-12-1 and -2, 10 MARCH 1972)

**TRUCK, LIFT, FORK, GED, SOLID RUBBER
TIRED WHEELS, 4000 LB CAPACITY, 180-INCH
LIFT (ALLIS-CHALMERS MODEL F40-24PS,
ARMY MODEL MHE-209) (NSN 3930-00-459-5948),
100-INCH LIFT (ALLIS-CHALMERS MODEL
F40-24PS100, ARMY MODEL MHE-224)
(3930-00-165-4102)**

Reference: TM 10-3930-621-12 and FEDERAL SUPPLY CATALOG C9100-IL

Hard time intervals and the related manhour times are based on normal operation. The man-hour time specified is the time you need to do all the services prescribed for a particular interval. Change the hard time interval if your lubricants are contaminated or if you are operating the equipment under adverse operating conditions, including longerthan-usual operating hours. The hard time interval may be extended during periods of low activity. If extended, adequate preservation precautions must be taken.

Clean parts or fittings with dry cleaning solvent (SD), Type II or equivalent. Dry before lubricating. Dotted arrow shafts indicate lubrication on both sides of equipment. A dotted circle indicates a drain below. Relubricate all items found contaminated after fording or washing.

The lowest level of maintenance authorized to lubricate a point is indicated by one of the following symbols as appropriate: Operator/Crew (C); and Organizational Maintenance (O).

WARNING

Dry cleaning fluid is flammable. Do not use near a flame or excessive heat. Use only with adequate ventilation. Avoid prolonged breathing of vapors and minimize skin contact.

Reporting errors and recommending Improvements. You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Tank-Automotive Command, ATTN: DRSTA-MB, Warren, MI 48090. A reply will be furnished to you.

*The time specified is the time required to perform all services at the particular interval.

*TOTAL MAN-HOURS		*TOTAL MAN-HOURS	
INTERVAL	MAN-HOURS	INTERVAL	MAN-HOURS
10	0.2	500	2.6
50	0.6	1000	3.0
250	1.7		

LO 10-3930-621-12

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CARD 1 OF 7

LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

Brake and Inching Pedals (0)
(Remove floor plate to lubricate.)

GAA 250

Tilt Cylinders (0)

GAA 250

Mast Pivot Pins (0)

GAA 250

Hand Brake Pivots (0)

OE/ HDO 250

Transmission and Converter Drain Plug (0)
(Drain and refill)
(See Note 6)

1000

Wheel Bearings (0)
(See Note 10)

GAA 1000

Pivot Arm (0)
(MHE209)
(On MHE 224 fitting is located on the center of the steer axle housing)

GAA 250

250 OE/ HDO

Lift Chains (0)
(Clean and coat)

1000 GAA

Wheel Bearings (0)
(See Note 10)

250 OE/ HDO

Accelerator Linkage (0)

250 BFS

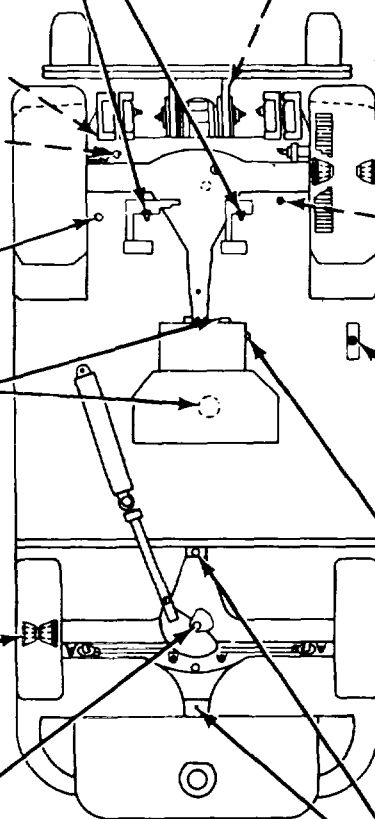
Brake Master Cylinder Fill and Level (0)
(Remove floor Plug to check level)

50 OE/ HDO

Transmission and Torque Converter Fill and Level Cap (C)
(Check level)
(See key) (See Notes 6 and 13)

250 GAA

Axle Housing Pivot Trunnion Bearings (0)



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LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

Mast Channels (0)
(Clean and coat)

GAA 250

Differential
Drain Plug (0)
(Drain and refill)
(See Note 14)

1000

Steering Gear
(no lubrication
required)

Steering
Cylinder (0)

GAA 250

Ball Socket (0)

GAA 250

King Pin (0)
(4 fittings)

GAA 250

**250 OE/
HDO** Carriage Fork
Latch (0)
(Clean and coat)

500 GAA Bull Gears (0)
(Clean and coat)

250 GO Differential Fill
and Level Plug (0)
(Check level)
(See key)

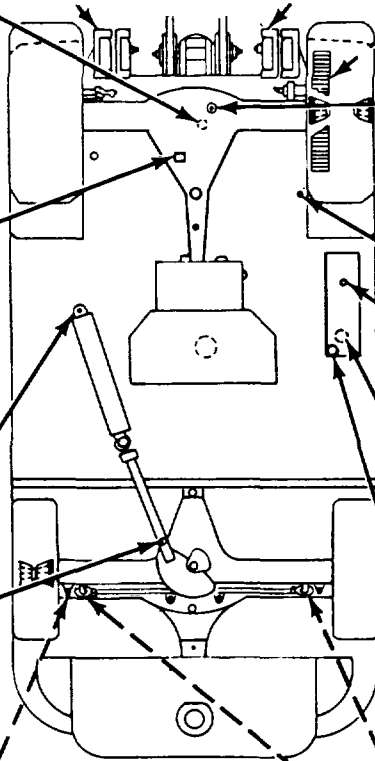
1000 Hydraulic Filter (0)
(See Note 8)

**50 OE/
HDO** Hydraulic
Reservoir Fill
and Level Cap (C)
(Check level)
(See Key) (See
Note 12)

1000 Hydraulic Reservoir
Drain Plug (0)
(Drain and refill)

500 Reservoir
Breather (0)
(Clean element)

250 GAA Tie Rods (0)



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LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

Alternator (Sealed bearings, no lubrication required)

Distributor (O)
(See Note 9)

Engine Oil Filter (O)
(See Note 5)

Starter (Sealed bearings, no lubrication required)

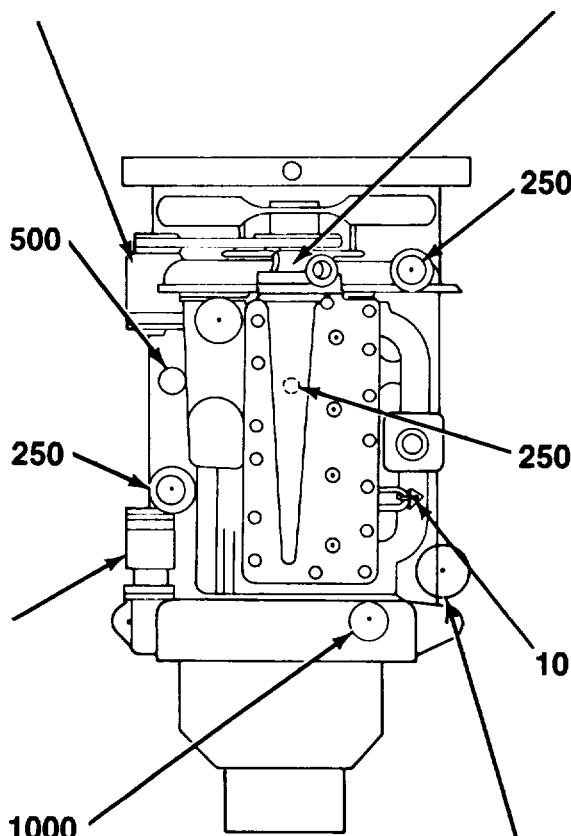
Torque Converter
Transmission Oil
Filter (O) (See
Note 7)

**OE/
HDO**

500

250

1000



**250 OE/
HDO**

250

10

**10 OE/
HDO**

Water Pump (Sealed bearing, no lubrication required)

Crankcase Oil Fill and Breather Cap (C)
(Every 250 hours remove cap, clean, and re-oil) (See key)

Crankcase Drain Plug (O)
(Drain and refill)
(See Note 4)

Engine Oil Level Gage (C)
(Check level)
(See Note 3)

Air Cleaner (C)
(See key) (See
Note 11)

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* KEY -

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES			INTERVALS
		Above +15°F (Above -9°C)	+40° to -15°F (+4° to -26°C)	+40° to -65°F (+4° to -54°C)	
OE/ HDO - Lubricating Oil, Internal Combustion Engine, Tactical Service OEA - Lubricating Oil, Internal Combustion, Arctic - Crankcase W/Filter - Oil Can Points (See Note 2)	5 qts. (4.73 L)	OE/HDO 30	OE/HDO 10	OEA (See Note 1)	For Arctic operation refer to FM 9-207 Intervals given are in hours of normal operation.
- Transmission and Converter - Hydraulic Reservoir W/Filters MHE 209 MHE 224 - Air Cleaner (MHE 209 only)	11 qts. (10.4 L) 18 qts. (17 L) 22 qts. (20.8 L) 1/2 qt. (0.473 L)				
GO - Lubricating Oil, Gear, Multipurpose - Differential Axle	5 pts. (2.36 L)	GO 85W/140	GO 80W/90	GO 75W	
BFS - Brake Fluid, Silicone, Automotive - Brake Master Cylinder	5/16 qt. (0.3 L)	ALL TEMPERATURES			
GAA - Grease, Automotive and Artillery		ALL TEMPERATURES			

*See Note 15 for lubricant specification number.

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NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW -150F (-260C). Remove lubricants prescribed in Key for temperatures above -150F (-260C). Relubricate with lubricants specified in Key for temperatures below -150F (-260C). If OEA lubricant is required to meet the temperature ranges prescribed in the Key, OEA lubricant is to be used in place of OE/HDO-10 lubricant for all temperature ranges where OE/HDO-10 is specified in the Key.

2. OIL CAN POINTS. Each 250 hours lubricate shift linkage, control valve linkage, brake linkage, and all exposed adjusting threads with OE/HDO.

3. ENGINE OIL LEVEL HOT OR COLD CHECK. Cold engine, oil level should be at high mark on dipstick. Hot engine, oil level must be between high and low marks on dipstick (allow to set 5 minutes before checking).

4. ENGINE. Oil is to be changed each 250 hours. Drain when lubricant is warm.

5. ENGINE OIL FILTER. Each 250 hours, remove filter element, clean housing and install new filter element. After installing new filter element, fill crankcase, operate engine for 5 minutes, check housing for leaks, check crankcase oil level and bring to "FULL" mark.

6. TRANSMISSION AND TORQUE CONVERTER. Check level each 50 hours with engine running at idle speed, oil at operating temperature and transmission in neutral. Maintain oil level at "FULL" mark. Change oil each 1000 hours. Access to torque converter drain plug is gained through timing cover opening on engine flywheel housing. Rotate flywheel until drain plug is in opening, remove plug and rotate flywheel until plug opening is aligned with drain opening at bottom of flywheel housing. Fill transmission to low mark. Run engine at idle speed to fill converter and lines. With engine running at idle speed, oil at operating temperature

and transmission in neutral, add oil to bring oil level to "FULL" mark. Operate for 5 minutes and check for leaks.

7. TRANSMISSION AND TORQUE CONVERTER OIL FILTER. Each 1000 hours, remove filter, clean filter mount, and install new filter and seal. Fill transmission to low mark. With engine running at idle speed, oil at operating temperature and transmission in neutral, add oil to bring oil to "FULL" mark. Operate for 5 minutes and check filter for leaks.

8. HYDRAULIC OIL FILTER. Each 1000 hours, remove element, clean filter shell and install new element. After replacement, operate hydraulic system for 5 minutes, check for leaks, check level and bring to "FULL" mark.

9. DISTRIBUTOR. Each 500 hours, lubricate rotor wick with 3 or 4 drops of OE/HDO 10. Apply very light coat of GAA to breaker cam.

10. WHEEL BEARINGS. Each 1000 hours, remove wheels, inspect all parts, replace damaged or worn parts, repack bearings, and assemble.

11. AIR CLEANER. Fork Lift Model MHE-209 has oil bath type air cleaner. Each 10 hours refill air reservoir to level mark. Each 50 hours disassemble entire unit, clean, re-oil and assemble.

Fork Lift Model MHE-224 has dry type air cleaner. Each 250 hours replace element.

12. HYDRAULIC RESERVOIR FILL AND LEVEL CAP. Fork Lift Model MHE-209, remove floor plate to check oil level.

Fork Lift Model MHE-224, open door on floor plate to check oil level.

13. TRANSMISSION AND TORQUE CONVERTER FILL AND LEVEL CAP. Fork Lift Model MHE-209, remove floor plate to check oil level.

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NOTES CONTINUED:

Fork Lift Model MHE-224, open door on floor plate to check oil level.

14. DIFFERENTIAL. Check level each 250 hours. Change gear lubricant each 1000 hours. After refill, operate for five minutes, check for leaks and bring oil level to fill and level plug opening.

15. LUBRICANTS. The following is a list of lubricants with military symbols and applicable specification numbers.

OEIHDO	MIL-L-2104
GO	MIL-L-2105
GAA	MIL-G-10924
OEA	MIL-L-46167
BFS	MIL-B-46176
(SD), Type II	P-D-680

Copy of this Lubrication Order will remain with the equipment at all times, instructions contained herein are mandatory.

By order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

OFFICIAL:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

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