

LUBRICATION ORDER

LO 10-3930-409-12

16 February 84

(Supersedes LO 10-3930-409-12, 8 JANUARY 1971)

**TRACTOR, WHEELED, WAREHOUSE, GASOLINE,
PNEUMATIC-TIRED WHEELS, 4,000-POUND- DRAWBAR
PULL (UNITED TRACTOR MODEL G40; ARMY MODEL
MHE 189) (UNITED TRACTOR MODEL G40A; ARMY
MODEL MHE189A) (UNITED TRACTOR MODEL G40B;
ARMY MODEL MHE-189B) (NSN 3930-00-724-8146)**

Reference TM 10-3930-409-10 and -20, and Federal Supply CATALOG C9100-IL

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

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.

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).

Reporting errors and recommending improvements. You can help us 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.

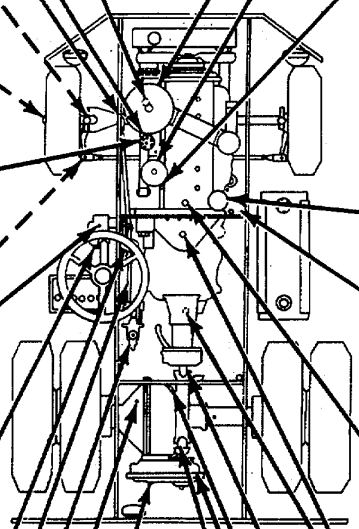
*TOTAL MAN-HOURS		*TOTAL MAN-HOURS	
INTERVAL	MAN-HOURS	INTERVAL	MAN-HOURS
10	0.2	500	2.4
50	0.3	1000	3.6
250	1.2		

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LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

- Generator (0) **OE/ 500**
(Sparingly) **HDO**
- Crankcase Fill (C) **OE/**
(See Key) **HDO**
- Drag Link Front (0) **GAA 250**
- Steering Spindle (0) **GAA 250**
Top and Bottom
- Wheel Bearings (0) **GAA 1000**
(See Note 7)
- Distributor (0) **OE/ 500**
(See Note 6) **HDO**
- Tie Rod (0) **GAA 250**
- Steering Gear Fill (0) **GO**
(See Key)
- Steering Gear Level (0) **500**
(Check level)
- Drag Link Rear (0) **GAA 250**
- Brake Shaft (0) **GAA 250**
- Brake Master Cylinder (0) **BFS 500**
(Check level)
- Differential Drain (0) **C/MR**
(Drain and refill)
(See Note 8)
- Drop GearCase Fill and Level (0) **GO 1000**
(See Key)
(Check level)



- 10 OE/** Air Cleaner (C)
HDO (See Note 9)
- 250** Engine Oil Filter (0)
(Replace filter element) (See Note 5)
- 10** Engine Oil Level Gage (C)
(Check level)
(See Note 3)
CAUTION: When OEA oil is used the level will be checked more often.
- 250 OE/** Crankcase Breather (0)
HDO (Clean and re-oil)
- 50 OE/** Transmission and Converter Fill and Level Cap (C)
HDO (See Key) (Check level) (See Note 10)
- 250** Crankcase Drain (0)
(Drain and refill)
(See Note 4)
- 500** Transmission and Converter Drain Plug (0)
(Drain and refill)
(See Note 11)
- 500 GAA** Universal Joint Front (0)
- 1000 GO** Differential Fill and Level (0)
(See Key)
(Check level)
- C/MR** Drop GearCase Drain (0)
(Drain and refill)
(See Note 12)
- 500** Universal Joint Rear (0)

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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 With Filter - Oil Can Points (See Note 2)	6 qts. (5.67 L)	OE/HDO 30	OE/HDO 10	OEA (See Note 1)	C/MR-Condition Monitor
- Transmission and Converter - Air Cleaner	8 qts. (7.56 L)				
GO - Lubricating Oil, Gear Multipurpose - Front Differential - Drop Gearcase - Steering Gear Housing	9-1/2 pts. (4.5 L) 1-1/2 pts. (0.80 L) 3/4 pt. (0.36 L)	GO 85W/140	GO 80W/90	GO 75W	Intervals given are in hours of normal operation. For Arctic operation refer to FM 9-207
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 13 for lubricant specification number.

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NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW -15°F (-26°C). Remove lubricants prescribed in Key for temperatures above -15°F (-26 °C). Relubricate with lubricants specified in Key for temperatures below -15°F (-26 °C). 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 clean and lightly coat control linkages, hinges 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. 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.
7. WHEEL BEARINGS. Each 1000 hours, remove wheels, clean and inspect all parts, replace damaged or worn parts, repack bearings, and assemble.
8. DIFFERENTIAL. Check level each 1000 hours. Change gear lubricant only when required by maintenance repair action, contamination by water, or other foreign material. After refill, operate for five minutes, check for leaks and bring oil level to level plug opening.
9. AIR CLEANER. Each 10 hours, refill reservoir to level mark. Each 250 hours disassemble entire unit, clean, re-oil and assemble.
10. TRANSMISSION AND CONVERTER LEVEL AND FILL. Check level each 50 hours. Set handbrake, run engine at idle speed until transmission oil reaches operating temperature. Move shift lever through all positions to distribute oil throughout transmission and converter, position lever in neutral. Check level and bring to "FULL" mark.
11. TRANSMISSION AND CONVERTER DRAIN AND REFILL. Change oil each 500 hours. To gain access to converter drain plug, remove converter housing cover plate and turn starter ring until converter drain plug is accessible. Remove and clean oil pan. Install new filter and install oil pan using new gaskets. Pour 5 quarts (4.73 L) of oil through oil filler tube. Set handbrake, operate engine at idle speed with shift lever in neutral. Add oil to bring level to "ADD" 1 pint mark on indicator. Idle engine until transmission reaches operating temperature. Slowly move shift lever through all- positions to distribute oil throughout transmission and converter, position lever in neutral. Operate for 5 minutes, check for leaks, check oil level and bring to AWFULLY mark.
12. DROP GEARCASE. Check level each 1000 hours. Change gear lubricant only when required by maintenance repair action, contamination by water, or other foreign material. After refill, operate for five minutes, check for leaks and bring oil level to level plug opening.
13. LUBRICANTS. The following is a list of lubricants with military symbols and applicable specification numbers.

OE/HDO	MIL-L-2104
GO	MIL-L-2105
GM	MIL-G-10924
OEA	MIL-L-46167
BFS	MIL-B-6176
(SD), Type II	P-D-680

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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

DISTRIBUTION:

To be distributed in accordance with DO Form 12-25B, Operator and Organizational maintenance requirements for tractors

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



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