

LUBRICATION ORDER

LO 5-2410-214-12

15 DECEMBER 83

(Supersedes LO 5-2410-214-12, 25 FEBRUARY 1982)

TRACTOR, FULL TRACKED, LOW SPEED: DED, MEDIUM DBP; OSCILLATING TRACK; 78-INCH GAGE; (CATERPILLAR MODEL D7E), W/WINCH (NSN 2410-00-782-1130); W/RIPPER (NSN 2410-00-926-3697); W/ROPS AND WINCH (NSN 2410-01-050-9628); W/ROPS AND RIPPER (NSN 2410-01-050-9629)

Reference: TM 5-2410-214-12, and FEDERAL SUPPLY CATALOG C9100-IL.

Intervals (on-condition or hard time) 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 services prescribed for a particular interval. On condition (OC) oil sample intervals shall be applied unless changed by the Army Oil Analysis Program (AOAP) laboratory. Change the hard time interval if your 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. Hard time intervals will be applied in the event AOAP laboratory support is not available.

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.

* The time specified is the time required to perform all services at the particular interval (on-condition or hard times).

Clean parts or fittings with dry cleaning solvent (SD), Type H 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 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.

* TOTAL MAN-HOURS		* TOTAL MAN-HOURS	
INTERVAL	MAN-HOURS	INTERVAL	MAN-HOURS
10	0.4	500	1.0
50	0.3	1000	2.1
100	0.6	2000	1.3
250	0.7		

TA 220439

LUBRICANT-INTERVAL

INTERVAL LUBRICANT

Lift Cylinder Lower GAA 10
Trunnion
Bearings (C)
(2 fittings)

100 GAA Fan Belt Adjusting
Pulley Bearing (0)

Blade Tilt Brace GAA 100
and Socket
Joints (C)
(2 fittings)

100 GAA Blade Tilt Brace
Threads (C)

Cylinder Upper GAA 50
Trunnion
and Support
Bearings (C)
(8 fittings)

100 GAA Fan Belt Adjusting
Pulley Bracket (0)
(Springly)

Fan Pulley GAA 250
Bearing (0)

1000 GAA Universal
Joints (C)
(2 fittings,

Brake Control GAA 2000
Shaft Bearings (0)
(4 fittings)

2000 GAA Transmission
Speed Selector
Shaft Bearings (0)

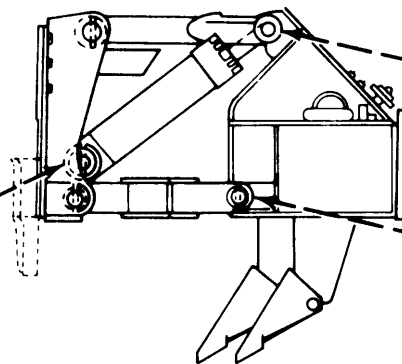
Steering Clutch GAA 2000
Control Lever
Bearings (0)
(6 fittings)

10 GAA Track Roller Frame
Outer Bearing (0)

Winch Brake
Compartment
Drain (C)
(Remove plug to
drain water)

10 GAA Track Roller Frame
Inner Bearing (0)
(2 fittings)

PLAN VIEW



Ripper Cylinder GAA 10
Pins (C)
(4 fittings)

100 GAA Ripper Link
Pivot Pins (C)
(4 fittings)

10 GAA Ripper Beam Pivot
Pins (C)
(4 fittings)

RIPPER

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LUBRICANT • INTERVAL

INTERVAL-LUBRICANT

Air Cleaner
(Dry Type)
(Do not Lubricate)

OE/ HDO Engine Oil Fill
Cap (C)
(See Key)

Engine Oil Drain
Plug (0)
(Drain and refill)
(See Notes 1 and 5)

**(OC)
or
250**

10

Engine Oil Level
Gage (C)
(Check level)
(See Note 4)
CAUTION: When
OEA oil is used the
level will be
checked more often.

Starter (Sealed
Bearing, no Lubri-
cation required)

**(OC)
or
250**

Engine Oil Filter (0)
(See Notes 1 and 6)
(Replace element)

Transmission Oil
Filter (0)
(See Notes 1 and 8)

**(OC)
or
250**

50

Winch Oil Level
Plug (0)
(Check level)

Final Drive
Breathers (C)
(Remove, clean,
re-oil and install)

OE/ HDO 250

OE/ HDC Winch Fill Plug (C)

Transmission
Breathers (C)
(Remove, clean,
re-oil and install)

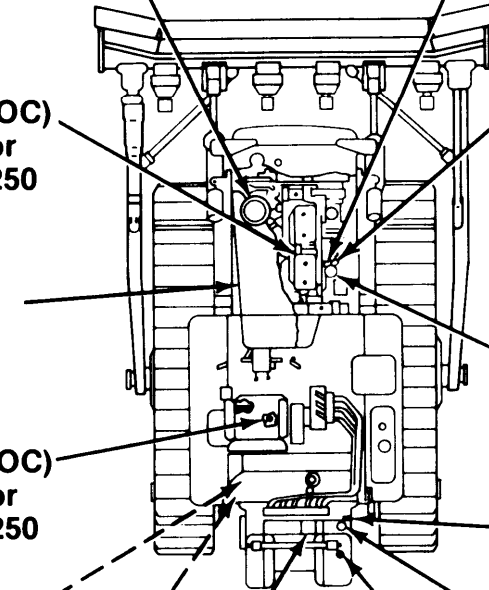
OE/ HDO 250

1000

Winch Drain
Plugs (0)
(Loosen only
to drain water every
250 hours. Remove
to drain oil
every 1000 hours)

Winch Oil Filter (0)
(Remove, clean and
install)

500



LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

Transmission
Magnetic
Strainer (0)
(Clean) (See Note 7)

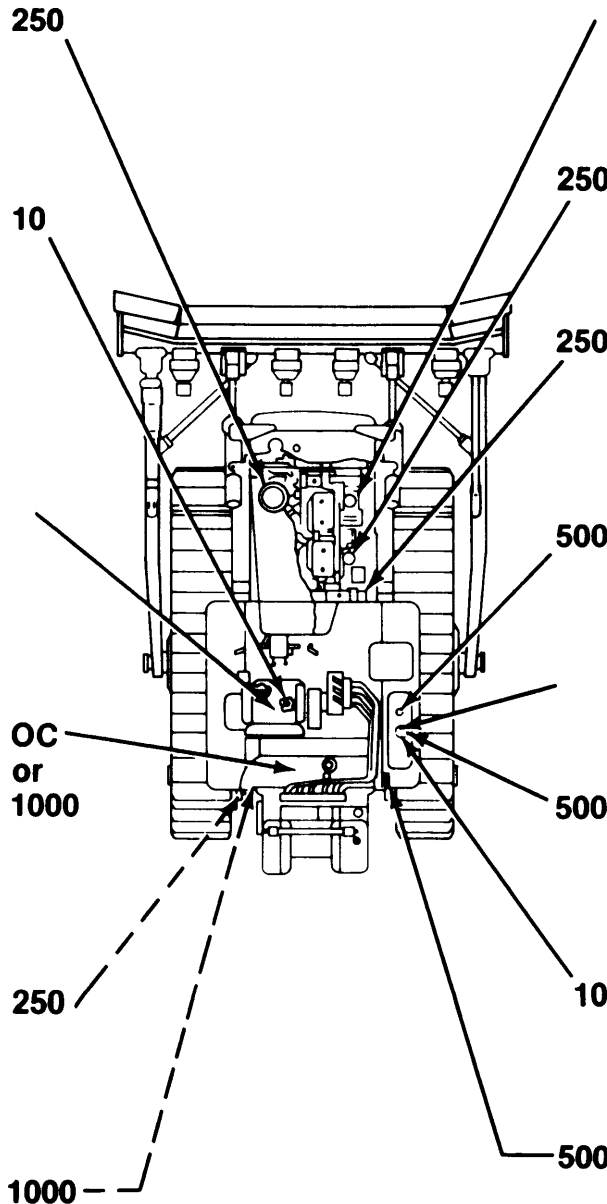
Transmission, Bevel
Gear, and Steering
Clutch Compartment
Oil Level Gage (C)
(Check level with
engine running)
(See Note 7)

Transmission, Bevel
Gear and Steering
Clutch Compartment
Oil Fill Cap (C)
(See Key)

Transmission, Bevel
Gear and Steering
Clutch Compartment
Drain Plugs (0)
(Drain and refill)
(See Notes 1 and 7)

Final Drive Fill
and Level Plugs (0)
(Check level)
(See Key)

Final Drive
Drain Plugs (0)
(Drain and refill)
(See Note 10)



Generator (Sealed
Bearing, no lubri-
cation required)

Engine Breather (C)
(Remove, clean and
install)

Transmission
Magnetic
Strainer (0)
(Clean) (See Note 7)

Hydraulic System
Filter (0)
(See Note 11)

**OE/
HDO** Hydraulic System
Fill (C) (See Key)

Hydraulic System
Strainer (0)
(Remove, clean
and replace)

Hydraulic System
Level Gage (C)
(Check level)

Hydraulic System
Drain Valve (0)
(Drain and refill)
(Remove cover to
turn valve)

* 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/ - Lubricating Oil, Internal Combustion Engine, Tactical Service HDO OEA - Lubricating Oil, Internal Combustion, Arctic - Oil Can Points (See Note 3) - Engine Crankcase - Transmission, Bevel Gear and Steering Clutch	30 qts. (28.4 L) 32 gals. (121.1 L)	OE/HDO 30	OE/HDO 10	OEA (See Note 2)	OC - On Condition (AOAP) Intervals given are in hours of normal operation.
- Hydraulic System	28 gals. (106 L)				
- Final Drives	34 qts. (32.2 L)	OE/HDO 50			
- Winch	38 qts. (35.9 L)	OE/HDO 30	OE/HDO 30		
GAA - Grease, Automotive and Artillery		ALL TEMPERATURES			

*See Note 12 for lubricant specification number.

NOTES:

1. ARMY OIL ANALYSIS PROGRAM (AOAP). For Active Army units, obtain samples from engine and automatic [transmission every 50 hours of operation or 60 days (whichever comes first). Reserve and National Guard activities will use 50 hours or 120 days as the prescribed sample intervals. Reserve and National Guard equipment in frequent use during active training period will adhere to the schedule for Active Army units. As a minimum, one sample from

each unit's two week active training period will be submitted for each item of equipment. Send these samples to the nearest AOAP laboratory. Refer to TB 43-0210 for sampling instructions. When or if AOAP laboratory support is unavailable, hard time intervals will apply.

NOTE

Do not hold oil samples. Submit oil

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NOTES - CONTINUED:

samples as soon as they have been taken.

Seasonal oil changes will be made due to expected temperatures. (See Key.)

2. 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.

3. OIL CAN POINTS. Each 50 hours lubricate control linkages, pins and clevises, and all exposed adjusting threads with OE/HDO.

4. 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).

5. ENGINE. Oil is to be changed each time an engine oil change is directed by AOAP laboratory. When AOAP laboratory support is not available, change oil each 250 hours. Drain when lubricant is warm.

6. ENGINE OIL FILTER. Filter is to be replaced each time an engine oil change is directed by AOAP laboratory. After installing new filter element, fill crankcase, operate engine 5 minutes, check housing for leaks, check crankcase oil level and bring to full mark. When AOAP laboratory support is not available, install new filter element each 250 hours.

7. TRANSMISSION, BEVEL GEAR AND STEERING CLUTCH COMPARTMENT. Check level each 10 hours with engine

running at idle speed, oil at operating temperature and transmission in neutral. Maintain oil level to "FULL" mark. Oil is to be changed each time a transmission oil change is directed by AOAP laboratory. Remove transmission magnetic strainers, clean and replace using new gaskets. Fill transmission to low mark. Run engine at idle speed to fill converter and lines. Add oil to bring oil level to "FULL" mark. Operate for 5 minutes and check for leaks. When AOAP laboratory support is not available, change transmission oil each 1000 hours.

8. TRANSMISSION OIL FILTERS. Filter elements are to be replaced each time a transmission oil change is directed by AOAP laboratory. Remove filter elements, clean filter housing, install new filter elements and seals. After replacement, fill transmission to low mark. With engine running, oil at operating temperature and transmission in neutral, add oil to bring oil level to "FULL" mark. Operate for 5 minutes, check filter housing for leaks. When AOAP laboratory support is not available, install new filter elements each 250 hours.

9. TRACK ROLLERS-TRACK CARRIER ROLLERS, AND FRONT IDLERS. These parts are lubricated for life with OE/HDO lubricant. After reconditioning, use special lubricator nozzle for refilling with OE/HDO.

10. FINAL DRIVES. Drain each compartment, wash, and refill every 1,000 service hours (500 service hours if operating in either extremely dusty conditions or deep mud and water).

11. HYDRAULIC SYSTEM FILTER. Each 500 hours, remove element, clean filter housing and install new element. After replacement, operate hydraulic system for 5 minutes, check for leaks, check level and bring to "FULL" mark.

NOTES - CONTINUED:

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

OE/HDO	MIL-L-2104
GAA	MIL-G-10924
OEA	MIL-L-46167
(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

DISTRIBUTION:

To be distributed in accordance with DA Form 12-25B, Operator and Organizational maintenance requirements for Tractors.

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