

18 January 1994

**PUMP UNIT, CENTRIFUGAL, DIESEL-DRIVEN,
SELF-PRIMING, 65 GPM WATER, MODEL 4M SDQ 2000
NSN 4320-01-338-8010**

References: TM 10-4320-316-14 and TM 10-4320-316-24P

REPORTING OF ERRORS

Reporting errors and recommending improvements. You can help improve this lubrication order. 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) directly to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

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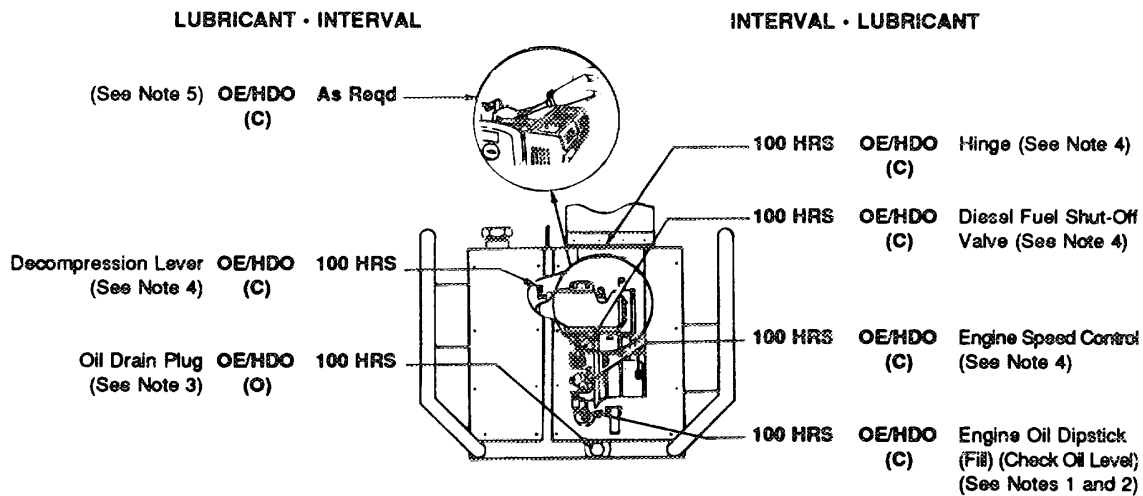
This LO is for crew (C) or unit (O) Maintenance. Intervals (on-condition or hard time) are based on normal operation. Lube more during constant use, and less during inactive periods. Use correct grade of lubricant for seasonal temperature expected.

On the picture a dash line (---) means lube points on both sides.

Clean parts with dry cleaning solvent conforming to P-D-680, Type III. Dry before lubricating. DO NOT use fluid or semi-fluid lubricant on SFD lubricated surface. Wipe surface dry.

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 conditions, including longer than usual operating hours. The hard time interval may be extended during periods of low activity. If extended, adequate preservations/precautions must be taken. Hard time intervals will be applied in the event AOAP laboratory support is not available. *Before you start your lube service:*

- | | |
|--|---------------------------------|
| ALWAYS | NEVER |
| a. Clean lubrication points before each lubrication. | a. Use wrong type/grade grease. |
| b. Use the lubrication order as your guide. | b. Use too much lubricant. |



TOTAL TASK-HOUR		TOTAL TASK-HOUR	
D	0.2	100	0.5

KEY

LUBRICANTS	COMPONENTS & CAPACITY (APP)	EXPECTED TEMPERATURES																		
		°F	<-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120
		°C	<-46	-40	-34	-29	-23	-18	-12	-7	-1	4	10	16	21	27	32	38	44	49
OE/HDO (MIL-L-2104) LUBRICATING OIL, ICE, COMBAT/ TACTICAL SERVICE or OEA (MIL-L-46167) LUBRICATING OIL, ICE ARCTIC	ENGINE 0.79 QT (0.75 L)	OE/HDO-10 (O-237)																		
	OIL CAN POINTS (As Req'd)	OE/HDO-30 (O-236)																		
P-D-680 DRY CLEANING SOLVENT	(As Req'd)	OE/HDO-15/40 (O-1236)																		
		OEA (O-183)																		
		TYPE III																		
		ALL TEMPERATURES																		
		°F	<-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120
		°C	<-46	-40	-34	-29	-23	-18	-12	-7	-1	4	10	16	21	27	32	38	44	49

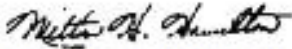
NOTES:

1. Unscrew dipstick. Check appearance of oil on dipstick for water contamination, excessive foaming, or particle contamination. If any of these conditions exist, notify unit maintenance.
2. When checking oil level, make sure engine is not running and is setting level. If engine is tilted, you may add too much or too little oil. Do not overfill or engine damage could result. If engine does become overfilled, remove oil drain plug and drain oil until proper oil level is indicated. Always check the lube oil level before starting engine and refill as necessary. Unscrew dipstick and wipe clean. Observe "H" mark on dipstick indicating engine is filled properly. Place dipstick into pan. Do not screw dipstick into oil pan. Remove dipstick and observe oil level. Add oil as needed to bring oil level to top mark of "H".
3. Drain oil with engine stopped and level. Engine oil should be warm to touch (not too hot to cause burning). Observe oil for evidence of contamination. If excessive contamination is found, there may be a major malfunction of the internal engine parts and direct support maintenance must be notified. Install drain plug, and tighten plug. Unscrew dipstick and fill oil pan with oil OE/HDO as defined in the KEY table above. Maximum oil pan capacity is 0.79 quarts (0.75 liters). Screw dipstick into oil pan.
4. Apply a drop of oil to component shaft or several drops along hinge. On hinge, open and close door to work oil into hinge.
5. The engine is equipped with a rubber plug in the rocker arm cover to aid starting in cold weather below 10°F (-12°C). The plug is removed and 5 or 6 drops of engine oil (OE/HDO) is added before starting.

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:

Official:



MILTON H. HAMILTON
*Administrative Assistant to the
Secretary of the Army*
06368

GORDON R. SULLIVAN
*General, United States Army
Chief of Staff*

DISTRIBUTION:

To be distributed in accordance with DA Form 12-25-E, block no. 6196, requirements for LO 10-4320-316-12.

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