

LUBRICANTS	REFILL CAPACITY	EXPECTED TEMPERATURES			FOR OPERATION	CHANGE INTERVALS
		>+15F >-10C	+40to -15F (+5 to -25C)	+40 to -45F (+5 to -55C)		
OE/HDO LUBRICATING OIL TACTICAL (MIL-L-2104)	3 GAL (11.4 LTR.)	OH/HDO30	OE/HDO10 (see note 2)		O P E R A T I O N	250 HRS
OEA-LUBRICATING OIL ARCTIC (MIL-L-46167)	3 GAL (11.4 LTR)			OEA		250 HRS
-TRANSMISSION -HYDRAULIC OIL	6.5 GAL (25 LTR) 25 GAL (91 LTR)	OE/HDO10 OE/HDO10	OE/HDO10 OE/HDO10	OEA OEA	R E F E R E N C E S T O F M 9- 207	1,000 HRS 2,000 HRS
GO-LUBRICATING OIL GEAR, MULTI PURPOSE (MIL-L-2105)	AS REQUIRE D	GO 85-145	GO 80-90	GO 75		WHEN REQUIRED
GAA-GREASE AUTOMOTIVE & ARTILLERY (MIL-G-0924)	AS REQUIRE D	ALL TEMPERATURES				WHEN REQUIRED
BFS-BRAKE FLUID SILICONE, AUTOMOTIVE ALL WEATHER, OPERTIONAL&PRESERVATIVE (MIL-B-46176) (see note 3)	AS REQUIRE D	ALL TEMPERATURES				WHEN REQUIRED

621B SCRAPER/WATER DISTRIBUTOR COLD WEATHER/DESERT OPERATION

This abbreviated checklist is not to be used as a replacement for the -10 Series Technical Manuals or any other PMCS guide.

References: FM 90-3, DESERT OPERATIONS; FM 9-207, OPERATIONS and MAINTENANCE of ORDINANCE MATERIAL in COLD WEATHER; TM 5-3805-248-10

- 1.) **Maintain proper TIRE PRESSURE.** In general, tires should be inflated **10 PSI** over normal tire pressure for winter operations.
- 2.) **ENGINE START PROCEDURES IN TEMPS BELOW 32°F (0°C) USING ETHER STARTING AID:**

A) Ensure Scraper bowl is lowered, parking brake is applied (parking brake control knob is pulled out), transmission is in **N** (Neutral) with shift lever locked, all machine hydraulic control levers are in center **HOLD** position, all accessories are OFF, and that all personnel are clear of machine.

B.) Insert battery disconnect switch key & turn to left (ON) position.

Approved for public release: distribution is unlimited
Distributor: U.S Training Support Center
June 2006

2.) ENGINE START PROCEDURES IN TEMPS BELOW 32°F (0°C) USING ETHER STARTING AID (continued):

C.) Partially depress the accelerator pedal and hold during cranking. **(CAUTION: *DO NOT crank starter motor for more than 30 seconds at a time. Allow to cool for 2 minutes minimum before attempting to start engine again.** *After 7 attempts (30 seconds of cranking followed by 2 minute wait), wait for 30 seconds before starting attempt (at which time only carry out 4 each 30 second cranking cycles, then wait 30 minutes before next attempt).

D.) Push in & turn start switch to START position. Release start switch when engine starts. **(CAUTION: Use ETHER starting aid sparingly and for cold starting purposes ONLY)** ***NOTE: Inject ether only while cranking engine or after initial start-up until engine is running smoothly***

E.) Push ether starting aid switch down for 2-3 seconds, then release for 2-3 seconds. Operate switch at 2-3 second intervals as engine is cranked. Repeat until engine starts and engine is running smoothly.

F.) Release start switch when engine starts. **(CAUTION: Turbocharger damage can result if engine RPM is not kept low until oil pressure is sufficient & gage is in green range.)**

G.) Release accelerator pedal once engine has started. H.) Operate engine at low idle for **5 minutes** to warm up engine. Monitor instrument panel gages for any abnormalities. Continue to warm up engine as follows: If temperature is **greater than 32°F (0°C)**, warm up machine for a total of approximately ^{15 min-}utes. If temp is **less than 32°F (0°C)**, warm up machine for a total of approximately **30 minutes**. If temp is **less than 0°F (-18°C)**, **OR** if hydraulic functions are sluggish, **additional time may be needed** (Cycle steering and machine controls to assist in hydraulic system warm up.)

3.) EXTREME COLD WEATHER OPERATIONS:

A.) When starting in extreme cold, use cold weather starting procedures and allow engine time to reach operation temps. *Be alert that tires may be frozen to the ground.*

B.) Start driving very slowly for 100 yds. If any problems are detected, notify Unit Maintenance as required.

4.) Extra attention must be observed during any PMCS procedures during cold weather operations due to extra time that may be encountered..This time lag **cannot be overemphasized and must be included in ALL planning.** *(Ref: TM 5-3.805-248-10) **DO NOT PERFORM PMCS Exercise ITEM #76, 'ALL SYSTEMS Maintenance Checks' when Temps are BELOW 0°F (-18°C) NOTE: *If temperature is below 32°F (0°C), operate controls prior to moving machine.**

5.) Lubrication required for Army equipment is specified in the LO or TM pertinent to the equipment. LOs are based on three anticipated ranges: above 32° F, from +40° to -10° F, and from 0° to -65° F. / Oil, engine, arctic (OEA), is a synthetic SAE OW-20 lubricant intended for temperature range 40° F to -65° F for engine systems and 120° F to -65° F for transmission and hydraulic systems. This lubricant is approved for use in engines, power steering systems, and both automatic and standard transmissions. Although OEA can be used in most automatic transmissions, it is necessary to consult the LO prior to use.

SEE LUBRICATION CHART NEXT PAGE

Lubricant Chart NOTES:

1. For equipment operation at temps above +5° multiviscosity oil OE/HDO 15W40 can be used in lieu of OE/HDO30
2. If OEA is required to meet the temperature ranges prescribed in the chart (Key), then the OEA lubricant is to be used in place of OE/HDO 10 lubricant for all temp ranges.
3. *See **TB 43-0002-87** for conversion procedures from HB to BFS.