

MTVR 7-TON TRUCKS



DEPARTMENT OF THE NAVY
HEADQUARTERS, UNITED STATES MARINE CORPS
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NORMAL

TI 11240-25/50A
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U.S. MARINE CORPS TECHNICAL INSTRUCTION

VEHICLE STORAGE PROCEDURES
FOR 7-TON TRUCKS

- 1. Purpose.** This Technical Instruction (TI) provides instructions for procedures and processes required for long term vehicle storage for 7-Ton Trucks. Units should use guidelines contained in this TI and applicable Marine Corps Orders when establishing an equipment administrative storage program.
- 2. Cancellation.** TI 11240-25/50.
- 3. Information.** Currently there are no standard procedures or processes available for preparing 7-ton trucks for vehicle storage. These instructions are necessary to provide general guidance to using units that have a requirement to prepare 7-ton trucks for storage. Units are required to identify additional Preventative Maintenance Checks and Services (PMCS) requirements and inspection intervals, based on the environmental conditions in which vehicle will be stored.
- 4. Technical Manuals Affected.** TM 10629-10 and TM 10629-14&P (on TM 10629-CD, PCN 177 106290 00 only).
- 5. Major Items Affected**

Description	NSN	TAMCN	I.D. No.
TRUCK, Cargo, MK23	2320-01-465-2174	D01987K	10629A
TRUCK, Cargo, MK25	2320-01-465-2176	D01987K	10629B
TRUCK, Cargo, MK27	2320-01-465-2180	D10627K	10631A
TRUCK, Cargo, MK28	2320-01-465-2182	D10627K	10631B
TRUCK, Dump, MK29	2320-01-465-2186	D10737K	10632A
TRUCK, Dump, MK30	2320-01-465-2189	D10737K	10632B
TRUCK, Wrecker, MK36	2320-01-465-2260	D12137K	10633A

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6. Material Required

<u>Item</u>	<u>Description</u>	<u>NSN</u>	<u>PN</u>	<u>Qty.</u>
* (1)	INHIBITOR, Corrosion, VCI 10		3374370 (45152)	AR
* (2)	KIT, Cap, Ether Storage		3414924 (45152)	AR
* (3)	INHIBITOR, Biological, Biobor-JF		3374371 (45152)	AR

7. Skill and Time Required. One Organizational Automotive Mechanic (MOS 3521) or technician with equivalent skills, 1.0 hour.

NOTE

If vehicles are not stored for a period greater than 30 days, Long Term Storage Preparation is not necessary.

8. Preservation Procedures. Guidance on specific components affected for long term (more than 30 days, up to 1 year) storage is provided below. After 1 year, exercise vehicle and re-add required inhibitors. Also, ensure fluid levels are adjusted accordingly.

NOTE

Vehicles must be exercised and brought up to operating temperature on an annual basis; otherwise, component damage may result that will not be covered under warranty. Exercising vehicle entails bringing vehicle up to operating temperature. This applies to both vehicle and its components.

NOTE

Any time vehicle is brought up to operating temperature, corrosion and bio inhibitors have to be reapplied to engine.

NOTE

Reference MTRV 7-Ton Truck Warranty Procedures, SI 10629-14, for necessary procedures when placing a vehicle in long term storage.

NOTE

Any time a component of these vehicles is exercised, corrosion and bio inhibitors have to be reapplied to that component of vehicle.

a. Engine. Preparation for storage.

- (1) Clean engine of any dirt, rust, grease, and oil. Inspect exteriors. If damage is found, repair, clean and paint.
- (2) Remove any dirt from air cleaner. Inspect all seals, gaskets, and filter element for damage.
- (3) Drain and replace crankcase oil and oil filter per TM 10629-14&P and LI 10629-12 which is incorporated into TM 10629-10.

(4) Drain 34 ozs of engine oil, using engine sampling valve, to remove enough engine oil to maintain correct level once VCI 10 Corrosion Inhibitor (1) is added.

(5) ~~Add 34 ozs of VCI-10 Corrosion Inhibitor (1) to the engine oil.~~

(6) Remove ether bottle and place Storage Caps (2) on both the bottle and ether valve.

b. Engine. Removal from storage.

(1) Check engine for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect air cleaner, seals, gaskets and filter element for serviceability.

(3) Remove Storage Caps (2) from ether valve and ether bottle and install bottle onto valve.

(4) Start engine and inspect frequently for fluid leaks during first few hours of operation.

(5) Inspect ether system for leaks during first few hours of operation.

c. Transmission. Preparation for storage.

(1) Drain oil and filters, and replace per TM 10629-14&P and LI 10629-12 which is incorporated into TM 10629-10.

(2) Drain 51 ozs of transmission oil, using transmission sampling valve to remove enough transmission oil to maintain correct fluid level once inhibitors are correct.

(3) ~~Add 51 ozs of VCI-10 Corrosion Inhibitor (1) and also add 15 milliliters of Biobor JF Biological Inhibitor~~
(3) to the transmission oil.

(4) Operate transmission in neutral for approximately 5 minutes at 1500 Revolutions Per Minute (RPM).

(5) Operate transmission shifts through all ranges and ensure lockup clutch activates.

d. Transmission. Removal from storage.

NOTE

If additional storage time is required, it is not necessary to drain the transmission oil each year, just add additional VCI 10 Corrosion Inhibitor (1) and Biobor JF Biological Inhibitor (3).

(1) Check transmission for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect transmission frequently for oil leaks during first few hours of operation.

e. Transfer. Preparation for storage.

(1) Drain and replace oil per TM 10629-14&P and LI 10629-12 which is incorporated into TM 10629-10.

(2) ~~Add 2 ozs of VCI-10 Corrosion Inhibitor (1) to transfer case oil, ensure transfer is not overfilled.~~

f. Transfer. Removal from storage.

(1) Check transfer for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect transfer frequently for oil leaks during first few hours of operation.

g. Numbers 1 and 3 Axle Differential. Prepare for storage by adding ~~3.5 ozs of VCI 10 Corrosion Inhibitor~~ (1) to numbers 1 and 3 axle differential oil, ensure differentials are not overfilled.

h. Numbers 1 and 3 Axle Differential. Removal from storage.

(1) Check differentials for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect numbers 1 and 3 axle differential frequently for oil leaks during first few hours of operation.

i. Number 2 Axle Differential. Prepare for storage by adding ~~4 ozs of VCI 10 Corrosion Inhibitor~~ (1) to number 2 Axle differential oil, ensure axle differential is not overfilled.

j. Number 2 Axle Differential. Removal from storage.

(1) Check differential for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect number 2 axle differential frequently for oil leaks during first few hours of operation.

k. Reduction Wheel Ends. Prepare for storage by adding ~~7.5 ozs of VCI 10 Corrosion Inhibitor~~ (1) to each reduction wheel end oil, ensure wheel ends are not overfilled.

l. Reduction Wheel Ends. Removal from storage.

(1) Check Wheel Ends for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect reduction wheel ends frequently for leaks during first few hours of operation.

m. Power Steering Reservoir. Preparation for storage.

(1) Remove 7.5 ozs of power steering oil.

(2) ~~Add 7.5 ozs of VCI 10 Corrosion Inhibitor~~ (1) to power steering reservoir oil, ensure steering reservoir is not overfilled.

n. Power Steering Reservoir. Removal from storage.

(1) Check steering reservoir for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect power steering reservoir and lines frequently for leaks during first few hours of operation.

o. Self Recovery Winch Gearbox. Prepare for storage by adding ~~1 oz of VCI 10 Corrosion Inhibitor~~ (1) to self recovery winch gearbox oil, ensure winch gear box is not overfilled.

p. Self Recovery Winch Gearbox. Removal from storage.

(1) Check winch gearbox for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Inspect self recovery winch gearbox frequently for leaks during first few hours of operation.

q. Self Recovery Winch Reservoir. Prepare for storage by adding ~~34.5 ozs of VCI 10 Corrosion Inhibitor~~ (1) to self recovery winch reservoir oil, ensure winch reservoir is not overfilled.

r. Self Recovery Winch Reservoir. Removal from storage.

- (1) Check winch reservoir for proper oil level. Add or drain oil, as required, to obtain proper level.
- (2) Inspect self recovery winch reservoir and hydraulic lines frequently for leaks during first few hours of operation.

s. Fuel Tank/System. Preparation for storage.

(1) Drain fuel tank and filter, replace filter and refuel with 3/4 tank of clean fuel, only if vehicle has been in use prior to inducting into storage.

(2) ~~Add 2 qts, 10-ozs of VCI 10 Corrosion Inhibitor (1) and 2 ozs of Biobor JF Biological Inhibitor (3) to fuel in fuel tank.~~

t. Fuel Tank/System. When removed from storage, inspect fuel tank and fuel lines for leaks during first few hours of operation.

u. Central Tire Inflation System. Preparation for storage. If it becomes necessary to reduce height of Medium Tactical Vehicle Replacement (MTVR) to a minimum of 98 inches, this may be obtained by utilizing cross-country setting on Central Tire Inflation System (CTIS) controller. The MTVR can be stored for long periods of time in cross-country mode.

v. Central Tire Inflation System. Removal from storage.

(1) If MTVR was stored in cross-country mode, ensure that system is returned to highway mode as soon as the MTVR is removed from storage.

(2) Inspect CTIS for leaks during first few hours of operation.

w. Hydraulic Systems Preparation for Storage

(1) Drain 5.5 ozs of hydraulic oil from system.

(2) ~~Add 5.5 ozs of VCI 10 Corrosion Inhibitor (1)~~ to hydraulic system and operate system.

x. Hydraulic Systems Removal from Storage

(1) Check hydraulic system for proper oil level. Add or drain oil, as required, to obtain proper level.

(2) Perform condition inspection on load lifting system per MCO P11262.2.

(3) Inspect hydraulic system reservoir and lines frequently for leaks during first few hours of operation.

y. Coolant System Preparation for Storage. Inspect and test coolant system per TM 10629-10 and LI 10629-12 which is incorporated into TM 10629-10.

z. Coolant System Removal from Storage. Inspect and test coolant system per TM 10629-10 LI 10629-12 which is incorporated into TM 10629-10.

WARNING

IF THE VEHICLE'S BATTERY POWER IS DISCONNECTED DURING STORAGE, THE ENGINE'S ELECTRONIC CONTROL MODULE (ECM) BATTERY SERVICE LIFE WILL BE AFFECTED, BASED ON THE ENVIRONMENTAL CONDITIONS IN WHICH THE VEHICLE HAS BEEN STORED. IT IS RECOMMENDED THAT THE VEHICLE BATTERIES REMAIN CONNECTED DURING STORAGE, IF POSSIBLE.

aa. Battery/Electrical System Preparation for Storage. Service and check batteries per TM 10629-10 and TM 10629-14&P.

bb. Battery/Electrical System Remove from Storage.

(1) Check and service batteries per TM 10629-10 and TM 10629-14&P.

(2) Check engine ECM per TM 10629-14&P.

cc. Air System Preparation for Storage.

(1) Check air system for serviceability per TM 10629-10, replace filters when needed.

(2) Drain the air system per TM 10629-10 after the truck is parked in place for long term storage.

dd. Air System Removal from Storage. Inspect air system frequently for leaks during first few hours of operation.

9. Lubrication Instructions. The MTRV must be greased per LI 10629-12, which is incorporated into TM 10629-10, prior to being placed in storage.

10. MTRV Wrecker. Additional Preservation procedures.

a. Left Hand (LH) Main Winch Drive Gearbox

(1) Prepare for storage. Drain 2 ozs of oil.

(2) ~~Add 2 ozs of VCI 10 Corrosion Inhibitor to~~ LH main winch drive gear oil; ensure winch reservoir is not overfilled.

b. LH Main Winch Drive Gearbox

(1) Remove from storage.

(2) Check LH main winch drive gearbox for proper oil level. Add or drain oil, as required.

c. Right Hand (RH) Main Winch Drive Gearbox

(1) Prepare for storage. Drain 2 ozs of oil.

(2) ~~Add 2 ozs of VCI 10 Corrosion Inhibitor to~~ LH main winch drive gear oil; ensure winch reservoir is not overfilled.

d. RH Main Winch Drive Gearbox

(1) Remove from storage.

- (2) Check RH main winch drive gearbox for proper oil level. Add or drain oil, as required.

e. LH Main Winch Idler Drum

- (1) Prepare for storage. Drain 1 oz of oil.
- (2) Add 1 oz of VCI 10 Corrosion Inhibitor to LH main winch idler drum oil reservoir; ensure reservoir is not overfilled.

f. LH Main Winch Idler Drum

- (1) Remove from storage.
- (2) Check LH main winch drive idler drum reservoir for proper oil level. Add or drain oil, as required.

g. RH Main Winch Idler Drum

- (1) Prepare for storage. Drain 1 oz of oil.
- (2) Add 1 oz of VCI 10 Corrosion Inhibitor to RH main winch idler drum oil reservoir; ensure reservoir is not overfilled.

h. RH Main Winch Idler Drum

- (1) Remove from storage.
- (2) Check RH main winch drive idler drum oil reservoir for proper oil level. Add or drain oil, as required.

i. LH Take Up Drum Gearbox

- (1) Prepare for storage. Drain .5 oz of oil.
- (2) Add .5 oz of VCI 10 Corrosion Inhibitor to LH take up drum gearbox oil; ensure reservoir is not overfilled.

j. LH Take Up Drum Gearbox

- (1) Remove from storage.
- (2) Check LH take up drum gearbox oil reservoir for proper oil level. Add or drain oil, as required.

k. RH Take Up Drum Gearbox

- (1) Prepare for storage. Drain .5 oz of oil.
- (2) Add .5 oz of VCI 10 Corrosion Inhibitor to RH take up drum gearbox oil; ensure reservoir is not overfilled.

l. RH Take Up Drum Gearbox

- (1) Remove from storage.
- (2) Check RH take up drum gearbox oil reservoir for proper oil level. Add or drain oil, as required.

m. Crane Swing Drive Gearbox Oil

- (1) Prepare for storage. Drain 1 oz of oil.
- (2) ~~Add 1 oz of VCI 10 Corrosion Inhibitor to crane swing drive gearbox oil; ensure reservoir is not overfilled.~~

n. Crane Swing Drive Gearbox Oil

- (1) Remove from storage.
- (2) Check crane swing drive gearbox oil reservoir for proper oil level. Add or drain oil, as required.

o. Hydraulic Reservoir

- (1) Prepare for storage. Drain 5 qts of hydraulic oil.
- (2) ~~Add 5 qts of VCI 10 Corrosion Inhibitor to hydraulic reservoir; ensure reservoir is not overfilled.~~

p. Hydraulic Reservoir

- (1) Remove from storage. Check hydraulic reservoir for proper fluid level. Add or drain oil, as required.
- (2) Inspect hydraulic lines frequently for leaks during the first few hours of operation.

11. Breather Preparation for Vehicles Stored in Uncontrolled Climate Conditions.

NOTE

The following are long-term storage breather preparation procedures for covering breathers on MTRV vehicles in non-environmentally controlled facilities, for long-term storage, and are necessary for vehicles not exercised on a regular 30 day schedule. Covering of breathers is required to keep moisture from the atmosphere from entering components not sealed and subject to condensation buildup on the MTRV.

NOTE

Do not attempt to operate vehicles with breather seal/covers installed.

- a. The engine breather is a rubber tube that is mounted on LH side of engine, about 1/3 of way back from front of engine block. It terminates behind frame rail, to the rear of front axle side plate. Cover or plug end of breather tube.
- b. Power steering reservoir fill cap incorporates breather for reservoir. Cover or tape bottom of cap.
- c. Air cleaner, remove air bonnet and cover air intake tube. Replace bonnet over cover. Be careful not to rip covering material with bonnet. An alternative would be to cover entire bonnet with a plastic bag sealed to air intake pipe.
- d. Exhaust, remove rain cap and cover exhaust pipe. Replace rain cap over cover. Be careful not to rip covering material with rain cap. An alternative would be to cover rain cap and exhaust pipe with a plastic bag and seal.
- e. Transmission breather is a bell shaped unit mounted on the air intake support mast behind cab. Seal bottom of breather.
- f. Driveline breathers remaining driveline components, not covered above consists of tubing routed to air intake support mast behind the cab. These tubes terminate in an inverted "U" shape with open ends of tubes pointing down, these tubes ends are to be sealed.

g. Hydraulic reservoir, fill cap incorporates breather for reservoir on MK25, MK28, MK29 and MK30. Seal bottom side of cap.

h. Hydraulic reservoir for MK36, wrecker, is fill type cap mounted on air intake support mast. Seal bottom side of cap.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

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