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Suggested Lubrication Practices

for **TW-25B Lubricant/Protectant** on the

Mk38 Chain Gun

(25mm)

TW25B is the preferred lubricant. TW25B is a light, semi-fluid grease that provides both lubrication and protection against corrosion. TW25B is available in a variety of packages to make application easier: bulk jar, grease gun cartridge, syringe (for precision placement), tube, and spray ("EP"). A companion product, MC2500, is a light, pourable/pumpable oil. Product descriptions and NSNs are listed on the last page.

Note

Before applying TW25B, the surface must be thoroughly cleaned: **all old oil and grease should be removed**, the surface should be cleaned and free of oil residues, and the surface should be dry. The EP spray can be used as needed on unpainted surfaces to quickly achieve effective corrosion protection.

SURFACE PREPARATION

The suggested method of preparation is:

- Clean with approved cleaning product
- Flush off all residue with isopropyl alcohol

APPLICATION

Conditions for applying TW25B

Conditions	Thickness	Visibility After Application	Applicators
1 - very close tolerances - sand or dust environments	very light	white grease is not visible	brush, cloth, patch, spray
2 - heavy load bearing - salt/fresh water corrosion - heat or high speed - long-term storage	light to moderate	white grease is slightly visible	brush, cloth, syringe, spray
3 - bearings, gears, grease fittings - extended extreme load - marine exposure	heavy	white grease is plentiful	brush, caulk or grease gun, bearing packer

General

1. **After cleaning each part, spray with EP to Condition 1 for immediate corrosion protection.**
2. Apply additional TW25B to Condition 2 as needed on parts in contact, or that slide or mesh.
3. Apply additional TW25B to Condition 3 as needed on parts where heavy load and/or pressure is experienced.
4. Where sand and/or dust accumulations would impede functionality, wipe off excess with a cloth. (The cloth can be used to apply a light coat to exterior surfaces of other parts.)

Specific Parts and Assemblies

1. Split and thoroughly clean the gun upper and lower housings. Remove the locking cam, roller guide, and both forward and rear unlocking cams. With the housing separated, use the EP spray to apply a thin coat (Condition 1) of TW25B to the inside of the housing.
2. Assemble upper and lower housings, cams, and roller guide coating all hardware threads with TW25B to Condition 2. Be sure to coat the sides of the main cam, the wear surfaces of the cams, the roller guide, and all surfaces of the clearing path with TW25B to Condition 2.
3. Spray the mating flanges, the tapped and through hole surfaces, and slot surfaces of the housing to provide corrosion protection (Condition 1). Wipe off excess with a clean rag.
4. Spray all surfaces of the gun rotor and the assembled leaf springs with a thin coat (Condition 1) to protect it against corrosion.
5. During assembly, coat the rotor tracks and their hardware threads and all surfaces that interface with the gun bolt body with TW25B to Condition 2.
6. Apply TW25B to Condition 2 to the forward and aft gear teeth. Apply TW25B to Condition 3 to the rotor locking area that mates with the locking block.
7. Lightly coat (Condition 1) the solenoid plunger with TW25B grease and remove excess with a clean rag.
8. Remove the main bearing rear seal. Clean and flush off old lubricant. Use the syringe to re-lubricate the main bearing, using about 0.25 to 0.5 ounces of TW25B (Condition 3). Apply lubricant to bearings visible in the area of aft seal: spread the bearing races apart at the center to lubricate the balls, and rotate the races to work the lubricant in. Lubricate the needle bearings on the aft end of the rotor to Condition 3 with an acid brush and work the TW25B into the bearings.
9. Spray the ammo chutes to Condition 1 with the EP spray, paying particular attention to the areas where the element tabs ride. Lubricate the element bypass chute to Condition 2 with TW25B grease using an acid brush. Lubricate the gears and element guides for the transfer unit, entrance unit, exit unit and access unit to Condition 2 with TW25B grease using acid brush.
10. Apply a light coat (Condition 1) of TW25B grease to the ammo drum ring gears. Place the 504 end cover ball bearings into a container, spray with the EP (Condition 1) and allow to soak for a few minutes. Coat the groove where the bearings ride with a moderate layer (Condition 2) of TW25B using an acid brush.
11. Repack (Condition 3) shielded bearings throughout the system using an applicable wheel bearing packer and a grease gun with a grease fitting. Use the 16 oz zerk cartridge of TW25B in the grease gun.
12. Apply a light coat of TW25B to Condition 1 to all parts of the bolt assembly, including the bolt face. Add TW25B grease (Condition 3) to:
 - a. the forward surface of the locking block that interfaces with the bolt body
 - b. aft locking block surfaces that interface with the gun rotor
 - c. the slotted hole in the locking block lobe
13. Apply a moderate coat (Condition 2) to the top and bottom of the roller; work lubricant into the surfaces between the roller and the shaft. As an alternate, soak the roller and shaft in a shallow bath of MC2500 oil and work the lubricant in.
14. Apply TW25B in a similar manner to any other parts and mechanisms, including other areas of feed chutes and feed assemblies.

REFERENCED PRODUCTS

The above instructions make reference to the following product packages:

	Mil-Comm Part Number	National Stock Number (NSN)
TW25B Grease Packages		
1.5 oz. Tube	TW25B-1SP11	9150-01-439-0859
4.0 oz. Tube	TW25B-4SP14	9150-01-439-1873
8 oz. Can	TW25B-1JSL16	9150-01-439-0858
16.9 fl. oz. (500 ml) EP Spray	TW25B-CA16EP	9150-01-448-2298
0.5 oz. Syringe	TW25B-1SY12	9150-01-448-2266
16 wt. oz. Cartridge, Zerk	TW25B-6NZ17	9150-01-439-0857
16 wt. oz. Cartridge, Caulk	TW25B-1NC17	9150-01-439-1864
MC2500 Oil Packages		
16 fl. oz. Bottle, oil	MC2500-16AP4	9150-01-439-1875
128 fl. oz. (1 Gal) Can, oil	MC2500-45AP5	9150-01-439-1887

Mil-Comm offers other packaging; contact your local representative or the Defense Logistics Agency.

Product Descriptions

TW25B Lubricant/Protectant and MC2500 are non-toxic, non-flammable, non-corrosive, harmless to wood, plastic, rubber, and composites. EP spray contains flammable isopropyl alcohol.

TW-25B LIGHT GREASE

TW25B-1SY12	SYRINGE	0.5 weight-ounce plastic syringe (14 grams). Designed for convenient application into small, recessed or otherwise hard to reach lubrication points, featuring a one inch, tapered plastic dispensing tip and a flow turn-off valve.
TW25B-1SP11	TUBE	1.5 weight-ounce plastic tube (43 grams) featuring a dispenser tip with a screw-on closure. Designed for individual, tool, or weapons maintenance kit.
TW25B-4SP14	TUBE	4 weight-ounce plastic tube (113 grams) having a dispenser tip with a screw-on closure. Designed for large tool or weapons maintenance kit.
TW25B-1JSL16	JAR	8 weight-ounce (227 grams) plastic jar featuring screw-on lid. Designed for shop or bench use.
TW25B-1NC17	CARTRIDGE	16 weight-ounce (454 grams) plastic caulk cartridge for larger lubrication points WITHOUT grease fittings.
TW25B-6NZ17	CARTRIDGE	16 weight-ounce (454 grams) cardboard ZERK cartridge for lubrication points WITH grease fittings.
TW25B-CA16EP	COMPRESSED-AIR PRESSURIZED SPRAY CAN ("EP") (NON-AEROSOL)	16.9 fluid-ounce (500 ml) non-aerosol pressurized aluminum EP spray can designed for convenient spray application into recessed or hard to reach points, and for quick application of initial corrosion protection layer. Features an angular extended nozzle with finger pushbutton actuator.

The EP spray contains isopropyl alcohol, which helps to loosen and flush residues and distribute the TW25B.

MC-2500 OIL

MC2500-16AP4	BOTTLE	16 fluid-ounce aluminum bottle (472 ml) with dispenser cap.
MC2500-45AP5	CAN	1 Gallon metal UN can (3.785 liters) with pour spout.