

WHY DO GUNS MALFUNCTION?

WARNING

ALWAYS ensure the firearm is unloaded, rendered safe and the ammunition source is removed. Confirm this condition by doing a VISUAL INSPECTION and get a buddy check if it is available.



MOST GUN MALFUNCTIONS ARE CAUSED BY A FAILURE TO FOLLOW BASIC INSTRUCTIONS AND THE PROPER USE OF CORRECT PRODUCTS.

To start, we examine what are the major elements of the gun malfunction problem. There are 3; The gun, the gun care products, and the gun owner. During the past 7 years of FrogLube's tech support service, the quickest way we find to identify the source of the malfunction is to begin by 'isolating' the 3 elements. Any gun can malfunction and the source could be the gun if it has been damaged or has a construction or production flaw. A person could be failing to operate or clean the gun properly. The gun lube might be flawed, dirty or used in excess. In any case, the first step to isolate the problem is to thoroughly clean, degrease, strip and otherwise remove anything from the firearm which will isolate the lube as the cause. We recommend using FrogLube degreasing solvents such as FrogLube Solvent or FrogLube Super Degreaser for this task. If the gun is exceptionally dirty, the Super Degreaser diluted to 5:1 strength is the best cleaner to start with. FrogLube degreasing solvents are compatible with ANY LUBE and will clean all existing gun lube products on the market. This has been and continues to be tested regularly by the FrogLube tech support staff.

FrogLube is a complete bio-based firearms care system that packages degreasing solvents along with lubricants to comply with weapons cleaning procedures developed by U.S. military and other professional sources.

Complete gun care requires:

- Proper instructions
- Proper cleaning tools
- Correct cleaning and lubrication products



EXCERPTS FROM SELECTED MANUALS FROGLUBE USES FOR REFERENCE:

BASIC COLD WEATHER MANUAL: US ARMY FM 37-10, SEC II. individual Weapons and Instruments: 6-4. Care, Cleaning and Maintenance:

Section II. INDIVIDUAL WEAPONS AND INSTRUMENTS

6-3. Effects of Northern Conditions on Weapons and Instruments

The year-round necessity for supervised care, cleaning, and maintenance cannot be overstressed. Effects of cold weather on various types of weapons are covered in detail in appendix D.

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6-4. Care, Cleaning, and Maintenance

a. Weapons will function under extreme conditions, provided they are properly maintained. Normal lubricants thicken in cold weather and stoppages or sluggish actions of firearms will result. DURING THE WINTER, WEAPONS MUST BE STRIPPED COM-

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PLETELY AND CLEANED WITH A DRY-CLEANING SOLVENT TO REMOVE ALL LUBRICANTS AND RUST PREVENTION COMPOUND. The prescribed application of special northern oils should then be made. These lubricants will provide proper lubrication during the winter and help minimize the freezing of snow and ice on and in weapons.

b. Soldiers must insure that snow and ice

warmed, all visible ice and snow should be removed and parts moved gradually until action is restored. Ice in the barrel can be removed with warm (standard issue) gun oil if slow warming is not possible.

g. When firing, do not let the hot parts of the weapon come in contact with the snow. The snow will melt and, on cooling, form ice. When changing barrels, do not lay them on the snow.

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M1911 LUBRICATION: TM 9-1005-211-12, Sec. III Lubrication instructions: 3-3. General Lubrication Instructions

Section III. LUBRICATION INSTRUCTIONS

3-3. General Lubrication Instructions

a. Use lubricating oil, general purpose (PL special) for lubrication above 0°F, and weapons lubricating oil (LAW) for lubrication below 0°F on all parts of the weapon. Prior to firing all interior parts must have a light coat of oil, except the bore which must be wiped dry of any lubrication, and other interior parts that come into contact with ammunition.

b. Refer to table 3-1 for listing of lubrication and cleaning materials and stock numbers for requisitioning purposes.

Table 3-1. Lubrication and Cleaning Materials

Federal stock number	Description
6860-224-6666	CLEANING COMPOUND, RIFLE BORE: (CR) (2 oz can)
6860-224-6667	CLEANING COMPOUND, RIFLE BORE: (CR) (6 oz can)
6860-281-1985	DRY CLEANING SOLVENT: (SD) (1 gal can)

Federal stock number	Description
6860-965-2392	CARBON REMOVING COMPOUND : (P-C-111) (6 gal pail)
7920-206-1711	RAG, WIPING: cotton (60 lb bale)
9150-273-2389	LUBRICATING OIL, GENERAL PURPOSE: (PL special) (4 oz can)
9150-292-9689	LUBRICATING OIL, WEAPONS : (LAW) for below zero operations (1 qt can)

3-4. Specific lubrication Instructions

The following areas must be well lubricated prior to firing the weapon:

Guide rails of the receiver
Grooves on the slide

Caution. Prior to loading the weapon, attention should be directed to wiping all visible oil from the pistol grip areas. Excessive oil could cause loss of control during firing.

ARMY-NAVY-AIR FORCE OPERATOR'S MANUAL: TM 9-1005-319-10: 0014 00-1: Operator Cleaning Instructions

CAUTION

Do not mix parts the parts of one weapon with other weapons. Parts are not interchangeable.

GENERAL

NOTE

DO NOT mix lubricants on the same weapon.

The term CLP or the word lubricant in this TM is to be interpreted to mean that CLP, LSA, LAW can be utilized as applicable. The weapon must be thoroughly cleaned during change from one lubricant to another using dry cleaning solvent (SD). Do not mix lubricants on the same weapon.

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H&K VP9 OPERATORS MANUAL: Sec. VII Cleaning and Maintenance - pg25

SECTION 7 CLEANING & MAINTENANCE

CLEANING

NOTE: The service life and performance of your HK VP9 pistol is dependent upon the correct handling and proper care by the operator.

Materials Required - At a minimum, we suggest the following materials to properly clean the VP9:

- Cleaning rod with handle and patch holder
- Nylon toothbrush
- Bronze bristle bore brush (in the appropriate caliber)
- Cleaning patches (in the appropriate caliber)
- Lint-free wiping rag
- Cleaning solvent/lubricant
- Cotton swabs

CAUTION: Use safety goggles when using solvents and exercise care if using compressed air.

Handgun cleaning kits are available from HK for thorough cleaning of pistols and other firearms. Visit the HK-USA webshop or contact HK Customer Service.

Cleaning Intervals - Normal and Major are the two types of operator cleaning for the VP9 pistol.

Normal Cleaning - Performed after each firing or every twelve (12) months.

Major Cleaning - Often referred to as "detailed cleaning." Performed after the firing of 500 cartridges or when the pistol is exposed to, or laden throughout, with sand, dust, water (especially salt water) or other visible contaminants or foreign matter.

Normal Cleaning

CAUTION: Do not use a stainless steel bore brush which can scratch the polygonal bore and reduce accuracy.

Slide -

- Gently scrub all internal surfaces of the slide using the nylon toothbrush moistened with solvent.
- Remove all loose fouling from all surfaces of the slide using a rag and cotton swabs.

Recoil spring assembly -

- Remove all visible fouling using solvent, a nylon toothbrush or a rag and cotton swabs.

Barrel (with locking block) -

- Moisten a bronze bore brush with solvent and scrub the bore from chamber to muzzle at least six (6) passes, back and forth.
- Remove the loose fouling from the bore using cleaning patches.
- Gently scrub the exterior of the barrel and locking block with the nylon toothbrush moistened with solvent.
- Remove all loose fouling from the exterior of the barrel using a rag and cotton swabs.

Frame -

- Gently scrub all internal surfaces where carbon fouling is present using the nylon toothbrush moistened with solvent. Concentrate on the area normally covered by the slide.
- Using a rag and cotton swabs, remove all loose fouling from all areas of the frame.

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1. Proper firearms care begins with the use of actual reference document(s) to validate proper procedures and to identify the correct products to use. Most gun malfunctions result from a failure to follow basic instructions by the operator. Here's a list of some common references FrogLube recommends:

- U.S. Military tech manual series (these small arms manuals are specific to each firearm the military uses)
- NRA Instruction guides
- User/owners manual for the specified firearm being cleaned, lubricated or maintained.
- Armorers guides
- Gun smithing manuals

2. Training is ALWAYS A GOOD IDEA for first time users or when acquiring a new firearm. Cleaning a firearm is relatively easy and done with simple tools; however, if done incorrectly will likely be the cause of unexpected failures.

3. Surface preparation and cleaning. The first step in proper care is to clean the firearm and prepare the surface for the application of lubricant. **According to best practices and references, degreasing solvent is required to do this step.** You should confirm that your selected cleaning solvent has been tested for compatibility with your lube. Use of cleaning solvent is common/accepted practice and is something if you deviate from, you will incur problems. **FrogLube most strongly concurs with this practice.** Here's the actual statement extracted from the attached reference, which we use and should be referenced EVERY TIME someone cleans their gun or changes to a NEW product:

'The weapon must be thoroughly cleaned during change from one lubricant to another. Dry cleaning solvent (SD) is recommended for cleaning during change from one lubricant to another.'

4. Product interoperability. FrogLube's solvent and lubricant products work together to complete the full system requirement for ALL cleaning, lubricating and preservation tasks. FrogLube degreasing solvents are compatibility tested and will clean and remove all current lubricant products on the market. Note: if the end user requires totally bio-based systems to meet non-hazardous, non-toxic and non-flammable requirements, FrogLube recommends the use of FrogLube degreasing solvents and FrogLube LP products which are all non-toxic, non-petroleum and food-grade safe.

A. Degreasing solvents do THREE things; they are required for cleaning, degreasing and removal of excess built up lube. Second, they do REQUIRED SURFACE PREPARATION and must disappear and leave a clean/dry/no residue surface. PROPER SURFACE PREPARATION is necessary before you apply ANY lube. Third, they clean the broad span of fouling residues which include hydrocarbon, salts, copper, lead, brass, propellant and various other compounds found in firing residues and in the shooting environment. And is required by the professional references listed herein.



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B. CLP lubricant is lube that has a cleaning property. The 'C' is the ability to clean and breakdown hydrocarbon, which is produced by both lube and propellant gun powder during firing. CLP lubricant does not remove heavy metals, copper, lead or brass. FrogLube is bio-based and designed to 'absorb'. IT DOES NOT GO ON, LAY ON THE SURFACE OR FILM. Specific lubricating instructions are written by the authoritative source and dictate where lube should be placed or not be placed. **Always reference your gun's manual for the exact instructions for use.**

5. Instructions for use. FrogLube's first suggestion is to 'REFER TO YOUR GUN'S OPERATING MANUAL FOR CLEANING AND OPERATING INSTRUCTIONS'. USE FROGLUBE'S CARE SYSTEM IN ACCORDANCE WITH YOUR GUN'S MANUAL. Gun manuals will direct that the gun be stripped/cleaned when purchased new in order to remove preservation materials and compounds used during shipping and storage. Apply your lube per your guns instruction.

6. FrogLube is applied to the surface, conditions the metal and is heat sensitive. It will become active when exposed to high heat, high pressure and will reappear in hot spots and where friction is occurring. FrogLube is NEVER DRY, nor does it dry out or burn. People will ask if they should completely disassemble their guns to pins and springs or should they field strip in order to apply FrogLube. Of course you could do this, but most people are not qualified to do this. We DO NOT RECOMMEND YOU DO THIS. We say to do a field strip in accordance with your firearms manual and apply your cleaning solvents and lubricants per your guns instruction. The use of a generous amount of FrogLube degreasing solvent will be like 'FLUSHING YOUR GUN'. It will get into all the nooks and crannies and dissolve and break down stubborn fouling or excess grease and oil. You may use 'mild' heat during this process. The manuals state to do gun care in room temperature or above. We concur with this instruction. Adding 'mild heat' to the application process is helpful but not required. It helps the FrogLube LP absorb quicker.

7. The repeated use of the FrogLube system will reduce your cleaning time from hours to mins. Typically, a 1 hour cleaning task turns into 3-5 mins. You can also use FrogLube degreasing solvents in an Ultrasonic cleaner with our Degreasing Solvent or Super Degreaser, to reduce the cleaning time further. Super D mixed at 5:1 ratio cleans in heated ultrasonics in 1-3 min. Applying lube is done in a few mins before the gun is reassembled and function checked. If the barrel requires cleaning, then scrub the barrel with a bore brush followed by a punch of the barrel with bore patches until they come out mostly clean and dry. Run a wet patch of the lube through the barrel to put a light coating on the barrel surface and let set for 5 min. Finish with a dry patch to remove excess lube.

8. Copper and other heavy metals. In our experience, we have seen 'good copper and bad copper'. The good copper is bonded to the rifling surface and allows for ballistic stabilization over increasing round count. The bad copper is the copper that has not bonded. Something has to be used to 'manage' bad copper. This is what we call a copper cleaner. FrogLube's degreasers are all copper cleaners and will manage the removal of 'bad copper'. Super Degreaser in a heated ultrasonic machine will penetrate metal and remove even the good/bonded copper.



Now, when we think about malfunctions, we've isolated our gun lube and cleaners from the other two sources; the gun and the end user. The gun lube can be set aside on a small dish in a carefully isolated area and checked each day to see what it will change into or if at all. The malfunctioning gun can be stripped of gun lube and shot 'dry' at the range to ensure the gun lube is not the cause of the malfunction. Since we're a lube company, we'll leave it to gun manufacturers and trainers to solve the other two problems.