Malfunctions and Remedies

Out of Battery

If you ever have an out of battery discharge, do not try to fire more rounds as there is likely an obstruction in your chamber or bore, or the extractor is broken. It is important to disassemble and inspect your chamber, bore, bolt face, extractor, and ejector after any out of battery discharge.

Possible Causes: The are four things that could cause this type of malfunction:

1) The chamber is worn such that the case mouth could not make a clean "stop" at the inside chamber cutout (see **The Chamber 'Plunk' Test** in this manual). The barrel may need to be replaced.

2) Obstructed Chamber:

a) Debris in Chamber

b) Case Separation in Chamber: The case mouth was undersized or the case was of a thin/weak variety. Undersized case mouths on reloads are a common problem. Case mouth dimensions aren't too important for most pistols but critical for SMGs so most reloaders don't take the extra step to size them. On the first cartridge, it looks like the case month does not crisply stop on the inside chamber cutout as described in **The Critical Point** on page 5. Rather than stop at the critical point the case mouth pushes forward into the bore resulting in the case '*pinching*' the bullet at the point of firing pin/ primer contact. With explosive force, the case splits cleanly in two pieces about the pressure seal and the bullet typically only travels a few inches forward down the bore because most of the pressure escaped rearward when the case rear blew off. Subsequent cartridges just jam into remnant of the previous case and detonate out of battery (pictured right).

First Cartridge: Case Separation. This is the obstruction



Subsequent cartridges out of battery due to obstructed chamber.

'pinch' point



unsupported area

3) Premature Firing Pin Contact:

a) Broken Extractor: (see FFP-BB Maintenance and Inspection in this manual)

b) Cartridge Size / Shape Problems: If a cartridge cannot smoothly feed and chamber, premature firing pin contact is possible. We have observed improperly loaded ammo with bulges at the bullet seat as well as certain bullet shapes that are incapable of feeding in this system.

4) Obstructed Bore: Squib Round - a bullet is stuck in the barrel. This bore obstruction results in massive back pressure.

Prevention:

1) If you aren't certain about your ammo, plunk test it.

2) Do not use thin-cased brass or aluminum-cased ammo. Blazer brass cases are very thin and tend to crumple while feeding which results in the same 'pinching' as described above. We typically use Tula/Wolf, Fiocchi, Sellier & Bellot, Remington, and Magtech. Steel cased ammo runs very well in these guns and will not cause excessive wear.

3) If you ever have an out of battery, your chamber is likely obstructed and should be cleared. It's usually pretty easy to do with a cleaning rod. Once cleared, visually check that the inside chamber cutout is crisp, check that no bullets are in the barrel, plunk test a few rounds, and you are good to go.4) Keep your chambers clean and smooth.

Failure to Feed - Possible Causes:

1) Low spring pressure: the magazine or drum did not present the cartridge in the feed lip fast enough. (See *"Re-tensioning the Drum"* below)

2) Bent Feed Lip: The cartridge is presenting at an angle that won't allow it to feed. On some doublestack / double-feed magazines, cartridges will feed from one side but not the other. This means that one of the feed lips is bent at an inappropriate angle.

3) Bullet Size/Shape: Some shapes of bullets will not be able to feed properly due to the ramping movement necessary to chamber the cartridge.

4) Damage to feed ramp in trunion or barrel

Failure to Fire - Possible Causes:

- 1) Bent cartridge from feeding movement
- 2) Obstructed firing pin or bolt face
- 3) Stuck extractor
- 4) Massive drag on bolt movement / speed during the forward stroke
- 5) Barrel not oriented properly or spacer bushing not installed (KP31 shrouds only)

Failure to Eject - Possible Causes:

- 1) Broken ejector
- 2) Worn extractor or extractor spring
- 3) Low bolt speed or short stroking
- 4) Bent mainspring

Runaway - Possible Causes:

1) Broken or worn sear or sear spring

- 2) Low bolt speed or short stroking
- 3) Rear takedown screw not tight
- 4) Worn catch surface on bolt

Trigger Not Responding Properly - Possible Causes:

- 1) Disconnector timing and spring not resetting (see Fire Control Group section)
- 2) Debris in the trigger pack

Accuracy / Dispersion Problem - Possible Causes:

- 1) Set screw at front of mag housing is too tight
- 2) Barrel is too loose and requires timing shims
- 3) Muzzle attachments are tight to barrel jacket rather than barrel

Re-tensioning the Drum

If you have a loaded drum and the bolt closed on an empty chamber or jammed a cartridge while attempting to feed, this means that the constant-force spring did not provide enough force to push the cartridge up into the feed lip before the bolt came forward to push the round into the chamber. This situation requires that you re-tension the drum by following these instructions:

- 1) Unload the Drum:
 - Open the drum by pressing the ratchet release pin and rotating the locking arm away from the retaining shoulder.
 - Charge the drum 1 'click' by winding the cage counterclockwise. This removes the tension from the cartridges and allows you to 'dump' them from the drum.
- 2) Re-tention the Drum Spring:
 - Use an extra-small regular screwdriver to remove the pusher arm retaining screw.
 - Remove the pusher arm and be careful not to allow the base plate to rotate.
 - Wind the cage counterclockwise 360 degrees.
 - · Reattach the pusher arm in exactly the same spot it was removed.

Suomi Drum Checklist

1) Bent Feed Lips

When the feed lips on the base assembly are bent 'up' relative to the cover plate, the drum will misfeed and jam. These deformations are typically caused by winding and releasing the system (unloaded) such that the feed arm accelerates and crashes into the feed lips.



The ideal feed lip shape should match the radius of the cover plate.



- 2) Dents: Large dents will prevent the track/base plate from rotating.
- 3) Rust



4) Broken Stops on Track or Housing



5) Ratchet Check

- Open the drum by pressing the ratchet release button and rotating the locking arm away from the retaining shoulder.
- Charge the drum 2 'clicks' by winding the cage counterclockwise.

(If the system quickly unwinds when you let go, the gear or pawl is broken and the winding system will not function)



6) Track/Base Plate Check

• With the drum charged 2 'clicks', the track/base plate should rotate freely between the feed arm and base stop.

(If the track/base plate is frozen, the feeding system will not function)