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ELITE FENCING COACHING

PRIVATE COACHING RESOURCE SERIES

How to Fix Your Weapons



*A step-by-step repair and maintenance guide for foil, épée, and sabre –
the fixes every fencer should know before they need them.*

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A Note from Coach Derek

Equipment failure at a tournament is not a question of if – it's a question of when. Body cords stop working. Tips fail weight test. Screws come loose. Springs break. If you can't fix your own equipment, you're dependent on finding an armorer, borrowing gear from a stranger, or worse – forfeiting a bout while you scramble.

This guide covers the most common equipment problems across all three weapons and teaches you how to fix them yourself. These are not advanced armorer skills. These are the basic repairs that every competitive fencer and every fencing parent should be able to do at a tournament with a small tool kit.

Read it once. Practice each repair at home before you need it under pressure. Keep this guide and your tool kit in your fencing bag at every tournament.

– Coach Derek

Essential Tool Kit

Before we get into specific repairs, here is what should be in your fencing tool kit at every tournament. Everything listed here fits in a small zippered pouch that lives permanently in your fencing bag.

Tools

- Small flathead screwdriver
- Small Phillips head screwdriver
- Jeweler's screwdriver set (for tip screws)
- Allen wrench set (metric – 2mm, 2.5mm, and 3mm cover most grips)
- Small adjustable wrench or 8mm wrench
- Needle-nose pliers
- Small wire cutters
- Multitool (backup for everything above)
- X-Acto knife or small scissors

Spare Parts

- 2-3 extra body cords
- Extra mask cord (foil and saber)
- Spare tip screws (foil and épée – they are different sizes)
- Spare tip springs (foil and épée)
- Spare contact spring (épée)
- Spare tip barrel/button (épée)
- Foil tip tape (gaffer tape)
- Electrical tape
- Grip tape or tennis overgrip
- Spare pommel nut (if using French grip)
- Spare pistol grip screws
- Spare socket screws
- Small container or pill case for tiny parts

Testing Equipment

- Foil/épée test weight (750g for foil, 500g for épée)
- Épée shim gauge (1.5mm)
- Weapon test box (if available — nice to have, not required)

COACH'S TIP: Label your tool kit with your name and put it in the same pocket of your fencing bag every time. At tournaments, you want to grab it without thinking. The 30 seconds you save finding your tools could be the difference between fixing a weapon during a break and forfeiting a bout.



Common Repairs — All Weapons

Loose Grip / Handle

Symptom: The grip wobbles, rotates, or feels loose on the tang (the metal rod that runs through the handle).

Cause: The pommel nut (French grip) or grip screws (pistol grip) have loosened from use and vibration.

Fix — French Grip: Tighten the pommel nut at the bottom of the handle using an adjustable wrench or 8mm wrench. Hold the blade guard steady with one hand and turn the pommel clockwise with the other. Tighten firmly but don't over-torque — you can strip the threads.

Fix — Pistol Grip: Locate the Allen screw(s) on the grip — usually one or two on the underside. Tighten them with the correct Allen wrench (typically 2.5mm or 3mm). If the grip still wobbles, remove it and check if the tang is bent. A slightly bent tang can be straightened with pliers, but be gentle.

Body Cord Not Registering

Symptom: You plug in at the strip and the scoring machine doesn't respond, or it registers intermittently.

Cause: The body cord has a broken wire internally, or the prongs are dirty/bent.

Fix: First, try a different body cord. If the second cord works, the first one is dead — set it aside and repair at home later. If multiple cords fail, check the weapon socket: look for bent or pushed-in prongs inside the socket at the guard. Use a jeweler's screwdriver to gently pry bent prongs back into position. Also check that the socket screws are tight — a loose socket can break the electrical connection.

COACH'S TIP: Always bring at least 2–3 body cords to every tournament. They are the single most common point of failure. Test them all the night before.

Loose or Missing Socket Screws

Symptom: The socket (where the body cord plugs into the weapon) is wobbly or pulling away from the guard.

Cause: The tiny screws holding the socket to the bell guard have loosened or fallen out.

Fix: Tighten the socket screws with a jeweler's screwdriver. If a screw is missing, replace it from your spare parts. If you don't have a spare, electrical tape around the socket as a temporary fix can hold it in place long enough to finish the event – but replace the screw as soon as possible.

Blade Rewiring (When to Stop)

If the blade wire itself is broken (visible nick, cut, or the wire has pulled free from the tip or socket), this is NOT a tournament repair. You need a full rewire, which requires a soldering iron and new wire. Mark the weapon as broken, set it aside, and use a backup. Have it professionally rewired or learn to rewire at home with proper tools.



Foil-Specific Repairs

Foil Tip Fails Weight Test

What the test is: A 500-gram weight is placed on the foil tip. The tip must depress and the light on the scoring machine must turn OFF while the weight is on. When the weight is removed, the light must turn back ON. If the light stays on with the weight applied, the tip spring is too weak.

Cause: The tip spring (a tiny coil spring inside the foil tip assembly) has weakened or broken.

Fix – Replacing the Foil Tip Spring:

Step 1: Unscrew one of the two tip screws on the side of the tip barrel using a jeweler's screwdriver. Keep it somewhere safe – they are tiny and easy to lose. Before removing the second screw, put your finger over the tip so when you remove the second screw the tip does not shoot across the room. Unscrew the second tip screw and put it with the first.

Step 2: Carefully slide the tip out of the barrel. The spring and contact parts should come with it.

Step 3: Remove the old spring. Note its orientation – the wider end sits against the blade wire contact.

Step 4: Drop the new spring into the tip barrel in the same orientation.

Step 5: Put the tip back into the barrel.

Step 6: Replace and tighten the two tip screws. Don't over-tighten – you can crack the barrel.

Step 7: Test with the weight again to confirm the new spring passes.

Replacing Foil Tip Tape

Why it matters: The small piece of tape covering the foil tip holds the contact in place and affects tip travel (how far the tip depresses). If the tape is old, peeling, or too thick, it can cause the tip to fail weight test or register false touches. If exposed metal on the barrel touches the lamé while attempting to score a point, the point may not register.

Fix:

Step 1: Peel off the old tip tape completely. Remove any adhesive residue with a small amount of rubbing alcohol on a cloth.

Step 2: Cut a new piece of foil tip tape. Use the proper adhesive tape made for foil tips – not electrical tape, which is too thick and can interfere with tip travel. Gaffer tape works great.

Step 3: Apply the new tape smoothly over the tip. Make sure it sits flat with no wrinkles or air bubbles.

Step 4: Trim any excess tape that extends beyond the tip barrel. The tape should cover only the face of the tip and not wrap around the sides where it could impede the tip's depression.

Step 5: Test the weapon. Press the tip — it should depress smoothly and spring back. Test with the weight to confirm it still passes.

COACH'S TIP: Tip tape thickness matters. If your foil keeps failing weight test after replacing the spring, the tape might be too thick and restricting tip travel. Use proper foil tip tape, not generic tape.



Épée-Specific Repairs

Épée Tip Fails Weight Test

What the test is: A 750-gram weight is placed on the épée tip. The tip must depress and the light on the scoring machine must turn ON. When the weight is removed, the light must turn OFF. If the tip doesn't trigger the light with the weight, the tip spring is too strong or the tip travel is insufficient.

Cause: The tip spring inside the épée point assembly is too stiff, or the tip travel distance is too short.

Fix – Replacing the Épée Tip Spring:

Step 1: Unscrew one of the two tip screws on the side of the épée point using a jeweler's screwdriver. Keep it somewhere safe – they are tiny and easy to lose. Before removing the second screw, put your finger over the tip so when you remove the second screw the tip does not shoot across the room. Unscrew the second tip screw and put it with the first.

Step 2: Carefully remove the tip barrel. The spring, contact spring, and pressure pad will come with it.

Step 3: Note the order of components: tip barrel → pressure pad → tip spring → contact spring → blade wire contact. Take a photo if it's your first time.

Step 4: Replace the tip spring with a new one. Épée springs are slightly different from foil springs – make sure you're using the right one.

Step 5: Reassemble in the correct order and replace the tip screws.

Step 6: Test with the 750g weight to confirm it passes.

Épée Shim Test Failure

What the test is: A 1.5mm shim (thin metal gauge) is inserted between the tip and the barrel. With the shim in place, the tip should NOT register a touch. If it does, the tip travel is too long and the weapon fails.

Cause: The tip is depressing too far, allowing the contact to close even with the shim blocking it. This usually means the tip spring is too weak or the contact spring is worn.

Fix: Replace the contact spring (the small, flat spring that sits behind the tip and makes electrical contact). This is the part that controls how much travel triggers a touch. If the contact spring is fine, try a slightly stiffer tip spring. After replacing, test with both the weight AND the shim to make sure the weapon passes both.

Épée Registering Double Lights (Grounding Issue)

Symptom: When you touch your opponent, both the colored light AND the white ground light come on, or the weapon registers on itself.

Cause: There is a short circuit somewhere – the blade wire is touching the blade, or the tip assembly has a grounding issue.

Fix: Check the tip screws first – if they're touching the blade wire inside, they can create a short. Try loosening and retightening them. Check for any bare wire visible along the blade groove. If the wire insulation is nicked, you can try a temporary fix with a tiny piece of electrical tape over the nick, but the weapon likely needs a rewire.



Saber-Specific Repairs

Saber Mask Cord Issues

Symptom: Touches to the mask don't register, or they register intermittently.

Cause: The mask cord (the wire that connects the mask's conductive bib to the body cord) is damaged, or the connection points are dirty.

Fix: First, try a different mask cord. If the new cord works, the old one is dead. If the problem persists, check the alligator clip attachment point on the mask bib — clean it with a cloth and make sure the clip has a solid grip on the conductive material. Also check that the bib itself is still conductive: run a body cord test from the bib to the scoring machine. If the bib has lost conductivity (worn out, washed too many times), the mask needs a new bib.

Saber Lamé Not Registering

Symptom: Valid touches to the lamé don't register, or they only register in certain areas.

Cause: The conductive fabric of the lamé has worn out in spots, or the connection between the lamé and the body cord is poor.

Fix: Test the lamé by touching the blade to different areas while connected to a scoring machine. Map which areas register and which don't. Dead spots usually appear at the shoulders, elbows, and sides where fabric gets the most wear. Small dead spots can sometimes be temporarily fixed with conductive spray, but a lamé with significant dead areas needs to be replaced. Check the body cord clip attachment to the lamé as well — a loose or corroded clip is often the real problem.

Saber Guard Loose

Symptom: The guard (the curved metal piece that protects your hand) wobbles or rotates.

Cause: The pommel or grip screws have loosened.

Fix: Same as the grip fix above — tighten the pommel nut (French grip) or Allen screws (pistol grip). On saber, also check that the guard insulation pad (the leather or rubber piece between the guard and the grip) is intact. A missing or worn pad can let the guard shift.



Pre-Tournament Weapon Check

Do this the night before every tournament. It takes 10 minutes and prevents 90% of equipment emergencies.

- Test every weapon on a scoring machine or test box if available.
- Test every body cord by plugging in and wiggling the connections.
- Test every mask cord (foil and saber).
- Check all tip screws – tighten any that are loose.
- Check all socket screws – tighten any that are loose.
- Check grip tightness on every weapon.
- Test foil tips with the 500g weight.
- Test épée tips with the 750g weight AND the 1.5mm shim.
- Inspect blade wires for nicks, cuts, or bare spots.
- Check lamé conductivity (foil: torso coverage; saber: torso, arms, mask bib).
- Pack your tool kit with all spare parts.
- Pack at least 2 working weapons and 2–3 working body cords.

COACH'S TIP: The fencers who never have equipment emergencies are not the ones with the best equipment. They're the ones who check and maintain their equipment the night before every tournament. Ten minutes of prevention is worth an hour of panic at the venue.



Final Coach's Note

Equipment repair is not glamorous. Nobody gets excited about replacing a tip spring or tightening a pommel nut. But the ability to fix your own weapons is one of the most practical competitive advantages in fencing. While other fencers are running around the venue looking for an armorer or trying to borrow a weapon from a stranger, you're calm, prepared, and back on the strip in two minutes.

Learn these repairs at home when there's no pressure. Practice them until they're automatic. Keep your tool kit stocked and in your bag at all times. And check your equipment the night before every tournament.

The best equipment repair is the one you never have to do because you caught the problem the night before.

– Coach Derek