

Your Miata after 1-3 weeks may not start due to battery voltage drain. One of the best ways to guarantee your car is going to start is to disconnect the battery. Modern cars ECU computer and other components require some minute amount of voltage and will drain the battery in short time. A good condition disconnected battery can last 6-8 weeks or more. When you reconnect the battery, you have a better chance of starting the engine. The cutoff switch key is removable and can also provide added security. There is also a provision for tying the key to the mount, so you don't lose it. Two keys are included.

The TDR battery disconnect kit comes complete with battery disconnect switch, mounting bracket, ground cable and mounting hardware. Installation is simple and only takes a few common shop tools. Works with all 2016 and up ND Miata models. The battery disconnect unit mounts on the front left shock mount location.

Tools Required

- 8 mm wrench or socket wrench
- 10 mm wrench or socket wrench
- 17 mm wrench or socket wrench
- Pliers
- 4 mm Allen wrench



SECTION 1: Disconnect Battery Cables

Disconnect both battery cables before starting on the new disconnect setup. Battery removal is not necessary.

- Using a 10 mm wrench, remove the Negative battery cable from the battery post as shown in Photo 1-1.
- Remove the Positive battery cable from the battery post as shown in Photo 1-2.

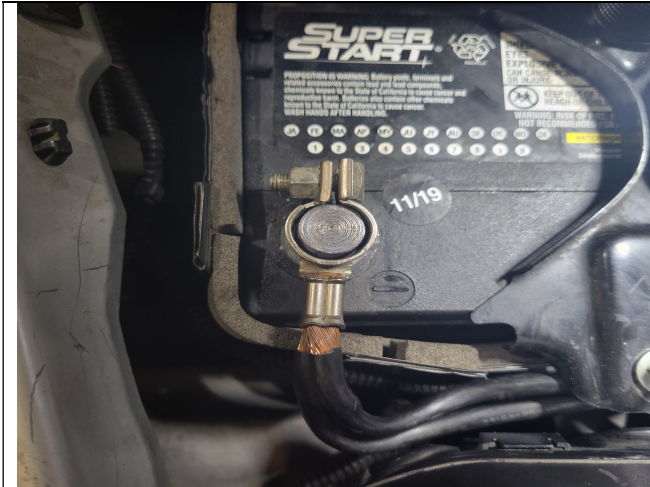


Photo 1-1: Negative battery cable removed from battery post



Photo 1-2: Positive battery cable removed from batterypost

SECTION 2: Removing the ECU

The ECU will be unplugged and removed to give access to the ground cable chassis mount. The ECU harness plugs are easy to remove. Each harness plug has a clip you press and rotate back to remove. The ECU mount is held on with three M6 bolts.

- Start with the small harness at the front of the car.
- Press the small harness plug as shown in Photo 2-1.
- Rotate the locking cap as shown in Photo 2-2 and then remove from the ECU unit.
- Press the large harness plug as shown in Photo 2-3.
- Rotate the locking cap as shown in Photo 2-4 and then remove from the ECU unit.

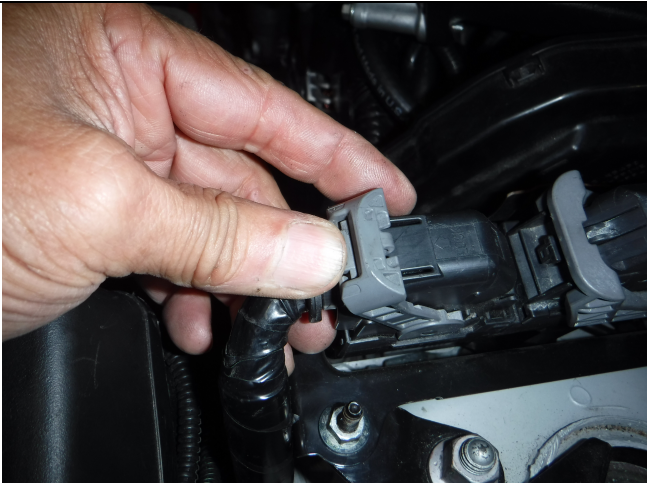


Photo 2-1: ECU harness plug release

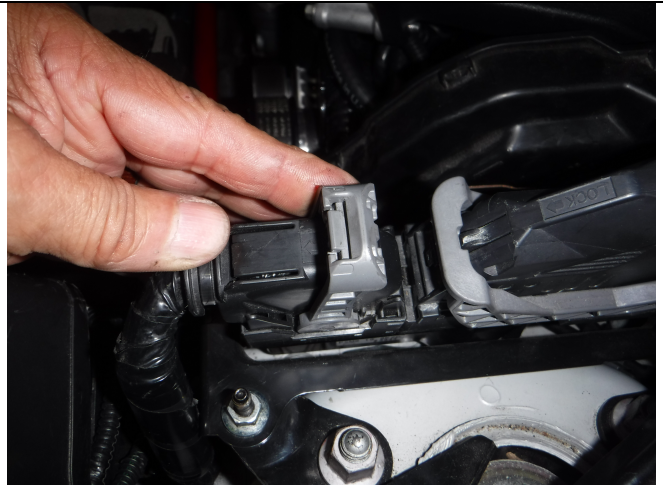


Photo 2-2: Harness plug rotated for removal



Photo 2-3: ECU harness plug release



Photo 2-4: Harness plug rotated for removal

- There is a secondary ECU box that is attached with built in plastic plugs.
- Using a flat head screwdriver, pry the plugs away from the ECU mount as shown in Photos 2-5 and 2-6.



Photo 2-5: Secondary ECU box removed

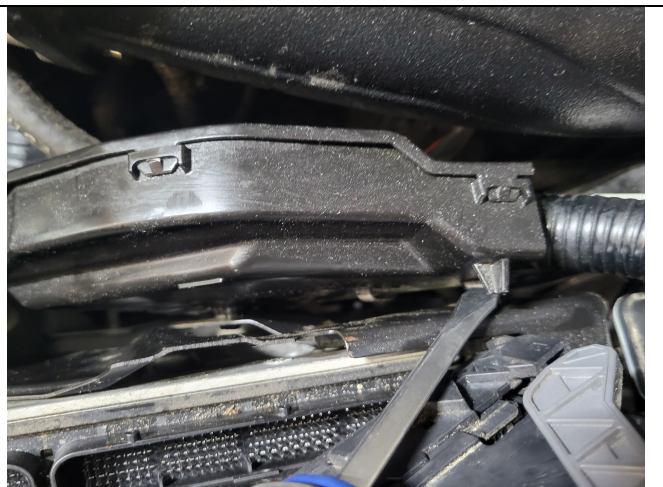


Photo 2-6: Secondary ECU box removed

- The ECU bracket is held on with two M6 nuts on top and 1 M6 bolt on the bottom as shown in Photos 2-7 and 2-8.
- Using a 10 mm socket wrench, remove the two M6 nuts on the top bracket
- Using a 10 mm socket and 6-8 inch extension to remove the lower M6 bolt.
- Remove the ECU and bracket from the car as shown in Photo 2-9 and place in a dry area.
- The area where the ECU was mounted will give access to the ground cable chassis mounting and new negative cable relocation.

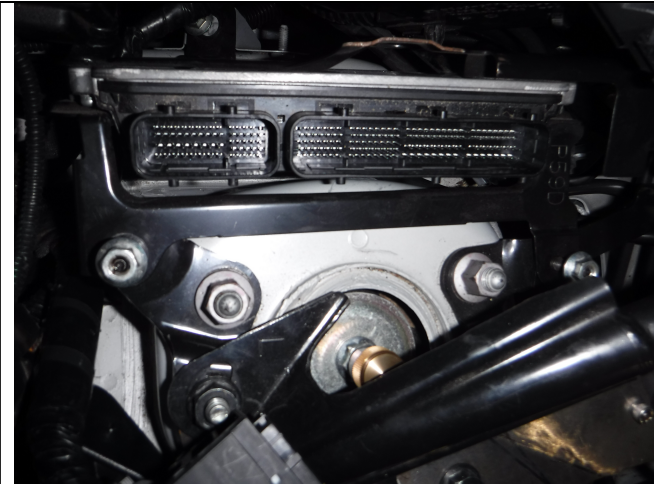


Photo 2-7: ECU bracket mounting nuts remove

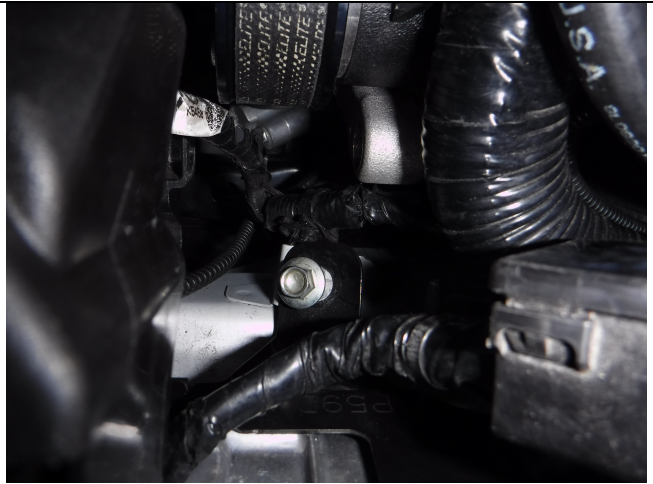


Photo 2-8: Lower ECU bracket bolt remove



Photo 2-9: Remove ECU from mounting area

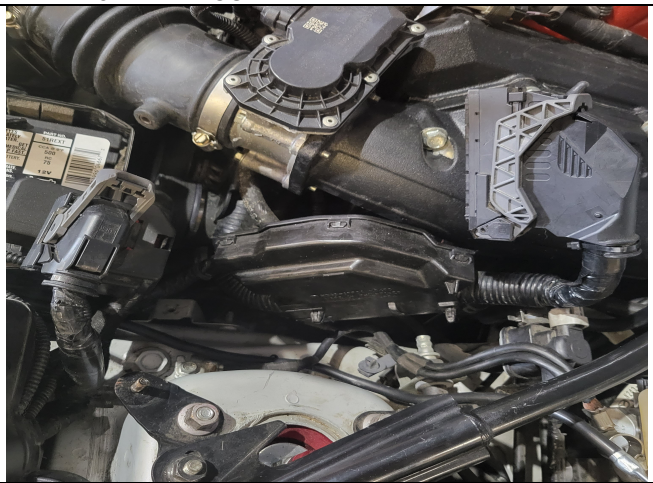


Photo 2-10: ECU removed for access to ground cables

SECTION 3: Modifying the Ground Cable

The factory ground cable will be removed from the battery location and moved over to the battery disconnect switch location. The new battery cable supplied will attach to the battery and to the battery disconnect switch.

- The factory negative cable attaches to the chassis located where the ECU was installed as shown in Photo 3-1.
- Using a 10 mm socket wrench with an extension, remove the M6 bolt.
- Reposition the factory ground Post cable toward the new position toward the shock tower brace as shown in Photo 3-2.
- Reposition the chassis ground cable as shown in Photo 3-3 and install the M6 bolt.



Photo 3-1: Factory chassis ground position



Photo 3-2: Factory ground Post cable at new location



Photo 3-3: Factory chassis ground new position

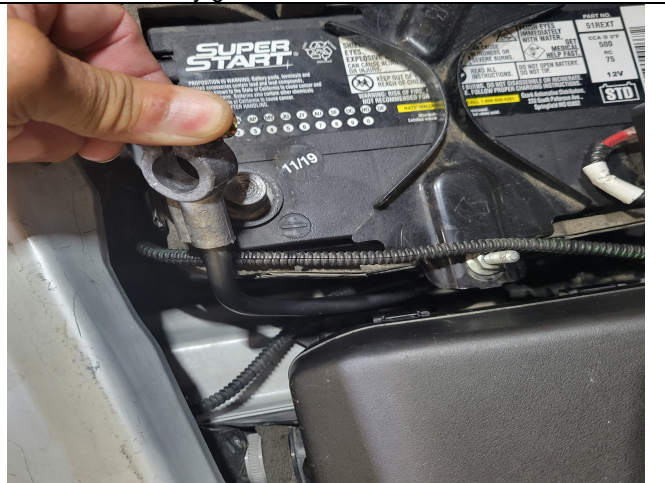
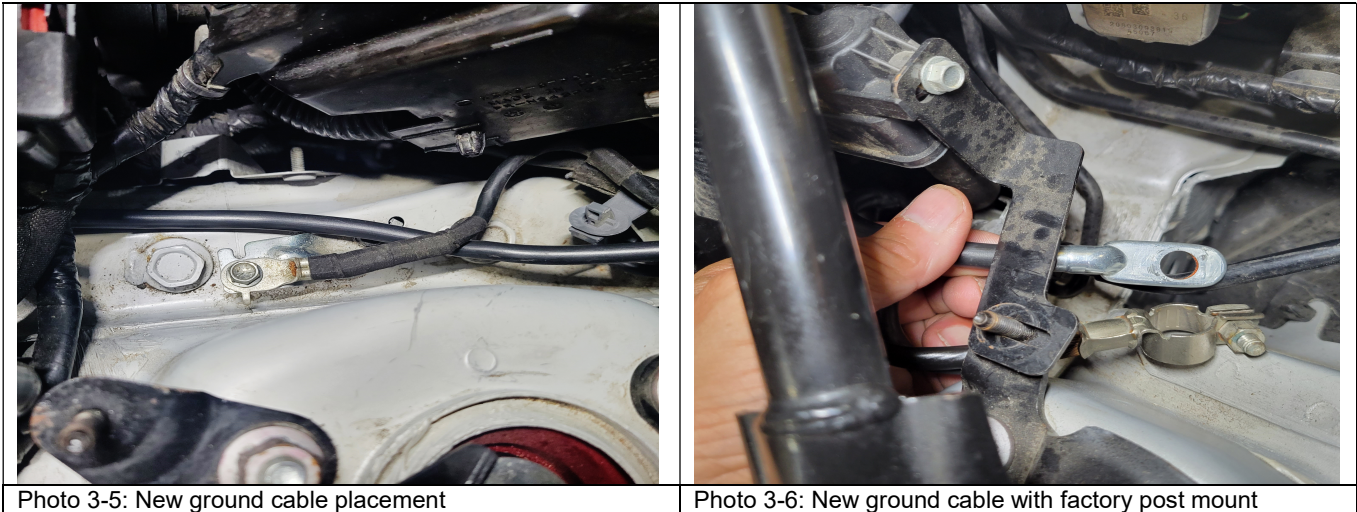


Photo 3-4: New battery cable install

- Locate the new battery cable supplied.
- Position the post connection of the new cable near the negative battery post as shown in Photo 3-4.
- Press the cable down beside the battery as shown in Photo 3-4.
- With the cable down low on the chassis, place the cable under the factory mounted ground cable as shown in Photo 3-5.
- Bring the terminating end of the cables up and under the small bracket as shown in Photo 3-6.



SECTION 4: Assembling the Battery Disconnect Bracket

The battery disconnect will be mounted to the TDR bracket using the supplied stainless steel Allen bolts and nuts. The brass battery post will thread on to the disconnect post allowing the factory ground post to simply reattach.

- Install the battery disconnect switch in the orientation as shown in Photos 4-1 and 4-2. NOTE the keyed notch orientation.
- Using a 5 mm wrench and a 4 mm Allen wrench, tighten the hardware on the assembly.
- To simplify installation, a brass battery post is supplied. Install the battery post based on the orientation in Photos 4-3 and 4-4.
- Tighten the battery post using a pair of plyers as shown in Photo 4-4.



SECTION 5: Connecting the Battery Cables

The new battery cable will attach to the disconnect post using the brass nut provided. The factory cable will attach to the brass post.

- Remove the nut from the shock tower as shown in Photo 5-1 using a 14 mm socket.
- Install the eyelet end cable first and tighten the 17 mm nut while holding the orientation as shown in Photo 5-2.
- Install the factory cable to the brass post using a 10 mm wrench while holding the orientation as shown in Photo 5-4. NOTE: The cable end fitting is tapered inwards. The larger diameter goes in first on the post as shown in Photos 5-3 and 5-4.



Photo 5-1: Shock tower nut removed

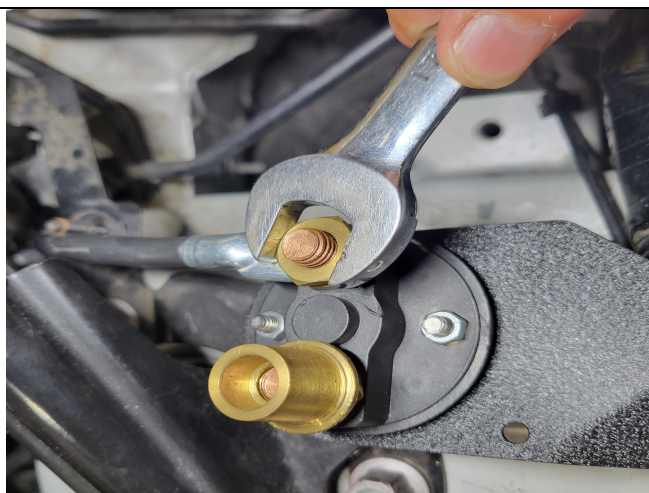


Photo 5-2: Battery cables attached to disconnect



Photo 5-3: Factory cable attaches to the brass post

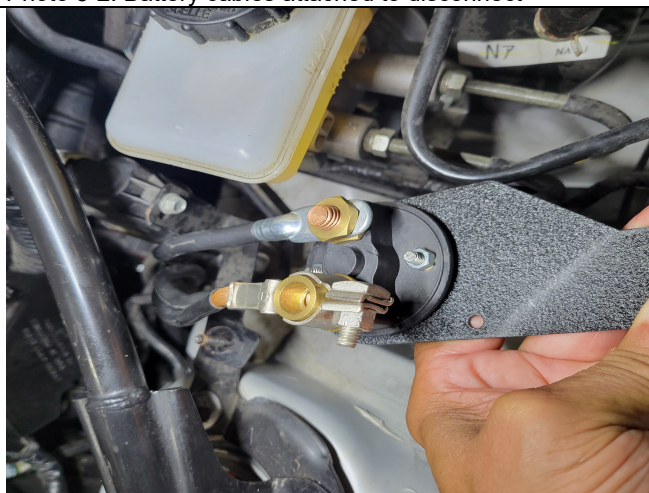


Photo 5-4: Proper orientation of cables

- Rotate the battery disconnect assembly and attach to the shock tower stud shown in Photo 5-5.
- There will be plenty of termination clearance as shown in Photo 5-6.



Photo 5-5: Disconnect mounted to shock tower brace



Photo 5-6: Termination clearance

SECTION 6: Reinstall ECU and Components

Reinstall all of the ECU components and reattach the battery cables. Reference the earlier Sections and pictures to aid in the reinstall.

- This is a negative disconnect so spacing under the disconnect assembly will not cause a short. However, you don't want rubbing, so confirm there is ample clearance.
- Reinstall the ECU placing it over the two top studs.
- Attach the two nuts and the lower bolt using a 10 mm socket wrench.
- Press in the secondary control box plastic fittings back into the ECU mount.
- Plug in and rotate the clip on the two harnesses into the ECU.
- Install the Positive cable first using a 10 mm wrench.
- Install the Negative cable using the 10 mm wrench.



Photo 6-1: Battery OFF position key removal



Photo 6-2: Battery ON position

SECTION 7: Operation

Battery will be in the OFF position when the key is removed.

- Install the plastic key into the disconnect switch as shown in Photo 6-1.
- PRESS DOWN and TURN the key 90 degrees as shown in Photo 6-2.
- The key will stay in the disconnect and will not come out until you turn the key to the OFF position.
- NOTE: When you disconnect the power to your car, the engine may be a little rough at idle on start up. This is because the ECU Short Term Trim for fuel needs to recalculate the O2 readings. This recalibration only takes a few blocks of driving to learn and be normal.
- You may also lose your radio presets. This may be an inconvenience, but better than having a dead battery.

We hope you will be pleased with our product. If at any time you need assistance, please contact us by phone or email us at support@trackdogracing.com.

Track Dog Team

Build List

CHECK	QTY	PART NUMBER	ITEM DESCRIPTION	LOCATION
	1	KILL-SWCH	Battery Kill Switch	Main
	1	BAT-BRACKET	Mounting bracket for kill switch	Main
	1	CABLE-GRD-32	Ground cable 32-36" battery post	Switch to battery
	1	BRASS-POST	Thread brass post	Switch to harness
	2	BOLT-M5-20A	SS Allen bolt M5 x .8 x 20	Switch Hardware
	2	NUT-M5	Nut M5	Switch Hardware
	1	BOLT-M8-30	Bolt M8 x 1.25 x 30	Battery Post
	1	NUT-M8	Nut M8	Battery Post