

## ND LIGHTWEIGHT LITHIUM BATTERY KIT 25-020X0



Thanks for purchasing our ND lightweight lithium battery kit. This kit is designed to fit both stock and BBR turbo applications and both installations are covered in these instructions. If you have any questions during installation or suggestions for improvement to the product or the instructions - please don't hesitate to call or email.

**WARNING: Not everyone can perform every installation. It is critical that you be honest with yourself in regards to your ability. We're more than happy to help, but there are only so many things we can do from the other end of a phone / computer. If in doubt, discuss the install with us before you dive in. Improper installation could cause injury and / or death!**

**Required tools:**

- Metric socket set
- Small flat blade screwdriver
- 4mm & 5mm Allen tools
- Side cutters
- Hose pick(s)

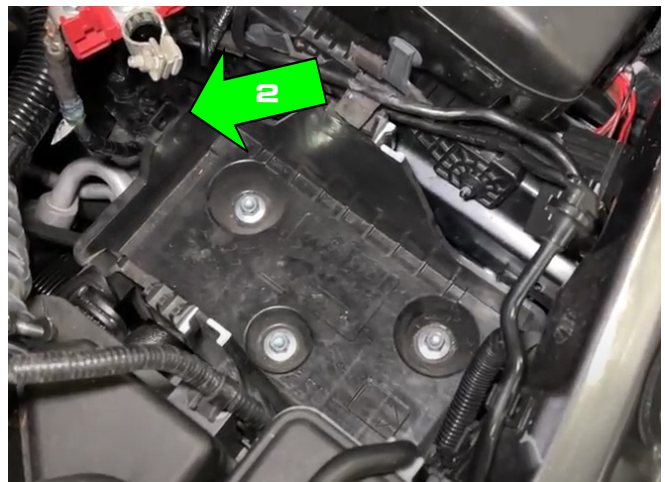
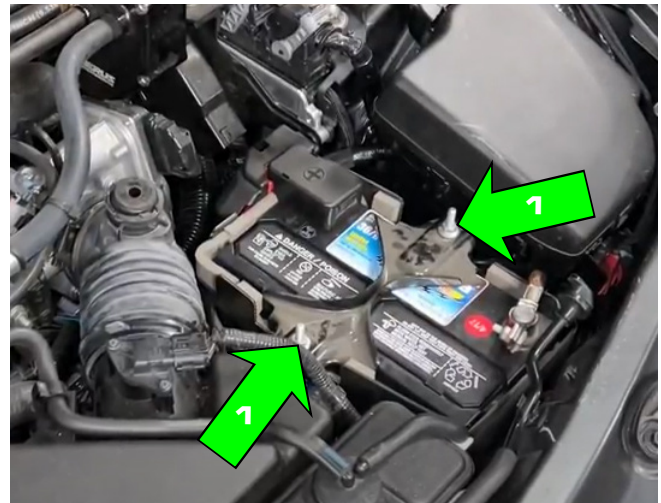
**Please Note - Not all of the pieces/parts included with the battery kit will be used with each installation. You will end up with unused parts**

**Stock Installation** - skip to p.6 for BBR installation

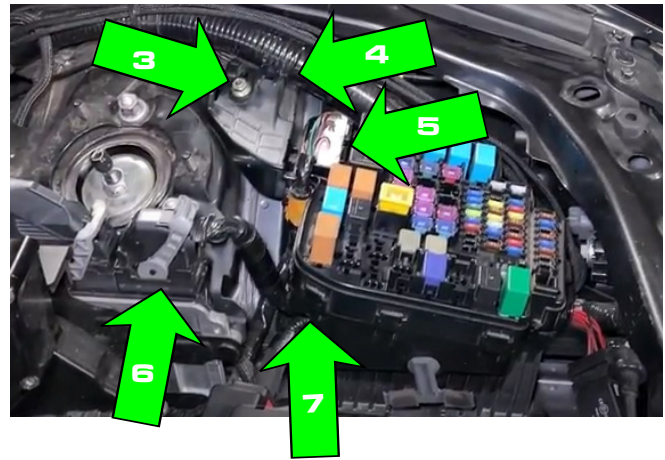
1. Disconnect the negative battery terminal. Fully remove the plastic cover from the positive battery terminal and then disconnect the terminal from the battery.

2. Loosen the two nuts (1) holding the upper battery bracket enough to remove the J-hooks from their lower mounting holes. Take care in removing the bracket not to have it touch the battery terminals causing a short. With the upper bracket removed, the battery can now be removed.

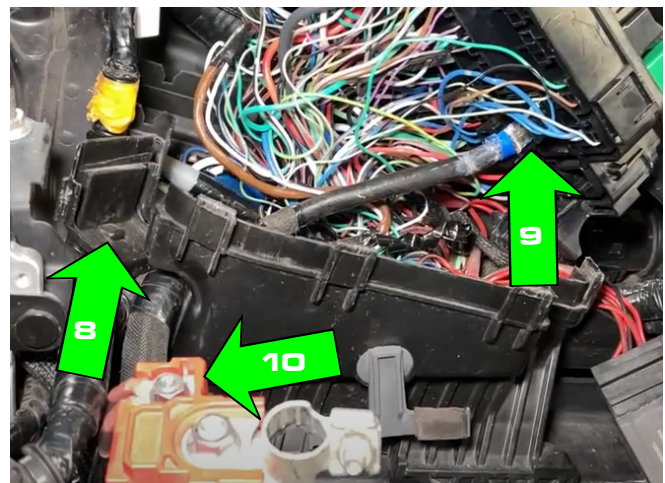
3. Using a small pick, disconnect the wiring clip that secures the positive battery cable to the lower battery tray (2). Using a 12mm socket, remove the three bolts holding the lower battery tray to the cross member, then remove the tray.



4. Now you'll need to install the supplied battery cable. Begin by removing the fuse box lid. Then remove the nut securing the fuse box flange (3) and cut the ziptie holding the main harness to the flange (4). Unplug the two white connectors at the backside of the fuse box (5) and unplug the smaller of the PCM plugs (6). First, depress the locking tab, then swing the lock arm to release the connector.

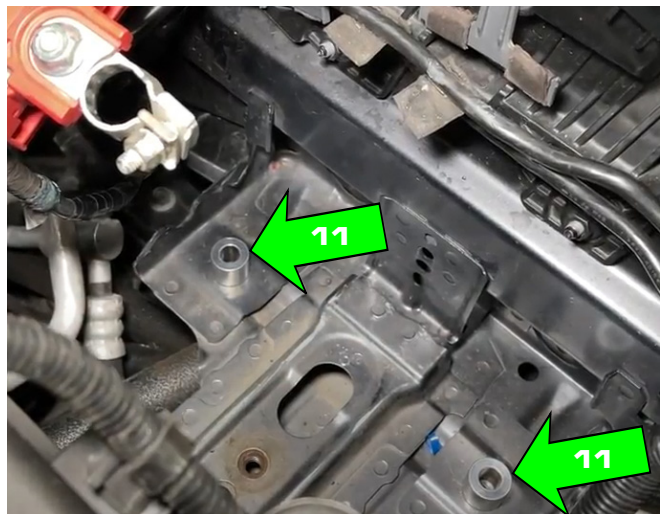


5. Now take a small flat screwdriver and release the locking tabs that hold the upper portion of the fuse box (7, eight tabs in total). Lift up on the fuse box to gain access to the wiring within. Locate the door at the backside of the fuse box and use the screwdriver to pry it open (8). Directly behind the door, you will see a ziptie holding the battery cable and PCM wiring to the fuse box. Carefully cut the ziptie and separate the battery cable from the foam wrapping.



6. Take a 10mm socket and remove the nut retaining the cable to the bottom of the fuse box (9). Using the same socket, remove the nut securing the other end of the cable to the positive battery terminal (10).

7. Install the new cable in place of the old. The cable is made so that it can install in either orientation. With the cable in place, reassemble the fuse box in the opposite order of removal. Reinstalling zipties to the fuse box is optional. The kit includes extra zipties in case you wish to do so. Just be sure to save at least one ziptie to retain the cable once fully installed.



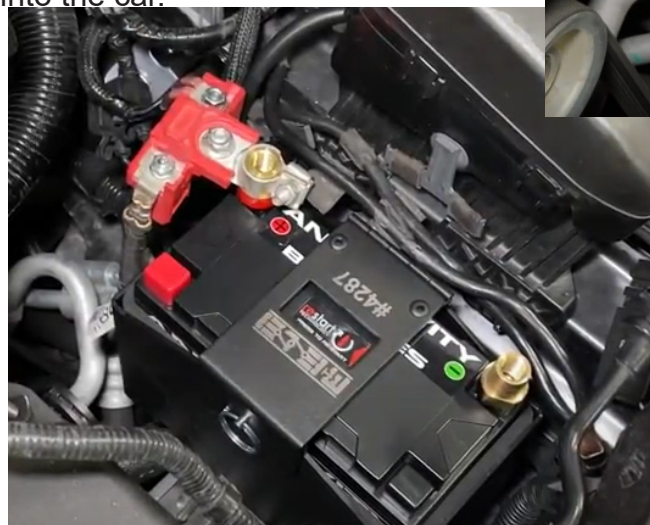
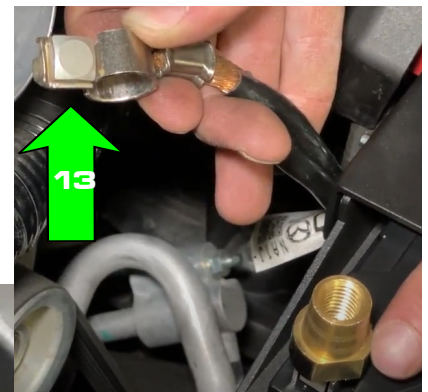
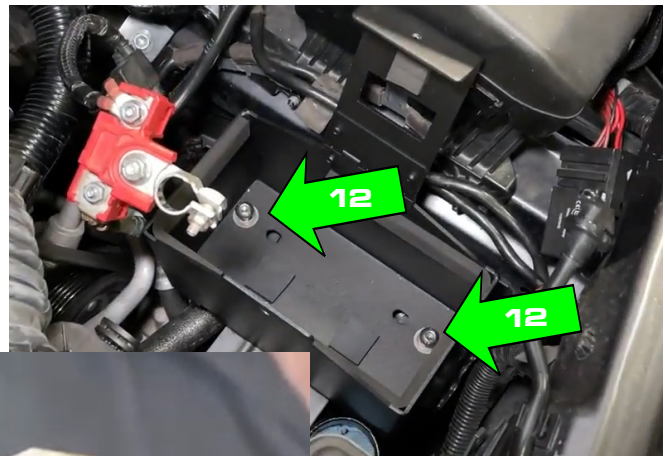
8. Locate the two large spacers (11) included with the kit and set them into position on the cross member. Since nothing is there yet to hold them into place, take care not to knock them down into the engine bay.

9. Set the battery box in place with the hinged side of the box toward the driver's side of the car. The hardware securing the box will use the two holes furthest from the center of the box. Loosely install the two M8 bolts and washers (12), being sure they pass through the spacers before threading into the cross member. Ensure the box is squarely mounted as you tighten down the bolts.

10. Due to the design of the Mazda ground cable's terminal, the supplied ground lug needs to have a portion of the base ground flat. This will ensure that the ground terminal seats fully. To make the flat spot, it is easiest to use an electric or pneumatic grinder, but a hand file can also be used.

11. The battery has multiple options for the terminals. For the stock setup, use the setup shown to the right. Install the supplied threaded blocks under the battery contacts and then install the supplied terminals with the M6 socket head bolts provided. Tighten down the bolts using an M4 Allen tool.

12. With the terminals securely in place, you can now install the battery into the car. With the battery in the box, close the box lid and secure it with the pin. If the battery appears loose, remove it and add the provided adhesive-backed foam block to the base of the battery box. Then reinstall the battery.



13. Attach the positive terminal while making sure that the cable to the fuse box is routed free of any hazards that could chafe or cut through the cable. Use the supplied zipties to secure it as needed. Now install the ground terminal. Make sure the lower bolt retaining flange (13) lines up with the flat spot on the negative terminal.

14. Reinstall the positive battery cover.

15. That's it, you're done!

## BBR Installation

1. Disconnect the negative battery terminal. Fully remove the plastic cover from the positive battery terminal and then disconnect the terminal from the battery.

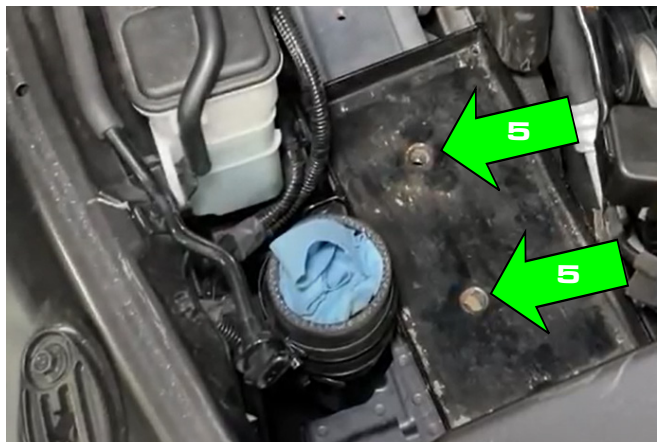
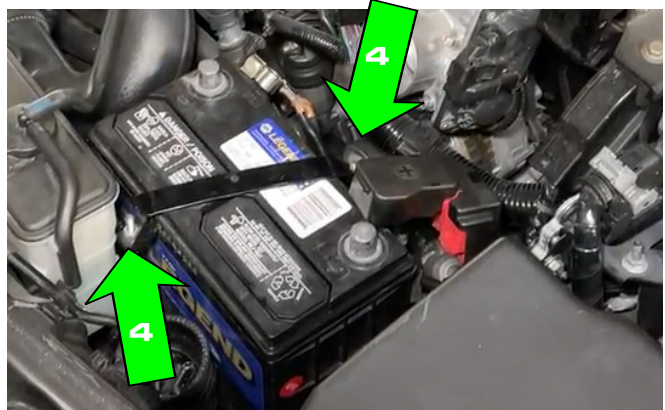
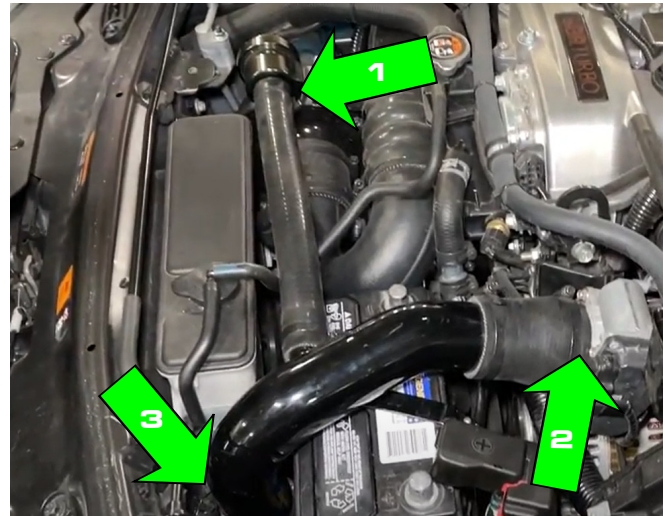
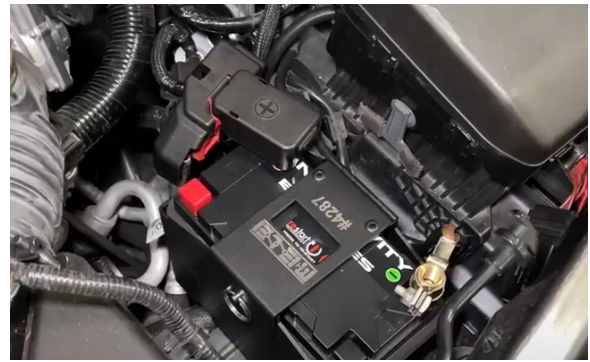
2. Depending on the revision of your BBR kit, you will either have metal intercooler pipes or full silicone intercooler hoses.

- If you have metal intercooler pipes, remove the pipe that passes over the battery by disconnecting the hose at the bypass valve (1), the coupler at the throttle body (2), and the one just forward of the battery (3). We recommend putting a shop rag in the exposed intercooler pipe in the car to keep anything from falling into it.

- If you have silicone hoses, disconnect the hose from the bypass valve (1) and the throttle body (2) and fold the hose out of the way so that you have access to the battery.

3. Loosen the nuts (4) holding the upper battery bracket enough to remove the J-hooks from their lower mounting holes. Take care in removing the bracket not to have it touch the battery terminals causing a short. With the upper bracket removed, the battery can now be removed.

4. Using a 5mm Allen tool, remove the two bolts securing the battery tray to the crossmember (5, bolts removed).



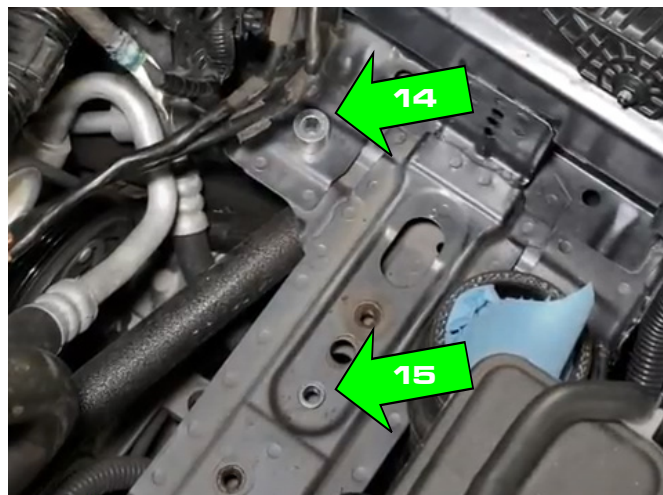
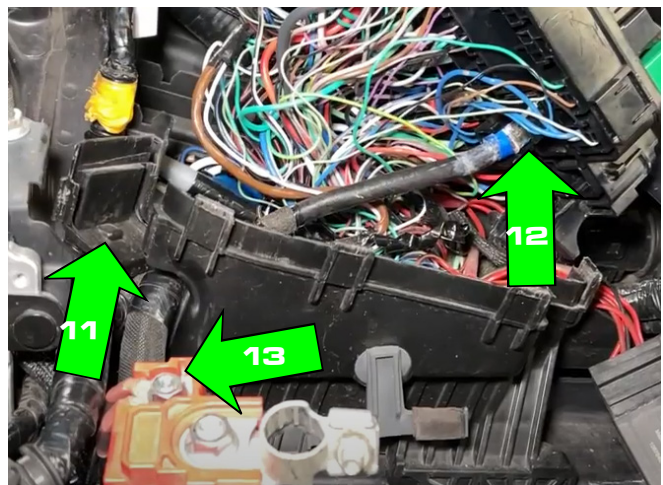
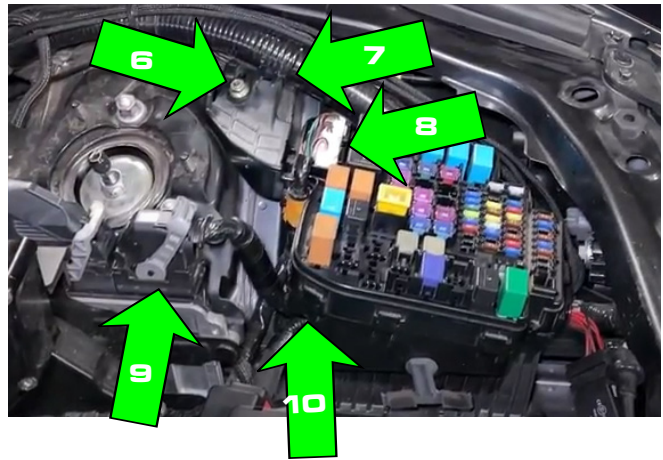
5. Now you'll need to install the supplied battery cable. Begin by removing the fuse box lid. Then remove the nut securing the fuse box flange (6) and cut the zip tie holding the main harness to the flange (7). Unplug the two white connectors at the backside of the fuse box (8) and unplug the smaller of the PCM plugs (9). First, depress the locking tab, then swing the lock arm to release the connector.

6. Now take a small flat screwdriver and release the locking tabs that hold the upper portion of the fuse box (10, eight tabs in total). Lift up on the fuse box to gain access to the wiring within. Locate the door at the backside of the fuse box and use the screwdriver to pry it open (11). Directly behind the door, you will see a zip tie holding the battery cable and PCM wiring to the fuse box. Carefully cut the zip tie and separate the battery cable from the foam wrapping.

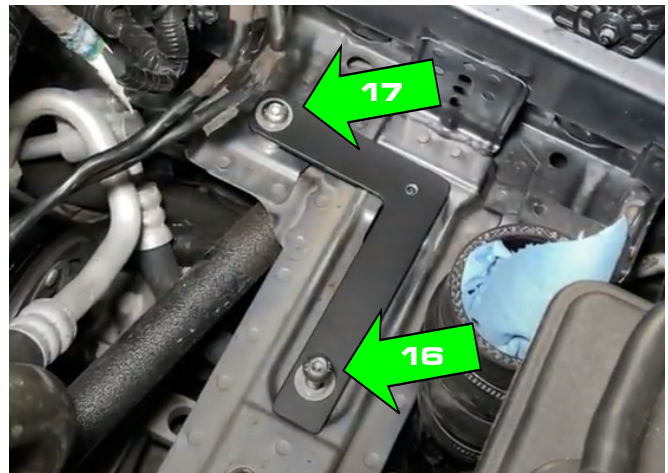
7. Take a 10mm socket and remove the nut retaining the cable to the bottom of the fuse box (12). Using the same socket, remove the nut securing the other end of the cable to the positive battery terminal (13).

8. Install the new cable in place of the old. The cable is made so that it can install in either orientation. With the cable in place, reassemble the fuse box in the opposite order of removal. Reinstalling zip ties to the fuse box is optional. The kit includes extra zip ties in case you wish to do so. Just be sure to save at least one zip tie to retain the cable once fully installed.

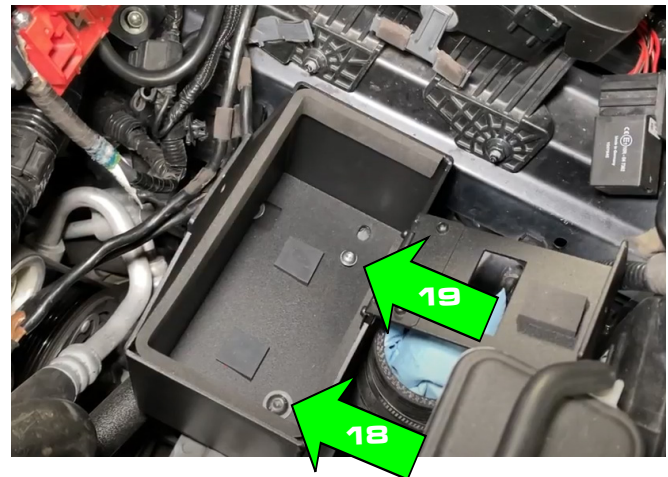
9. Locate the large (14) and small (15) spacers included with the kit and set them into position as indicated on the crossmember. Since nothing is there yet to hold them into place, take care not to knock them down into the engine bay.



10. Place the bracket from the kit in the orientation shown. Now take the two M8 bolts with washers and install them into the bracket. The bolt closest to the radiator (16) only needs to be installed a few threads since it is just helping to locate the bracket for the time being. Ensure that the bracket is parallel to the crossmember as you tighten down the M8 bolt furthest from the radiator (17). Now remove the loose M8 bolt and washer (16).



11. Set the battery box in place with the hinged side of the box toward the front of the car. The hardware securing the box will use the two holes closest to the center of the box. Loosely install both bolts before tightening them down. Install the M8 bolt and washer from the previous step into the passenger side hole (18). Take the M6 button head bolt and washer and install them into the driver side hole (19). Do not overtighten the M6 bolt.



12. Due to the design of the Mazda ground cable's terminal, the supplied ground lug needs to have a portion of the base ground flat. This will ensure that the ground terminal seats fully. To make the flat spot, it is easiest to use an electric or pneumatic grinder, but a hand file can also be used.



13. The battery has multiple options for the terminals. For the BBR setup, use the setup shown to the right. Install the supplied threaded blocks under the battery contacts and then install the supplied terminals with the M6 socket head bolts provided. Tighten down the bolts using an M4 Allen tool.

14. With the terminals securely in place, you can now install the battery into the car. With the battery in the box, close the box lid and secure it with the pin. If the battery appears loose, remove it and add the provided adhesive-backed foam block to the base of the battery box. Then reinstall the battery.



15. Attach the positive terminal while making sure that the cable to the fuse box is routed free of any hazards that could chafe or cut through the cable. Use the supplied zip ties to secure it as needed. Now install the ground terminal. Make sure the lower bolt retaining flange (20) lines up with the flat spot on the negative terminal.

16. With the battery fully installed and connected, you can now reassemble the intercooler piping and reinstall the positive terminal cover.

17. That's it, you're done!

