Ferrari 328 Battery Replacement & Maintenance/Trickle Charger Installation

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With a mean modern battery lifespan of 4-5 years, this is relatively common & simple procedure. Given that an 1% loss of charge every 24 hours, installing a maintenance charger is good prophylaxis for an infrequently-driven car; disconnecting the body ground connector cancels all clock & radio presets (328s do not "re-learn" the engine ECU parameters when battery is disconnected). I have a storage lift which allows for easy underside access, but jack stands would certainly be adequate.

Example shown is a US 1988.5 car, but all 328s are identical in this regard.

Note: if some of the photos seem suboptimal…consider they were taken at night in an unheated garage with outside temperature –1°F…!

Time: Approximately 2 hours, including harness construction.

Tools required:

- 13mm deep socket, ¼ ratchet, and 8-12" extension bar
- 10mm combination wrench
- Battery strap (can use one supplied in factory tool kit or purchase at local parts store for <$5)
- Terminal cleaner
- Terminal remover tool (possibly)

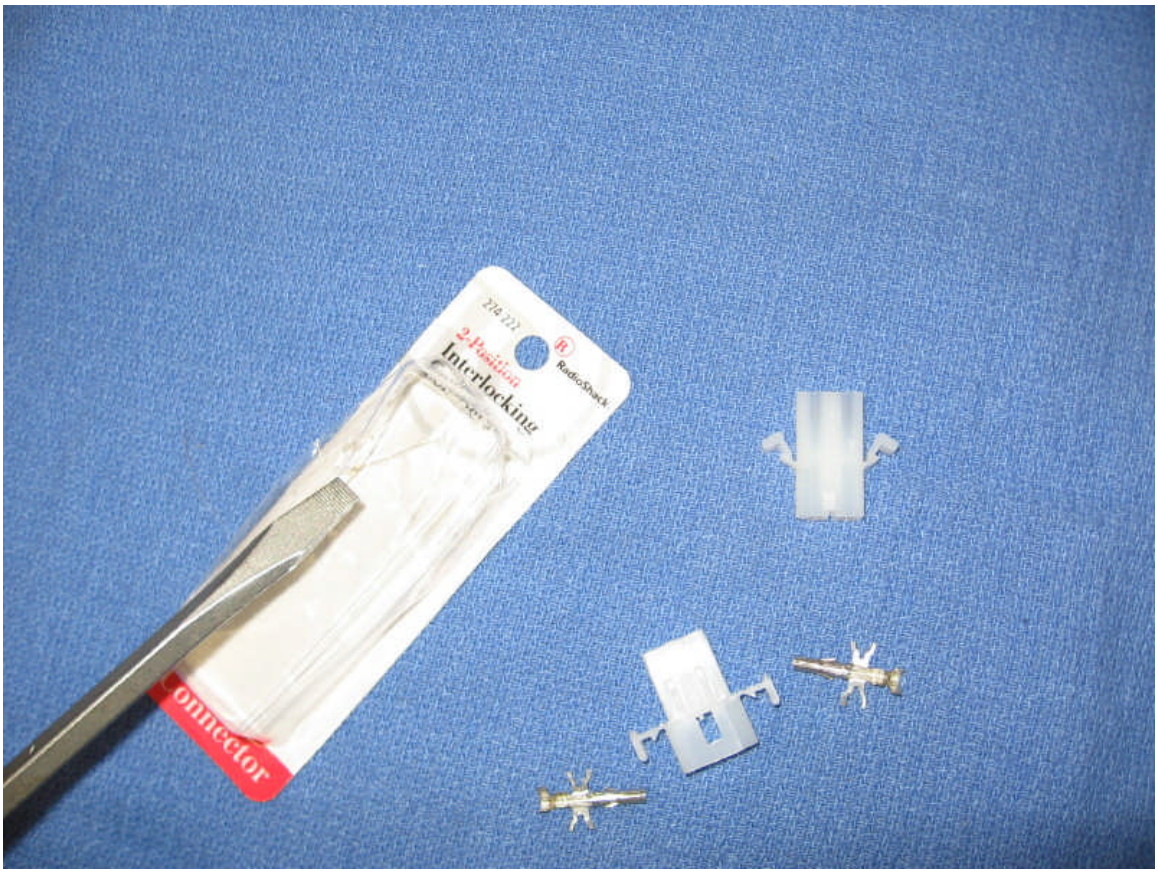
- Sidecutter & needle-nose pliers
- Matches or disposable lighter
- Multimeter (optimal)
- Soldering iron (optional)

Parts required:

- Group #34 battery. 328s were initially shipped with a Delco European size #L3, which is similar in size to a BCI group #34. I purchased an AC-Delco group #34 (DLB 34-6YR) ($69.99) for "OEM/authenticity" purposes. In standard configuration (non-reverse-terminal), the positive terminal post will be on driver's side, but there was sufficient slack in my ground cable to use this standard battery configuration. The factory hold-down clamp plate fit properly without modification. However, many owners & respected mechanics recommend using the Optima Red-Top #34/78.

- Maintenance charger. I have used a basic Sears Diehard #71220 ($29.99) on two of my other cars for years without any problems:

- Molex 0.093” 2 circuit connector w/receptable & plug #1545PRT/#2077571 ($4 from Hooper’s Electronics in Jackson, Mississippi). This connector mates perfectly to the Sears charger & comes with proper terminals. RadioShack also sells this connector in a package as #274-222 for $1.99 & there’s likely one a bit closer.



- 18g combination red/black wire, long heat-shrink ¼” sheath, shorter 3/16” segments, and two ring ¼” ring terminals (Ideal #770009L #16-#14 gauge). Wire is available at RadioShack (speaker wire #278-567) in 25ft spools for $4.99, terminals are $1.99. 36in of wire is required, but it’s only sold in spools.


Radio Shack
Wire
IN WALL
YES
TYPE
CL2
UL
LISTED
Speaker Wire

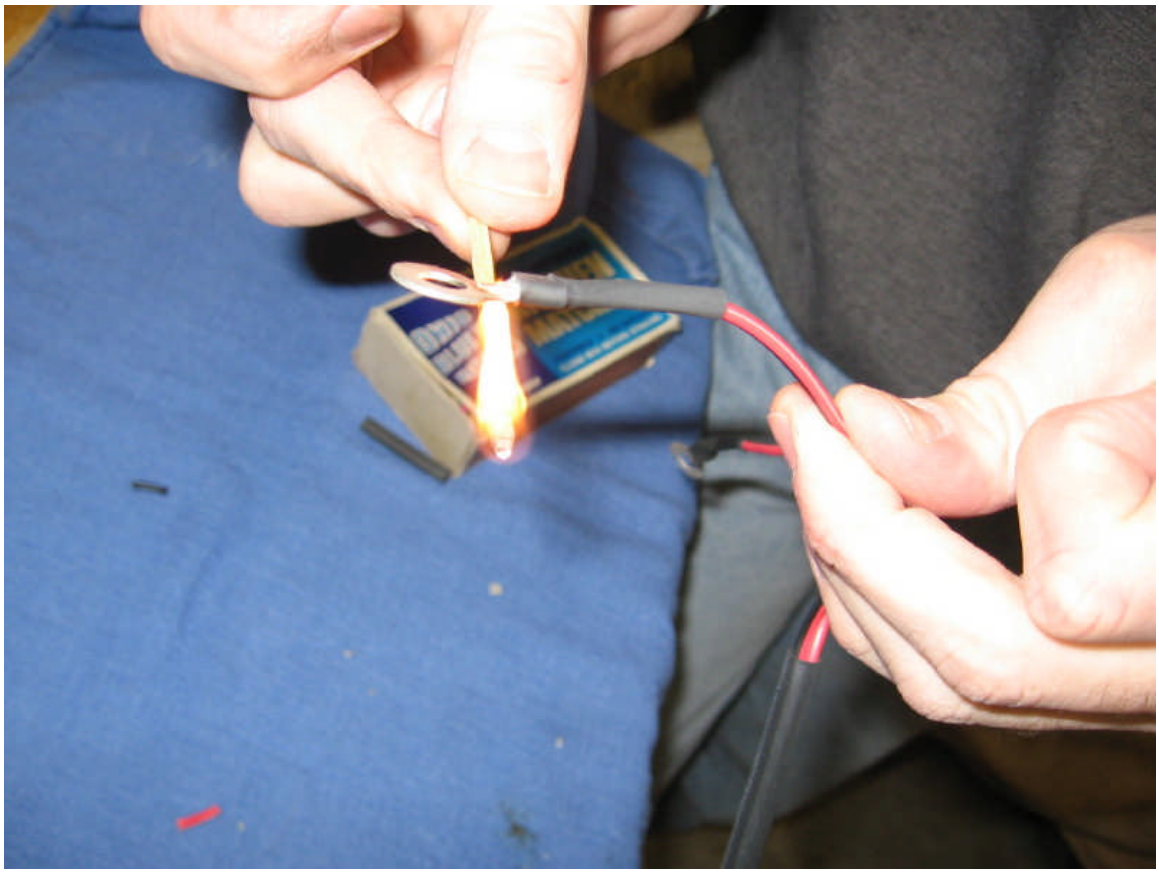

IDEAL
#16 - #14 Wire Gauge
Ring Terminal
Terminal de Anillo
1/4" Stud
Borne No. 1/4
c UL us
7 83250 57004 1
IDEAL INDUSTRIES, INC.
Sycamore, Illinois 60178, U.S.A.

- 5mm flat or lock washers (2)
- Zip ties (black)

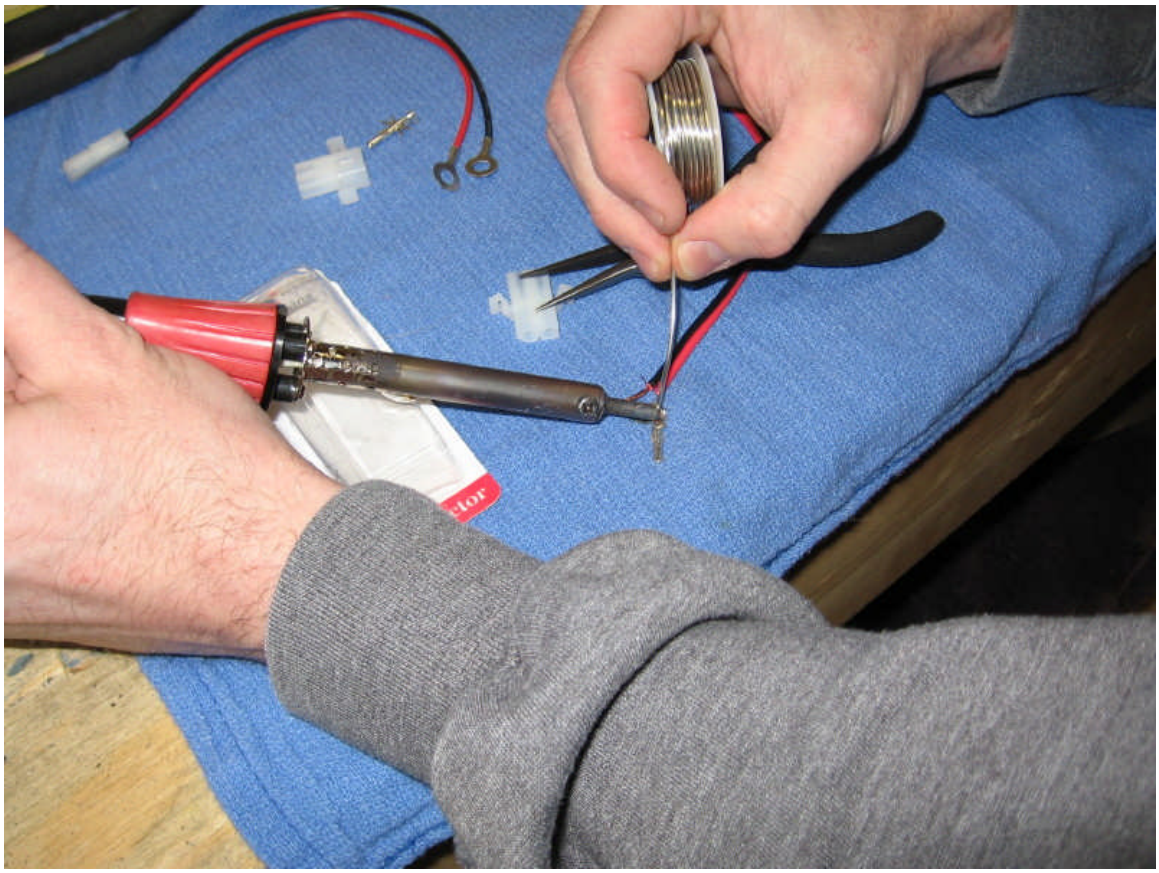
Procedure:

First (inside, where it's warm!), partially or fully construct the charger wire harness; the 36in length listed will fit perfectly if you choose to route in the same manner I did. Otherwise, construct only the proximal end now and the distal end once you have run the harness for your particular car.

Split the red/black wire for about 6" and slide a small segment of 3/16" heat-shrink tubing down each. Strip each wire, remove the plastic bit from each ring terminal connector, and crimp into place. Optionally, one can solder this connection for extra security. Slide the heat-shrink over the crimp and heat with match or lighter:

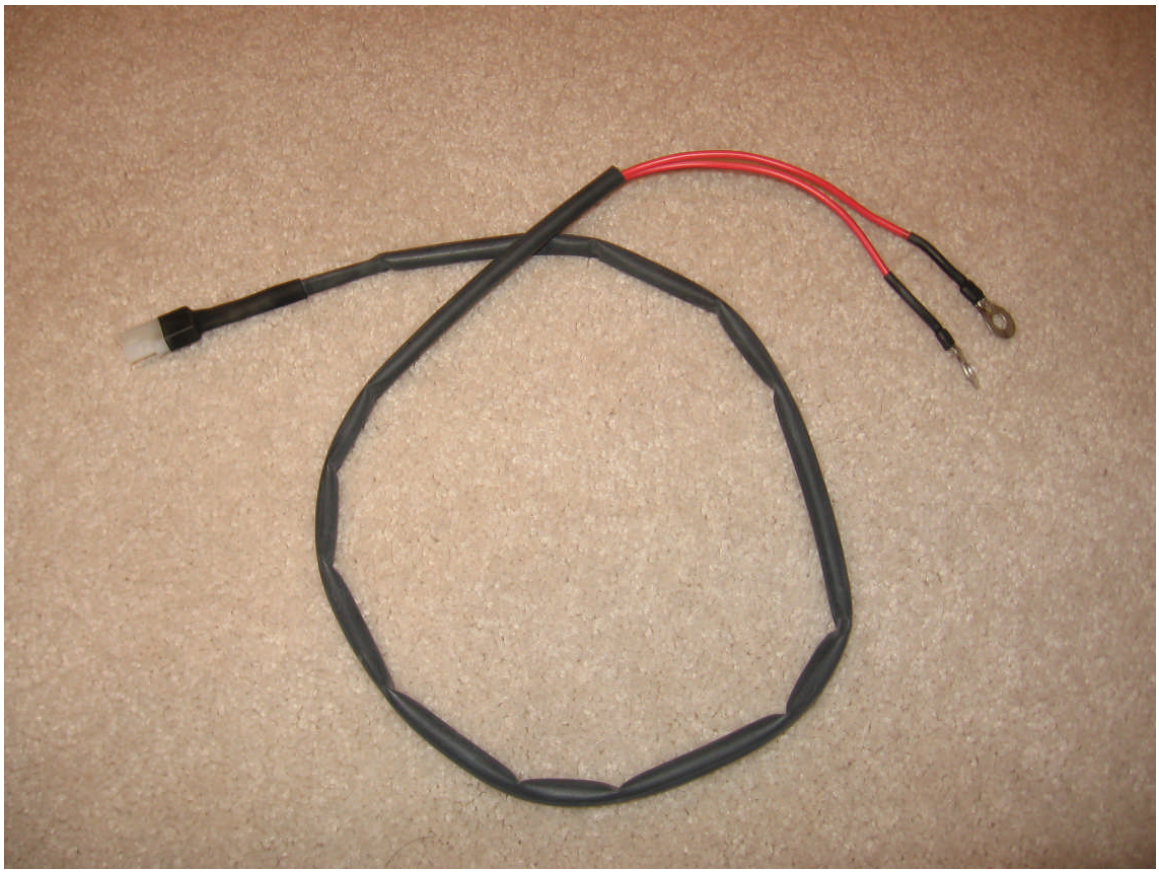


Slide the ¼” heat-shrink over the wire. Split a 1-2in section of the wire lengthwise & strip the end insulation. At this point I also slipped a 5/8 x 2in section of heat-shrink tubing on to cover the connector. Install the two female ends (tubular connector) over these two wires, crimp & solder if desired.



The black (negative) wire connector fits into the “peaked” section of the plastic multi-plug, while the red (positive) terminal end fits into the flat section (distinction is obvious viewing end-on). Each terminal will “click” to lock in place. Slide the 5/8” heat-shrink over the entire terminal and apply heat. Clip the little “ears” off the plastic multi-plug:

The completed harness appears as follows (both wires appear red due to angle of picture):



Now on to the installation. Open the front hood & cover the fender. Remove the spare tire:

Battery is concealed under the center well access panel. Remove both knurled nuts (don’t drop or they can fall through tray drain hole *[~10 o’clock in photo]* into underbody) and lift away cover:

Note the terminal orientation on the replacement Interstate battery (red cover over positive terminal):

Carefully loosen & remove the terminals (negative first so if when loosening the positive terminal combination wrench brushes metal body perimeter will not spark); the red plastic cap pops off. I was able to twist the cables free by hand; if tightly adherent you want to use this tool (instead of pliers or hammer):

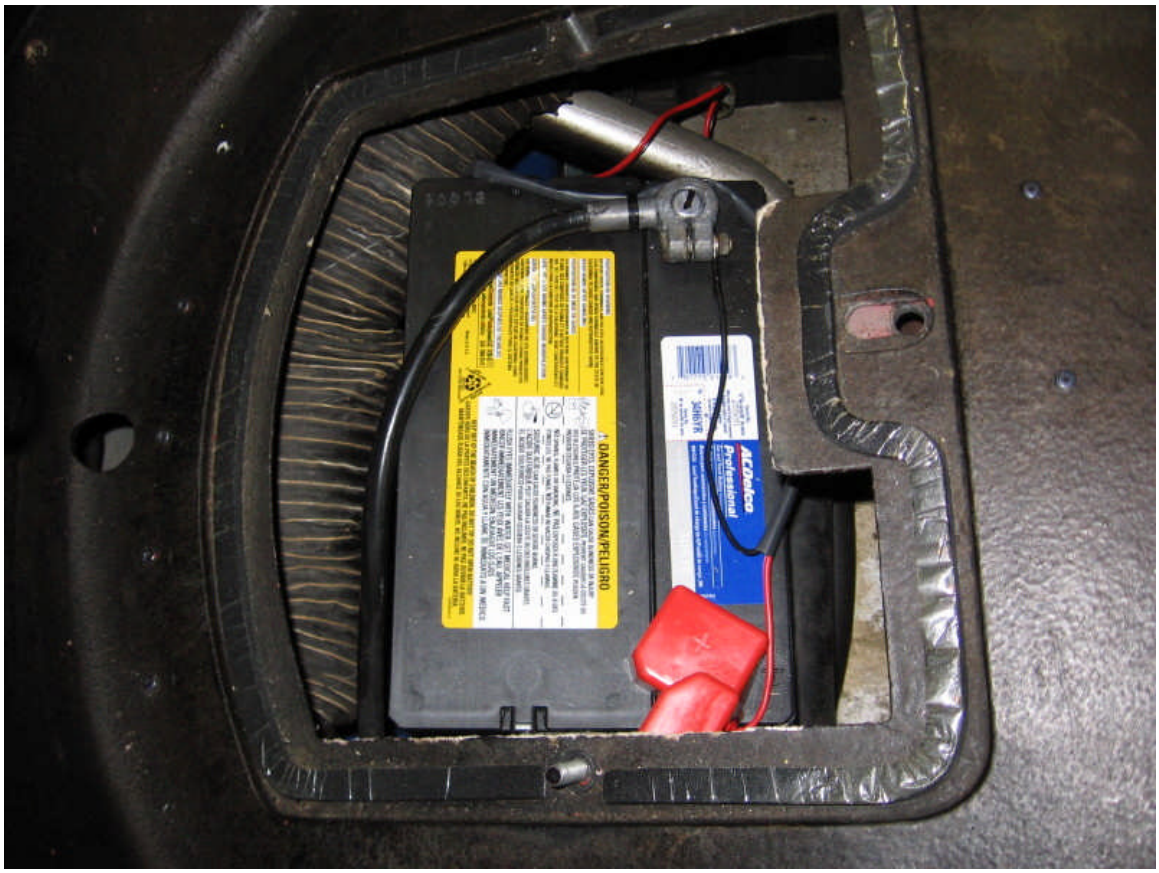
The hold-down clamp is located in the front center. Using a 13mm deep socket on a long extension, loosen and remove the clamp plate, nut, and lockwasher:

Affix the lifting strap over the terminals and carefully remove:

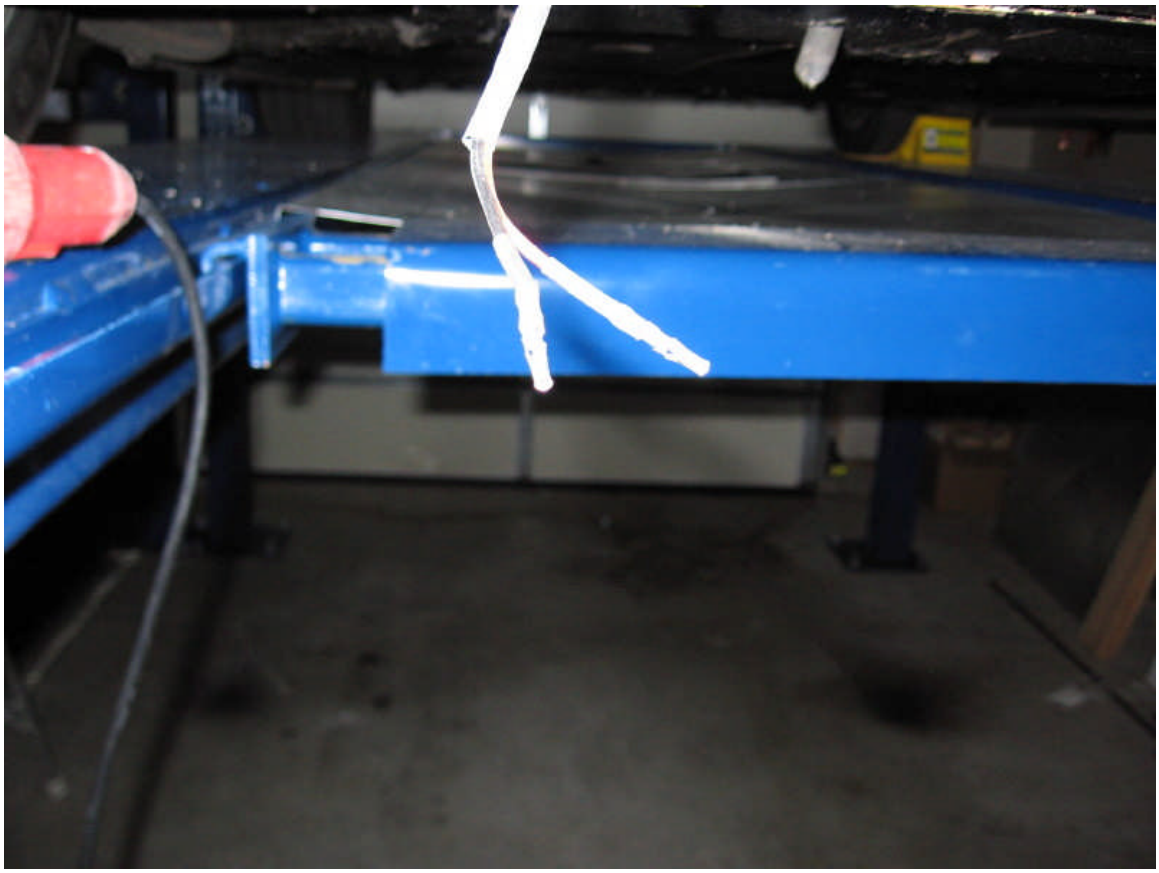
Clean up each terminal with terminal post tool. Drop the new battery into place and install hold-down clamp. Note opposite configuration of positive and negative terminals on the Delco battery compared with the previous Interstate (positive/negative remain on same side of car but battery is in opposite orientation):

The charger harness attaches to to each terminal directly. Some authorities recommend attaching the ground lead to a chassis ground instead of directly to the battery *(ala jump-starting*), but the instructions accompanying the charger clearly show direct wiring. I put the ring terminal directly against the lead terminal, followed by a washer, then the nut:

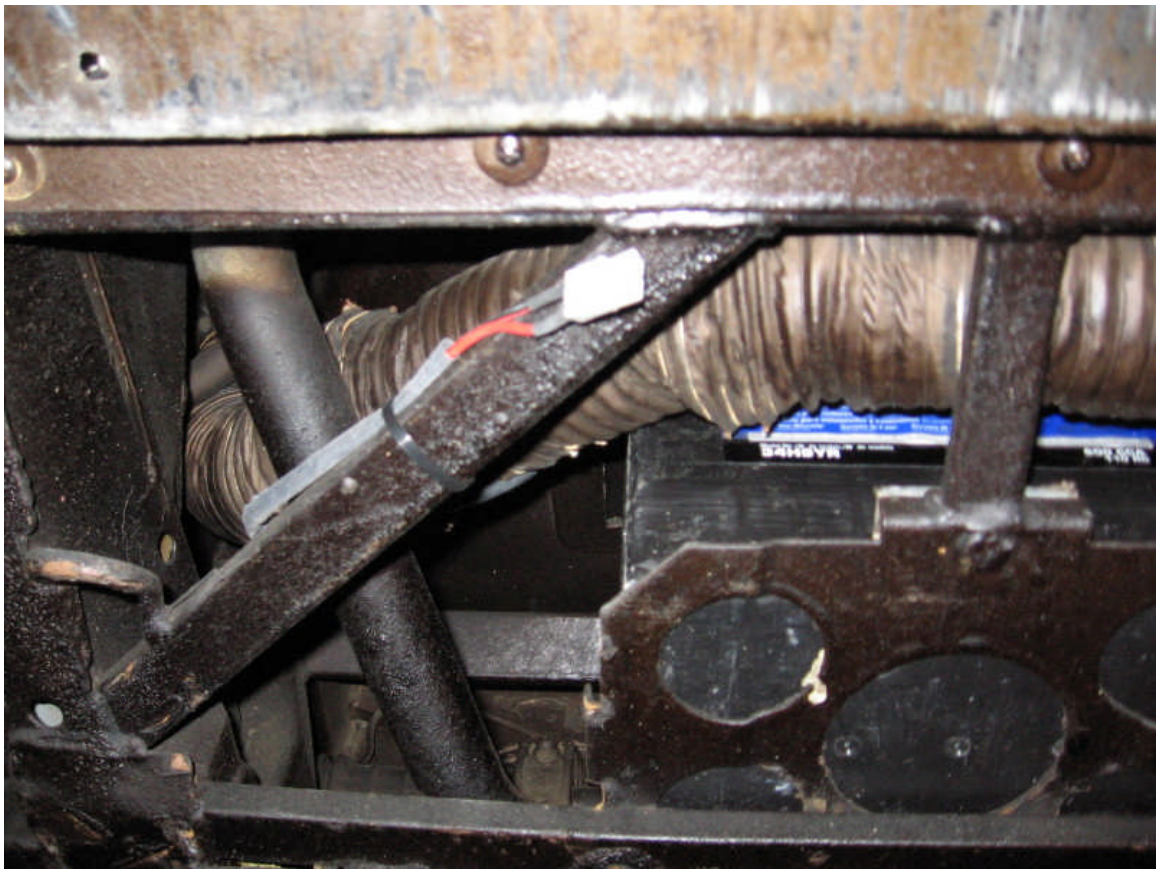
Route the red (positive) wire retrograde along the positive cable to clear the plastic cover. The cooling pipes run immediately behind the battery, so I zip-tied the harness directly to the negative cable terminal (if you are concerned regarding abrasion due to vibration, a short segment of vacuum hose slit lengthwise would provide good protection):



The harness then runs down and forward. Decide on length, clip the excess wire, and crimp each terminal. Each wire terminal then “clicks” into the white female connector. Check your charger to confirm, but on mine the black/ground wire went into the peaked end and the red/positive into the flat end:



There is a small diagonal chassis brace running towards the right front (front of car is at top of photo):



Confirm 12V across terminals with multimeter on “DC” setting. Replace the battery cover plate and re-install knurl nuts. Replace the spare tire, and close the front hood (remember on pre-1988.5 cars to push button on support rod!).

A few thoughts:

- My car spends most of it’s time on a storage lift & is only driven in perfect weather, so road debris collecting in the connector is not an issue. If you drive your car frequently and/or in inclement conditions, take a spare plug from the Molex/Radioshack kit, clip the muli-plug “ears” off, click the terminals in, then fill the end with silicone sealant to make a dummy plug.
- Ensure to purchase a “float” automatic charger that turns off when the battery is fully charged (this way one can leave it plugged in indefinitely).
- Unplug the charger prior to starting/running the car. As my car is run regularly but rarely leaves the garage, I put a Leviton toggle switch ($3 at HomeDepot) inline between the charger plug and extension cord so I can quickly “flip” the power off without actually needing to unplug any connections.