

FIELD INSTALLATION OF STANDARD DC FILTER OPTION**REFERENCE DOCUMENTATION**

- 1) AT10.1 Group II Operating and Service Instruction Instructions ([JA0102-02](#)), or
- 2) AT30 Operating and Service Instruction Instructions ([JA0102-03](#))
- 3) AT10.1 Group II or AT30 Standard Drawings featured at <http://www.ATSeries.net/>

MATERIALS REQUIRED***Supplied With Standard DC Filter Installation Kit:***

- 1) filter inductor or "choke" (L2)
- 2) one or more filter capacitors (C1), or (C1/C2), quantity depends on charger rating
- 3) filter capacitor bus bars (FF5005-00/FF5005-01)
- 4) polarity diode (CR1), and mounting bracket in units 100 Adc or greater
- 5) new data nameplate decal (FK5007-##)

Supplied By User:

- 1) mounting hardware for inductor and capacitors
- 2) crimp terminals (ring type preferred)
- 3) cable ties

TOOLS REQUIRED

- 1) standard hand tools
- 2) wire cutters, stripper and terminal crimping tool

PROCEDURE (Mechanical Assembly & Wiring)

WARNING: DISCONNECT ALL AC AND DC POWER SOURCES FROM THE BATTERY CHARGER BEFORE PROCEEDING. ONLY QUALIFIED SERVICE TECHNICIANS SHOULD PERFORM THIS PROCEDURE. FOLLOW THE SITE AND YOUR EMPLOYER'S STANDARD SAFETY PROCEDURES.

1. In the following procedure, "L1" and "L2" refer to the inductors (chokes) mounted on the floor, mounting base, or stacked together vertically in larger units.
2. Refer to the internal component layout drawings in Appendix C of the AT Series operating manual. Identify the standard inductor (L1) on the drawing, and locate the corresponding physical component inside the charger. Install the new inductor (L2) next to or on top of L1 as indicated in the drawings. In most units, there are predrilled holes to accommodate the mounting plate of the new inductor (L2). If these holes are not present, transfer drill mounting holes into the base for appropriate hardware. In some cases, L1 needs to be switched with the new L2, if a top bracket is not installed on L1.

**Style-5030 Assembly**

3. Refer to the electrical schematic and wiring diagrams in Appendix C of the AT Series operating manual. Ignore the references on the schematic to "C2", unless you are also installing the Battery Eliminator Filter option.

4. Disconnect the heavy gauge wire (currently labeled #12) attached to the main inductor (L1) at terminal 2. Connect this wire to the newly installed inductor (L2) at terminal 2. Re-label this wire "#14" at both ends if possible, to match standard wiring diagrams. Connect the two (2) short leads of the inductors (L1-2 and L2-1). In most cases, the lugs can be formed together and bolted without wire to form a connection point (E13). Use crimp terminals to make the connections. When you are finished, L1 and L2 will be connected in series.
5. Remove the signal wire (labeled #50) attached to the dc circuit breaker (CB2). Connect this wire to the bolted contact point (E13) between L1-2 and L2-1.
6. Refer to the internal component layout drawings in Appendix C of the AT Series operating manual. In most AT Series battery charger enclosures (Style-5017, Style-5018 & Style-5030), the blue filter capacitors (C1) are situated on a U-shaped circuit breaker mounting bracket, fastened with plastic cable ties. In other enclosures (Style-163 & Style-198), there are predrilled holes on the back phenolic mounting panel to accommodate capacitor-mounting clamps. Mount and secure the filter capacitors (C1) and connect the positive (+) terminals of all caps together. Some conversion kits may contain copper bus bars for interconnecting the capacitors. Connect this positive end of the caps to L1 at terminal 2, using the provided wire.
7. In AT10.1 Group II battery chargers, screw the supplied stand-off, then Polarity Diode (CR1), to the exposed (top) terminal of the dc shunt (R1-2).
8. In AT30 battery chargers, mount the Polarity Diode (CR1) to the negative (-) bus bar mounted across the Filter Capacitors (C1). A mounting bracket is supplied with 100Adc units and higher.
9. Refer to the **optional** wiring diagrams (JE5###-99) in Appendix C of the AT Series operating manuals. Pay attention to wire numbers 12, 13, 14, 17, 20, 21, & 50. Connect ALL wires of newly installed filtering assembly to the proper terminals of the existing charger components.



PROCEDURE (Inspection & Restart)

1. Refer back to the internal layout drawings, electrical schematics, and wiring diagrams in Appendix C of the AT Series operating manual. Confirm that all your work matches the drawings, and all connections are tight.
2. Double check to ensure that all capacitors are connected with the **correct polarity**. Bundle new wiring into the existing cable harnesses if desired.
3. Remove the original charger nameplate, and replace it with the new nameplate supplied with the conversion kit. This identifies the charger properly as a filtered model.
4. Reconnect the battery, dc loads, and ac power. Re-energize the charger by **first** closing the dc breaker (CB2), followed by the ac breaker (CB1).
5. Check the float and equalize settings for proper charge voltages. Your AT10.1 Group II or AT30 Series battery charger has now been field-retrofitted with the dc filtering option per **NEMA PE5-1996** standards.