

## Conversion Checklist

The following checklist is intended as a convenient overview of the steps involved in converting an on-road vehicle to electric power. Some steps may not apply to your project. If there are additional steps you feel we should include, please let us know.

**Working on electric vehicles is potentially dangerous. Always read instructions and follow sound safety practices.**

- Take Pre-conversion measurements**
  - Vehicle weight
  - Front axle weight
  - Rear axle weight
  - Front ground clearance
  - Rear ground clearance
  - Engine & transmission centerline
  
- Prepare for dismantling**
  - Have air-conditioning refrigerant removed for recycling
  - Clean engine compartment and underside of vehicle
  - Find buyer for engine while they can still check it out running
  - Run gas tank dry
  - Label wiring harness
  
- Dismantle**
  - Disconnect and remove battery
  - Drain and properly dispose of antifreeze and engine oil
  - Disconnect wiring harness
  - Remove engine (retain until design measurements are taken)
  - Remove cooling system
  - Remove exhaust system
  - Remove fuel system
  
- Design new systems**
  - Motor support (using engine & transmission centerline measurements)
  - Motor to transmission adapter (using engine & transmission measurements)
  - Power Steering

- Air-conditioning
- Battery support, containment & ventilation
- Layout of components
- High current wiring
- Low current wiring
  
- Order or fabricate vehicle-specific components**
  - Motor to transmission adapter
  - Motor mounts
  - Bracket for power steering pump
  - Bracket for air-conditioning compressor
  - Battery support, containment & ventilation
  
- Order motor and motor clamp/mount**
  
- Install motor**
  - When motor arrives, run (seat) brushes using 12 volt battery
  - Mount flywheel to motor and bench test for balance and vibration using 12 volt battery
  - Install motor using motor-to-transmission adapter and motor mount
  - Elevate drive wheels and test drive train using 12 volt battery
  
- Order off-the-shelf conversion components**
  
- Install mechanical systems (except suspension modifications)**
  - Air conditioning
  - Power steering
  - Vacuum system
  
- Install battery boxes**
  - Mount boxes securely to vehicle frame
  - Provide reinforcement if any modifications are made to vehicle structure
  - Install battery insulation
  - Install battery heating
  
- Install high-current components**

- Controller
- Contactor(s)
- Circuit breaker
- Fuse(s)
- Shunt(s)

**Install low-current components**

- Throttle pot box
- Controller pre-charge resistor(s)
- Auxiliary battery
- DC-DC converter
- Auxiliary fuse panel
- Instrumentation
  - Speedometer
  - Tachometer
  - Amps
  - Volts (battery pack)
  - Volts (auxiliary system)
  - Link-10 meter
  - Motor temperature
  - Controller temperature
- Heating
- Air-conditioning wiring
- Vacuum pump, switch, etc. to restore power brakes
- RPM limiter
- Inertia switch
- Controller cooling pump for fans
- Battery charger
- Battery charger interlock

**Purchase batteries**

**Install batteries**

- Batteries

- High-current cabling
- Battery management
- Battery box ventilation
  
- Stationary testing**
  - Subsystems
  - Drivetrain
  
- Upgrade suspension (compare post-conversion to pre-conversion measurements)**
  - Overload springs
  - Heavy-duty anti-sway bars
  - Heavy-duty suspension bushing
  - Heavy-duty shock absorbers
  
- Reduce rolling resistance**
  - Low rolling resistance tires
  - Use synthetic lubricants in axle(s) & transmission or transaxle
  - Align front end with zero toe-in
  - Close grille opening
  
- License**
  
- Insurance**
  
- Road Test**
  
- Lettering, decals, etc.**
  
- Have fun driving your new clean running, silent EV!**