ELECTRICAL—ELECTRIC VEHICLE (EV)—RANGER E.V.—DECLINING DRIVING RANGE—BATTERY RECOVERY AND CHARGING PROCEDURE	Article No. 00-22-4

FORD: 1999-2001 RANGER

ISSUE

Some Ranger Electric Vehicles (EVs) may experience steadily declining driving range. This may be caused by Nickel-Metal Hydride batteries that suffer from a condition where, if not fully discharged on a regular basis, the battery may lose much of its ability to deliver energy, thus reducing the vehicle's range.

ACTION

To maintain vehicle range, it is recommended the battery be deep discharged once every two weeks. This procedure may require several cycles to recover energy/range. Refer to the following Service Procedure for details.

It is imperative that the vehicle be allowed to drive to shutdown, (battery in a very low state of charge/energy). This procedure is very effective if followed on a regular basis. This procedure is intended for Ranger EV with a Nickel-Metal Hydride (NiMh) battery pack, particularly those located in warm climates.

NOTE

DO NOT USE THIS PROCEDURE WITH LEAD-ACID (PbA) VEHICLES. THIS PROCEDURE IS APPLICABLE TO ALL NICKEL-METAL HYDRIDE (NiMH) EV RANGERS, AND WILL AFFECT THOSE VEHICLES THAT ARE HABITUALLY DRIVEN LIMITED DISTANCES (LESS THAN 48 km (30 MILES) BETWEEN CHARGES).

This procedure presumes that no significant mechanical or other impediments to range exist. To confirm this state, review the vehicle's Diagnostic Trouble Codes (DTCs) according to the appropriate Ranger Workshop Manual.

SERVICE PROCEDURE

1. Drive the vehicle as the customer normally would to as low a state of charge as the driver feels comfortable. For best results, the State of Charge gauge should read "E" and the low fuel light should be on and flashing.
2. Park the vehicle in front of the Power Control Station (PCS).
3. Turn the climate controls on to full power (maximum heat/defrost in moderate or cool climates, maximum A/C in hot climates) until the vehicle shuts down. The total time it takes to do this will vary depending on the state of charge you drove the vehicle to, the outside temperature, and the condition of the battery. If the vehicle is driven to low fuel light on, this procedure will typically take between 15 minutes and 2.5 hours.

NOTE

DO NOT USE THE HEADLIGHTS BECAUSE THEY WILL NOT TURN OFF WHEN THE VEHICLE SHUTS DOWN AND MAY DRAIN THE AUXILIARY BATTERY.

4. With a New Generation Star (NGS) Tester, check the battery module temperatures (BATTMP1) according to the Workshop Manual. When all of the battery temperatures are below 30°C (86°F), put the vehicle on-plug.
5. Charge the vehicle completely (a normal full charge, Op-state 87).
6. Again, drive the vehicle as the customer normally would to as low a state of charge as the driver feels comfortable. For best results, the State of Charge gauge should read "E" and the low fuel light should be on and flashing.
7. Again, turn the climate controls on to full power (maximum heat/defrost in moderate or cool climates, maximum A/C in hot climates) until the vehicle shuts down.

NOTE

DO NOT USE THE HEADLIGHTS BECAUSE THEY WILL NOT TURN OFF WHEN THE VEHICLE SHUTS DOWN AND MAY DRAIN THE AUXILIARY BATTERY.

8. With an NGS Tester, check the battery module temperatures according to the Workshop Manual. When all of the battery temperatures are below 30°C (86°F), put the vehicle on-plug and charge the battery pack.
9. This procedure typically takes from one to six cycles to fully recover a battery pack, depending on the condition of the battery and the temperature. If no range improvement (assuming similar driving conditions) is seen after three cycles, contact the EV Service Hotline at 1-800-852-5280 (8 AM-5 PM Monday-Friday Eastern Time) for further assistance.

OTHER APPLICABLE ARTICLES: NONE
WARRANTY STATUS: INFORMATION ONLY
OASIS CODES: 203000, 203100, 404000, 607000, 607500, 607600, 614000, 614500, 614600, 622000, 698298