



POWER WHEELCHAIRS & SCOOTERS



A power wheelchair is one of the most expensive and service-intensive products available to the physically challenged individual. The use of high-tech electronics in today's power wheelchairs results in the need for the user to observe certain precautions to operate them in a safe, reliable manner. Scooters, although not as expensive or as technically advanced, have some similarity with regard to certain safety precautions.

OWNER'S MANUAL

The tremendous variety of features and designs found in modern power wheelchairs and scooters makes it impossible to cover the specific operating instructions for every model of every manufacturer in these brief instructions. It is essential that the user studies and understands the information in the owner's manual provided with all **new** power wheelchairs or scooters by the manufacturer. A regular review of information in the owner's manual is also recommended. The owner's manual is always the most reliable source of information about these products.

There are, however, certain important precautions common to almost all power wheelchairs and scooters. These precautions are listed below.

PRUDENT USE

Always operate your power wheelchair or scooter well within its reasonable capabilities as well as within your own. Do not attempt to negotiate steep inclines, either up or down. Avoid operating your chair or scooter laterally across inclines; approach even moderate inclines directly, straight up or straight down.

Operate your wheelchair or scooter only on hard, relatively smooth surfaces. Avoid rough terrain and soft surfaces such as gravel, sand, and thick grass. As you move about in your power wheelchair or scooter, observe the surface ahead of you to avoid getting stuck or running over bumps, holes, etc. that might turn you over, cause you to be thrown out, or severely damage your wheelchair or scooter.

SERVICE AND MAINTENANCE

Have your power wheelchair or scooter serviced only by qualified power wheelchair technicians. The high-tech electronics and complex circuitry in your chair should not be adjusted, serviced or repaired by even the best intentioned hobbyist or experimenter. Individuals who are highly competent to service other electrical or electronic products may not be knowledgeable regarding power wheelchairs. Do not install accessories that have not been specifically approved by the manufacturer for use on your power wheelchair. Even approved accessories must be properly installed.

BATTERY SAFETY

All batteries intended for use on power wheelchairs and scooters contain lead and sulfuric acid and can be quite dangerous. The sulfuric acid is highly caustic and corrosive. Also, during the charging process, these batteries produce hydrogen gas, which is highly flammable and can be explosive. For these reasons, installation, handling and servicing of these batteries should also be left to properly trained technicians. Charging should always take place in an open, well-ventilated area away from living and sleeping facilities.

The batteries in your wheelchair or scooter may be the wet type, sometimes referred to as **lead-acid** batteries, or they may be the sealed type, sometimes referred to as **sealed** lead-acid batteries or SLA batteries. The sealed type battery may also be referred to as a Gel Cel or an Absorbed Glass Mat Battery (AGM). The sealed battery enhances safety and reduces maintenance in several ways.

If your batteries are of the wet type, it will be necessary to maintain the proper level of electrolyte or acid by periodically adding **distilled** water to each cell (six filler caps on each 12-volt battery), to bring the electrolyte level up to the **lower** edge of the filler tubes. The electrolyte level should never be allowed to become so low as to expose the top edges of the lead plates which could cause serious damage to the battery. However, care should also be exercised to avoid over-filling. If it is possible and convenient for you to come into our repair center, we will be happy to check electrolyte level for you, but this check must be conducted regularly. Our technicians will be glad to show you how you, a member of your family, or a friend can check the electrolyte level and add distilled water, if this is more convenient.

If your batteries are the sealed type, they are virtually maintenance free, and the need to add distilled water to maintain the electrolyte level is eliminated.

BATTERY REPLACEMENT

Although battery life in power wheelchair and scooter service will vary greatly depending upon patterns of use, the average life of a good quality battery of the correct size and type will usually range from six months to one year. Although they look very much alike, wheelchair batteries are quite different from conventional automobile batteries. Wheelchair batteries are **deep-cycle** batteries. They are designed to be discharged relatively slowly over a longer period of time and then recharged more slowly for longer periods. Automotive batteries are used for starting a car. They are designed to provide a brief burst of power to start the engine and are quickly recharged by the alternator in the car. Automotive batteries **WILL NOT** perform well or last very long in deep-cycle service. It is actually quite dangerous to use a "maintenance-free, sealed type, non serviceable" automotive battery in deep cycle service. The longer periods of charging can cause them to explode. Also, contrary to popular belief, marine batteries are frequently **NOT** deep-cycle batteries; most are used strictly for starting purposes. It is also important to note that if you change from wet batteries to sealed batteries, even though both may be designed for deep-cycle service, you should have your technician confirm that your battery charger is suitable for the new type battery. Only a qualified power wheelchair technician has the knowledge of wheelchairs . . . batteries . . . and chargers, all of which have to be matched correctly, to avoid problems. The actual cost of the batteries may be the smallest expense in the wheeled mobility package, but it remains the most critical for reliability and safety.

ELECTROMAGNETIC INTERFERENCE

Tests by the Food and Drug Administration (FDA) have determined that Electromagnetic Interference (EMI) can, under certain conditions, cause power wheelchairs and scooters to move unintentionally and/or erratically, or cause unintended release of the brakes. The most common sources of EMI are radio waves emitted from cellular phones, mobile two-way radios (like those used in police, fire, emergency medical vehicles, and taxi cabs), walkie talkies, CB radios, and amateur (ham) radio transmitters. Other possible sources of EMI are microwave ovens, industrial RF heating equipment, scientific or industrial telemetry equipment, and certain medical diagnostic equipment such as magnetic resonance imaging (MRI) machines. Areas in close proximity to TV or radio broadcast stations are frequently heavily saturated with EMI. Certain new devices associated with computer systems may also be a source of EMI.

Some power wheelchairs and scooters have been shielded by the manufacturer to minimize the effect of EMI, but this "immunity level" cannot be made perfect or fool-proof. Even though you may have used your wheelchair or scooter for some time, and have never experienced unintended, erratic motion, or unintended brake release, you should always be alert to this possibility if you are exposed to **any** sources of radio waves. If unintended, erratic motion or unintended brake release should occur, turn the power wheelchair or scooter **OFF** as soon as it is safe to do so. You should also report the incident to the manufacturer.

It is important to note that adding accessories or components or otherwise modifying your power wheelchair or scooter may reduce its immunity level to EMI.

DO NOT turn ON or use communications devices such as cellular phones, walkie-talkies, CB radios, etc. while your power wheelchair or scooter is turned on.

Be alert to any nearby sources of radio waves, for example: hand-held cellular phones, walkie-talkies, etc. being used by others. Be aware of passing emergency vehicles that may be operating two-way radios, and, of course, be aware if you are in the vicinity of radio or TV broadcast stations.

Avoiding accidents caused by EMI simply requires prudent use of electronic devices, being aware of your surroundings, and taking common sense precautions.