ABLEDATA Fact Sheet on Scooters



Introduction

For many individuals with mobility disabilities, a powered scooter is an attractive alternative to a manual or powered wheelchair. Scooters are often lighter, more compact, and more maneuverable than power chairs, and in many people's eyes their appearance is more appealing. This fact sheet is intended to help people with mobility disabilities who are interested in learning more about scooters. Topics discussed include features and components of scooters; factors determining whether a scooter is an appropriate mobility aid; and considerations in scooter selection. The fact sheet also provides a list of manufacturers and sources for scooter reviews.

Scooter Features and Components

Electric scooters (sometimes called "mobility scooters" to distinguish them from the recreational scooters popular among teenagers) all share a recognizable set of features. Each has a seat at the rear of a wheeled platform, with controls and sometimes handrests on a column in front of the seat, called the tiller. The wheeled platform is the base unit. It supports the feet and batteries and contains the drive system. Scooters can have either front- or rear-wheel drive, and most have either four wheels or three (two in back, one in front).



Figure 1: The RT Express from Amigo Mobility International is a 3-wheeled scooter designed primarily for indoor use.



Base Unit

The base unit is the body of the scooter. Generally it consists of a steel, aluminum, or composite frame with a fiberglass or composite floor to support the feet and batteries. Some scooter bases include a shroud over the front wheel and drive head, giving the scooter a bullet-shaped appearance. Certain scooter models also use the shroud to create a dashboard housing some of the instrumentation (such as a key lock for turning the scooter on and off and a battery-level indicator) for the scooter. The base also includes the wheels and the drive train. In some scooters, the seat post is part of the base. The scooter's maneuverability and its suitability for indoor or outdoor use largely depend on the characteristics of the base unit such as its turning radius, the size of its wheelbase, its ground clearance, and its overall dimensions.

The base unit also affects the comfort and safety of the rider. When evaluating a scooter, it is important to be certain that the base can accommodate the user's needs. The floor should provide enough space to comfortably support the feet at a natural angle, and the overall dimensions should permit the controls to be easily reached and manipulated. Some manufacturers offer models with optional extended bases for tall people or shorter bases for small adults. Some models also offer optional extended footrests for those who wear leg braces or who have difficulty bending their knees.

It is important to evaluate the base for safety features, including its overall stability. A scooter should not tip easily during sharp turns or on inclines such as curb cuts (if the scooter is designed for outdoor use). Anti-tip wheels should be included as part of the frame to help support and stabilize the scooter. On front-wheel drive units, anti-tips are often located laterally just behind the front wheel because they generally lack the power for steep inclines. Because most rear-wheel drive scooters are intended to negotiate more rugged terrain, they are usually equipped with rear anti-tips to support the scooter on hills. Side anti-tip wheels are sometimes offered as options. It should be noted that lateral anti-tippers may cause difficulties on curb cuts and ramps.

Some scooters can be disassembled into modular units for transport and storage. Modular design may also allow the scooter to be converted from a 3-wheeled to a 4wheeled model or from indoor to outdoor use.



Figure 2: The Legend XL from Pride Mobility is a 4-wheeled scooter intended primarily for outdoor use.

Drive Train and Power System

The drive train is an integral part of the base unit and provides either front- or rearwheel drive for the scooter. Front-wheel drive is usually found on smaller scooters designed primarily to be used indoors or outdoors on flat, paved surfaces. The motor of the front-wheel drive scooter is located over the front wheel and drives only that wheel. Because of the motor and wheel configuration, front-wheel drive scooters are usually direct-drive units, eliminating chains and belts. This means that front-wheel drive models generally have smaller motors and that the front wheel pulls the weight of the unit and the rider. Consequently, these types of scooters have a lesser capacity to move their load than do rear-wheel drive models, and are therefore less capable of handling hills, curb cuts, and other outdoor terrain. Front-wheel drive scooters often have a shorter range, less speed and power, and a smaller rider weight capacity. These same factors, however, usually result in a scooter that is smaller than rear-wheel drive models, more maneuverable, more capable of fitting in tighter spaces, and more likely to be compatible with van and bus wheelchair lifts.

Conversely, rear-wheel drive scooters are powered by motors connected to the rear axle, either via a chain, a belt, a transaxle unit, or some combination. Because the scooter is driven by the rear wheels, they push the combined weight of the unit and the rider, rather than pull it. The combined weight of the rider, the motor, and the batteries over the rear wheels, generally create better traction than that usually provided by front-wheel drive models. The increased traction combined with the more powerful motors used on rear-wheel drive scooters results in better climbing ability. Rear-wheel-drive scooters also have a greater maximum speed, a longer traveling range between battery charges, and a larger rider weight capacity. These scooters have a wider wheel base and a greater overall length, making them less maneuverable and rendering some models unsuitable for indoor use. They may also be too large for van or bus lifts.

Front- or rear-wheel drive does not necessarily determine whether a scooter is powerful enough to meet the user's needs, nor does the horsepower of the motor. The torque of a motor is more often a determining factor. Most scooters use permanent magnet motors, some with lower torque than others. Lower torque motors frequently provide greater speed on flat, smooth surfaces, while higher torque motors may seem slow in that environment. However, the higher torque motor will generally offer more power for climbing hills and negotiating other outdoor terrain. Again it is essential, when evaluating scooters, to keep the scooter's primary intended use in mind.

Brakes

Most rear-wheel drive scooters utilize an electronic or electro-mechanical dynamic, regenerative braking system. This type of braking system works in tandem with the motor, first to slow and then to stop the vehicle when the pressure is released on the thumb levers or the controls are otherwise disengaged. When the scooter is not being powered forward or in reverse, the brakes are engaged, thus preventing the scooter from moving. During the application of the brakes, excess power from the motor is channeled to the batteries, providing recharging. Because the brakes are engaged when the scooter is not being actively powered, most scooters with this braking system are equipped with a clutch on the motor or another release lever to manually disengage the brakes to allow the scooter to be pushed in case of emergency.

Some scooters also use disc brakes alone or disc brakes in combination with the braking system discussed above. Some scooters—usually front-wheel drive models—are not equipped with electronic or electro-mechanical brakes. In the absence of a brake system, a manual parking brake applied by lever to a rear wheel is provided. Manual parking brakes may also be offered either as optional or standard features on other scooters to provide extra braking on hills and inclines.





Figure 3: The Buzzaround 4-Wheel Scooter, model GB-104, from Golden Technologies, Inc. is a lightweight, portable scooter designed for indoor or outdoor use. It can be folded and broken down into components for easy storage or transport.

Batteries and Chargers

Most scooters utilize 12- or 24-volt motors and electrical systems, generally with one or two 12-volt batteries to power the drive train and controls. Twelve-volt systems are most frequently found on front-wheel drive scooters, and usually require one 12-volt battery, although two six-volt batteries are sometimes used. Some manufacturers offer add-on units for 12-volt systems which allow them to utilize two batteries to extend the scooter's range between charges, although speed and power are not affected. Rearwheel drive systems generally require two 12-volt batteries to power 24-volt systems.

These batteries are "deep cycle" batteries intended for wheelchairs and scooters and generally last between 12 and 18 months, although with conservation and regular charging, longer life may be achieved. Deep cycle batteries are designed to provide a steady supply of power and to be discharged and recharged on a regular basis. In contrast, automotive and marine batteries are designed to be starter batteries, providing short bursts of power only. Consequently, marine and automotive batteries should never be substituted for deep cycle batteries.

There are three basic types of batteries available for use with scooters:

- lead acid (or wet cell) batteries
- sealed lead-acid batteries
- gel cell batteries.

Lead acid batteries are the least expensive of the three types, but they also require the most maintenance. In addition to regular charging, electrolyte and water levels must be checked regularly, with water added frequently to maintain appropriate levels. Because these batteries are not sealed, there is danger of acid spillage and explosion if the batteries are not handled properly. Despite these potential problems, lead-acid batteries provide the benefits of a two- to six-month longer battery life and up to a ten percent greater running time than other battery types.

Sealed lead acid batteries are maintenance-free versions of lead acid batteries. Because they are sealed in cases, it is unnecessary to add water and the danger of acid spillage is reduced or eliminated. The cases are vented to prevent gas build-up that can lead to an explosion.

Finally, **gel cell batteries** are the most commonly used battery type on scooters. They are sealed in their cases and require no maintenance other than regular charging. Gel cells are the safest of the battery types, with no danger of spillage and limited risk of explosion. However, gel cells are more expensive, usually ranging in price from \$90 to \$125, and they may have a somewhat shorter life than other battery types.

Many manufacturers do not include the battery or batteries as part of the scooter; rather, they are considered extra-cost options. The type and size of battery used on a given scooter should be selected in accordance with the recommendation of the manufacturer. It is particularly important that the battery be compatible with the battery charger to be used. Lead acid and gel cell batteries require different types of chargers operating at differing amperage levels, so their chargers should never be used interchangeably; however, dual chargers capable of charging both types of batteries are also available.

While the batteries are frequently optional, the charger is usually included with the scooter as part of the purchase price. It may be an on-board internal charger built into the scooter's base unit or it may be an external charger that is totally separate from the unit. On-board chargers have the benefit of allowing the user to recharge the batteries during extended use, although it may be necessary to carry a separate cord or an extension cord to connect the unit to an electrical outlet. However, should an on-board charger require repair, it is necessary to take the entire scooter in for repair.

External chargers, on the other hand, require the user to carry extra equipment, but they offer the benefit of easier repair or replacement. External chargers also have the capability of charging the batteries away from the scooter, an option that can be particularly useful during travel because the batteries can be maintained without removing the scooter from the van or automobile.

Wheels and Tires

The dimensions of a scooter's wheels and tires have a direct effect on the scooter's stability and its ability to surmount obstacles. Scooters are generally equipped with six-, eight-, or ten-inch wheels, although other sizes may also be used. Some models use the same size wheels on both front and rear, while others may have smaller wheels in front and larger rear wheels. As a rule, the intended use of the scooter should dictate the size of the wheels and tires. Smaller wheels are generally found on front-wheel drive scooters intended for indoor use. The larger the wheels, the more stable the unit. Similarly larger and wider the tires provide better traction and greater capacity to manage obstacles such as curb cuts and uneven outdoor terrain. Those same tires, however, may make it more difficult to maneuver the scooter in tighter indoor spaces.

Several types of tires are available for scooters. Manufacturers generally offer a specific tire as standard equipment, with others available as extra-cost options. **Pneumatic tires** have air-filled tubes and are similar to those found on automobiles. Air pressure should be checked regularly to maintain proper levels, and tires may need to be replaced if punctured. The addition of an anti-flat compound before inflation reduces the risk of tires going flat. Pneumatic tires provide good shock absorption when properly inflated.

Foam filled tires are similar to pneumatic tires, but include foam inserts rather than air-filled tubes. These tires cannot be deflated and, therefore, require less maintenance. They may be more expensive than pneumatic tires and may not offer a consistently comfortable ride.

The least expensive tire option is **solid tires**. These tires require the least maintenance, but provide minimal shock absorption and are intended primarily for indoor use.

Other issues in tire selection include color and tread depth. Most tires are available in black or gray rubber. Black tires are generally less expensive and have a longer life than do gray tires. However, gray tires are specially treated to prevent the marking and scuffing of floors and walls that is common with black tires.

Tires are available with differing levels of tread. A deeper tread provides greater traction and improved ability to handle such outdoor surfaces as mud, gravel, and grass. However, the treads do tend to track dirt and debris indoors. Low-tread or treadless tires eliminate this problem, but should be confined to indoor use or limited outdoor use on paved surfaces.

Seating

Most scooters have a chair-style seat or captain's chair with a back and armrests, and sometimes a headrest as well. Some lightweight scooters, however, have seats without a back or armrest. Seats are usually made of molded hard plastic or fiberglass, and differ in the amount of padding. Padded seats usually have vinyl or fabric upholstery. Vinyl upholstery is often less expensive, but because it is a more slippery surface, it may not be the best choice for those whose disability makes it difficult to maintain position or balance.

Other options may include ergonomically designed seats, lumbar supports, and separate cushions. In rare cases, manufacturers may offer custom-design and fitting with positioning options similar to those found on wheelchairs. Seats are usually post-mounted to the center or rear of the base, and most swivel up to 360 degrees with stops at every 90 degrees using a manual lever beneath the seat. A powered seat is a common option. The mechanism is usually controlled from the dashboard or control box and uses power from the battery to rotate the seat. Some powered seats also elevate, allowing the user greater access to counters, cupboards, etc. As with most options, powered seats add to the scooter's final cost. Another consideration is the draw of power from the battery; frequent use of the power seat during the course of the day may reduce the scooter's range. Some seats also allow for forward and rearward adjustment to better accommodate the user's needs. In addition, some scooters have folding seats, fold-down seat backs, or removable seat posts for transport or storage.

Armrests are another consideration in seating. Some scooters offer armrests only as an option; others offer fixed armrests as standard with flip-up armrests available. Whatever the type, armrests are generally constructed of rigid plastic with padded upholstery optional, although some armrests feature a rigid plastic base with padded, upholstered inserts. Whether or not armrests are padded and whether they are fixed or not should be determined by the needs of the person using scooter in transferring to and from the scooter and whether the armrests will help with balance while seated. Padding may make it more difficult to grasp the armrests and fixed armrests may make it more difficult to transfer.

Tiller

The tiller is the control and steering mechanism for the scooter, usually containing the controls to drive the scooter forward or in reverse, as well as steering the front wheel or wheels. Most scooters offer one type of standard tiller with other controllers available as options. Possibilities include thumb levers, loop handles, joysticks, and others. Thumb levers are the most common controls, allowing the user to keep both hands on the handle bars while using the left thumb to power the scooter in reverse and the right to power the scooter forward. The amount of pressure applied to the lever will determine the speed of the vehicle (unless it is equipped with a proportional speed control). Consequently, a fair amount of hand control is necessary for safe operation. Finger control levers or a joystick may be alternatives. Some manufacturers may also be able to adapt controls to user requirements at extra cost.

The tiller, itself, is often an upright post attached to the front wheel, but there are also flexible, accordion-style tillers that can be adjusted for height or body position. This not only enables a person to place the tiller in the most comfortable position while driving, but also allows it to be moved up and out of the way during transfers. In the absence of a dashboard or shroud over the front wheel, a control box with the key lock, battery level indicator, speed controller, and other features may be affixed to the tiller handlebars.

Since a joystick controls both speed and direction, scooters equipped with joysticks generally do not have the post-and-handlebar tiller; the joystick is usually attached to an armrest or to an armrest extension, with a choice of right or left mounting. While this frees the space in front of the user and may accommodate easier transitions for some, the lack of handlebars may make transfers more difficult for others.

Other Features and Accessories

In addition to the features listed above, which are found in all scooters, manufacturers offer a variety of other features and accessories. Most scooters are equipped with a key lock for turning the scooter on and off, a battery-level indicator, and a proportional speed controller to limit maximum speed. Available accessories include crutch and cane holders, oxygen carriers, front and rear baskets, trailers, headlights, tail lights, horns, and canopies. Some manufacturers even offer sidecars to allow an additional passenger. As when purchasing a car, options add to the cost of the scooters. Accessories should be evaluated in light of how they contribute to maximum user independence. At the same time, it should be kept in mind that some options may decrease battery life, maneuverability, and travel range.

Transportation

Most scooter owners find it necessary at some point to transport the scooter. If a van with a lift or public transportation is to be used, it may be advisable to consider a scooter with a narrow wheelbase and smaller overall profile to be certain that the scooter can be accommodated by the lift and be sufficiently maneuverable to be used on buses and other public transit vehicles.

There are several options available for people wanting to transport a scooter with their personal vehicles, including scooter carriers that attach onto a vehicle's bumper or trailer hitch, loading aids to help put a scooter into vehicles with a large cargo space, and scooters that break down into smaller components for storage in the vehicle.

Scooter carriers are platforms mounted on a vehicle's bumper or a rear trailer hitch that are designed to carry scooters. Powered and manual scooter carriers are available. The platform on some powered carriers can be lowered to the ground level so that the scooter can drive onto the platform. On other powered carriers, a ramp will flip down to allow the scooter to drive on or off of the platform. Manual carriers remain at a fixed height above the road, and the user puts a ramp down to allow the scooter to drive up onto the platform. Once on the platform, the scooter is secured, often using safety belts, so that the scooter remains fixed on the platform while driving.



Figure 4: The Lift 'N' Go Model 210 electric powered carrier from WheelChair Carrier is mounted on the hitch of a car, truck or van.

For vehicles such as vans and trucks that have sufficient cargo space to fit a scooter, **ramps** or **lifts** can be used to load the scooter into the vehicle. Ramps can be mounted on side of a van or on the back (Figure 4) of any vehicle large enough to fit a scooter. When the ramp is extended the scooter drives in or out of the vehicle. Portable ramps can also be attached to a vehicle when loading or unloading a scooter, and stored in the vehicle when not in use.



Figure 5: The EZ-ACCESS Hitchmount Ramp extends to allow a scooter to drive up into a van, truck or SUV. It folds flat against the back of the vehicle when not in use (see insets).

Two basic types of lifts are available: (1) crane-style lifts and (2) platform lifts. A cranestyle lift can be mounted in the vehicle or have its own external base. The lift has a horizontal arm to which the scooter is attached using a strap or sling and lifted off of the ground. With the scooter suspended in the air, the horizontal arm rotates to move the scooter into or out of the vehicle, and then lowers it to the ground or into the vehicle. Platform lifts work similarly to scooter carriers. The lift is mounted on a rear bumper or trailer hitch. To load a scooter, the platform is lowered to the ground the scooter drives onto the platform, and once the platform is raised to the level of the trunk or cargo area, the scooter is transferred into the vehicle. When not in use, the platform is folded vertically so that is does not protrude from the vehicle.

If the scooter is to be transported by an automobile without a carrier, it will need to be either folded, if possible, or broken down into smaller components so that it can fit in the auto's trunk. Some scooters are designed with modular components or take-apart frames. At the very least, a scooter to be transported by automobile should have a folding seatback and/or a folding tiller. Some scooters also offer removable a seat post, seat, and batteries. Factors affecting a scooter's transportability include whether it will be transported in the trunk or in the back seat, how much space is available, how heavy the individual components are, how much the user can lift, and whether a lift or loader can be used.

Choosing a Scooter

The first consideration in selecting a scooter is to determine whether it will meet the needs of the potential user. The primary market for scooters is individuals with physical disabilities or health conditions which affect their ability to walk or limit their physical endurance. Typically, scooter users have some ability to walk, but are limited in distance or stamina—people with milder forms of cerebral palsy, multiple sclerosis, post-polio syndrome, arthritis, cardiac conditions, or stroke survivors, among others. Scooters are used to increase and extend the range of personal mobility and help conserve energy. Scooter users often have difficulty propelling manual wheelchairs, but do not require the sophisticated electronic controls and seating systems common in powered wheelchairs.

A number of other physical factors must also be evaluated when determining whether a scooter is an appropriate mobility aid. A scooter user generally must be able to sit upright for extended periods and have sufficient seated balance to maintain an erect posture. Further, sufficient upper body and arm strength to master the controls and steer and maneuver the unit is required. In addition, uncorrected vision disabilities, or conditions which may cause confusion or memory loss or which inhibit proper safety awareness may render a scooter an unsatisfactory mobility aid.

Other considerations in selecting a mobility aid include how and where the scooter will be used, whether or not it will need to be transported, and if so, how it will be transported. Additional factors include whether or not a scooter will be the primary mode of transportation, how far it will need to travel in between battery charges on a given day, and whether it will be used primarily indoors or outdoors, or in a combination of environments. The overall evaluation of all these factors will help determine whether a scooter is an appropriate assistive device for a particular individual in a specific set of circumstances. Persons considering a scooter for the first time should seek the advice of a physician, therapist, or other rehabilitation professional about whether a wheelchair or scooter is most appropriate, and what type of scooter best meets their needs.

It is also important that a scooter under consideration be thoroughly tested and compared with other similar models, if possible, in the setting in which it will be most typically used. Some manufacturers and distributors allow the prospective buyer to take the scooter for on-site trials for a specified period. Such trials allow a person to more accurately determine whether the vehicle will perform as required in a given setting, and whether the controls, seating, and leg room are sufficiently comfortable for long-term use. Like shopping for an automobile, it is advisable to test comparable models and their features.

Beyond the Purchase

Once a scooter has been selected, there are other factors to be considered. First, be certain that a warranty is offered and know what the terms of the warranty are. If the scooter is purchased from a local dealer, determine whether the store has trained service technicians capable of performing routine maintenance and repairs. Be certain that parts such as batteries, tires, chains and belts, and electronics are stocked on the premises and do not have to be ordered from the manufacturer, causing delays in getting the scooter back on the road. If the scooter is purchased directly from a manufacturer, learn whether repairs can be made locally and by whom. Wherever maintenance is performed or repairs are made, the work should be done by someone authorized to do it under the terms of the warranty.

Funding Sources

The primary funding sources for scooters are private medical insurance, Medicare, and Medicaid. Worker's Compensation insurance may be another funding source if the scooter is needed as the result of a workplace injury. Insurance plans will only pay for scooters and scooter accessories insofar as they are deemed medically necessary and medical necessity can be an issue in paying for scooters. Some insurance plans, including Medicare, may deem scooters not medically necessary for individuals who can walk a short distance without assistance. Issues of medical necessity may also exclude coverage of some optional features that would be beneficial to the individual but which are not deemed necessary. There may be other limitations on coverage as well, such as frequency of replacement. Many States offer an Assistive Technology Alternative Financing Program that help people with disabilities to qualify for and receive low cost loans to purchase assistive products or services. A list of these State projects is available from RESNA at <u>http://www.resna.org/AFTAP/state/</u>.

Each State also offers a State Assistive Technology Project that supports consumerdriven, statewide, technology-related assistance for individuals of all ages with disabilities. There are 56 projects (one in each State and in D.C. and the U.S. territories). A list of these projects can be found on the ABLEDATA Web site at <u>http://www.abledata.com/abledata.cfm?pageid=113573&top=16050&ksectionid=19326</u> <u>&stateorganizations=1</u>.

For more information on funding sources, see the ABLEDATA **Informed Consumer <u>Guide to Funding Assistive Technology</u>**.

Conclusion

Scooters offer individuals with mobility disabilities an alternative in personal mobility aids. For some a more attractive, less "medical" appearance is an important factor. For others, greater flexibility is a primary consideration. For those not requiring the sophisticated electronics or seating systems of a powered wheelchair, the smaller price tag is attractive. Whatever the reason for considering a scooter, models should be carefully evaluated for their capability to accommodate a person's disability and meet the requirements of the intended use. First-time purchasers are advised to consult with a physician, therapist, or other rehabilitation professional to determine whether a scooter is the best option, and what features are required.

For those seeking information on assistive technology, ABLEDATA provides information about more than 22,000 products for people with disabilities. Included in the ABLEDATA product listings are descriptions of scooters currently available in the United States, as well as information about scooter manufacturers and distributors. ABLEDATA can be reached by calling 800/227-0216 or 301/608-8998, or through e-mail at <u>abledata@orcmacro.com</u>. Information specialists are on hand to assist callers in locating the information they need.

ABLEDATA offers additional Fact Sheets and Informed Consumer's Guides on assistive technology and disability issues, including Fact Sheets on <u>Manual Wheelchairs</u>, <u>Powered Wheelchairs</u>, <u>Wheelchairs for Children</u>, and Informed Consumer Guides on <u>Wheelchair Selection</u>, and <u>Assistive Technology for People with Spinal Cord Injury</u>. All ABLEDATA publications may be downloaded free of charge from the ABLEDATA Web site, <u>http://www.abledata.com</u>; print copies can be sent by mail for a small fee.

Scooter Manufacturers

The following list includes the scooter manufacturers in ABLEDATA as of July, 2006. Note: This list does not include manufacturers of scooter carriers and loading aids (lifts and ramps). To find information on these products, go to the Products section of the ABLEDATA Web site, click on Transportation, and then click on <u>Wheelchair and Scooter Carriers</u> under Vehicle Accessories.

Adepta Medical / Cosco Home & Office Products

2526 State Street Columbus, Indiana 47201 USA Telephone: 866-623-3782 toll free. Web site: <u>http://adeptamedical.com</u>. Product types: lightweight 3-wheeled.

Amigo Mobility International, Inc.

6693 Dixie Highway Bridgeport, Michigan 48722-9725 USA Telephone: 800-692-6446 toll free or 989-777-0910. Fax: 800-334-7274 toll free. Email: <u>info@myamigo.com</u>. Web site: <u>http://myamigo.com</u>. Product type(s): bariatric; commercial; pediatric; standard; folding / travel.

Assembled Products Corporation

115 East Linden Street Rogers, Arkansas 72756 USA Telephone: 800-548-3373 toll free or 479-636-5776. Fax: 479-636-3245. Email: <u>dnichols@assembledproducts.com</u>. Web site: <u>http://www.assembledproducts.com</u>. Product type(s): Commercial (powered scooter for shopping).

Bladez Corporation / Bladez Health Products

20155 Ellipse Foothill Ranch, California 92610 USA Telephone: 866-325-2339 toll free or 949-206-0330. Fax: 949-206-0350. Email: <u>info@ebladez.com</u>. Web site: <u>http://www.ebladez.com</u>. Product type(s): lightweight 3-wheeled; heavy-duty 4-wheeled.

Buzz Mobility Products

1289 Seagull Drive Mississauga, Ontario L5J 3T6 Canada Telephone: 800-361-0706 toll free or 905-822-1212. Fax: 905-822-9816. Email: <u>buzz@bellnet.ca</u>. Web site: <u>http://buzzmobilityscooter.com</u>. Product type(s): heavy duty / all terrain 3-wheeled.

CTM Homecare Product, Inc.

1663 Iowa Avenue Riverside, California 92507 USA Telephone: 951-788-8168. Fax: 951-786-9323. Web site: <u>http://www.ctmhomecare.com</u>. Product type(s): mini, mid-, and full-size; 3- and 4-wheeled.

Dalton Medical

1103 Venture Carrollton, Texas 75006 USA Telephone: 972-418-5129. Fax: 972-418-5706. Web site: <u>http://www.daltonmedical.com</u>. Product type(s): 3- and 4-wheeled.

Drive Medical Design and Manufacturing

99 Seaview Boulevard Port Washington, New York 11050 USA Telephone: 877-224-0946 toll free. Fax: 516-998-4601. Email: <u>customerservice@drivemedical.com</u>. Web site: <u>http://www.drivemedicaldesign.com</u>. Product type(s): 3- and 4-wheels; indoor / outdoor.

Electric Mobility Corporation

591 Mantua Blvd. Sewell, New Jersey 08080 USA Telephone: 800-587-8806 toll free (general) or 800-257-7955 toll free (customer service) or 856-468-0270. Fax: 856-468-3426. Email: <u>tele@electricmobility.com</u>. Web site: <u>http://www.electricmobility.com</u>. Product type(s): 3- and 4-wheeled; indoor, indoor/outdoor, and outdoor; convertible.

EV Rider, LLC

24551 Production Circle Ste 3 Bonita Springs, Florida 34135 USA Telephone: 800-944-1997 toll free or 888-743-3738 toll free. Email: <u>info@evrider.com</u>. Web site: <u>http://www.evrider.com</u>. Product type(s): lightweight / compact; indoor / outdoor; 3- and 4-wheeled.

EVERMED

4999 E. La Palma Avenue Anaheim, California 92807 USA Telephone: 888-615-8989 toll free. Fax: 714-777-9978. Email: <u>message@evermed.com</u>. Web site: <u>http://www.evermed.com</u>. Product type(s): 3- and 4-wheeled.

EZ-International, Inc.

3275 Intertech Drive
Suite 500
Brookfield, Wisconsin 53045 USA
Telephone: 800-824-1068 toll free or 262-790-5200.
Fax: 262-790-5204.
Email: info@ez-international.com.
Web site: http://www.ez-international.com.
Product type(s): Commercial (shopping scooters for in-store use).

Golden Technologies, Inc.

401 Bridge Street Old Forge, Pennsylvania 18518 USA Telephone: 800-624-6374 toll-free or 717-883-7423. Fax: 800-628-5165 toll free. Email: <u>cjcopley@goldentech.com</u>. Web site: <u>http://www.goldentech.com</u>. Product type(s): 3-wheeled compact / lightweight / travel; 4-wheeled heavy-duty / allterrain.

IMC-Heartway, LLC

6140 Mid Metro Drive, Suite 6 Fort Myers, Florida 33912 USA Telephone: 866-464-9779 toll free or 239-275-6767. Fax: 239-275-7033. Web site: <u>http://www.imc-heartway.com</u>. Product type(s): lightweight; indoor; outdoor; 3- and 4-wheeled.

Invacare Corporation

One Invacare Way P.O. Box 4028 Elyria, Ohio 44036-2125 USA Telephone: 800-333-6900 toll free or 440-329-6000. Email: <u>info@invacare.com</u>. Web site: <u>http://www.invacare.com</u>. Product type(s): 3-wheeled lightweight; outdoor scooter with center wheel drive.

Landlex USA

5910-E Breckenridge Parkway Tampa, Florida 33610 USA Telephone: 866-526-3539 toll free. Fax: 813-740-7411. Email: <u>info@landlex.com</u>. Web site: <u>http://www.landlex.com</u>. Product type(s): lightweight; indoor / outdoor; 3- and 4-wheeled.

Leisure-Lift, Inc., a division of Burke, Inc.

1800 Merriam Lane Kansas City, Kansas 66106 USA Telephone: 800-255-0285 toll free. Email: <u>leisure-lift@kc.rr.com</u>. Web site: <u>http://www.pacesaver.com</u>. Product type(s): 3-wheeled standard; 4-wheeled bariatric.

Lifestyle Mobility Aids

PO Box 8107 Seminole, Florida 33775 USA Telephone: 877-843-6464 toll free or 727-393-9696. Fax: 727-319-5695. Email: <u>sales@lifestylemobility.net</u>. Web site: <u>http://www.lifestylemobility.net</u>. Product type(s): lightweight 3-wheeled.

Medline Industries Inc.

One Medline Place Mundelein, Illinois 60060-4486 USA Telephone: 800-633-5463 toll free or 847-949-5500. Fax: 800-351-1512 toll free. Email: <u>service@medline.com</u>. Web site: <u>http://www.medline.com</u>. Product type(s): indoor / outdoor; lightweight; bariatric; 3- and 4-wheeled.

Merits Health Products USA

PO Box 150356 Cape Coral, Florida 33915 USA Telephone: 800-963-7487 toll free or 239-772-0579. Fax: 239-574-2661. Email: <u>sales@meritshealth.com</u>. Web site: <u>http://www.meritshealth.com</u>. Product type(s): 3- and 4-wheel scooters; micro, mid, and full size; bariatric.

Movingpeople.net, a division of Handicare AS

Vossenbeemd 104 5705 CL Helmond, Netherlands Telephone: 011-31-492-59-38-88. Fax: 011-31-492-53-79-31. Email: <u>info@movingpeople.net</u>. Web site: <u>http://www.movingpeople.net</u>. Product type(s): 3- and 4-wheeled; indoor/outdoor.

No Boundaries Mobility LLC

12882 Valley View Street #5 Garden Grove, California 92845 USA Telephone: 800-926-8637 toll free or 714-891-5899. Fax: 714-891-0658. Email: <u>directsales@noboundaries.tv</u>. Web site: <u>http://www.noboundaries.tv</u>. Product type(s): Lightweight / folding / portable.

Palmer Industries

PO Box 5707, Union Station Endicott, New York 13763 USA Telephone: 800-847-1304 toll free or 607-754-1304. Fax: 607-754-1954. Email: <u>palmer@palmerind.com</u>. Web site: <u>http://www.palmerind.com</u>. Product type(s): outdoor / recreational; one to four seats.

Pride Mobility Products Corp.

182 Susquehanna Avenue
Exeter, Pennsylvania 18643 USA
Telephone: 800-800-8586 toll free.
Fax: 800-800-1636 toll free.
Web site: <u>http://www.pridemobility.com</u>.
Product type(s): compact / indoor; lightweight / travel; outdoor / all-terrain; bariatric.

Ranger All-Season Corporation

P.O. Box 132 George, Iowa 51237 USA Telephone: 800-225-3811 toll free or 712-475-2811. Fax: 712-475-3320. Email: <u>sales@rangerallseason.com</u>. Web site: <u>http://www.rangerallseason.com</u>. Product type(s): 3- and 4-wheeled; bariatric; lightweight.

Shoprider Healthcare, Inc.

21184 S. Figueroa St. Carson, California 90745 USA Telephone: 800-743-0772 toll free or 310-328-8866. Fax: 877-797-7081 toll free or 310-328-8185. Email: <u>customerservice@shoprider.com</u>. Web site: <u>http://www.shoprider.com</u>. Product type(s): 3-wheeled lightweight; 4-wheeled heavy-duty.

Tuffcare, Inc.

3999 East La Palma Avenue
Anaheim, California 92807-1714 USA
Telephone: 800-367-6160 toll free or 714-693-8668.
Fax: 714-632-3998.
Email: contact@tuffcare.com.
Web site: <u>http://www.tuffcare.com</u>.
Product type(s): 3- and 4-wheeled heavy-duty.

Wheelcare Power Mobilizers

16310 Arthur Street Cerritos, California 90703 USA Telephone: 800-448-5999 toll free or 562-921-7254. Fax: 562-921-7593. Email: <u>sales@powermobilizers.com</u>. Web site: <u>http://www.powermobilizers.com</u>. Product type(s): 3-wheeled lightweight / compact; 4-wheeled recreational / outdoor.

Zip'r Mobility, LLC

PO Box 1238 Issaquah, Washington 98027 USA Telephone: 800-760-9107 toll free or 425-837-9884. Fax: 425-837-9886. Email: zipr@globalfabtech.com. Web site: <u>http://www.zipr.com</u>. Product type(s): 3- and 4-wheeled.

Scooter Distributors

The following list includes the scooter distributors listed by ABLEDATA as of July, 2006. Below each company's contact information, we list the scooter brands sold by that company.

1st Senior Care LLC

16387 SW O'Neill Tigard, Oregon 97223 USA Telephone: 877-835-8494 toll free (customer service), 866-822-7348 toll free (voice mail), or 503-590-5928. Email: <u>products@1stseniorcare.com</u>. Web site: <u>http://www.1stseniorcare.com</u>.

• Sells products from Drive Medical, Golden Technologies, No Boundaries, and Tuffcare.

4 Electric Scooters

801 S. Power Rd, #205 Mesa, Arizona 85206 USA Telephone: 800-736-0183 toll free. Fax: 800-295-6195 toll free. Email: <u>inquiry@4electricscooters.com</u>. Web site: <u>http://www.4electricscooters.com</u>.

• Sells products from Golden Technologies, Pride Mobility, and Shoprider.

A1 Electric Scooters

207 Red Field St. Cary, North Carolina 27511 USA Telphone: 800-774-2134 toll free. Fax: 877-472-6609 toll free. Email: <u>inquiry@a1electricscooters.com</u>. Web site: <u>http://www.a1electricscooters.com</u>.

• Sells products from Golden Technologies, Pride Mobility, and Shoprider.

AAA Mobility

2321-B Tapo Street Suite 114 Simi Valley, California 93063-3023 USA Telephone: 888-222-1809 toll free. Fax: 888-746-4872 toll free. Web site: <u>http://www.aaamobility.com</u>.

• Sells products from Wheelcare.

Access Mobility, Inc.

4855 S Emerson Indianapolis, Indiana 46203 USA Telephone: 800-336-1147 toll free or 317-784-2255. Fax: 317-784-6391. Email: <u>alan@accesstoday.com</u>. Web site: <u>http://www.accesstoday.com</u>.

• Sells products from Golden Technologies, Invacare, and Pride Mobility.

Action Scooters, Inc.

PO Box 327446 Pembroke Pines, Florida 33332 USA Telephone: 877-289-8899 toll free or 954-252-1660. Fax: 954-252-1629. Email: <u>sales@action-scooters.com</u>. Web site: <u>http://www.action-scooters.com</u>.

• Sells products from DTP Wholesale, Golden Technologies, Medline, Merits, Pride Mobility, Shoprider, and Zip'r Mobility,.

All Electric Scooters, a division of Internet Alliance, Inc.

3901A Commerce Park Drive Raleigh, North Carolina 27610 USA Telephone: 800-787-1752 toll free or 919-231-0364. Fax: 919-231-4217. Email: <u>inquiry@allelectricscooters.com</u>. Web site: <u>http://www.allelectricscooters.com</u>.

• Sells products from Golden Technologies, Lifestyle Mobility Aids, Pride Mobility, and Shoprider.

Allegro Medical Supplies Inc.

1733 E. McKellips Rd., #110 Tempe, Arizona 85281 USA Telephone: 800-861-3211 toll free or 480-990-8881. Web site: <u>http://www.allegromedical.com</u>.

• Sells products from Amigo Mobility, CTM Homecare, Drive Medical, Invacare, Lifestyle Mobility Aids, Pride Mobility, Shoprider, and Sunrise Medical.

American Wheelchairs, Inc.

12547 66th St. N. Largo, Florida 33773 USA Telephone: 800-449-8991 toll free or 727-538-0604. Fax: 727-538-0614. Email: <u>sales@americanwheelchairs.com</u>. Web site: <u>http://www.americanwheelchairs.com</u>.

• Sells products from Pride Mobility, Ranger All Season, and Shoprider.

Assistive Living Mobility

1660 Rose Petal Lane Castle Rock, Colorado 80109 USA Telephone: 800-670-4306 toll free or 303-660-2605. Fax: 775-521-3264. Email: <u>support@assistivelivingmobility.com</u>. Web site: <u>http://www.assistivelivingmobility.com</u>.

• Sells products from Golden Technologies.

Best Buy Healthcare

25600 Rye Canyon Road, Suite 210 Santa Clarita, California 91355 USA Telephone: 800-603-7366 toll free. Fax: 661-702-1555. Email: <u>customerservice@bestbuyhealthcare.com</u>. Web site: <u>http://www.bestbuyhealthcare.com</u>.

• Sells products from CTM Homecare, Golden Technologies, and Wheelcare.

Command Mobility

The Whistle Stop Mall 1281 Georgia Road, Hwy. 441 South Franklin, North Carolina 28734-9275 USA Telephone: 800-790-5769 toll free. Email: <u>info@commandmobility.com</u>. Web site: <u>http://www.commandmobility.com</u>.

• Sells products from CTM Homecare and Pride Mobility.

Easy Mobility Company

8973 Taft Street Pembroke Pines, Florida 33024 USA Telephone: 877-432-3279 toll free or 954-914-6509. Fax: 888-432-7930. Email: <u>sales@easymobilityco.com</u>. Web site: <u>http://www.easymobilityco.com</u>.

• Sells products from DTP Wholesale, Golden Technologies, Landlex, Medline, Merits, and Pride Mobility.

Edmond Wheelchair Repair and Supply

3800 E. 2nd St., Suite H Edmond, Oklahoma 73034 USA Telephone: 888-343-2969 toll free. Fax: 405-359-5006. Email: <u>sales@edmond-wheelchair.com</u>. Web site: <u>http://www.edmond-wheelchair.com</u>.

• Sells products from Evermed, Golden Technologies, Invacare, Pacesaver, and Sunrise Medical.

Electric Scooters 4 Less

510 Heritage Lane Winder, Georgia 30680 USA Telephone: 800-710-4964 toll free. Fax: 770-867-4769. E-mail: <u>inquiry@electricscooters4less.com</u>. Web site: <u>http://www.electricscooters4less.com</u>.

• Sells products from Golden Technologies, Lifestyle Mobility Aids, Pride Mobility, and Shoprider.

Heartland Mobility

1810 Megan Circle ElDorado, Kansas 67042 USA Telephone: 316-322-3502. Email: <u>customerservice@heartlandmobility.com</u>. Web site: <u>http://www.heartlandmobility.com</u>.

• Sells products from CTM Homecare, Golden Technologies, Invacare, and Shoprider.

Maxi Aids, Inc.

42 Executive Boulevard Farmingdale, New York 11735 USA Telephone: 800-522-6294 toll free or 631-752-0521. TT: 631-752-0738. Fax: 631-752-0689. Email: <u>sales@maxiaids.com</u>. Web site: <u>http://www.maxiaids.com</u>.

• Sells products from Invacare.

Mobility Express

4320 U.S. Highway 19 New Port Richey, Florida 34652 USA Telephone: 800-918-7433 toll free or 727-849-0262. Fax: 727-849-1380. Web site: http://www.mobilityexpress.com.

• Sells store brand scooters, along with products from Golden Technologies, Pride Mobility, and Shoprider.

Mobility Products Unlimited LLC

2400 S. Ridgewood Ave. Suite 48 South Daytona, Florida 32119 USA Telephone: 888-224-2482 toll free or 386-255-2388. Fax: 386-255-3481. Email: <u>salesinfo@mpullc.com</u>. Web site: <u>http://www.mpullc.com</u>.

• Sells products from Invacare, Merits, and Pride Mobility.

Mobility Solutions, Inc.

7895 Convoy Ct. Suite #11 San Diego, California 92111 USA Telephone: 888-400-1533 toll free or 858-278-0591. Fax: 858-278-0490. Email: <u>sales@mobility-solutions.com</u>. Web site: <u>http://www.mobility-solutions.com</u>.

• Sells products from Invacare, Merits, Pride Mobility, and Sunrise Medical.

MobilityStore.com / Cedar Valley Mobility

P.O. Box 817 Waterloo, Iowa 50704 USA Telephone: 800-603-9857 toll free or 319-291-7210. Email: <u>cvm@forbin.net</u>. Web site: <u>http://www.mobilitystore.com</u>.

• Sells products from Pride Mobility and Sunrise Medical.

Planet Mobility

14986 Technology Dr. Shelby Township, Michigan 48315 USA Telephone: 866-465-4387 toll free or 586-247-8900. Fax: 586-247-3435. Web site: <u>http://www.planetmobility.com</u>.

• Sells products from CTM Homecare, Drive Medical, Golden Technologies, Invacare, No Boundaries, Pacesaver, Pride Mobility, Ranger All-Season, Shoprider, and Wheelcare.

Resp-A-Care Inc.

1901 Deerbrook Dr. Tyler, Texas 75703 USA Telephone: 800-218-7212 toll free. Fax: 877-839-8871 toll free. Email: <u>info@keepingyoumobile.com</u>. Web site: <u>http://www.keepingyoumobile.com</u>.

• Sells products from Dalton and Pride Mobility.

RolControl Products

6750 Worth Way Camarillo, California 93012 USA Telephone: 800-281-7791 toll free or 805-386-4191. Email: <u>rolcontrol@pcificnet.net</u>. Web site: <u>http://www.pacificnet.net/~rolcontrol/</u>.

• Sells products from Invacare, Merits, and Movingpeople.net/ Handicare (Fortress).

Scooter Direct Inc.

1509 Amaryllis Ct. Trinity, Florida 34655 USA Telephone: 800-987-6791 toll free. Fax: 727-816-9773. Email: <u>info@scooterdirect.net</u>. Web site: <u>http://www.scooterdirect.net</u>.

• Sells products from CTM Homecare, Drive Medical, DTP Wholesale, EV Rider, Golden Technologies, Invacare, Medline, Merits, No Boundaries, Pacesaver, Pride Mobility, Shoprider, and Zip'r Mobility.

Scooter Discounts of Florida

3320 Wind Chime Dr W Clearwater, Florida 33761 USA Telephone: 866-265-0060 toll free or 727-786-3259. Email: <u>scooterdiscounts@tbi.net</u>. Web site: <u>http://www.scooterdiscounts.net</u>.

• Sells products from CTM Homecare, EV Rider, Pacesaver, Pride Mobility, Ranger All Season, Shoprider, and Wheelcare.

Scooter Store, Ltd.

1650 Independence Drive New Braunfels, Texas 78132 USA Telephone: 800-391-7237 toll free or 830-608-9200. Web site: <u>http://www.thescooterstore.com</u>.

• Sells products from Pride Mobility.

Scooter411.com

11030 Arrow Route, #103 Rancho Cucamonga, California 91730 USA Telephone: 888-466-1651 toll free. Email: <u>info@scooter411.com</u>. Web site: <u>http://www.scooter411.com</u>.

• Sells products from Amigo Mobility, Invacare, Lifestyle Mobility Aids, Pacesaver, Pride Mobility, Shoprider, and Wheelcare.

Scooterville

1536 Myrtle Ave. Monrovia, California 91016 USA Telephone: 800-994-0454 toll free or 800-689-0030 toll free. Fax: 626-628-3956. Email: <u>scooterville2000@yahoo.com</u>. Web site: <u>http://www.scooterville.net</u>.

• Sells products from Golden Technologies, Invacare, No Boundaries, Pride Mobility, Shoprider, and Zip'r Mobility.

Sears Health and Wellness Catalog

7700 Brush Hill Road, Suite 240 Burr Ridge, Illinois 60527 USA Telephone: 800-326-1750 toll free or 630-655-8213. Fax: 630-850-7623. Web site: <u>http://www.searshealthandwellness.com</u>.

• Sells products from Pride Mobility.

Southeast Mobility Group, LLC / Scooters Unlimited

1702 Ridgewood Avenue, Suites A-B Holly Hill, Florida 32117 USA Telephone: 877-204-3733 toll free or 386-673-6902. Email: <u>info@scootersunlimited.us</u>. Web site: <u>http://www.scootersunlimited.us</u>.

• Sells products from Pride Mobility.

Spinlife.com

1108 City Park Avenue Columbus, Ohio 43206 USA Telephone: 800-850-0335 toll free or 614-449-8123. Fax: 888-873-6543 toll free. Web site: <u>http://www.spinlife.com</u>.

• Sells products from Bladez, Drive Medical, Golden Technologies, Invacare, No Boundaries, Pacesaver, Pride Mobility, Sunrise Medical, and Zip'r Mobility.

Transtech Mobility

8332 Hwy 7 St Louis Park, Minnesota 55426 USA Telephone: 952-935-1515. Fax: 952-935-3050. Web site: <u>http://www.transtechmobility.com</u>. Email: <u>transtech@transtechmobility.com</u>.

• Sells products from Pride Mobility.

U-Scoot

3499 NE 12th Terrace Oakland Park, Florida 33334 USA Telephone: 866-387-2668 toll free or 954-561-6448. Email: <u>info@uscoot.com</u>. Web site: <u>http://www.uscoot.com</u>.

• Sells products from Merits and Shoprider.

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For an updated list of Web links to manufacturers and distributors, go to the ABLEDATA Web site, http://www.abledata.com.

Publications

Three and Four Wheel Scooter Buyer's Guide, Minneapolis, MN: National Multiple Sclerosis Society - Minnesota Chapter.

http://www.nationalmssociety.org/MNM/more_content/buyers_guide_2002.pdf.

This 5-page guide includes checklists for selection of a scooter and a dealer.

Product Reviews

The ABLEDATA Web site provides space for consumers to post reviews of assistive technology products, including scooters. Reviews may be submitted and read on the <u>Reviews Page</u> of the <u>ABLEDATA Consumer Forum</u>. While providing this space for consumers to express their views, neither ABLEDATA nor the U.S. Department of Education endorse or recommend any product or company.

Another resource with reviews of scooters is the United Spinal Association's USA TechGuide, which has consumer reviews of Three Wheel, Four Wheel, Lightweight, Transportable, and "Muscle" (heavy-duty) models. Readers can submit their own reviews.

USA TechGuide

United Spinal Association 75-20 Astoria Boulevard Jackson Heights, New York 11370 USA Telephone: 718-803-3782. Fax: 718-803-0414. Web site: <u>http://www.usatechguide.org</u>. Email: <u>info@unitedspinal.org</u>.

For the most current listing of organizations and other resources for people with disabilities, visit the ABLEDATA Web site, <u>http://www.abledata.com</u>.

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ABLEDATA 8630 Fenton Street, Suite 930 Silver Spring, Maryland 20910 USA Telephone: 800-227-0216 toll free in the U.S.; 301-608-8998 local call in the Washington, D.C. area. TT: 301-608-8912. Fax: 301-608-8958. All ABLEDATA publications, the ABLEDATA database of assistive technology, and other ABLEDATA resources are available on the ABLEDATA Web site, http://www.abledata.com.

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