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Transportation for a person in a manual wheelchair, power wheelchair or scooter involves several issues. Individuals may purchase a vehicle that has already been modified, or they may choose to modify a new or used vehicle. Ramps or lifts can be used to get wheeled mobility aids into the passenger area of the vehicle, into a carrier, on a platform, or in the trunk. There are a variety of ramps and lifts to choose from depending on the vehicle, the mobility aid, and the individual's needs. Additionally, the vehicle may need to be modified to provide sufficient headroom.

## **FREQUENTLY ASKED QUESTIONS:**

### ***Should I choose a vehicle with a lowered floor or with a raised roof?***

Vehicles are modified for a raised roof when the individual's seated height exceeds the standard interior height of the vehicle. Typically, raised roofs are put on full-sized vans. Mini-vans and

some other vehicles (i.e., PT Cruiser) can have the floor lowered to accommodate for a ramp. Additionally, some vehicles have a “kneeling” capability that lowers the vehicle when the ramp is extended. There are trade-offs with either choice. A lowered floor may cause the vehicle to hit or scrape some speed bumps, however, a raised roof will make the vehicle taller and often causes clearance issues in shorter spaces (e.g., parking garages). Also, remember to consider door height as well, particularly if the user can’t bend his or her head to enter the vehicle.

### ***What types of lifts are available?***

There are several different types of lifts for manual wheelchairs, power wheelchairs and scooters. Lifts may be external or internal depending on the size of the vehicle and personal needs and can be mounted on the side or rear of the vehicle. Lifts may also be automatic or semi-automatic. An automatic lift provides powered lifting and folding motions. It is possible for a person with a disability to operate this type of lift without assistance. On average, fully automatic lifts cost about \$500 more than semi-automatic lifts. A semi-automatic lift provides powered lifting and lowering motion. However, the platform must be manually folded and unfolded on a semi-automatic lift.

There are four general categories of wheelchair lifts:

**Platform Lift**- This is the most common type of lift and the type required on public transportation. This type of lift has a flat surface that acts like a drawbridge to work on both level pavement and curbs. The platform can fold to a vertical position outside of the van or along the doorway inside of the van. A platform lift usually can lift larger and heavier loads. They also

take up more space, weigh more, and require more room for operation.

Rotary Lift / Swing Lift- This type of lift has a platform that swings out on a post and lowers to the ground. The rotary motion can be a problem for some people with poor balance. The lift takes up floor space in the vehicle and cannot handle some larger and/or longer wheeled mobility aids. However, a rotary lift does not block the door and does not require as much parking space as a platform lift for operation. This type of lift is only used on personal vehicles.

Hoist Lift – This type of lift has an arm and straps. The wheeled mobility aid is attached to the arm by the straps and is hoisted into the vehicle. These lifts are not as common for lifting an individual seated in the mobility aid, but are used more frequently to lift the unoccupied mobility aid into the vehicle.

Under Vehicle Lift – This type of lift is stored under the vehicle in a metal enclosure. The platform slides out and rises to the height of the vehicle's floor and then to the ground. Under vehicle lifts do not take up space in the passenger area and are generally installed on full-size vans, some full-size pickup trucks, and buses. However, this type of lift may require modification to the vehicle's exhaust system.

### ***What are some things I should think about when purchasing a lift?***

There are many things to consider when purchasing a lift. Most importantly, an individual should make sure that the lift is compatible with the vehicle. The type of door(s) on the vehicle,

location of the lift, and typical parking environments are other significant issues to look at. Here are a few additional questions to ask when choosing a lift:

1. Does the lift support the size and weight of the user, wheeled mobility aid, and any additional equipment (e.g., ventilators)?
2. Does the lift have a non-slip surface, edge barriers and a barrier at the end of the platform, designed to keep the wheelchair from rolling off?
3. Does the lift have a platform that is a few inches wider and longer than the wheeled mobility aid?
4. Is there a limit switch to stop travel upon contact with the ground or a foreign object?
5. Is the lift operated by a momentary switch requiring constant pressure?
6. Is there an emergency manual backup lever, a manual pumping mechanism, or a manual crank that will allow a lift to be raised and stowed if electrical failure occurs?
7. Are there controls to prevent folding when the lift is occupied?
8. Does the lift lock in place to prevent movement when it is stored?

### ***Could I just use a ramp instead of a lift?***

Deciding between a ramp and a lift involves many issues. Some common issues are the weight and seated height of the person in his/her mobility aid, daily driving environment, and fuel economy. If a heavy individual uses a manual wheelchair and requires assistance to get into the vehicle, he/she might be difficult to push up a ramp versus using a lift. Additionally, ramps are usually installed on vehicles that can have their floors

lowered (e.g., minivans, PT Cruisers) to accommodate for ramp slope needs (12 inches of length is recommended for every one inch of height). An individual who constantly drives over rocky or unpaved roads may damage the underside of the vehicle with a lowered floor. However, if an individual is concerned with fuel economy and maneuverability, it is important to know that minivans (which usually have ramps) get better mileage and are easier to handle than full-sized vans (which usually have lifts).

### ***What types of ramps are available?***

Ramps can be portable, mounted (non-powered), or powered. Ramps can be installed on the side or at the rear of the vehicle. They may be single track or double track and usually have a non-slip surface. It is recommended that ramps have a secure and direct attachment to the vehicle or be permanently mounted.

Portable ramps and mounted, non-powered ramps both come in varying lengths with maximum weight capacities over 700 pounds. They are usually made of aluminum or other lightweight material. These ramps can be fixed, single fold or multi-fold. Portable and mounted ramps are manually operated and should be secured. Keep in mind that larger, portable ramps built for heavy weight capacities may be difficult to carry and maneuver.

Powered ramps frequently work in conjunction with a powered door or hatch. A remote entry button can activate the door and ramp on most of the newer vehicles. Vehicles with powered ramps may also have a “kneeling” feature that lowers the vehicle before extending the ramp. Powered ramps can be folding or sliding with non-slip surfaces.

***What are some things I should look for when purchasing a ramp?***

1. Will the ramp support the size and weight of the user and wheelchair?
2. Does it have a non-slip surface, edge barriers and a level-end platform that is designed for easy transfer from the ramp to the street?
3. Is there an emergency manual backup lever or a manual pumping mechanism, which will allow the ramp to be raised and stowed if electrical failure occurs?
4. Does it have controls to prevent folding when the ramp is occupied?
5. Is there a mechanical locking device or internal design to prevent movement when the ramp is stored?

***If an individual has some ability to ambulate and/or transfer, does the person have to buy a ramp or lift?***

People who are unable to transfer from a mobility aid into a vehicle may still need assistance with loading the unoccupied wheelchair or scooter into the vehicle. Depending on the type of vehicle and size of the mobility aid, it might be placed in the trunk, into a carrier on the top of the vehicle, on the bumper, on a hitch, or in the bed of a pickup truck. Carriers typically make use of a ramp, loader, or hoist to move the mobility aid into the vehicle or onto the carrier. Hoists attach to the mobility aid by an arm and/or straps and lift it into the vehicle or onto the carrier. A loader will pick up the mobility aid and put it into a car-top carrier, trunk, or bed of a pickup truck.

***Is it better to buy a vehicle and have it modified or buy a vehicle that is manufactured with the modifications?***

Choosing between a vehicle that is manufactured with modifications or modifying a vehicle with after-market equipment is a personal decision. When buying, be aware that the choice of vehicles that come from the factory with modifications is limited, but companies that specialize in after-market modifications can modify many other vehicles. However, individuals should know that after-market modifications might affect or even void the vehicle's warranty.

***How do people pay for lifts and ramps?***

There are several options for funding assistance. Funding sources may have eligibility requirements and vehicle guidelines. The following list represents some of the common funding sources:

- Insurance companies
- State rehabilitation agencies
- Veterans Administration
- Organizations that are disability- or disease-specific
- Local service clubs (e.g., Kiwanis, Lions)
- Vehicle manufacturers

***What vehicle manufacturer programs are available?***

**Chrysler Automobility Program**

When the customer buys or leases any new Chrysler Corporation vehicle, Chrysler Corporation will provide cash reimbursement to help cover the cost of installing adaptive driver or passenger equipment on a vehicle. Conversions to full-size Van Ramps, Ram Wagons and minivans may be reimbursed

up to \$1000. Other Chrysler Corporation cars and trucks qualify for a maximum of \$750. For more information, contact the Chrysler Automobility Program toll free at 800-255-9877 (TTY: 800-922-3826). In Canada call 800-265-6908 or 313-916-9448. Web address: <http://www.automobility.daimlerchrysler.com>.

### **Ford Mobility Motoring Program**

The Ford Mobility Motoring Program provides the customer with a check, directly from a Ford or Lincoln-Mercury dealer, for up to \$1000 toward the exact cost of the installation of adaptive equipment. For more information, contact the Ford Mobility Motoring Program toll free at 800-952-2248 (TTY: 800-833-0312). In Canada call 800-565-8985. Web address: <http://www.mobilitymotoringprogram.com>.

### **GM Mobility Program**

The GM Mobility Program reimburses customers for an amount matching the cost of after-market driver or passenger adaptive aids, including installation, or reinstallation, up to a maximum of \$1,000. For more information, contact the GM Mobility Assistance Center toll free at 800-323-9935 (TTY: 800-833-9935). In Canada call 800-263-3777 or 905-644-6624. Web address: <http://www.gmmobility.com>.

### **Saturn Mobility Program**

Customers will be reimbursed by the Saturn Mobility Program for the cost of after-market driver or passenger adaptive aids, including installation, or re-installation, in an amount up to a maximum of \$1000. For more information, contact the Saturn Mobility Program toll free at 800-553-6000 (TTY: 800-833-6000). In Canada call 800-553-6000.

### **Toyota Mobility Program**

Toyota and Lexus will provide cash reimbursement of up to \$1000 to each eligible, original retail customer, for the cost of purchasing and installing qualifying adaptive driving or passenger equipment. Vehicles must be adapted within 12 months of delivery date. Call 800-331-4331.

Web addresses: <http://www.toyota.com/mobility/> and <http://www.lexus.com/mobility/>.

### **Volkswagen Mobility Access Program**

Volkswagen will refund \$1000 on the purchase or lease of a new Volkswagen vehicle if access or ramp equipment is installed. For more information, contact Volkswagen of America, Inc., Mobility Access Program, PO Box 214378, Auburn Hills, Michigan 48321-9975 or toll free at 800-DRIVE VW. Web address: <http://www.vw.com/access/legal.htm>.

## **INFORMATION RESOURCES:**

ADA Accessibility Guidelines for Transportation:

Accessibility standards for accessible vehicles

<http://www.access-board.gov/transit/html/vguide.htm>

Department of Transportation:

Accessibility standards and resources for transportation access

<http://www.dot.gov/accessibility/>

Digital Federal Credit Union's Resource Guide for Person's with Disabilities:

Vehicle adaptation resource

<http://www.dcu.org/streetwise/ability/auto-adapted.html>

Edmunds.com:

Summary of mobility programs and vehicle adaptations

<http://www.edmunds.com/edweb/editorial/features/mobility.htm>

Idaho Assistive Technology Project Van Lifts Guide:

Information sheet on van lifts

<http://www.educ.uidaho.edu/idatech/factsheets/vanlift18.asp>

Muscular Dystrophy Association vehicle information:

Summary of adapted vehicles and driver training

<http://www.mdausa.org/publications/Quest/q41vehicle.html>

National Highway Traffic Safety Administration:

Regulatory information on automotive adaptive equipment and modified vehicles

<http://www.nhtsa.dot.gov/cars/rules/adaptive/index.html>

National Mobility Equipment Dealers Association:  
Trade association for mobility equipment dealers  
<http://www.nmeda.org/>

Transportation Research Board:  
Research, publications, guides and other information on  
transportation  
<http://www.nas.edu/trb/index.html>

Wheelchairnet.org pages on transportation:  
Information on public and private transportation for individuals  
with disabilities  
[http://www.wheelchairnet.org/WCN\\_Living/transport.html](http://www.wheelchairnet.org/WCN_Living/transport.html)

## **PRODUCT RESOURCES:**

Access Unlimited:

Lifts, extending chairs, transfer aids, and driving controls

<http://www.accessunlimited.com>

Assistivetech.net

Searchable database of AT products.

<http://www.assistivetech.net>

Braun:

Minivan conversions, lifts, adapted seats, and cartop carriers

<http://braunlift.com>

Bruno Independent Living Aids, Inc.:

Lifts, power chairs, scooters, and adapted seating

<http://www.bruno.com>

Discount Ramps.Com:

Lifts, ramps, and carriers

<http://www.discountramps.com>

Handi-Ramp

Lifts and ramps.

<http://www.handiramp.com>

HDS Specialty Vehicles:

Lifts, ramps, used vehicle sales, and vehicle accessories

<http://www.hdsmn.com/wheelvanlif.html>

MITS Mobility Products

Ramps, lifts, new/used vehicle sales, and vehicle rentals  
<http://www.wheelchair-van.com>

Ricon Corp.:  
Lifts for personal and public transportation  
<http://www.riconcorp.com>

TESCO Bus and Van Sales:  
Bus and van sales, lifts and ramps  
<http://www.tescobus.com>