Powered wheelchairs and outdoor mobility assistive products

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Picture 1

Introduction

Technical aids that allow independent and quick movements are more and more required as a complement or an alternative to the manual wheelchair. The market offers an increasing number of products matching these requirements. In this case, like every time you choose an assistive device, evaluating the features that can fully meet the specific needs is extremely important.

Picture 2

Indoor powered wheelchairs

When independent but not very demanding transfer (indoors or oudoors) is required, this kind of wheelchair is a good solution. A preliminary assessment should be carried out to choose a suitable product for you. Very simple and cheap models or sophisticated and expensive ones are available on the market.

Indoor powered wheelchair are designed for use in environments that offer reduced stress to motor and batteries; the frame is very simple, bulky and sometimes folding.

These features also allow transfers in confined spaces (e.g. in a flat) and transportation on vehicles without special equipment (platforms/ramps). Evaluation of the seating system (seat/backrest) dimensions is very important to assure a comfortable seating, very important for a correct driving (Pictures 1-2 3).

Picture 3

Outdoor powered wheelchair

This wheelchair is designed for ground and road use; it travels on longer distances than indoor wheelchair. They have a very robust frame, a good wheel suspension system, lights and indicators. Motor and battery features assure good speed and range of travel. As for indoor powered wheelchair, the postural system should be attentively chosen to suit the individual need. Outdoor wheelchair frames usually doesn't fold, but they dismantles for transportation. They can only be carried by special vehicles equipped with platforms and ramps (Pictures 4-5).

Picture 4

Picture 5

Features

As already said, the market offers a wide range of products for any need. Wheelchair frame can be foldable, dismantling, rigid or standing; seat can be anatomically shaped, elevating, reclining or tilting.

Maximum speed:	*Range of travel:*	*Maximum slope:*	*Weight:*
6-12 km/h	*20-30 km*	*15-20%*	*60-70 kg*

Picture 6

Picture 7

Picture 8

Picture 9

Picture 10

Picture 11

Several functions can be integated in the wheelchair control unit. Obvoiusly, they are available at extra cost. At the moment we can say that companies can supply wheelchairs with the following features

Wheelchairs for children is a particular issue. These assistive devices should be proportioned to the user size and match the children needs; the seat can be lowered to the floor for direct contact with other children (Pictures 6-7).

Scooters

These products, very common abroad, are a possible choice for people that can walk with great difficulties or can't walk for a long time. In these cases a scooter allows fast and safe transfers. Three or four wheel version is available.

As for powered wheelchair, the assessment of individual needs is very important.

Three wheeled scooters

They are extremely handy, not very heavy and suitable to quite regular ways (Picture 8).

Four wheeled scooters

The four wheels guarantee greater steadiness and security. These scooters can travel on irregular ways with a low risk of upsetting or motor blockage. Outwardly they have a steadier frame than three wheeled models (Pictures 9-10).

Features

Almost every scooter is provided with detachable seat, fold-down steering tiller and removable battery pack: in this way, the scooter dimensions can be remarkably reduced. Obviously,

the overall weight can be much greater than in three wheeled models. As the user should not have severe trunk muscles problems, the seat are quite simple and does not offer postural control.

The main features are the following:

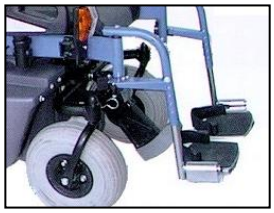
Maximum speed:	*Range of travel:*	*Maximum slope:*	*Weight :*
9,5-12 km/h	*30-45 km*	*15-20%*	*30-70 kg*

Wheelchair motor units

These special devices transform a manual wheelchair into a powered one. They are rear propelling wheels (Picture 11), add-on power systems to be attached to

Picture 12

Picture 13



Picture 14

Picture 15

seat base frame (Pictures 12) or motors to be applied to the front part of the wheelchair (Picture13).

Step and stairs climbing

Powered wheelchairs and scooters can only climb a few centimeter step, for higher step or the sidewalk climbing you need an additional device, that doesn't suit every model (Picture 14).

Powered wheelchairs and scooters should not climb several steps in succession.

A wheelchair with caterpillar treds allows autonomous step and stairs climbing. In Italy only a product named Explorer is available at the moment; it is the only device with both mobility and climbing functions (Picture 15).

Costs

The cost of a powered wheelchair may vary according to the model and to the technical features. You can get a wheelchair provided by the National Health Service or a more expensive model (offering high level performances and special features like reclinable backrest, tilting seat, vertical seat elevation, etc).

At the moment, scooters are not included in the Italian National List of Assistive Devices eligible for medical prescription; however, in some cases, they have been prescribed as they were powered wheelchairs.

A particular issue is Explorer, that costs over 12.000 € and is not included in the above mentioned List: in this case, it could be prescribed as if it was a powered wheelchair or a stairlift with caterpillar treads.