

## FABRICATION OF MOTORIZED WHEEL CHAIR

### ABSTRACT:

A motorized wheelchair, power chair, electric wheelchair or electric-powered wheelchair (EPW) is a wheelchair that is propelled by means of an electric motor rather than manual power. Motorized wheelchairs are useful for those unable to propel a manual wheelchair or who may need to use a wheelchair for distances or over terrain which would be fatiguing in a manual wheelchair. They may also be used not just by people with 'traditional' mobility impairments, but also by people with cardiovascular and fatigue based conditions.

### BATTERY:

The electric motors of power chairs are usually powered by 4 or 5 amp rechargeable deep-cycle batteries, similar to those used to power electric outboard motors for boats. These are available in wet or dry options. As wet-cell batteries may not legally be carried on an aircraft without removing them from the wheelchair and securing them in a shipping container, dry-cell batteries are preferred for power chair use. Many power chairs carry an on-board charger which can be plugged into a standard wall outlet; older or more portable models may have a separate charger unit.

### CONTROLLER:

Controllers are most commonly an arm-rest mounted joystick which may have additional controls to allow the user to tailor sensitivity or access multiple control modes. The controller may be swing-away to aid in side-transfers. For users who are unable to use a hand controller various alternatives are available such as sip-and-puff controllers, worked by blowing into a sensor. In some cases the controller may be mounted for use by an aide walking behind the chair rather than by the user. Capabilities include turning one drive wheel forward while the other goes backward, thus turning the wheelchair within its own length.

'Thought-control' of power chairs, actually working by the detection of brainwaves or nerve signals via sensors on the scalp or elsewhere, has been demonstrated in the laboratory environment.

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