

Lightweight

Total weight 20 lbs added to wheelchair frame, possible because of:

- light DC wound motors
- lithium ion cells for maximum energy density

Intuitive Use

Strain gauge force sensors indicate users intentions and provide a proportional torque

Discrete on/off button is located on beneath the arm rest

Assist level allows user to select amount of help wanted.

Business Model

- Profitable after one year
- Breakeven in year 3
- 4 year internal rate of return of 22%

Purple Team

Students:

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Instructors & Mentors

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ASCENT

Ascent Assistive Wheelchair:
The lightest assistive wheelchair technology on the market. Ascent provides extra mobility to current manual wheelchair users, and allows many power-chair users to gain independence!

- Adds force to each push, making ascending ramps easier and long distances less exhausting
- Lightweight
- \$3400 at steady state price

Power Train:

Contains two motors and power-on clutches. The motors operate efficiently at the ideal assist level for ascending ramps. The power-on clutches allow the user to disengage the motors from the wheels entirely, transforming the Ascent Assistive Wheelchair into a normal, manual wheelchair.

- Able to be turned off in case of emergency
- Shock-Resistant



Wheels:

Contain sensors for detecting the force applied to the handrail. Information from these sensors is sent wirelessly to the Control Box.

- Quick-release – Able to be removed in 15 seconds
- Easily Rechargeable

Control Box:

Processes signal from the wheels and instructs motor to apply a proportional force. When fully charged, it is able to provide assist for a full day.

- Easily Recharged
- Removable
- Adjustable level of assistance