

Bowden cable system



Description

One of the most popular types of upper extremity prosthesis are those powered by the users own muscle power. These are referred to as 'body-powered'.

Body-powered systems use a harness and flexible cables running in housings to move the prosthesis. The so-called Bowden cable system.

The Bowden cable system is similar to the gear change mechanism on modern bicycles. The system was used extensively in the fledgling aero industry where the cables were used to move the control surfaces in small planes.

By engaging the large muscles of the shoulder, the harness can exert a very strong pull on the cable. This can be used to open or close a terminal device as well as operating elbow flexion.

The system is low cost, reliable and durable. Users can even affect their own repairs with a few simple tools.

Advantages

- Low cost.
- Durable.
- Reliable.
- Fine control of cable force.

Disadvantages

- Harness can cause discomfort especially pressure and chaffing under the sound side arm.
- Harnesses can be difficult to clean.
- Under duress, cables can fail without warning.