

Product Design Specifications

Computer Input Device for Individual with Muscular Dystrophy

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Function (a general statement of what the device is supposed to do): The goal of project is to minimize the setup time and improve the accessibility of the computer input device currently used by the client. The device needs to be tailored to the client's limited motor control. All operational needs must also be considered including arm and wrist support and general comfort.

Client requirements:

- Wrist and forearm support
- Comfort and safety
- Quick set-up time
- Adjustable
- Custom Setup

Design requirements: This device description should be followed by list of all relevant constraints, with the following list serving as a guideline. (Note: include only those relevant to your project):

1. Physical and Operational Characteristics

a. *Performance requirements:* Client must be able to easily have full input control of the computer. Mostly regarding the movement and clicking of the mouse with the limited motion in his hands.

b. *Safety:* Device must be operated safely. This includes operating position and supports, making sure there is not chafing or contact with rough surfaces that would cause skin damage

c. *Accuracy and Reliability:* Sensitivity must be maintained over time because of the small range of motion.

d. *Life in Service*: Service should be minimal since device is assumed to be basically permanent. Device would be used for multiple hours daily.

e. *Shelf Life*: Not applicable. Device is used daily, storage conditions are same as usage conditions.

f. *Operating Environment*: Basic room environments, in home use. Corn syrup in environment may affect moving parts.

g. *Ergonomics*: Device must conform precisely with client's physical capabilities. This includes operating position, padding for comfort, and wrist and forearm support.

h. *Size*: Product must fit client's hand and arms, and fit on his computer desk.

i. *Weight*: No explicit requirements, easily handled and supported by the desk.

j. *Materials*: No known restrictions.

k. *Aesthetics, Appearance, and Finish*: Appearance and colors negligible, finish should be for comfortable extended use.

2. Production Characteristics

a. *Quantity*: one.

b. *Target Product Cost*: \$500

3. Miscellaneous

a. *Standards and Specifications*: None.

b. *Customer*: Prefers right hand use for movement control. Tactile feedback preferred.

c. *Patient-related concerns*: Skin sensitivity must be considered.

d. *Competition*: Similar but inadequate products are available. No known competition.