Automatic Height Adjustable Massage Table

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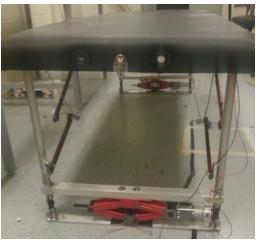


Figure 9. Prototype of Automatic Height Adjustable Massage Table

INTRODUCTION

A portable massage table with automatic height adjustment is designed and prototyped. This project is motivated by a need to improve massage therapists' capability of adjusting the table to a desired height to execute the job more efficiently while keeping the table portable. Many massage tables on the market have manual adjustable legs with standard set heights. They cannot be adjusted during the massage process but can only be adjusted leg by leg before doing message. Meanwhile, the existing automatic adjustable massage tables are mostly heavy, bulky, expensive and not portable. The automatic height adjustable massage table designed in this project incorporates a motor-driven lead screw mechanism with a portable massage table to accomplish an adjustable and portable scheme.

SUMMARY OF IMPACT

The automatic height adjustable table eliminates the tedious set up procedure for standard massage tables, and avoids the bulky, non-portable designs of the existing automatic adjustable massage tables. The designed massage table incorporates both the functionality and portability. Eliminating the need to manually adjust each leg, the table can be adjusted with a click of a button. This will not only save the massage therapist set up time but will allow adjustment during the massage process. This project will benefit not only massage therapists but also patients. Patients will no longer have to get off the table if the table adjustment is necessary, and the inprocess adjustment will help to maximize the patient comfort. This is of particular convenience to patients with upper or lower body impairments which prevent them from moving their bodies freely.

TECHANICAL DESCRIPTION

The automatic height adjustable massage table is raised and lowered by means of telescopic legs which are driven simultaneously in parallel using two motorized scissor jacks.

The massage table uses an external power source to power two individual motors to raise the table to a desired height. The power from each motor is transmitted to a screw which converts motor rotation into leg linear translation. Having two motors, one on either end of the table, allows for a bi-fold through the center of the table, making the table foldable and portable.

The extensions and contractions of the legs are accomplished by the forces transmitted from the scissor mechanisms. An ideal component for this design, the scissor mechanism's self-locking feature allows the table to maintain its desired height.

The motors are controlled with a remote control. When the operator pushes either up or down on the remote, the table will smoothly and quietly rise up or lower down.

The cost of the parts and supplies for this project was about \$1200.

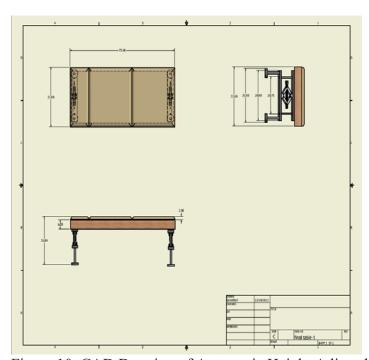


Figure 10. CAD Drawing of Automatic Height Adjustable Massage Table