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RGP 400D Dental Operator Stool (RGP Dental Inc.) Project # 11-004 (03/12)

The 400D Dental Operator Stool is the newest version of RGP's operatory stools ergonomically designed to enhance proper posture, reduce stress/fatigue and potentially alleviate future musculoskeletal disorders prevalent in dentistry today. The stool features a unique hydraulic mechanism that allows the stool to adjust to an individual's personal seating requirements. According to the manufacturer, when set in "free motion", the back and seat will "float" to follow the operator's movement. The RGP 400D is designed to accommodate the optional 'Hydro' and 'Relax' Arm Support System. These arm systems features a padded and contoured eight by four-inch sliding forearm pad that attach to either the left or right-side of the stool. This system purportedly allows comfortable support and movement of the stool's forearm pads under the provider's arms during patient treatment, potentially reducing arm fatigue and musculoskeletal stress. See Figure 1. The 'Hydro' Arm Support System includes a tension control knob for flexibility and balance and includes a height adjustment of up to ten inches. Additional features include a contoured 18-inch seat pan with fully adjustable tilt for correct weight distribution and pelvic tilt. The kidney-shaped backrest lumbar supports feature a patented 'split back' that provides support on the lower back away from the spinal cord. Pneumatic height adjustment cylinder ranges are 16.5 to 31.5 inches. A 24-inch five-star cast aluminum base allows for added stability. The RGP 400D Dental Operator Stool is available in three options of smooth, seamless vinyl, ultra vinyl and leather upholstery. There are nine colors available for the vinyl, six in ultra vinyl and four color options in leather. The 38-pound stool has a limited lifetime warranty, for the operational lifetime of the stool, which covers all pneumatic and hydraulic cylinders as well as the star base and all five casters. In addition, RGP extends a three year warranty on all accessories and add-on parts including armrests and upholstery.

Manufacturer:

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Suggested Retail Price:

\$980.00 400-D Operator Stool without ergonomic shoulder supports
\$140.00 210404 Relax Support Arm
\$176.00 210503 Hydro Support Arm

Government Price:

\$752.00 400-D Operator Stool without ergonomic shoulder supports
\$140.00 210404 Relax Support Arm
\$176.00 210503 Hydro Support Arm

ADVANTAGES:

- + Seat height-adjustment and tilt feature allows for adaption to preferred seating position
- + Active seating with the 'free-float' positioning worked as advertised
- + Single lever design is convenient and easily accessible for seat height and tilt adjustment
- + Adjustable 'Hydro' and 'Relax' Arm Supports provided adequate arm support
- + Armrests are adjustable vertically and horizontally
- + 'Hydro' Arm Support rest tension can be adjusted for each provider's comfort level
- + Split back design was comfortable and provided adequate lumbar support
- + Seamless upholstery was easy to clean and did not stain
- + Five-star caster base with double wheels provided excellent stability and maneuverability
- + Rubber-like material on the wheels enhances the ability to grip the floor and swivel in the desired direction.

- + Black Oxide metal components didn't mar or wear; proved to be a durable finish
- + Limited lifetime warranty on all pneumatic and hydraulic cylinders, casters and star base.
- + Armrest pads are made of durable, comfortable material; provided adequate provider arm support during patient treatment
- + 'Hydro' and 'Relax' Arm Supports are ambidextrous allowing users to customize which arm supports go on the left or right side of the stool
- + 'Hydro' and 'Relax' Arm Supports are optional, stool can be used as a stand alone or with one, both or none of the arm supports.

DISADVANTAGES:

- Stool was too bulky with the arm supports, not ideal for small or crowded treatment rooms
- Seat cushion was too thick
- Stool was too heavy
- Arm rest was difficult to relocate each time provider moved arms off of them
- Arm rests were too close to the patient's head when provider turned positions

SUMMARY AND CONCLUSION:

The RGP 400D with 'Hydro' and 'Relax' Arm Supports performed as indicated by the manufacturer. The 'free-float' adjustable seat with split back support provided adequate lumbar support which allowed each user to adjust the stool to their individual preferences. The craftsmanship of the stool is solid, durable and held up very well during the trial evaluation period. The double-wheeled, five-star caster base maneuvered flawlessly while providing excellent stability. The stool seemed heavy and the seat appeared to be thick for some clinical evaluators. In addition, the ergonomic design while beneficial makes the stool a little larger than other stools and may hinder their use in small operatory spaces. The seamless vinyl upholstery facilitates asepsis and showed no signs of discoloration or wear. The arm supports were easy to install, ambidextrous, easy to adjust and convenient during applications where the users used them properly. Within the time constraints of our evaluation period and limited number of clinical evaluators, both the 'Hydro' and 'Relax' Arm Supports remained on the stool. Our clinical evaluators did not employ the stool without the arm supports and in some procedures the arms were not beneficial to the provider and appeared to be cumbersome. Overall the RGP 400D Dental Operator Stool is a well designed stool that provides excellent support to the dental provider. The **RGP 400D Dental Operator Stool** is rated **Acceptable** for use in the US Air Force dental facilities.