

Reconfigurable & Adaptable Ergonomic Squeegee Grip

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Abstract: A wide range of industrial/manufacturing professionals like painters, composite layup technicians, Sheetrock mud & tape specialists in construction, upholsterers, seamstresses etc. use some type of a Squeegee Tool which by nature of its design results in high pinch forces ranging between 2 to 3 times over the max Palmar Pinch Grip capacity of Males and Females. Majority of the tasks take continuous operation over 6 to 8 hours and almost all users report finger & wrist strain, with approximately 10% of the workers reporting high levels of discomfort, and a little over 1% progressing onto to Finger and Wrist Injuries. The newly designed Squeegee Grip transforms it to a Grasp from the current Pinch and causes necessary sustained force to drop to under 2 lb. and peak force of about 19 lb., which is 3.5 to 6 times less than the max Grasp capacity for Females and Males. The Tool is designed such that its size can be adapted to match small & large hand sizes and can also be reconfigured to match various task requirements. It is estimated that for every 1000 Squeegee users: the adoption of this tool will result in an estimated savings of \$800K+ in the first year from injury risk reduction.

Keywords: Ergonomics, Pinch Grip, Anthropometry