

Materials List for:

A Tactile Automated Passive-Finger Stimulator (TAPS)

Daniel Goldreich^{1,2}, Michael Wong², Ryan M. Peters², Ingrid M. Kanics¹

¹Department of Occupational Therapy, Duquesne University

²Department of Psychology, Neuroscience and Behaviour, McMaster University

Correspondence to: Daniel Goldreich at goldrd@mcmaster.ca

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Materials

Name	Company	Catalog Number	Comments
Delrin plastic rods 0.5" diameter 3" long	Small Parts	ZRD-08	Rods from which the stimulus pieces are made
Chrome-steel bearing, 0.5" bore diameter	Small Parts	BR-08-01	Pivot for the rotating rod
Plastic bearing, 0.5" bore, 1.125" outer diameter, 0.25" thick	Small Parts	BRP-08-01	Wheel at end of rotating rod
Fiberglass curtain, 0.75" thick	McMaster-Carr	9781T83	Sound absorbing curtain around lower table
Silicone O-rings 5/16" inside diameter	McMaster-Carr	AS568A- 011	To reduce vibration of stimulus pieces
Anti-Vibration Pads 2"x 2", 93 PSI max	McMaster-Carr	60105K61	Put under the linear actuator
Rubber sandwich mounts 1/2" H x 3/8" W	McMaster-Carr	9378K11	Put under linear actuator base
Stepper motor Nema 23, 3-stack	Industrial Devices	S23	For rotating the stimulus disk
Linear rodless actuator	Industrial Devices	R2S23N-105A-18-I-M35M	To control rotating bar movement
1 Hall effect switch "normally open" config.	Industrial Devices	RP1	Actuator home sensor
2 Hall effect switches "normally closed" config.	Industrial Devices	RP2	Actuator limit sensors
Micro switch	Honeywell	FSG15N1A	Finger force sensor
Retro-reflective sensor	Honeywell	FE7B-RB6VG-M	Piece position sensor
Motor controller board, closed-loop control	National Instruments	PCI-step-4CX	Mediates communication between computer and Nudrive
Nudrive stepper motor driver	National Instruments	Nudrive 4SX-211	Sends command voltages to the linear actuator and disk stepper motors
Data acquisition board	National Instruments	PCI-MIO-16E-1	Reads finger force sensor
LabVIEW	National Instruments		Programming language
Valuemotion library	National Instruments		Motor control routines
Phot-electric sensor	Panasonic	PM-K53-C1	Disk home sensor
Mini milling machine	Sherline	2010-DRO	For machining the stimulus surfaces
Ohaus precision mass set	Edmund Scientific		Mass on rotating bar
Parrish Magic Line aluminum cake pan bottom, 9" diam.	Sur La Table		Rotating disk machined with square cut-outs to hold the stimulus pieces