

Materials List for:

Robotic Mirror Therapy System for Functional Recovery of Hemiplegic Arms

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Materials

Name	Company	Catalog Number	Comments
LabVIEW	National Instruments		System design software
24 V power supply	XP Power	MHP1000PS24 24V	Any 24 V power supply should do
AHRS sensor receiver	E2box	EBRF24GRCV	
AHRS sensors	E2box	EBIMU-9DOFV2	You will need total 3 sensors. Any AHRS sensors will do
EC90 flat motor module	Maxon	323772 + 223094 + 453231	Any geared motor with higher than 30 Nm should do. (For our custom machined parts, you will need these particular flat motor and gear module, but the gear ratio and encoder may vary)
EC45 flat motor module	Maxon	397172	Any geared motor with higher than 10 Nm should do (For our custom machined parts, you should use the same gear module but the gear ratio, motor, and encoder may vary)
EPOS2 70/10 controller	Maxon	375711	This can be replaced with EPOS 24/5 controller
EPOS2 24/5 controller	Maxon	367676	
Connector and cable set	Maxon	381405 + 384915 + 275934 + 354045	You can also make these cables. Connectors and corresponding wire info can be found in "300583-Hardware-Reference-En.pdf" and "300583-Cable-Starting-Set-En.pdf"
Coupling- Oldham, Set Screw Type	Misumi	MCORK30-10-12	Type may vary
Coupling- High Rigidity, Oldham, Set Screw Type	Misumi	MCOGRK34-12-12	Type may vary
Shaft Collars	Misumi	SCWDM10-B	You will need 4 sets
Shaft Collars	Misumi	SDBJ10-8	You will need 2 sets
Precision Linear Shaft	Misumi	PSSF10-200	Any straight 10 mm diameter shaft with at least 200 mm length should do
Bearings with housings	Misumi	BGRAB6801ZZ	
Elbow motor force dispersion shaft	custom machined	3D CAD	

Lower elbow support	custom machined	Part Drawings	
Elbow rooftop frame	custom machined	Part Drawings	
Support wall	custom machined	Part Drawings	You will need 2 frames.
Elbow coupling hollow cylinder cover	custom machined	Part Drawings	
Wrist motor force dispersion shaft	custom machined	Part Drawings	
Wrist rooftop frame	custom machined	Part Drawings	
Upper wrist coupling hollow cylinder cover	custom machined	Part Drawings	
Lower wrist coupling hollow cylinder cover	custom machined	Part Drawings	
Joint movement limiter	custom machined	Part Drawings	
Handle	3D printed	Part Drawings	
Upper elbow support	3D printed	Part Drawings	
Friction reduction ring	3D printed	Part Drawings	
Acrylic mirror	custom laser cutting	Part Drawings	
Task table	custom machined	Part Drawings	
Silicone sponge			
DOF limiter	3D printed	Part Drawings	
DOF limiter lid	3D printed	Part Drawings	
Healthyarm handle	3D printed	Part Drawings	
Ball rollers - Press fit	Misumi	BCHA18	
Goalpost	3D printed	Part Drawings	
Circle trace	3D printed	Part Drawings	
Angled assist	3D printed	Part Drawings	Optional
Curved assist	3D printed	Part Drawings	Optional
Plain assist	3D printed	Part Drawings	Optional
Task board	custom laser cutting	Part Drawings	