

Bill of Materials - Mechanical Components						
Cart Pole Project						
Color Legend:	McMaster	Machined, Aluminum		Laser Cut, 1/4in MDF	3D Printed	FoamByMail
	Flintec	Tekscan	Maxon	Automation Direct		Amazon
Part Name	Part Number	Quantity	Size	Additional Info	Link or Part Number	
T-Frame	1	4	160mm	20mm width	<a href="https://www.mcmaster.com/5537T101-5537T504/">https://www.mcmaster.com/5537T101-5537T504/</a>	
	2	4	100mm			
	3	2	1170mm			
	4	2	90mm			
	5	2	350mm			
	6	2	50mm			
Corner Bracket	7	26			<a href="https://www.mcmaster.com/5537T935/">https://www.mcmaster.com/5537T935/</a>	
Linear Motion Shafts	8	2	1200mm	25mm Diameter	<a href="https://www.mcmaster.com/6112K67/">https://www.mcmaster.com/6112K67/</a>	
Shaft Support	9	4			<a href="https://www.mcmaster.com/1865K24/">https://www.mcmaster.com/1865K24/</a>	
Timing Belt	10	1		9ft Long	Item Number: 1679K999	
Timing Belt Pulley	11	2			<a href="https://www.mcmaster.com/1428N23/">https://www.mcmaster.com/1428N23/</a>	
Linear Bearings	12	4			<a href="https://www.mcmaster.com/9338T54/">https://www.mcmaster.com/9338T54/</a>	
Rotational Bearings	13	2			<a href="https://www.mcmaster.com/2820T53/">https://www.mcmaster.com/2820T53/</a>	
Rotary Shaft	14	1	300mm	8mm Diameter	<a href="https://www.mcmaster.com/1265K64/">https://www.mcmaster.com/1265K64/</a>	
Pole	15	1	600mm	8mm Diameter	<a href="https://www.mcmaster.com/1265K67/">https://www.mcmaster.com/1265K67/</a>	
Ball Bearing	16	1			<a href="https://www.mcmaster.com/6661K11/">https://www.mcmaster.com/6661K11/</a>	
Pulley Mount	17	1			See drawing 4	
Belt Tensioner	18	1			See drawing 5	
Screw Press	19	1			See drawing 6	
Cart Base	20	1			See drawing 7	
Encoder Mount	21	1			See drawing 8	
Encoder Hub	22	1			See drawing 10	
Clamp Mount	23	1			See drawing 11	
Pole Hub	24	1			See drawing 12	

Pole Cap	25	1	See drawing 13				
PC Mount	26	2	See drawing 15				
Cap	27	2	40mm Diameter	See DWG Folder			
Foam Mount	28	2	4x13.5in	See DWG Folder			
Motor Mount	29	1	See STL Folder				
Belt Clamp	30	1	See STL Folder				
Foam for Walls	31	2	4x12x4in	4in Thick	<a href="https://tinyurl.com/36ns3uyk">https://tinyurl.com/36ns3uyk</a>		
	32	2	4x12x6in	6in Thick			
	33	2	4x12x8in	8in Thick			
Squash Ball	34	1		3 Pack	<a href="https://tinyurl.com/apaat3b4">https://tinyurl.com/apaat3b4</a>		
Flintec Force Sensor	35	2	PC42	More details and info with electrical B.O.M.			
Tekscan Force Sensor	36	2	FlexiForce A401	More details and info with electrical B.O.M.			
Maxon Motor Configuration	37	1		More details and info with electrical B.O.M.			
Encoder	38	1	TRD-S2500AD	More details and info with electrical B.O.M.			
Misc. Parts Required		Approx Quantity	Link or Part Number				
T-Frame Nuts		20	<a href="https://www.mcmaster.com/6661K11/">https://www.mcmaster.com/6661K11/</a>				
M5 Screws		10					
M6 Screws		20					
M4 Screws		10					
6mm Shaft		2in					
Updates							
Belt Tensioner EM	39	1	See drawing 17				
Outer EM	40	1	See drawing 18				
Encoder	41	1	TRD-S2500AD	More details and info with electrical B.O.M.			
Smaller Cart Base	42	1	See drawing 19				