Chess Robot Materials List

Mechanical
2x 24" Acme Lead Screw [https://www.mcmaster.com/#99030A005]
2x 0.5" Ball Bearings [https://www.mcmaster.com/#60355K505]
2x 24" Carbon Steel Rod [https://www.mcmaster.com/#1327K68]
1x 14" - 1.5"x1.5" per square Chessboard
2x 5mm x 6.35mm Motor Coupler [http://amzn.to/2qUJCmG]
1x 5mm x 5mm Motor Coupler [http://amzn.to/2r5IH7y]
1x Nema 17 Stepper Motor [https://www.sparkfun.com/products/9238]
2x Nema 23 Stepper Motor Holder [http://amzn.to/2sC45hm]
1x 1.75mm Red ABS Filament (for 3D printer) [http://amzn.to/2D50gGw]
1x Trossen ASM-RGS-13 Servo Motor [http://www.trossenrobotics.com/rg-180-servo]

Plastic (PVC)
1x 1/2" Thick, 4" Wide, 2 ft. PVC Bar [https://www.mcmaster.com/#8740K73]
1x 1" Thick, 3" Wide, 1 ft. PVC Bar (cut into 2" and 4" bar with some to spare) [https://www.mcmaster.com/#8740K63]
3x 1/2" Thick, 1-1/2" Wide, 2 ft. PVC Bar [https://www.mcmaster.com/#8740K24]
2x 1/2" Thick, 1" Wide, 2 ft. PVC Bar [https://www.mcmaster.com/#8740K14]
2x 1/2" Thick, 2" Wide, 1 ft. PVC Bar [https://www.mcmaster.com/#8740K35]
1x 1" Thick, 2" Wide, 1 ft. PVC Bar [https://www.mcmaster.com/#8740K37]

Screws
100x Number 6 Size, 1/2" Long Tap Screw (1/8 drill) [https://www.mcmaster.com/#90190A110]
100x Number 6 Size, 1" Long Tap Screw (1/8 drill) [https://www.mcmaster.com/#90190A153]
100x Number 6 Size, 1-1/2" Long Tap Screw (1/8 drill) [https://www.mcmaster.com/#90190A157]
100x 4-40 Thread 1/2" 2.5M Long Hex Screw [https://www.mcmaster.com/#91251A110]
25x 4-40 Thread 1" 2.5M Long Hex Screw [https://www.mcmaster.com/#90044A111]
100x 4-40 Thread Steel Hex Nut [https://www.mcmaster.com/#90480A005]

Wood
1x 4’ x 4’ Plywood (Base)
1x 1x4 - 8 ft. Plywood (Arms)
2x 1.5"x3.25"x20" Wood Beam (Base Stand)
Electrical

1x Arduino Uno [http://amzn.to/2FBTARG](http://amzn.to/2FBTARG)
1x Copper Grounding Wire Roll [http://amzn.to/2mvd29Y](http://amzn.to/2mvd29Y)
1x Electrical Solder
1x Electrical Tape Roll
1x Extension Cord
3x Limit Switch [http://amzn.to/2FCHAze](http://amzn.to/2FCHAze)
1x 12V Power Supply [http://amzn.to/2sR2G5W](http://amzn.to/2sR2G5W)
3x Push Button (product is 100 pack) [http://amzn.to/2D2LQqn](http://amzn.to/2D2LQqn)
1x Ribbon Cable [http://amzn.to/2D4bhb7](http://amzn.to/2D4bhb7)

Tools

1/2-10 Acme Tap [http://www.victornet.com/detail/TAAC-1/2.html](http://www.victornet.com/detail/TAAC-1/2.html)
Drill [http://amzn.to/2EF7kK0](http://amzn.to/2EF7kK0)
Drill Bit Set
Z-Drill Bit
Hex Wrench Set
Hot Glue Gun
Lathe (3 Cuts to Acme Lead Screws to 5mm for the motor couplers)
3D-Printer (Prints Gripper)
Saw (Power tool recommended)
Screwdriver
Soldering Iron