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Lite Arm i2 (Iteration Two)

Parts list

24- MF84zz 4x8x3mm flanged ball bearing (we use two per hole one on each side) \$15

1- 6807 2RS bearing (for base rotation) 35mm ID x 47mm OD x 7mm Depth \$9.47

3- Power HD 1501 MG servos \$15.95 ea

3- 25T servo horn 3mm threaded (set of 2 \$7 just get two sets)

NUTS & BOLTS:

You can use all 6-32 bolts or a combo of both 6-32 & 8-32 I listed what I used below which is a combination of the two.

The only place you need metric is for the servo horns (most likely) and the base where 7B and 8B attach to 6B.

In 6B the slots that hold the nuts are too small for standard nuts. I originally designed this for all M4 bolts and nuts but they are hard to find here in the US.

Here is my list of what I used:

12- 3mm diam x 10mm long M3 bolts (for the servo horns) \$3 ACE hardware

1- 8-32 1 foot length of all thread \$3.30 ea

1- 6-32 1 foot length of all thread \$3.30 ea

(I just bought the boxes of 100, I'll be using these in all my upcoming add-ons to the arm)

1- box of 100 8-32 screw nuts \$3.59

1- box of 100 6-32 screw nuts \$3.59

1- box of 100 #8 lock washers \$3.59

1- box of 100 #6 lock washers \$3.59

1- box of 100 #8 flat washers \$2.89

1- box of 100 #6 flat washers \$2.89

SEE DIAGRAM

A0

QTY. 1- 2 1/4"(long) 6-32 bolt for top of tool head

A1

1- 1 3/4" 6-32 bolt for tool head wrist joint

A

1- 1 3/4" 8-32 bolt for tool head (front)

B

3- 1 3/4" 8-32 bolt for forearm spacers

C

1- 2 1/4" 6-32 forearm joint (to upper triangle)

D

1- 2" 6-32 forearm actuator joint

E

1- 1" 6-32

Head linkage to shoulder

13 to 17

F

2- 3/4" 6/32 triangle connections

G

1 1/4" 6-32 elbow 15 to 20

H

12- 1/2" 8-32 for servo mounts

I

4- M3x15mm for base (6b to 7b&8b)

4- M3 nuts

J

3- 1 1/4" 8-32 for 5b to 6b connection

K

4- 3/4" 8-32 connects Arduino board supports (7b 8b 9b 10b)

L

1- 3 3/4" 8-32 breast connection

M

4- 5/8" 8-32 for Arduino plate (i2)

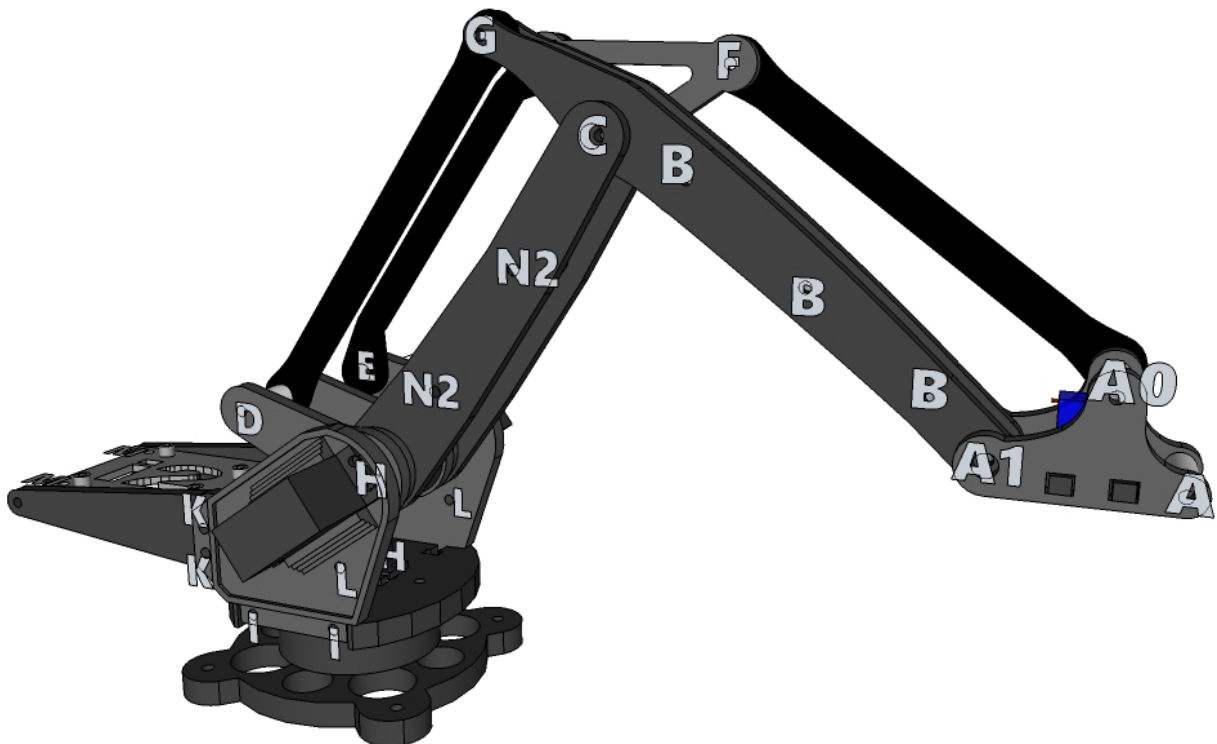
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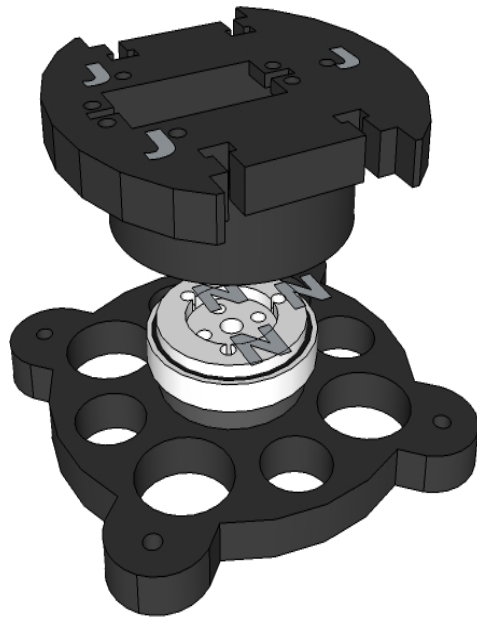
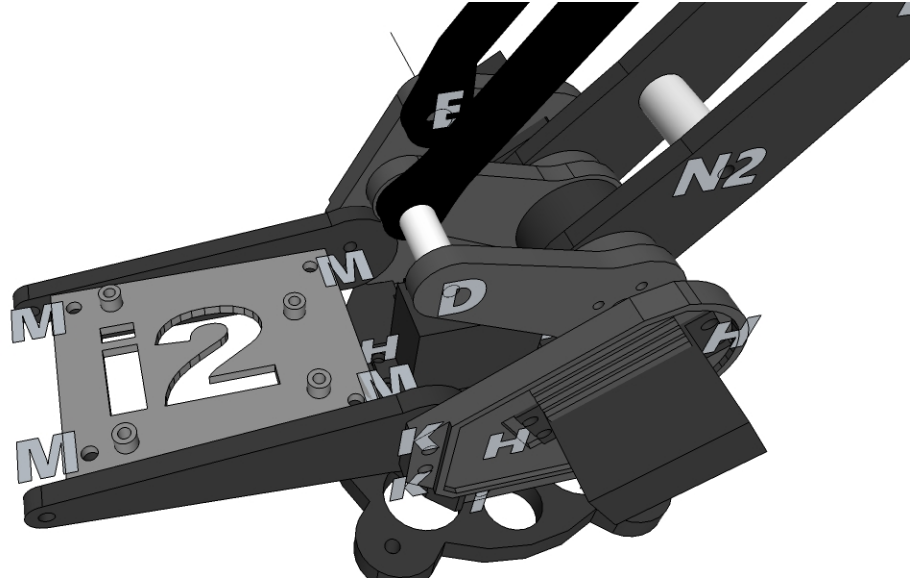
3- 1" 8-32 bearing clamp to base/1b

N2

2- 1 3/4" 8-32 bicep spacers

Diagram





Arduino sketch to set servos to center:

```
// Testing for Lite Arm Project 4/16/2015
// http://www.thingiverse.com/thing:407800
#include <Servo.h>

Servo servobase;
Servo servoshoulder;
Servo servo forearm;

void setup() {
  servobase.attach(9); // Set servo to digital pin 9, min, max
  servoshoulder.attach(10); // Set servo to digital pin 10, min, max
  servo forearm.attach(11); // Set servo to digital pin 11, min, max
}

void loop() {          // Loop through motion tests
  middle(); //go to start pos
  delay(2500); // Wait 1000 milliseconds (1 seconds)
  left();
  delay(2500);
  right();
  delay(2500);
}

void middle() {
  servobase.writeMicroseconds(1500); //1500 is the midpoint
  servoshoulder.writeMicroseconds(1500);
  servo forearm.writeMicroseconds(1500);
}

void left() {
  servobase.writeMicroseconds(1500); //1000 is all the way left
  servoshoulder.writeMicroseconds(1500);
  servo forearm.writeMicroseconds(1500);
}

void right() {
  servobase.writeMicroseconds(1500); //2000 is all the way right
  servoshoulder.writeMicroseconds(1500);
  servo forearm.writeMicroseconds(1500);
}
```

}