Assembly instructions for the Armuno A1HD Robotic Arm Kit By Microbotlabs. Additional information and resources for getting the most out your robot arm kit please visit WWW.MICROBOTLABS.COM
Here is a reference drawing of the basic structural parts for the Armuno Desktop Robotic Arm. The parts have been color coded and numbered to assist in identifying them.
The Armuno’s structural parts are laser cut. They arrive in flat pack form and are covered with protective masking. It is recommended that you only remove the parts required to complete the current sub assembly as shown in the following pages. This will help you keep track of and not lose any of the many small parts. Remember to peel off the masking before building your kit.

The build begins by assembling several sub assemblies. This makes it easier to visualize the arm structure by limiting the number of parts we have to deal with and giving us a fairly recognizable part of the arm when we’re done with its assembly. Let’s start with the turret box sub assembly.
First attach a double sided servo horn with the small screws that come with the servo motors. Pay attention to the orientation of the parts. Note the small arrow head etched onto the part that points toward the front of the arm. Position the servo horn as shown and then flip the two parts over and attach the two small screws. Always position the screws midway or more away from the servo horn center hub. This prevents possible interference with the screw heads with some servo motor cases.
Lay down the turret box side and start fitting the additional pieces as shown. If slots are not lining up, double check that the part is orientated as shown. Do not install the nuts and bolts yet.

Install the center strut as shown.

With the last side installed we just need to attach the bolts and nuts.
WITH THE LAST SIDE INSTALLED WE JUST NEED TO ATTACH THE BOLTS AND NUTS.

4) 3MM X 10MM LONG BOLTS
4) 3MM NUTS

Armuno Desktop Robotic Arm
TURRET BOX FRAME - SUB ASSY#1
SIDE SERVO LEFT WITH PARTS NEEDED TO COMPLETE THE NEXT SUB ASSEMBLY

3) 3MM X 8MM LONG BOLTS
(ONE BOLT IS NOT SHOWING IN THIS VIEW)

1) SERVO HORN SCREW

Place servo horn hub into matching hole on servo motor link.

Flip the two pieces over and again attach the servo horn screw toward the out most limit to avoid possible servo case clearance problems.
OPTIONAL THIN BEARINGS AT ALL BOLT PIN JOINTS
ATTACHING LEFT SERVO (SUB ASSY#2) TO TURRET BOX (SUB ASSY #1)

ATTACHING CENTER ARM BEAM SIDE 1 TO TURRET BOX (SUB ASSY #1)
ATTACHING CENTER ARM BEAM SIDE 1 TO TURRET BOX (SUB ASSY #1)

RIGHT SIDE SERVO - (SUB ASSY #3)

PARTS FOR RIGHT SIDE SERVO SUB ASSY

- 2) 3MM X 10MM LONG BOLTS
- 2) 3MM X 8MM LONG BOLTS
- 2) 3MM NUTS
- SERVO HORN AND SCREWS
Position servo horn hub into matching hole.

Note the angle.
ARMUNO DESKTOP ROBOTIC ARM
RIGHT SIDE SERVO - (SUB ASSY #3)
ARMUNO DESKTOP ROBOTIC ARM
RIGHT SIDE PARALLEL LINK ATTACHED TO TURRET BOX

UPPER LINK BEAM ASSY PARTS

14  15  16  17  18  19
ATTACH UPPER LINK BEAM BRACE AS SHOWN

ATTACH WITH ONE 3MM X 6 BOLT
THE MAIN ARM ASSY IS NOW COMPLETE AND READY FOR THE CLAW ASSY TO BE ATTACHED
PARTS FOR THE CLAW SERVO ASSEMBLY

4) 3mm x 8mm Bolts
CLAW JAW LINK ASSY

ATTACH SERVO HORN TO LINK AS SHOWN

1) 3MM x 12MM BOLT

ATTACH JAWS WITH 6MM BOLTS AND ADJUST FOR SMOOTH ROTATION

INSERT BOLT THRU LINK AND 2 SPACERS

2) 3MM x 6MM BOLTS

PARTS NEEDED FOR THE JAW LINK ASSY

TIGHTEN AND ADJUST LINK AND SPACERS TO CLAW AS SHOWN

ATTACH SERVO HORN LINK AS SHOWN

SERVO HORN SCREW
ATTACH LINKS AS SHOWN

ATTACH CLAW TO LEFT UPPER ARM LINK WITH A 3MM x 10MM BOLT. DO NOT OVER TIGHTEN AS THE BOLTS MAY COMPRESS THE SERVO MOTOR CASE CAUSING THE GEAR TRAIN TO BIND UP.

1) 3MM x 6MM BOLT

THE COMPLETED CLAW ASSEMBLY

MOUNTING THE CLAW ASSY TO THE ARM ASSY

1) 3MM x 10MM BOLT
MOUNTING THE CLAW ASSY TO THE ARM ASSY

ATTACH CLAW TO RIGHT UPPER ARM LINK WITH A 3MM x 10MM BOLT.
DO NOT OVER TIGHTEN AS THE BOLTS MAY COMPRESS THE SERVO MOTOR CASE
CAUSING THE GEAR TRAIN TO BIND UP.

ATTACH PARALLEL LINK TO CLAW WITH SPACER AND A 3MM x 10MM BOLT.
ADJUST TIGHTNESS FOR FREE MOVEMENT.
The Armuno robotic arm includes a base servo mount plate that has a smooth plastic face for the optional base plain bearing. The bearing improves the stability of the robotic arm over the original MeArm design. I highly recommend installing it but if you wish you may leave it out.

**Plastic veneered servo mount plate**
This must be used instead of the plain wood plate for the base bearing option.

4) 3MM X 20MM BOLTS
4) 3MM HEX NUTS

**Servo mount bracket**
(hidden from viewport # 34)

This goes between the bottom of the turret and the base servo mount plate

**SHOWING THE ORIENTATION OF THE BEARING**
Place a few small drops of motor oil on the bearing surface before assembly.
ADJUST BEARING COMPRESSION WITH THE BASE SERVO HORN SCREW

Check the base rotation resistance while tightening the screw. If it gets too tight loosen it a little. It is ideal when there is very little drag upon rotating the turret box.

OPTIONAL THIN BEARINGS CAN BE PLACED AT ALL BOLT PIN JOINTS

When properly adjusted the base plain bearing upgrade gives your robotic arm significantly more stability and allows it to make quicker more precise moves.
YOU DID IT! YOUR ARMUNO DESKTOP ROBOTIC ARM IS ASSEMBLED

YOUR MeCon MOTION CONTROL SOFTWARE HAS WIRING DIAGRAMS TO SHOW YOU HOW HOOK UP YOUR ARDUINO MICRO CONTROLLER AND ALSO AN ARDUINO SKETCH SO YOU CAN START MAKING SOME MOVES WITH YOUR NEW DESKTOP ROBOTIC ARM.
SPECIAL THANKS TO MASTER ROBOT MECHANIC “BIG BOY JAMES” FOR HIS HELP IN THE MAKING OF THIS TUTORIAL

LETS SEE, NEEDS A LITTLE ADJUSTMENT HERE..

AND ADD THE BASE PLATE AND WE ARE GOOD TO GO!