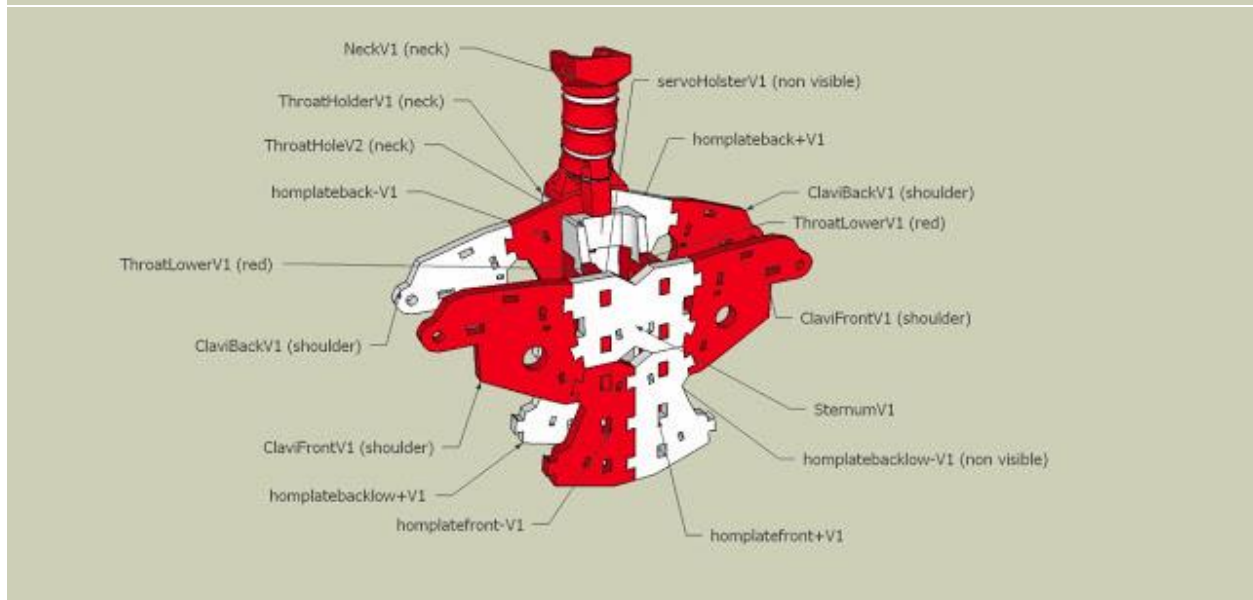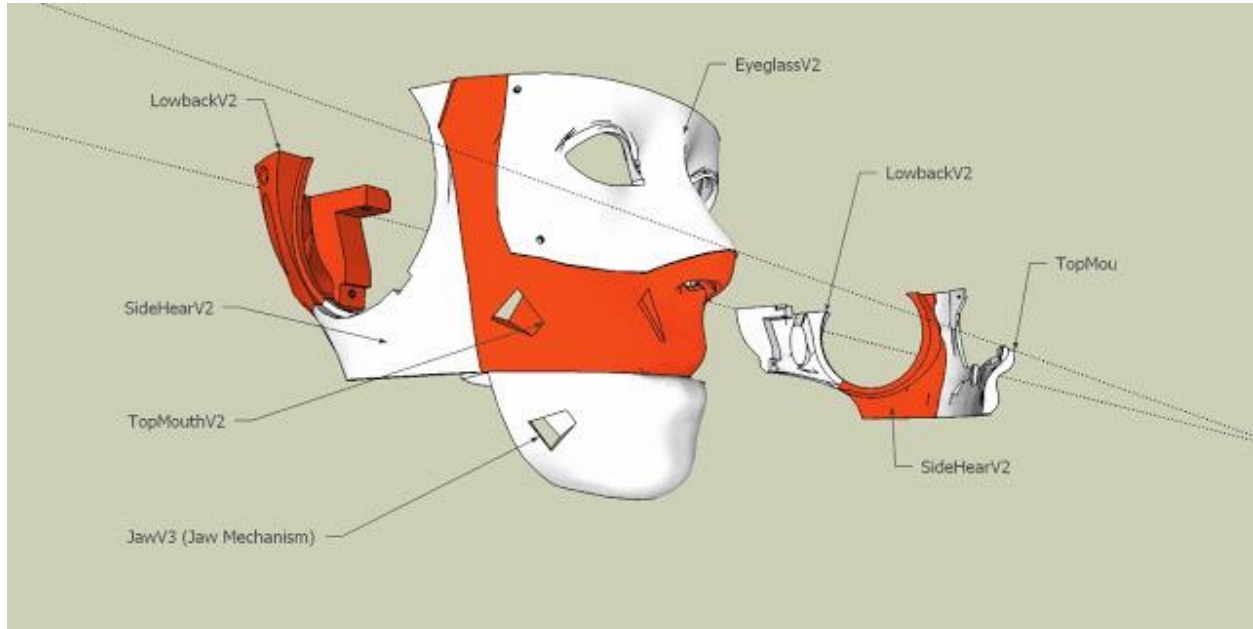# PART: NECK AND JAW

Double check that you have all the materials necessary BEFORE continuing. Note that when affixing "SideHearV2" on the face, you MUST glue this piece to its neighboring pieces AFTER you have assembled the internals of the head. Otherwise, you have no way of accessing the inside parts.

Parts List

1 x MainGear
1 x NeckHinge
1 x GearHolder
1 x ServoGear
1 x HS-805BB servo
1 x LowBackRight
1 x LowBackLeft
1 x Ring
1 x FaceHolder
1 x JawPiston
2 x JawHinge
1 x HK15298 servo
1 x SkullServoFix
1 x Jaw
2 x JawSupport
1 x ThroatHole
1 x ThroatPiston
1 x ThroatPistonBase
1 x Neck
1 x NeckHinge
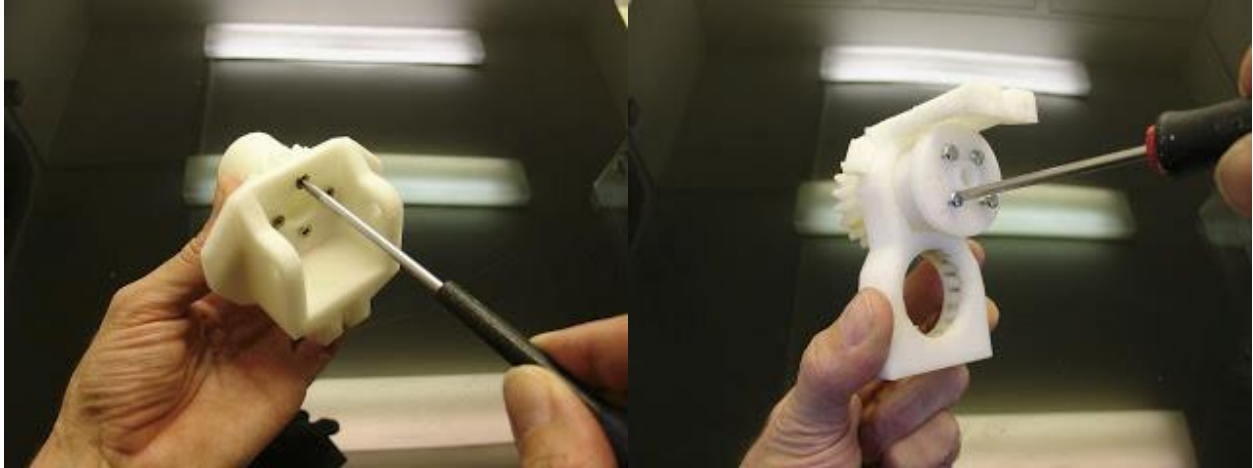
Glue or screw "MainGear" to "NeckHinge".

Use "GearHolder" and set "ServoGear" through it. Screw the actuator wheel sold with your HS-805BB servo to "ServoGear".
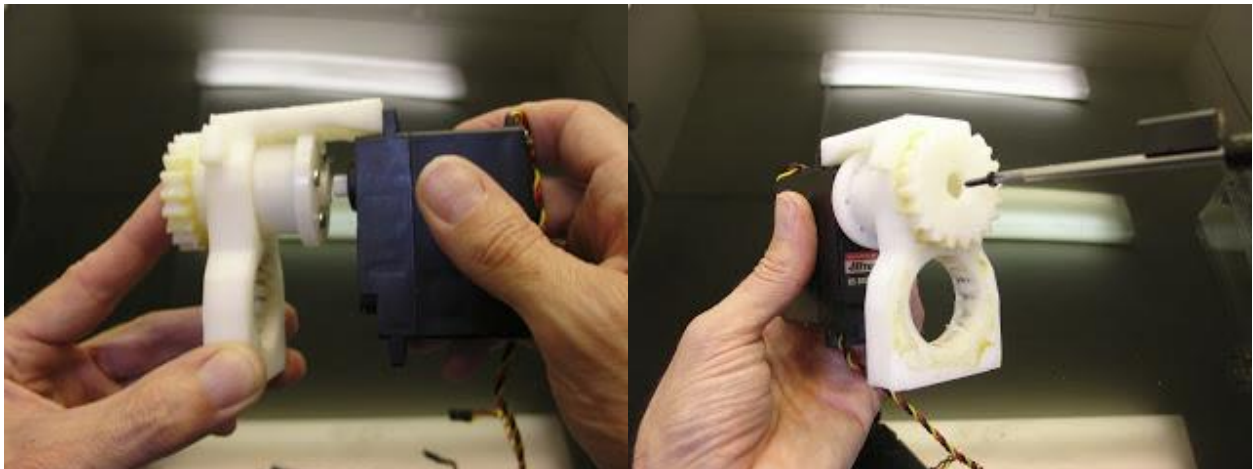

Use your Arduino board and set your HS-805BB servo to 90°. Push it in the turntable.

This next part is a bit tricky, but can be achieved using a magnet on your screwdriver. Using the screw delivered with the servo, you need to screw the turntable to the servo inside "ServoGear". Keep your servo at 90°.
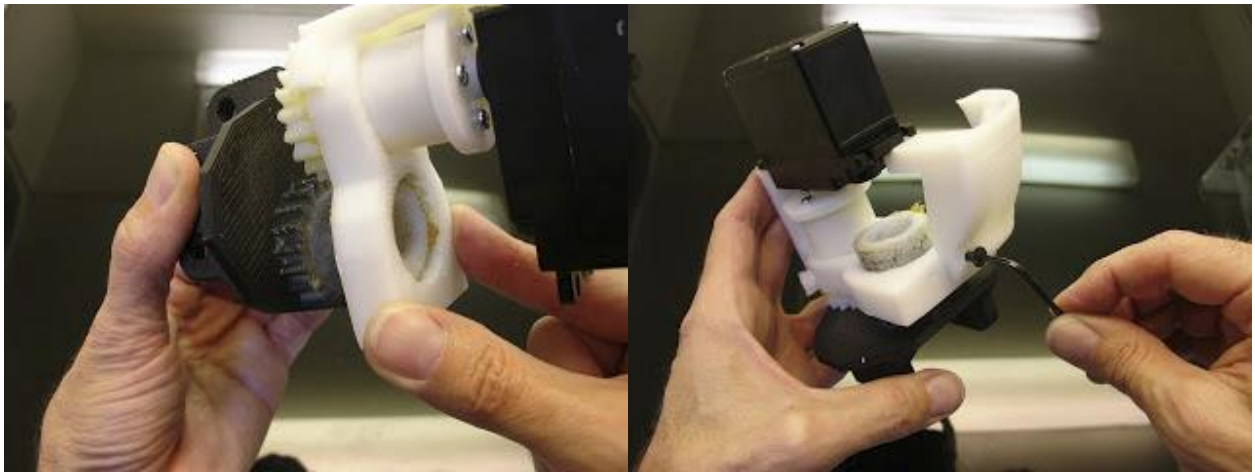
Mount this assembly to the assembly "MainGear" and "NeckHinge"using some grease to ease the rotation. "GearHolder" should be aligned with "NeckHinge" and your servo should be still at 90°.

Fix the "LowBackRight" and "LowBackLeft" or "Temporary" to "GearHolder".This will be the back of the skull.
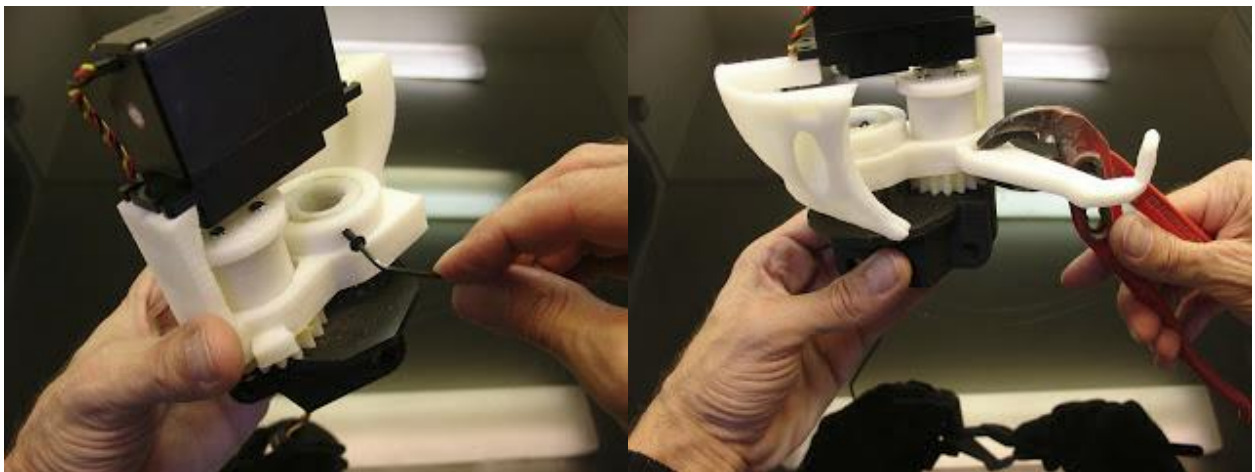

Screw "Ring" to "MainGear". Try to avoid slack between parts.

Use your favourite pliers to mount "FaceHolder". You can mount both of them.
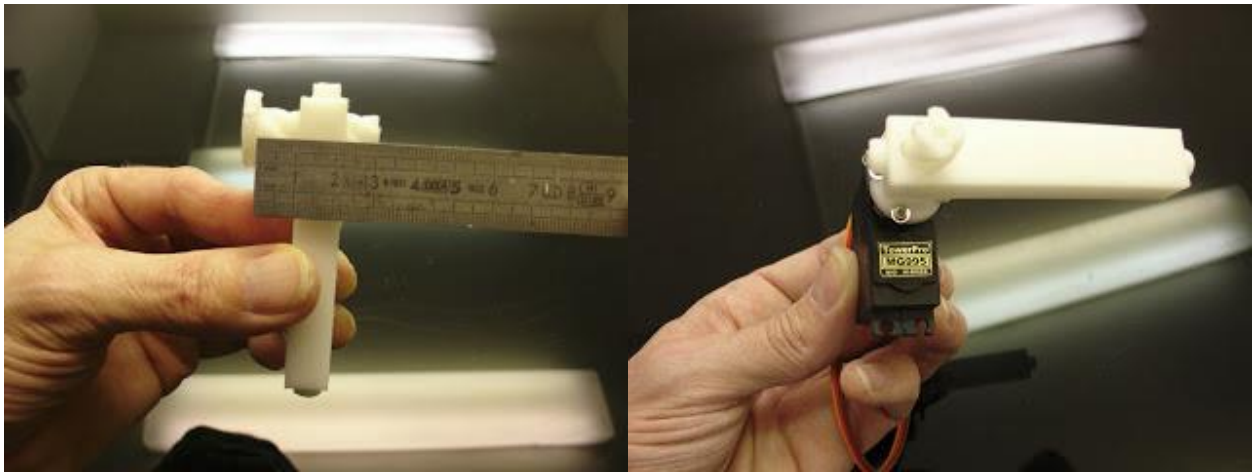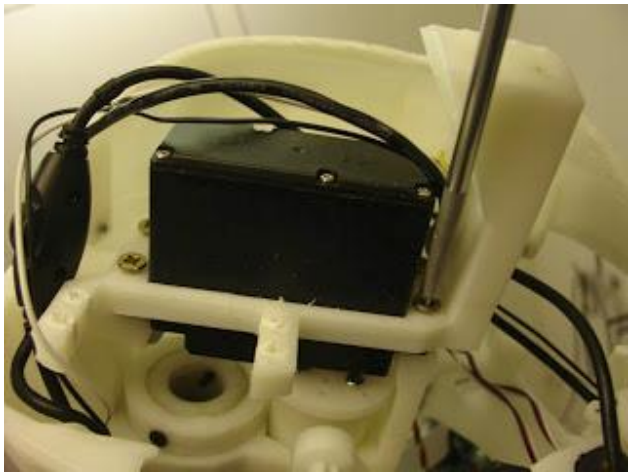
Now you need to build the jaw. Take "JawPiston" and turn it inside "JawHinge" until you get 1cm offset between them.
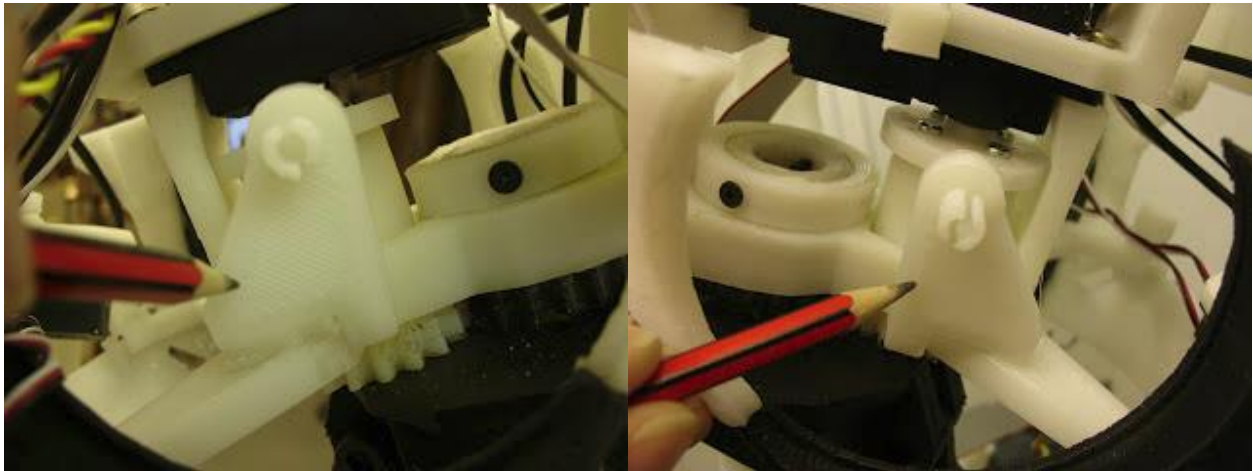
Mount screw this on the turntable of your HK15298 or similar servo. Set your servo at 0° with the arduino board. Keeping the 1cm offset, "JawHinge" should be mounted at a 90° angle compared to the servo.
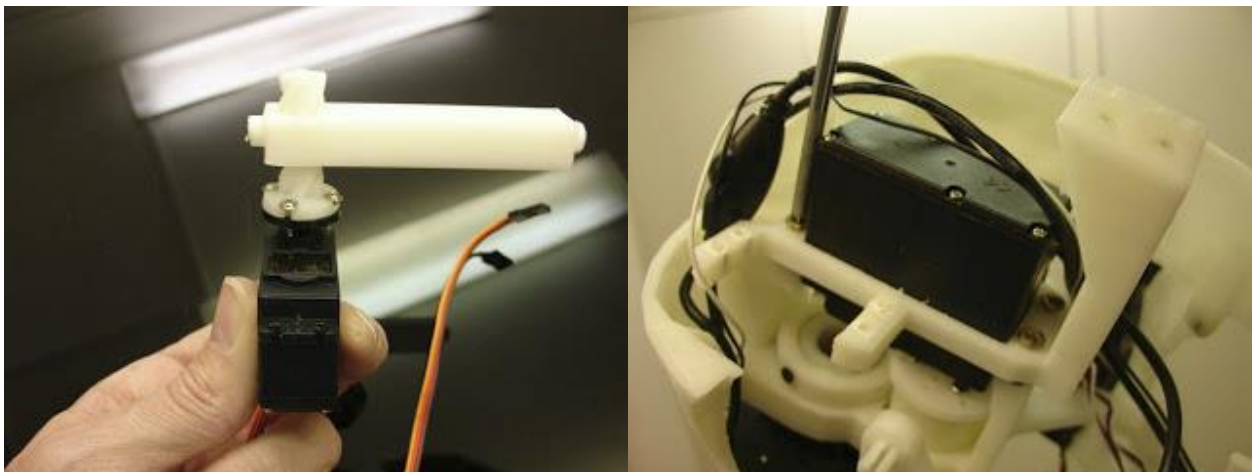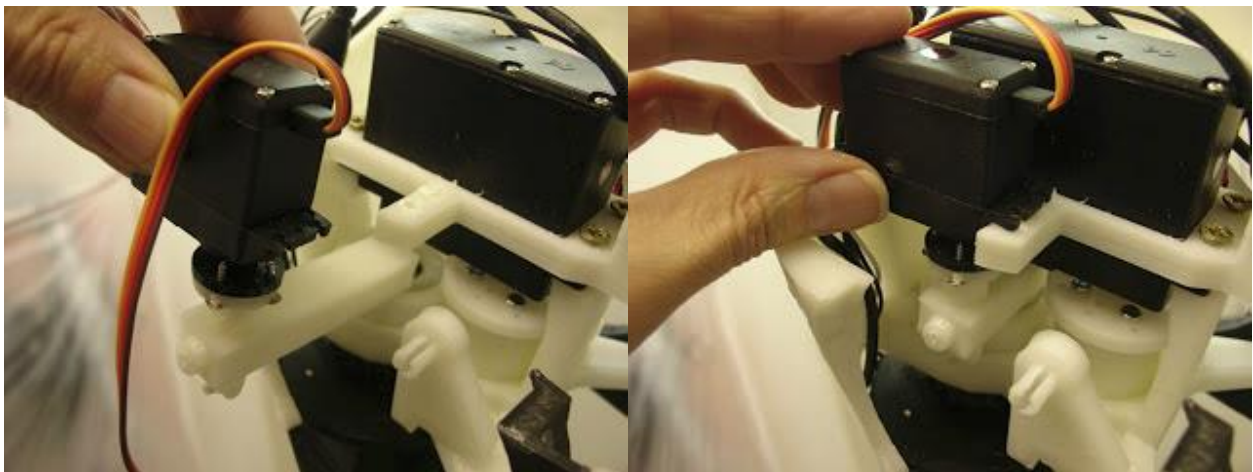

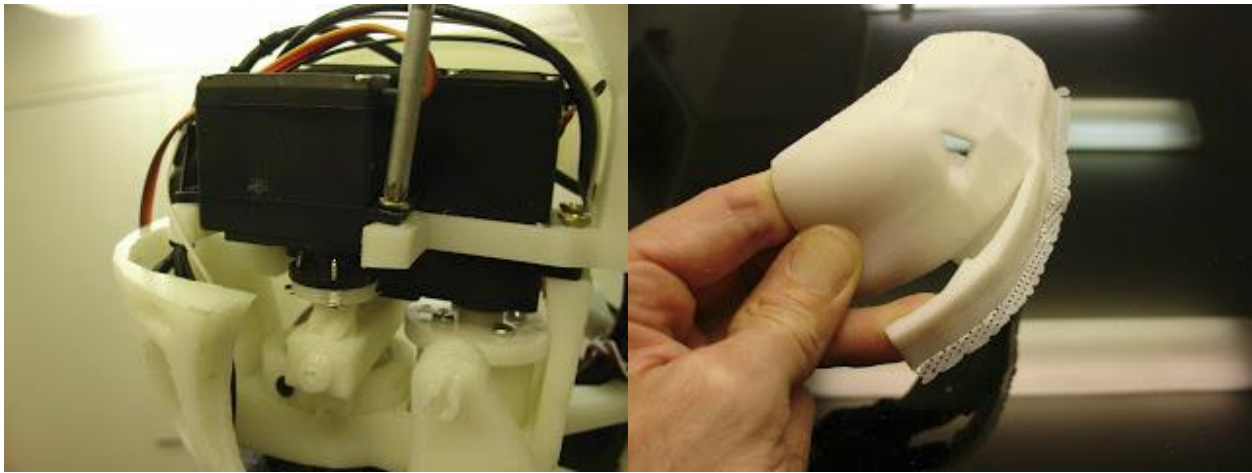Mount screw "SkullServoFix" over the HS-805BB servo.

Put all 4 screws. Don't mind the wires on my pictures they come from cameras.

Glue the two "JawHolders" on both sides of whole assembly with acetone. It comes/fit on the "FaceHolders".
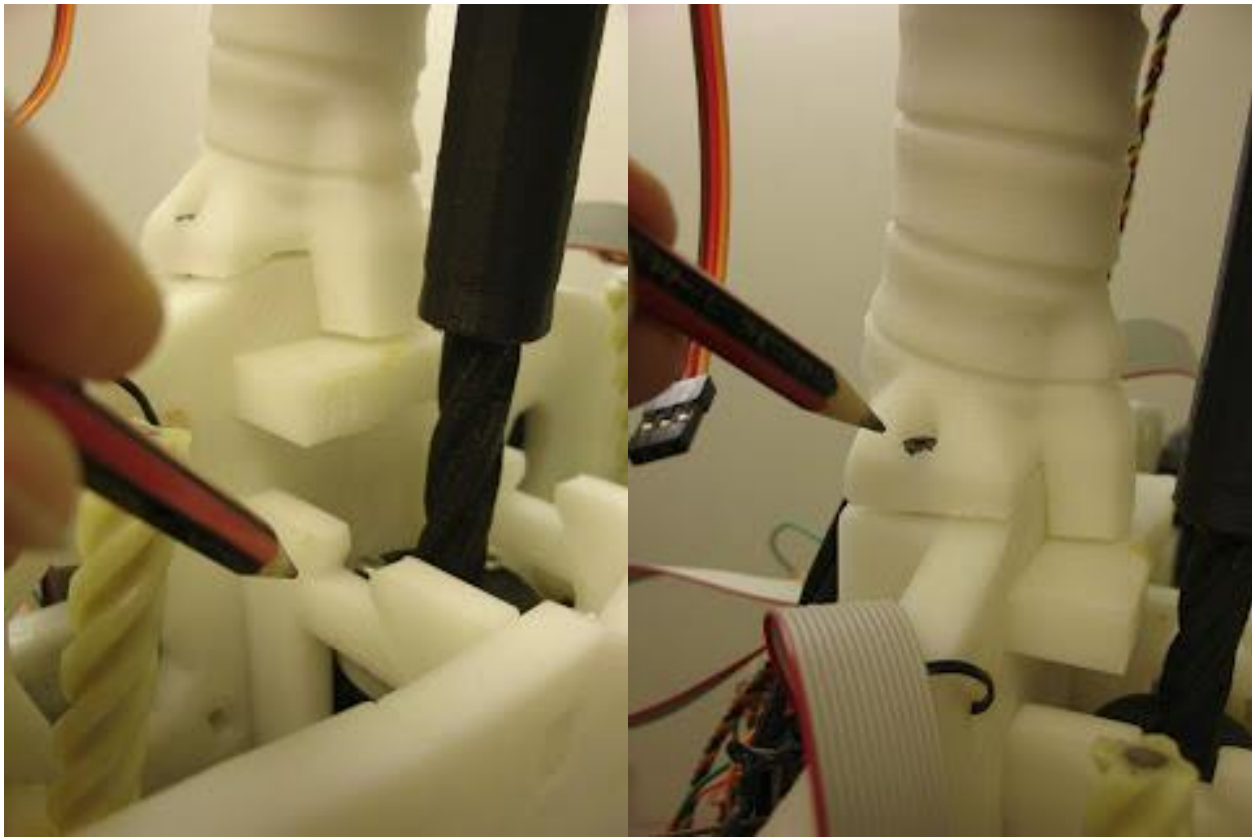

Now take your HK15298 assembly and slide it through.

Put all 4 screws to fix your HK15298 servo.
Remove the pre-support from "Jaw". My "Jaw" shown on this picture is only a half part. It was a previous test print I did. Your "Jaw" is one piece print.
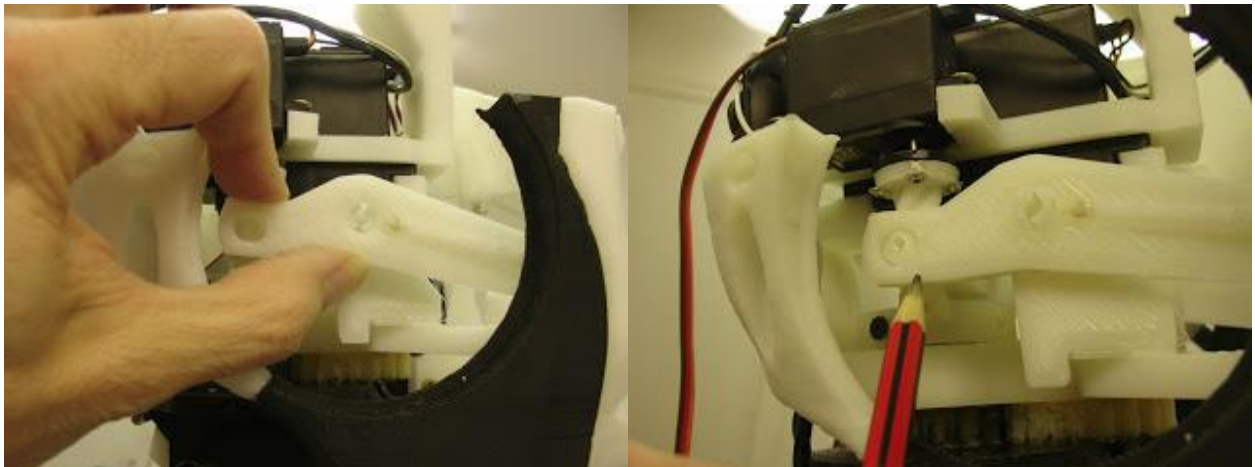
Screw "Jawsupport" to "Jaw". Make sure the flat surfaces of the "Jawsupport" are on the inside.
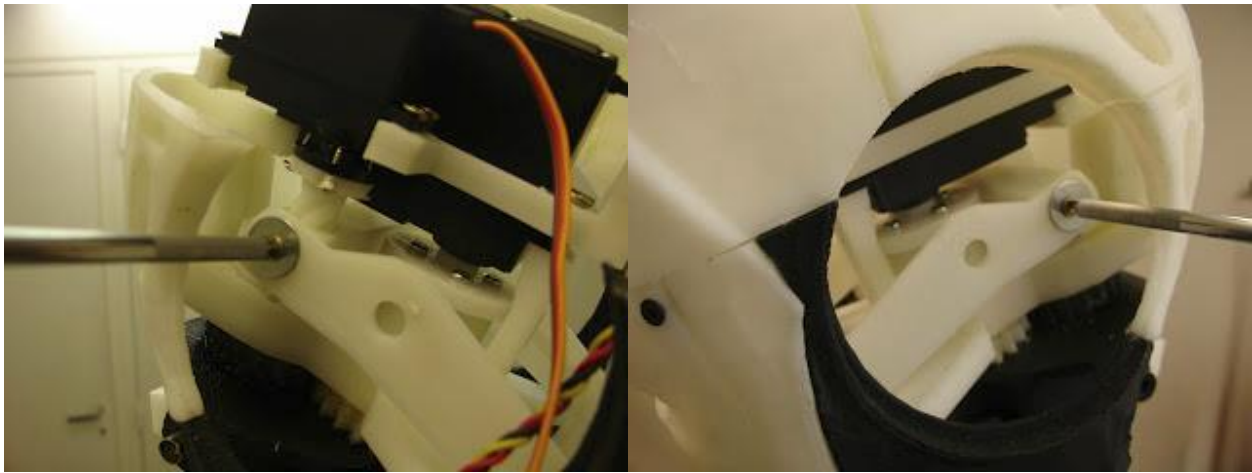
Fix in "ThroatHole". Mine looks different than yours. Sorry for this picture but "ThroatPiston" and "ThroatPistonBase" shouldn't be already mounted, it comes in the next steps.

Screw "Neck" to "ThroatHole".

Bring the "JawSupports" through and mount them to the "JawHinges" and "JawHolders"

Using washers, set screws in.
Run a test on the jaw mechanism with Arduino.
ATTENTION: Best guess is that the jaw servo can only turn from 0 to 20°. Trying to extend beyond this range might break something. CAREFULLY run your own tests to verify this.
You can run the cables of your servos in the "Neck".
Now you should be set to move the head and the jaw through your Arduino.
Check InMoov service Myrobotlab for to get this added to your robot. Jaw is not yet implemented in InMoov service at this date (08/03/2013).
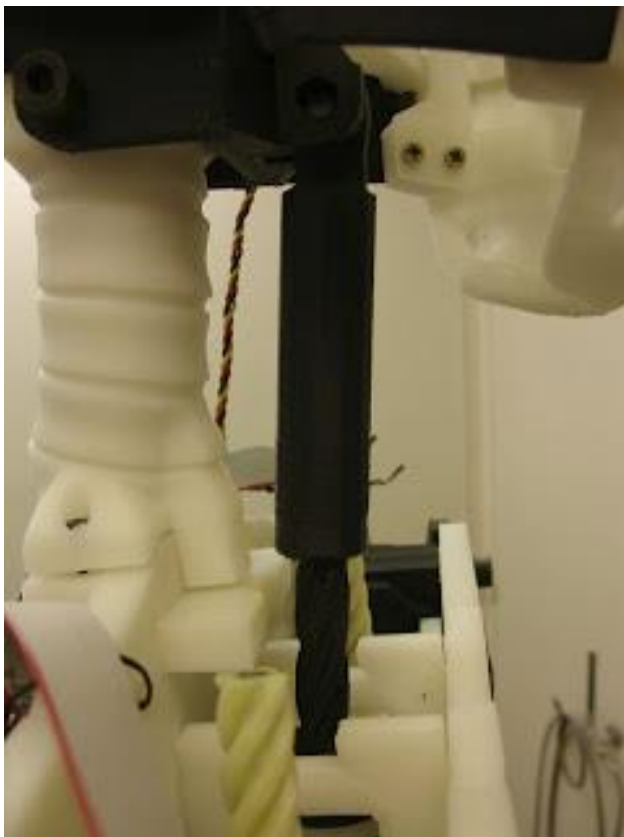
Fix "ThroatPistonBase" to "NeckHinge" with an 8mm bolt (or print one from the hand)

Now the whole head should be able to go up and down if the servo turns from 0 to 180. Make a test with the arduino. Run this test carefully.
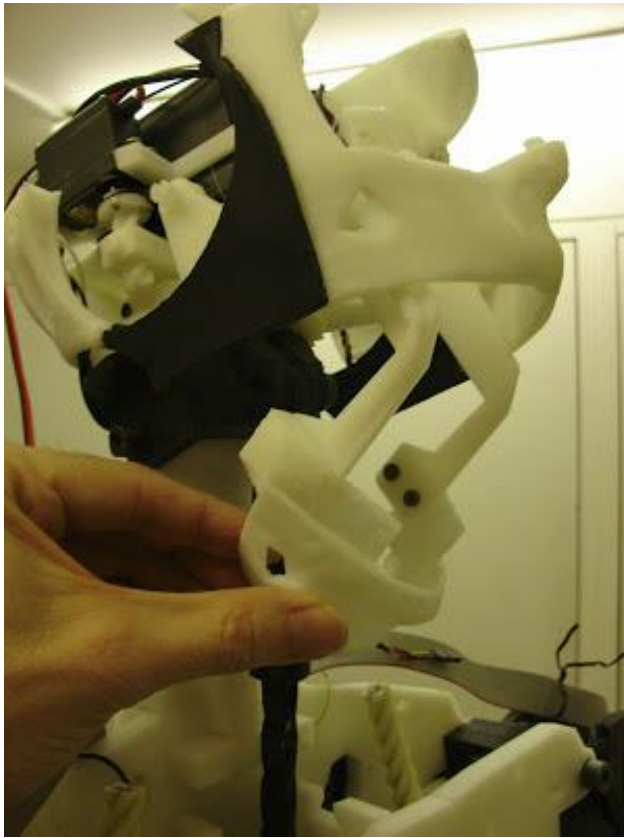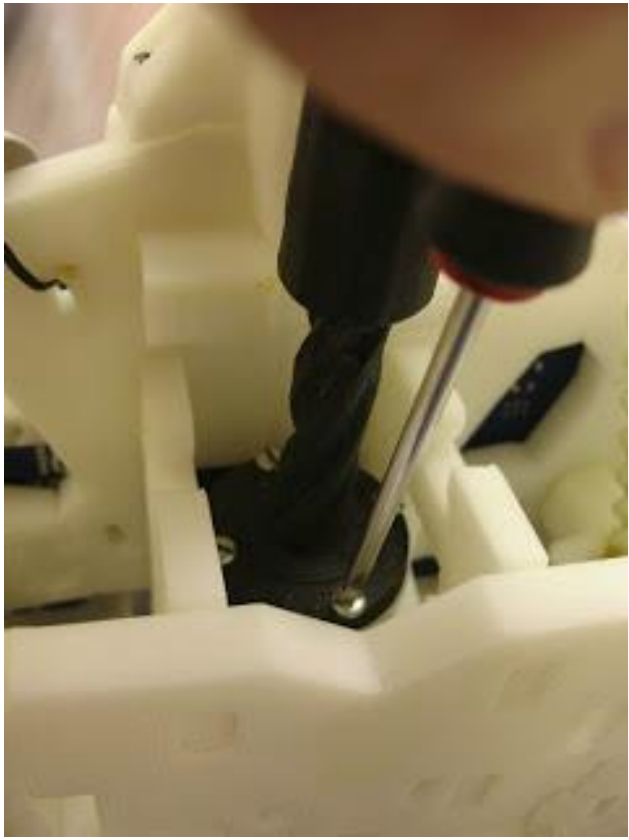
Leaving the head up, Slide the jaw assembly in to the head.

Fix "NeckHinge" to "Neck" with a 8mm bolt (or print one from the hand). Assuming you have already fixed your HS-805BB servo in the Torso assembly.

Set your servo at 90° with arduino board. Turn "ThroatPiston" and "ThroatPistonBase" in a matter to get "NeckHinge" straight flat.

Screw "ThroatPiston" to its turntable while keeping your servo at 90°.