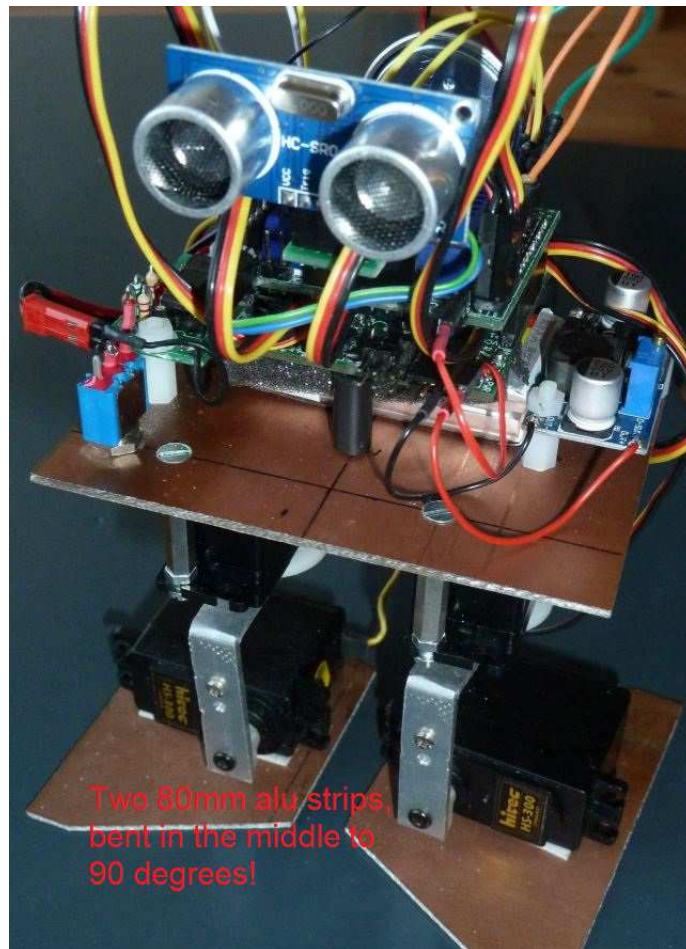


Biped building plan



autonomous version

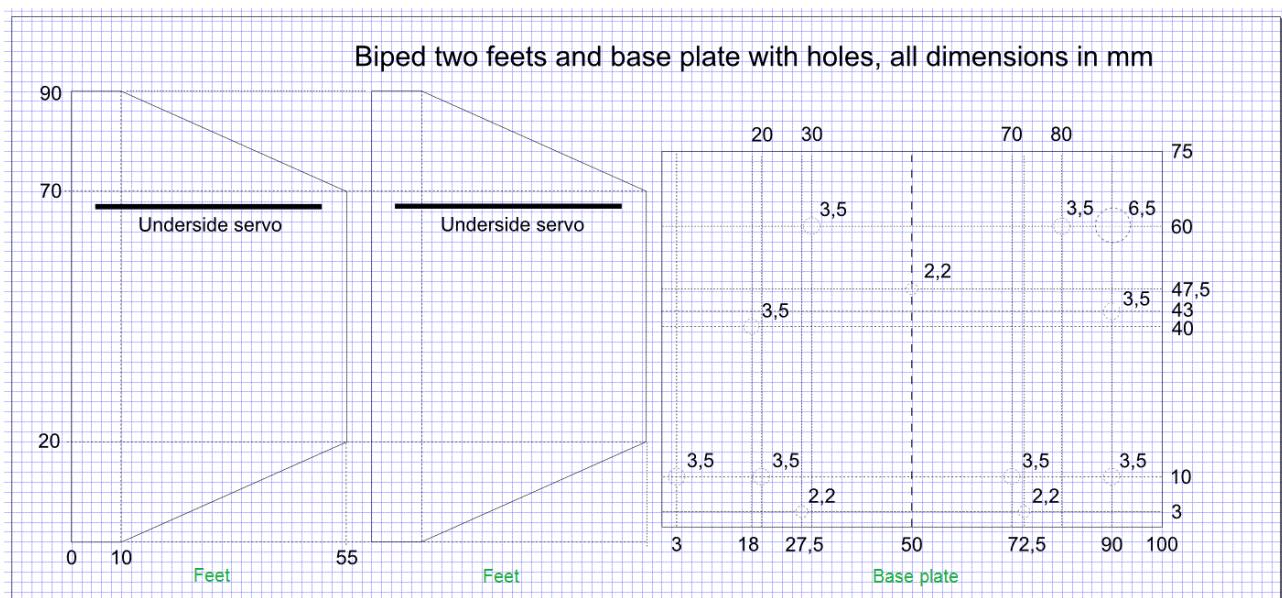
This is a photo series of the building steps of a simple biped.

- Collecting materials see BOM
- Cutting feet and baseplate
- Cutting and milling legs
- Constructing legs and feet and baseplate
- Testing the servomotors on bare biped version
- Adding Battery, power supply and on/off switch
- Adding Egel kit controller
- Connect all the wires
- Adding Ultrasonic sensor, speaker and Bluetooth module
- Connect for the first time and upload of software
- Test and adjust walk routines

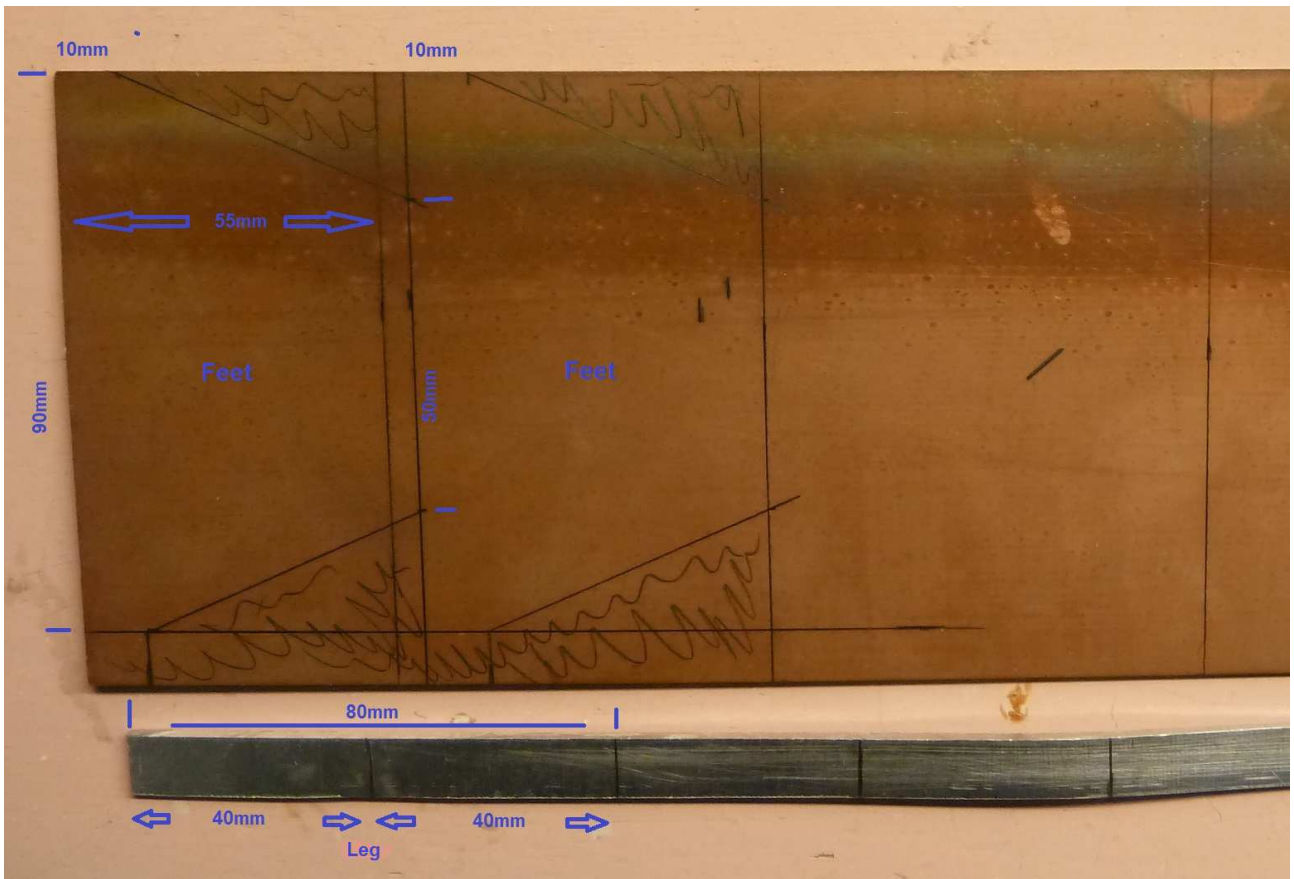
-- Biped material list --

- Material feet (3mm Plywood or 1,5mm alu, FR4 epoxy board)
- Material base plate (3mm Plywood or 1,5mm alu, FR4 epoxy board)
- Egel kit with shield
- 4x standard servo (HS-300/HS-311, Towerpro 996 or similar)
- Switched power supply 3 Amp. 5 Volt LM2596 (LM2596S DC-DC)
- Bluetooth module HC06 (HC-06 Bluetooth serial module)
- HC-SR04 ultrasonic sensor (see links)
- Beeper or small high impedance speaker (see links)
- Alu strip 2x 80mmx10mmx2mm flat
- Switch 3 Amp. (MTS-102 SPDT)
- 3x 15 mm column spacer m2
- 4x 10mm column spacer m3
- 4x 27mm column spacer m3
- 50mmx40mmx5mm of styrofoam
- Some wired, solder & connectors
- A few M3 bolts, nuts and small metal screws
- 6 cm double-sided sticky tape
- LiPo accu 7,4V - 900mAh (Lion power 7.4V 900MAH 25C 2s lipo)
- Lipo under voltage protection (See schematic)
- LiPo charger! (ImaxRC B3 Pro Compact, Balance Charger)

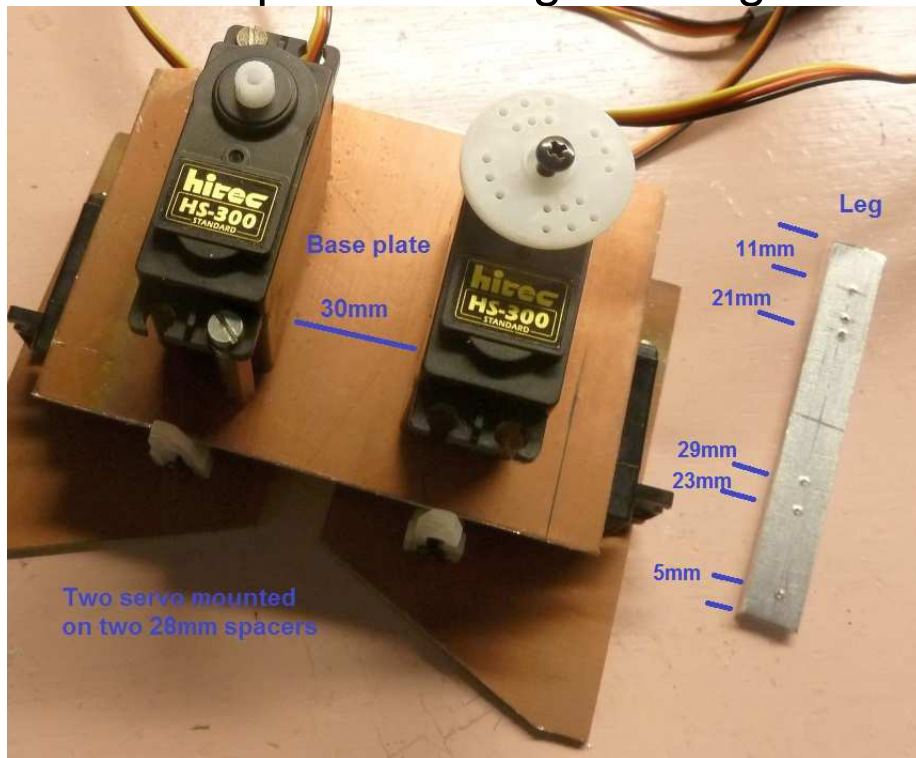
Drawings of feet and base plate



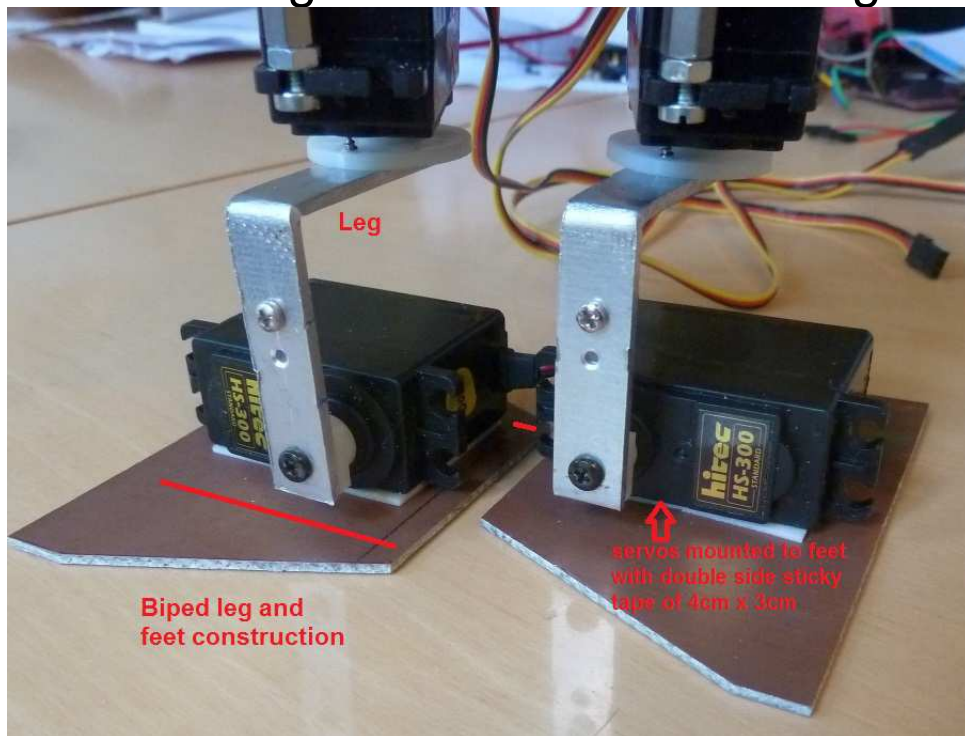
Marking the parts



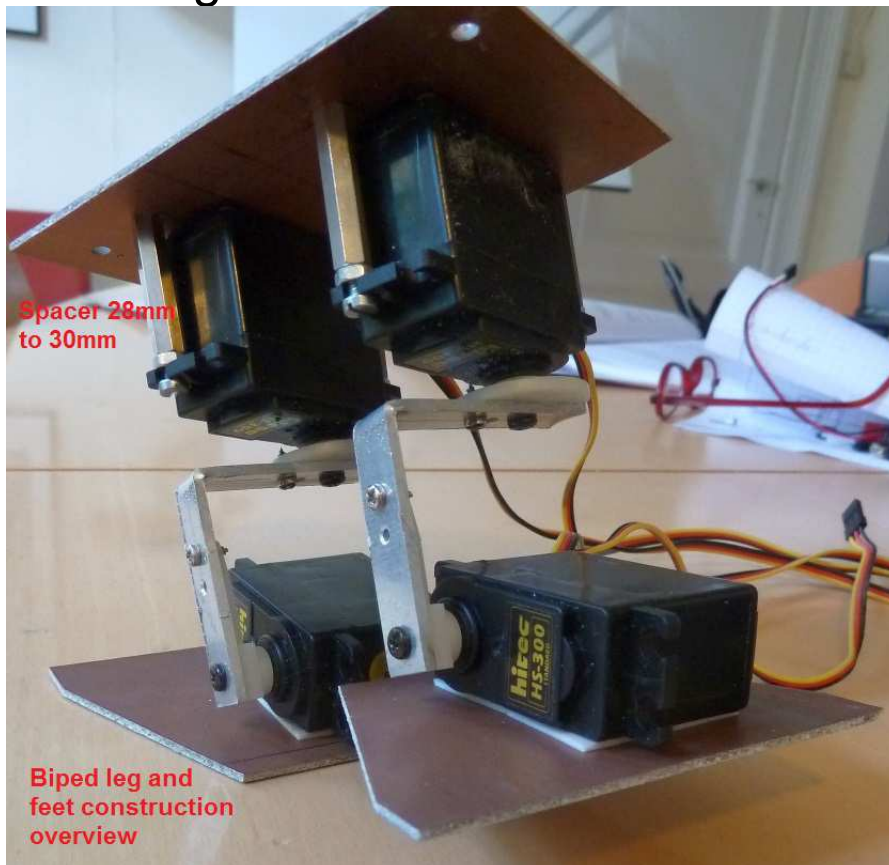
Base plate and leg markings



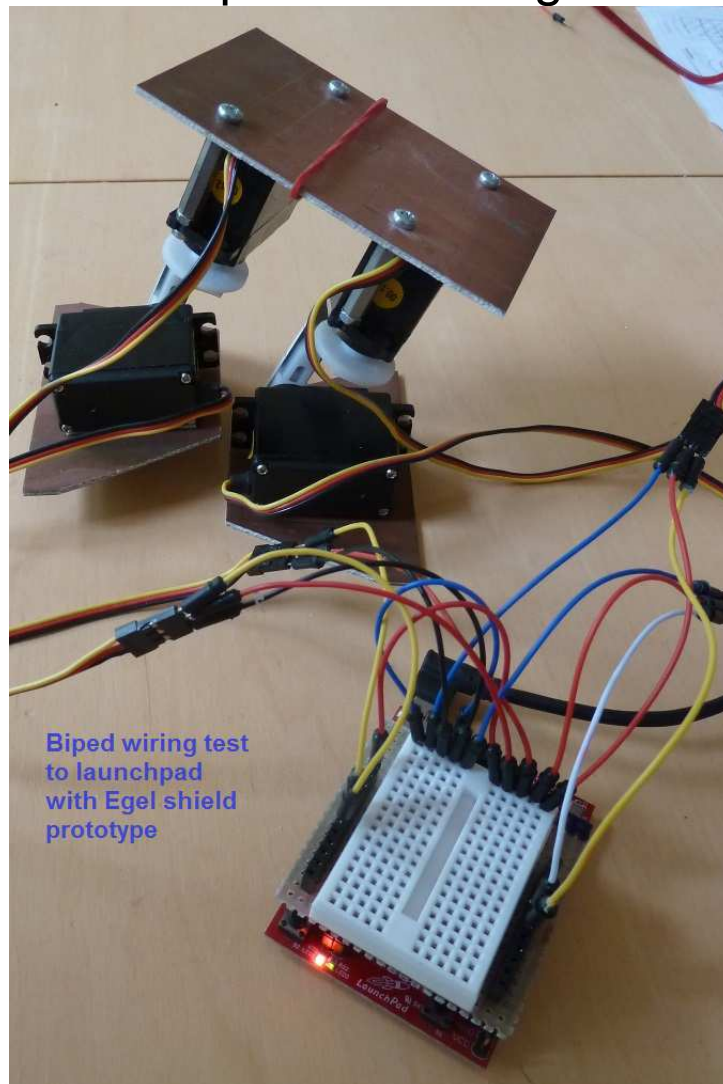
Connecting servo's the feet and legs



Leg construction overview



Biped test wiring



Connect the servo motors to a Launchpad or Egel kit.

- P1.4 to servo-0
- P1.5 to servo-1
- P1.6 to servo-2
- P1.7 to servo-3

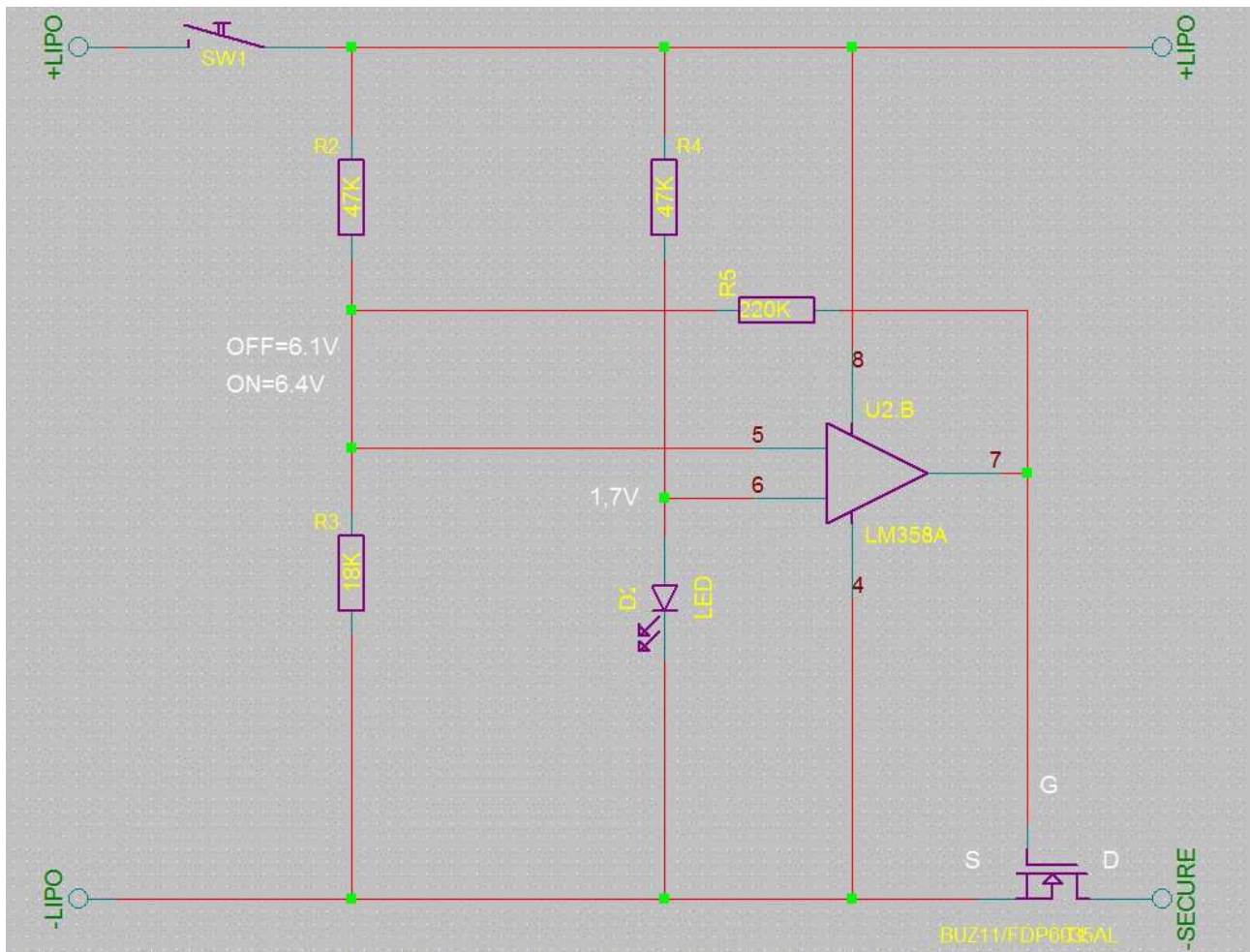
Load the E101a Walking biped software. And type: BIPED-ON
When all is ok the feet are straight forward and horizontal.
Then type: HELLO The robot then waves with one foot.
Walking can be tested by typing: 4 WALK

If this is not happening check all the connections.
Otherwise carry on with the building of the biped.

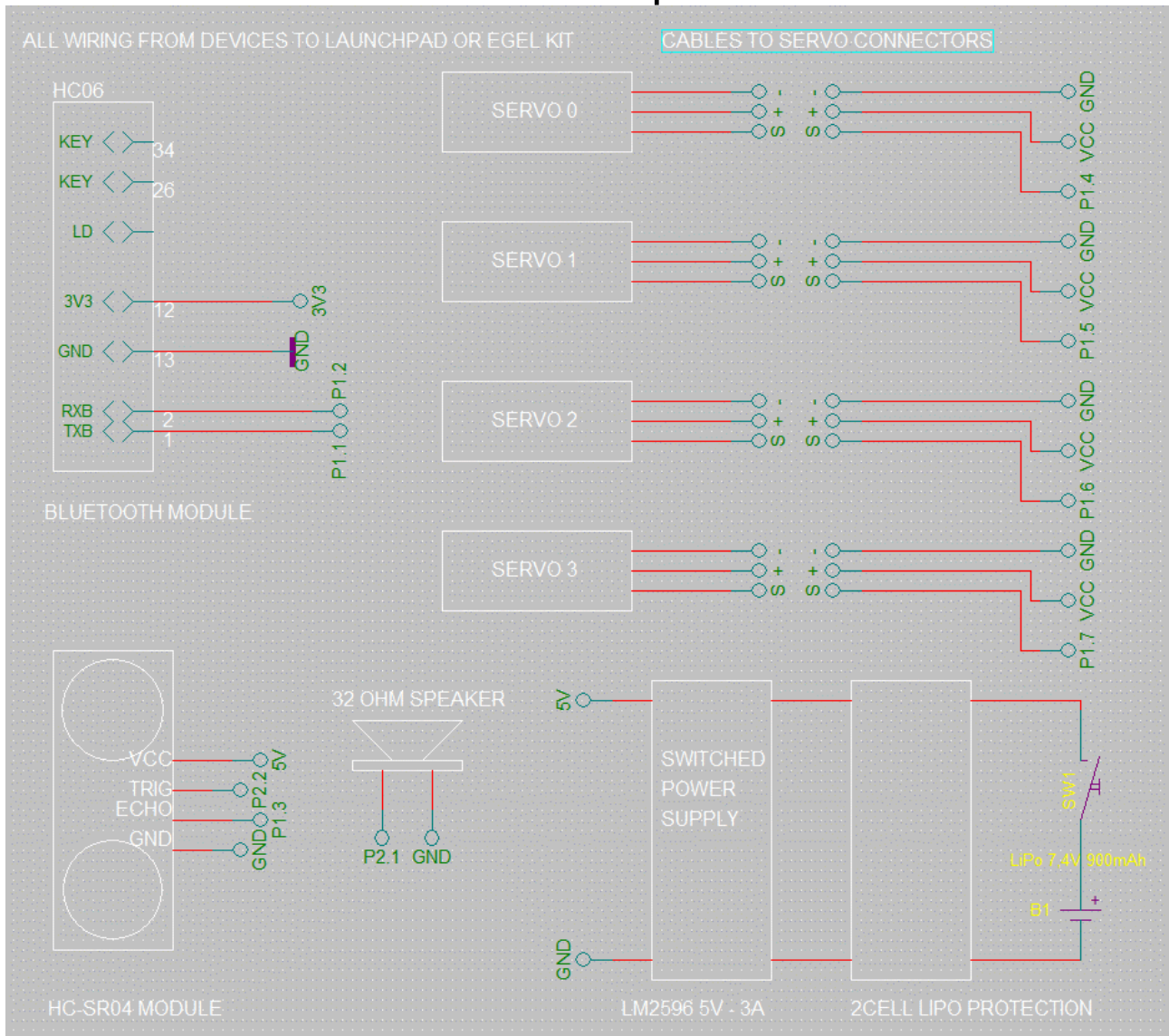
Placing the accu, power supply and Li-Po safe



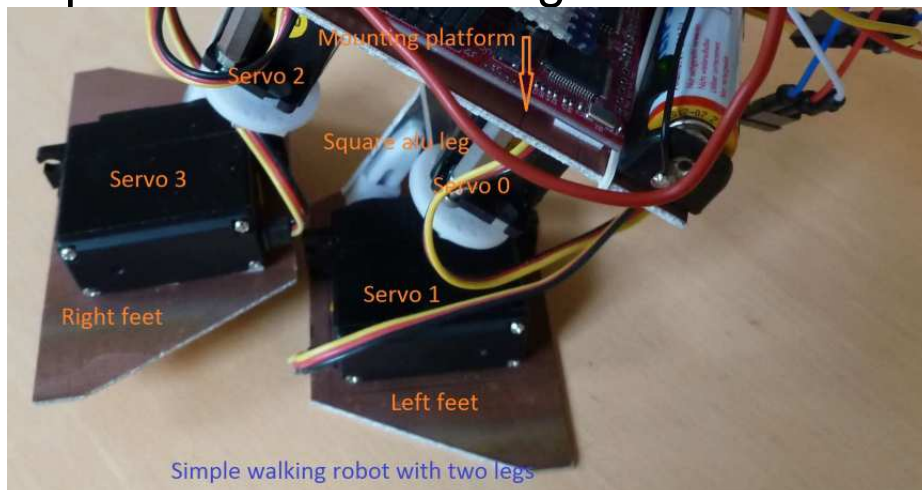
Schematics Li-Po safe



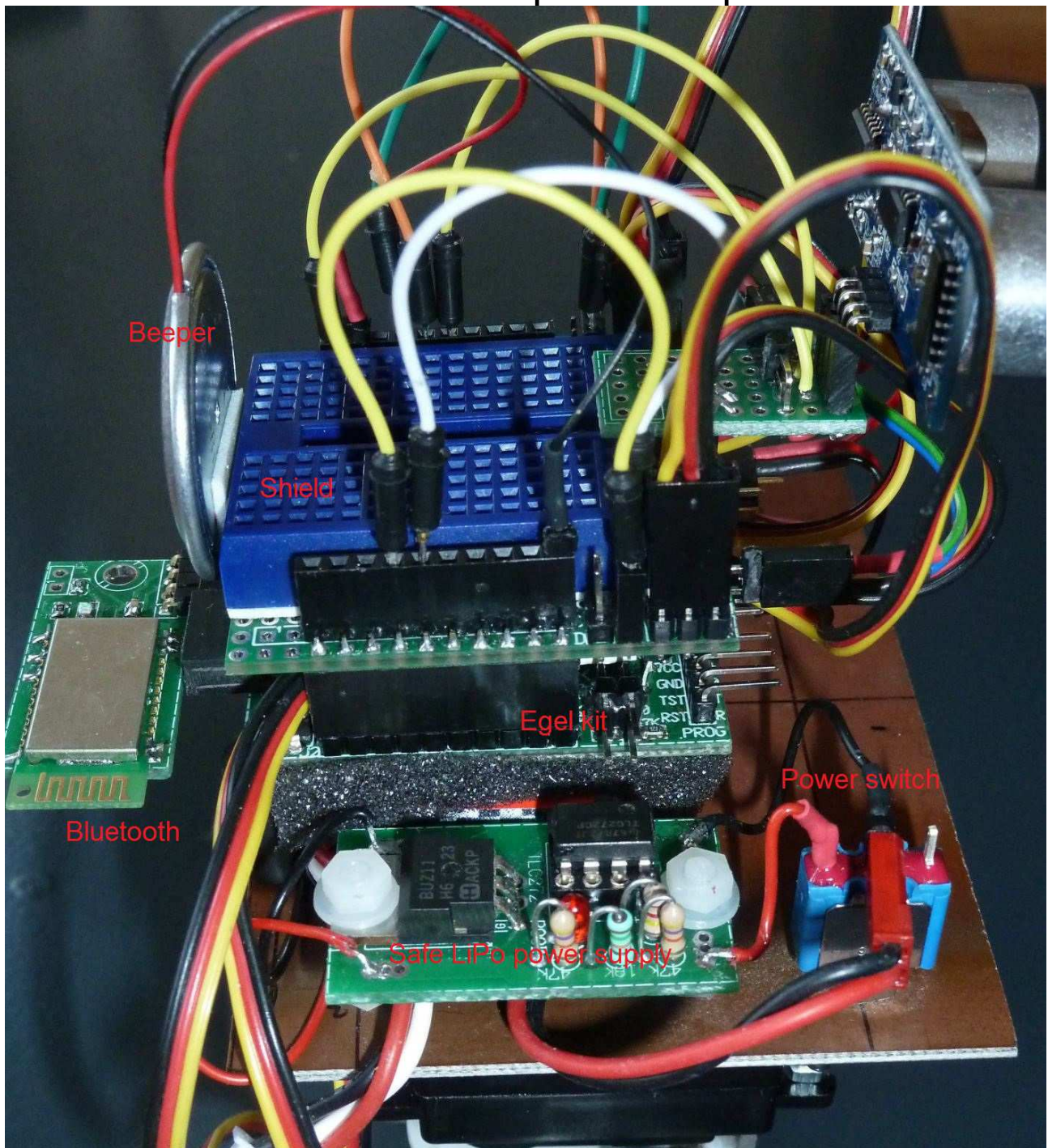
Schematics biped



Biped servo numbering from backside

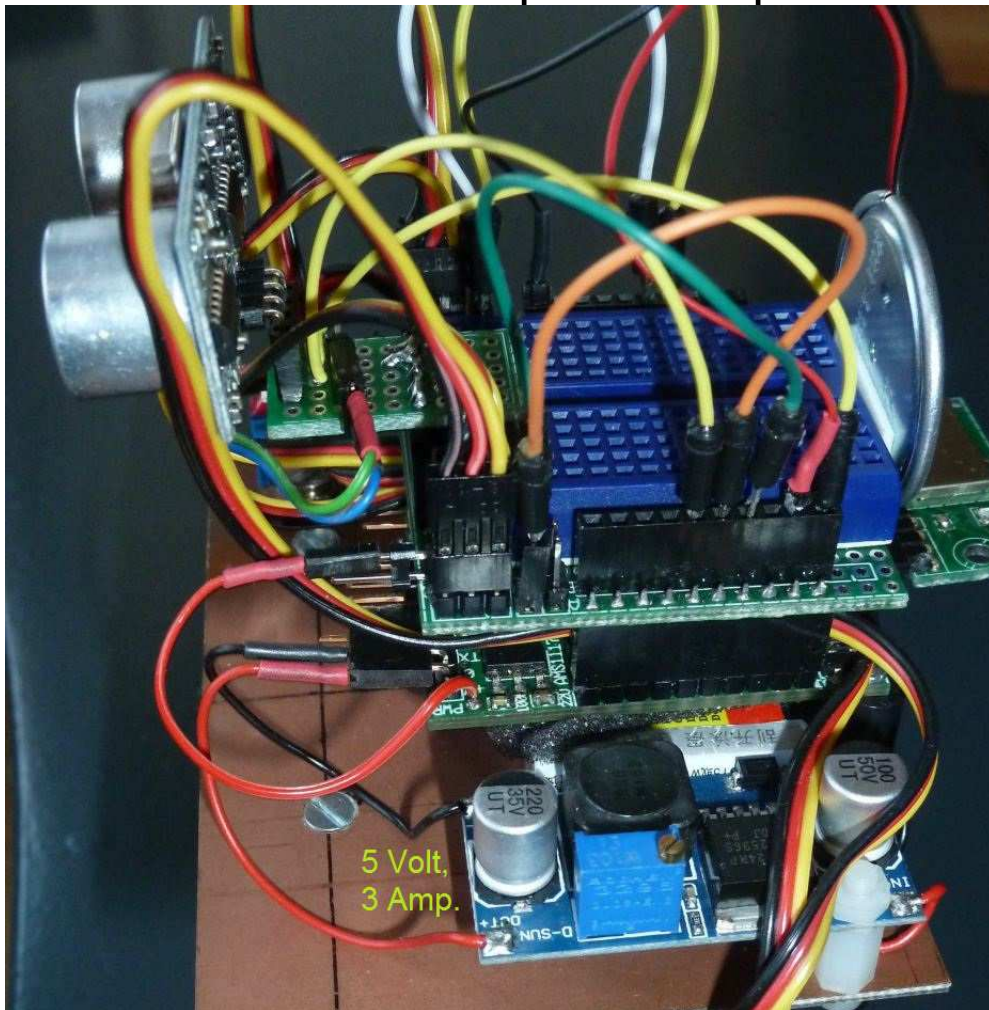


Overview main parts of biped



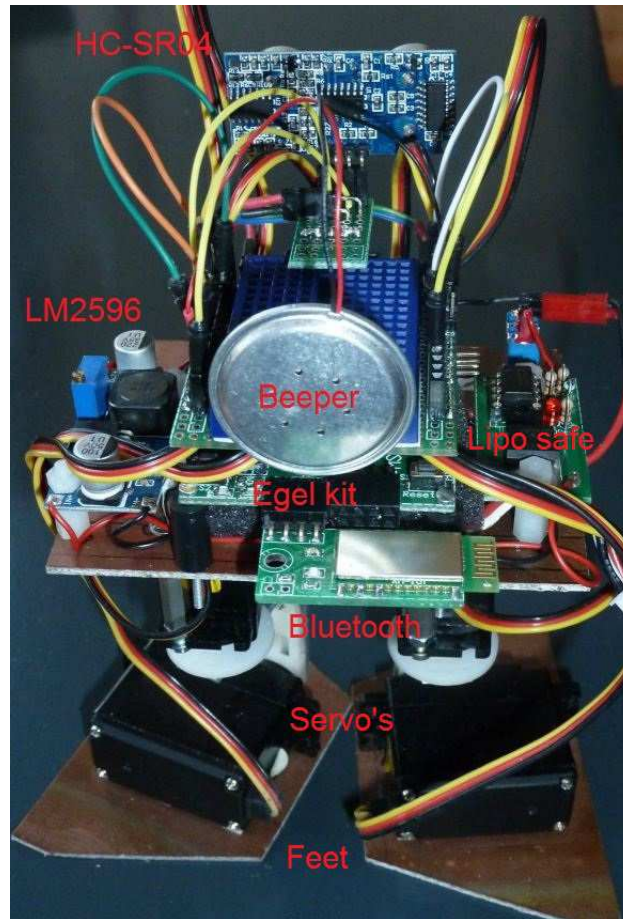
As seen from the right side of the biped

Overview main parts of biped



As seen from the left side of the biped

Overview main parts of biped



As seen from the backside of the biped