

1.0.1 PhantomX Robotic Turret Kit Assembly

I

Page 1 of 2 pages

OBJECTIVE:

Assemble a PhantomX Robotic Turret Kit and configure the Turret.

LOCATION:

Installed: UCSB Capstone Lab

Stowed: UCSB Capstone Lab

DURATION:

20 minutes

PARTS:

M2 Hex Nut

M3X6 Socket Head

M2X6 Socket Head

M2X8 Socket Head

M3X30 Standoff

M3X15 Standoff

M3x10 Socket Head

Base Plate

Top Plate

Mounting Plate

Dynamixel Cable

FTDI Cable

ArbotixM Board

Servo Motors

Hub

Washer

F2 Bracket

Power Jack

MATERIALS:

None

TOOLS REQUIRED:

M3 Hex Screwdriver 3mm

M2 Allen Wrench 2mm

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I

Page 2 of 2 pages

Stage 1: Attach ArbotixM to Base Plate

- 1.1 Attach 4 M3X10 Standoffs using 4 M3X6 Socket Heads. (Check that power socket is in the bottom left corner.)
- 1.2 Attach ArbotixM to the Base Plate using 4 M3X6 Socket Heads.

Stage 2: Attaching Motor 1

- 2.1 Attach Servo Motor 1 to the Top Plate using 10 M2X8 Socket Heads.
- 2.2 Attach F3 Bracket onto Horn of Servo Motor 1 using 4 M2X6 Socket Heads.

Stage 3: Attaching Motor 2

- 3.1 Align Horn of Servo Motor 1 to top line.
- 3.2 Attach Motor 2 onto F3 Bracket using 4 M2X6 Socket Heads (Check that the horn is pointing to the right).

Stage 4: Attaching Mounting Plate

- 4.1 Attach Top Servo Plate to F2 Bracket using 4 M2X8 Socket Heads and 4 M2 Nuts.
- 4.2 Create AX Hub Assembly and attach to ID Side of Servo Motor 2.
 - 4.2.1 Attach following parts in this order: M3X10 Socket Head -> Hub -> Washer -> F2 Bracket -> Washer
- 4.3 Fasten F2 Bracket on Horn Side using 4 M2X6 Socket Heads.

Stage 5: Top Plate to Base Plate Attachment

- 5.1 Screw 4 M3X30 Standoff with 4 M3X15 Standoff to create 4 different Standoffs.
- 5.2 Attach Standoffs to Bottom Plate using 4 M3X6 Socket Heads.
- 5.3 Attach 1 Dynamixel Cable from White Port on ArbotixM to Right Port of Servo Motor 1.
- 5.4 Attach 1 Dynamixel Cable from Left Port of Servo Motor 1 to Left Port of Servo Motor 2.
- 5.5 Attach FTDI Cable to ArbotixM.
- 5.6 Attach Top Plate to Base Plate using 4 M3X6 Socket Heads.

Stage 6: Robot Turret Checkout

- 6.1 Attach USB of FTDI Cable to Laptop.
- 6.2 Attach Power Jack to power port and plug into wall socket.
- 6.3 Run Robot Turret Simple Test Script.