Mechatronics Robot
Assembly guide

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Please unpack your Freescale mechatronics robot and carefully review the contents to make sure it matches the list below. If you find any damaged or missing parts, please contact customer service at **freescale.com/support**.

Mechatronics Robot Parts List

Part	Quantity	Description	Assembly Hardware	Quantity	Description
	2	Left and Right Robot Feet		20	Servo and Body Mounting Screws
	2	Left and Right Robot Legs		20	Servo and Body Nuts
	4	RC Servo Motors		4	Pivot Screws
	2	Body Assembly		8	Servo Mounting Screws
	1	Body Plate		8	Flange Bushings
	1	Tower Mechatronics Board		8	Nylon Locking Nuts
	2	Ear Panels		4	Circuit Board Mounting Screws
	1	Face Panel		4	Offset Spacers

STEP 1

Right Foot Sub-Assembly

1) Position pivot screw into **right** hole in foot (leave loose)
2) Position servo with wheel attached to mounting holes
3) Insert servo mounting screw through servo and robot foot
4) Thread servo mounting nut onto screw
5) Repeat steps 3 and 4 for three remaining screws and nuts
6) Tighten servo nuts onto servo screws

Servo Mounting Nuts

Servo with Wheel

Right Foot

Pivot Screw

Servo Mounting Screws

Pivot Screw

Servo Mounting Nuts

Servo with Wheel
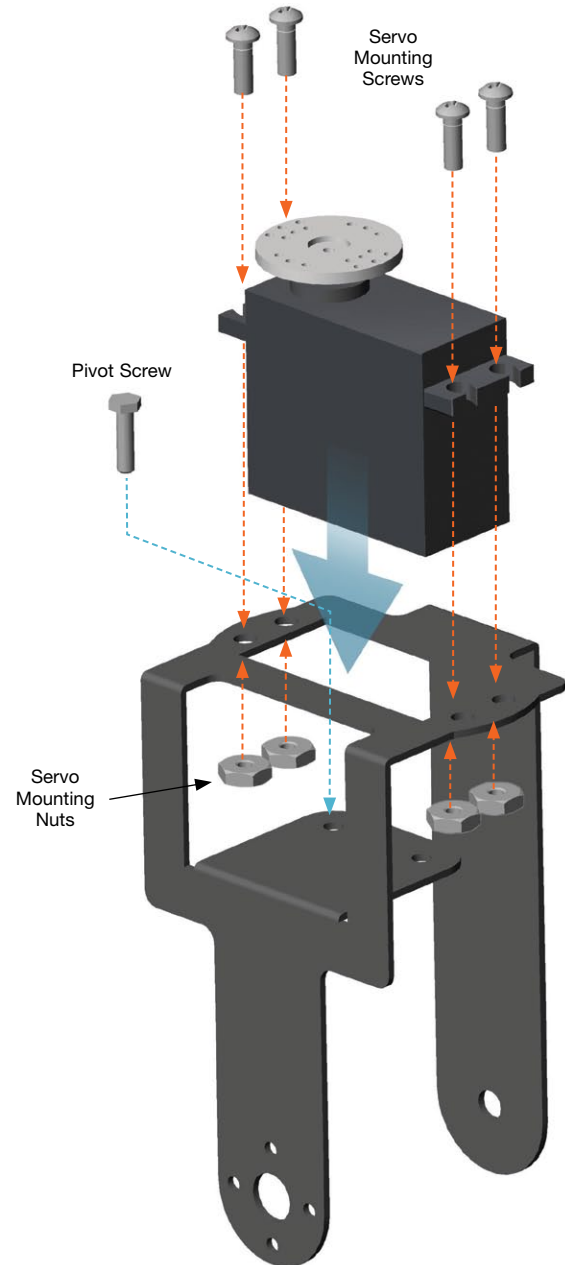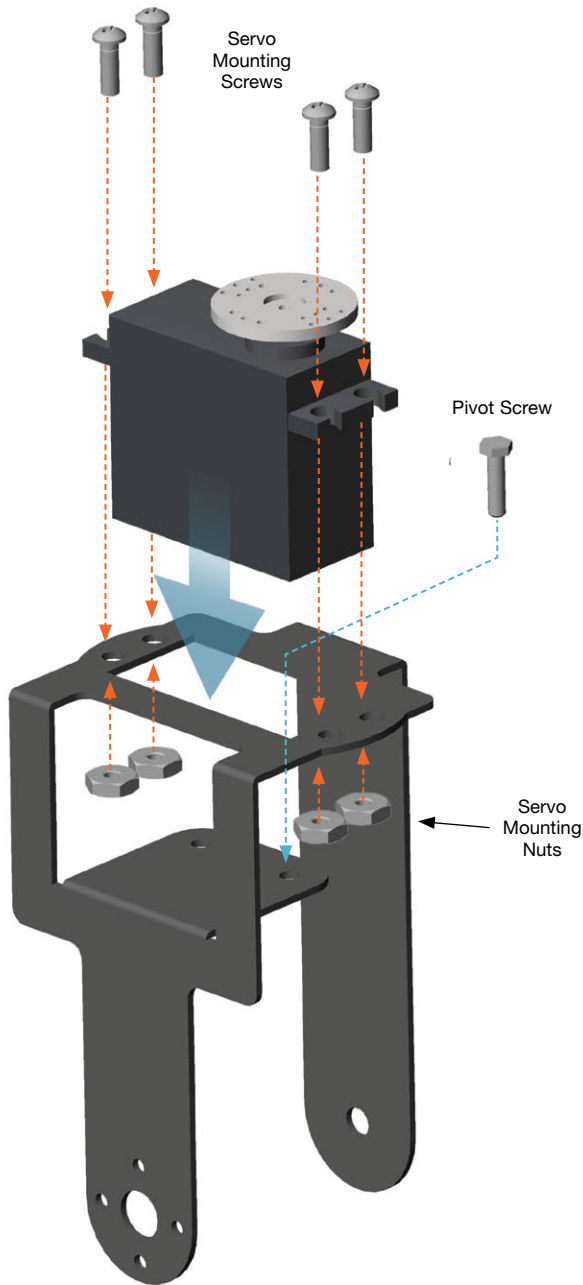
Left Foot

Servo Mounting Screws
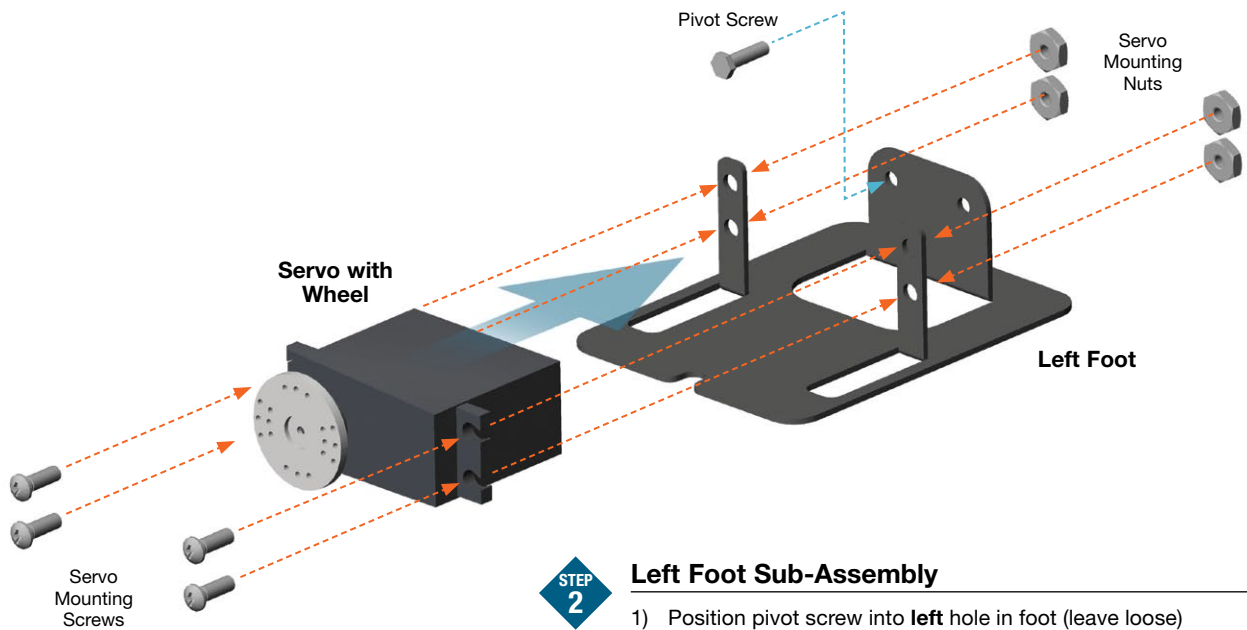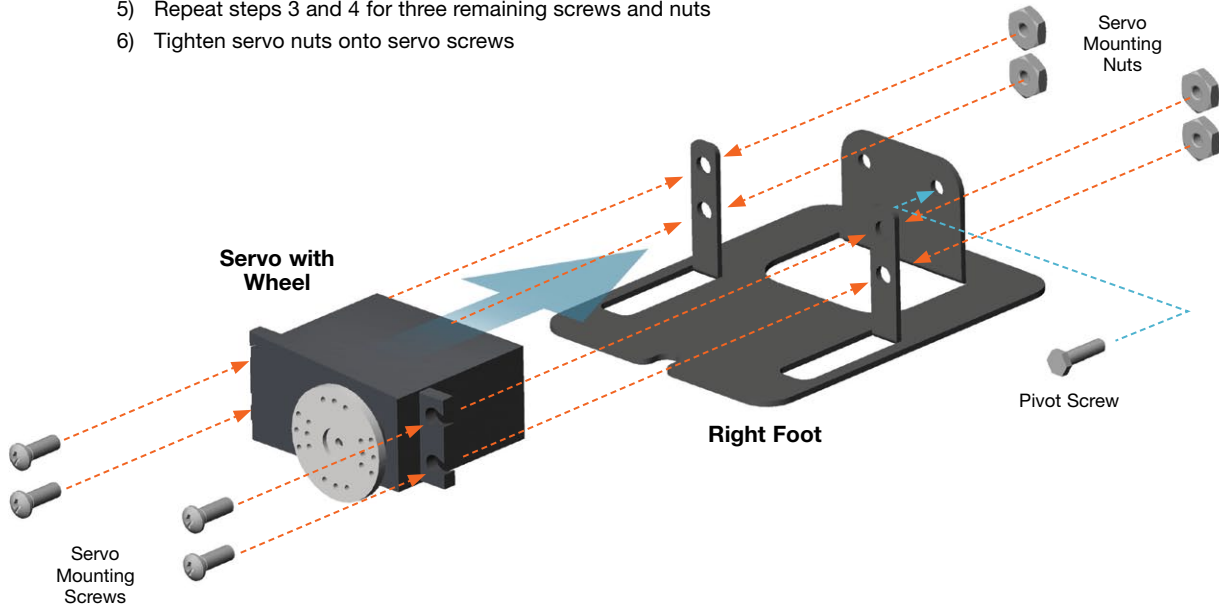
STEP 2

Left Foot Sub-Assembly

1) Position pivot screw into **left** hole in foot (leave loose)
2) Position servo with wheel attached to mounting holes
3) Insert servo mounting screw through servo and robot foot
4) Thread servo mounting nut onto screw
5) Repeat steps 3 and 4 for three remaining screws and nuts
6) Tighten servo nuts onto servo screws

STEP 3 — Right Leg Sub-Assembly
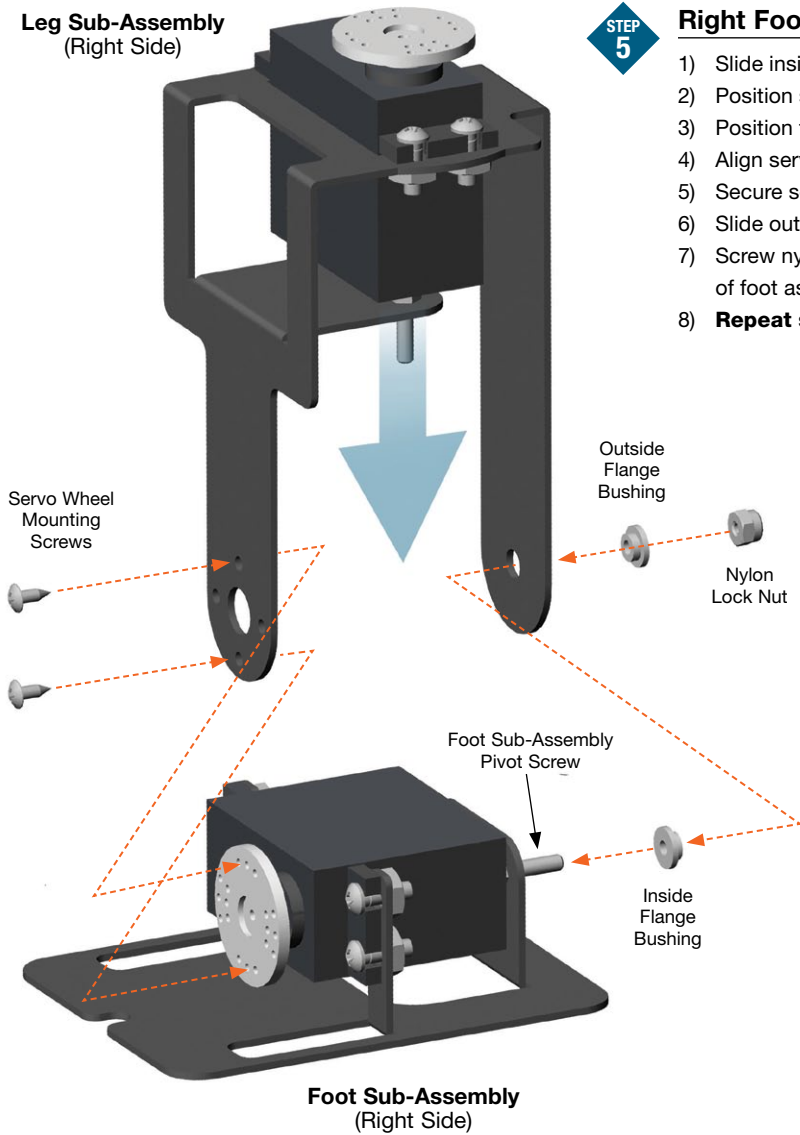
1) Position pivot screw into **right** hole in leg (leave loose)
2) Position servo with wheel attached to mounting holes
3) Insert servo mounting screw through servo and robot leg
4) Thread servo mounting nut onto screw
5) Repeat steps 3 and 4 for three remaining screws and nuts
6) Tighten servo nuts onto servo screws

Servo Mounting Screws

Pivot Screw

Servo Mounting Nuts

Servo Mounting Screws

Pivot Screw

Servo Mounting Nuts

STEP 4 — Left Leg Sub-Assembly

1) Position pivot screw into **left** hole in leg (leave loose)
2) Position servo with wheel attached to mounting holes
3) Insert servo mounting screw through servo and robot leg
4) Thread servo mounting nut onto screw
5) Repeat steps 3 and 4 for three remaining screws and nuts
6) Tighten servo nuts onto servo screws

Leg Sub-Assembly
(Right Side)

Servo Wheel
Mounting
Screws

Outside
Flange
Bushing

Nylon
Lock Nut

Foot Sub-Assembly
Pivot Screw

Inside
Flange
Bushing

Foot Sub-Assembly
(Right Side)
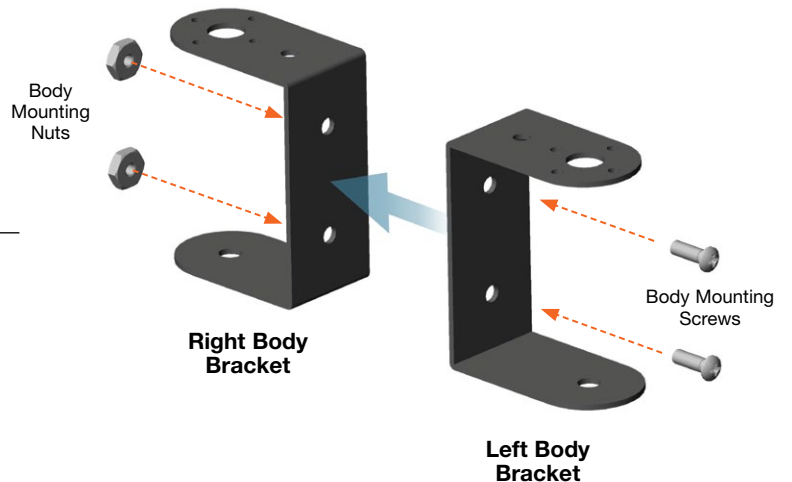
STEP 5

Right Foot Sub-Assembly to Leg Sub-Assembly

1) Slide inside flange bushing onto foot pivot screw
2) Position servo wheel in home position
3) Position foot sub assembly pivot screw into leg assembly hole
4) Align servo wheel holes with leg assembly clearance holes
5) Secure servo wheel to leg sub-assembly using two screws
6) Slide outside flange bushing onto pivot screw
7) Screw nylon locking nut onto pivot screw, making sure to allow movement of foot assembly on leg sub-assembly
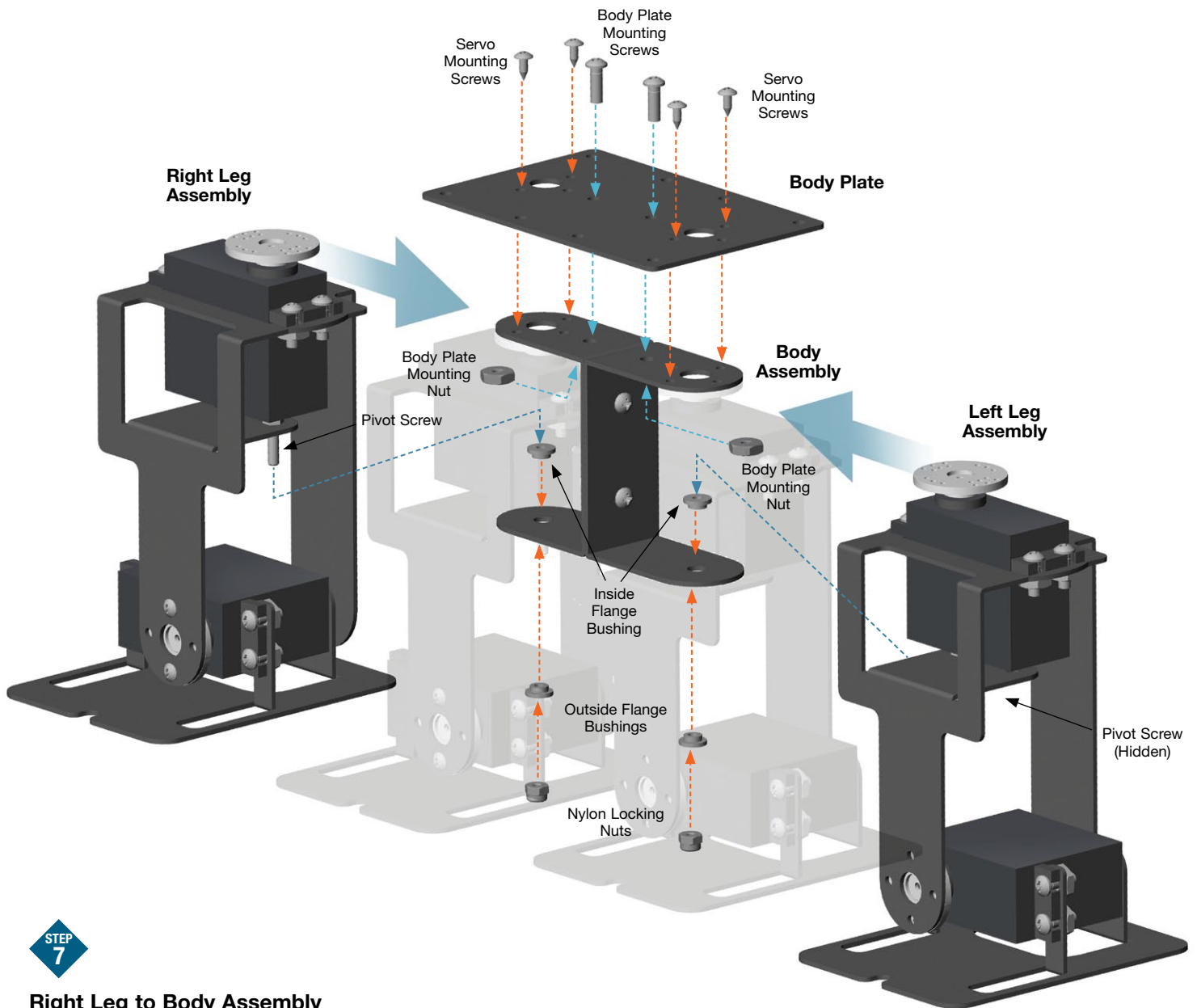8) **Repeat steps 1 through 7 for other (left) foot to leg sub-assemblies**

**Completed Leg
Assembly**
(Right Side)

**Completed Leg
Assembly**
(Left Side)

STEP 6

Body Sub-Assembly

1) Position right and left body halves together, aligning clearance holes
2) Insert body mounting screw through clearence hole
3) Thread body mounting nut onto screw
4) Repeat steps 2 and 3 for other mounting screw and nut
5) Tighten both nuts onto screws

Body
Mounting
Nuts

Body Mounting
Screws

**Right Body
Bracket**

**Left Body
Bracket**

Servo Mounting Screws

Body Plate Mounting Screws

Servo Mounting Screws

Right Leg Assembly

Body Plate

Body Plate Mounting Nut

Pivot Screw

Body Assembly

Left Leg Assembly

Body Plate Mounting Nut

Inside Flange Bushing

Outside Flange Bushings

Pivot Screw (Hidden)

Nylon Locking Nuts

STEP 7

Right Leg to Body Assembly

1) Slide inside flange bushing onto leg pivot screw
2) Position servo wheel to home position
3) Position leg assembly pivot screw into body assembly hole
4) Position body plate on body assembly, lining up servo wheel mounting holes
5) Secure body plate to body assembly with two screws and nuts
6) Secure servo wheel to body assembly and body plate with two screws
7) Slide outside flange bushing onto pivot screw
8) Screw nylon locking nut onto pivot screw

STEP 8

Left Leg to Body Assembly

1) Repeat steps 1 through 3, then steps 6 through 8 from "Right Leg to Body Assembly"
2) Tighten both right and left nylon lock nuts, allowing movement of legs on body assembly

STEP 9

Circuit Board to Body

1) Insert (4) AA batteries into battery holder on back of board
2) Insert circuit board mounting screw through circuit board, offset and body plate **(Note: The "toes" of the robot indicate the front of the robot. The robot face should be on the same side as the toes.)**
3) Secure screw with locking nut
4) Repeat steps 2 and 3 for three remaining mounting screws
5) Tighten all four nuts

Circuit Board Mounting Screws

Circuit Board

Offset Spacers

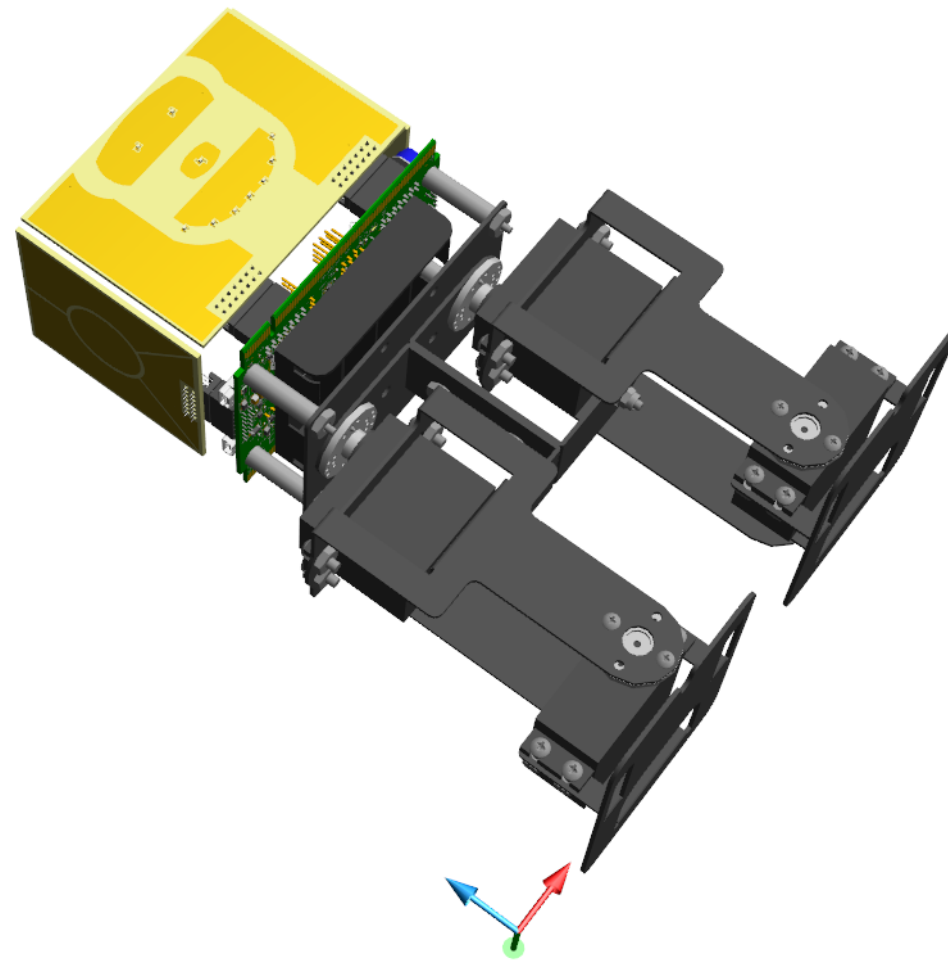**Body Plate**

Nylon Locking Nuts
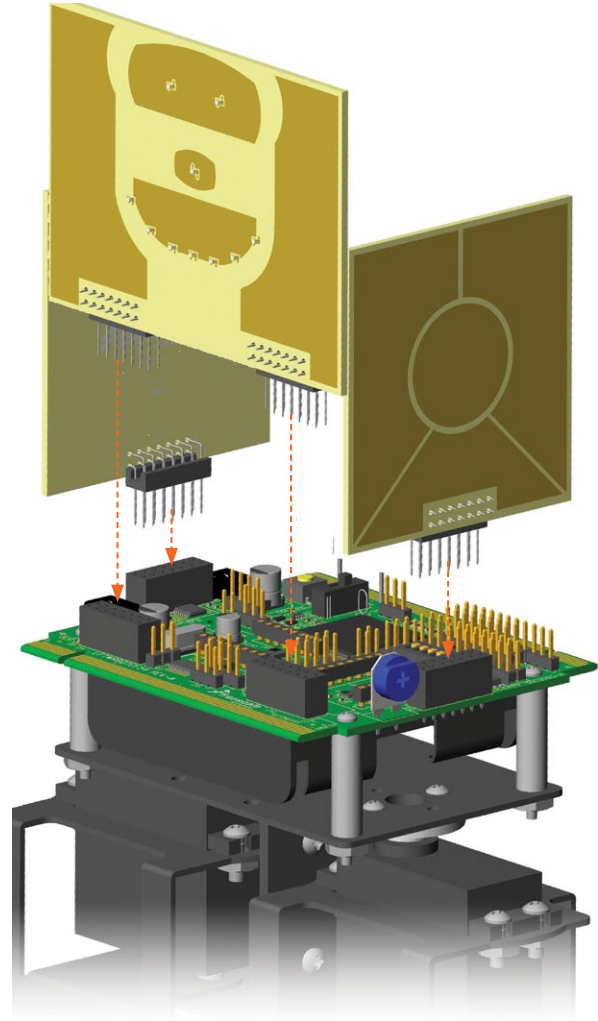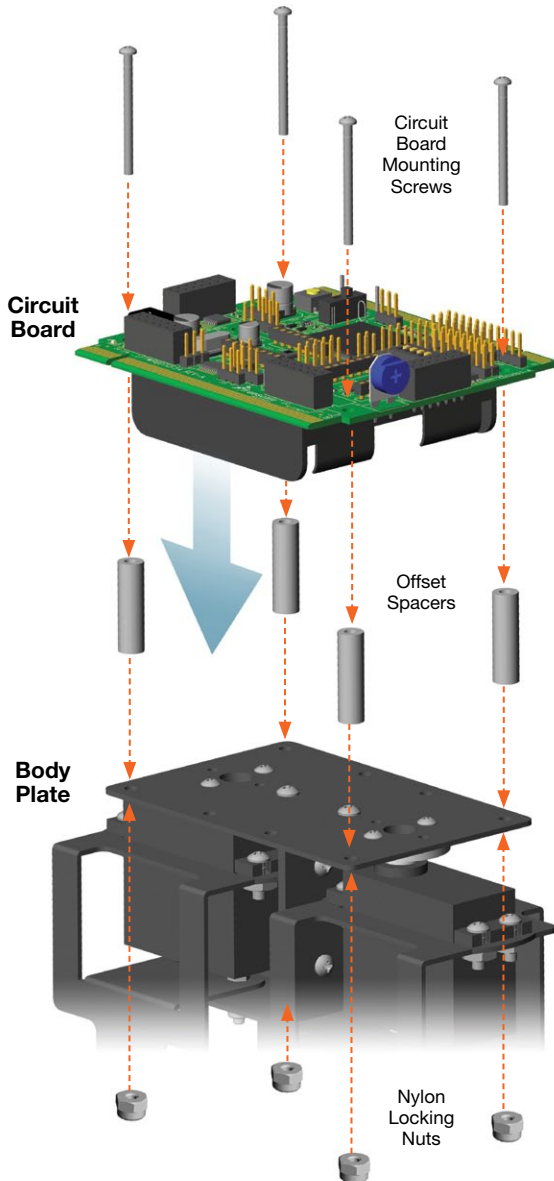
STEP 10

Face and Ears to Circuit Board

1) Align robot face and ears as shown with circuit board headers
2) Gently push into headers

STEP 11

Operation and Programming

1) Refer to the included TWR-MECH Quick Start Guide for programming information and where to download software
2) For more information about Freescale's mechatronics robot, please visit **freescale.com/mechbot**

USER INTERACTIVE
VIEW

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