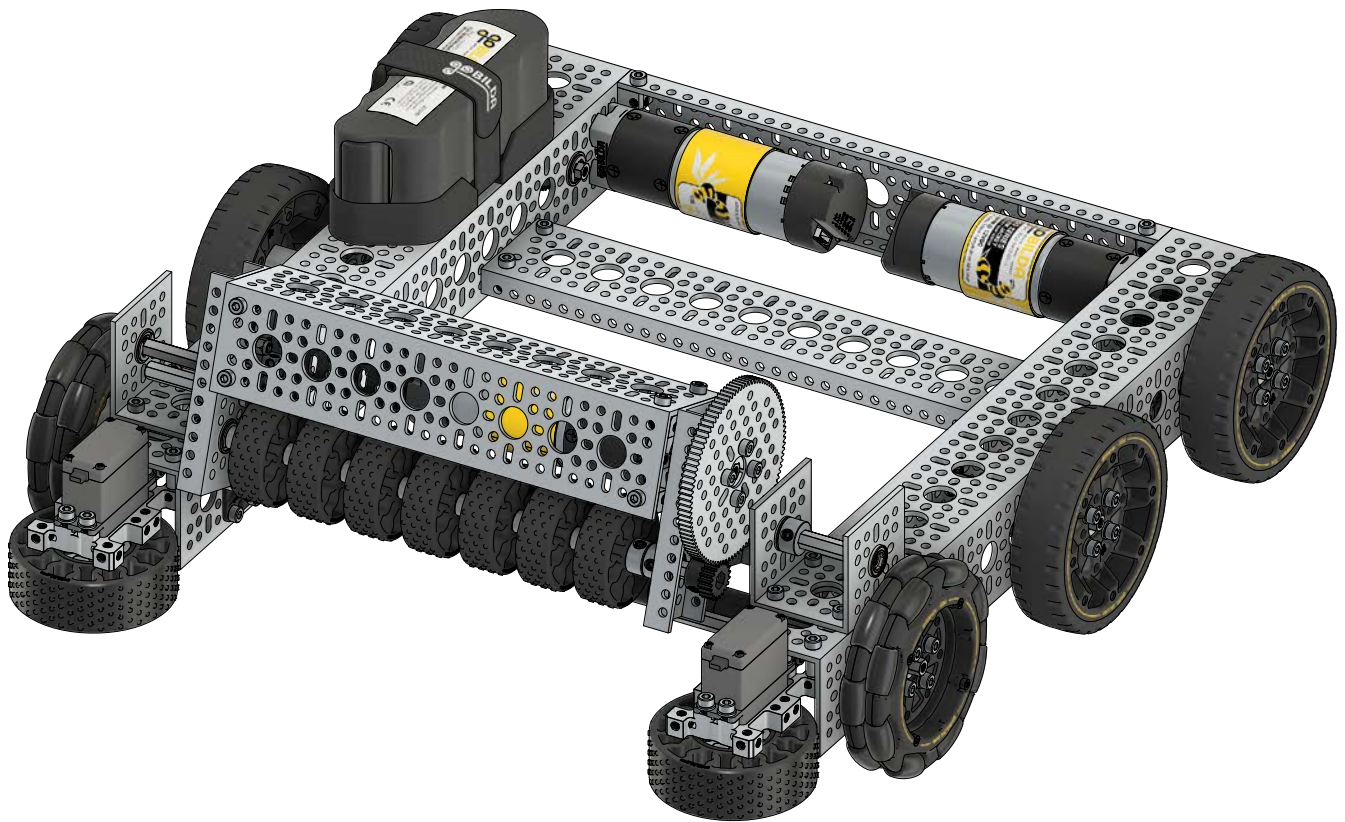
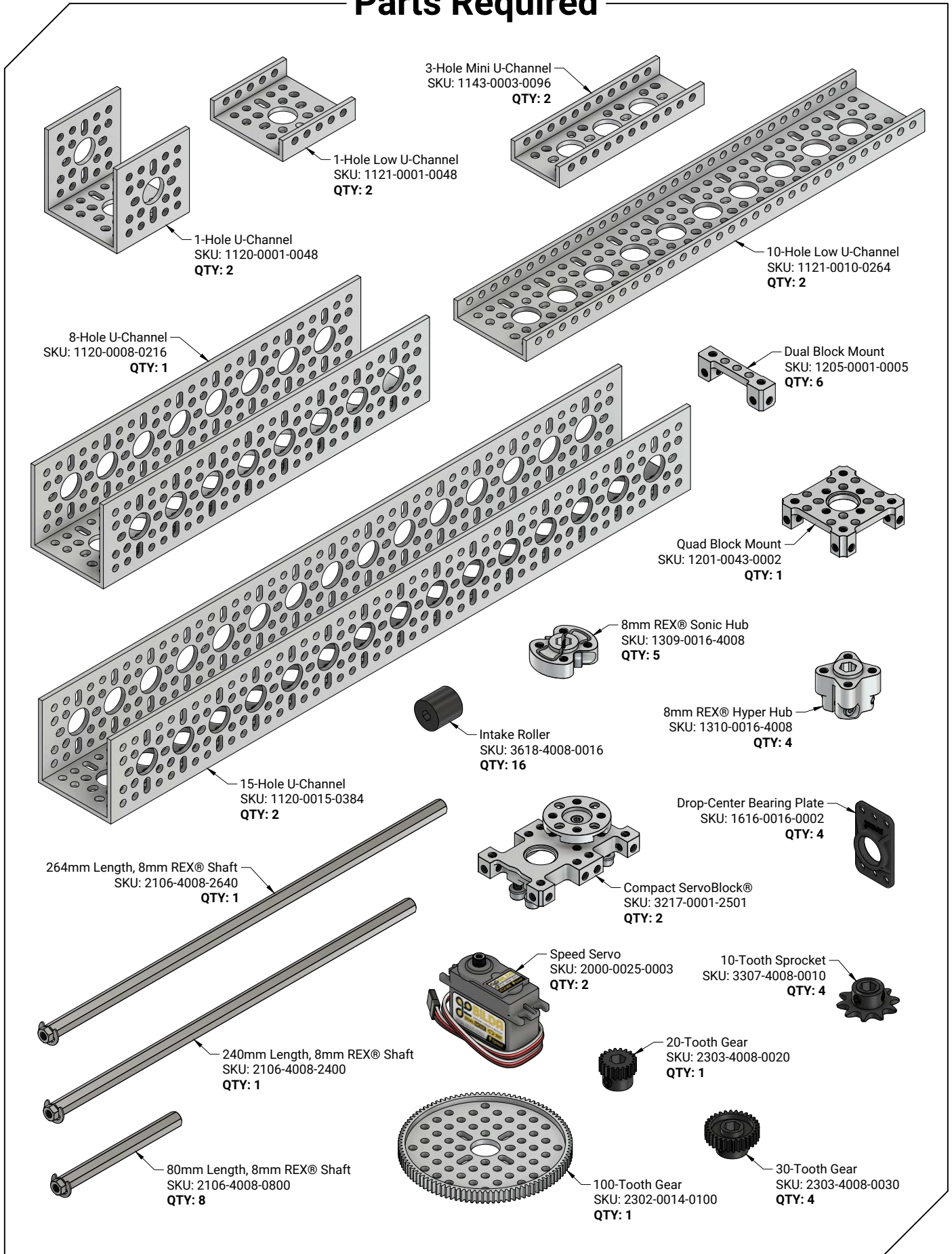




Assembly Instructions for
FTC StarterBot (for 2026-2027 Preseason)
Built from the FTC Starter Kit (SKU: 3200-4008-2627)



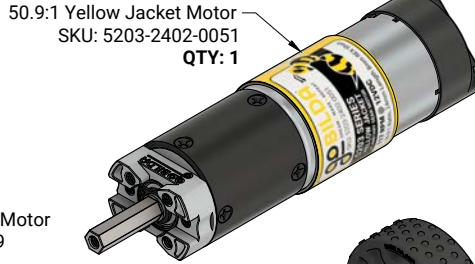
Parts Required



Parts Required (Cont)



19.2:1 Yellow Jacket Motor
SKU: 5203-2402-0019
QTY: 2



50.9:1 Yellow Jacket Motor
SKU: 5203-2402-0051
QTY: 1



Omni Wheel
SKU: 3624-0014-0096
QTY: 2

48mm GripForce® Gecko Wheel
SKU: 3613-4008-0048
QTY: 7



72mm GripForce® Gecko Wheel
SKU: 3613-0014-0072
QTY: 2

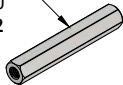


Hogback Wheel
SKU: 3626-0014-0096
QTY: 4

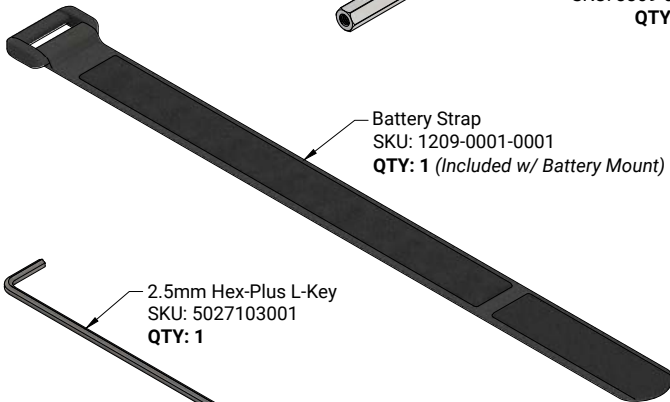


24mm Length, 8mm REX® Standoff
SKU: 1516-4008-0240
QTY: 1

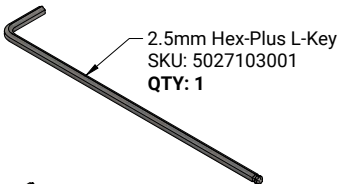
43mm Length, 8mm REX® Standoff
SKU: 1516-4008-0430
QTY: 2



Plastic Chain
SKU: 3309-0108-0050
QTY: 92 Links



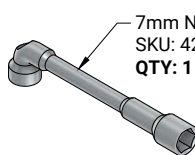
Battery Strap
SKU: 1209-0001-0001
QTY: 1 (Included w/ Battery Mount)



2.5mm Hex-Plus L-Key
SKU: 5027103001
QTY: 1



3mm Hex-Plus L-Key
SKU: 5027104001
QTY: 1



7mm Nut Driver
SKU: 4206-0070-0001
QTY: 1



Battery Mount
SKU: 1209-0001-0001
QTY: 1



12V Battery
SKU: 3100-0012-0020
QTY: 1

8mm Socket Head Screw
SKU: 2800-0004-0008
QTY: 8



10mm Socket Head Screw
SKU: 2800-0004-0010
QTY: 66



12mm Socket Head Screw
SKU: 2800-0004-0012
QTY: 45



20mm Socket Head Screw
SKU: 2800-0004-0020
QTY: 4



Locknut
SKU: 2812-0004-0007
QTY: 34



Washer
SKU: 2801-0004-0008
QTY: 32



0.5mm Shim
SKU: 2807-0811-0500
QTY: 6



4mm ID Spacer
SKU: 1502-0006-0110
QTY: 4



8mm ID Spacer
SKU: 1522-0010-0120
QTY: 7



8mm REX® Bearing
SKU: 1611-0514-4008
QTY: 18



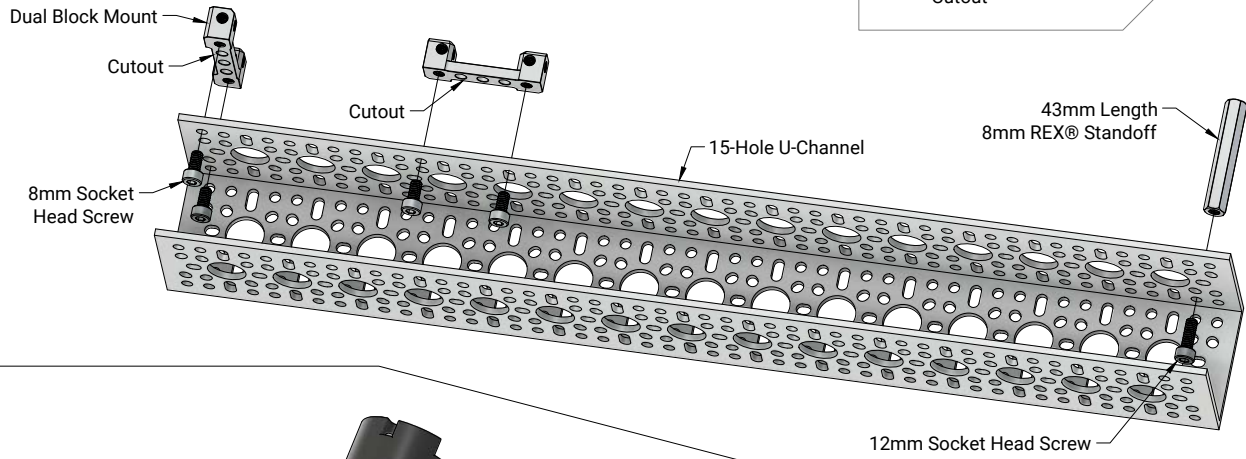
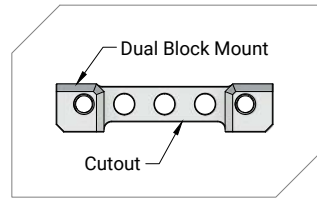
8mm REX® Collar
SKU: 2920-0001-4008
QTY: 4



STEP 1:

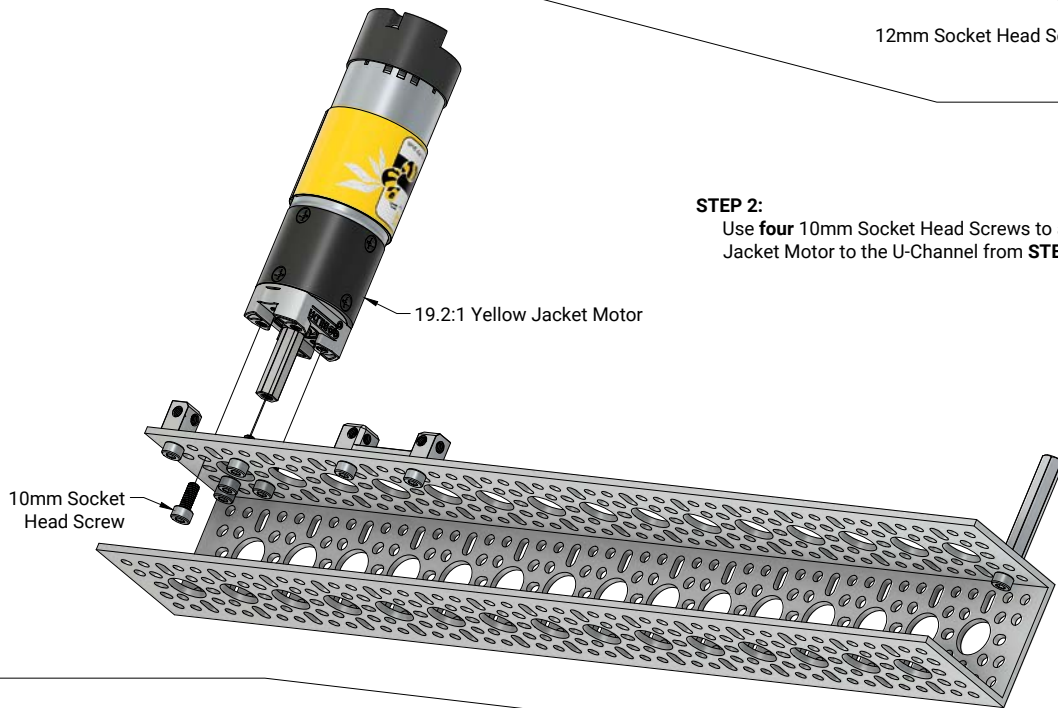
Attach **two** Dual Block Mounts, and **one** 43mm Length, 8mm REX® Standoff, to **one** 15-Hole U-Channel using **four** 8mm Socket Head Screws, and **one** 12mm Socket Head Screw as shown. Note the orientation of the Dual Block Mount using the Cutout shown in **FIGURE 1-A**

FIGURE 1-A



STEP 2:

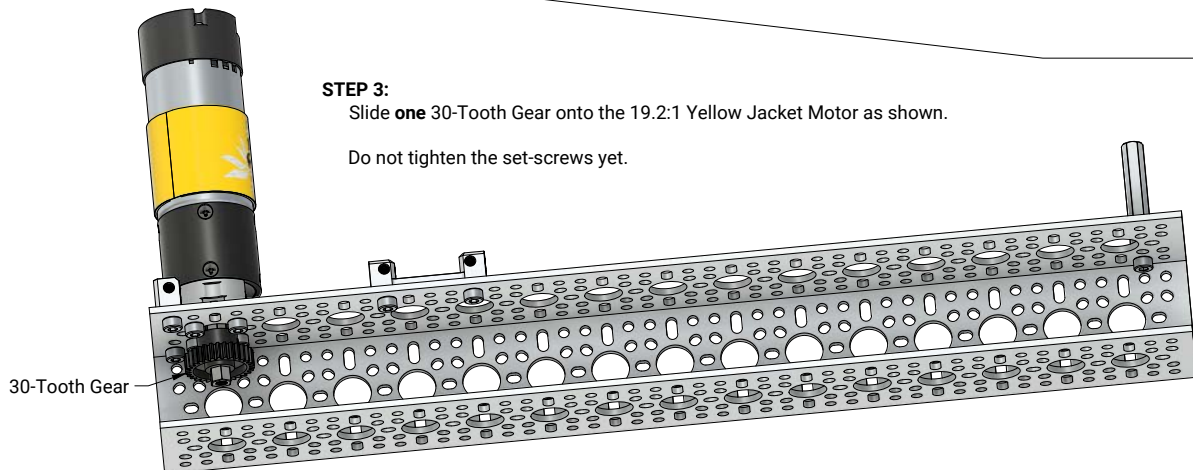
Use **four** 10mm Socket Head Screws to attach **one** 19.2:1 Yellow Jacket Motor to the U-Channel from **STEP 1** as shown.



STEP 3:

Slide **one** 30-Tooth Gear onto the 19.2:1 Yellow Jacket Motor as shown.

Do not tighten the set-screws yet.



STEP 4:

Use **eight** 10mm Socket Head Screws and **eight** Locknuts to attach **two** Drop Center Plates as shown. Note the orientation of the "Logo" on the Drop Center Plate (**FIGURE 4-A**).

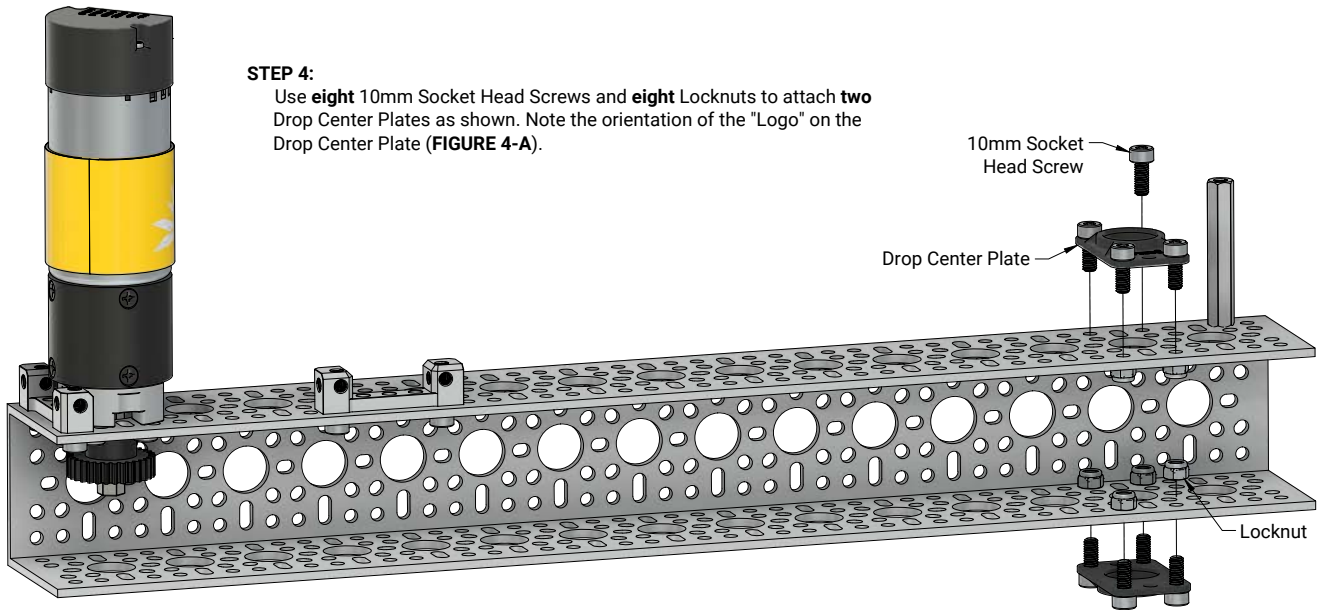
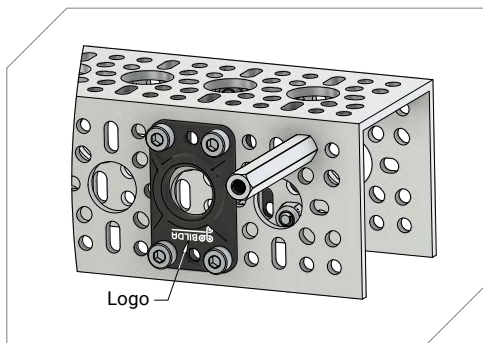
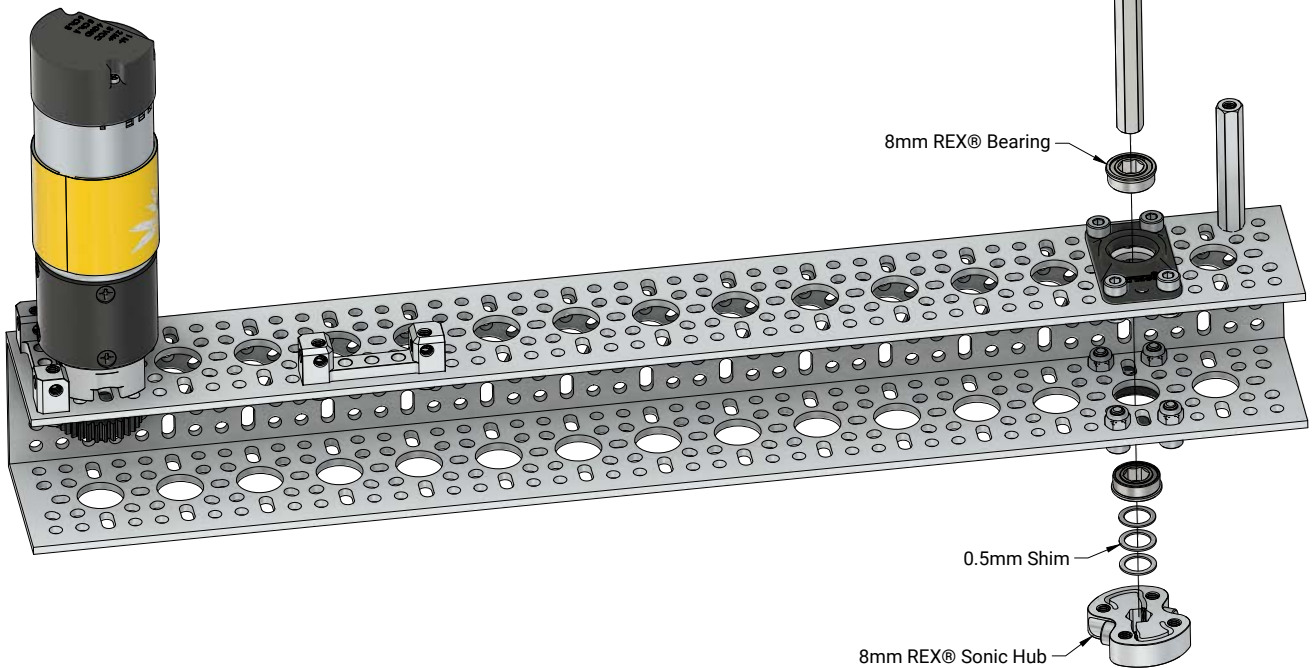


FIGURE 4-A



STEP 5:

Assemble **one** 80mm Length, 8mm REX® Shaft through **two** 8mm REX® Bearings, **three** 0.5mm Shims, and **one** 8mm REX® Sonic Hub as shown.



STEP 6:

Use **forty-six** Plastic Chain Links to create one Chain Loop (**FIGURE 6-A**).

Assemble the Chain Loop, **one** 10-Tooth Sprocket, **one** 80mm Length, 8mm REX® Shaft, **two** 8mm REX® Bearings, **one** 30-Tooth Gear, and **one** 8mm REX® Hyper Hub as shown.

Pull the 8mm REX® Hyper Hub and 80mm Length, 8mm REX® Shaft together firmly before tightening in place.

Push the 30-Tooth Gear and 10-Tooth Sprocket against the 8mm REX® Bearings before tightening the set-screws (**FIGURE 6-B**).

Align the 30-Tooth Gears (**FIGURE 6-C**), then tighten its set-screws.

FIGURE 6-A

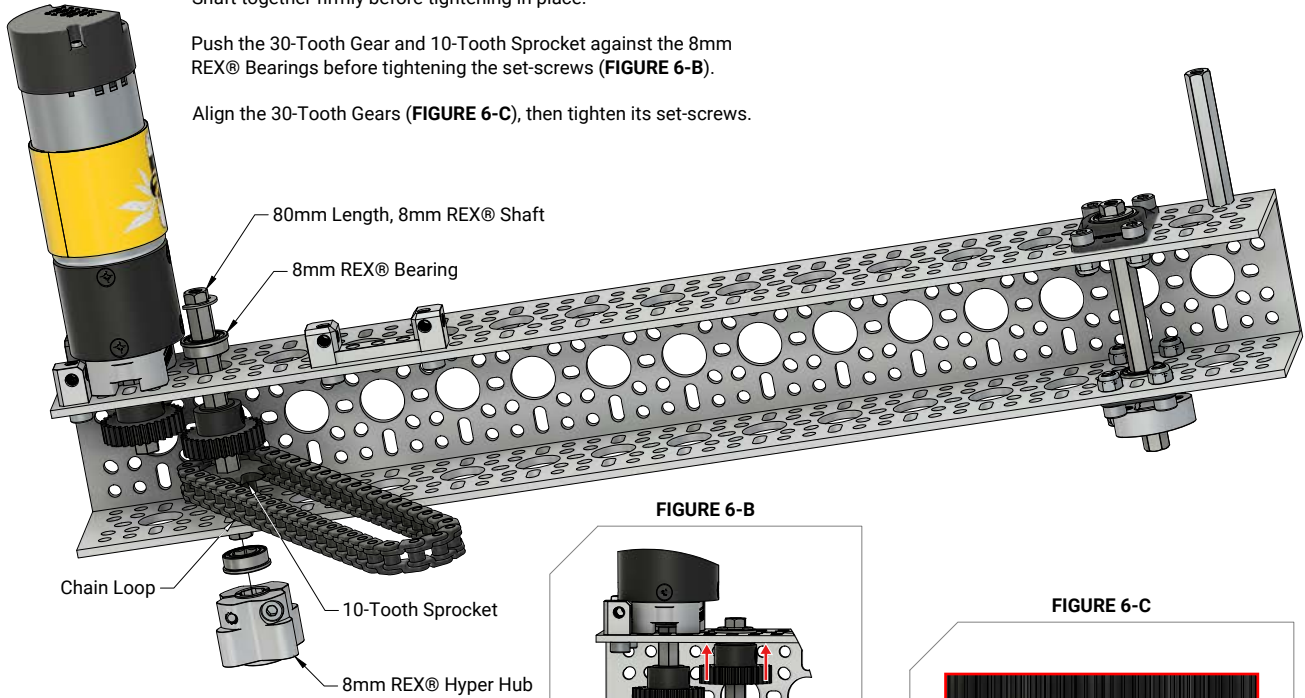
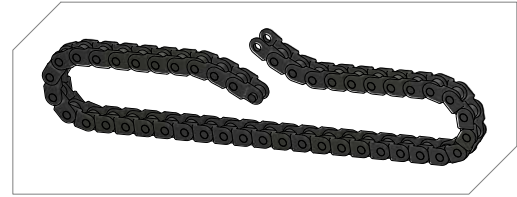


FIGURE 6-B

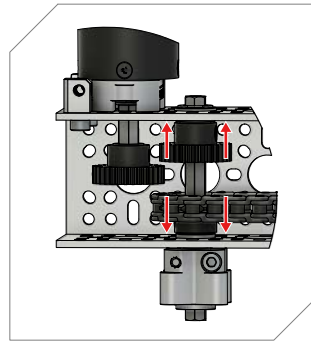
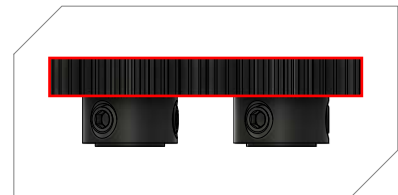
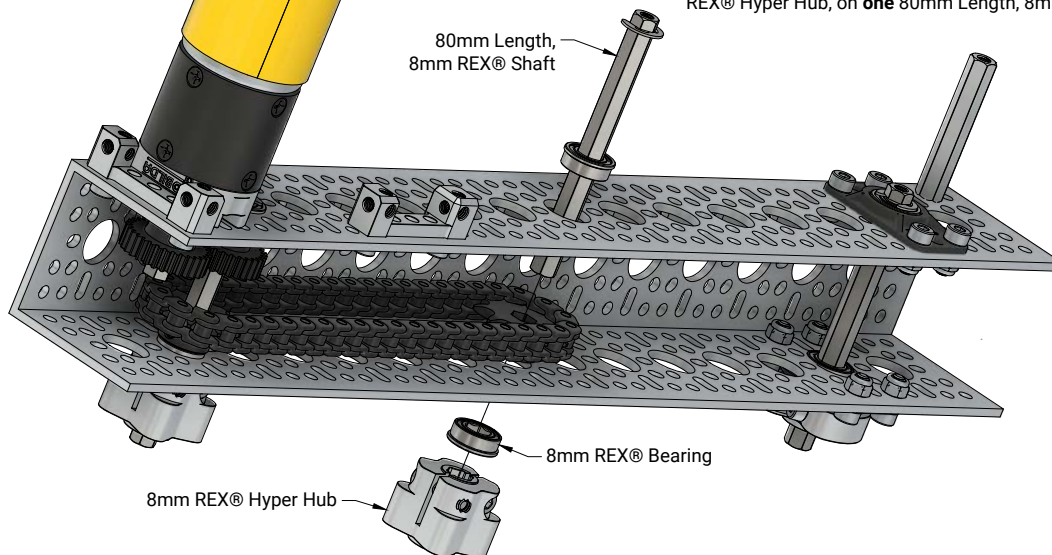


FIGURE 6-C

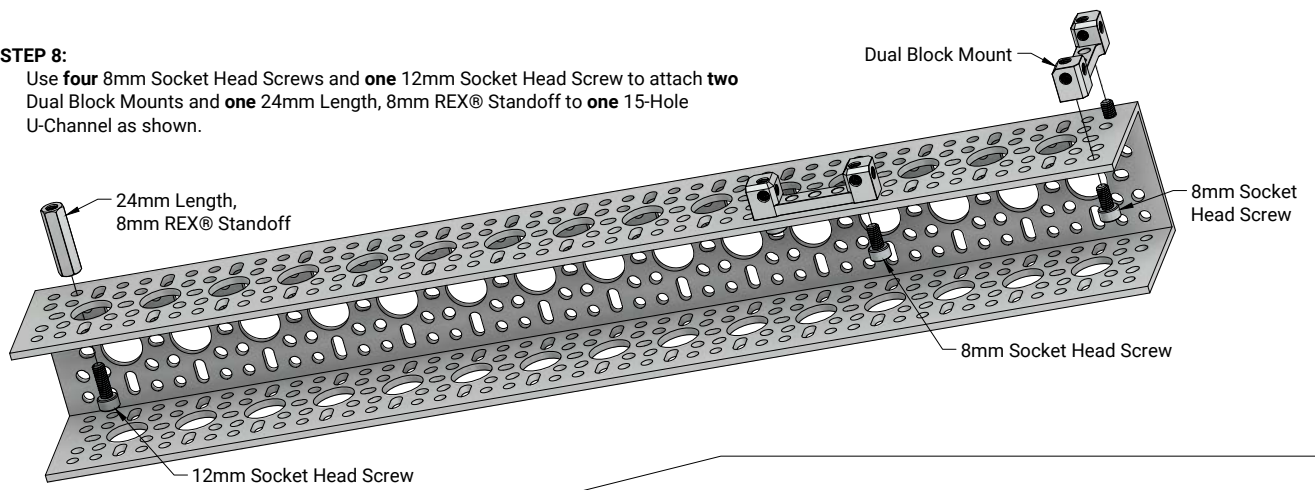


STEP 7:

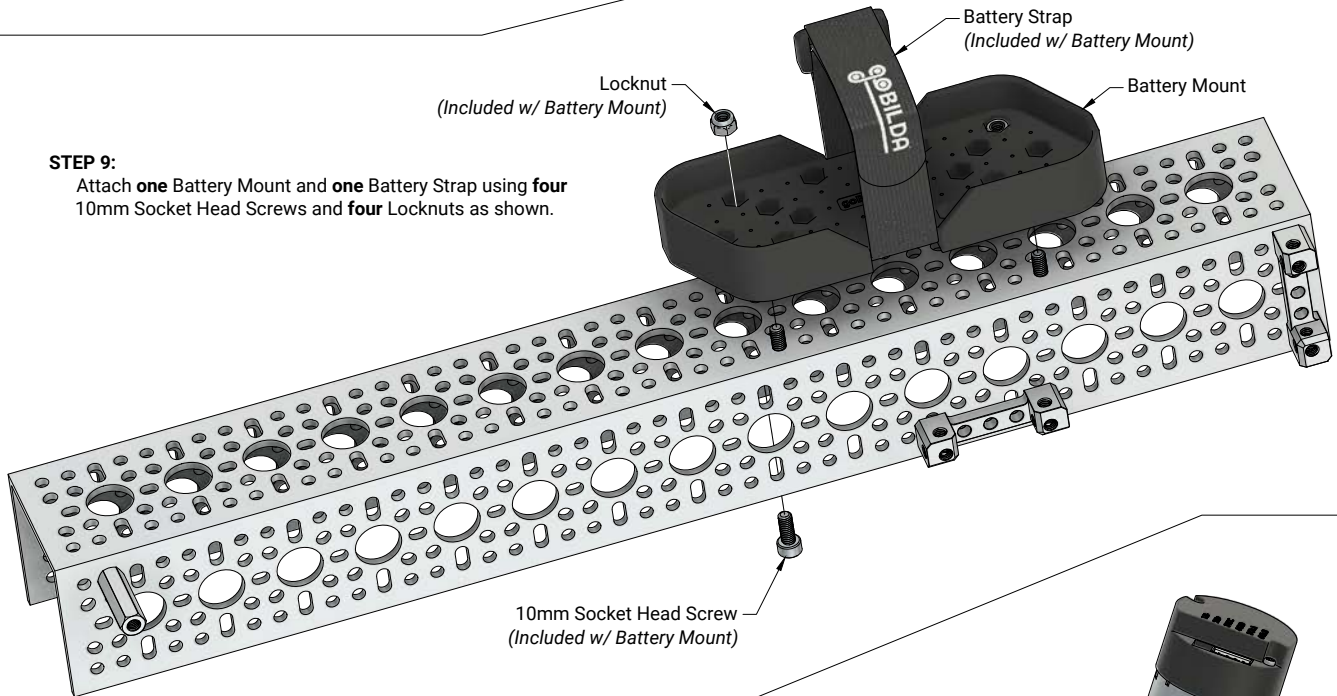
Assemble **one** 10-Tooth Sprocket, **two** 8mm REX® Bearings, **one** 8mm REX® Hyper Hub, on **one** 80mm Length, 8mm REX® Shaft as shown.



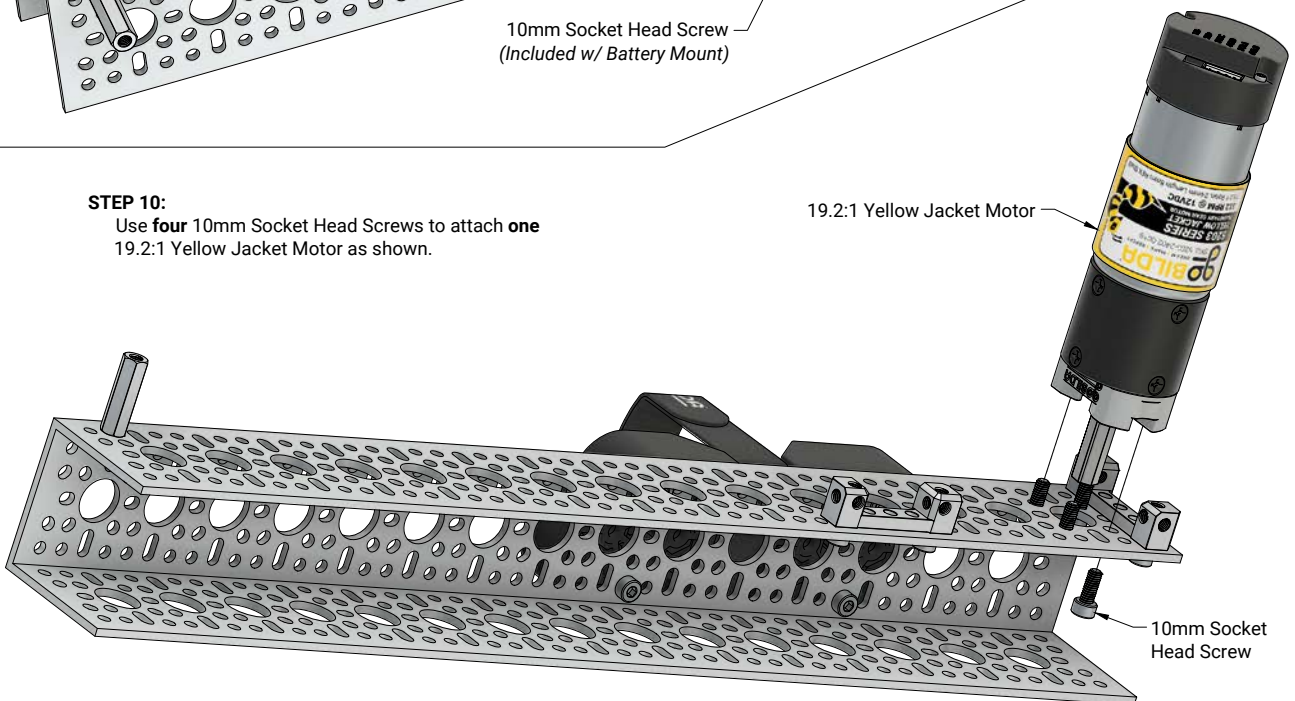
STEP 8:
Use **four** 8mm Socket Head Screws and **one** 12mm Socket Head Screw to attach **two** Dual Block Mounts and **one** 24mm Length, 8mm REX® Standoff to **one** 15-Hole U-Channel as shown.



STEP 9:
Attach **one** Battery Mount and **one** Battery Strap using **four** 10mm Socket Head Screws and **four** Locknuts as shown.



STEP 10:
Use **four** 10mm Socket Head Screws to attach **one** 19.2:1 Yellow Jacket Motor as shown.



STEP 11:

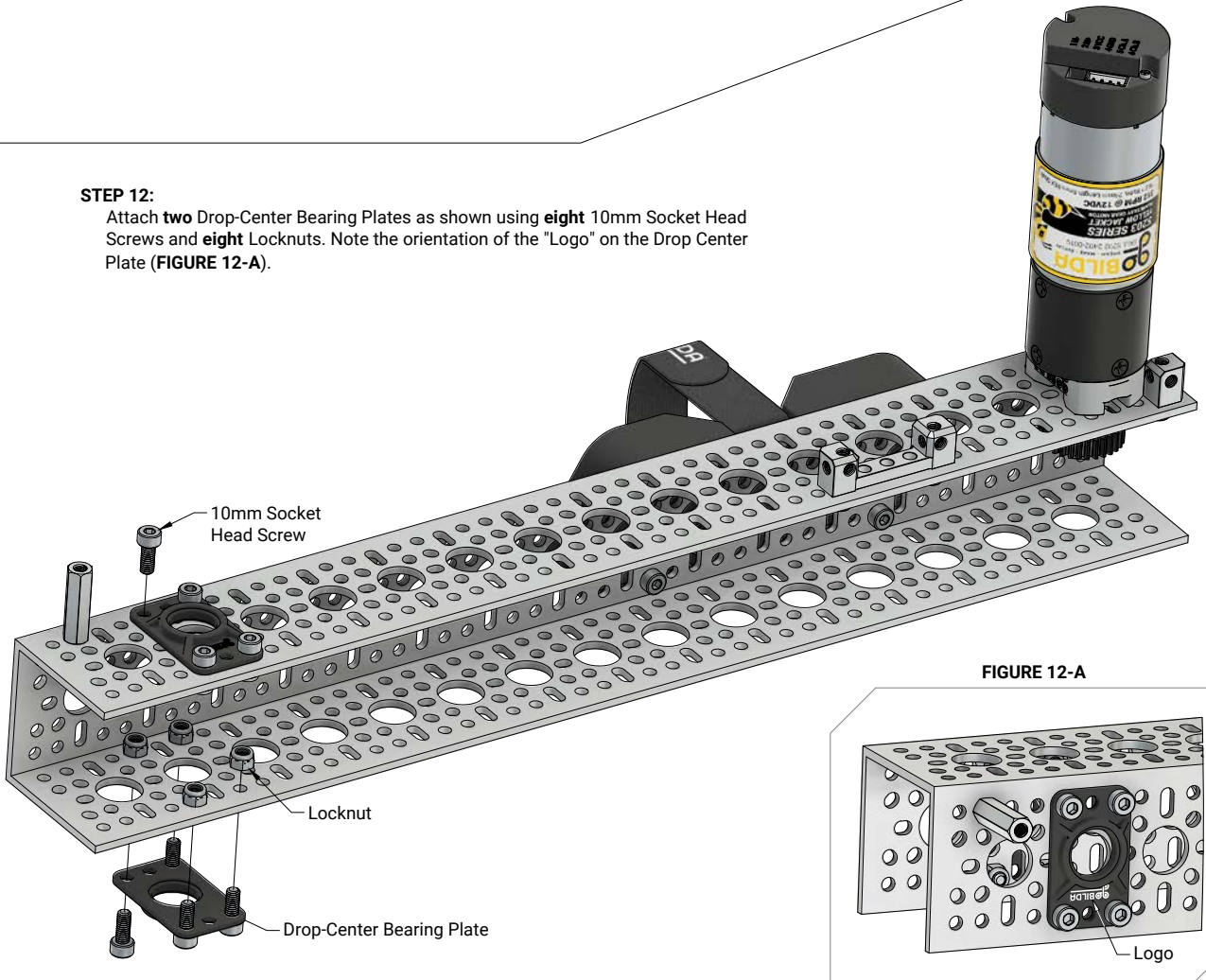
Slide **one** 30-Tooth Gear onto the 19.2:1 Yellow Jacket Motor as shown.

Do not tighten the set-screws yet.



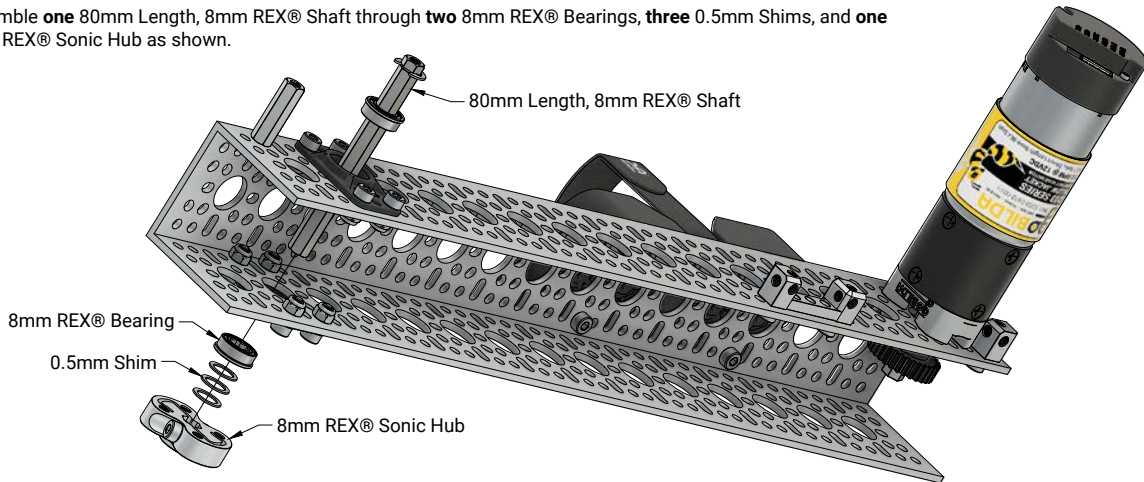
STEP 12:

Attach **two** Drop-Center Bearing Plates as shown using **eight** 10mm Socket Head Screws and **eight** Locknuts. Note the orientation of the "Logo" on the Drop Center Plate (**FIGURE 12-A**).



STEP 13:

Assemble **one** 80mm Length, 8mm REX® Shaft through **two** 8mm REX® Bearings, **three** 0.5mm Shims, and **one** 8mm REX® Sonic Hub as shown.



STEP 14:

Use **fourty-six** Plastic Chain Links to create one Chain Loop (**FIGURE 14-A**).

Assemble the Chain Loop, **one** 10-Tooth Sprocket, **one** 80mm Length, 8mm REX® Shaft, **two** 8mm REX® Bearings, **one** 30-Tooth Gear, and **one** 8mm REX® Hyper Hub as shown.

Pull the 8mm REX® Hyper Hub and 80mm Length, 8mm REX® Shaft together firmly before tightening in place.

Push the 30-Tooth Gear and 10-Tooth Sprocket against the 8mm REX® Bearings before tightening the set-screws (**FIGURE 14-B**).

Align the 30-Tooth Gears (**FIGURE 14-C**), then tighten its set-screws.

FIGURE 14-A

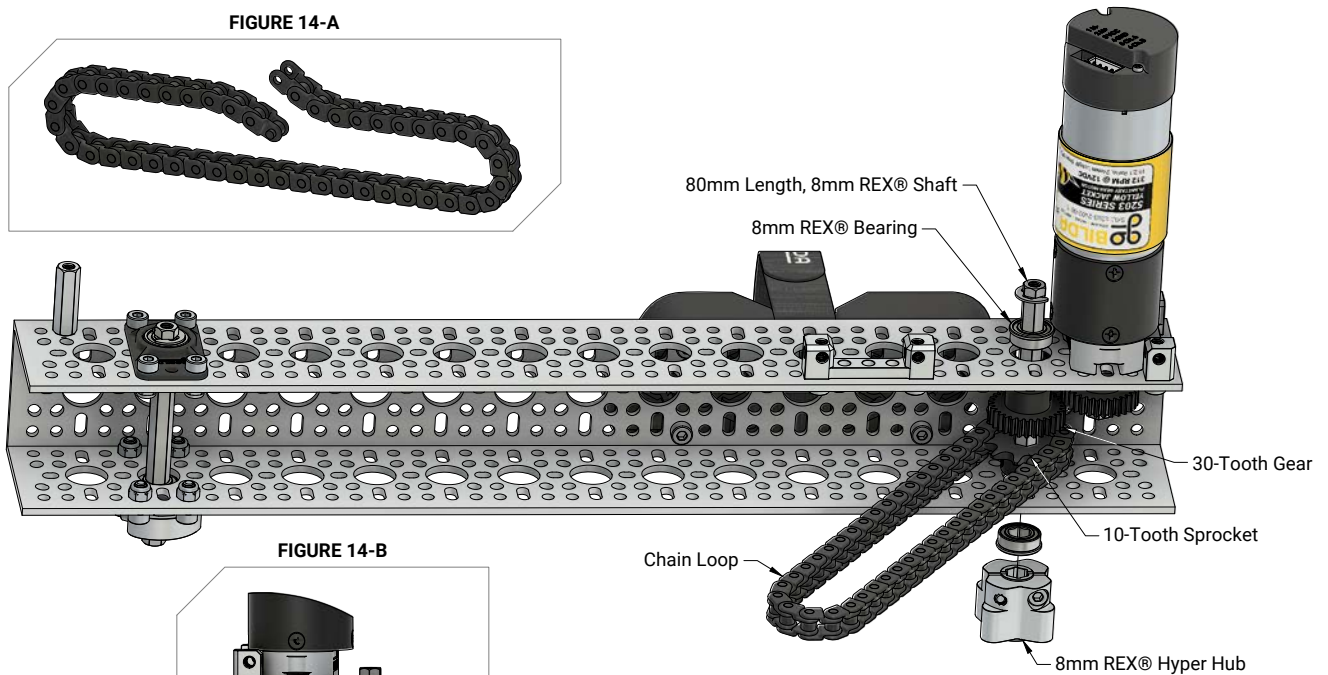
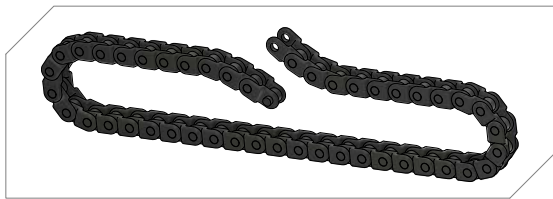


FIGURE 14-B

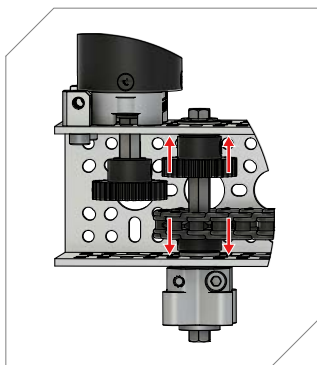
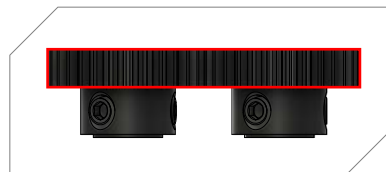
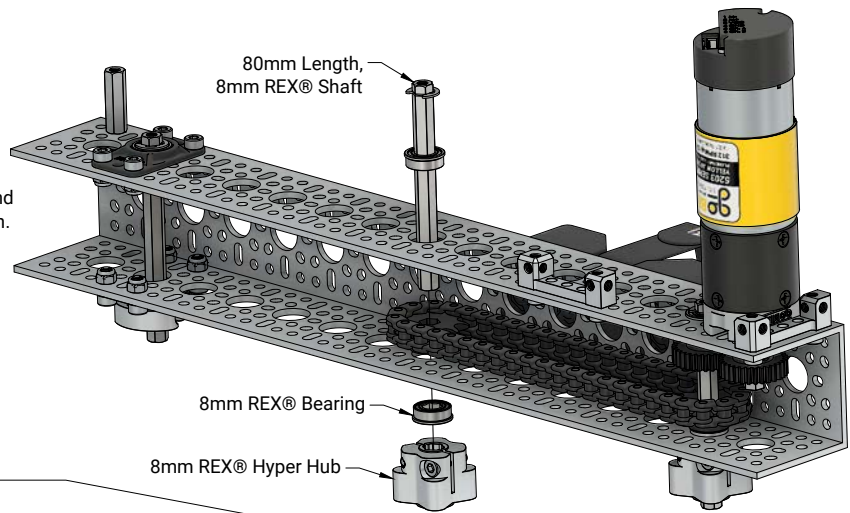


FIGURE 14-C



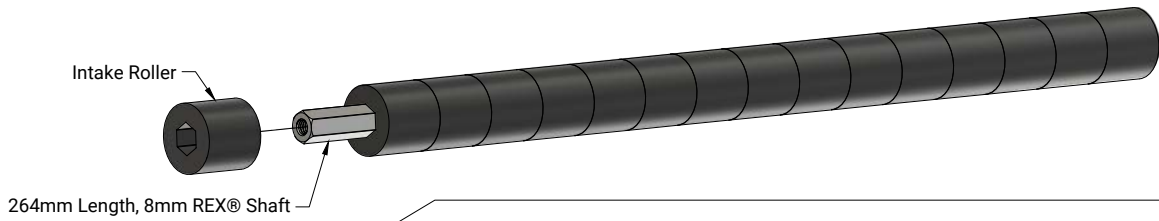
STEP 15:

Assemble **one** 10-Tooth Sprocket, **two** 8mm REX® Bearings, **one** 8mm REX® Hyper Hub, and **one** 80mm Length, 8mm REX® Shaft as shown.



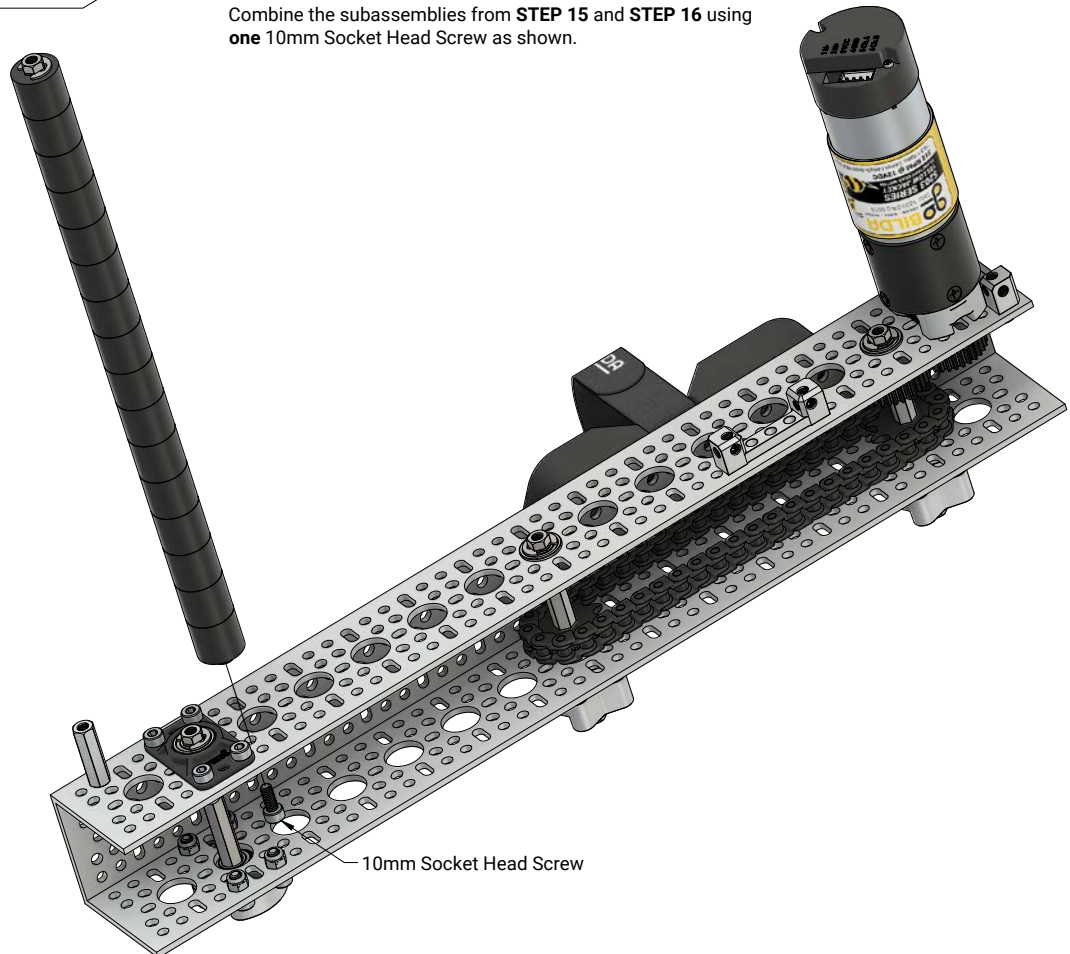
STEP 16:

Slide **sixteen** Intake Rollers onto **one** 264mm Length, 8mm REX® Shaft as shown.



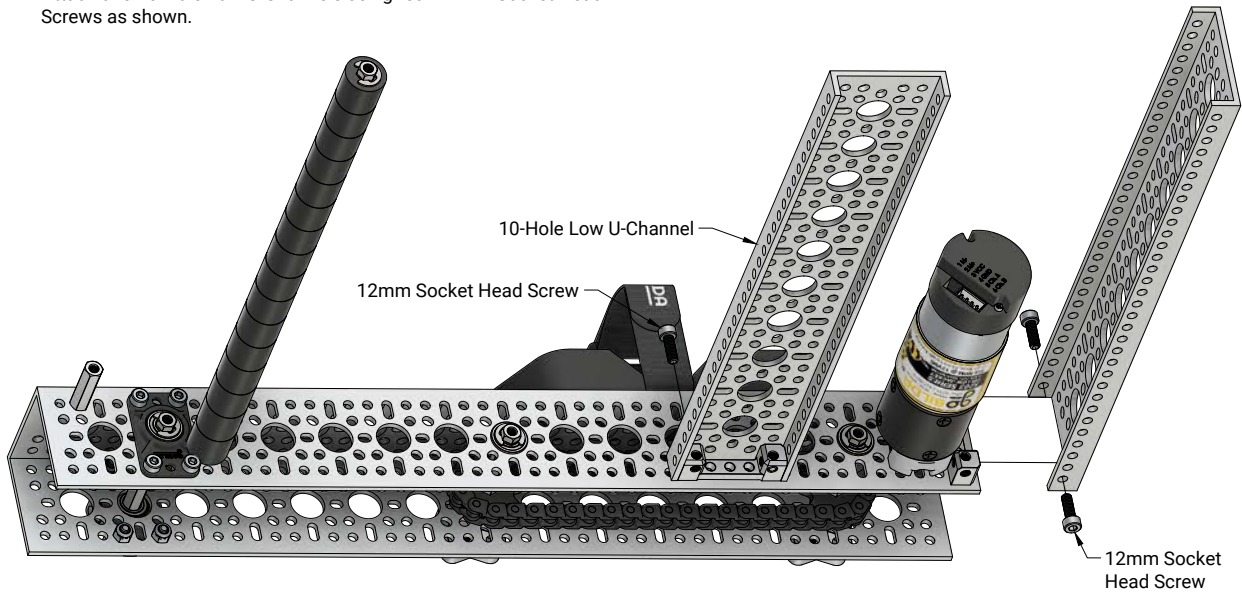
STEP 17:

Combine the subassemblies from **STEP 15** and **STEP 16** using **one** 10mm Socket Head Screw as shown.



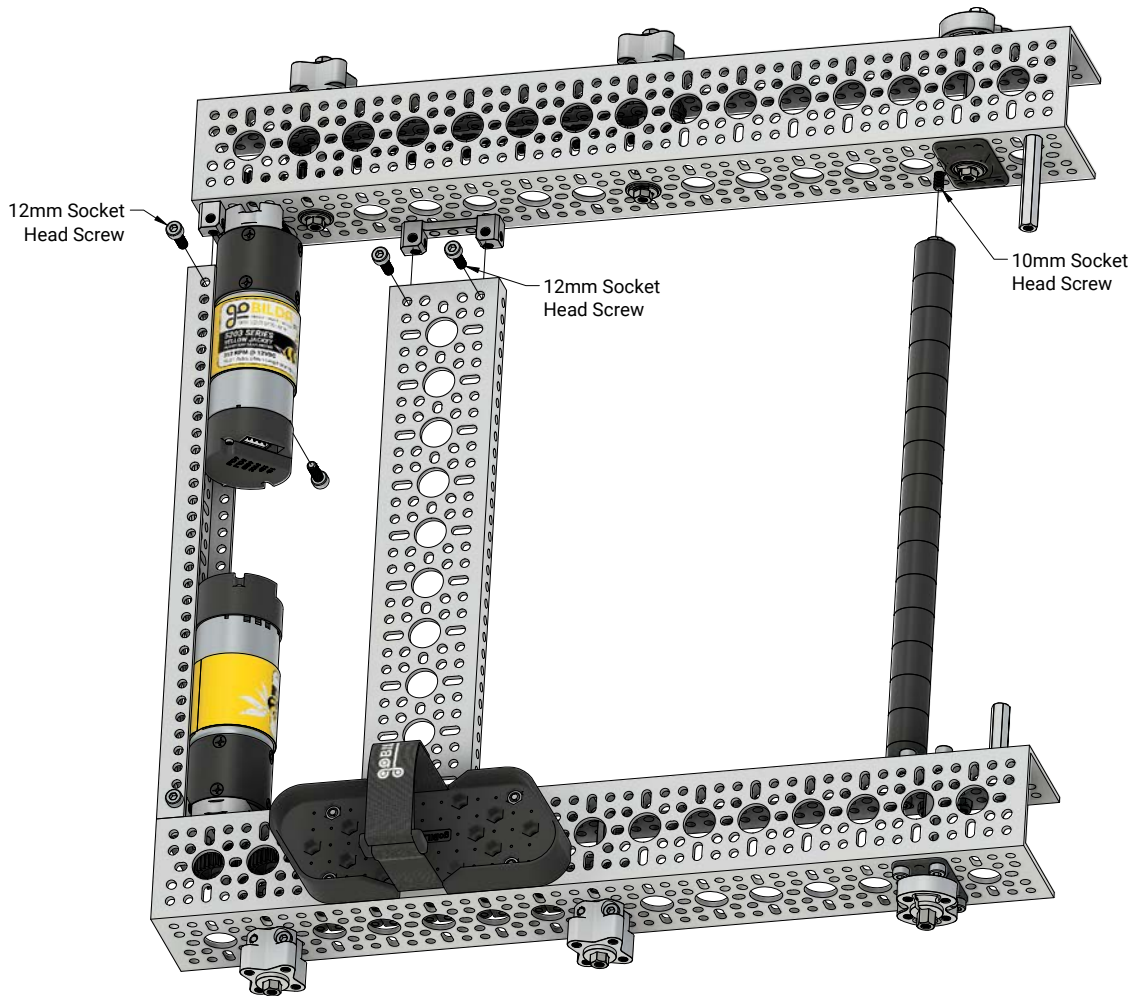
STEP 18:

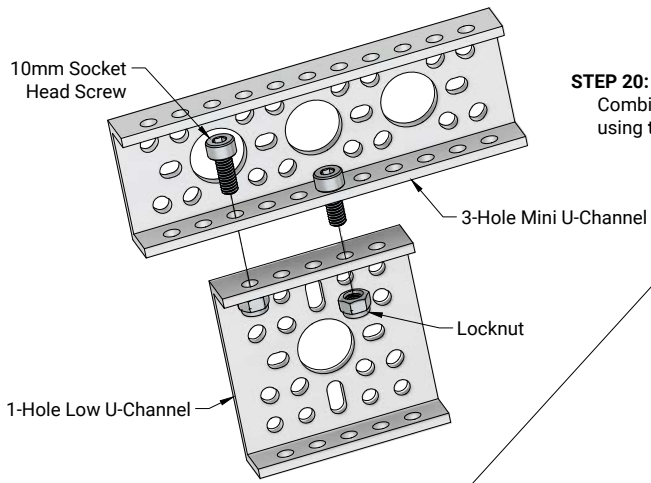
Attach **two** 10-Hole Low U-Channels using **four** 12mm Socket Head Screws as shown.



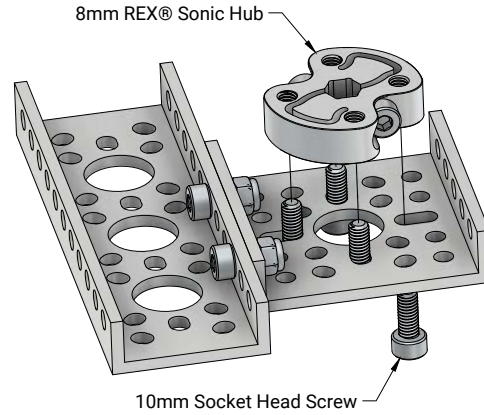
STEP 19:

Combine the subassemblies from **STEP 7** and **STEP 18** using **four** 12mm Socket Head Screws and **one** 10mm Socket Head Screw as shown.

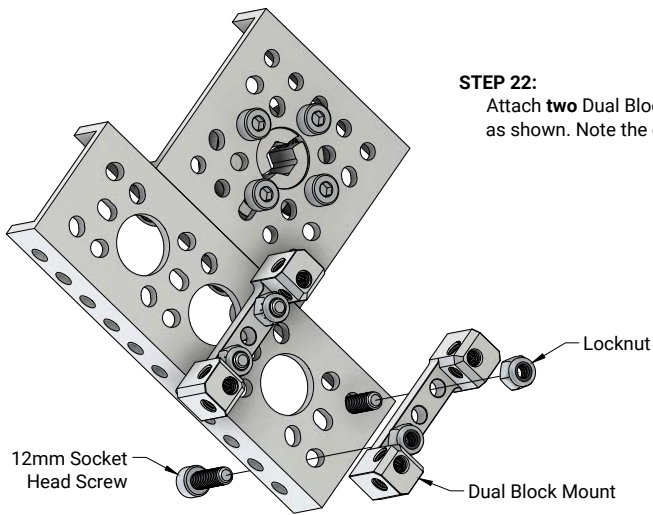




STEP 20:
Combine **one** 3-Hole Mini U-Channel and **one** 1-Hole Low U-Channel as shown using **two** 10mm Socket Head Screws and **two** Locknuts.

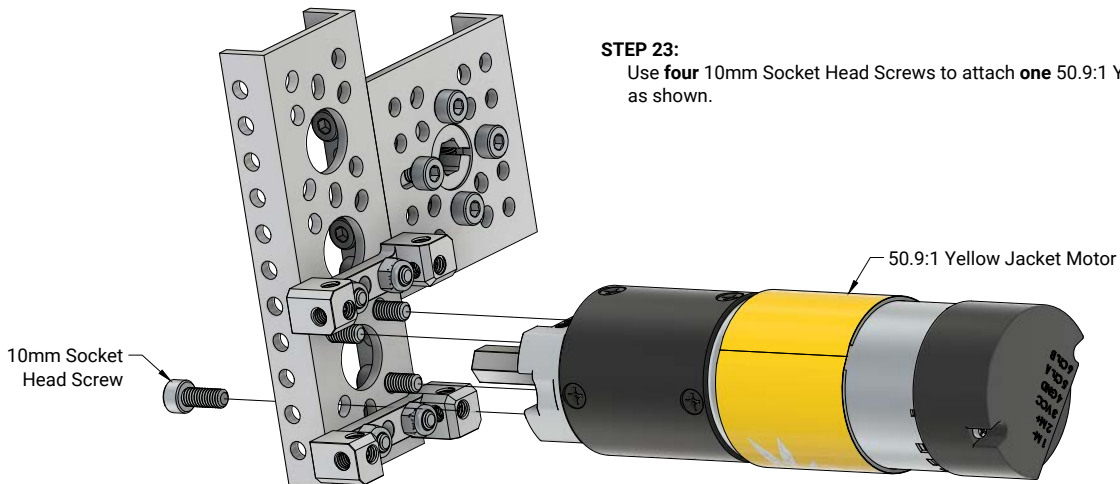
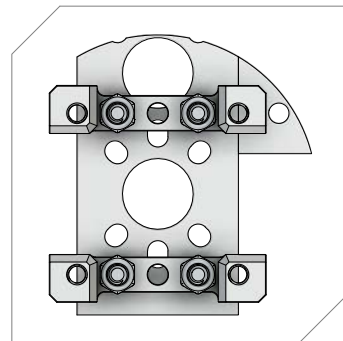


STEP 21:
Attach **one** 8mm REX® Sonic Hub using **four** 10mm Socket Head Screws as shown.

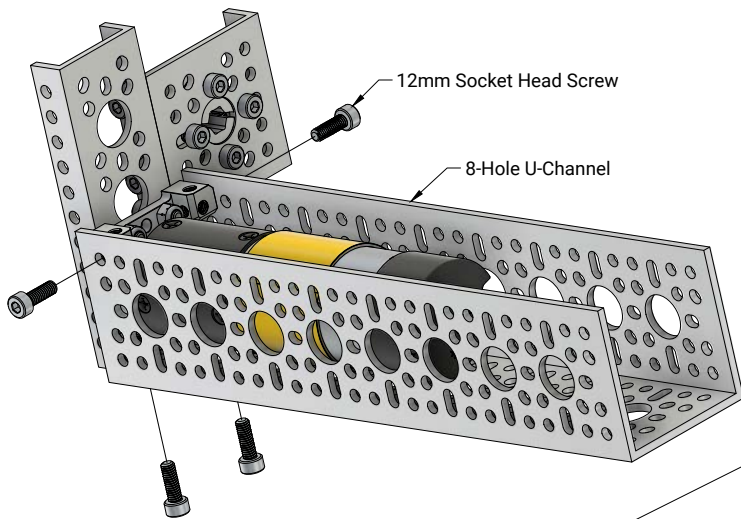


STEP 22:
Attach **two** Dual Block Mounts using **two** 12mm Socket Head Screws and **two** Locknuts as shown. Note the orientation of the Dual Block Mounts (**FIGURE 22-A**).

FIGURE 22-A

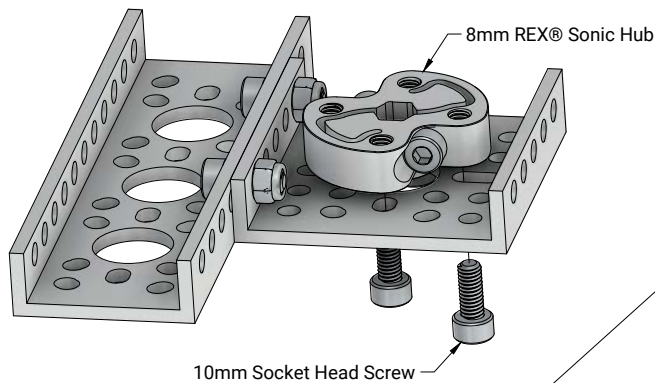
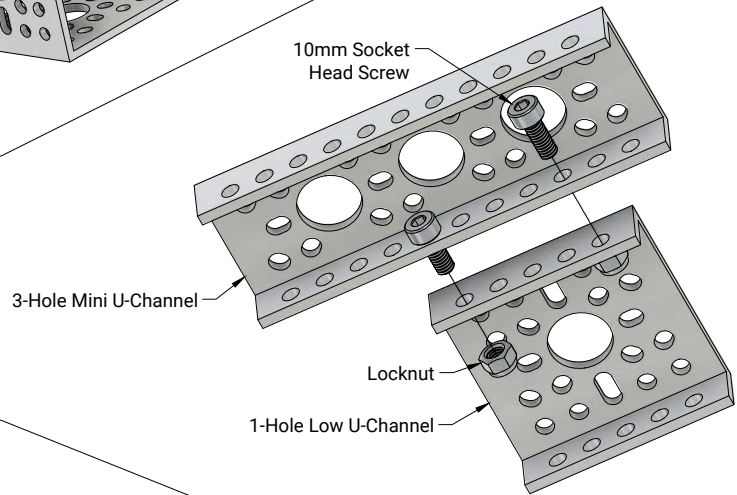


STEP 23:
Use **four** 10mm Socket Head Screws to attach **one** 50.9:1 Yellow Jacket Motor as shown.



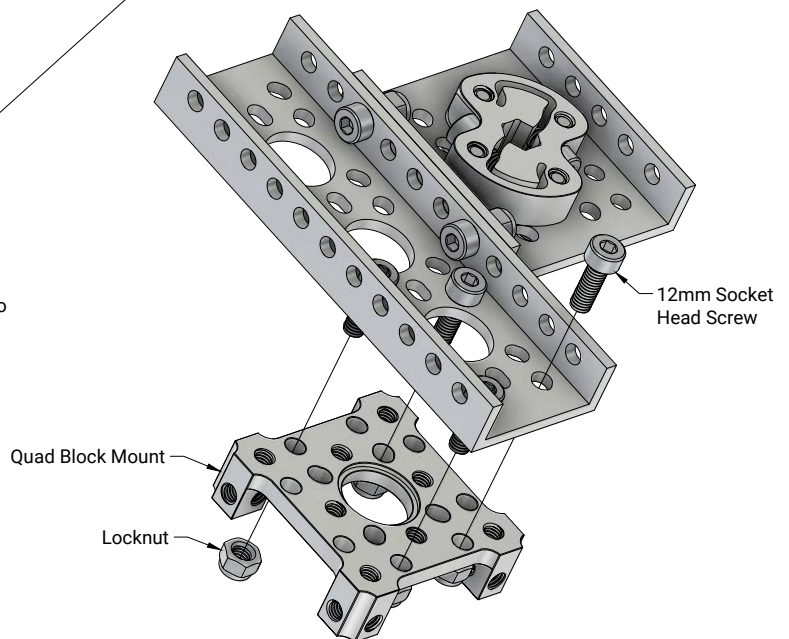
STEP 24:
Attach **one** 8-Hole U-Channel using **four** 12mm Socket Head Screws as shown.

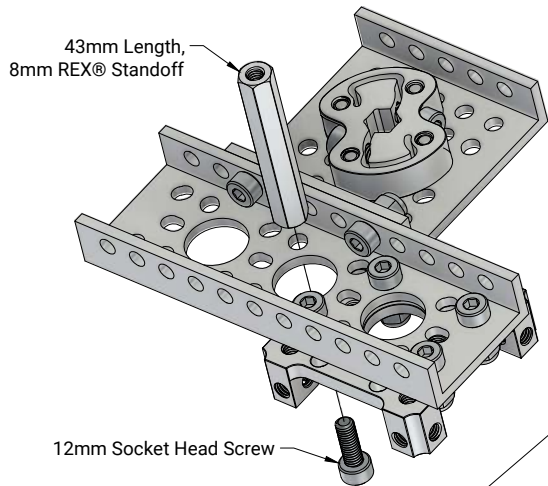
STEP 25:
Combine **one** 3-Hole Mini U-Channel and **one** 1-Hole Low U-Channel as shown using **two** 10mm Socket Head Screws and **two** Locknuts.



STEP 26:
Attach **one** 8mm REX® Sonic Hub using **four** 10mm Socket Head Screw as shown.

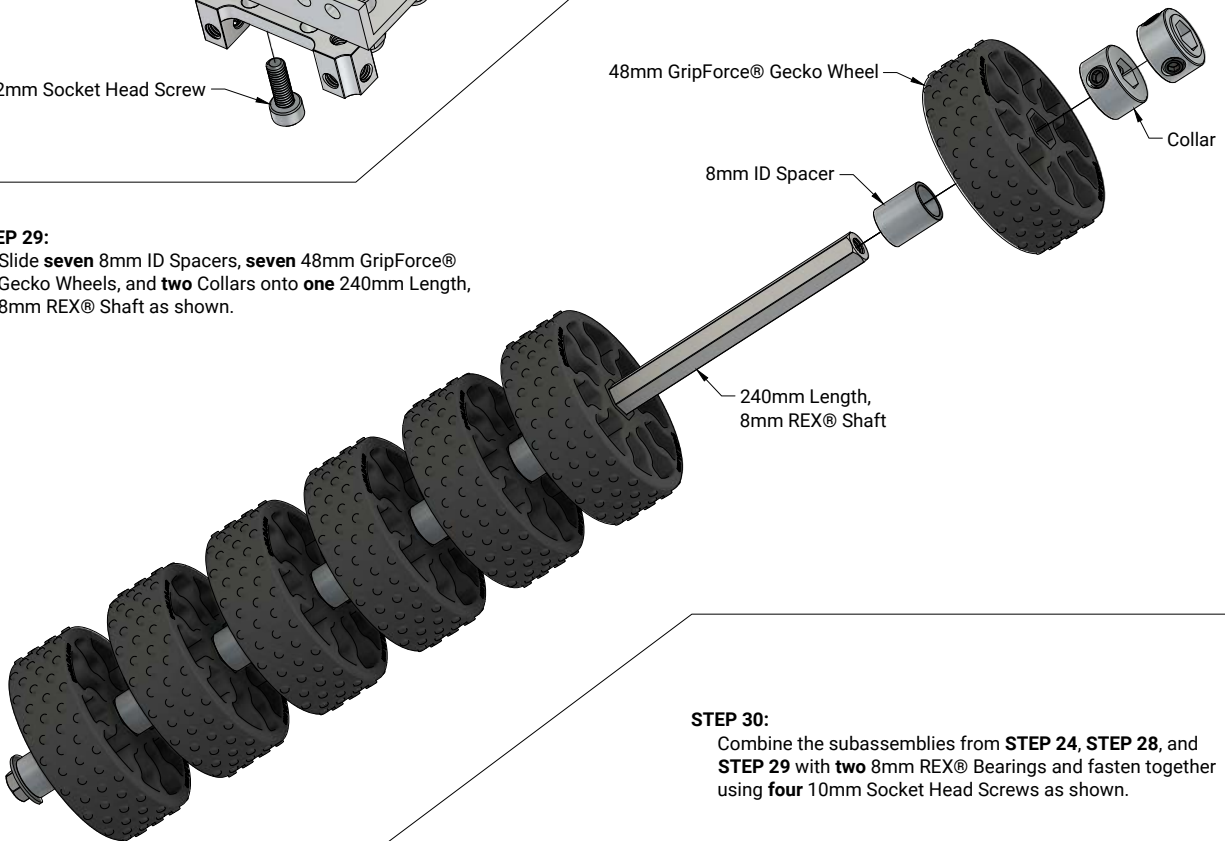
STEP 27:
Use **four** 12mm Socket Head Screws and **four** Locknuts to attach **one** Quad Block Mount as shown.



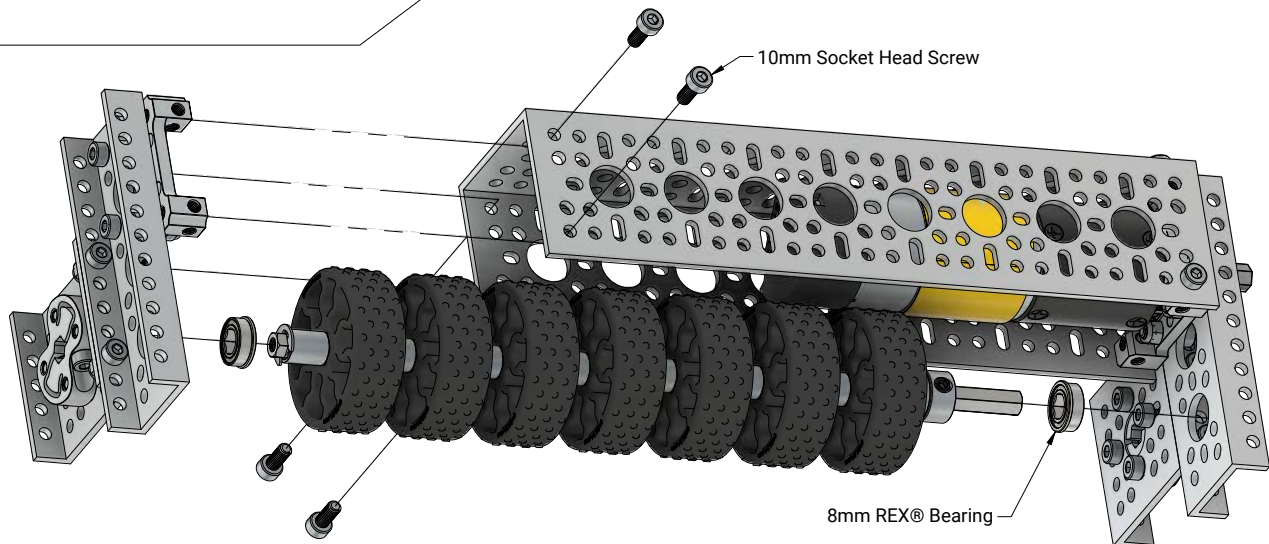


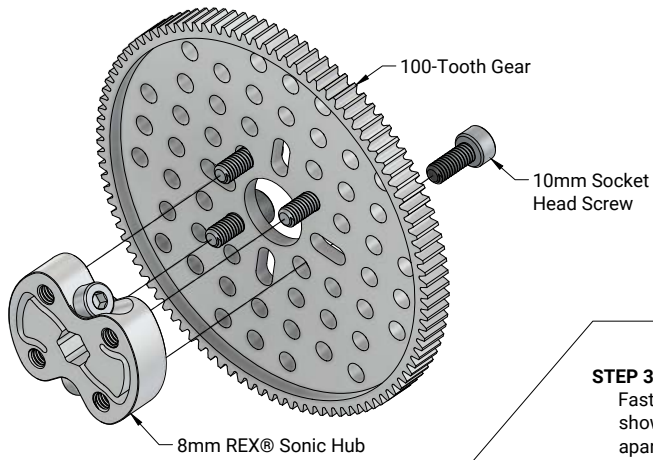
STEP 28:
Attach **one** 43mm Length, 8mm REX® Standoff using **one** 12mm Socket Head Screw as shown.

STEP 29:
Slide **seven** 8mm ID Spacers, **seven** 48mm GripForce® Gecko Wheels, and **two** Collars onto **one** 240mm Length, 8mm REX® Shaft as shown.



STEP 30:
Combine the subassemblies from **STEP 24**, **STEP 28**, and **STEP 29** with **two** 8mm REX® Bearings and fasten together using **four** 10mm Socket Head Screws as shown.





STEP 31:
Fasten **one** 8mm REX® Sonic Hub to **one** 100-Tooth Gear using **four** 10mm Socket Head Screws as shown.

STEP 32:
Fasten the subassembly from **STEP 31** to the subassembly from **STEP 30** as shown. The 8mm REX® Sonic Hub should be spaced approximately 1mm apart (**FIGURE 32-A**).

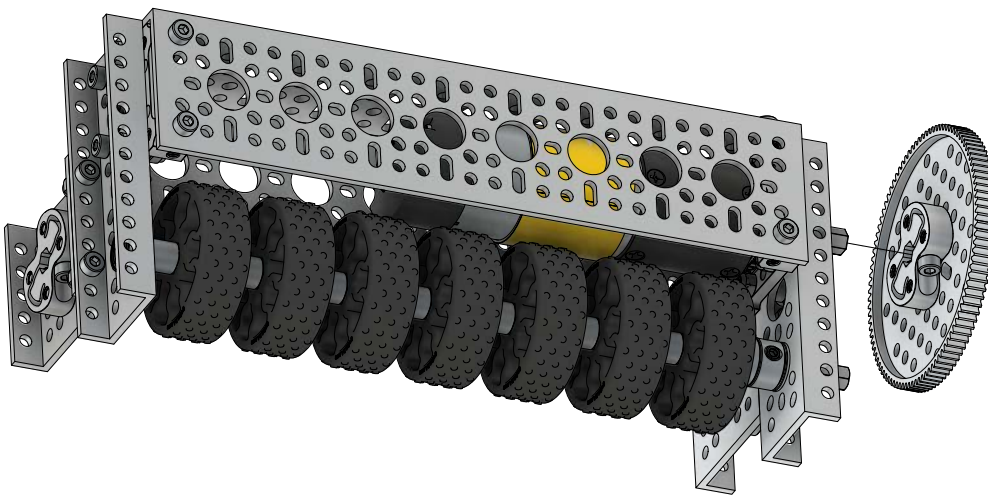
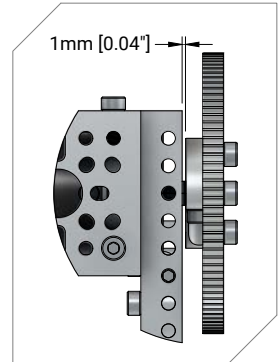


FIGURE 32-A



STEP 33:
Fasten **one** 20-Tooth Gear as shown.
Align the gears before tightening its set-screws (**FIGURE 33-A**).

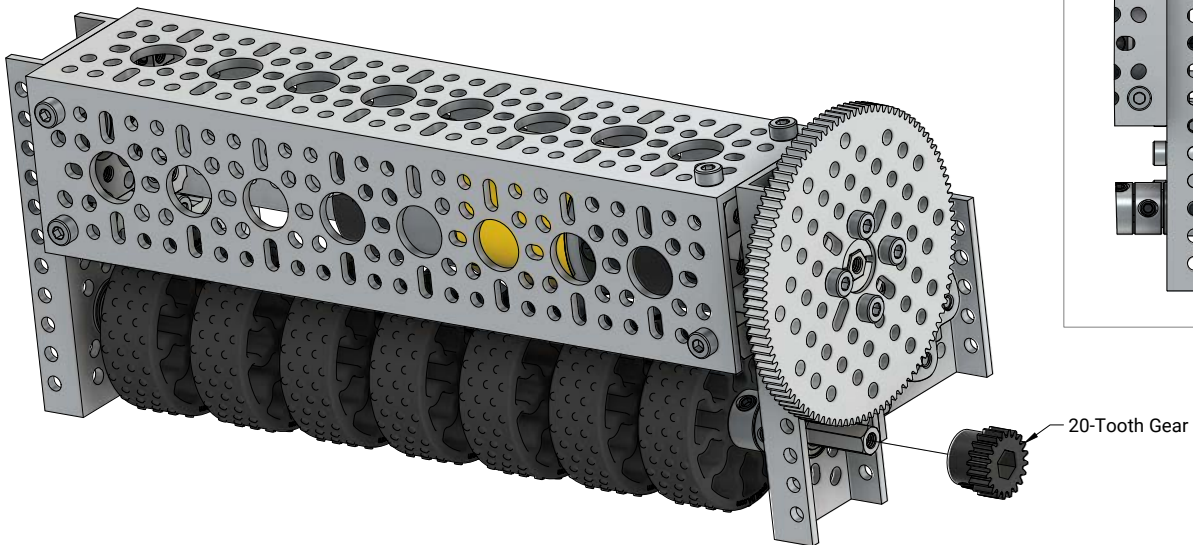
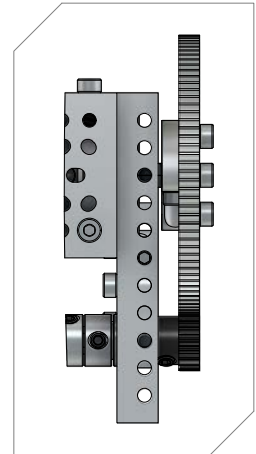
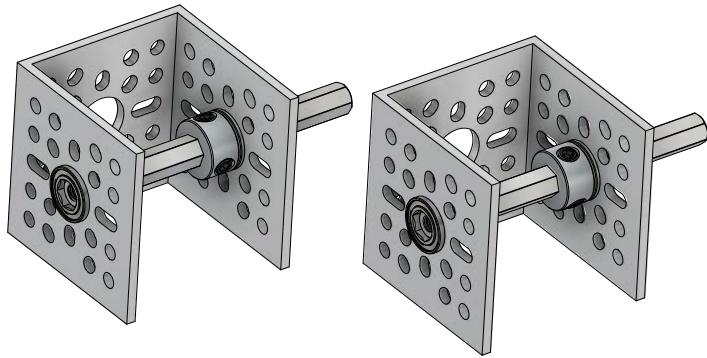


FIGURE 33-A





STEP 34:

Follow the procedure below to create two subassemblies using **two** 1-Hole U-Channels, **four** 8mm REX® Bearings, **two** Collars, and **two** 80mm Length, 8mm REX® Shafts.

FIGURE 34-A

Slide one 80mm Length, 8mm REX® Shaft through one Collar, one 8mm REX® Bearing, and one 1-Hole U-Channel as shown.

Do not tighten the Collar.

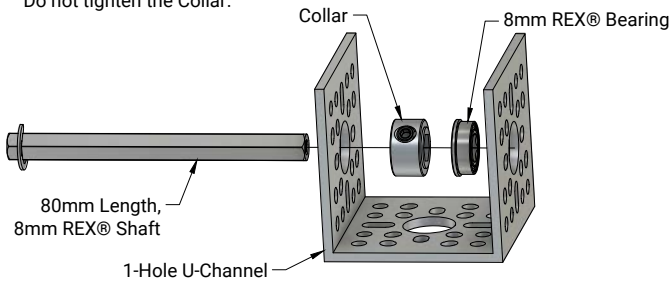


FIGURE 34-B

Slide one 8mm REX® Bearing into the 1-Hole U-Channel as shown.

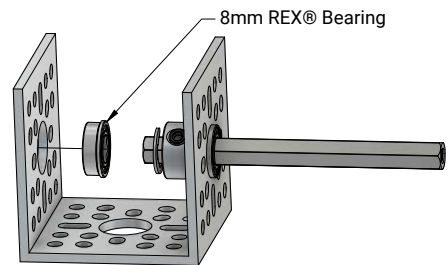
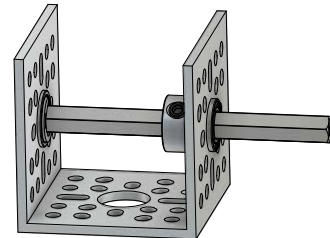


FIGURE 34-C

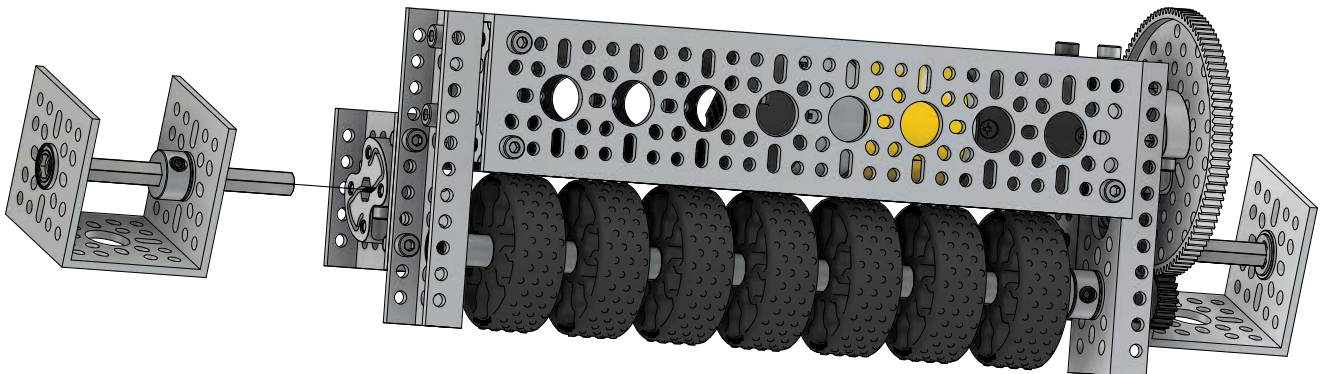
Pull the 80mm Length, 8mm REX® Shaft and the Collar against the 8mm REX® Bearings as shown, then tighten the Collar in place.



STEP 35:

Combine the subassemblies from **STEP 33** and **STEP 34** as shown.

Do not tighten in place.



STEP 36:

Use **eight** 10mm Socket Head Screws and **eight** Locknuts to fasten the subassembly from **STEP 35** to the subassembly from **STEP 19** as shown.

Center the components (**FIGURE 36-A**), then tighten the 8mm REX® Sonic Hubs. A 4mm thick component such as an 1102 Series Flat Beam can be used to achieve acceptable spacing between the 100-Tooth Gear and the 1-Hole U-Channel.

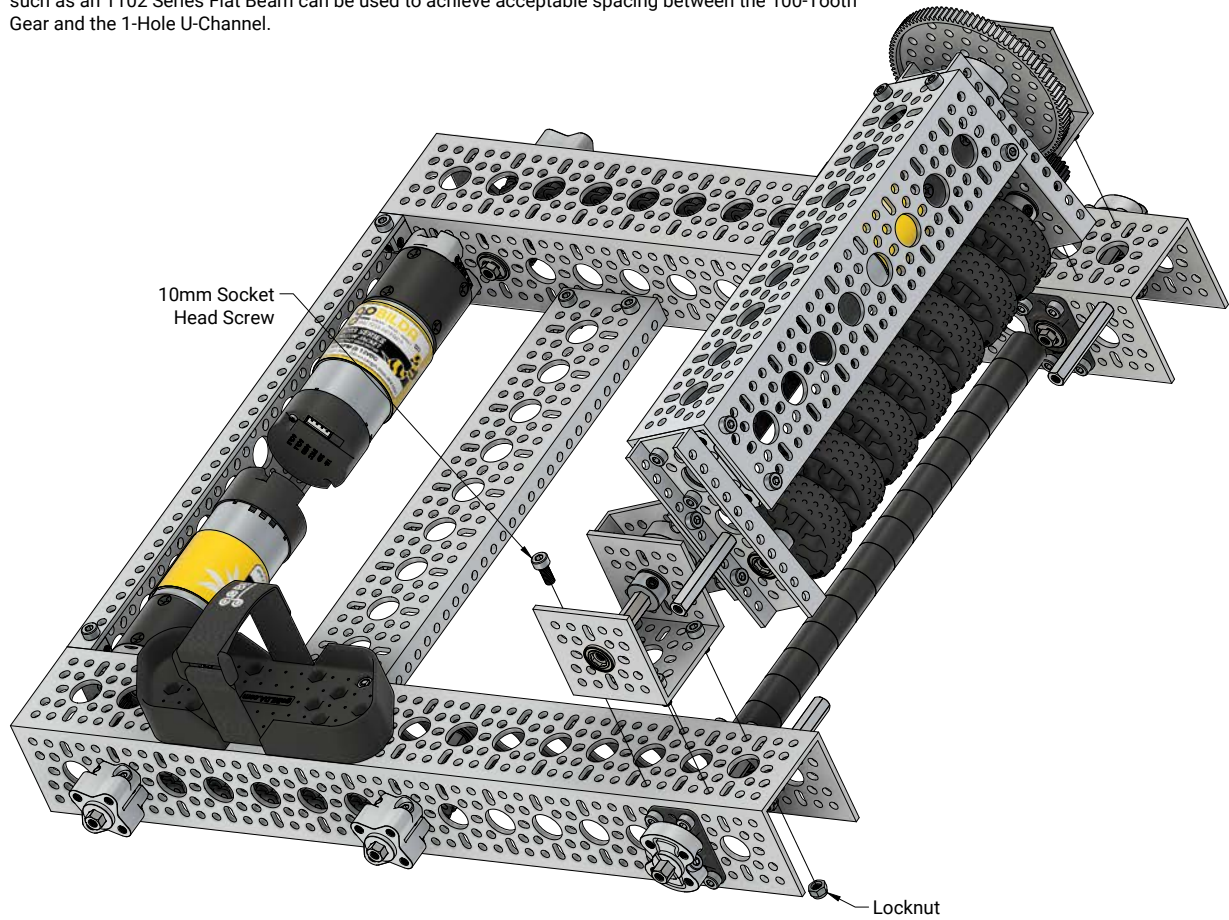
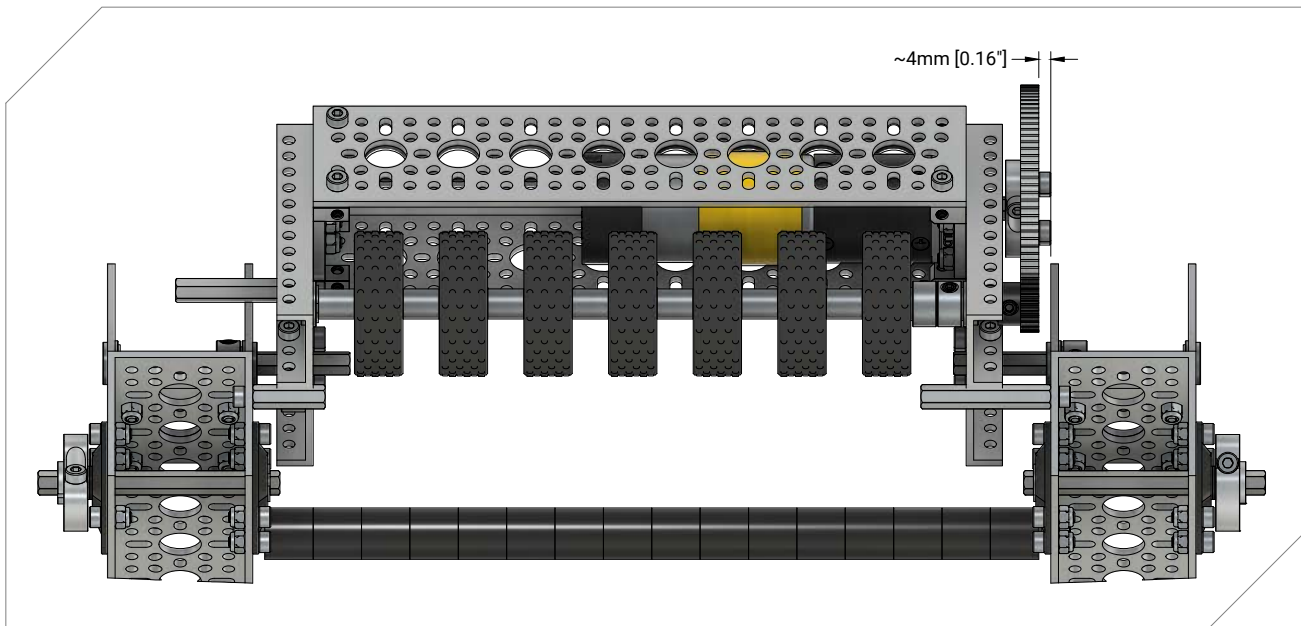


FIGURE 36-A



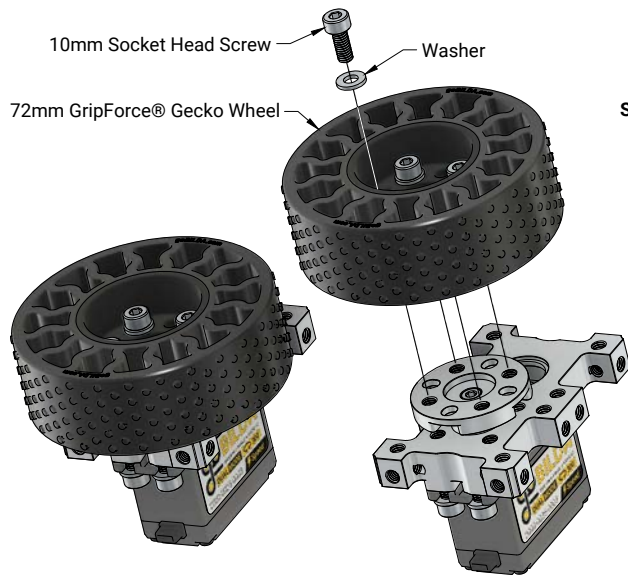
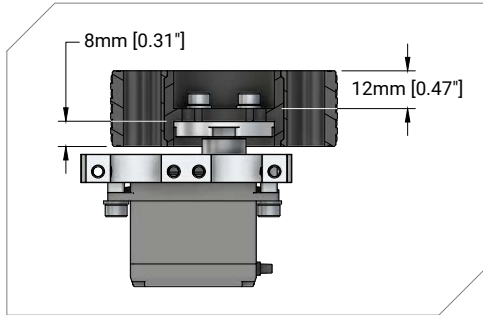


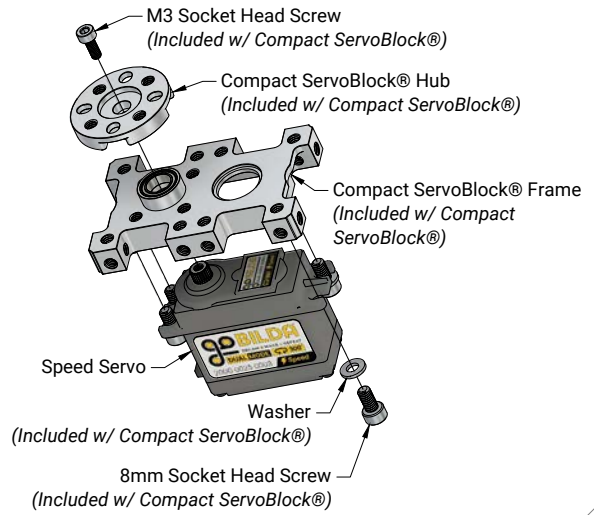
FIGURE 37-B



STEP 37:

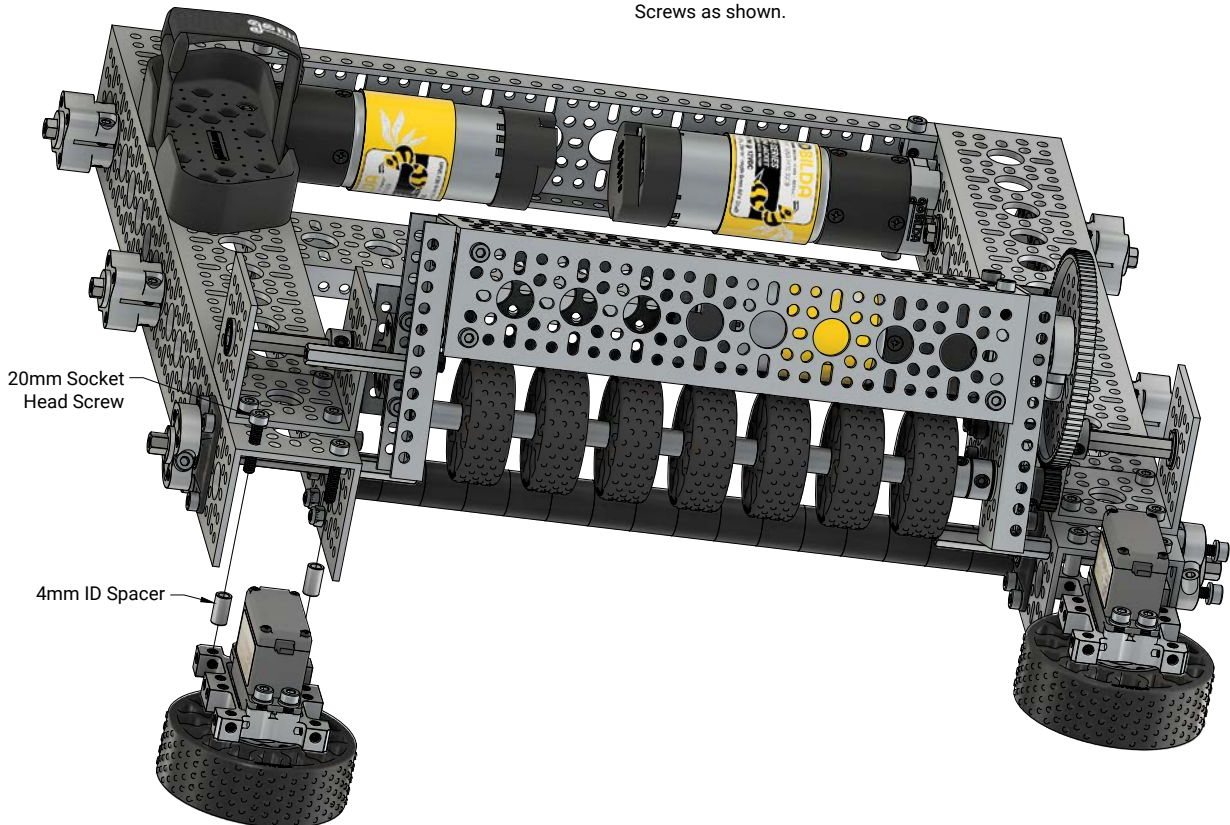
Install **two** Speed Servos in **two** Compact ServoBlocks® (FIGURE 37-A) and attach **two** 72mm GripForce® Gecko Wheels as shown (FIGURE 37-B) using **eight** Washers and **eight** 10mm Socket Head Screws.

FIGURE 37-A



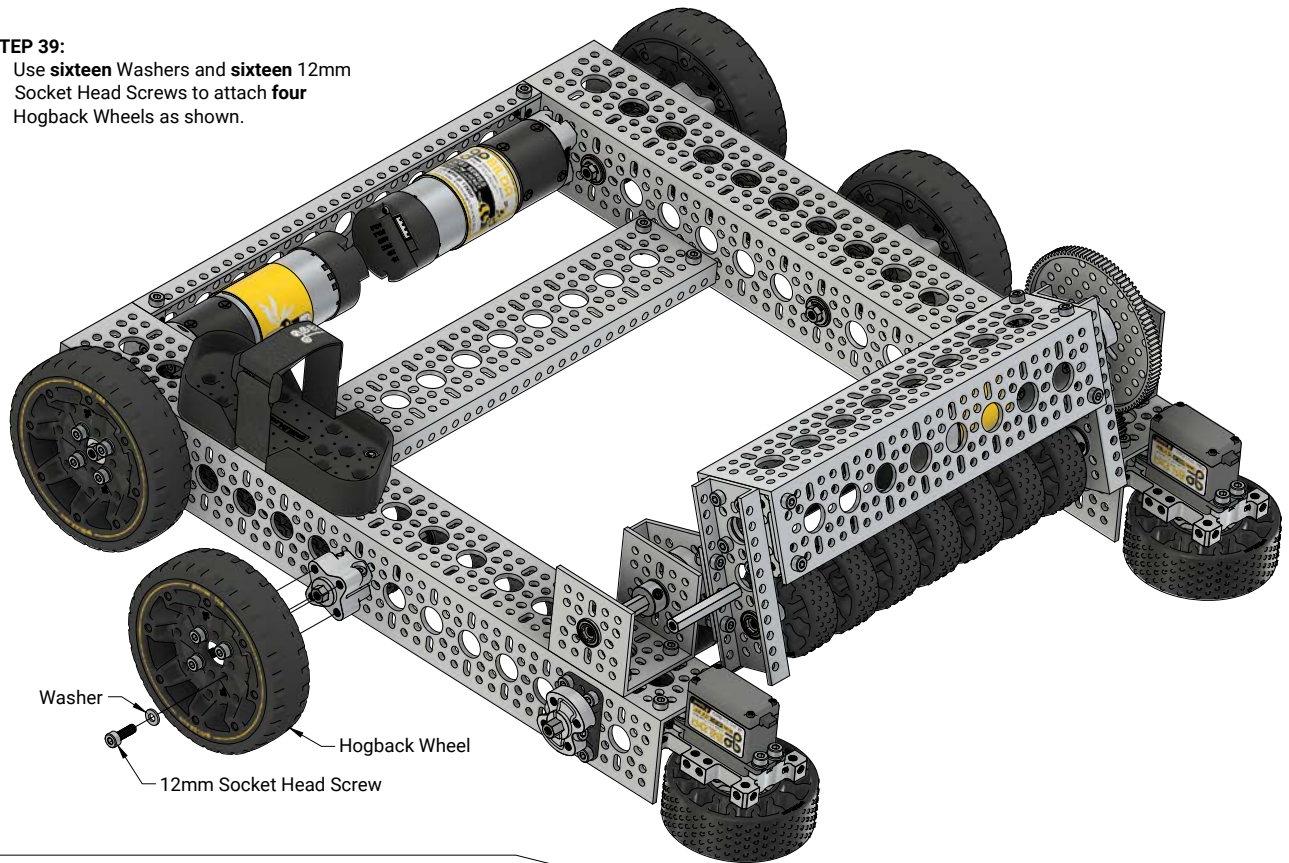
STEP 38:

Install the subassemblies from STEP 37 onto the subassembly from STEP 36 using **four** 4mm ID Spacers and **four** 20mm Socket Head Screws as shown.



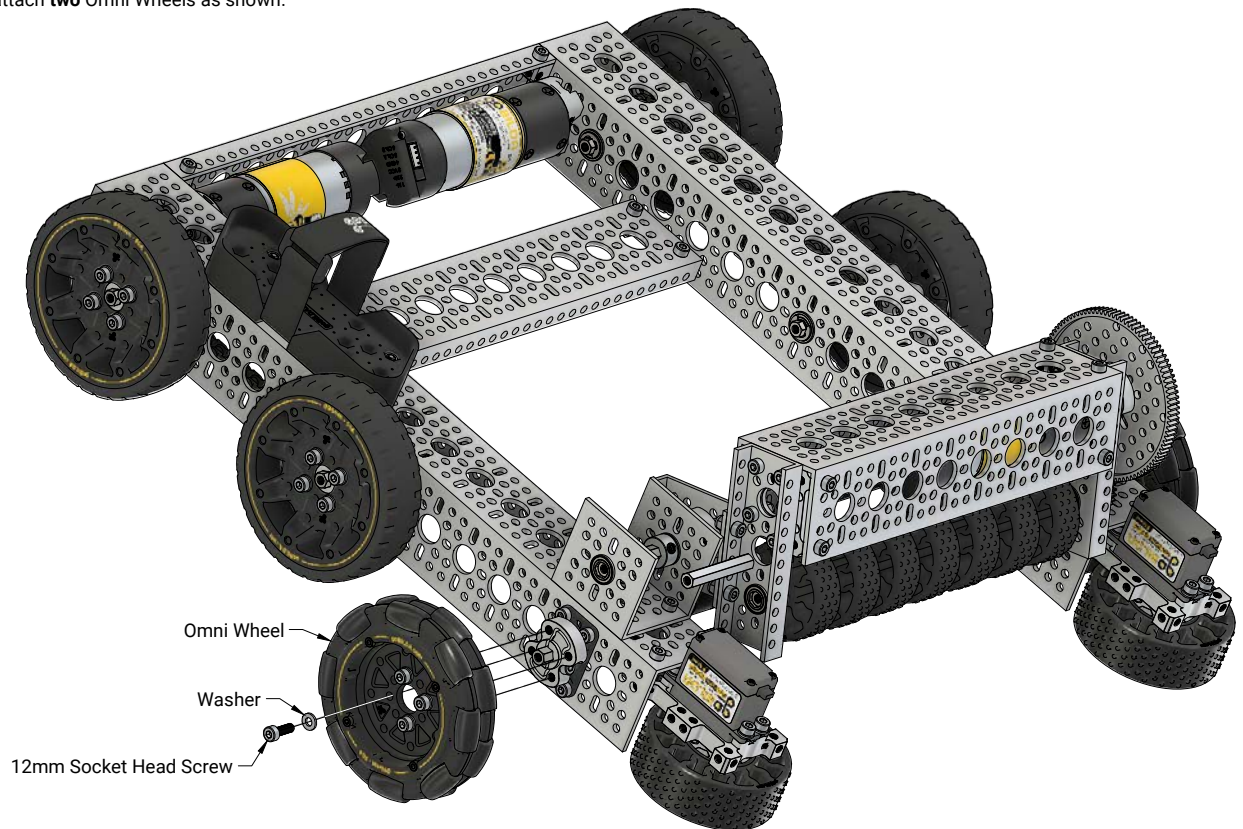
STEP 39:

Use **sixteen Washers** and **sixteen 12mm Socket Head Screws** to attach **four Hogback Wheels** as shown.



STEP 40:

Use **eight 12mm Socket Head Screws** and **eight Washers** to attach **two Omni Wheels** as shown.



Congratulations!

Your Preseason StarterBot is officially ready to roll. Now that the foundation is built, it's time to shift gears into programming, driver practice, and iterative design.

Ready. Set. goBILDA®!

