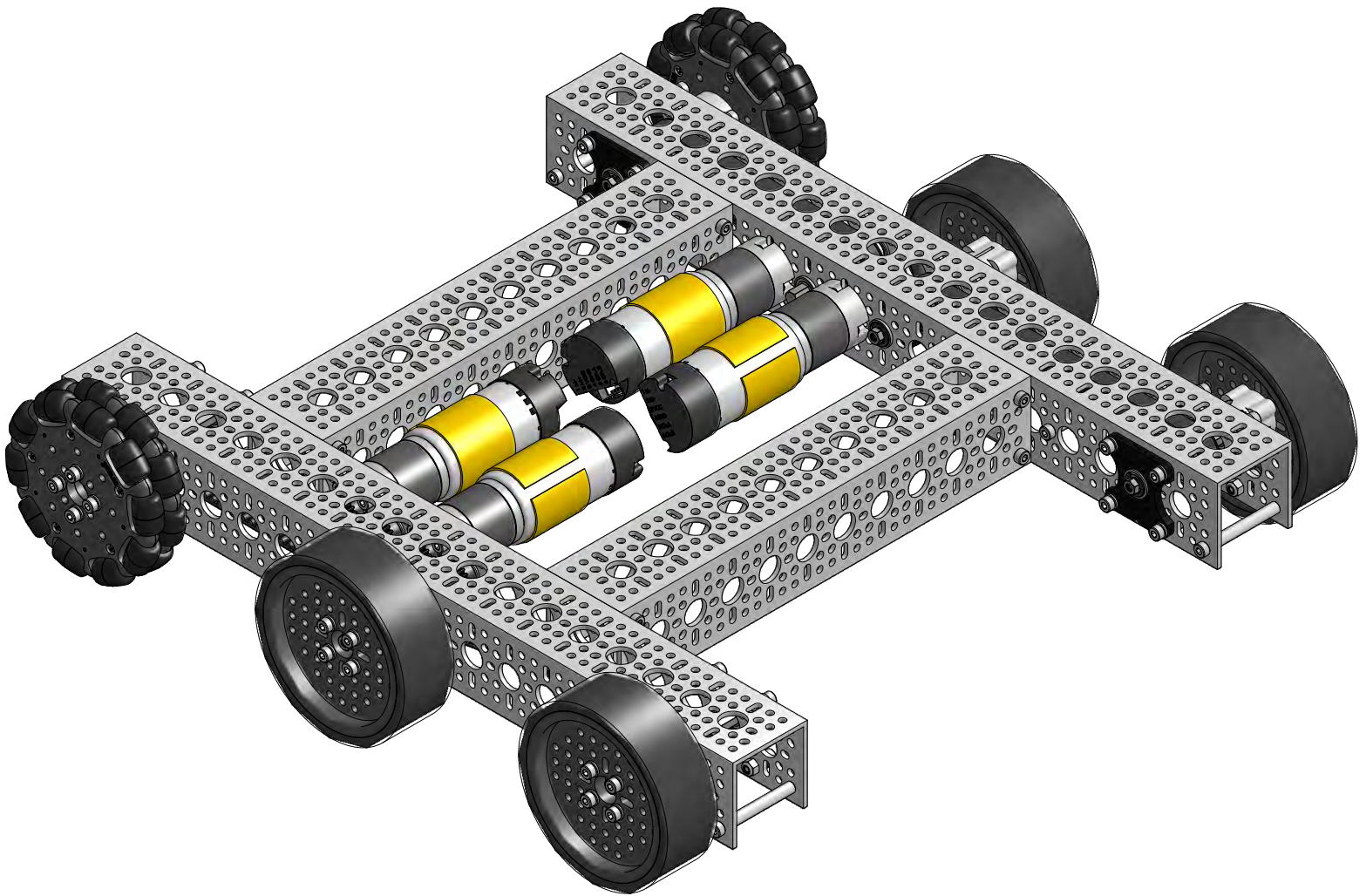
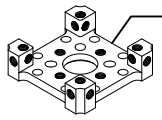


Assembly Instructions for **BeeLine Chassis Kit**

SKU: 3209-0002-0001



Kit Contents:



Quad Block Pattern Mount
SKU: 1201-0043-0002
QTY: 4



4mm Pattern Spacer
SKU: 1504-0032-0040
QTY: 2



8mm REX Bore Sonic Hub
SKU: 1309-0016-4008
QTY: 2



8mm REX Bore Hyper Hub
SKU: 1310-0016-4008
QTY: 4



43mm Standoffs
SKU: 1501-0006-0430
QTY: 8 (two 4 packs)



4mm Length, 8mm ID Spacer
SKU: 1514-0010-0040
QTY: 4 (one 4 pack)



6mm Length, 8mm ID Spacer
SKU: 1514-0010-0060
QTY: 4 (one 4 pack)



8mm Length, 8mm ID Spacer
SKU: 1514-0010-0080
QTY: 4 (one 4 pack)



8mm REX Bearing
SKU: 1611-0514-4008
QTY: 16 (eight 2 packs)



60mm Length, 8mm REX Shaft
SKU: 2102-0008-0060
QTY: 2



88mm Length 8mm REX Shaft
SKU: 2106-4008-0880
QTY: 6



8mm Length M4 Screw
SKU: 2800-0004-0008
QTY: 25 (one 25 pack)



11mm Length M4 Screw
SKU: 2800-0004-0011
QTY: 50 (two 25 packs)



14mm Length M4 Screw
SKU: 2800-0004-0014
QTY: 50 (two 25 packs)



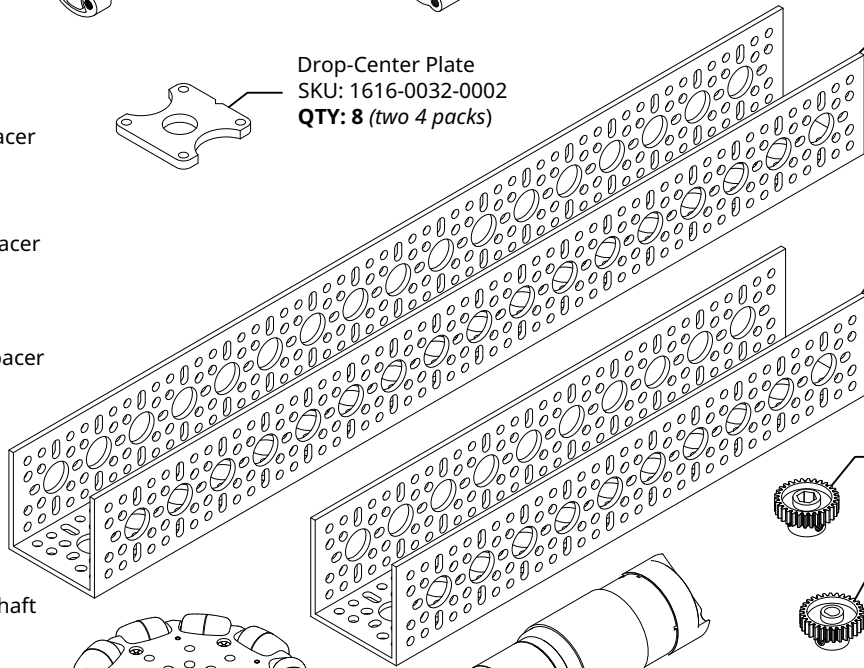
18mm Length M4 Screw
SKU: 2800-0004-0018
QTY: 25 (one 25 pack)



30mm Length M4 Screw
SKU: 2800-0004-0030
QTY: 25 (one 25 pack)

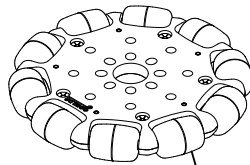


Drop-Center Plate
SKU: 1616-0032-0002
QTY: 8 (two 4 packs)

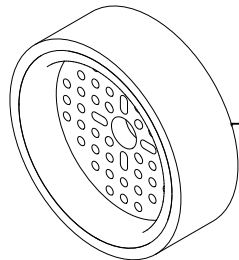


17 Hole U-Channel
SKU: 1120-0017-0432
QTY: 2

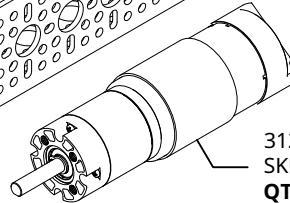
10 Hole U-Channel
SKU: 1120-0010-0264
QTY: 2



Omni Wheel
SKU: 3604-0014-0096
QTY: 4



Rhino Wheel
SKU: 3601-0014-0096
QTY: 4



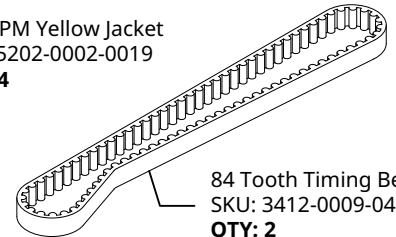
312 RPM Yellow Jacket
SKU: 5202-0002-0019
QTY: 4



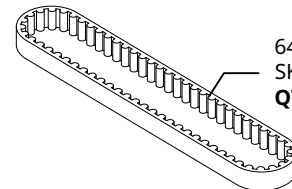
30T Gear, 8mm REX Bore
SKU: 2303-4008-0030
QTY: 4



30T Gear, 6mm D-Bore
SKU: 2303-1006-0030
QTY: 4



84 Tooth Timing Belt
SKU: 3412-0009-0420
QTY: 2



64 Tooth Timing Belt
SKU: 3412-0009-0320
QTY: 2



16 Tooth Timing Pulley
SKU: 3414-4008-0016
QTY: 8



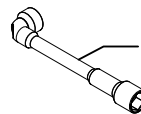
8mm ID, 1mm Thick Shim
SKU: 2807-0811-1000
QTY: 12 (one twelve pack)



M4 Locknut
SKU: 2812-0004-0007
QTY: 50 (two 25 packs)



4mm ID Washer
SKU: 2801-0004-0008
QTY: 75 (three 25 packs)



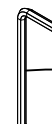
7mm Nut Driver
SKU: 4206-0070-0001
QTY: 1



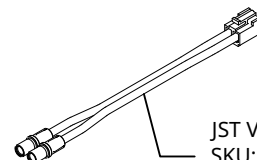
Timing Belt Idler
SKU: 3413-0001-0001
QTY: 2 (one 2 pack)



2.5mm Hex Key
SKU: 4200-0090-0025
QTY: 1



3mm Hex Key
SKU: 4200-0090-0030
QTY: 1

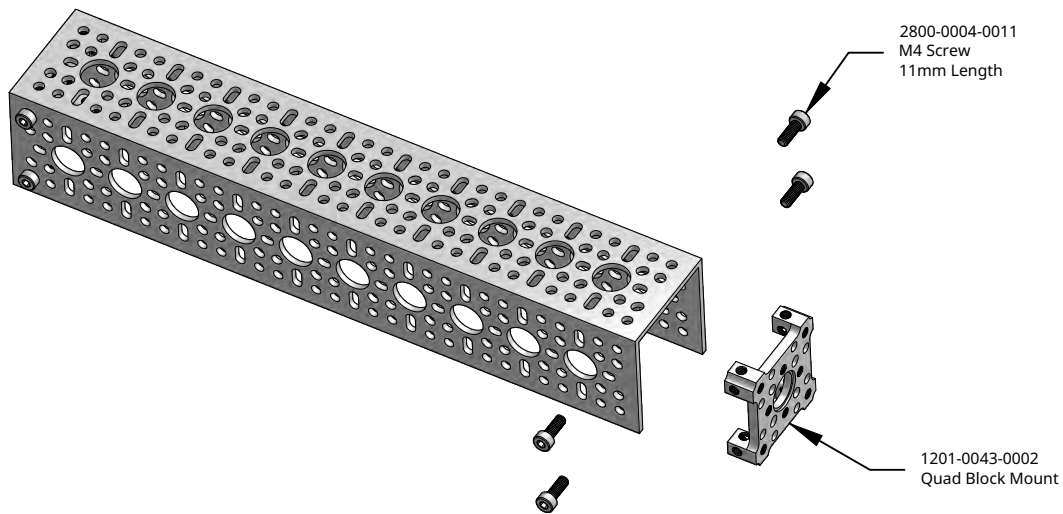


JST VH to Bullet Adaptor
SKU: 3801-0613-0100
QTY: 4

STEP 1

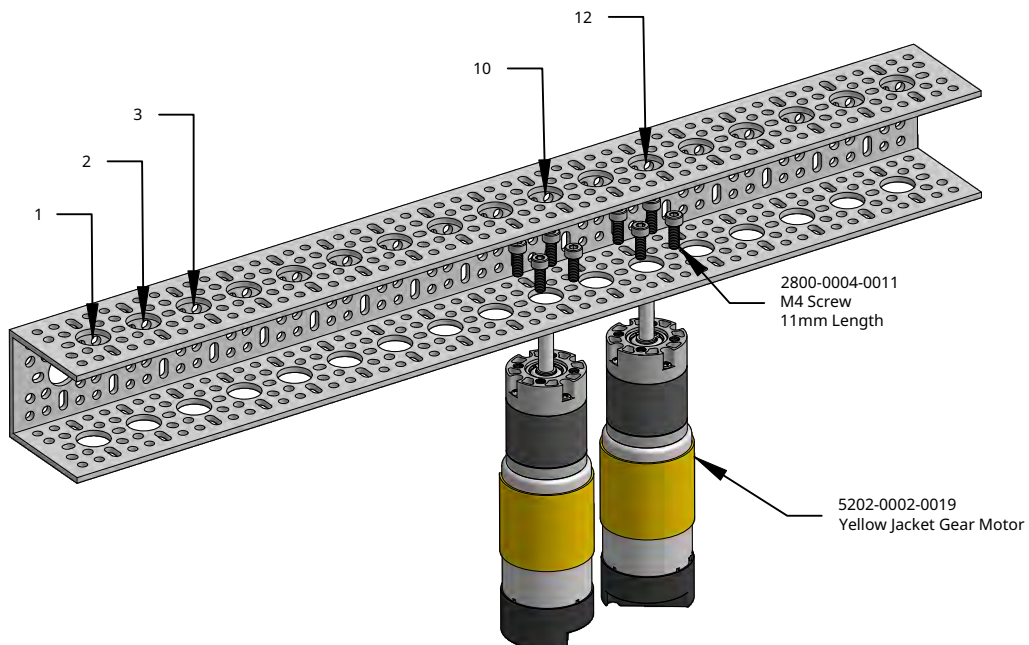
Using eight of the 11mm long screws, fasten a Quad Block Mount to each end end of a ten hole U-channel as shown.

Repeat this process on the other ten hole U-Channel.



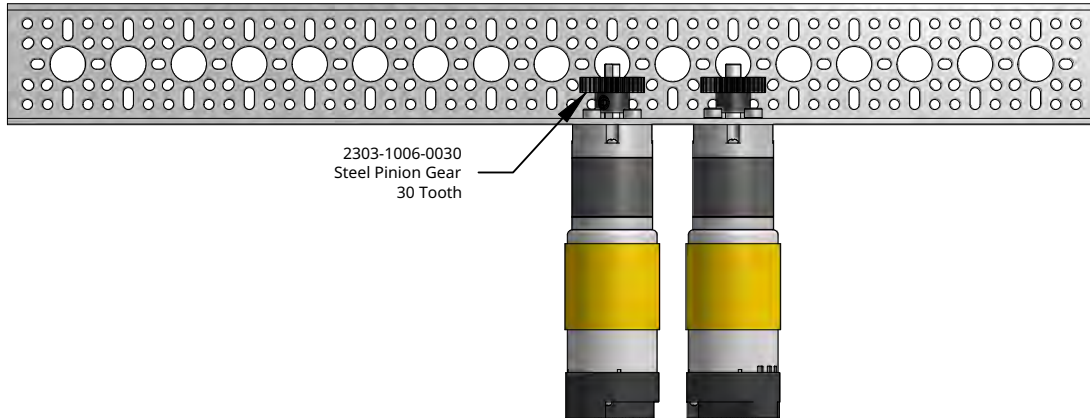
STEP 2

Using eight of the 11mm long screws, fasten one motor to the 10th hole from the end of a 17 hole channel, and the other to the 12th from the end.



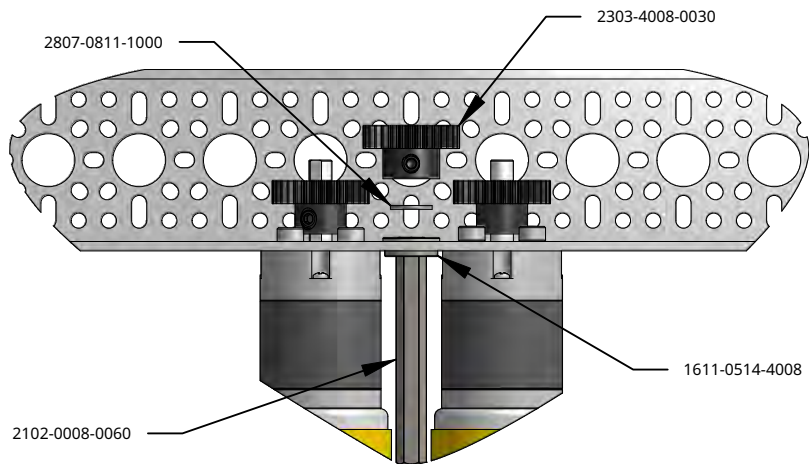
STEP 3

Put a 30 Tooth 6mm D-Bore gear on each of the motors. Leave the set screws loose for now.



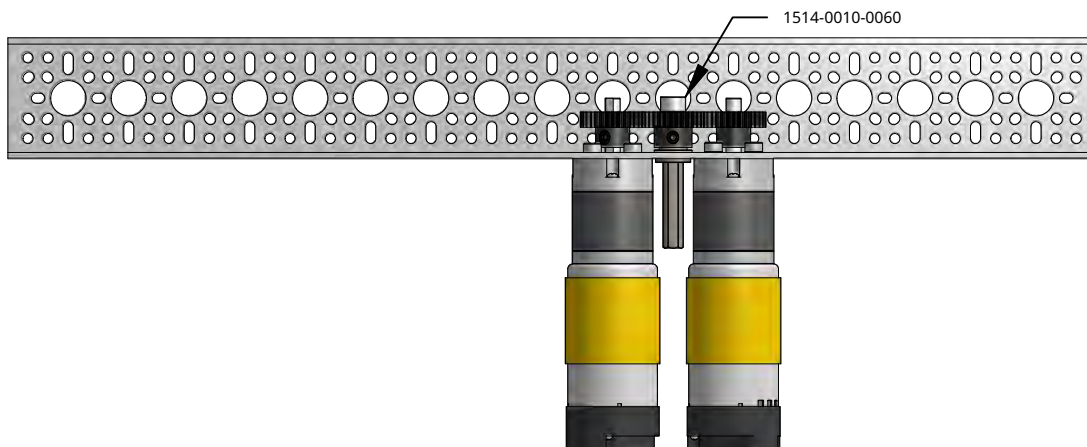
STEP 4

Insert 1x 1611-0514-4008 bearing into the 14mm hole between the motors with the flange on the inside of the U-Channel. Then from between the motors, slide one 2102-0008-0060 shaft into the bearing, and put a 2807-0811-1000 shim on the shaft touching the bearing's flanged side. Next, put a 30 Tooth 8mm REX Bore Gear on the shaft. Leave the set-screws loose for now.



STEP 5

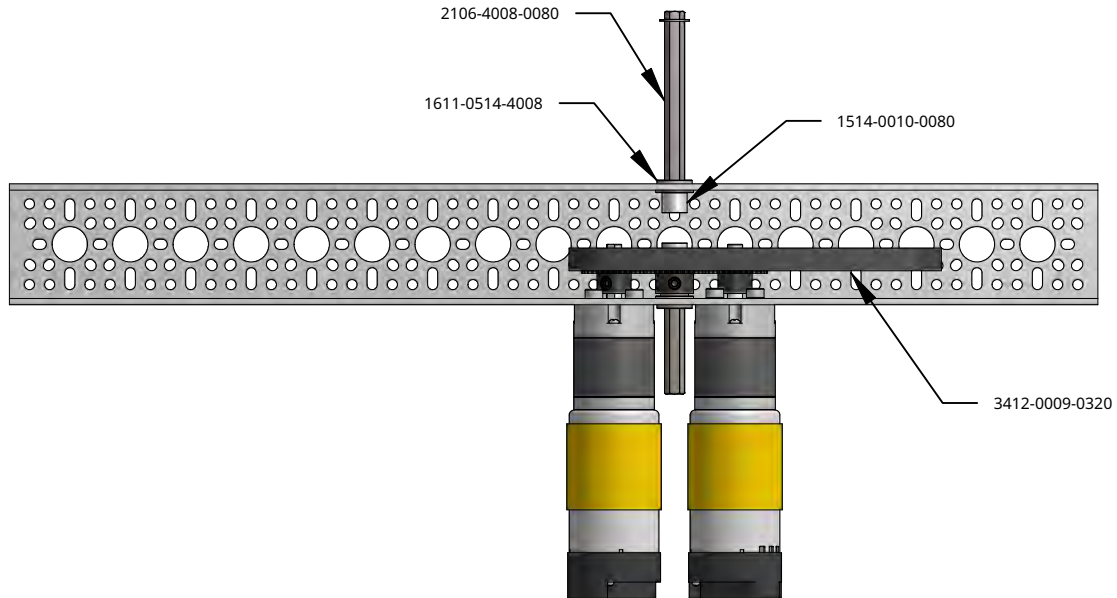
Slide 1x 1514-0010-0060 Spacer onto the 8mm REX Shaft you installed in Step 4. Slide the shaft back so that it does not stick out past the spacer.



STEP 6

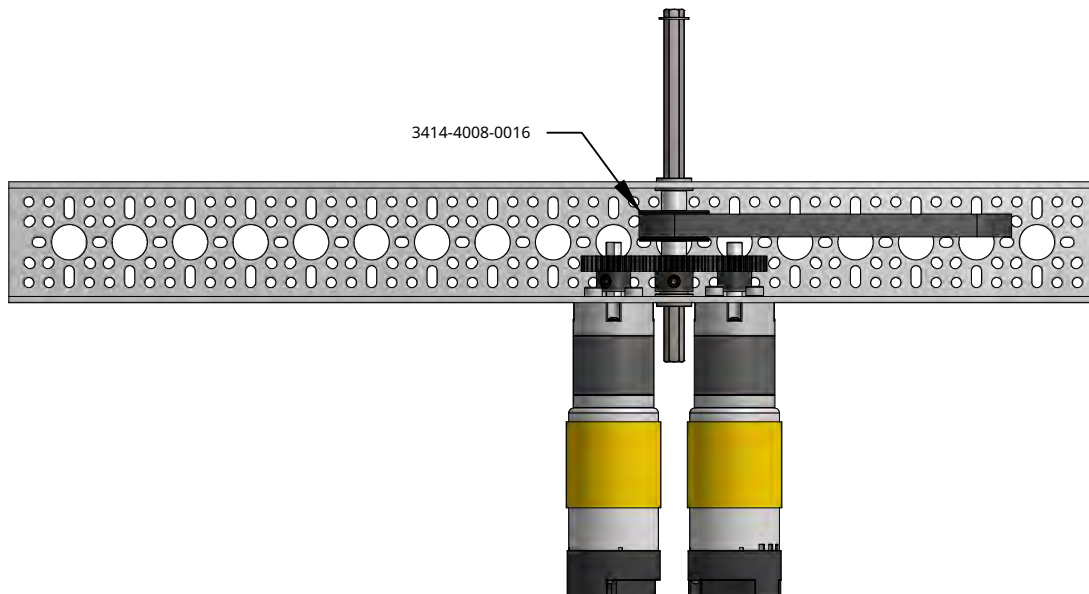
Grab one of the short belts (3412-0009-0320) and loosely place it over the cluster of gears. Add a 1611-0514-4008 Bearing to the hole directly opposite the 8mm REX shaft located between the motors, with the flange of the bearing on the inside of the U-Channel

Pro Tip: Slide one of the spare 8mm REX Shafts into the bearing in order to stack parts onto to assist in keeping loose parts in place. Slide a 1514-0010-0080 spacer onto this shaft.



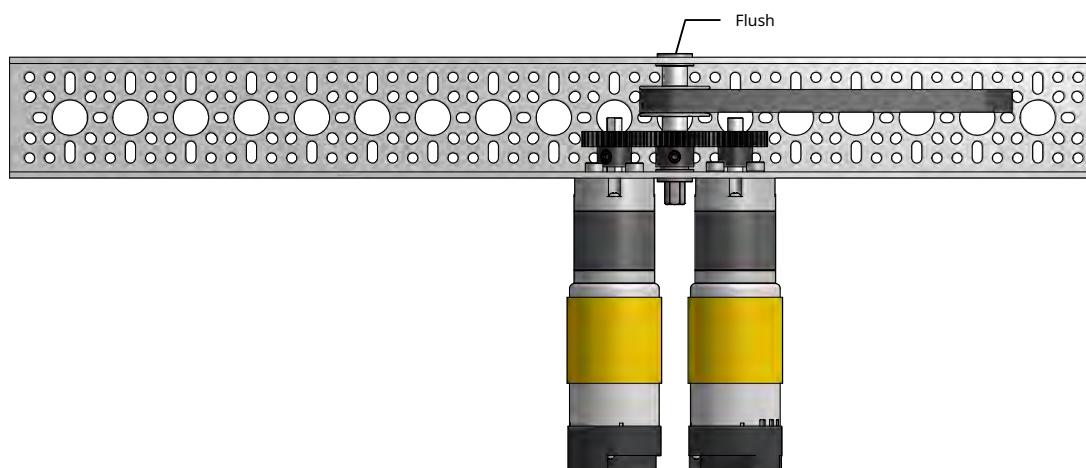
STEP 7

Insert a 3414-4008-0016 Pulley into the space between each 1514 spacer. Then push the shorter of the two 8mm REX shafts through the pulley and use it to push the 8mm REX Shaft that was used as an alignment tool out of the assembly. Push the shaft up until it is flush with the bearing on the far side.



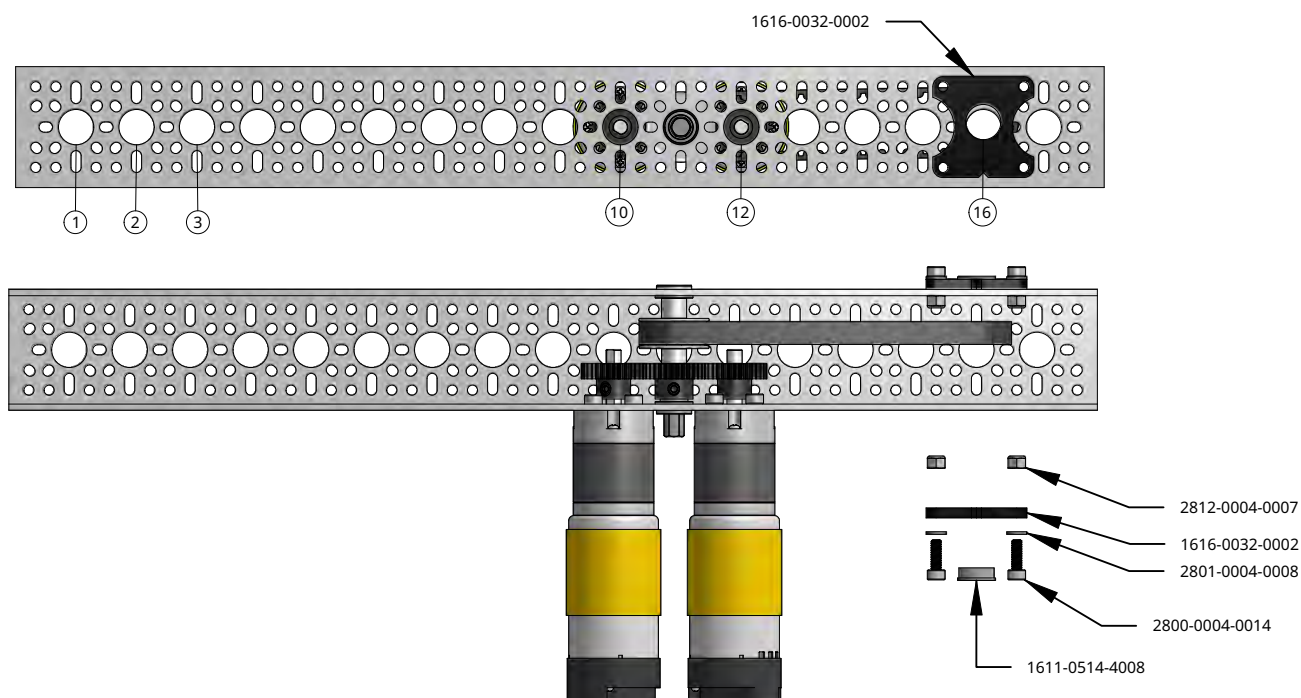
STEP 8

Keeping the 8mm REX shaft flush with the outer bearing, tighten the 2 set-screws on the pulley, then the two on the 8mm REX bore gear. Then align the 2303 series gears on the motor's output shafts with the gear on the 8mm REX shaft, and tighten the set-screws onto the motor shafts.



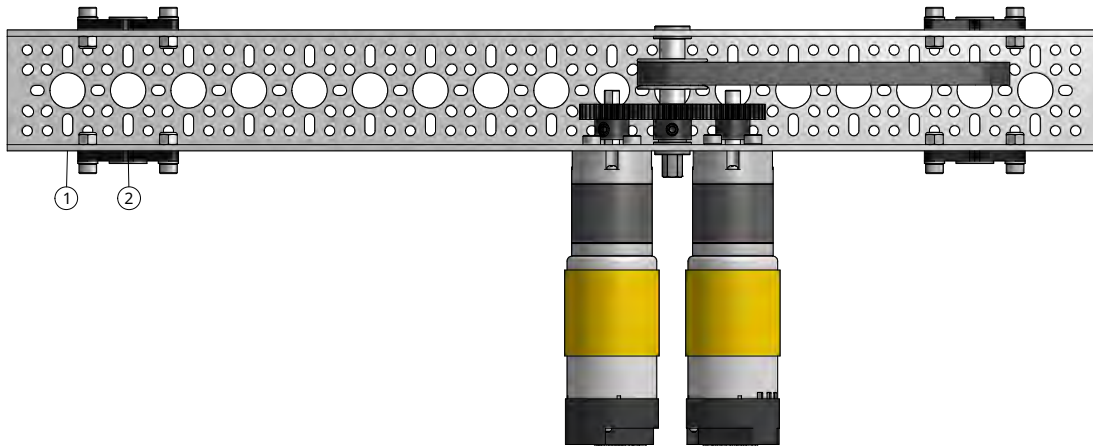
STEP 9

Orient the Drop-Center Plates so that the little triangles are facing up toward the open side of the U-Channel. Then use the 14mm screws, washers, and locknuts to affix them to the second-to-last (16th) hole in the U-Channel. Add a 1611-0514-4008 to the 14mm hole in the drop plate. Repeat this for the hole directly across the channel.



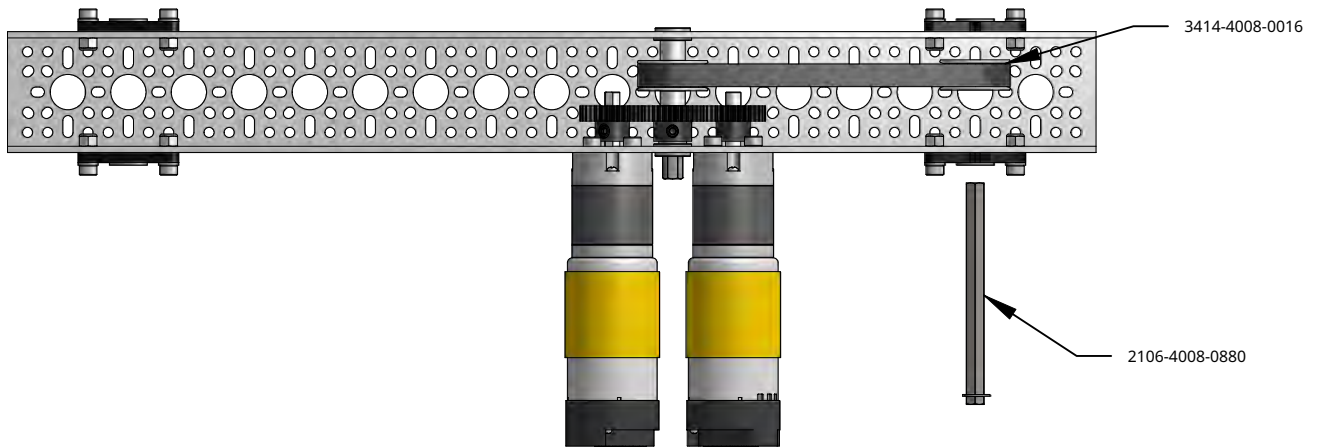
STEP 10

Repeat Step 9 on the 2nd hole of the U-Channel.



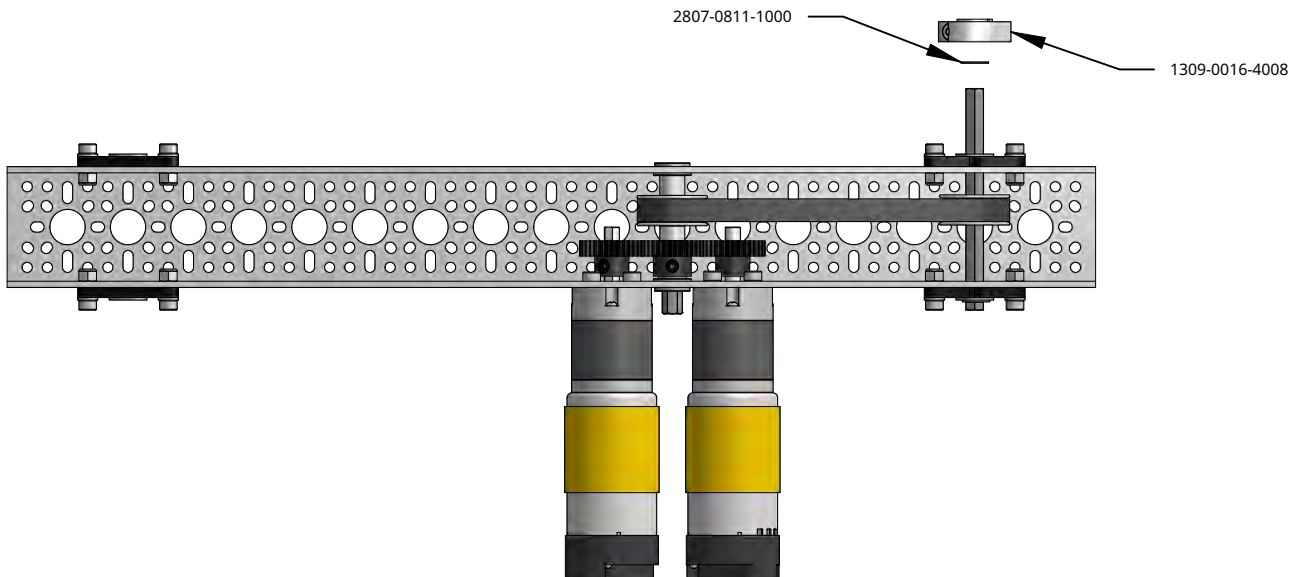
STEP 11

Wrap the belt you installed in step 6 around one of the 3414-4008-0016 8mm REX Bore Pulleys. Then insert the 2106-4008-0880 shaft through the bearing, through the pulley, and through the far bearing.



STEP 12

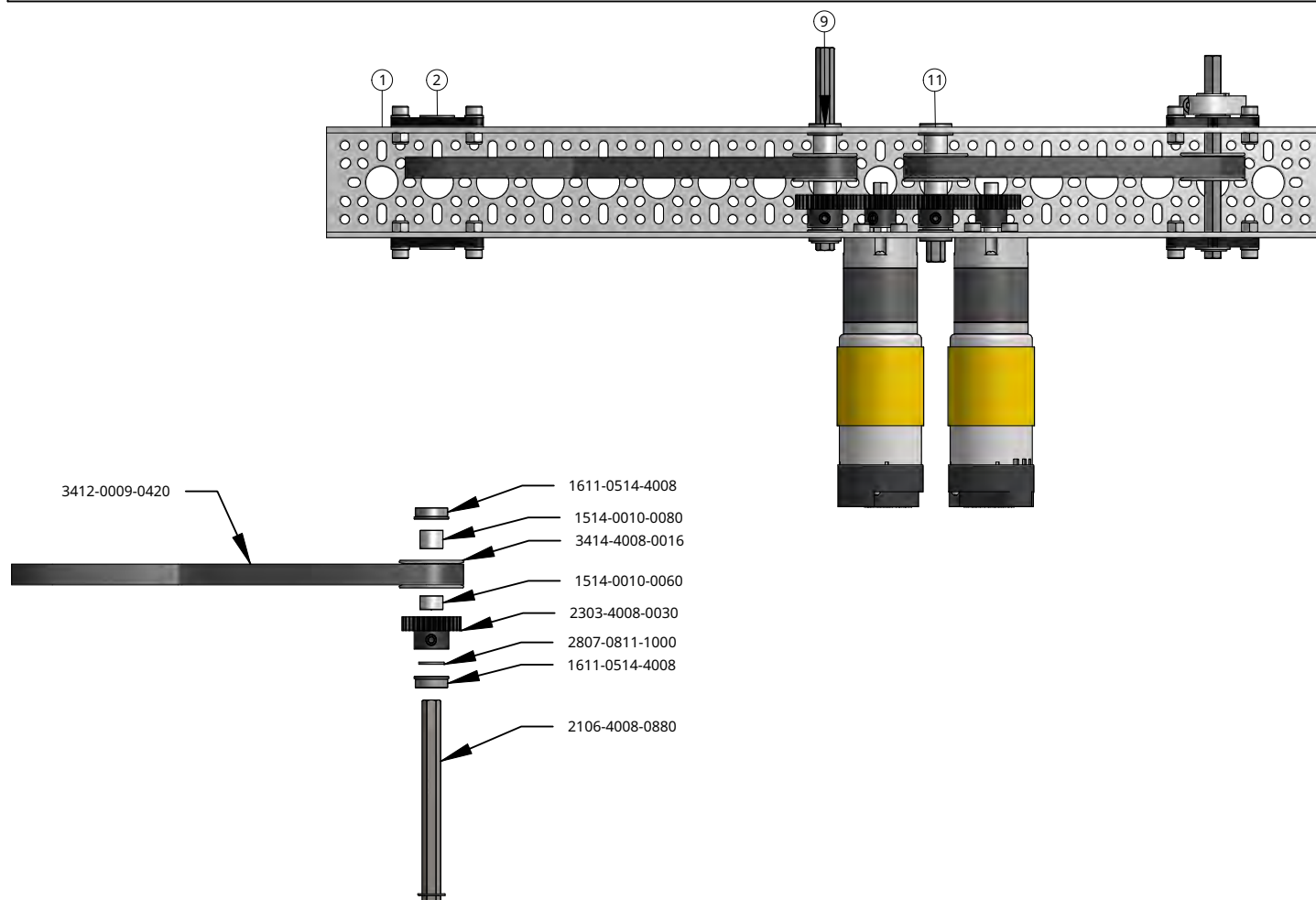
Slide a 1mm thick shim (2807-0811-1000) onto the 2106 series REX shaft, followed by an 8mm REX Bore Sonic hub. Push the shaft in as far as it will go, then tighten the pinch bolts in the hub.



STEP 13

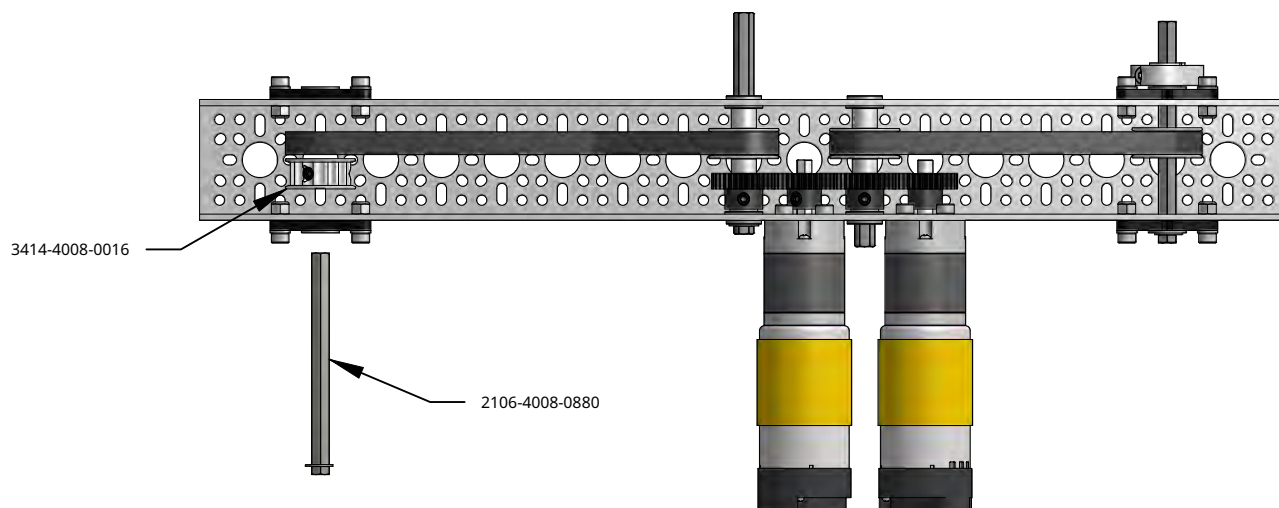
In the 9th hole, create an assembly just as you did in the 11th hole, only this time using a long belt and an 8mm REX shaft with a snap ring. Once you have the parts on the shaft, slide the shaft all of the way through until the snap-ring contacts the inner race of the bearing.

Note: This assembly is very similar to the one created in steps 4-8. So it may be useful to reference those steps.



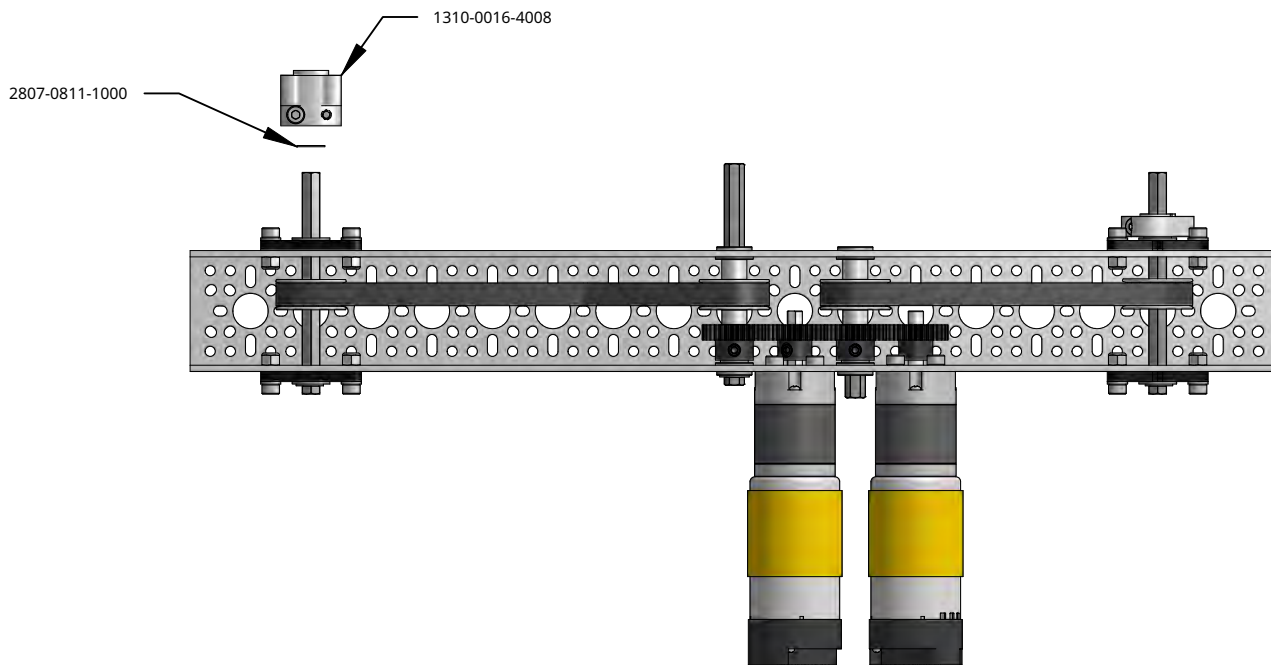
STEP 14

Add a 3414 Series Pulley to the longer (420mm) belt, and slide an 88mm long 8mm REX shaft through the bearings and pulley.



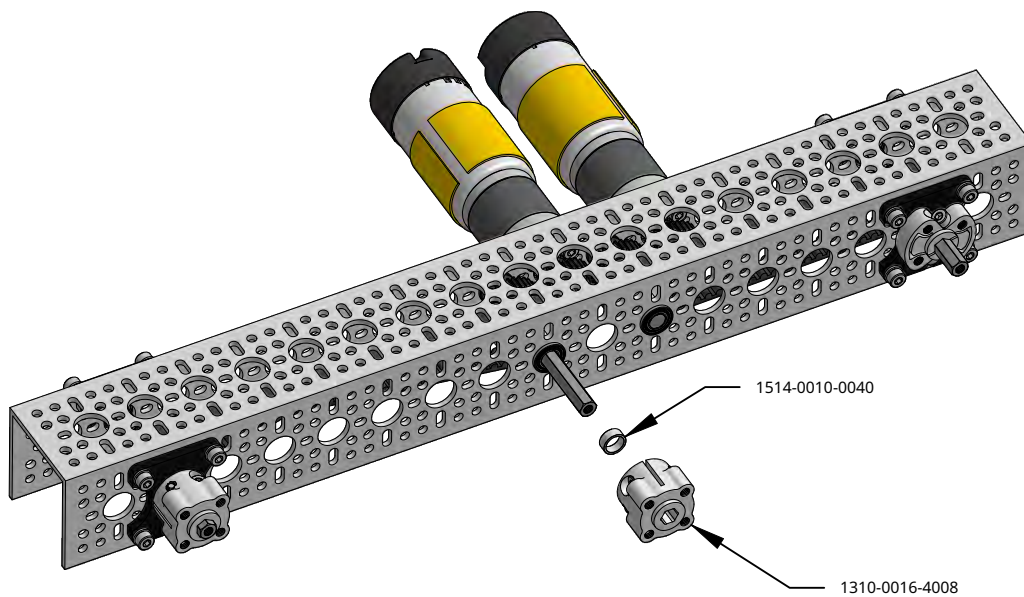
STEP 15

Add a 1mm shim and a Hyper hub to the newly added 8mm REX shaft, make sure the E-Clip bottoms out against the bearing, then tighten the pinch bolts on the hub to lock the shaft in place.
Align the recently added 3414 pulley with the center-mounted pulley. The holes on the U-Channel provide a useful visual guide to align the belt. Use the 2.5mm driver to tighten the 2 set-screws on the pulley



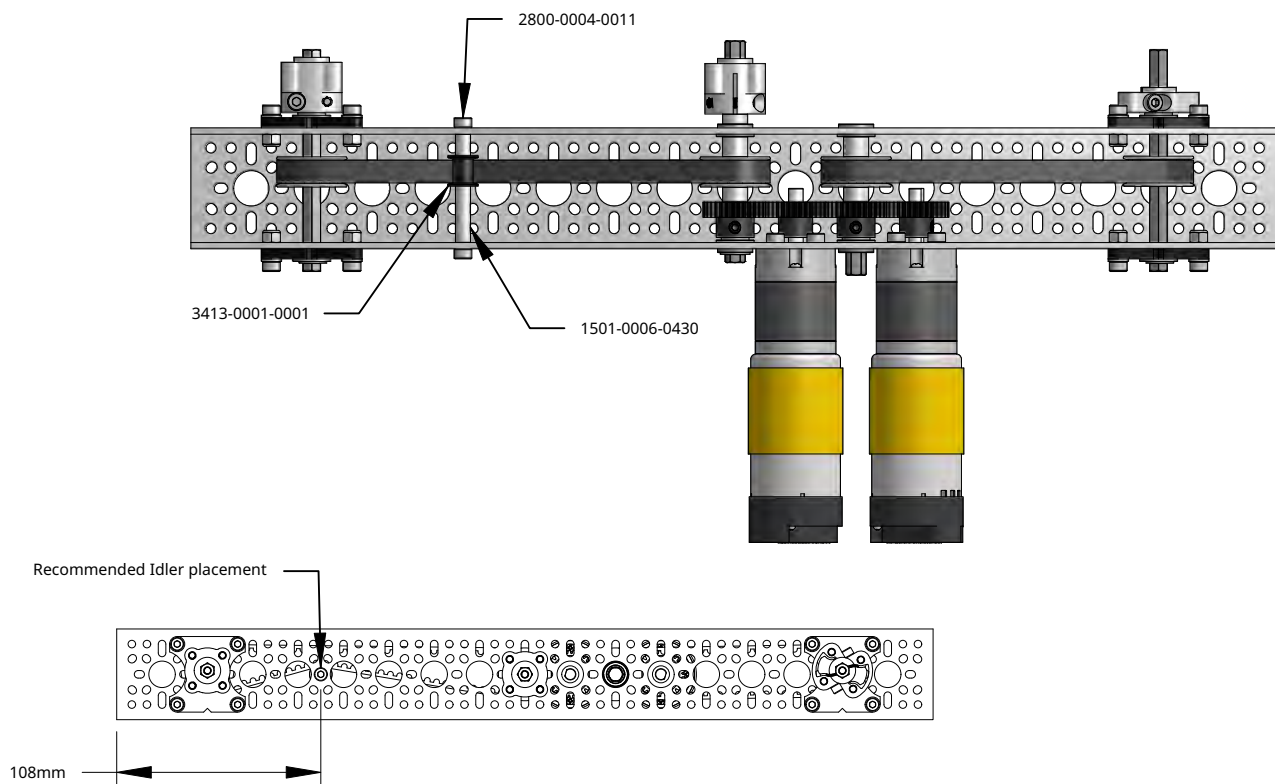
STEP 16

Add a 4mm, long 8mm ID spacer and a Hyper hub to the center shaft and tighten the pinch bolts.



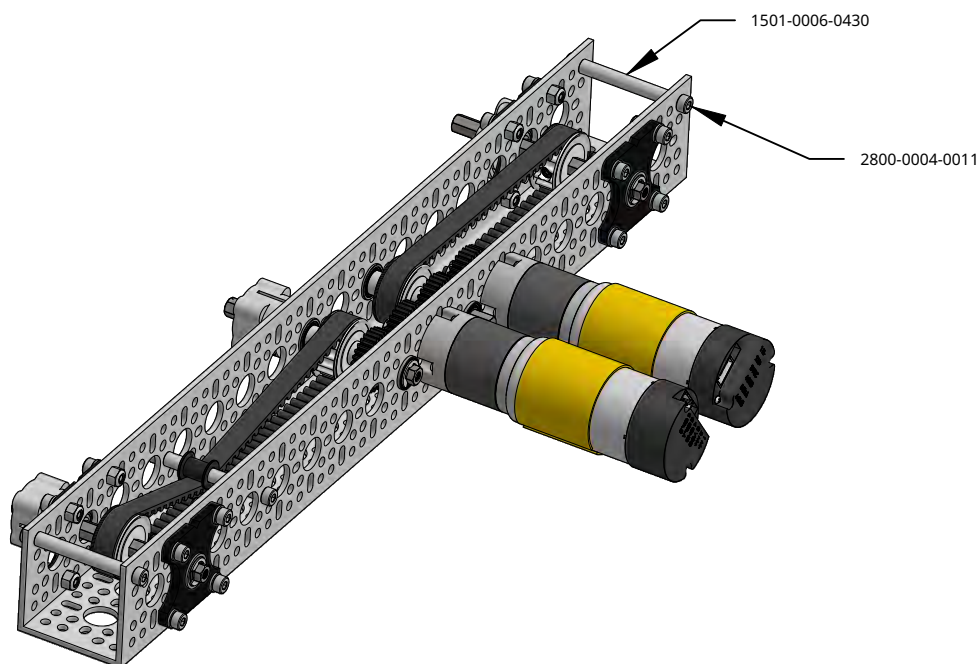
STEP 17

Slide a timing belt idler over a 43mm long standoff, then insert it into the U-Channel as shown. Use this idler to add some necessary tension to the belt. It should be snug but not difficult to turn. We have shown a recommended idler placement.



STEP 18

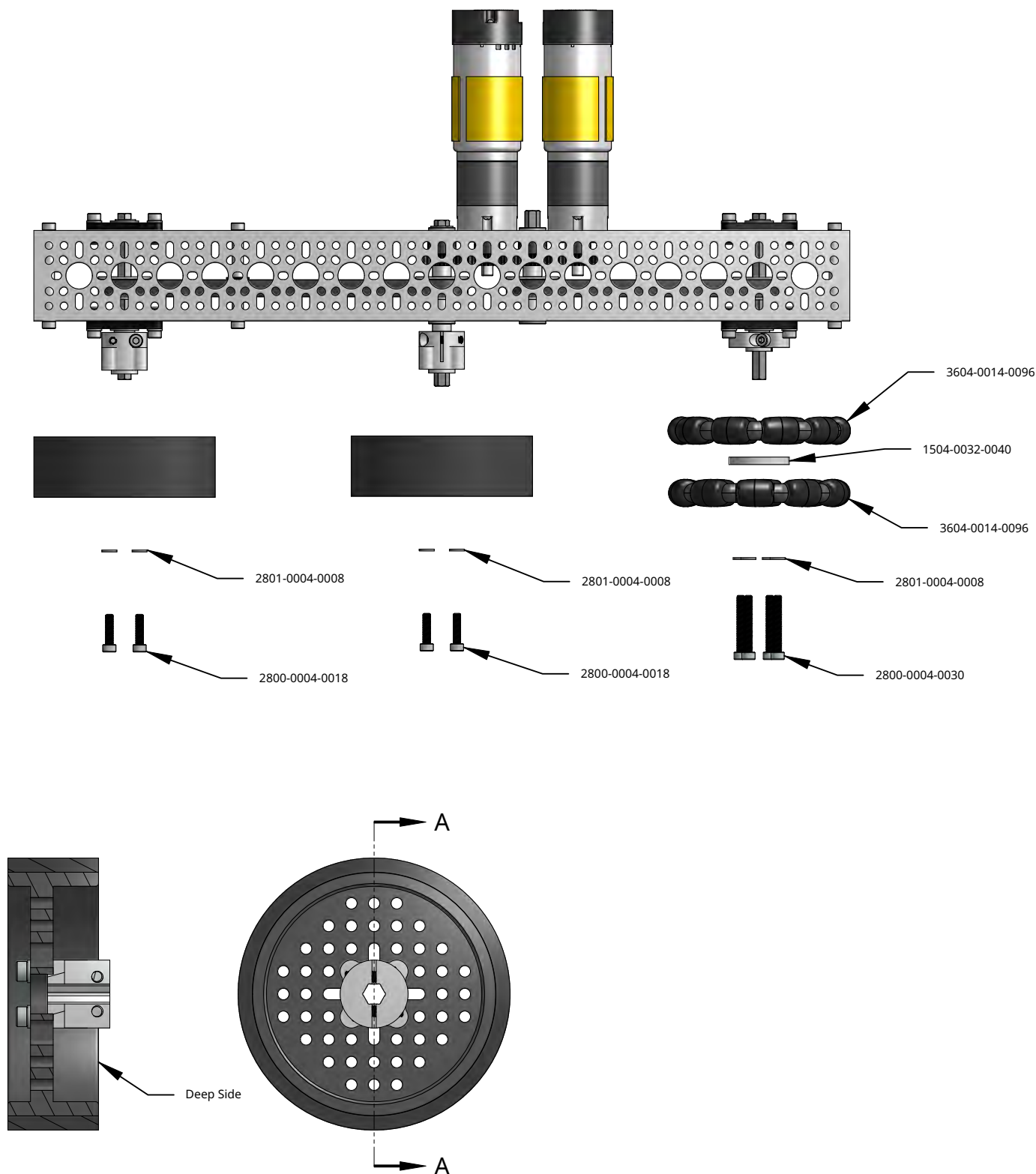
Next, add a standoff (1501-0006-0430) to each bottom corner hole of the channel using 11mm long screws.



STEP 19

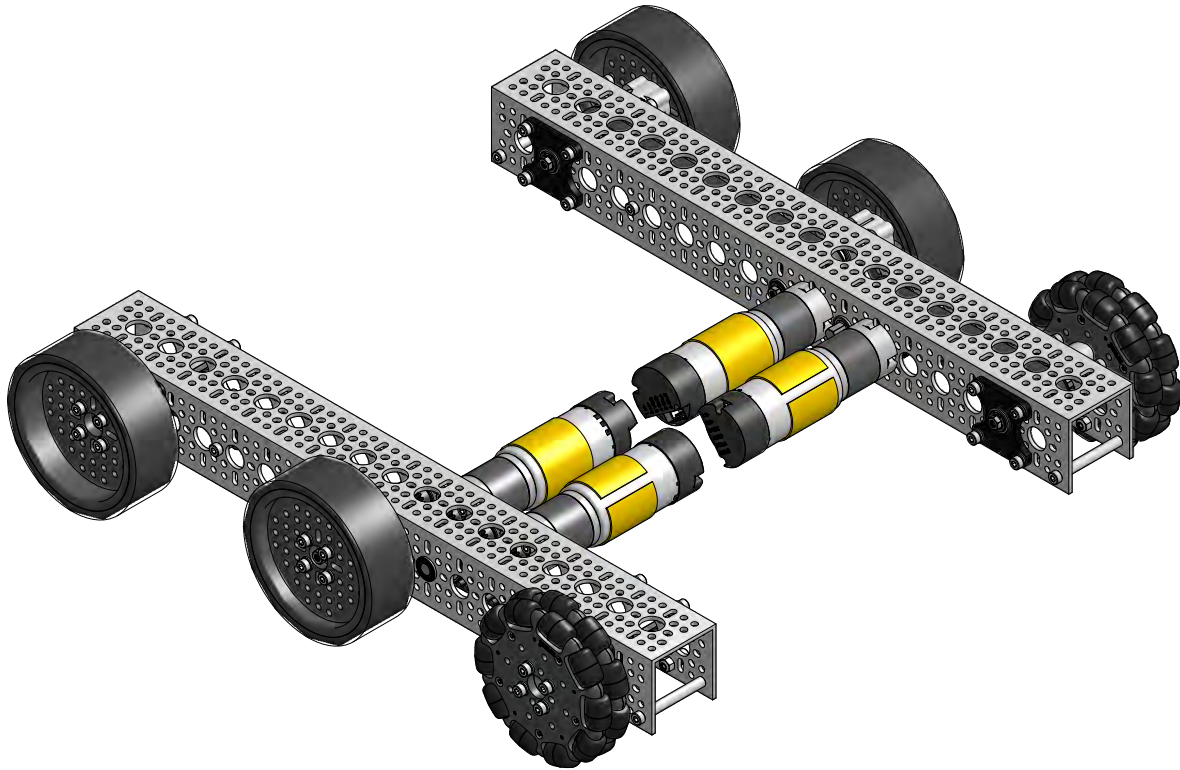
Attach Rhino wheels to the two Hyper hubs with the wheel's deep side facing the chassis, using 18mm screws and washers. Attach two Omni wheels with a pattern spacer to the Sonic hub using 30mm screws and washers.

Note: Make sure to clock the omni wheels so that the rollers of one wheel coincide with the gaps of the next wheel.



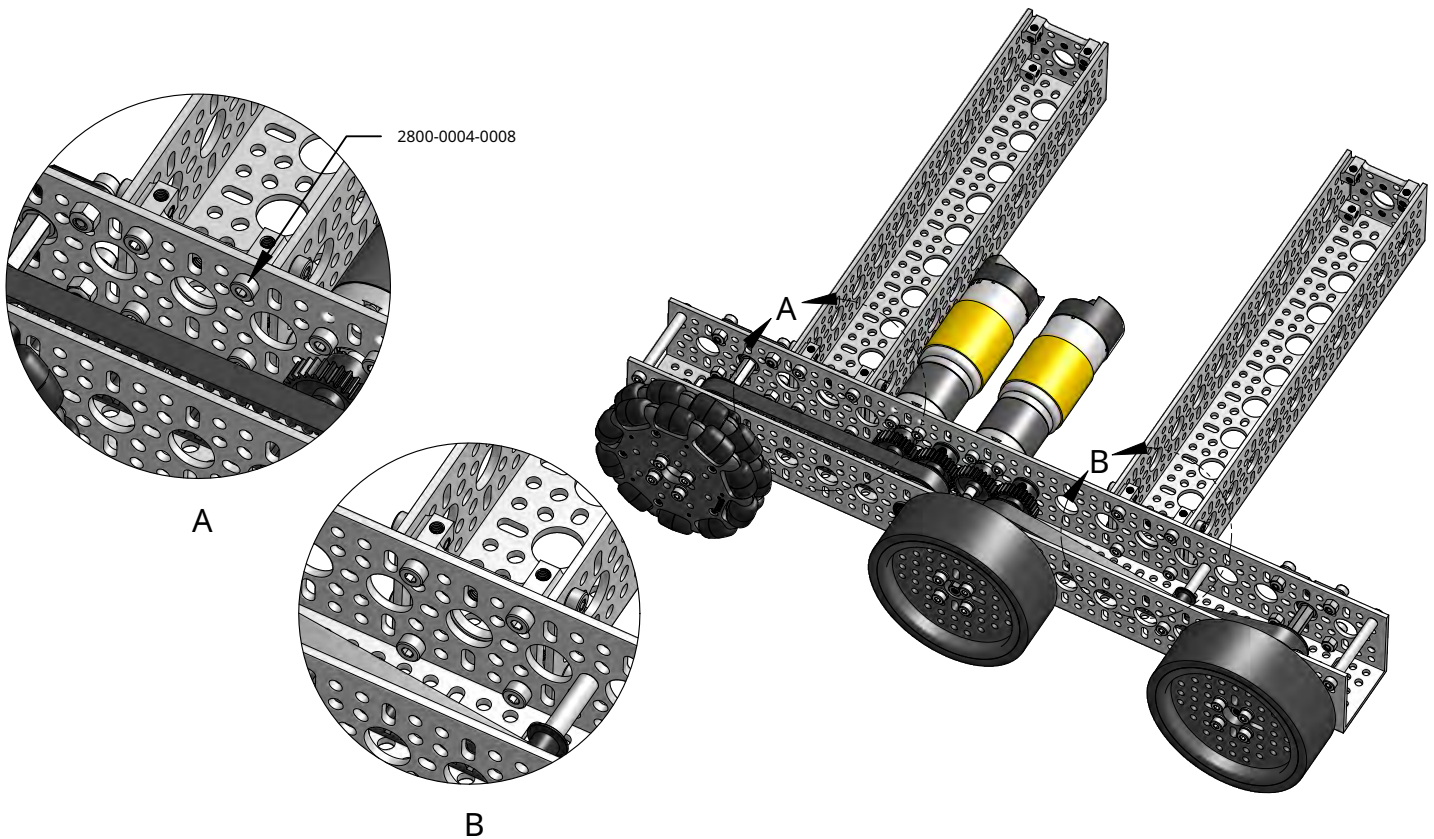
STEP 20

You've finished putting together the left side! Repeat steps 2-21 to create the right side of your chassis. You should end up with two sub-assemblies that are a perfect mirror of one another.



STEP 21

Attach the crossbars you created in step 1 to the side of your chassis using 8mm long screws



STEP 22

Attach the other side of your drivetrain to the far end of the crossbars, and you're done! Sit back and enjoy your work before you make a BeeLine to your destination!

