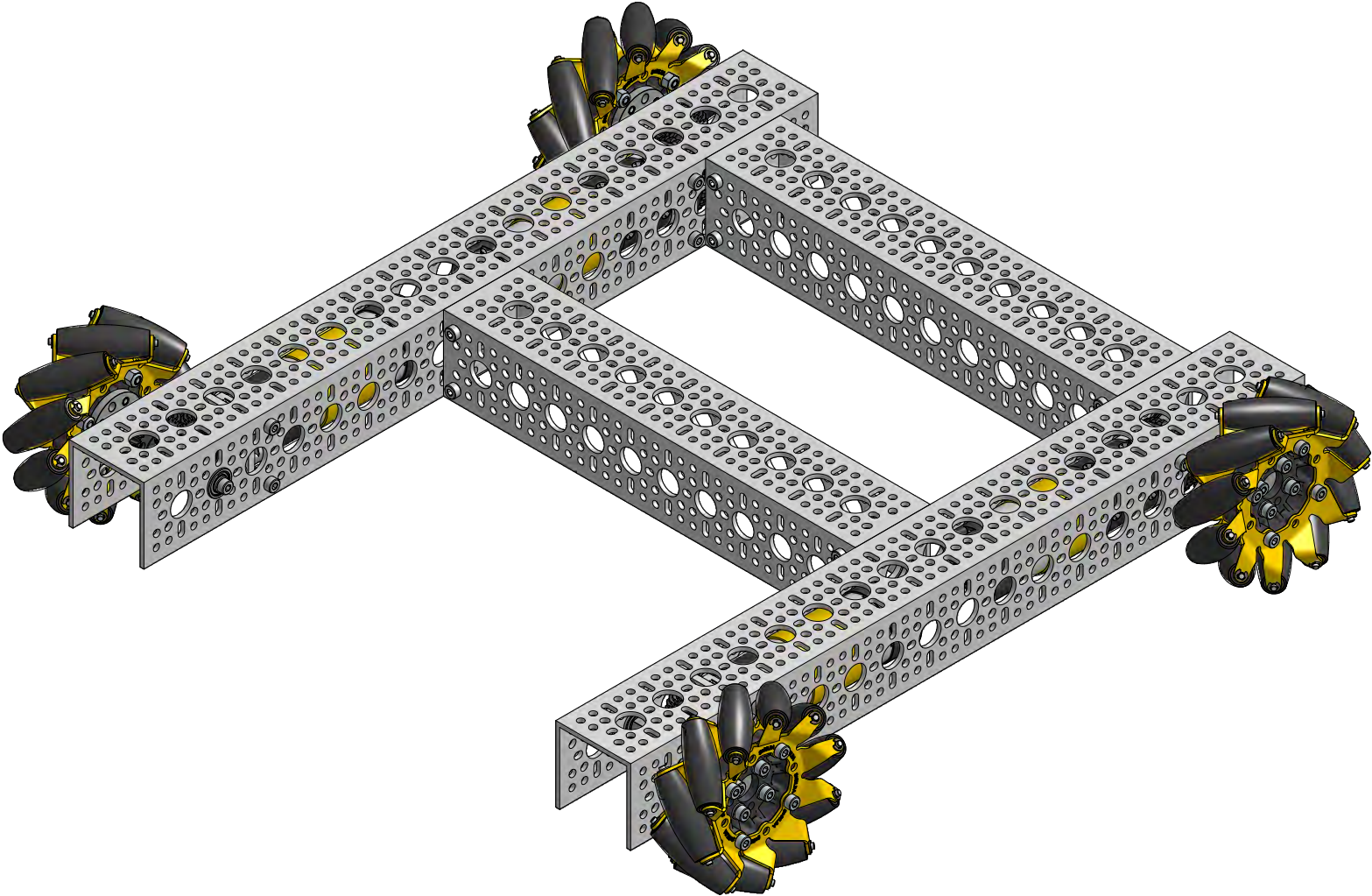
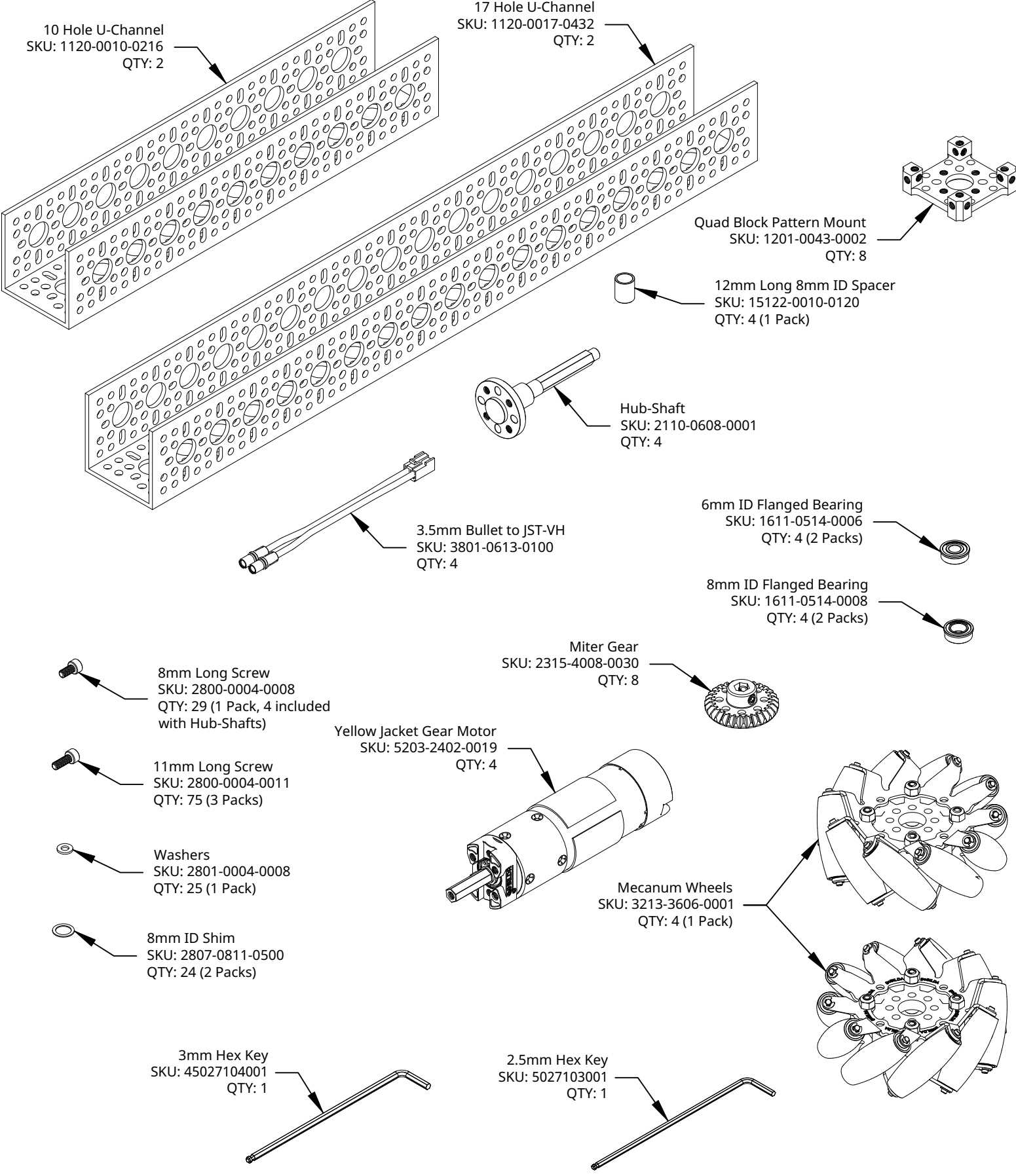


Assembly instructions for
Strafer Chassis V5
SKU: 3209-0001-0005



Kit Contains:



10 Hole U-Channel
SKU: 1120-0010-0216
QTY: 2

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

Quad Block Pattern Mount
SKU: 1201-0043-0002
QTY: 8

12mm Long 8mm ID Spacer
SKU: 15122-0010-0120
QTY: 4 (1 Pack)

Hub-Shaft
SKU: 2110-0608-0001
QTY: 4

3.5mm Bullet to JST-VH
SKU: 3801-0613-0100
QTY: 4

6mm ID Flanged Bearing
SKU: 1611-0514-0006
QTY: 4 (2 Packs)

8mm ID Flanged Bearing
SKU: 1611-0514-0008
QTY: 4 (2 Packs)

Miter Gear
SKU: 2315-4008-0030
QTY: 8

8mm Long Screw
SKU: 2800-0004-0008
QTY: 29 (1 Pack, 4 included
with Hub-Shafts)

11mm Long Screw
SKU: 2800-0004-0011
QTY: 75 (3 Packs)

Washers
SKU: 2801-0004-0008
QTY: 25 (1 Pack)

8mm ID Shim
SKU: 2807-0811-0500
QTY: 24 (2 Packs)

Yellow Jacket Gear Motor
SKU: 5203-2402-0019
QTY: 4

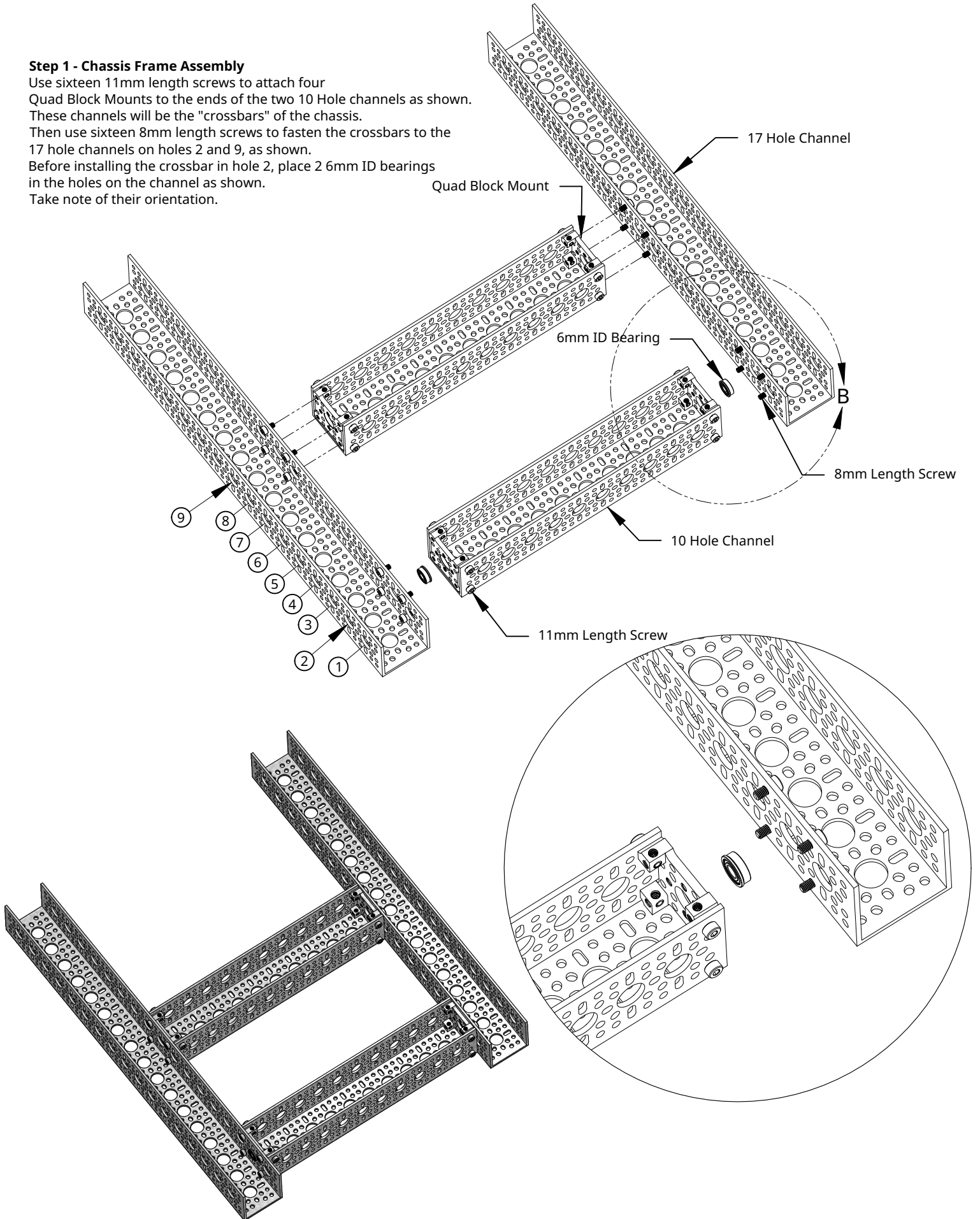
Mecanum Wheels
SKU: 3213-3606-0001
QTY: 4 (1 Pack)

3mm Hex Key
SKU: 45027104001
QTY: 1

2.5mm Hex Key
SKU: 5027103001
QTY: 1

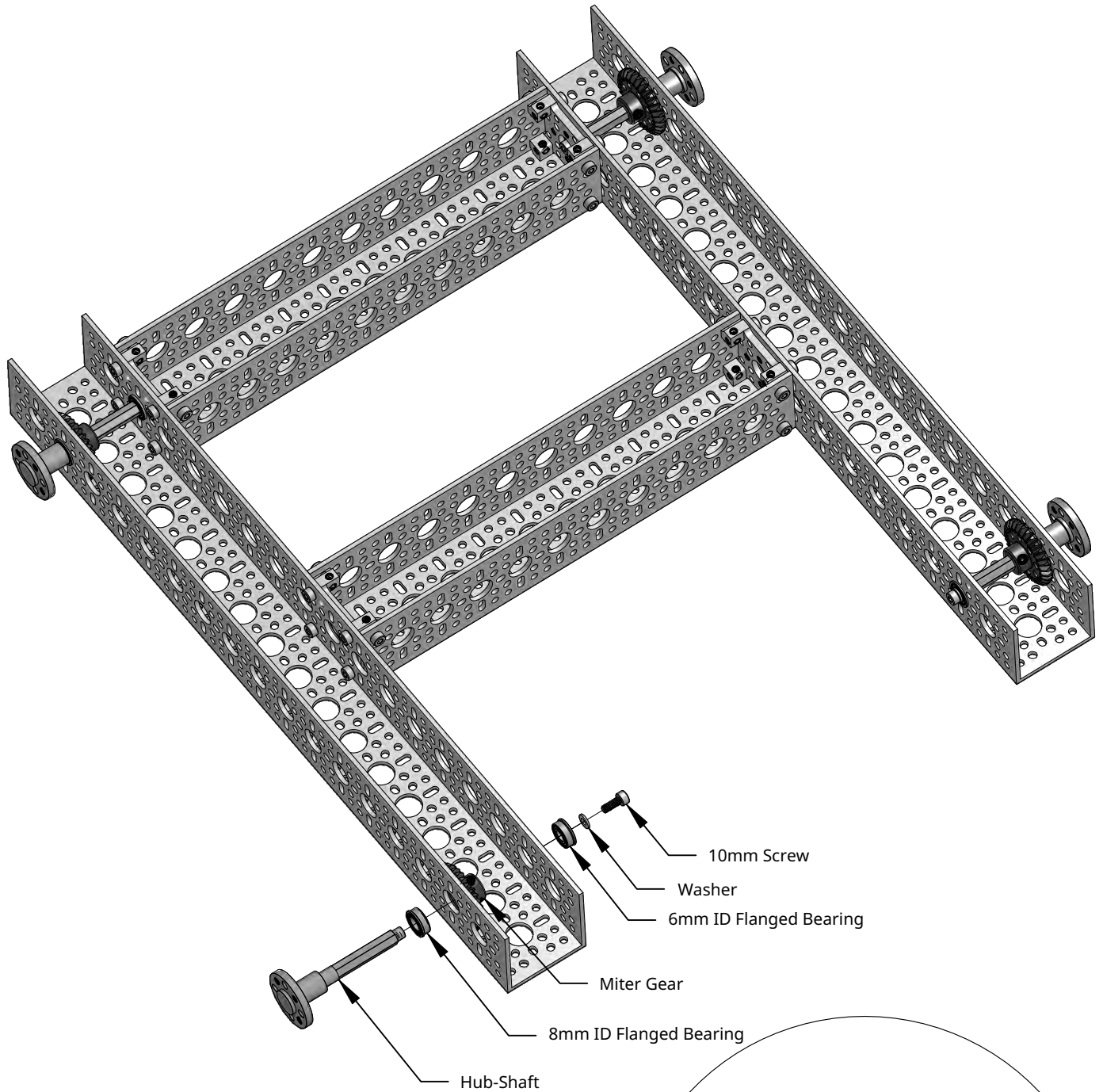
Step 1 - Chassis Frame Assembly

Use sixteen 11mm length screws to attach four Quad Block Mounts to the ends of the two 10 Hole channels as shown. These channels will be the "crossbars" of the chassis. Then use sixteen 8mm length screws to fasten the crossbars to the 17 hole channels on holes 2 and 9, as shown. Before installing the crossbar in hole 2, place 2 6mm ID bearings in the holes on the channel as shown. Take note of their orientation.



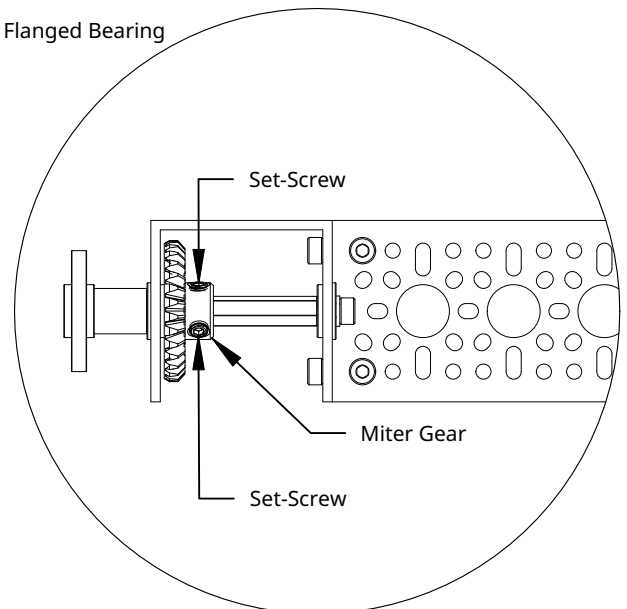
Step 2 - Output Shaft Assemblies

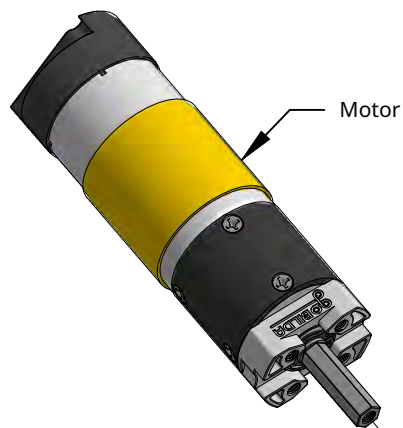
In this step you will assemble the driven shafts of the chassis. Create one corner of the assembly as shown in the exploded view, then duplicate that process on the 3 other corners of the chassis.



Step 3: Constrain Miter Gears

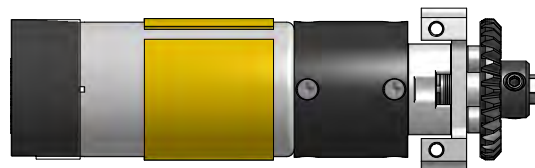
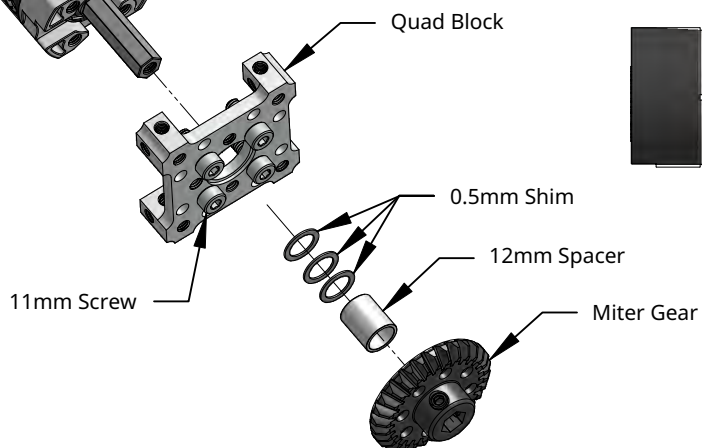
Slide the Miter Gear as far to the outside of the chassis (Closest to the mounting face of the Hub-Shaft) as it will go. It should stop before contacting the channel wall. Then, using a 2.5mm Hex Key, tighten both set screws. Repeat for each corner of the chassis.





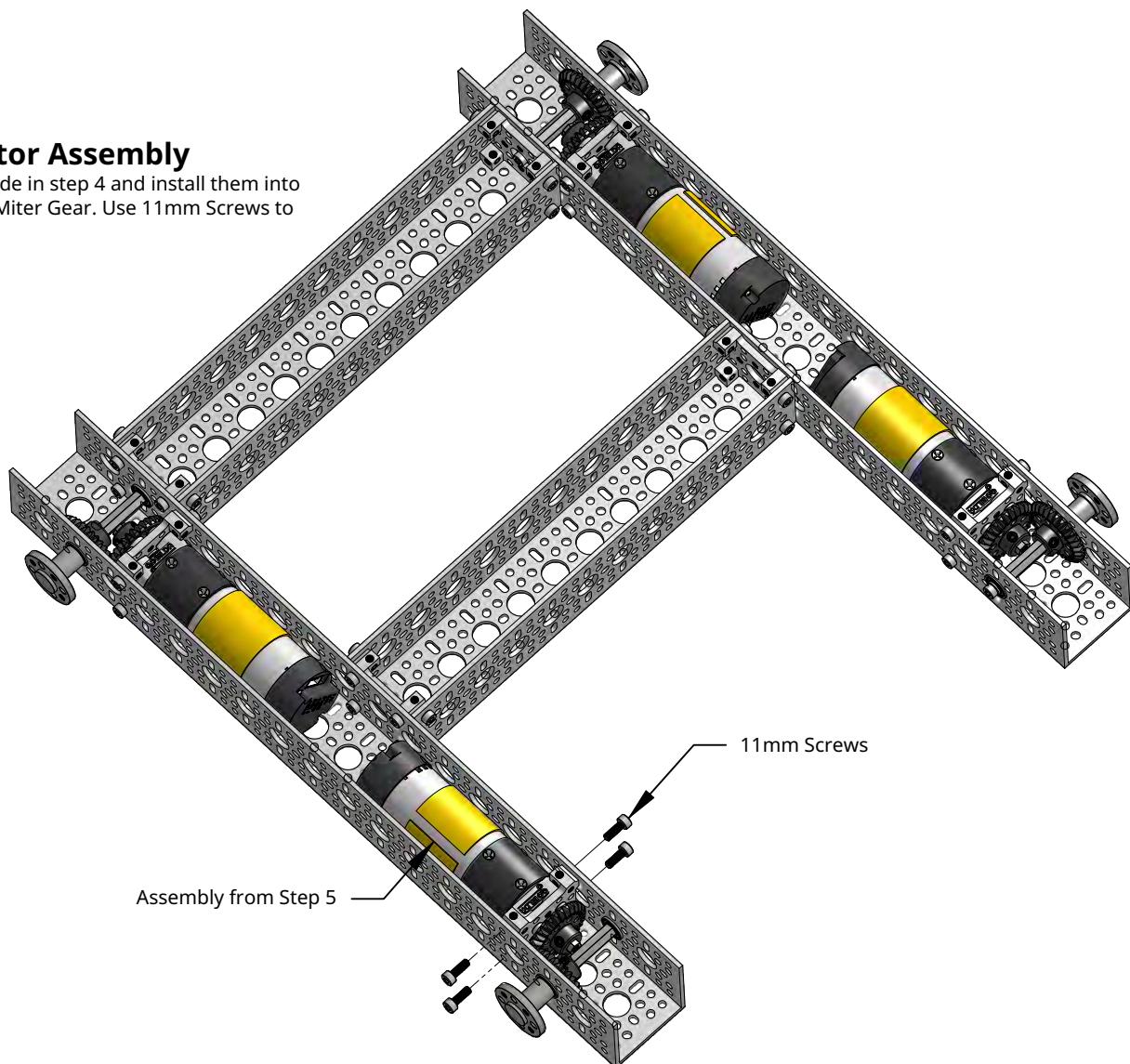
Step 4: Motor Assembly

Start by mounting a Motor to a Quad Block, using four 11mm screws, before adding three 0.5mm long shims onto the motor shaft. These give you a way to adjust the gear mesh of the Miter Gears. Add a 12mm spacer, and a Miter Gear to the shaft and slide everything down as far as it will go. Then tighten the Set-Screws on the Miter Gear. Repeat this 3 more times to create 4 Motor Assemblies.



Step 5: Install Motor Assembly

Grab the assemblies you made in step 4 and install them into the channel to mesh with a Miter Gear. Use 11mm Screws to secure them in place.



Step 6: Wheels

The final step is to use sixteen 11mm length screws (each with a washer) to fasten the wheels to the Hyper Hubs. (Figure A) Note that each side of the robot gets one left-slant wheel and one right-slant wheel. Also note that each wheel's core has a shallow side and a deep side - the deep side will be towards the outside of the chassis (see Figure B). For ease-of-assembly and visibility, we have been assembling the chassis upside-down. When you flip your chassis right-side-up and look down from above (Figure C), the rollers of the wheels should "point" towards the center of the chassis.

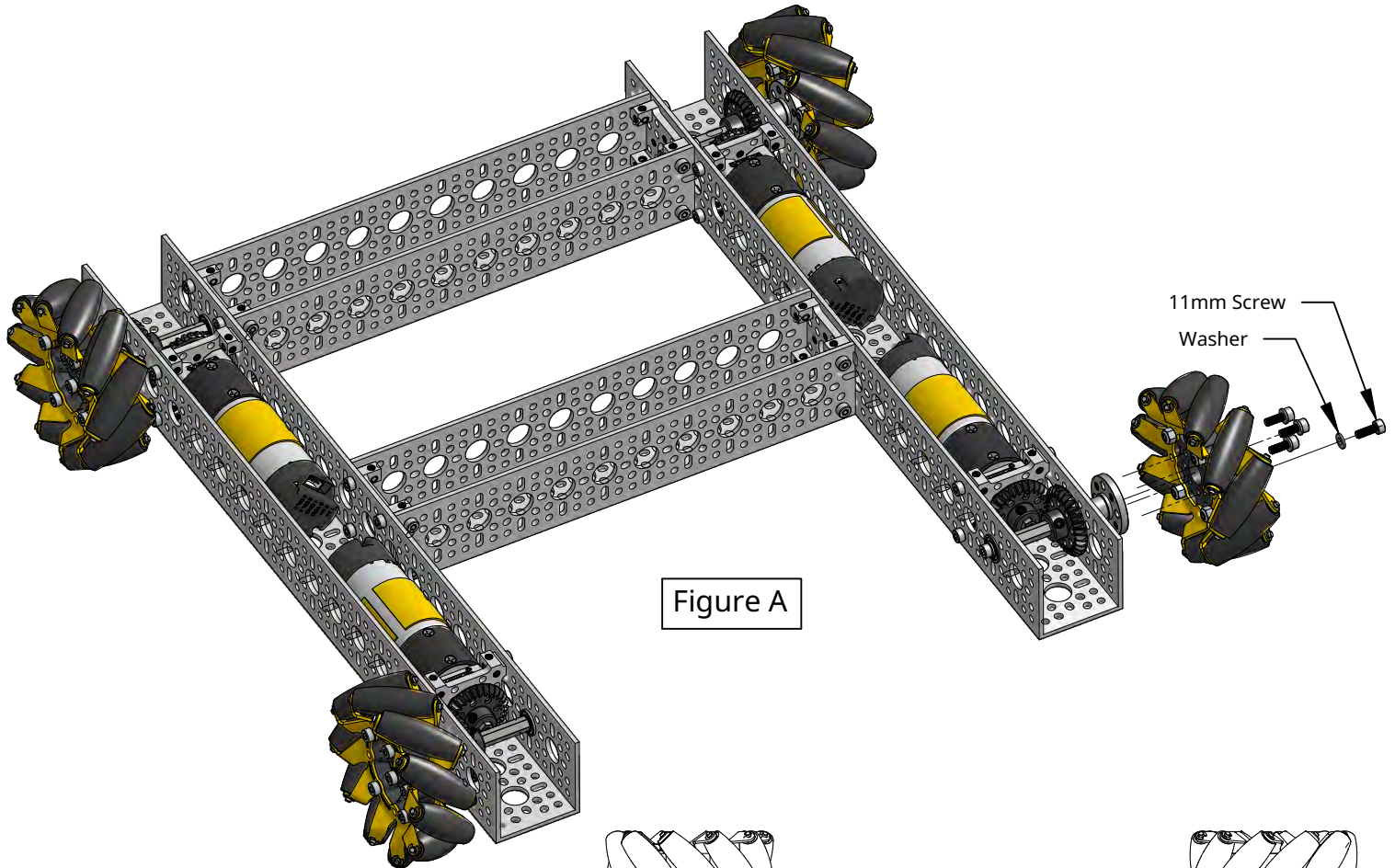


Figure A

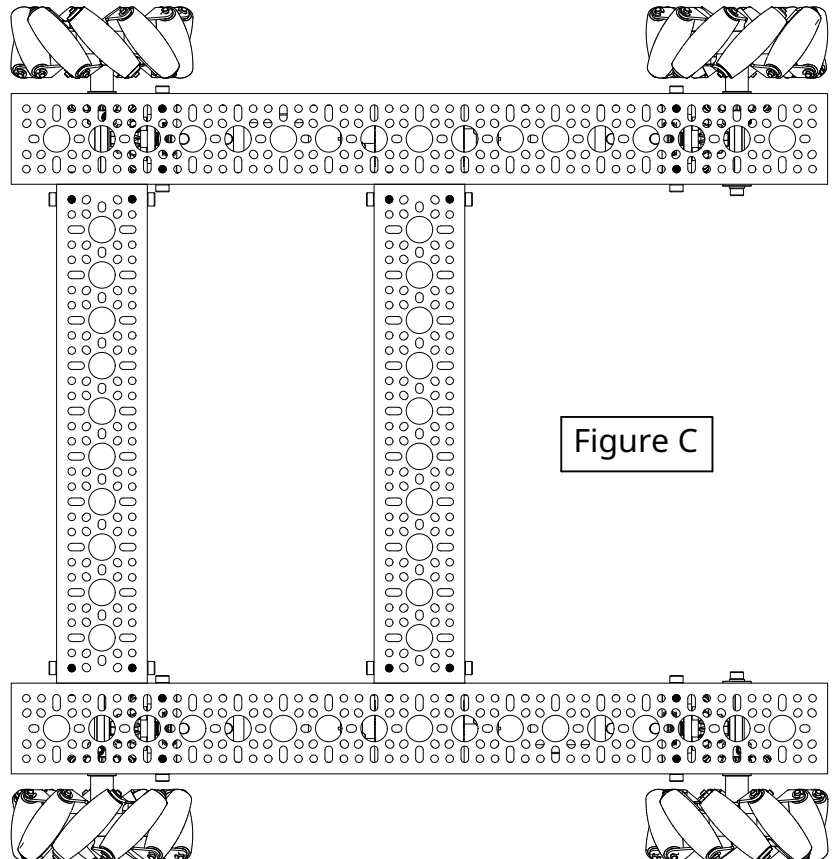


Figure C

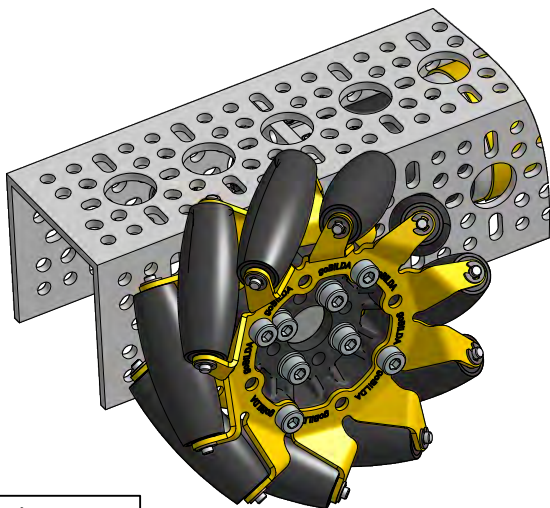
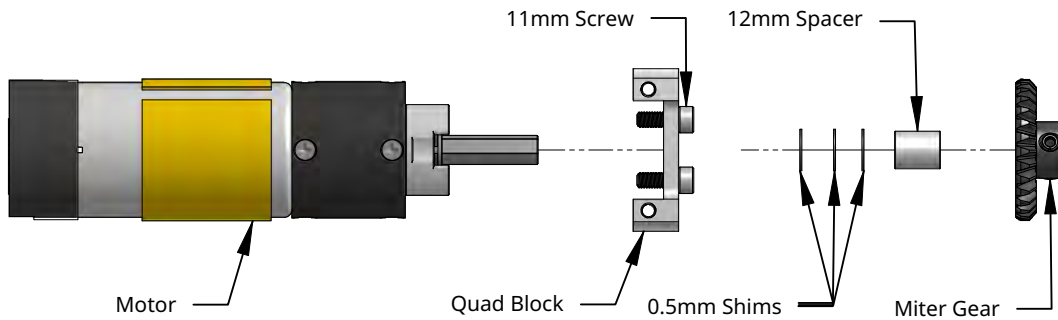


Figure B

Congrats! Your chassis is now assembled.

We've included some parts that make running and fine-tuning your chassis easier.

- A. Your chassis comes with 4 Bullet to JST VH adaptor cables so you can control the chassis with a REV Robotics controller.
- B. Spin each wheel of the chassis by hand (with the battery disconnected). Make sure each shaft is able to rotate smoothly. A small amount of backlash between the miter gears is desirable. If the gear mesh is too tight (you'll feel excess friction when rotating the wheel), remove a shim from the motor assembly covered in step 4.



- C. Included with each Hub-Shaft is a 6mm id 0.25mm thick shim. This can adjust the spacing between the bearings. If the Hub-Shaft can slide back and forth in the channel, and the screw is tight, install the shim under the washer while making sure to align the inside of the shim to the round portion of the hub shaft.

