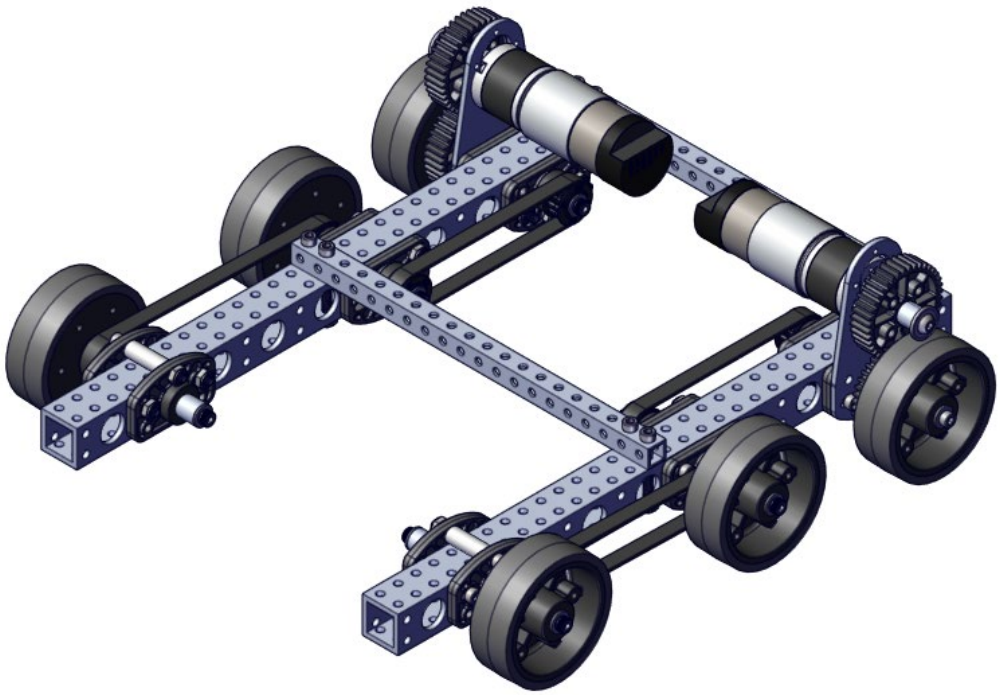
AndyMark®

Assembly Guide

ROBITS

6-Wheel Drive Chassis



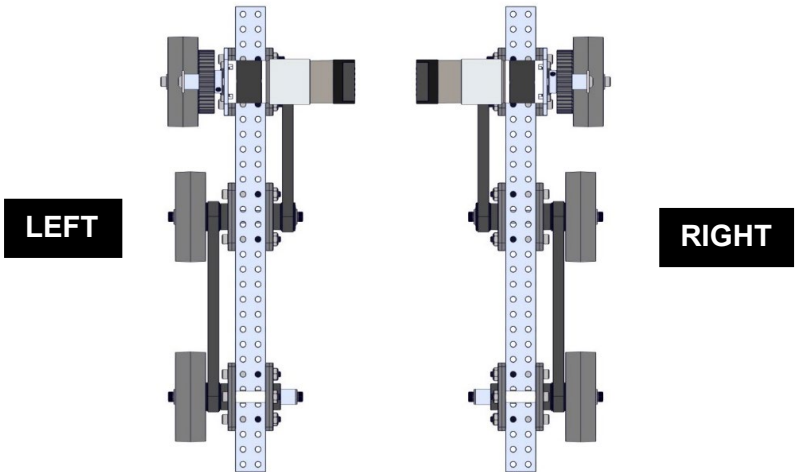
October 2023

Required Tool List	
AM Part Name	**AM Part #**
Hex Driver, Ball End 2.5mm with Handle	am-3724
Hex Driver, Ball End 3/32" with Handle	am-3173
Hex Driver, Ball End 5/32" with Handle	am-2751
3/8 Combination Wrench	am-4961

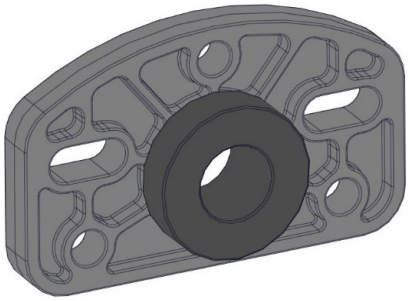
6-Wheel Drive Assembly		
AM Part Name	**AM Part #**	**Quantity**
Robits 1.0×1.0×15.5 Tube	am-5002-1550	2
Robits 0.5×0.5×10.0 Tube	am-5001-1000	2
40 Tooth 20DP 0.375 in. Hex Bore Plastic Gear	am-5020_40	4
14 Tooth 0.375 in. Hex Bore HTD Pulley Half	am-4960_half	16
Spacer, 0.430 ID x 0.500 OD x 0.250 Long Aluminum	am-1698	2
Spacer, 0.430 ID x 0.500 OD x 0.500 Long Aluminum	am-1699	4
#10 Steel Washer	am-1026	12
Screw, SHCS, 10-32 x 0500	am-1002	10
Screw, SHCS, 10-32 x 0750	am-1047	2
Screw, SHCS, 10-32 x 1750	am-1048	20
Screw, SHCS, 10-32 x 2000	am-1049	6
10-32 Jam Nut	am-1063	26
M3-0.5 x 8 mm Socket Head Cap Screw with Thread Patch	am-1500	6
Spacer, 0.375 OD x 0.194 ID x 1.00 Long Nylon	am-1696	6
Spacer, 0.375 OD x 0.194 ID x 0.25 Long Nylon	am-1700	2
300-5M-09 (60T) Belt	am-4902	2
375-5M-09 (75T) Belt	am-4958	2
3 in. Stealth Wheel (Gray)	am-4718_gray	6
Robits Drop Gearbox Single Mount	am-5018_1	2
Robits Drop Mount	am-5019	12
Robits Bushing	am-5021	12
Robits 0.375" Hex Shaft, 4" length	am-5003-0400	6
6mm-375H adapter	am-3444	2
NeveRest 19.2	am-3637b	2

Assemble Drive Modules

This Robits drive base has a module for each side. Ensure a **left** and **right** version are built.

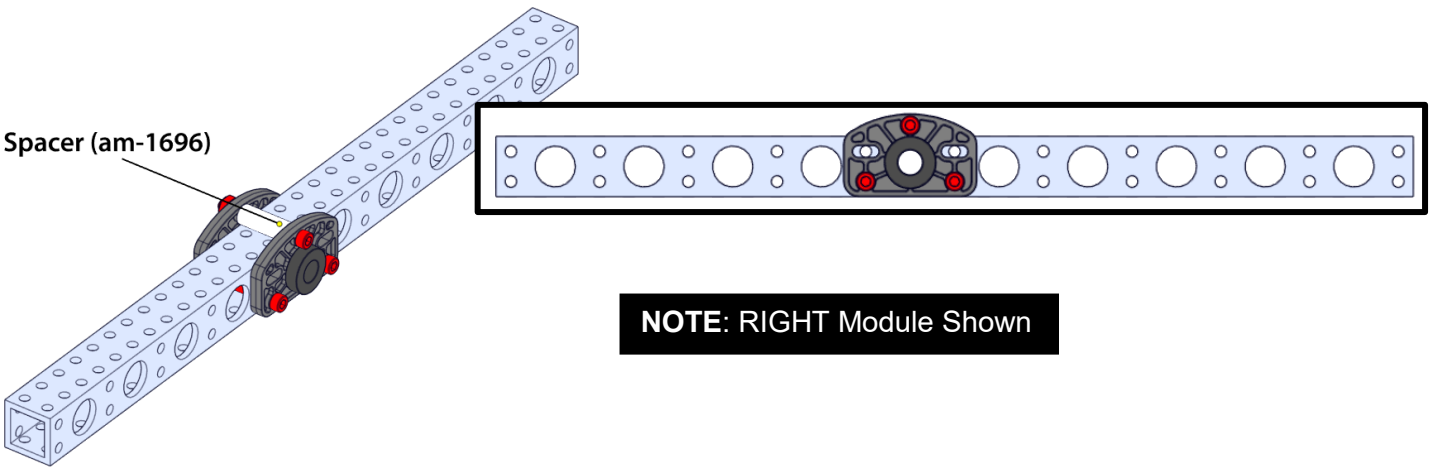


1. Insert one bushing (am-5021) into a Drop Mount (am-5019). Repeat this to create six drop mount assemblies.



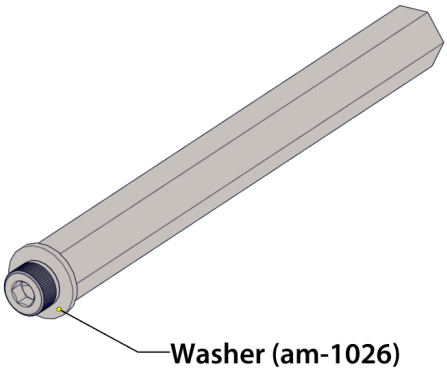
x6

2. Place two drop mount assemblies on either side of a 1.0 x 1.0 x 15.5 tube (am-5002-1550) and fasten through the bottom holes with two 10-32 x 1750 screws (am-1048) and two 10-32 nylock nuts (am-1063).
Install a 1 inch screw spacer (am-1696) between the drop assemblies and secure with one 10-32 x 1750 screw (am-1048) and one 10-32 nylock nut (am-1063).

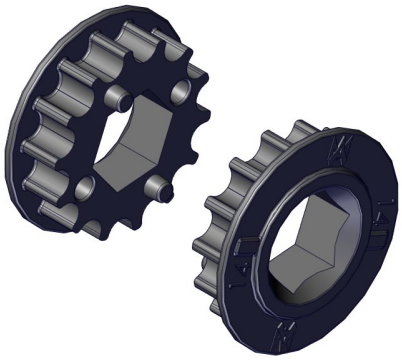


NOTE: RIGHT Module Shown

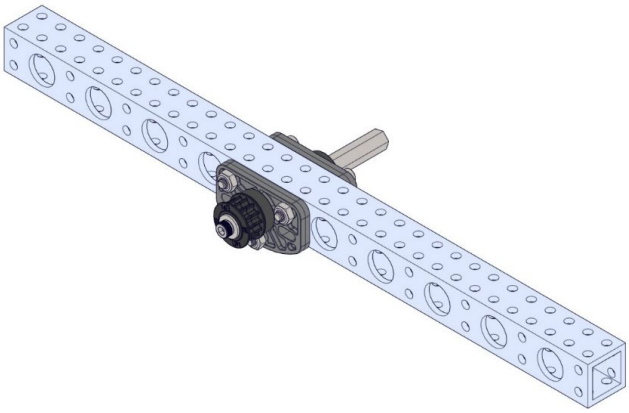
3. Fasten one 10-32 x 0500 screw (am-1002) and one #10 washer (am-1026) to the end of a 4 inch Robits shaft (am-5003-0400).



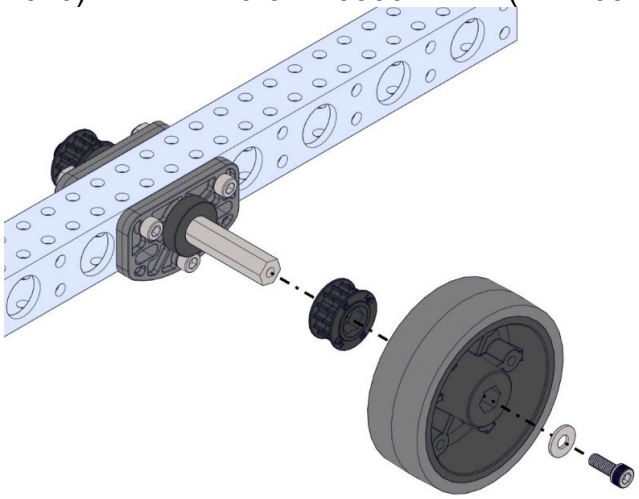
4. Put together two pulley halves (am-4960_half) to create a pulley. Four pulleys will be used in each module.



5. Flip the tube assembly over and insert the shaft assembly through one 14 tooth pulley (am-4960) to previously installed drop mounts.

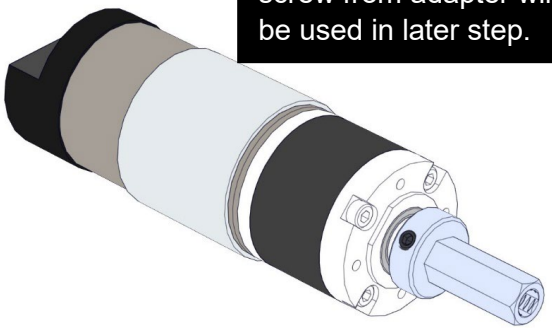


6. Install one 14 tooth pulley (am-4960) and one 3 inch stealth wheel (am-4718_gray) to shaft and retain with one #10 washer (am-1026) and one 10-32 x 0500 screw (am-1002).

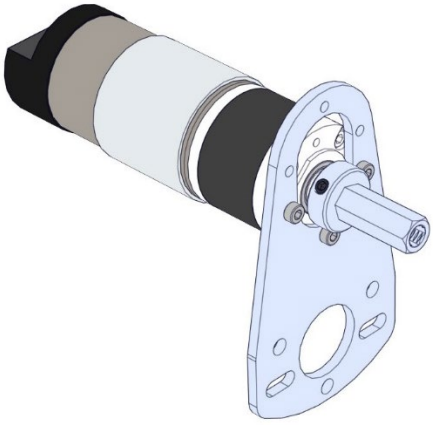


7. Place one 6mm to 375 Hex adapter (am-3444) on the NeveRest Orbital 19.2 (am-3637b) motor shaft. Make sure to secure by tightening the provided 10-32 set screw.

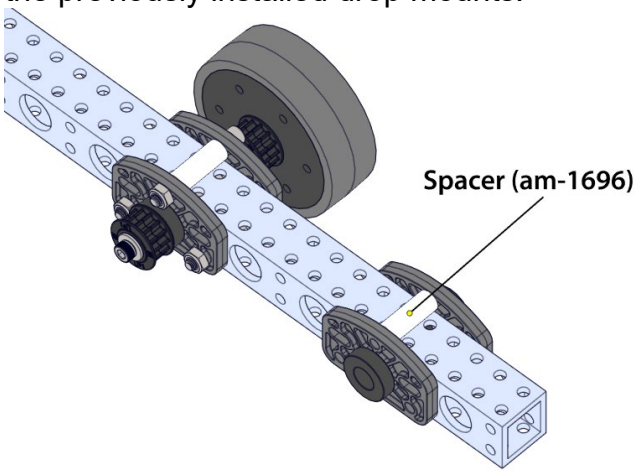
NOTE: Washer and screw from adapter will be used in later step.

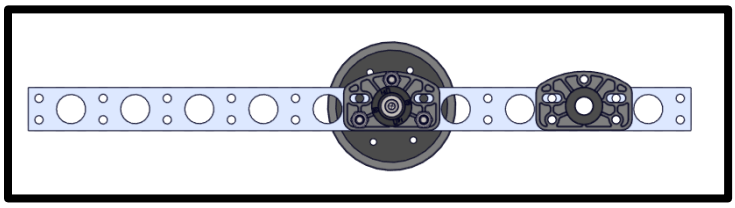


8. Attach the NeveRest motor to the three lower mounting holes on a Drop Gearbox Single Mount (am-5018_1) using three M3-8mm patched screws (am-1500).

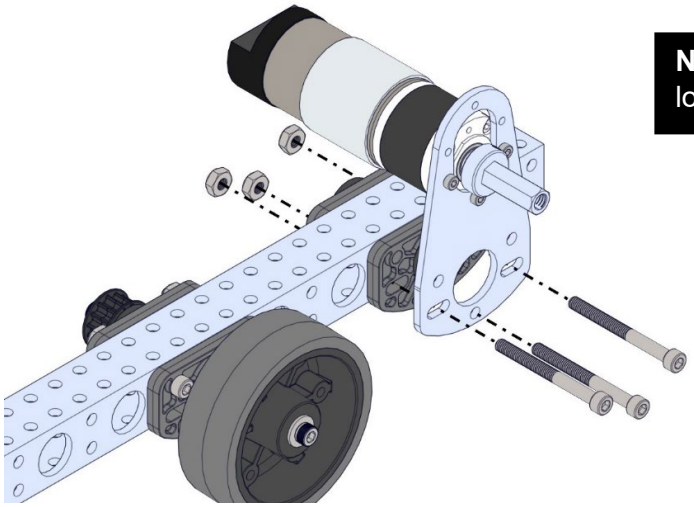


10. Place two drop mount assemblies on either side of the tube with a 1 inch screw spacer (am-1696) between the drop mount assemblies. The spacer should be on the same side of the tube as the previously installed drop mounts.



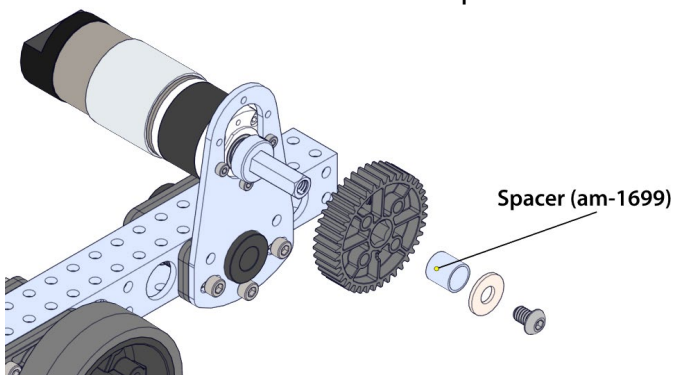


11. Turn the assembly over and loosely attach the motor and bracket through the drop mounts, tube and spacer with three 10-32 x 2000 screws (am-1049) and three 10-32 nylock nuts (am-1063). The motor should extend over the tube and be on the side of the tube opposite the drop mount spacers.

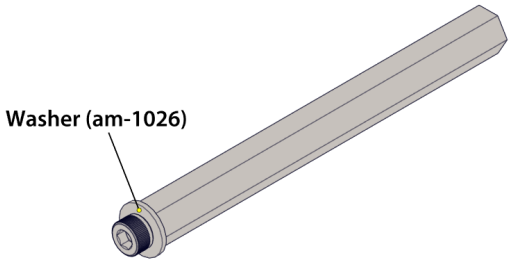


NOTE: Keep screws loose until later step.

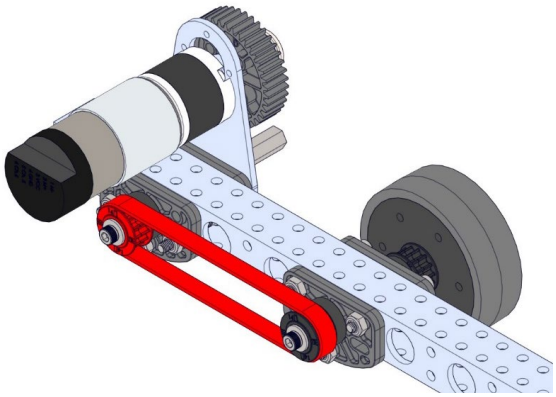
12. On the motor shaft, add one 40 tooth gear (am-5020_40) and one ½ inch shaft spacer (am-1699). Retain components with the washer and screw included with the adapter.



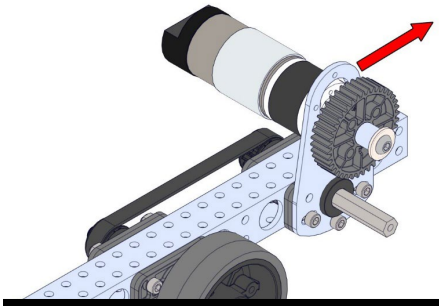
13. Fasten one 10-32 x 0500 screw (am-1002) and one #10 washer (am-1026) to the end of a 4 inch Robits shaft (am-5003-0400).



14. Add one 14 tooth pulley (am-4960) and one 60 tooth belt (am-4902) to the shaft assembly and insert through the previously installed drop mounts.

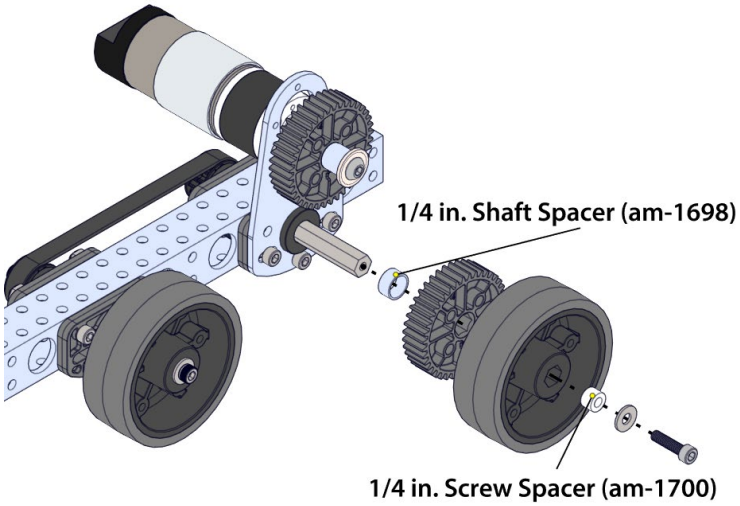


15. Slide drop mount and gearbox assembly away from the wheel to tension belt. Tighten fasteners to maintain belt tension.



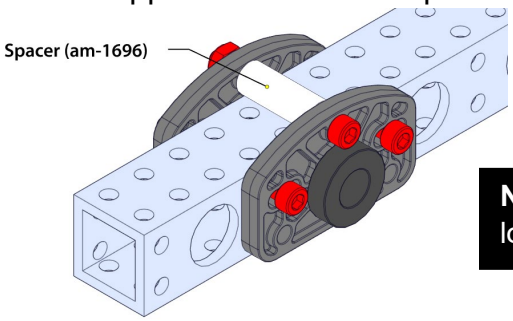
Belt Tension Note:
Too Loose = Belt slips off pulley teeth when rotated.
Too Tight = Belt causes shafts to sit at an angle.

16. Add one ¼ inch shaft spacer (am-1698), one 40 tooth gear (am-5020_40), one 3 inch wheel (am-4718_gray), and one ¼ inch screw spacer (am-1700) to the shaft and retain with one #10 washer (am-1026) and one 10-32 x 0750 screw (am-1047).

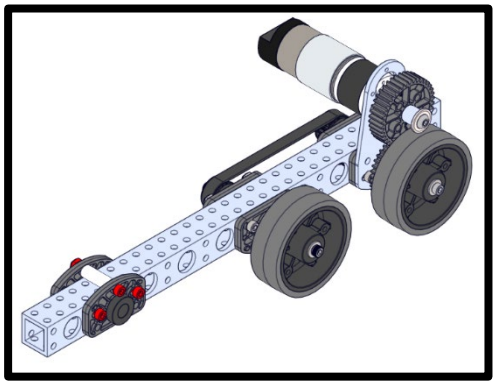


18. Place two drop mount assemblies on either side of a 1.0 x 1.0 x 15.5 tube (am-5002-1550) and loosely fasten through the slots with two 10-32 x 1750 screws (am-1048) and two 10-32 nylock nuts (am-1063).

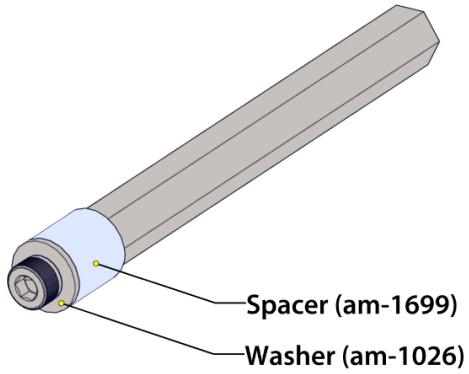
Install a 1 inch screw spacer (am-1696) between the drop assemblies and secure with one 10-32 x 1750 screw (am-1048) and one 10-32 nylock nut (am-1063). The spacer should be on the side of the tube opposite the other drop mount spacers.



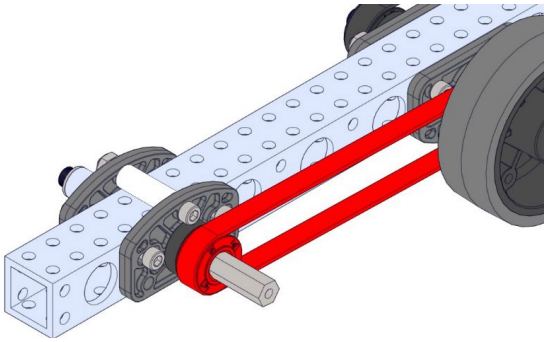
NOTE: Keep screws loose until later step.



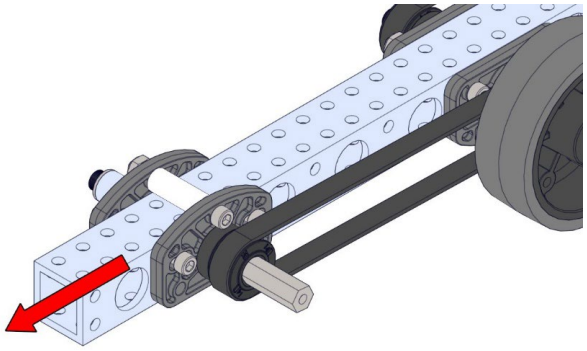
19. Fasten one 10-32 x 0500 screw (am-1002) with one #10 washer (am-1026) and one ½ inch shaft spacer (am-1699) to the end of a 4 inch Robits shaft (am-5003-0400).



20. Insert the shaft assembly through the previously installed drop mounts. Add one 14 tooth pulley (am-4960) to the shaft and connect the pulley to the adjacent pulley with one 75 tooth belt (am-4958).

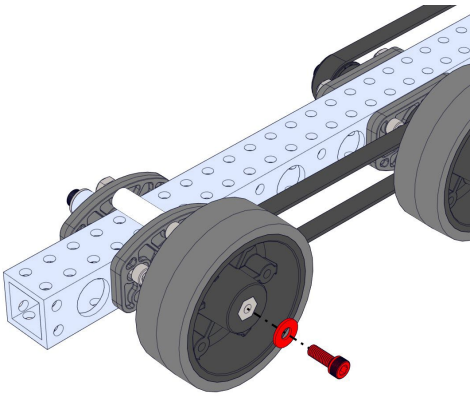


21. Slide drop mount assembly away from the wheel to tension belt. Tighten fasteners to maintain belt tension.

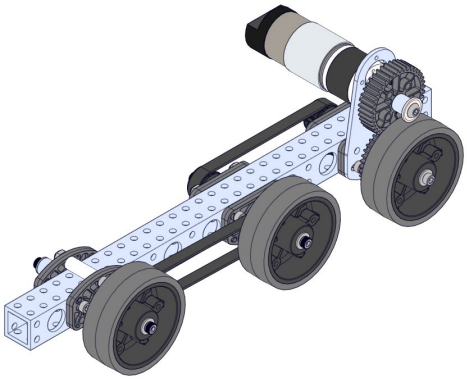


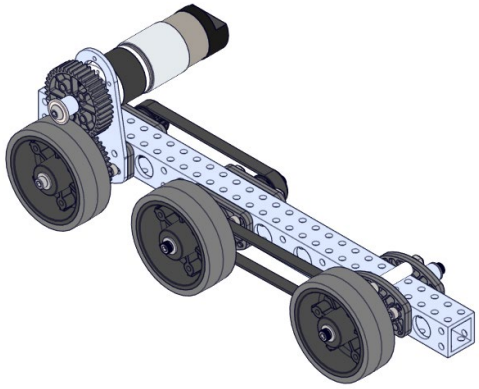
Belt Tension Note:
Too Loose = Belt slips off pulley teeth when rotated.
Too Tight = Belt causes shafts to sit at an angle.

22. Add one 3 inch stealth wheel (am-4718_gray) to the shaft and retain with one #10 washer (am-1026) and one 10-32 x 0500 screw (am-1002).



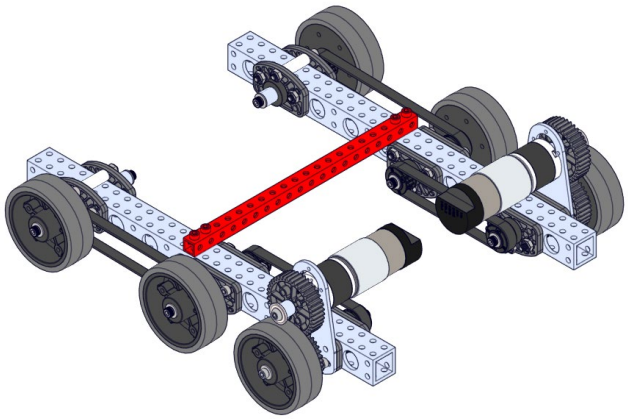
The module is complete. Repeat above steps in a mirror image to create the opposing drive module.

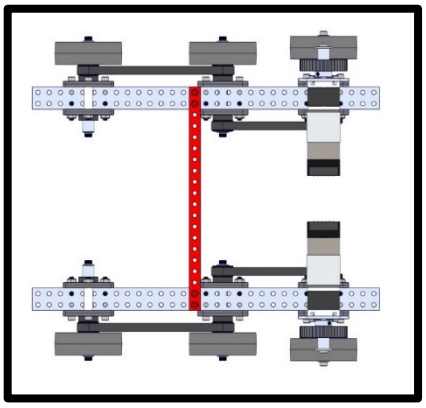




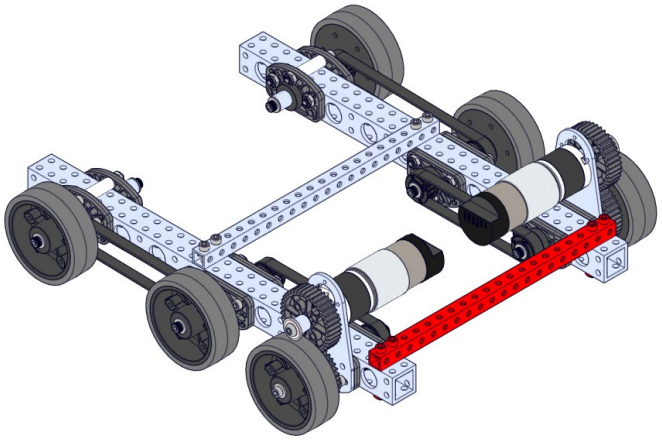
Assemble Drive Base:

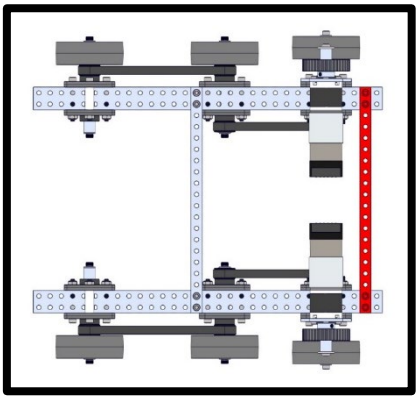
Locate one 0.5 x 0.5 x 10.0 Robits Tube (am-5001-1000) to the center of the the 1 inch tubes and fasten with four 10-32 x 1750 screws (am-1048) and four 10-32 nylock nuts (am-1063).





Locate one 0.5 x 0.5 x 10.0 Robits Tube (am-5001-1000) to the 2nd pair of holes from the end of the 1 inch tubes and fasten with four 10-32 x 1750 screws (am-1048) and four 10-32 nylock nuts (am-1063).





The Robits 6WD Drive Base is Complete! Use this as a starting point and add on other parts, mechanisms, and electronics to create a complete robot.