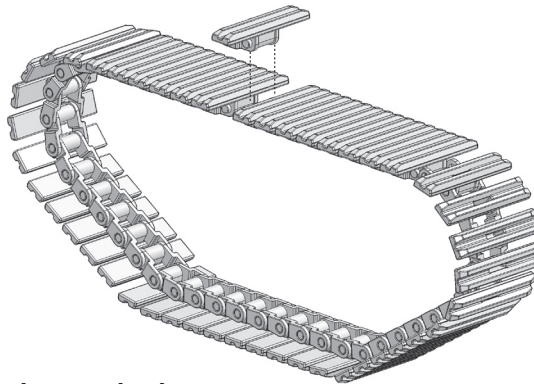


tank tread kit

Tank treads will enable your robot to explore much more demanding terrain than ordinary wheels. Tank treads distribute a vehicle's weight more evenly than wheels, allowing your robot to move more easily in sand or on soft, spongy surfaces into which wheels would sink and bog down. This increased surface area also gives your robot more traction for hauling heavy loads up an incline. And because each link can grip the surface over which it's traveling, a robot with tank treads can more easily climb obstacles or traverse crevasses in which wheels would get stuck.

INSERT THIS PAGE
at the **back of the**
Motion chapter in your
Vex Inventor's Guide.

tank tread links (2 preassembled chains)
x 85 links each (32.75" each)



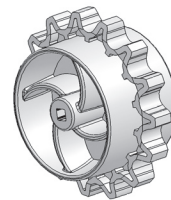
bogey wheel
support screw x 12
(8-32x1")



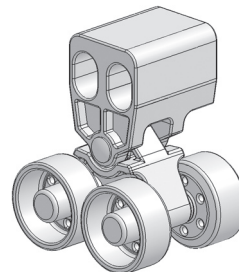
bogey wheel support
keps nut x 12



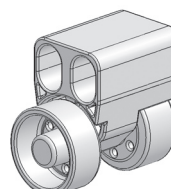
tank tread
drive/idler wheel x 4



bogey wheel assembly x 4



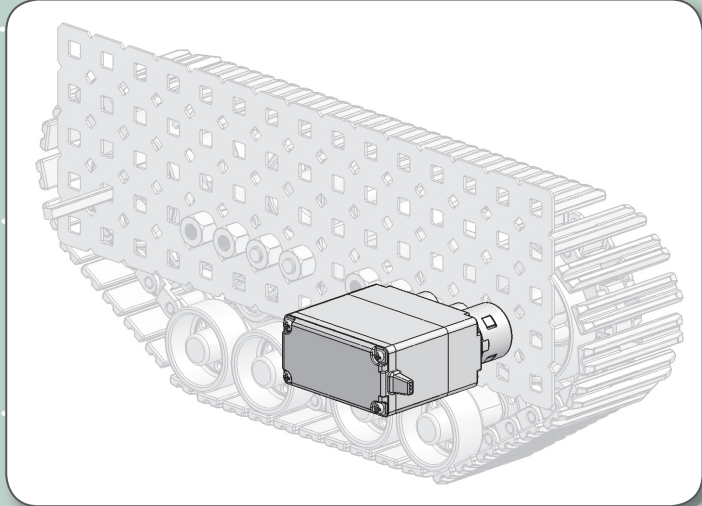
single bogey
wheel assembly (tensioner) x 2



tank tread kit, continued

As you learned in the Vex Inventor's Guide, a robot's structure and motion subsystems are usually interdependent and often have to be built together. In this case, you'll need to have some pre-existing structure to which you can connect the tank track components. In particular, you'll need a chassis rail or other structural component, two axles for the tank tracks' drive wheels, and a motor to power one of those axles. Remember to mount the motor securely using two 6-32 screws, or you'll have problems down to the road!

Note: for more information on motors and motion systems, see the Motion chapter in your Vex Inventor's Guide.

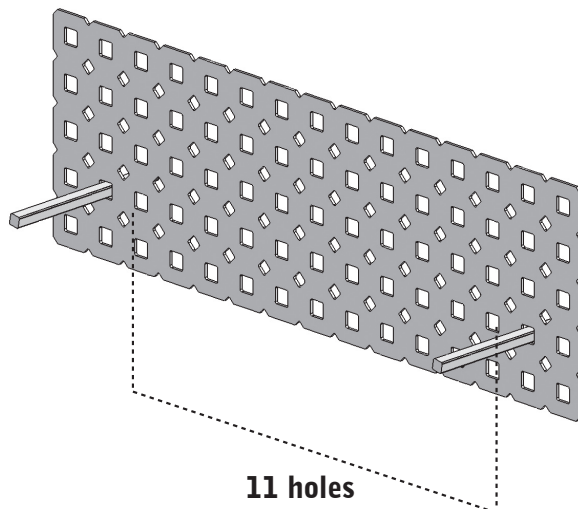


Assembly Instructions

1 Build Your Support Structure

Start by assembling the chassis of your robot and the support structure on which you intend to mount the tank tread. (Note: the structure shown in these instructions is only for reference.) The mounting structure should include two axles spaced out such that there are 11 open holes in between them. One of these axles will be connected to a motor, which will drive the whole assembly.

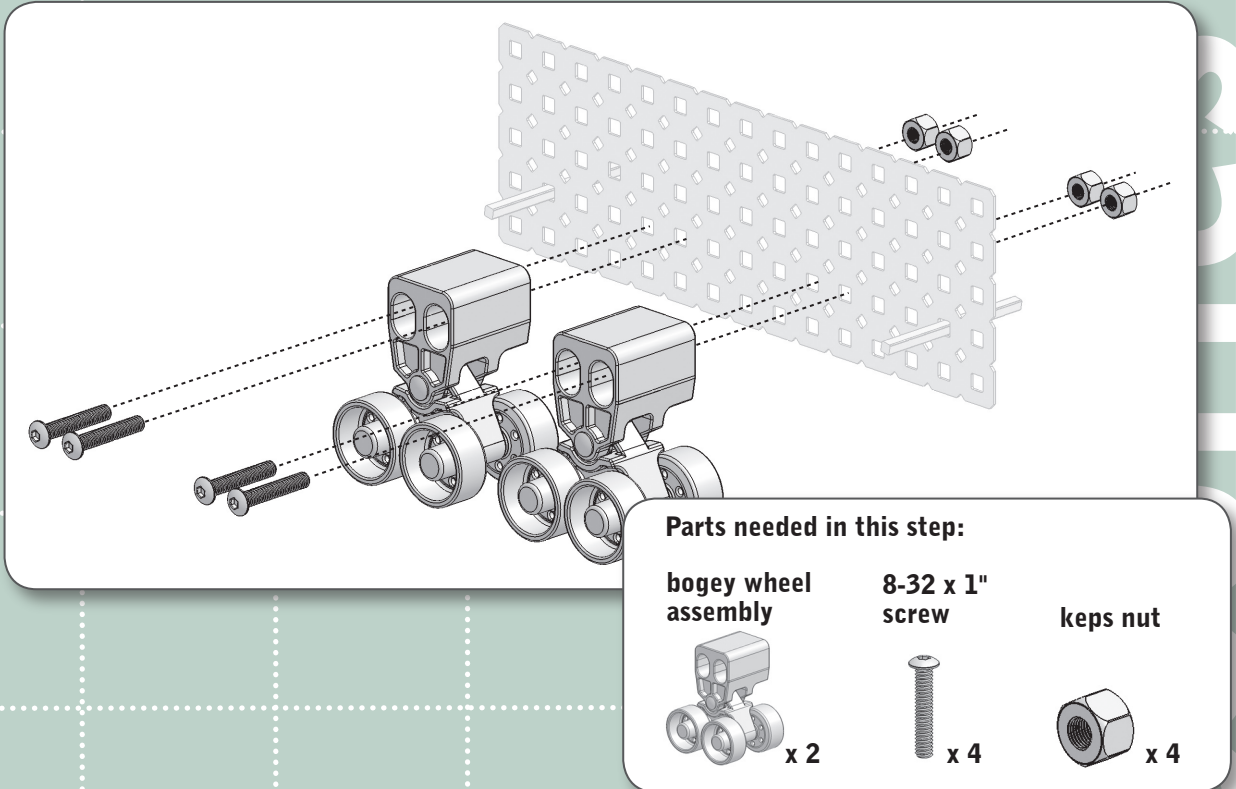
NOTE: The following assembly instructions show how to build tank tracks for one side of your robot. The same directions should also be followed to build the other side.



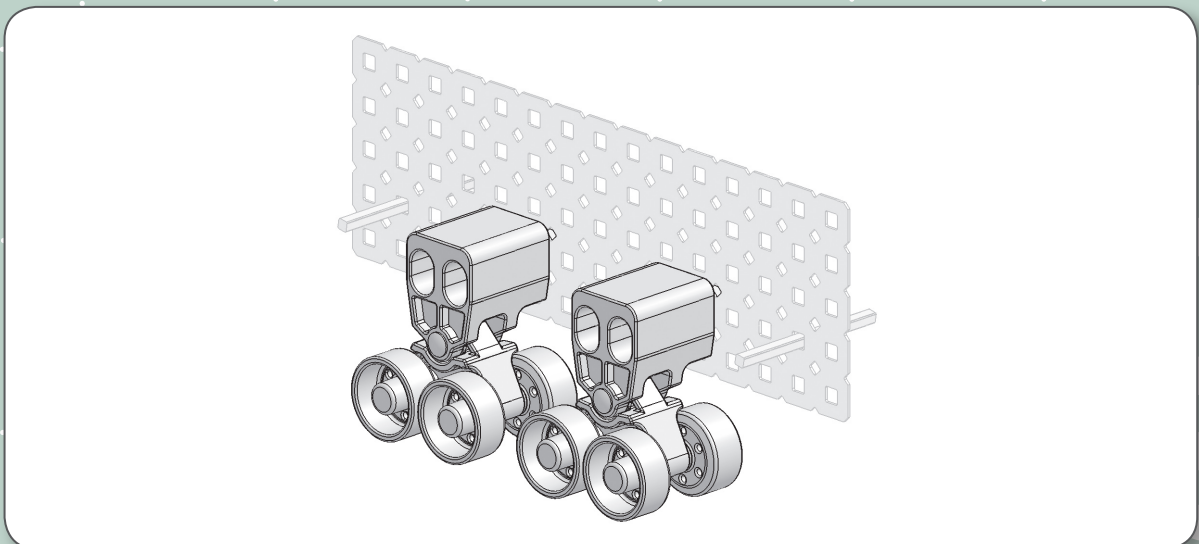
tank tread kit, continued

2 Add bogey wheel assemblies

Add two bogey wheel assemblies to the support structure as shown. Note that, for both bogey wheel assemblies, there should be two spaces separating the bogey wheel assembly and the axle. Secure the bogey wheel assemblies to the support structure using two 8-32x1" screws and two keps nuts per bogey wheel assembly. The oblong holes in the bogey wheel assemblies will allow you to adjust the tension of the tracks once you've finished assembling the system.



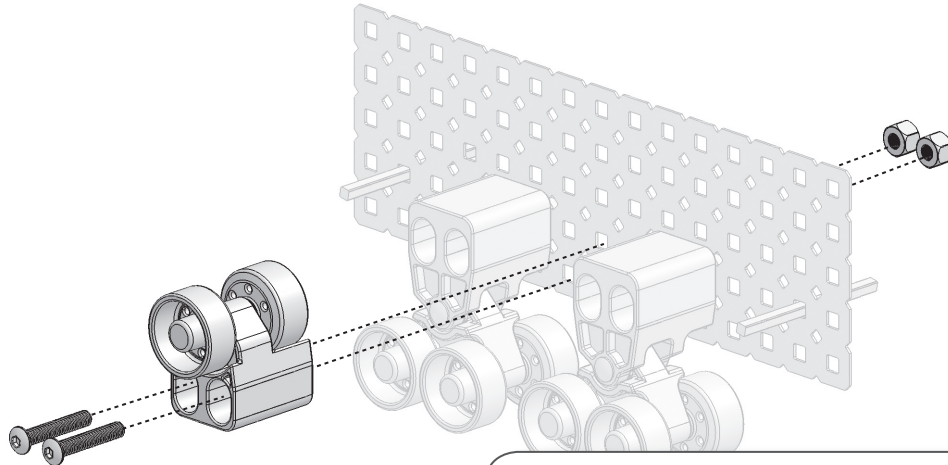
Your assembly should now look like this:



tank tread kit, continued

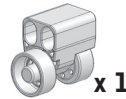
3 Add tensioner assembly

Add one tensioner assembly to the support structure as shown. Note that the tensioner should be flush with the right bogey wheel assembly. Secure the tensioner to the support structure using two 8-32x1" screws and two keps nuts. The oblong holes in the tensioner assembly will allow you to adjust the tension of the tracks once you've finished assembling the system.



Parts needed in this step:

single bogey
wheel assembly
(tensioner)



x 1

8-32 x 1"
screw



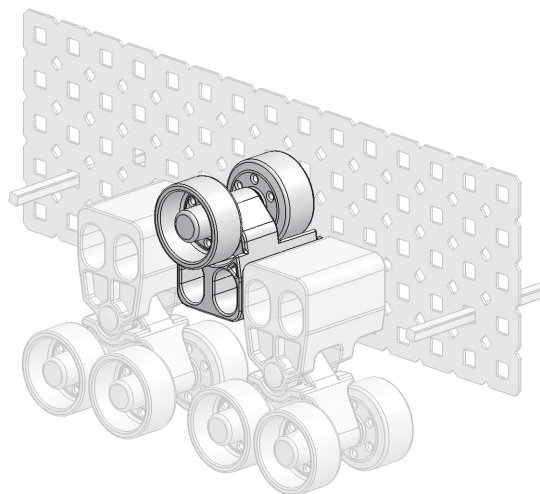
x 2

keps nut



x 2

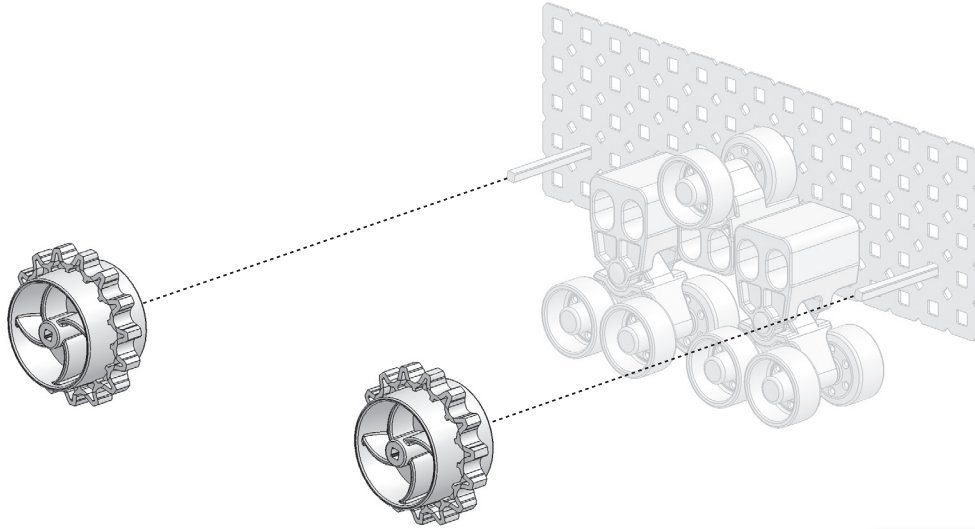
Your assembly should now look like this:



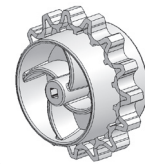
tank tread kit, continued

4 Mount drive wheels

Mount the drive wheels on the axles of the support structure.



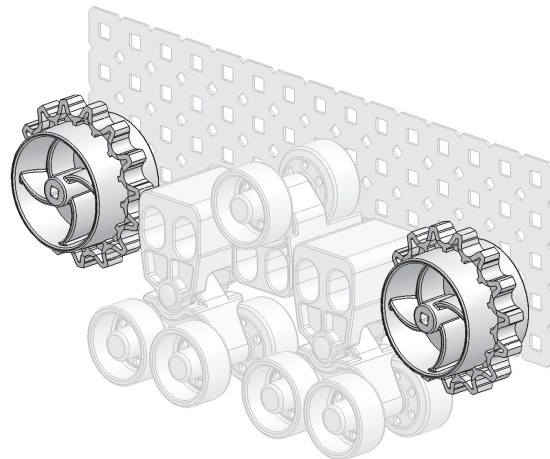
Parts needed in this step:



tank tread
drive/idler
wheel

x 2

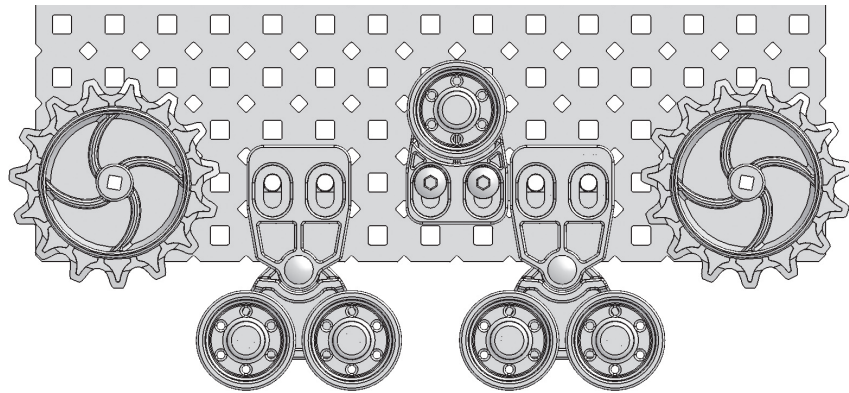
Your assembly should now look like this:



tank tread kit, continued

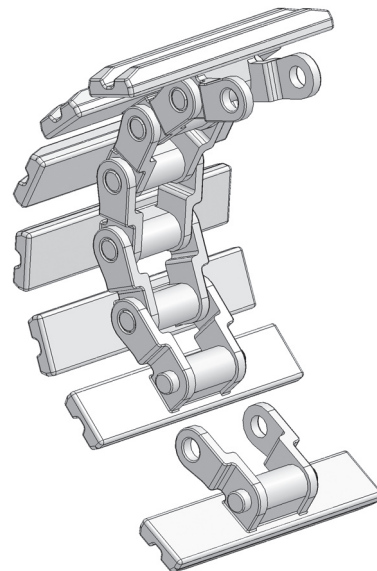
5 Verify position of components.

At this point, make sure that your assembly looks like this. It's very important to have all the components in the right position with respect to one another, or the preassembled tread links might not fit.



6 Adjust chain of tread links.

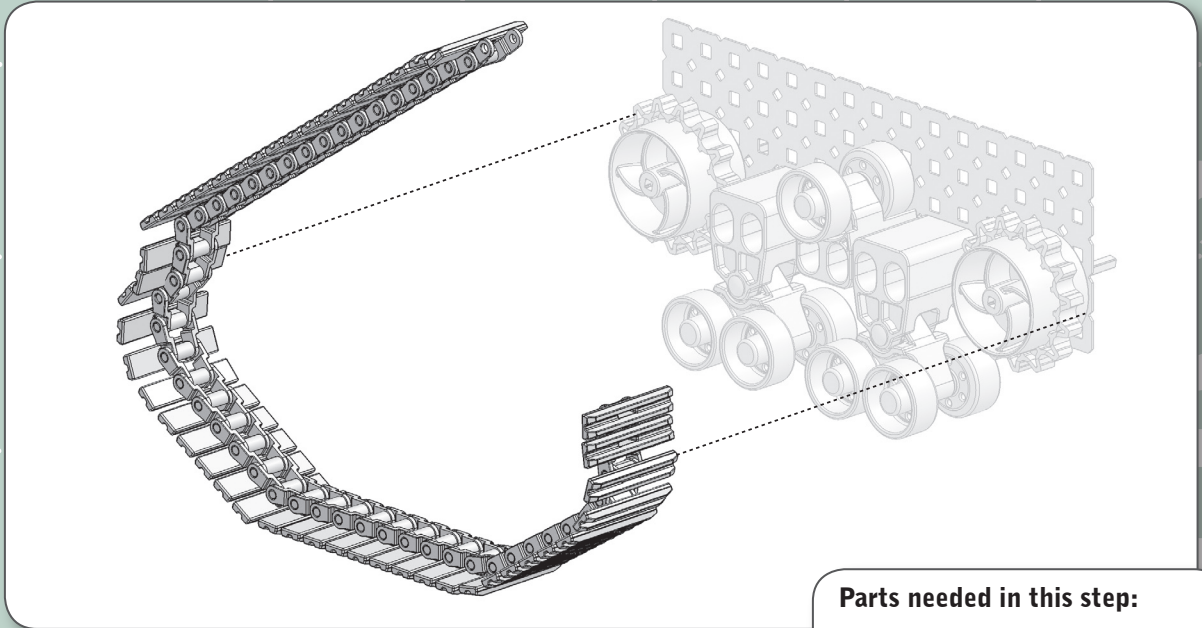
The tread links come preassembled in two long chains of 85 links apiece. For this design, you'll need a section of chain with 47 links in it. The link material is slightly flexible, which makes it easy to separate links from the rest of the chain. Just bend the arms out – GENTLY! – just enough to disengage the hole from the posts on the next link. Reverse the process to reassemble the links.



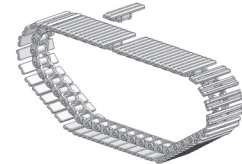
tank tread kit, continued

7 Add tread links.

Wrap the chain of 47 preassembled tread links around the drive wheels, tensioner, and bogey wheel assemblies, making sure that the teeth of the drive wheels mesh with the rollers of the links.



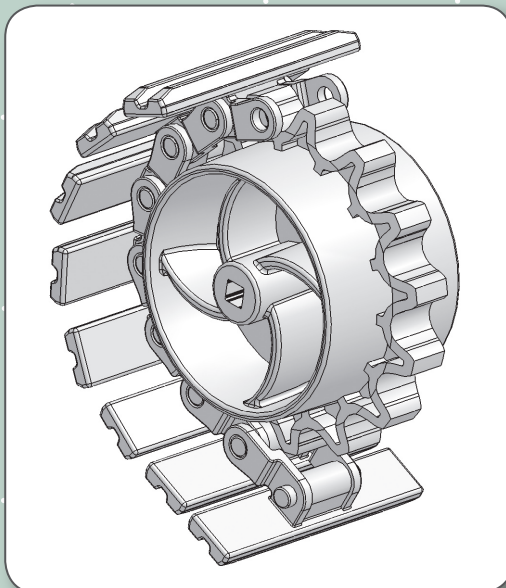
Parts needed in this step:



tank tread links

x 1 chain

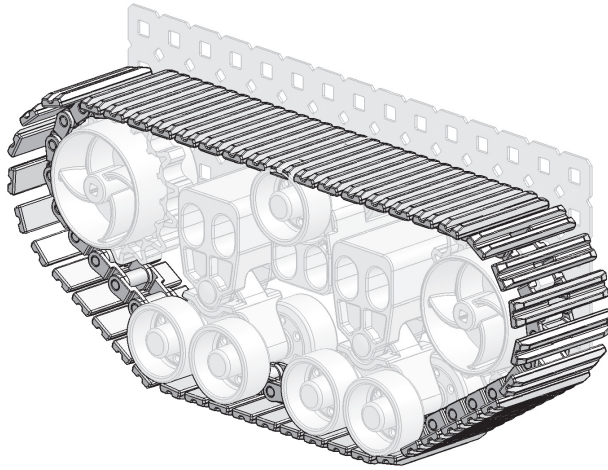
Note how the teeth on the drive wheel fit between the rollers on the tread links.



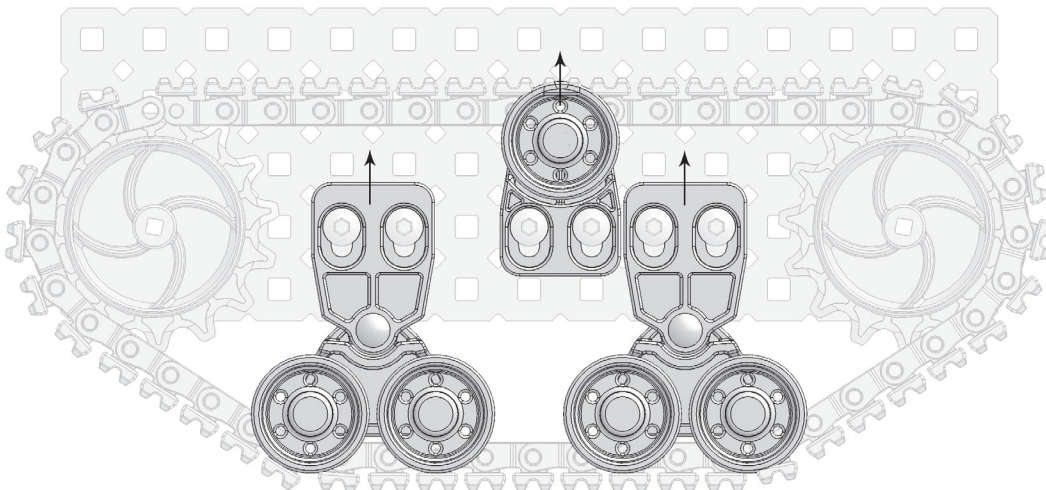
motion accessories

tank tread kit, continued

Once the chain of tread links is securely in place, connect the first and last link to make a continuous loop.



You can now slightly loosen the screws holding the bogey wheel assemblies and tensioner in place. Slide the tensioner and the bogey wheel assemblies to tighten the chain of tread links. If the tread links are loose, they'll come off once the robot is in motion.



Limited 90-day Warranty

This product is warranted by Innovation One against manufacturing defects in material and workmanship under normal use for ninety (90) days from the date of purchase from authorized Innovation One dealers. For complete warranty details and exclusions, check with your dealer.

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