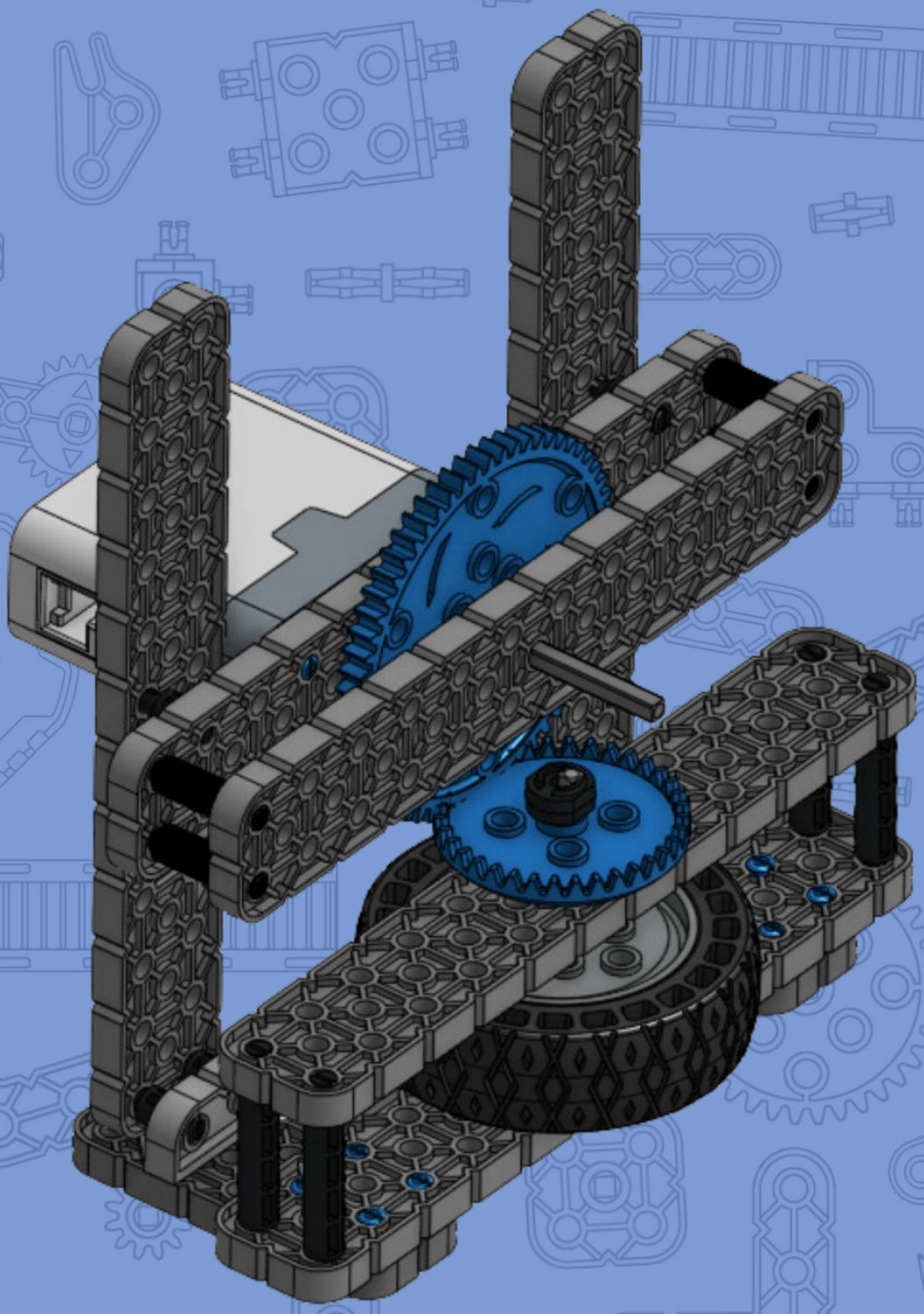
Build Instructions

Bevel Gear Demo



Created by the students of Bixby Public Schools

BACKGROUND

A bevel gear system consists of two gears that intersect at a right angle (90 degrees). These gears are designed to change the direction of motion between the input and output. In this example, you can see how the gears mesh together to transfer movement from one axis to another.

How Does it Work?

In a bevel gear mechanism, one gear (the input gear) is turned by a motor. This gear has teeth that mesh with the teeth of another gear (the output gear) positioned at a right angle to it. When the input gear turns, it causes the output gear to turn as well, but in a different direction – typically 90 degrees from the original direction. This setup allows the mechanism to transfer motion smoothly and efficiently from one direction to another.

Why is it Useful?

This mechanism is useful because it allows for the transfer of motion and power in different directions, which is essential in many machines and devices. It can change the direction of a motor's output, making it possible to fit mechanical parts into compact spaces or to drive components that need to move in different directions. For example, it can be used to turn the wheels of a robot or adjust the angle of a robotic arm.

MATERIALS

x8 

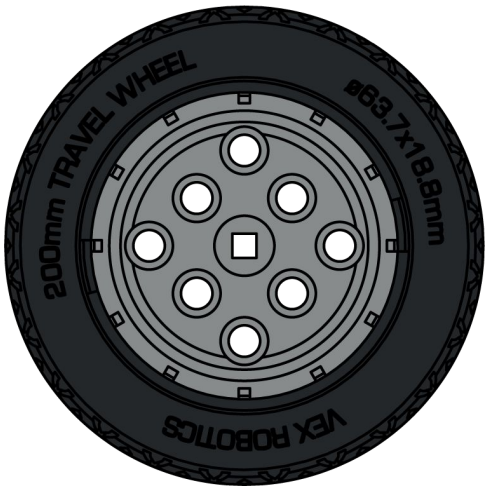
0.25x Pitch Standoff
228-2500-063

x4 

1x Pitch Standoff
228-2500-065

x4 

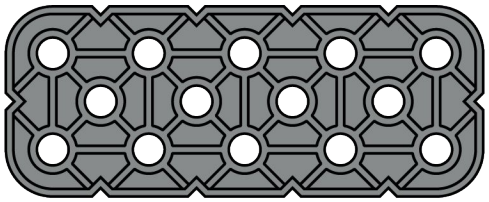
2x Pitch Standoff
228-2500-067



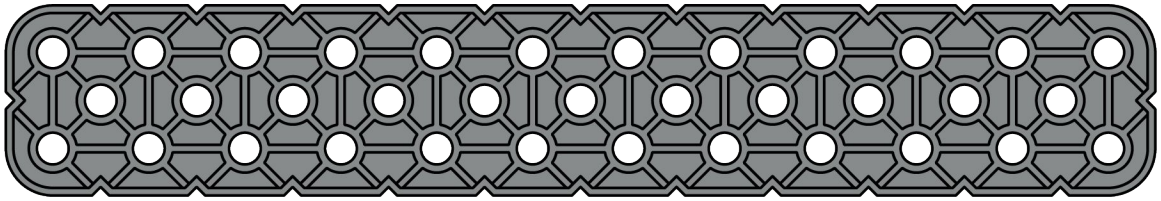
x1 **200mm Travel Tire**
228-2500-1208, 209

x1 **4x Pitch Motor Shaft**
228-2500-079, 2238

x1 **5x Pitch Shift**
228-2500-077



x2 **2x5 Beam**
228-2500-020



x6 **2x12 Beam**
228-2500-026

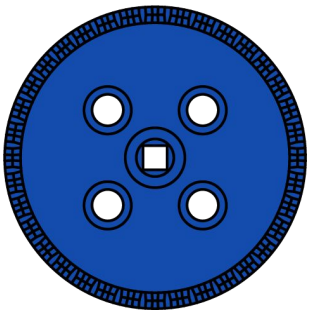
MATERIALS

x1

Washer
228-2500-112

x14

1x1 Connector Pin
228-2500-060

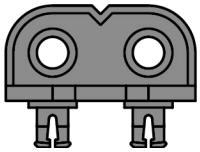


x1 **36 Tooth Crown Gear**
228-2500-218

x1

Rubber Shaft Collar
228-2500-143

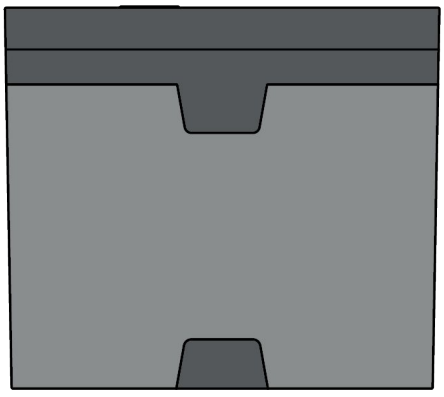
x2



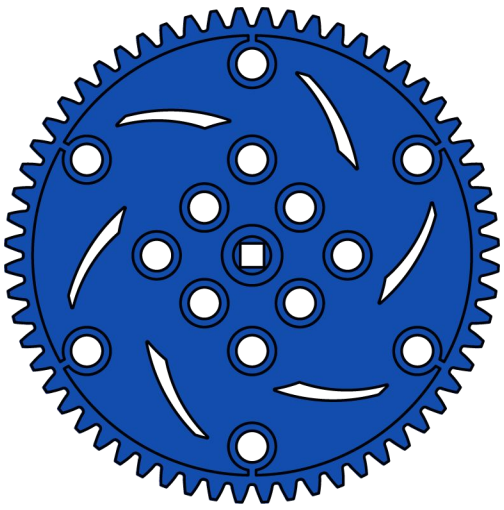
2x Wide, 1x2 Corner Connector
228-2500-128

x2

0.25x Pitch Spacer
228-2500-114



x1 **IQ Smart Motor**
228-2560

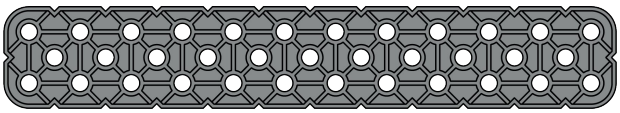


x1 **60 Tooth Gear**
228-2500-215

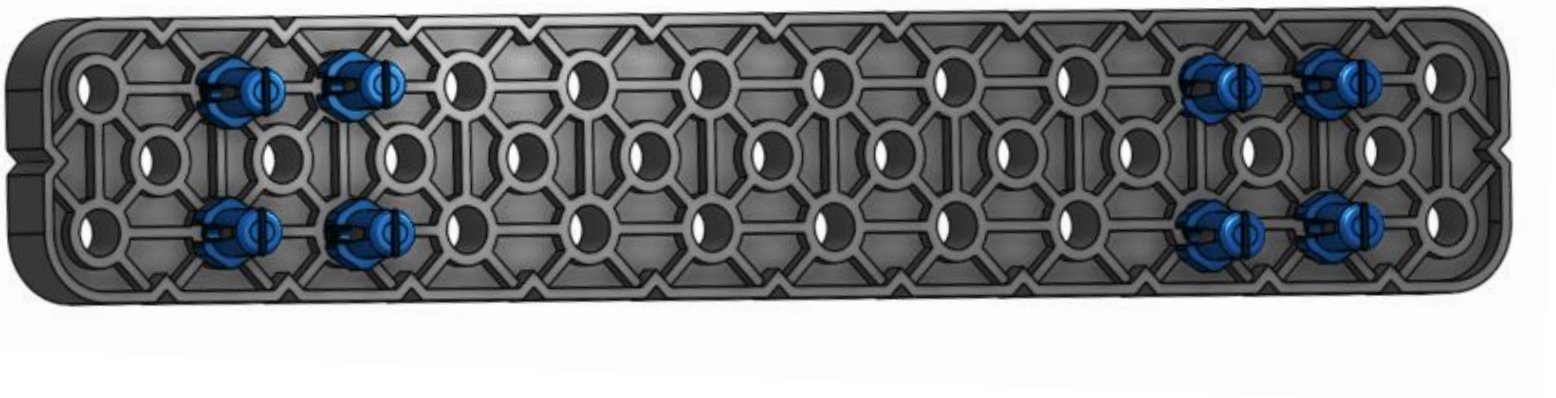
1

Parts List:

x8 

x1 

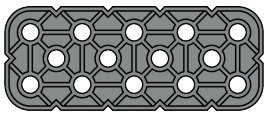
2x12 beam



2

Parts List:

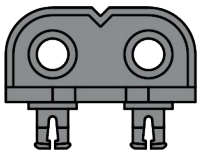
x2



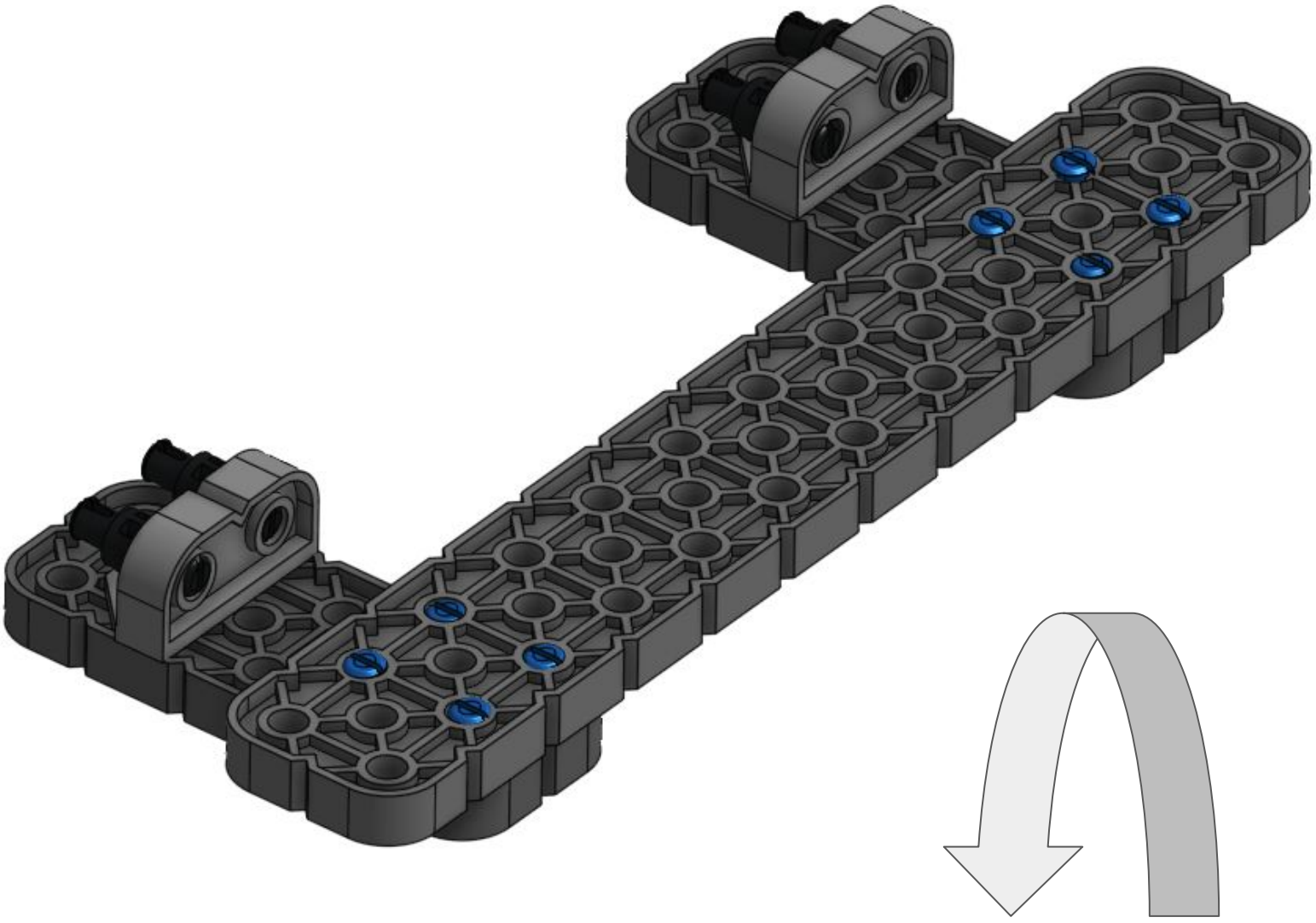
2x5 beam

3

Parts List:

x2 

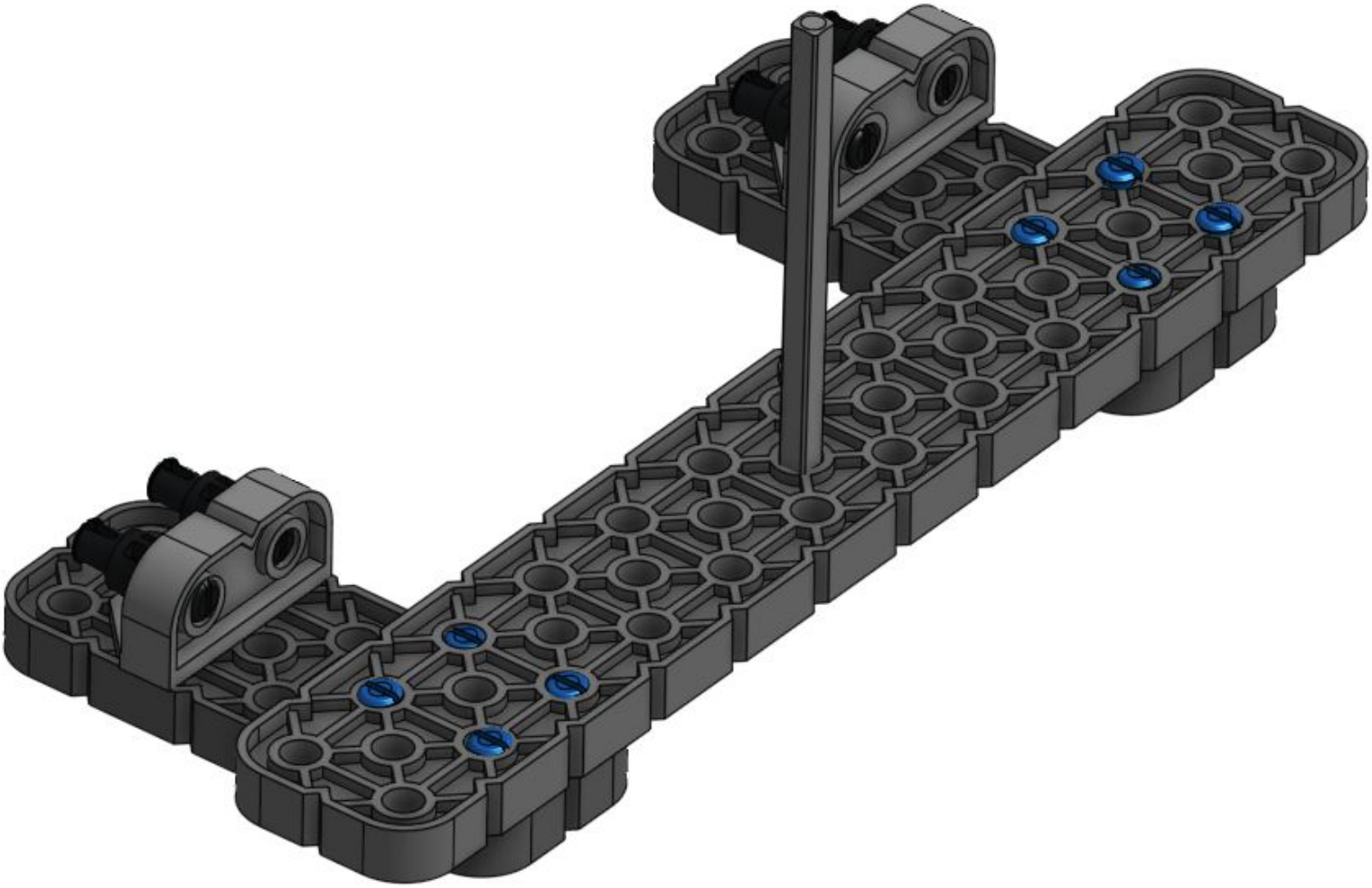
x4 



4

Parts List:

x1 

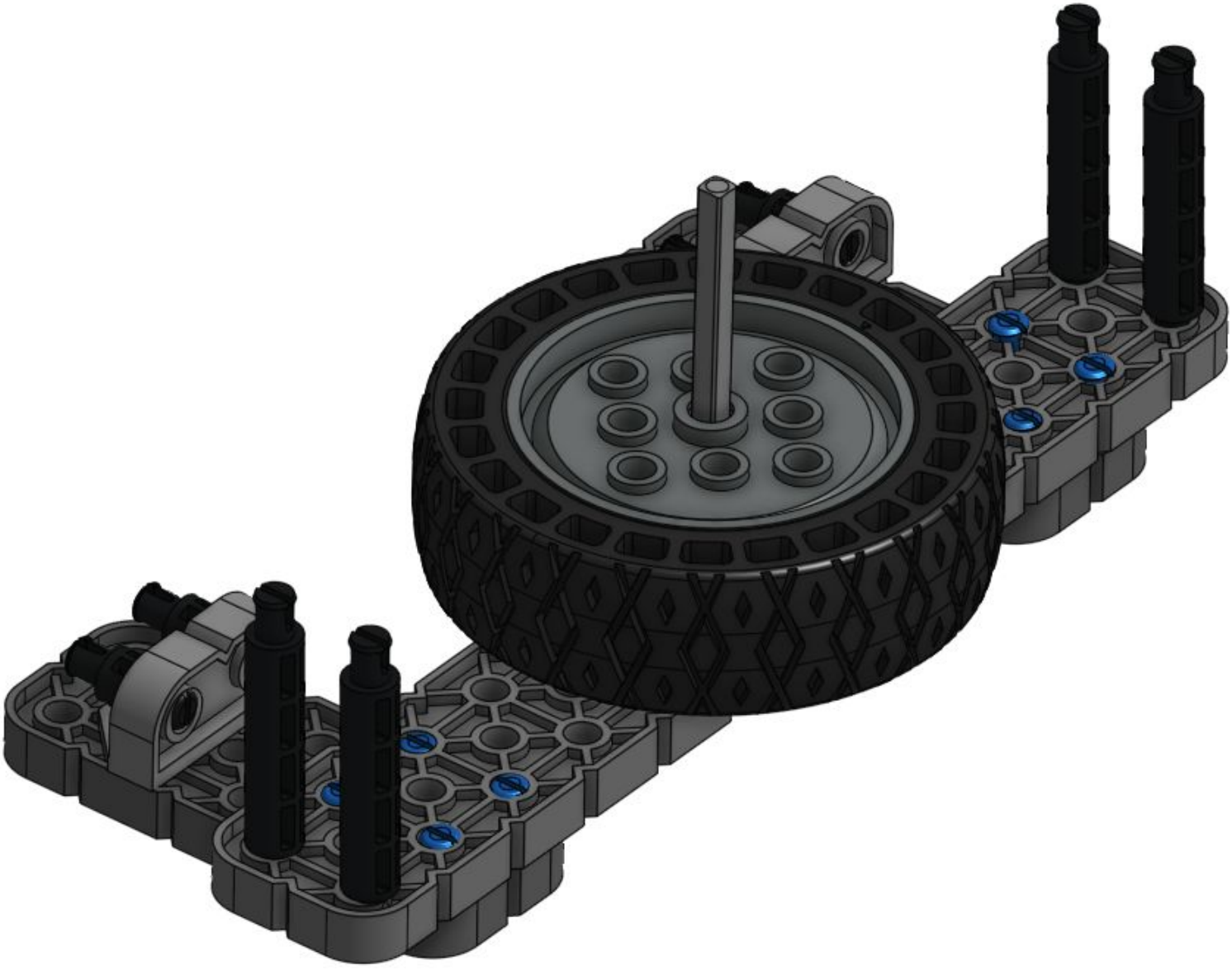


5

Parts List:

x1 

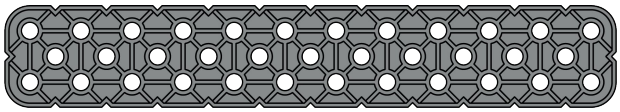
x4 



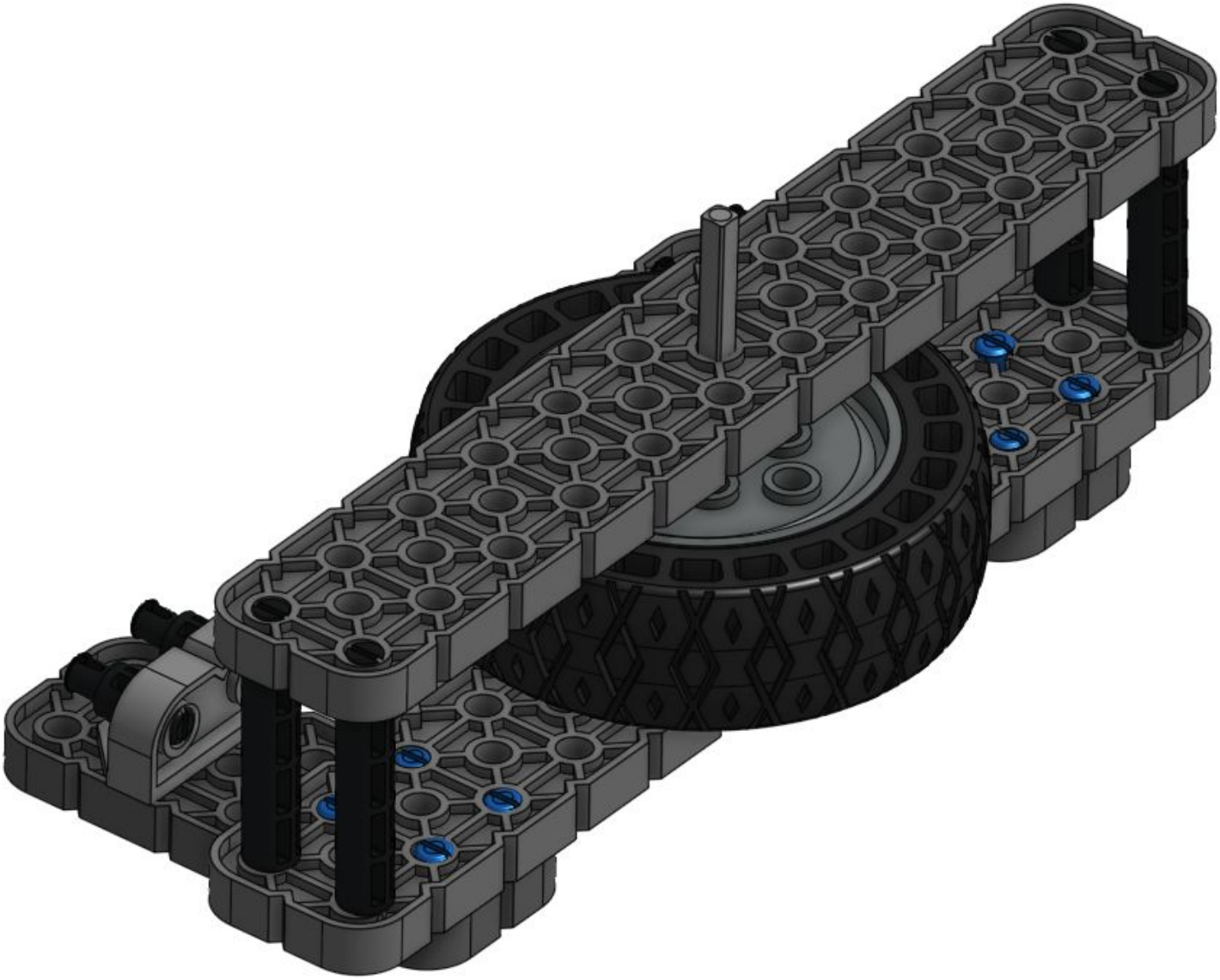
6

Parts List:

x1



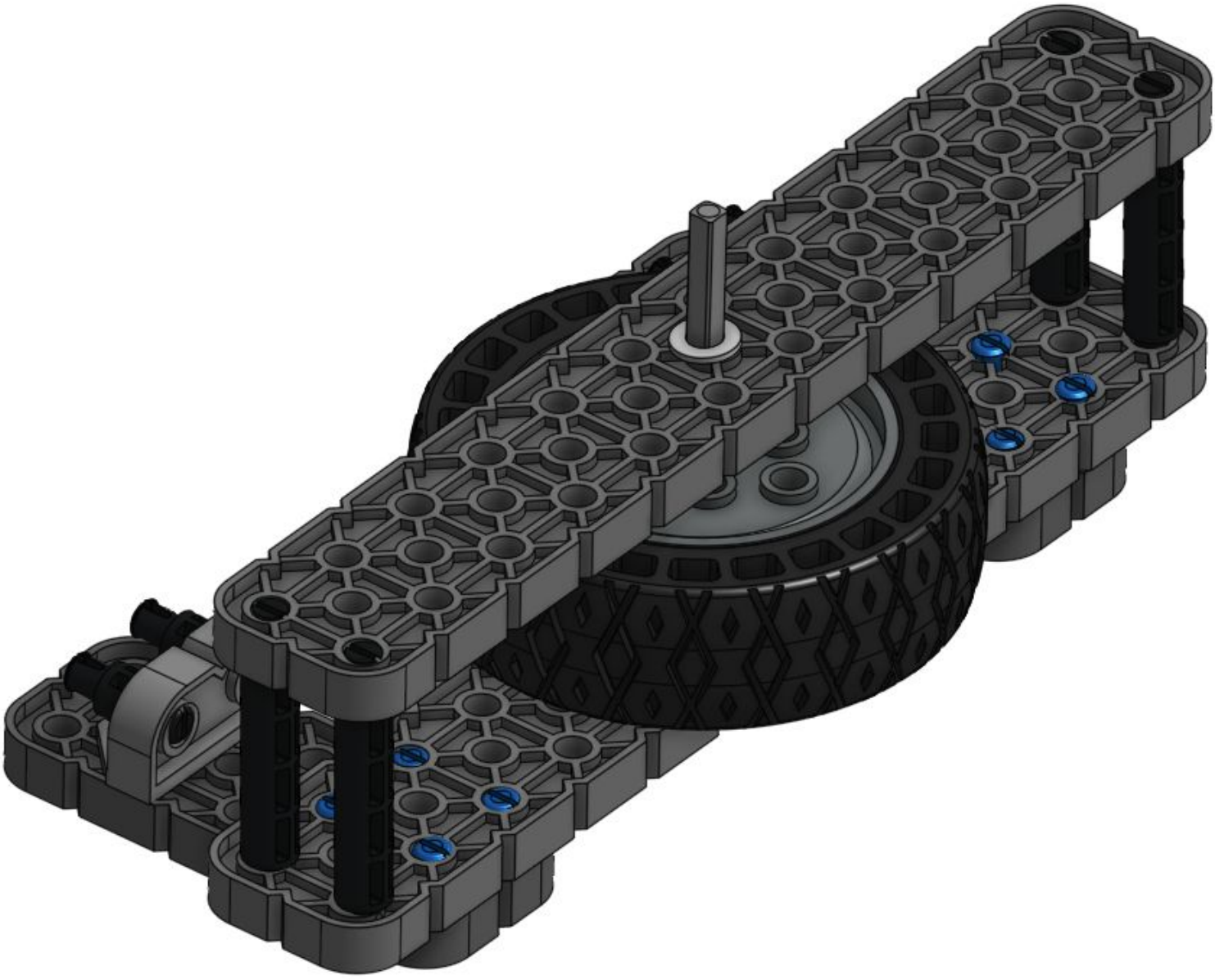
2x12 beam



7

Parts List:

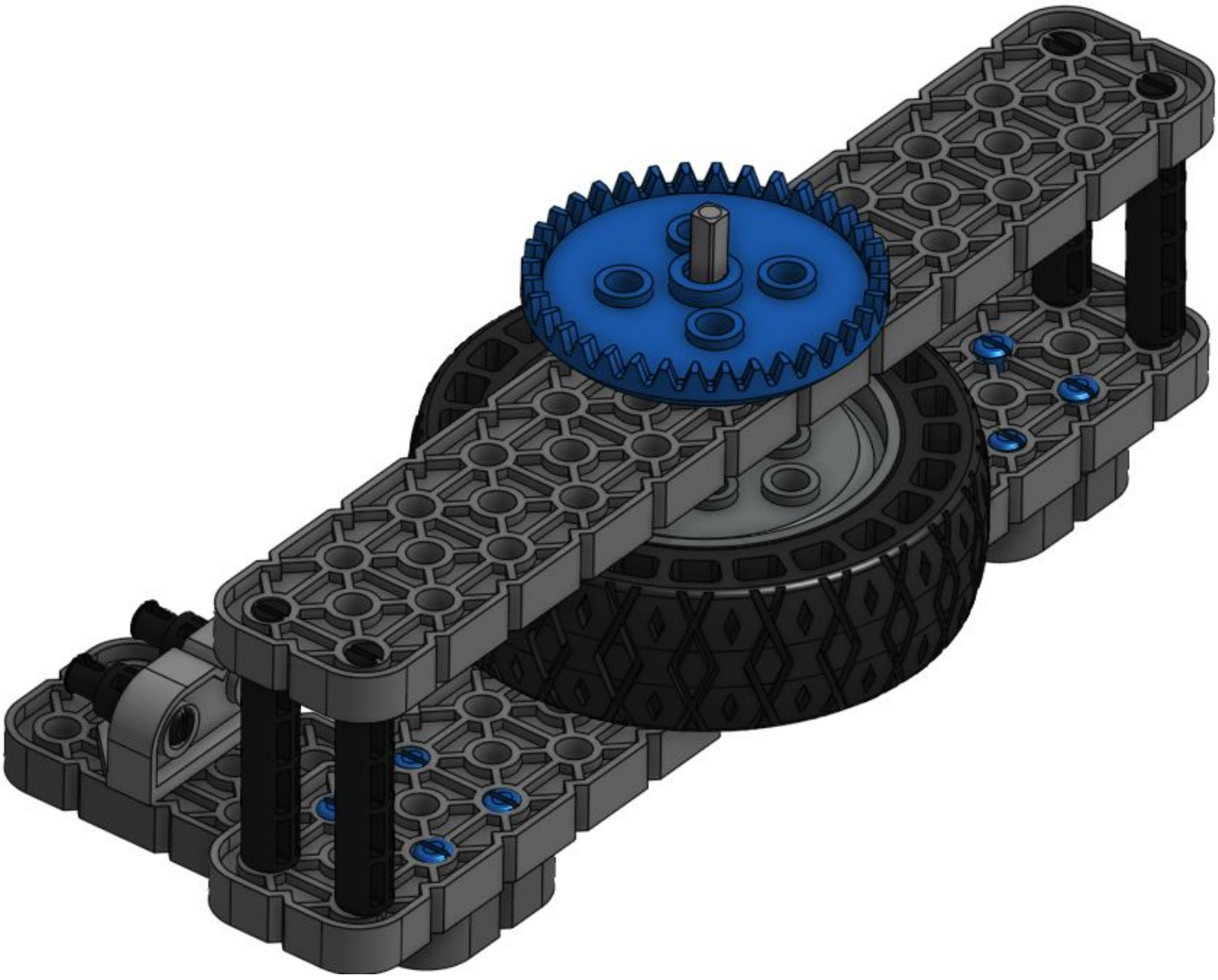
x1 



8

Parts List:

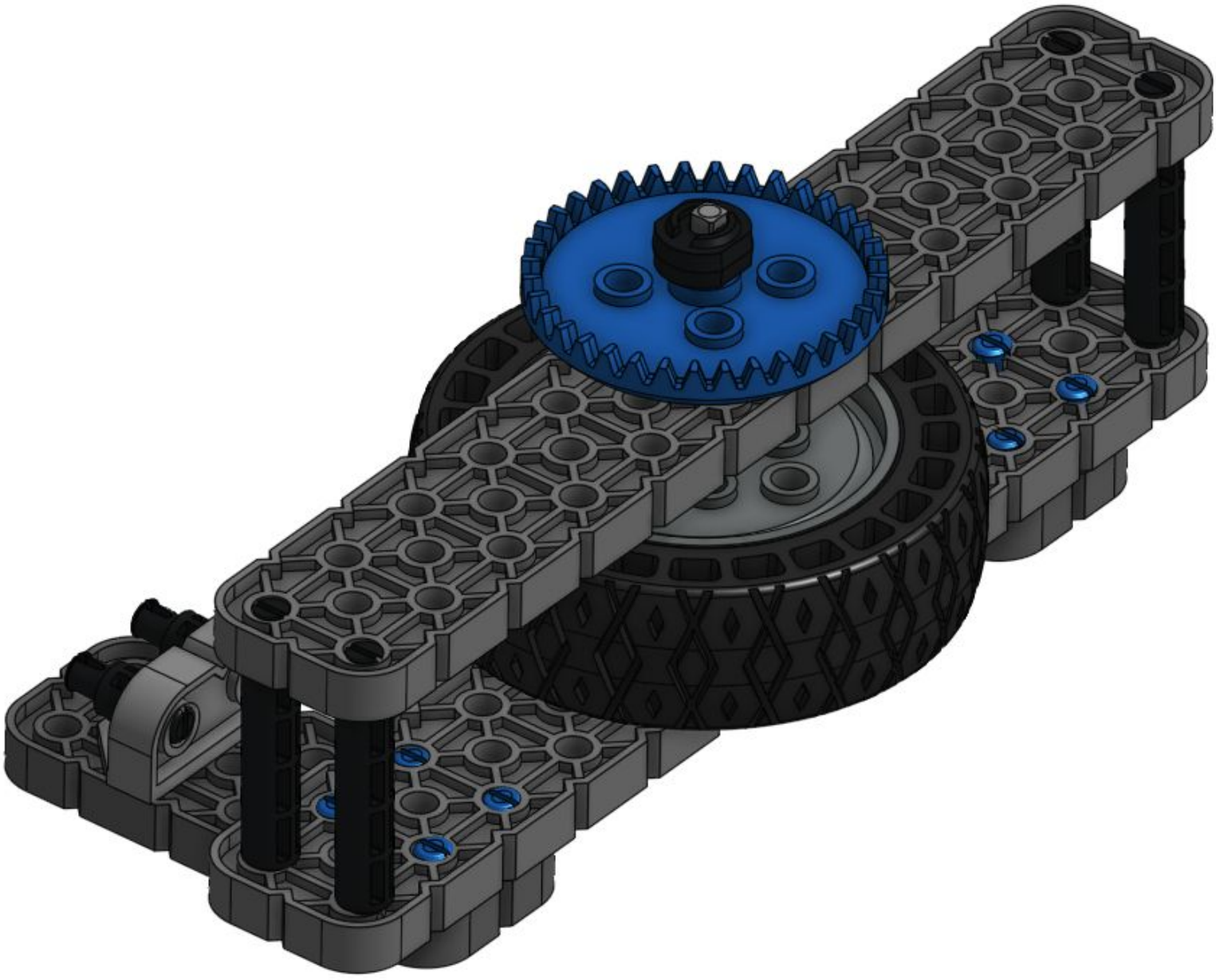
x1

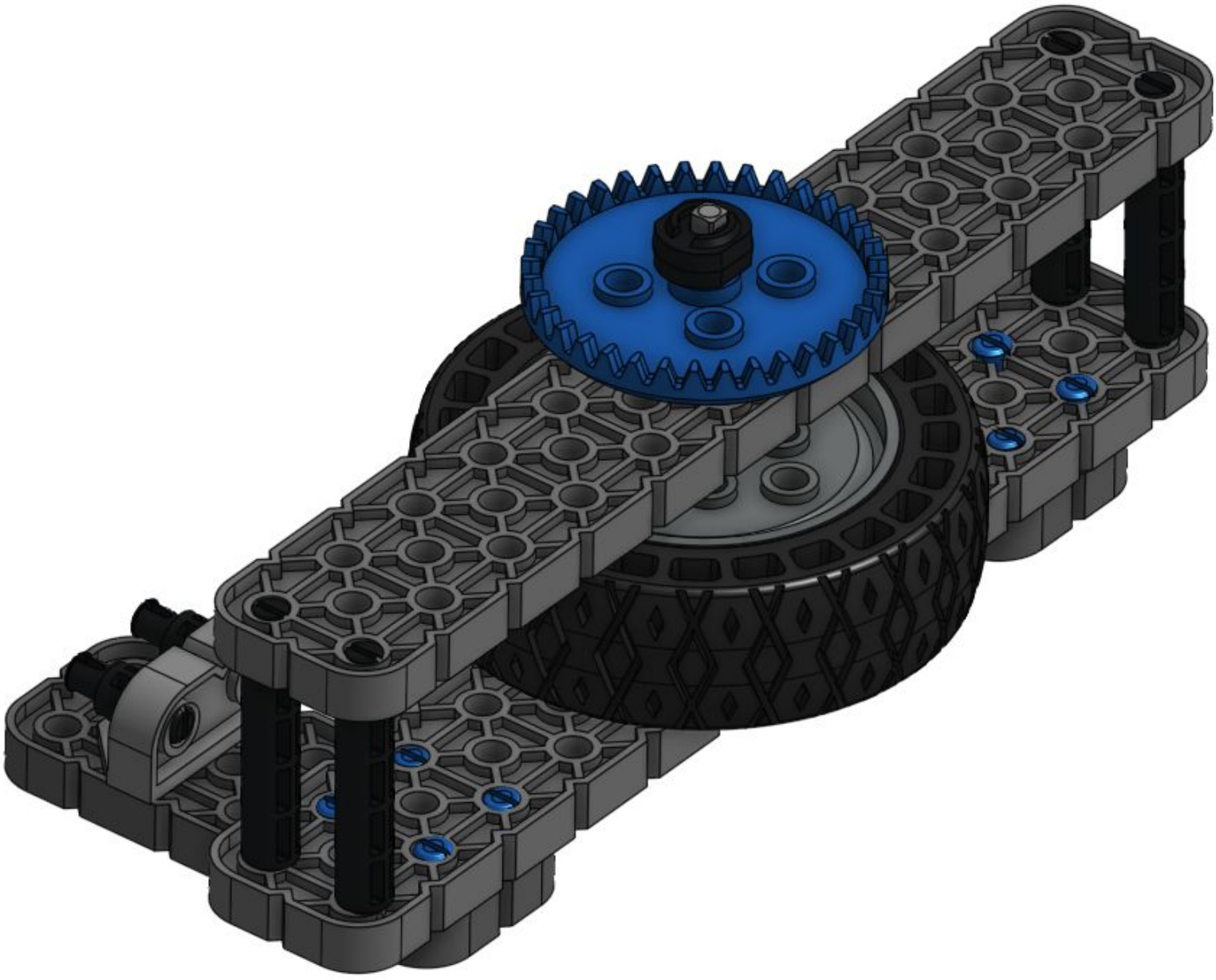


9

Parts List:

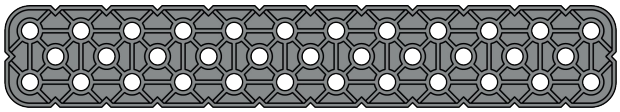
x1 



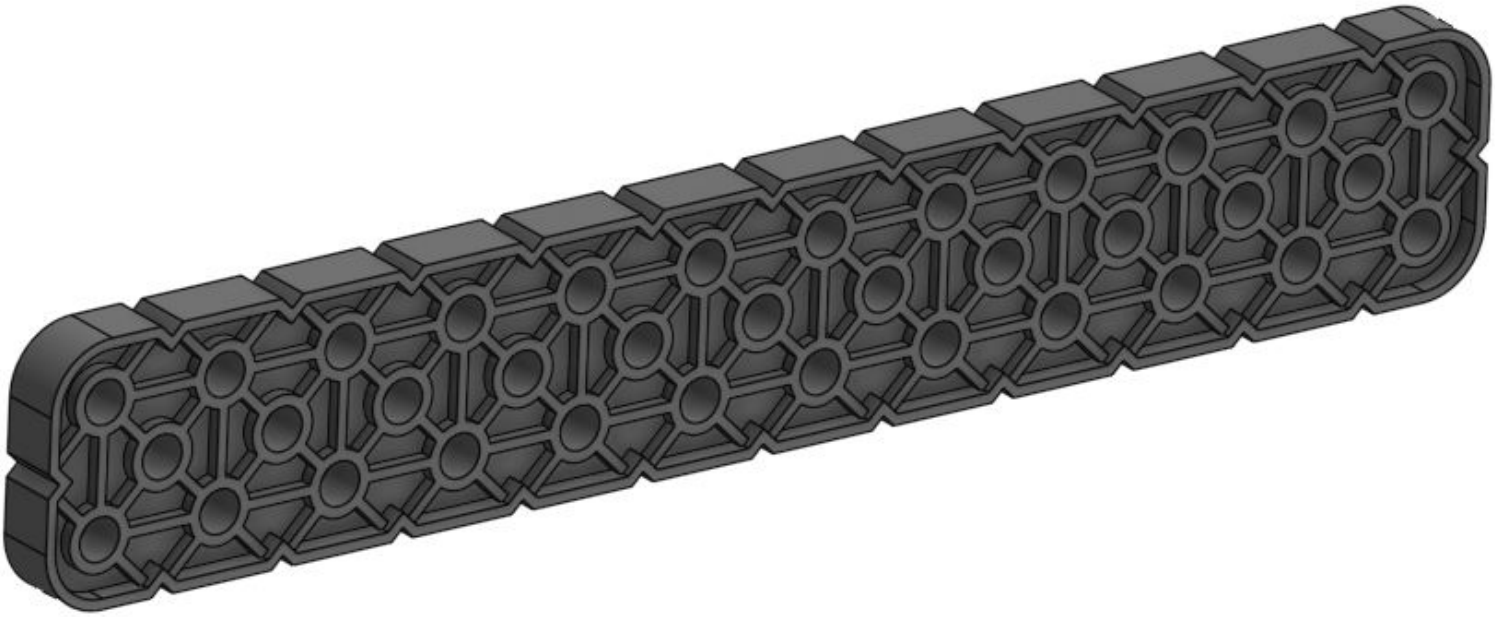


Parts List:

x1

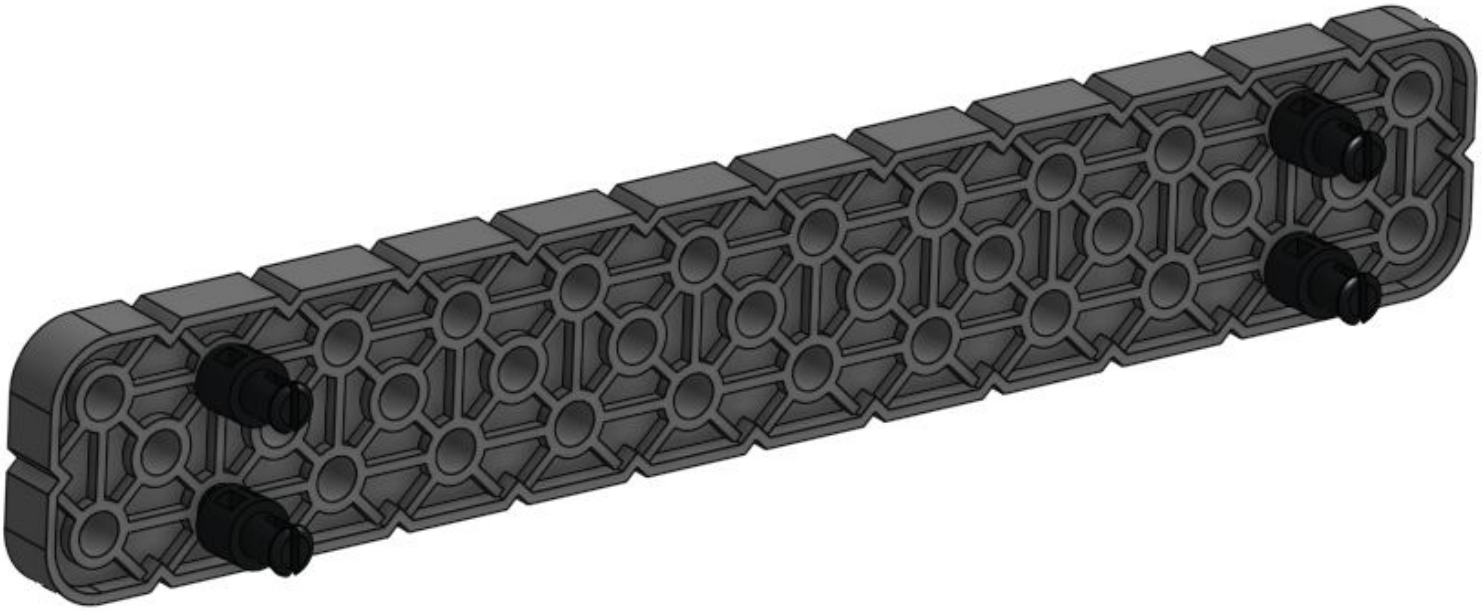


2x12 beam



Parts List:

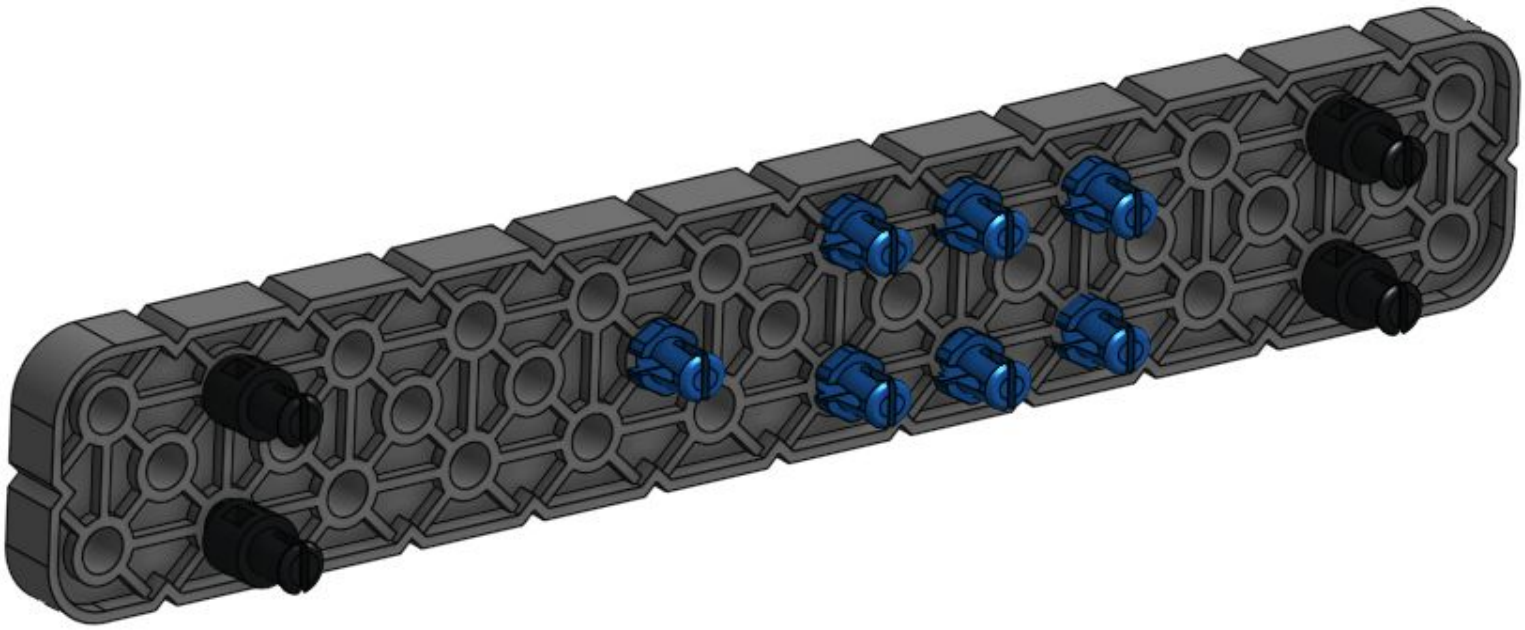
x4 



13

Parts List:

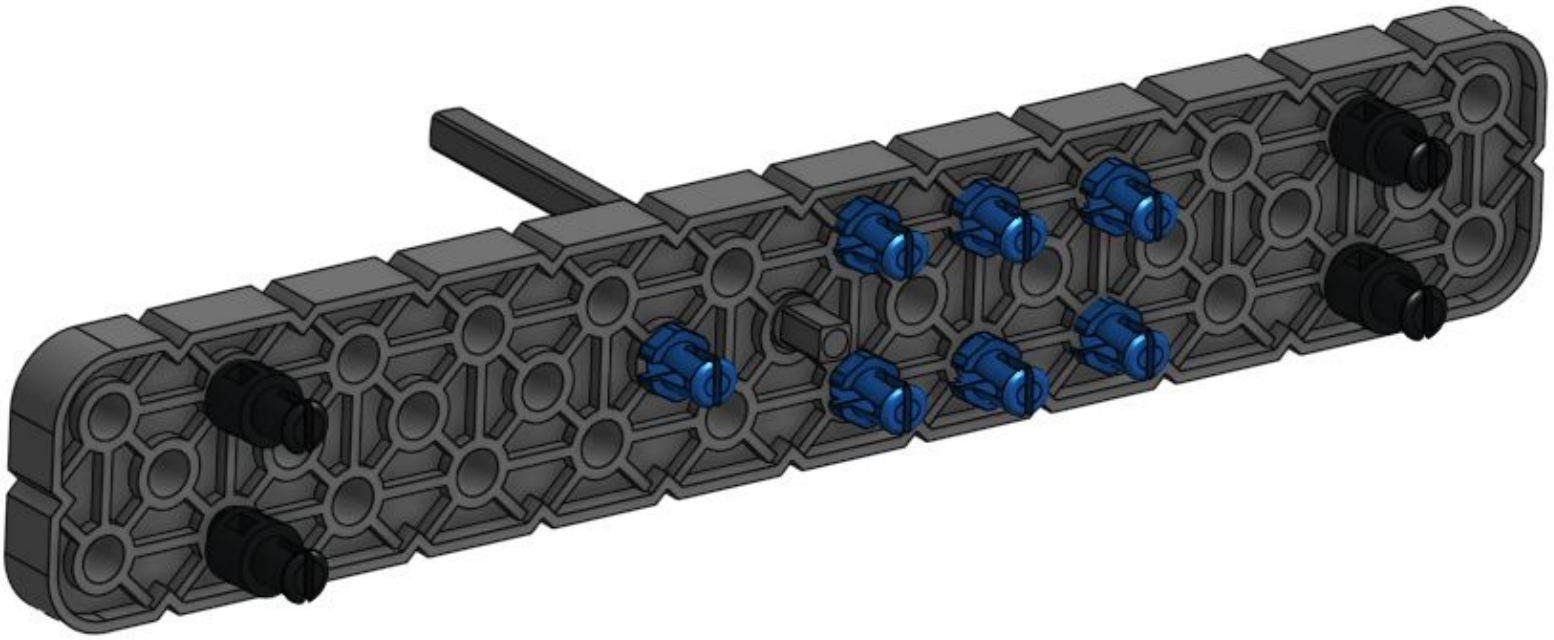
x6 



14

Parts List:

x1 

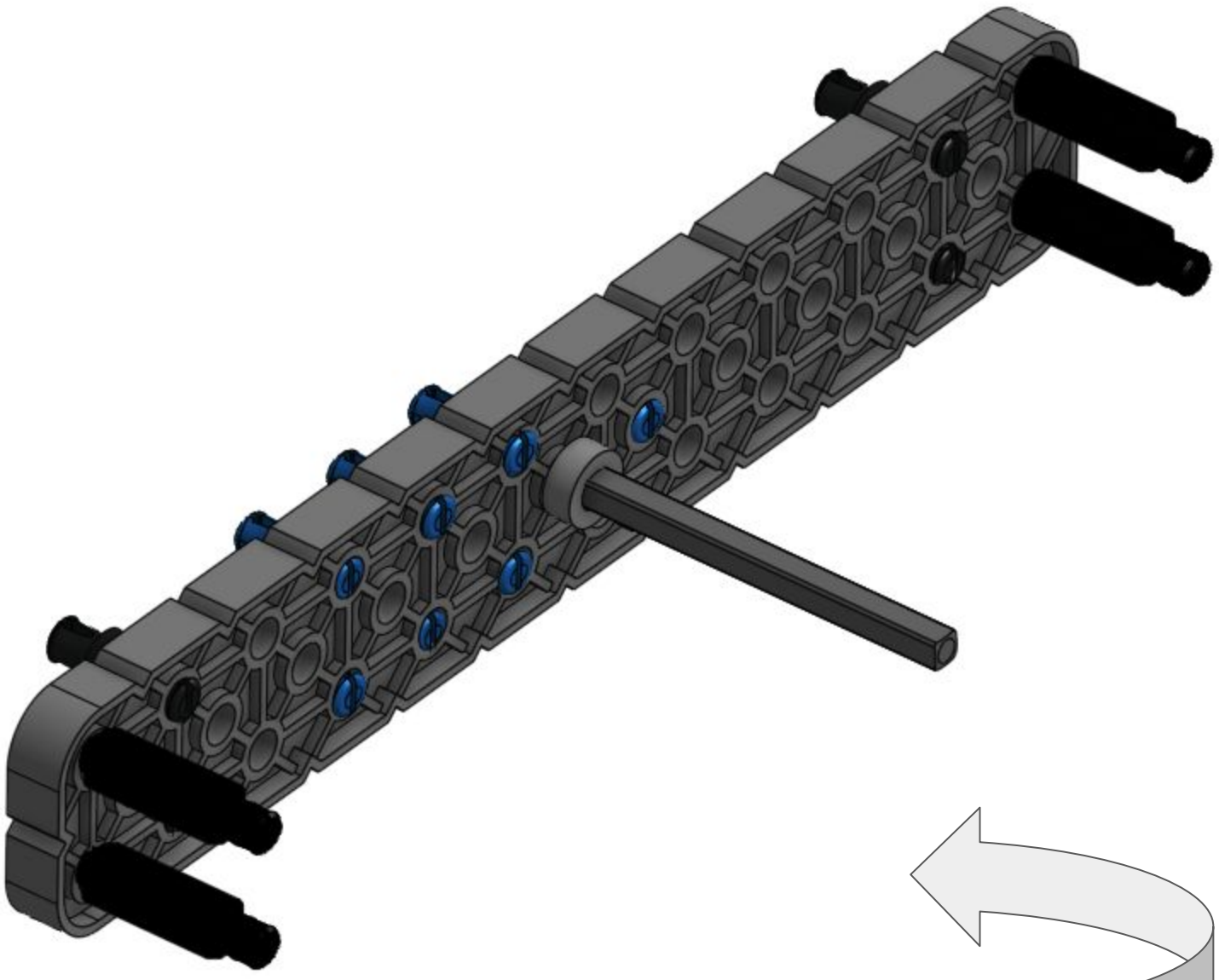


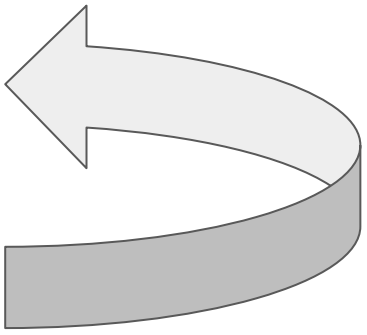
15

Parts List:

x4 

x1 

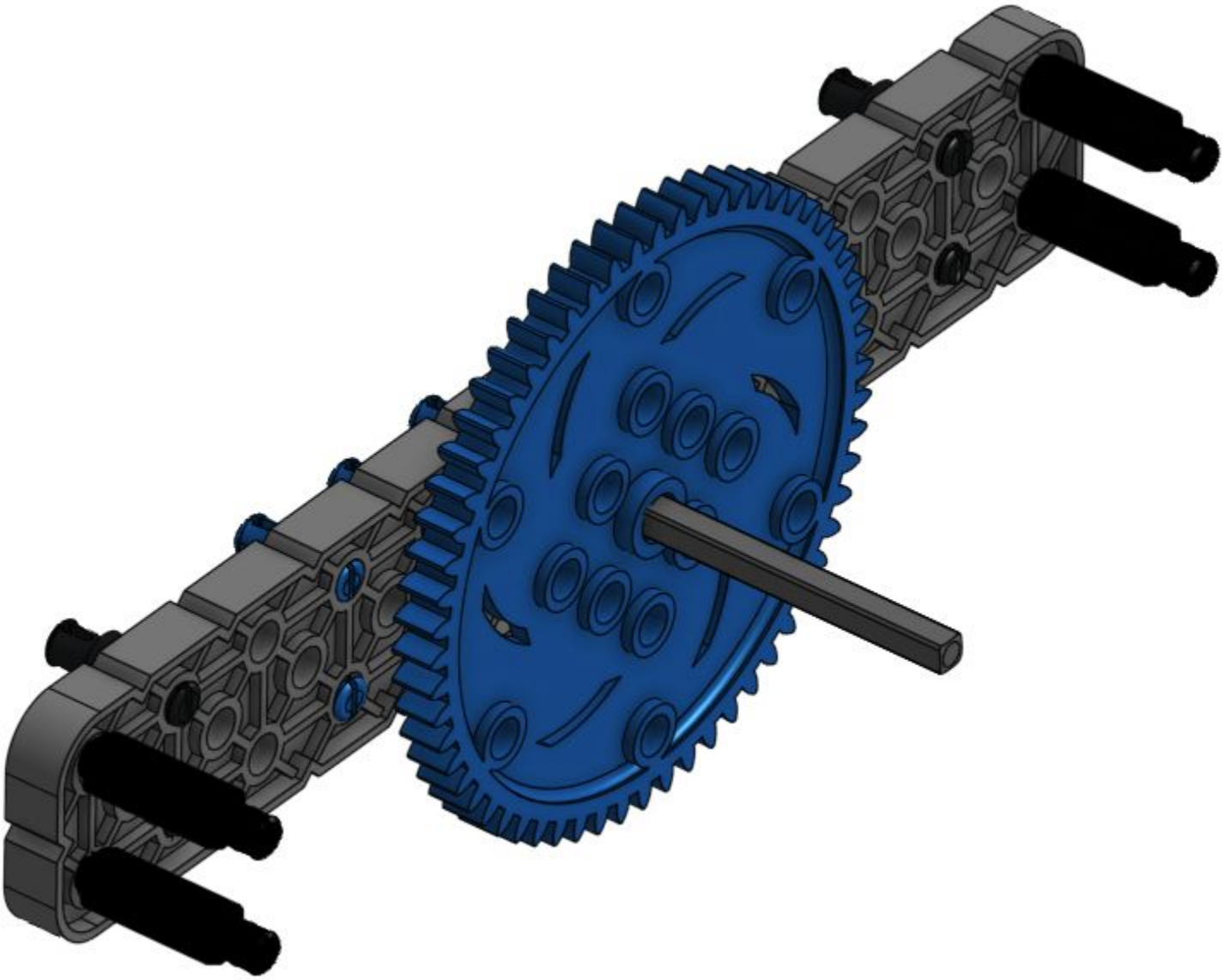




16

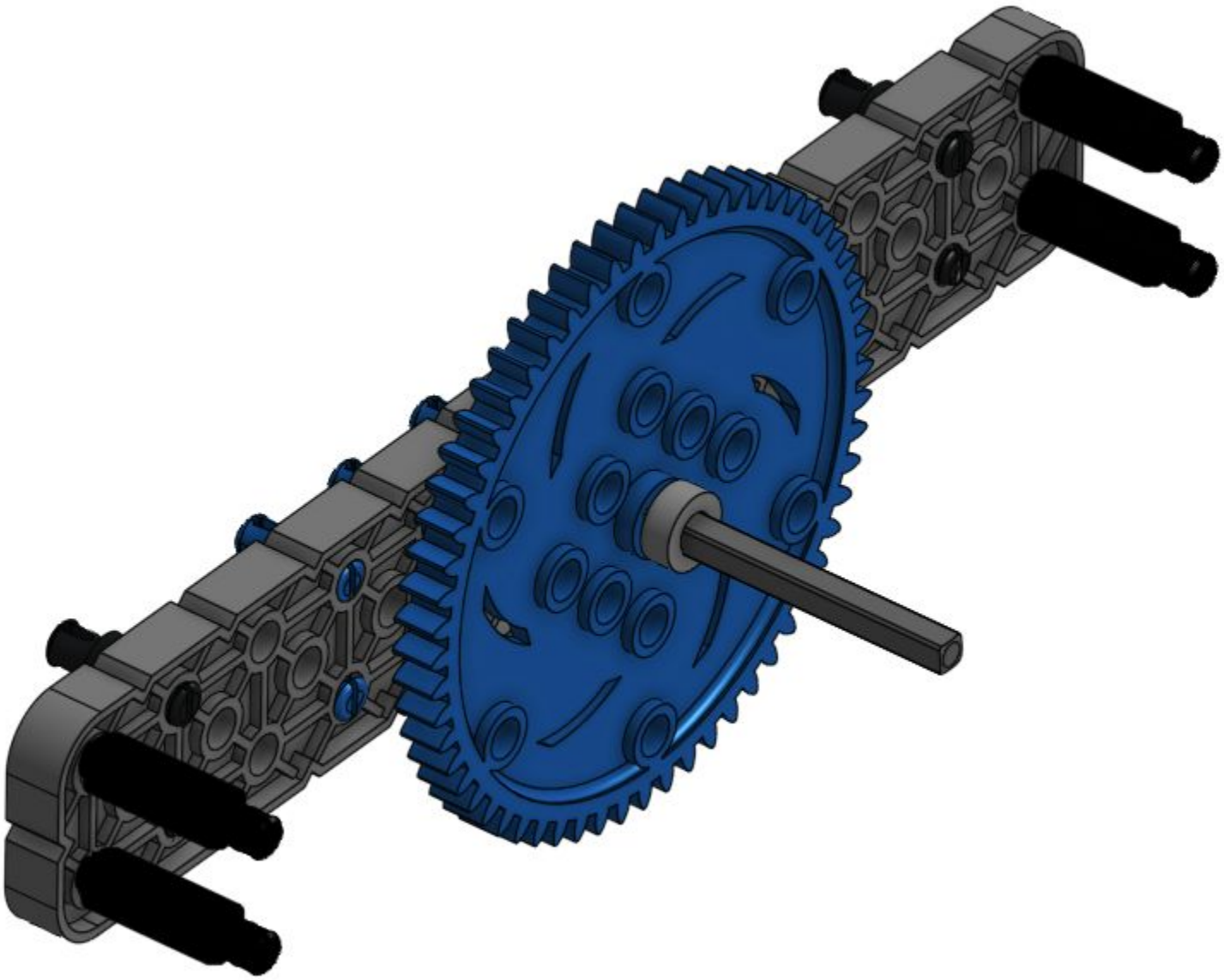
Parts List:

x1



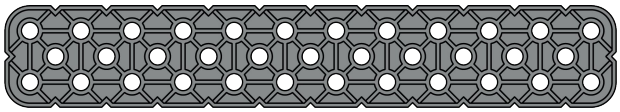
Parts List:

x1 

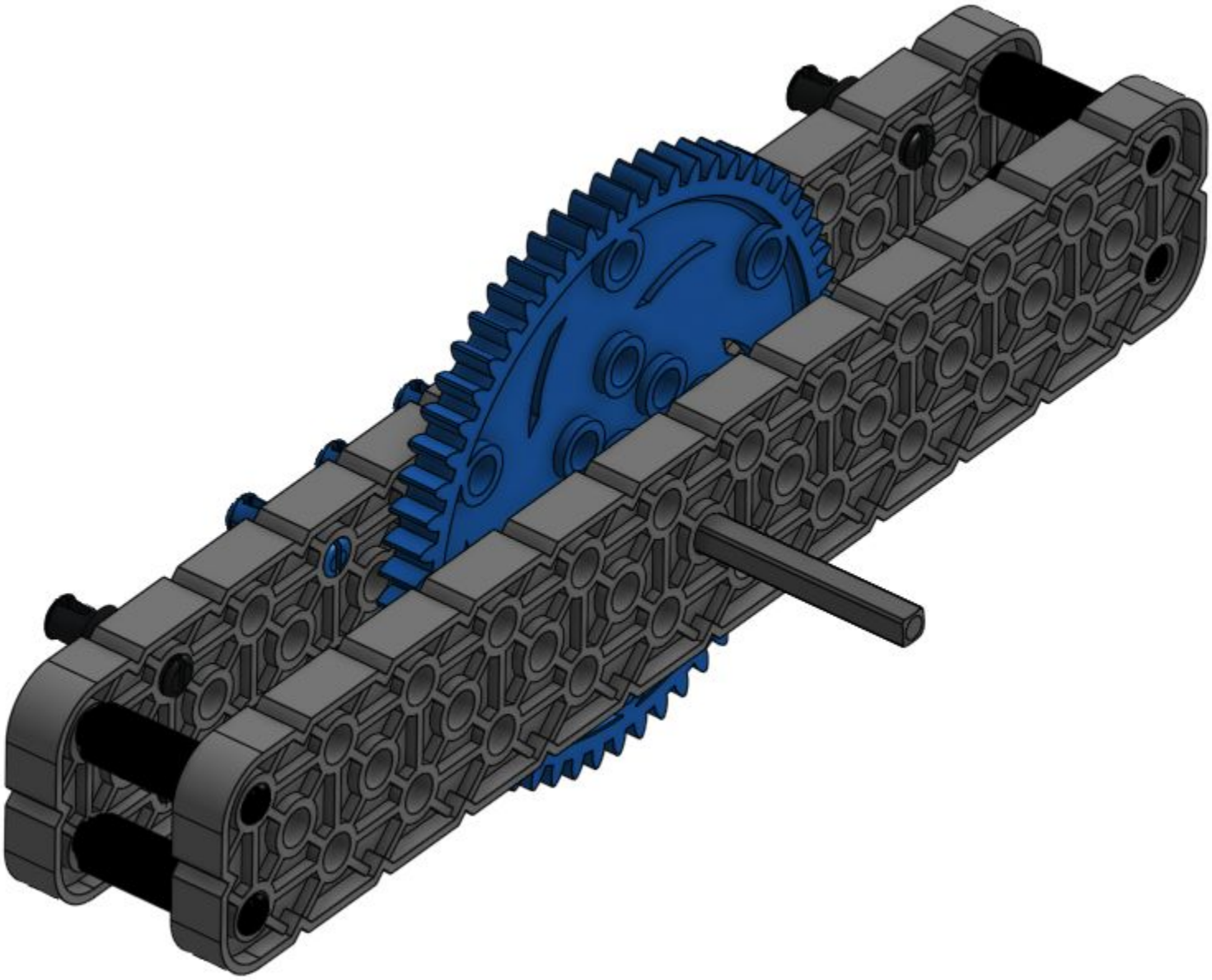


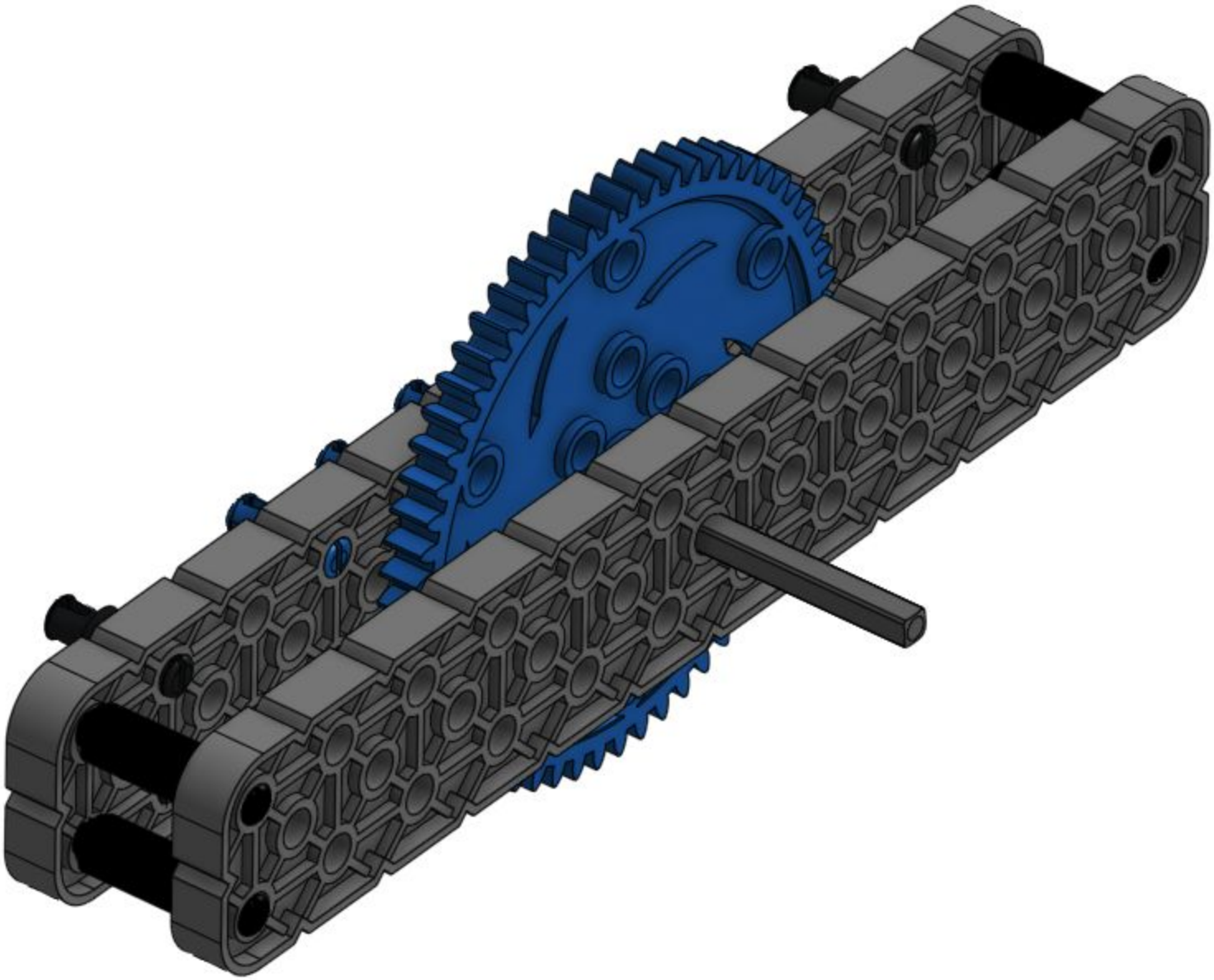
Parts List:

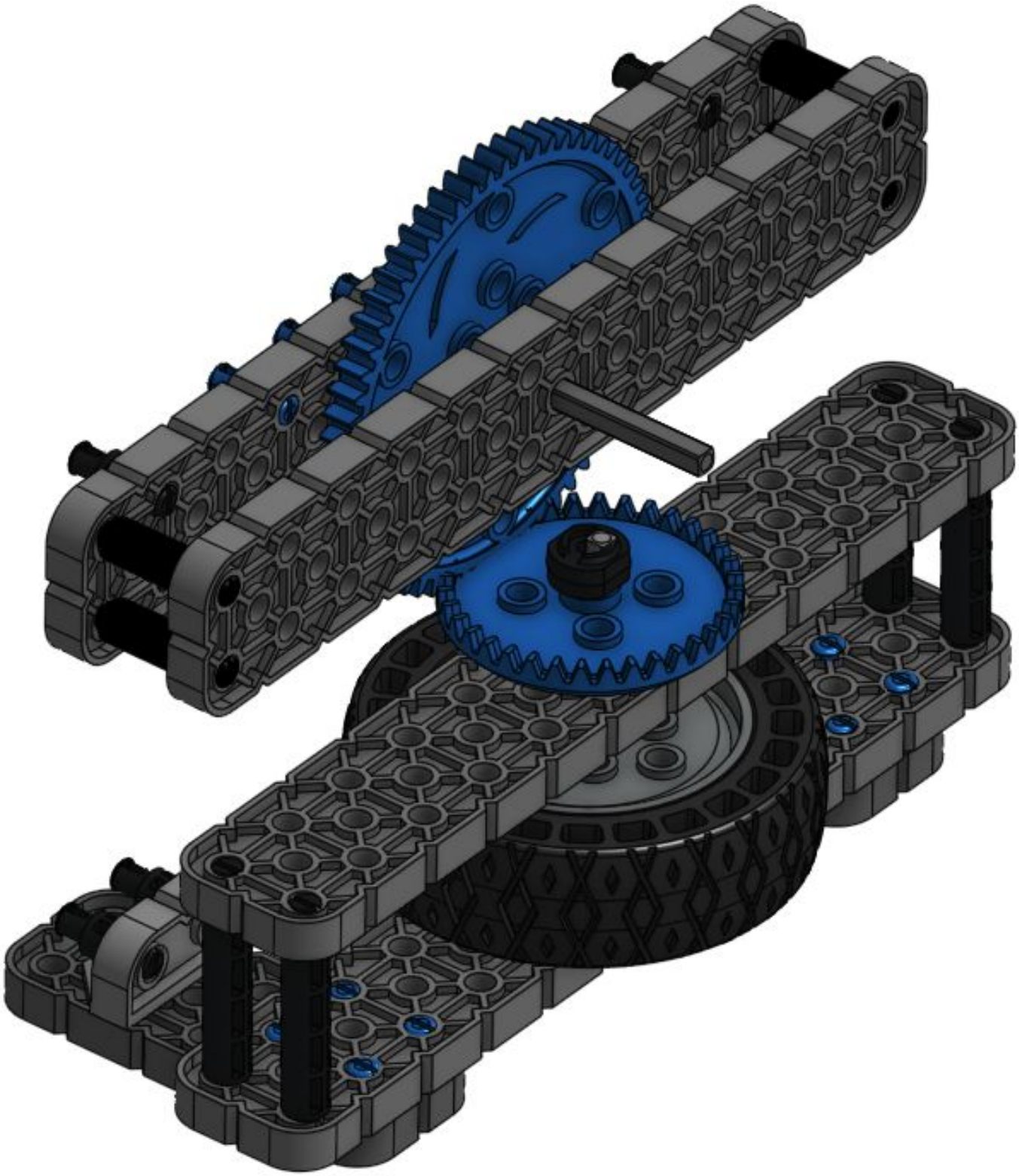
x1



2x12 beam

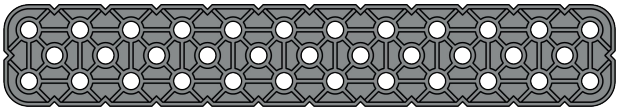




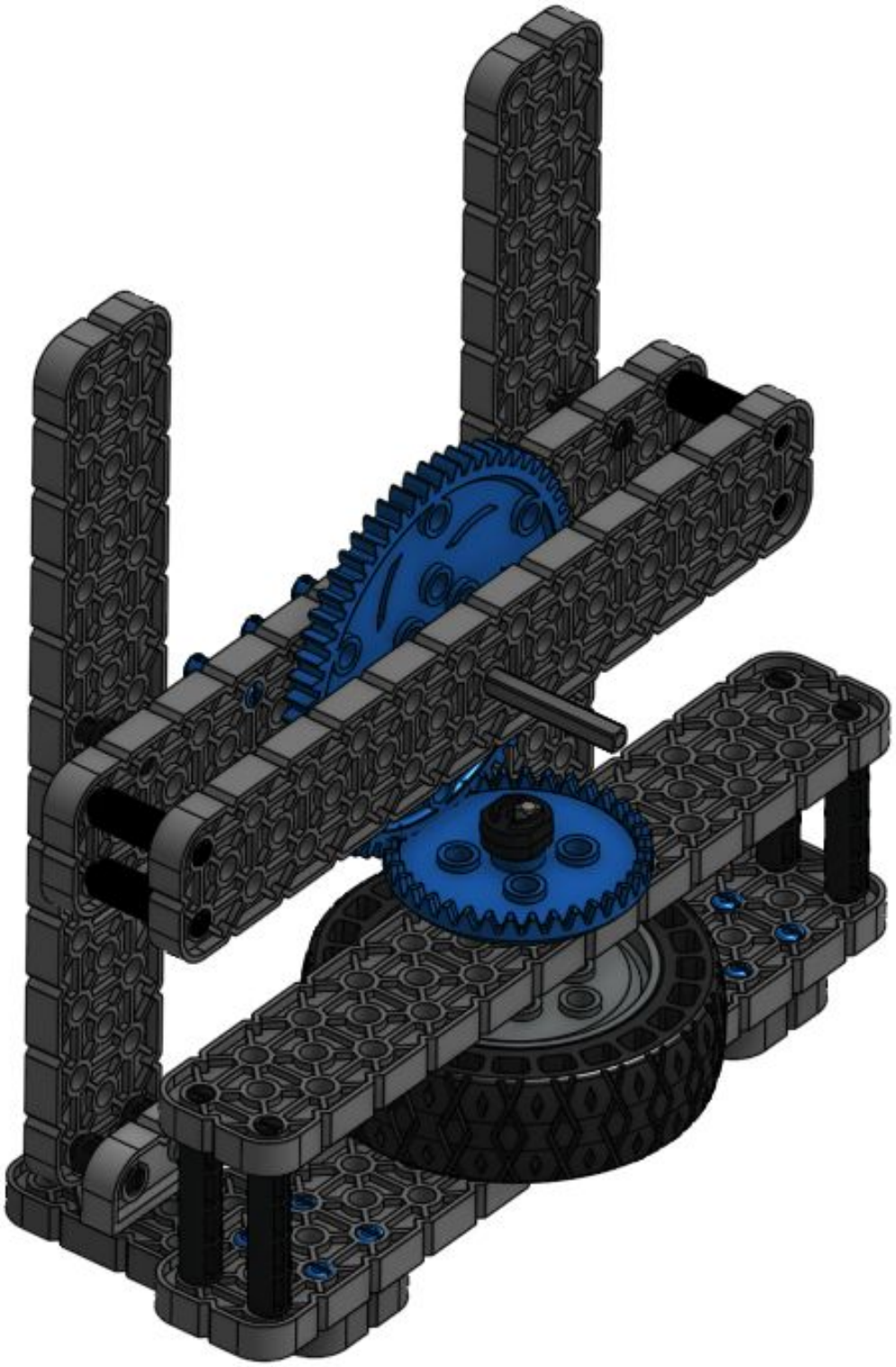


Parts List:

x2

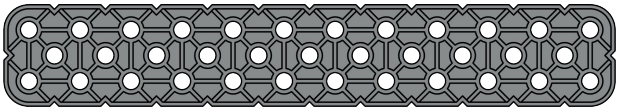


2x12 beam

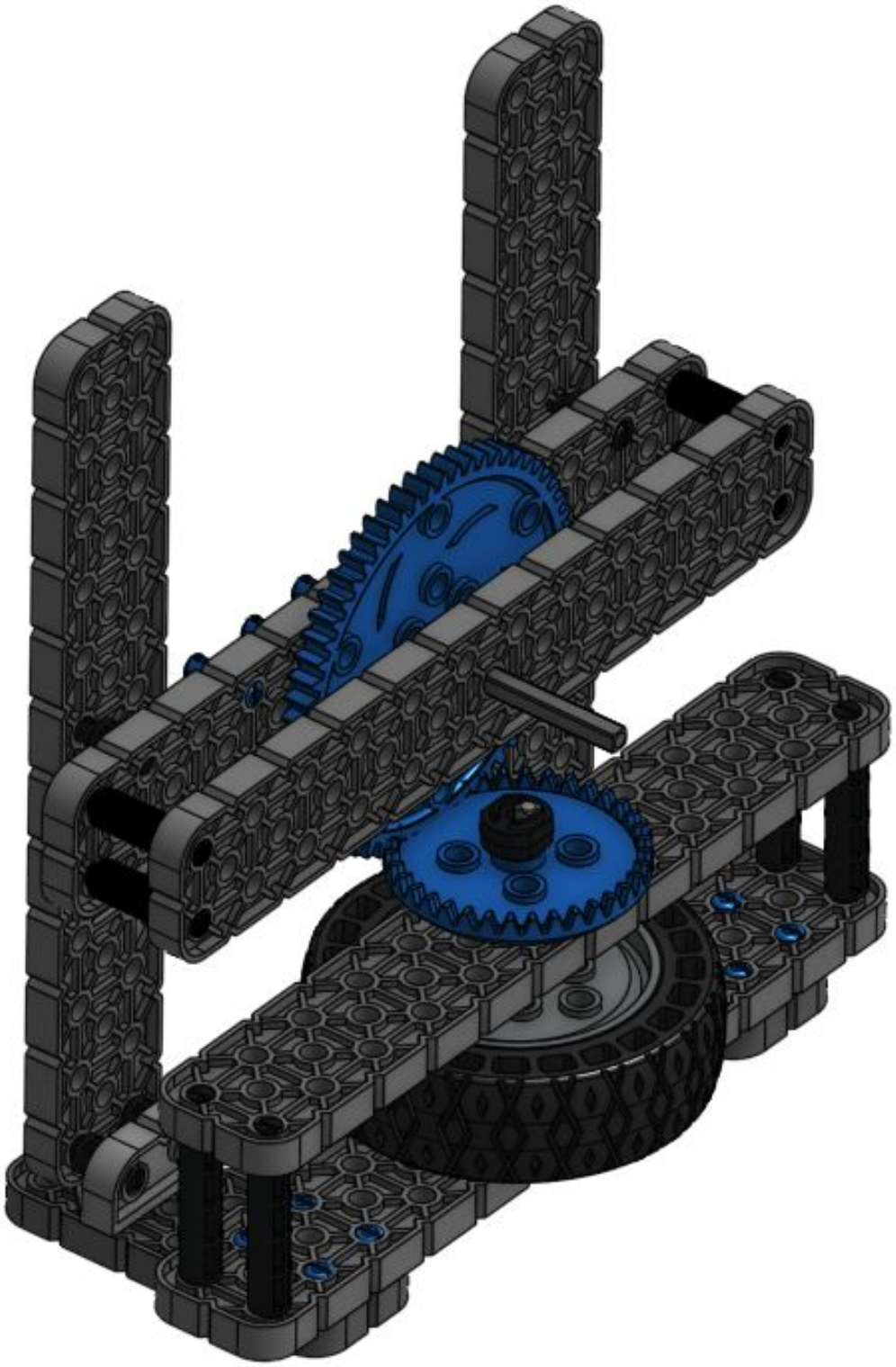


Parts List:

x2



2x12 beam



Parts List:

x1