

*FIRST*<sup>®</sup> Tech Challenge 2023-2024  
**Notice de montage Tetrix<sup>®</sup> FIRST<sup>®</sup> Tech  
Challenge Competition Set**

## A quoi sert ce guide ?

Ce document suggère une liste d'étapes qui permettent de construire un premier robot grâce au kit de démarrage. Ce robot pourra accomplir environ 40% du jeu une fois monté et programmé.



## Nomenclature

Nom complet de la pièce	Nombre nécessaire	Nombre dans le kit de démarrage
39067 TETRIX MAX 160 mm Channel	4	4
39066 TETRIX MAX 96 mm Channel	4	4
44707 TETRIX Stand-Off Post 6-32 x 28 mm	8	12
39098 Socket Head Cap Screw 6-32 x 5/16	28	100
39094 Kep Nut	109	200
39073 TETRIX MAX Flat Building Plate	4	4
39111 Button Head Cap Screw 3/8"	22	50
39272 TETRIX MAX Flat 160 mm x 27 mm	1	4
39097 Socket Head Cap Screw 6-32 x 1/2"	55	100
38009 TETRIX MAX Battery Clip	2	2
39085 TETRIX MAX Gear 120-Tooth	1	2
44708 TETRIX MAX 100 mm x 6 mm Axle	1	6
39079 TETRIX MAX Motor Hub	5	10
39100 TETRIX MAX Axle Spacer 1/8"	20	12 + Fichier STEP et STL pour en fabriquer ou en imprimer
40227 TETRIX PRIME 8 mm x 6 mm Bronze Bushing	2	12
39068 TETRIX MAX 288 mm Channel	4	4

39028 TETRIX MAX Gear 40-Tooth	4	6
39089 TETRIX MAX Motor Mount	3	4
39072 TETRIX MAX 144 mm Angle	1	2
39069 TETRIX MAX 416 mm Channel	1	2
41789 TETRIX MAX Standard Servo Mounting Kit	2	4
39197 TETRIX MAX Standard-Scale Servo Motor	2	4
39061 TETRIX MAX Flat Bracket	2	6
39197 TETRIX MAX Standard-Scale Servo Motor	2	4 (ce sont les vis pour l'engrenage du servo)
39273 TETRIX MAX Flat 96 mm x 27 mm	2	4
39062 TETRIX MAX L Bracket	2	6
39086 TETRIX MAX Gear 80-Tooth	1	4
39172 TETRIX MAX Axle Hub	3	6
39091 TETRIX MAX Bronze Bushing	17	12 long et 12 court total = 24
39088 TETRIX MAX 100 mm Axle	5	6
39055 TETRIX MAX 4" Wheel	2	4
36466 TETRIX MAX 4" Omni Wheel Pack	2	4
39092 TETRIX MAX Axle Set Collar	6	6
39065 TETRIX MAX 32 mm Channel	3	8
39281 TETRIX MAX Inside Corner Bracket	2	8
39071 TETRIX MAX 288 mm Angle	1	2

44260 TETRIX MAX TorqueNADO® Motor	3	4
TETRIX MAX Axle Spacer x 6mm 1/8"	2	0 + Fichier STEP et STL pour en fabriquer ou en imprimer en 3D.

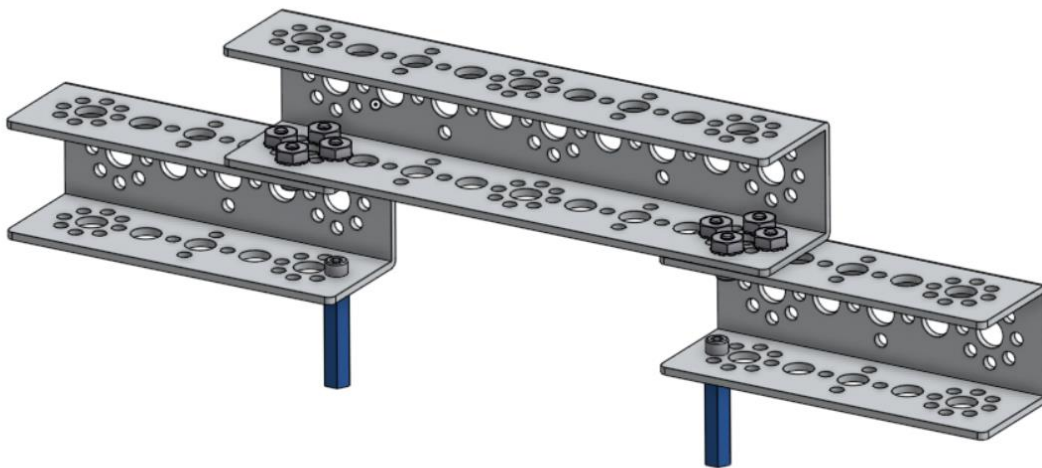


## Etape 1

### Cross Bar Assemblies:

A faire en deux exemplaires.

39067 TETRIX MAX 160 mm Channel (1), 39066 TETRIX MAX 96 mm Channel (2), 44707 TETRIX Stand-Off Post 6-32 x 28 mm (2), 39098 Socket Head Cap Screw 6-32 x 5/16 (10), 39094 Kep Nut (8)

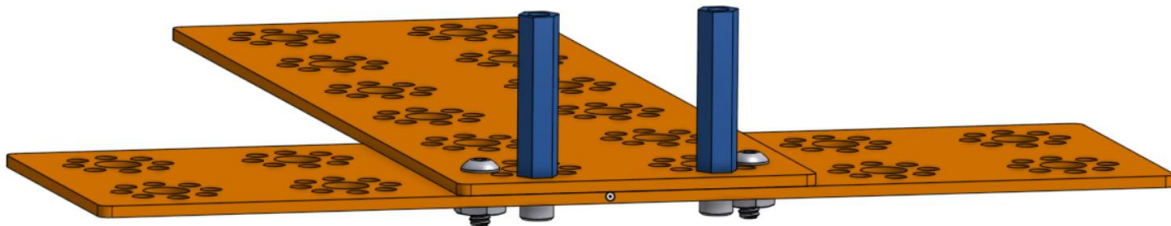


## Etape 2

### Battery Holder Assembly:

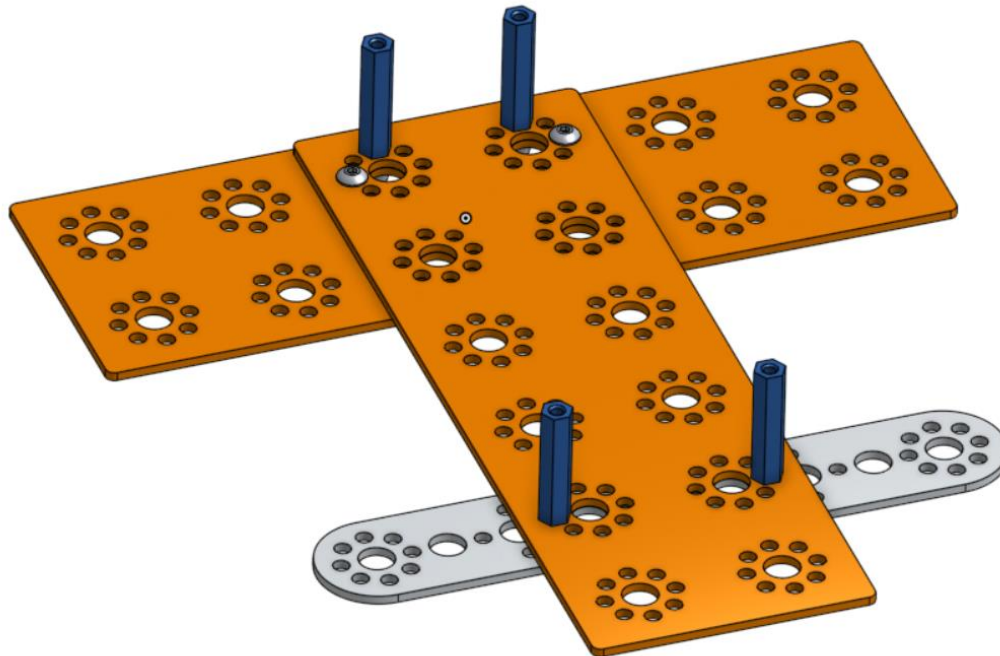
#### Step 1

39073 TETRIX MAX Flat Building Plate (2), 44707 TETRIX Stand-Off Post 6-32 x 28 mm (2), 39111 Button Head Cap Screw 3/8" (2), 39098 Socket Head Cap Screw 6-32 x 5/16" (2), 39094 Kep Nut (2)



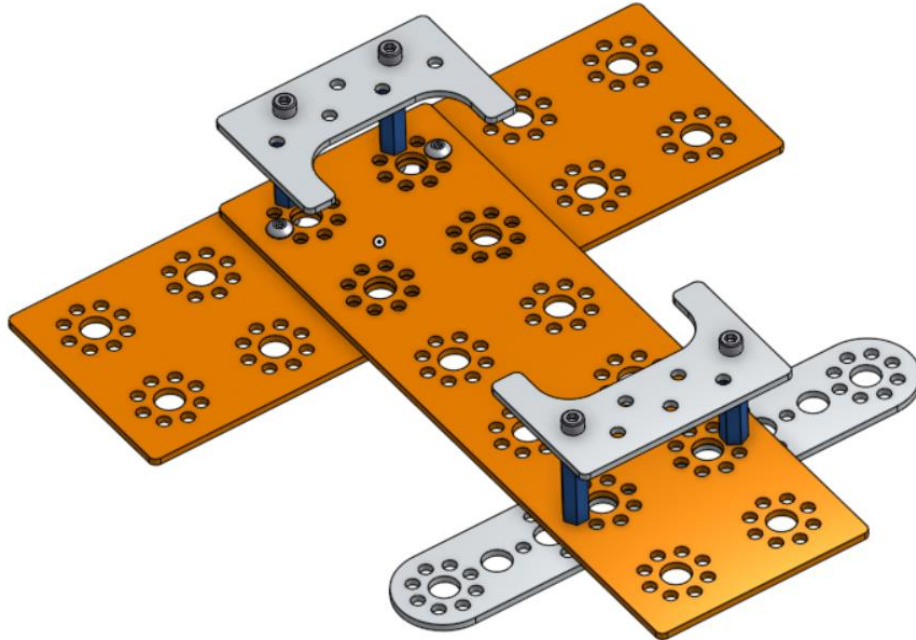
#### Step 2

39272 TETRIX MAX Flat 160 mm x 27 mm (1), 44707 TETRIX Stand-Off Post 6-32 x 28 mm (2), 39097 Socket Head Cap Screw 6-32 x 1/2" (2)



### Step 3

38009 TETRIX MAX Battery Clip (2), 39098 Socket Head Cap Screw 6-32 x 5/16" (4)



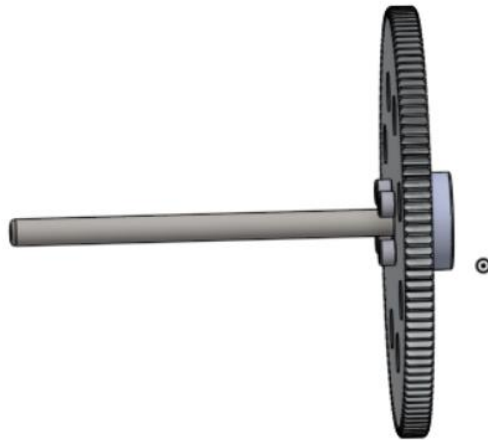


## Etape 3

### Tower Assembly

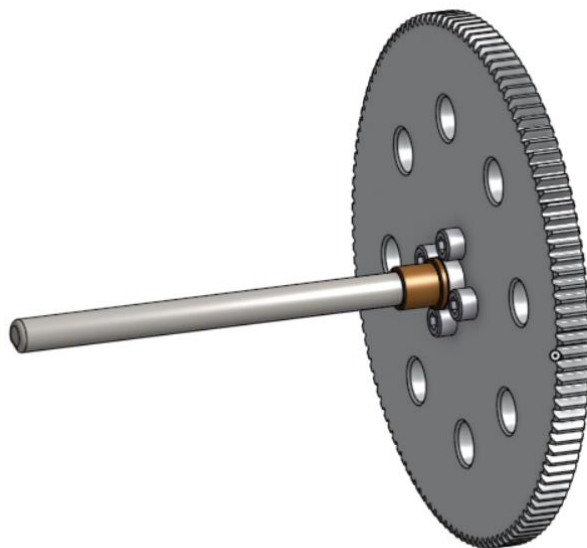
#### Step 1

39085 TETRIX MAX Gear 120-Tooth (1), 44708 TETRIX MAX 100 mm x 6 mm Axle (1), 39079 TETRIX MAX Motor Hub (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (4)



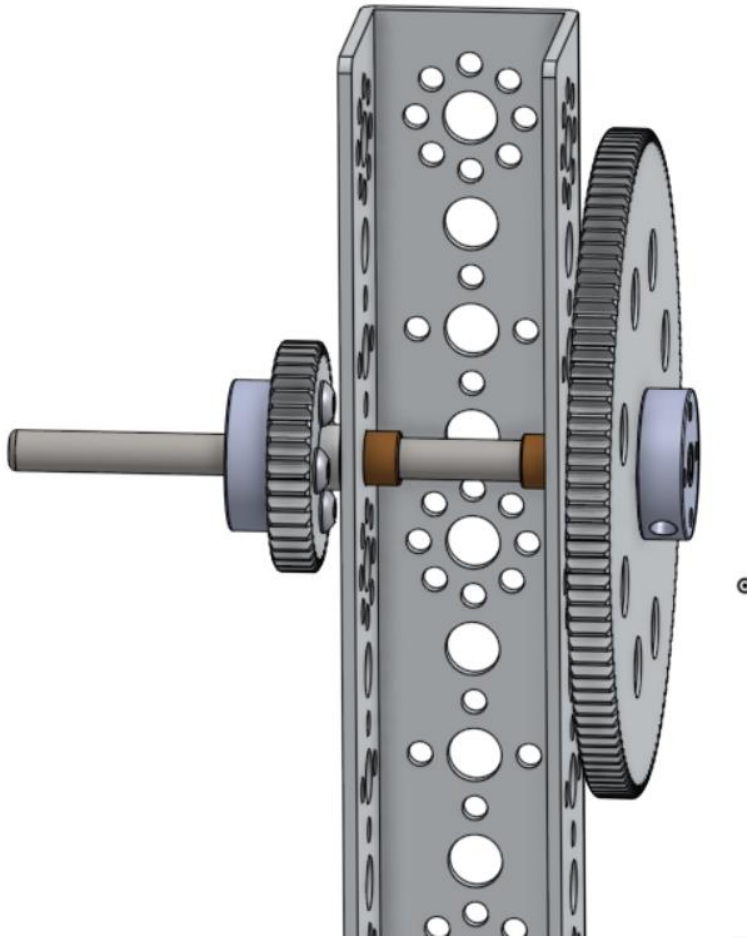
#### Step 2

TETRIX MAX Axle Spacer x 6mm 1/8" (1), 40227 TETRIX PRIME 8 mm x 6 mm Bronze Bushing (1)



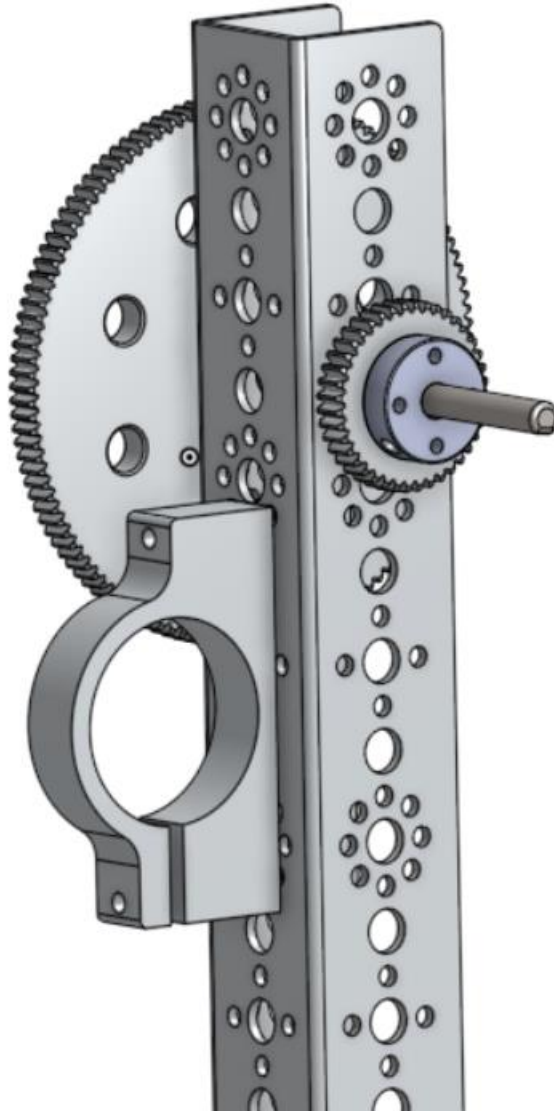
### Step 3

39068 TETRIX MAX 288 mm Channel (1), 40227 TETRIX PRIME 8 mm x 6 mm Bronze Bushing (1), TETRIX MAX Axle Spacer x 6mm 1/8" (1), 39111 Button Head Cap Screw 3/8" (4), 39028 TETRIX MAX Gear 40-Tooth (1), 39079 TETRIX MAX Motor Hub (1)



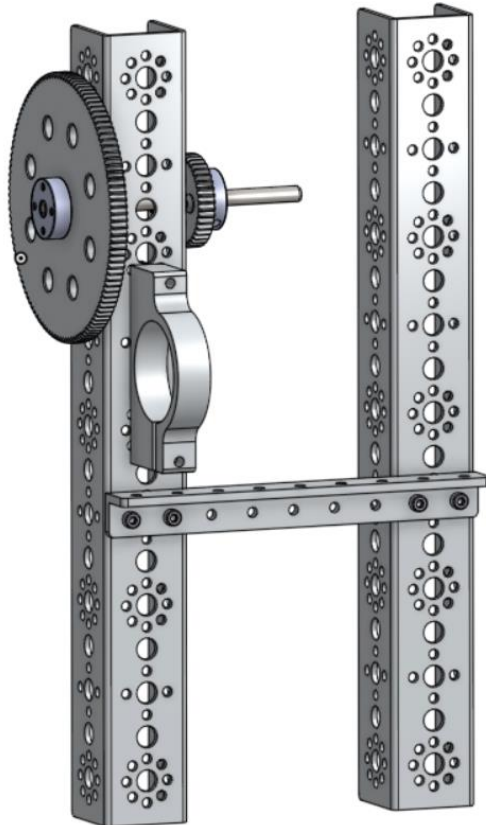
**Step 4**

39089 TETRIX MAX Motor Mount (1), 39094 Kep Nut (2)



## Step 5

39068 TETRIX MAX 288 mm Channel (1), 39072 TETRIX MAX 144 mm Angle (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (4), 39094 Kep Nut (4)

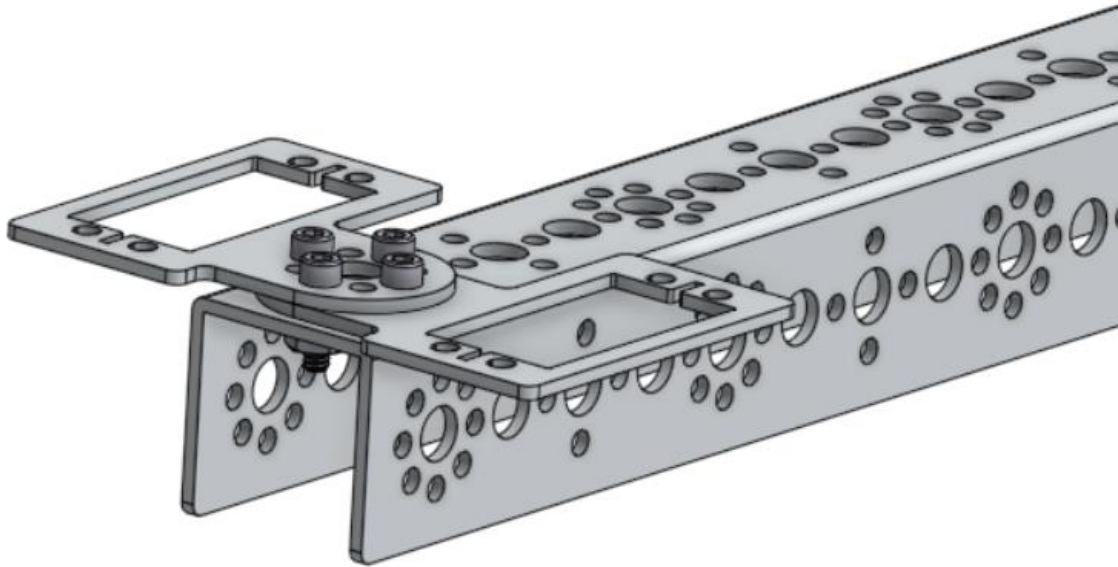


## Etape 4

### Arm Assembly

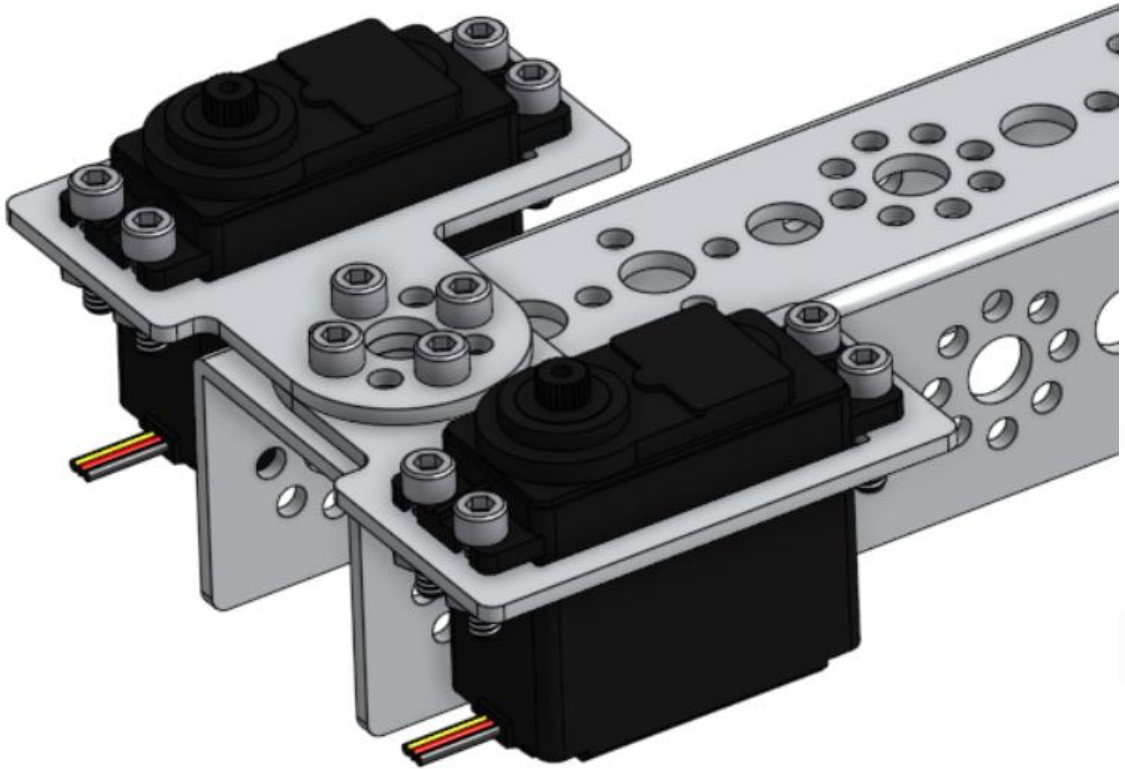
#### Step 1

39069 TETRIX MAX 416 mm Channel (1), 41789 TETRIX MAX Standard Servo Mounting Kit(2), 39097 Socket Head Cap Screw 6-32 x 1/2" (4), 39094 Kep Nut (4)



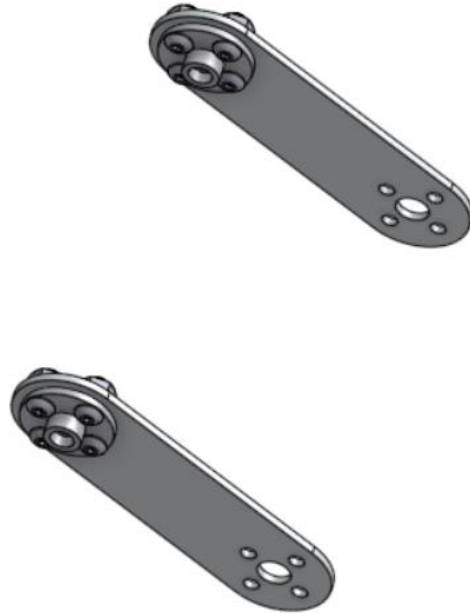
## Step 2

39197 TETRIX MAX Standard-Scale Servo Motor (2), 39097 Socket Head Cap Screw 6-32 x 1/2" (8), 39094 Kep Nut (8)



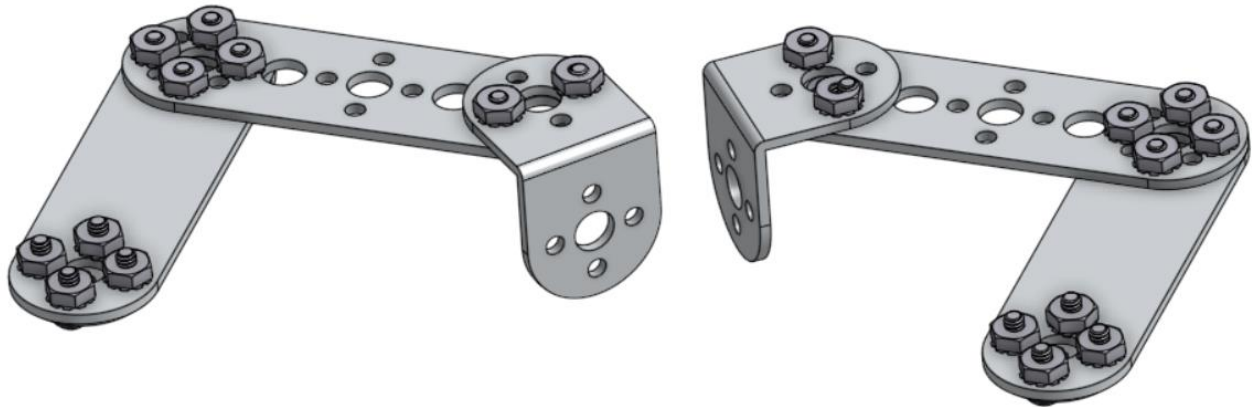
### Step 3

39061 TETRIX MAX Flat Bracket (2), 39197 TETRIX MAX Standard-Scale Servo Motor (2), 39111 Button Head Cap Screw 3/8" (8), 39094 Kep Nut (8)

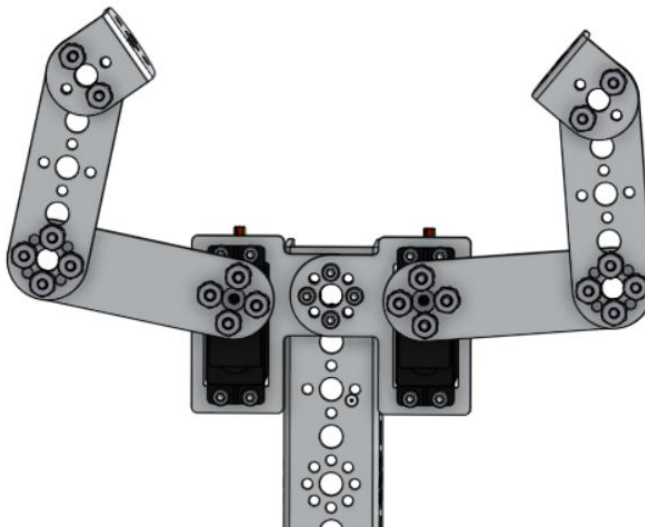


### Step 4

39273 TETRIX MAX Flat 96 mm x 27 mm (2), 39062 TETRIX MAX L Bracket (2), 39098 Socket Head Cap Screw 6-32 x 5/16" (12), 39094 Kep Nut (12)



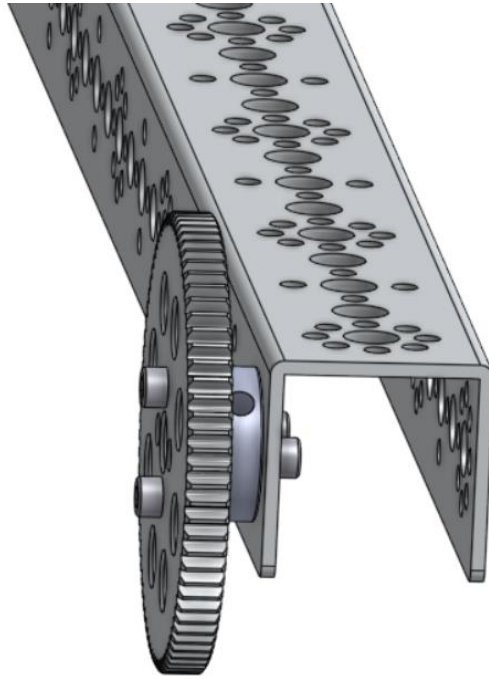
**Step 5**



**Step 6**

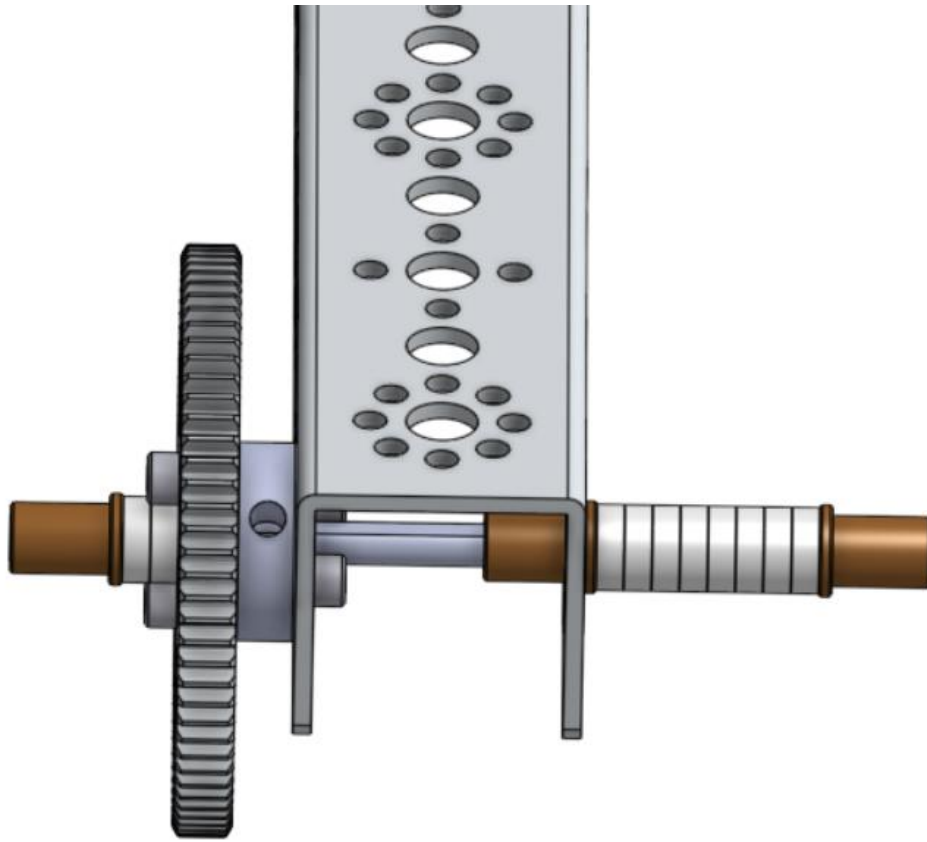
39086 TETRIX MAX Gear 80-Tooth (1), 39172 TETRIX MAX Axle Hub (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (4)





### Step 7

39100 TETRIX MAX Axle Spacer 1/8" (10), 39091 TETRIX MAX Bronze Bushing (3), 39088 TETRIX MAX 100 mm Axle (1)



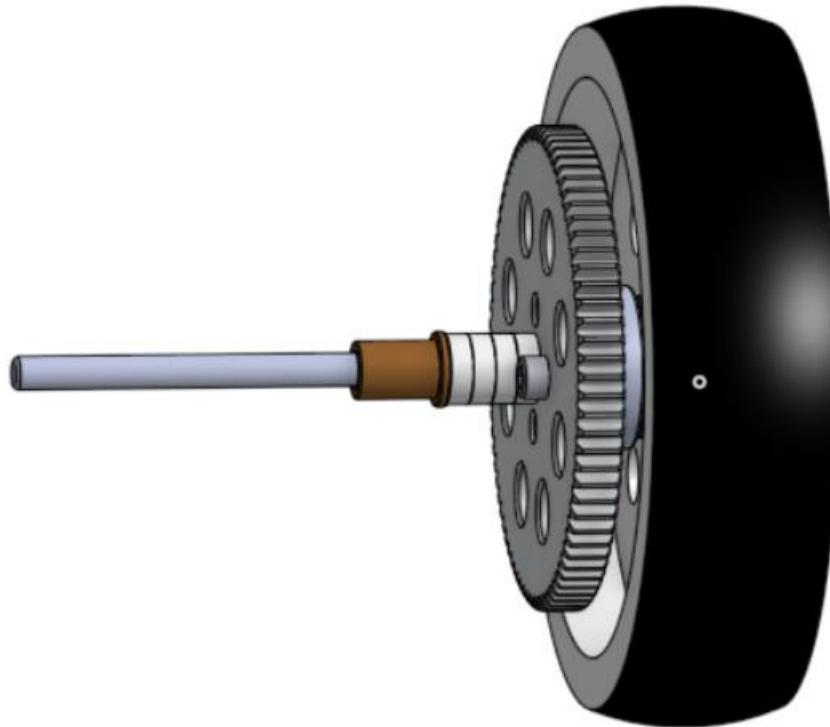
## Etape 5

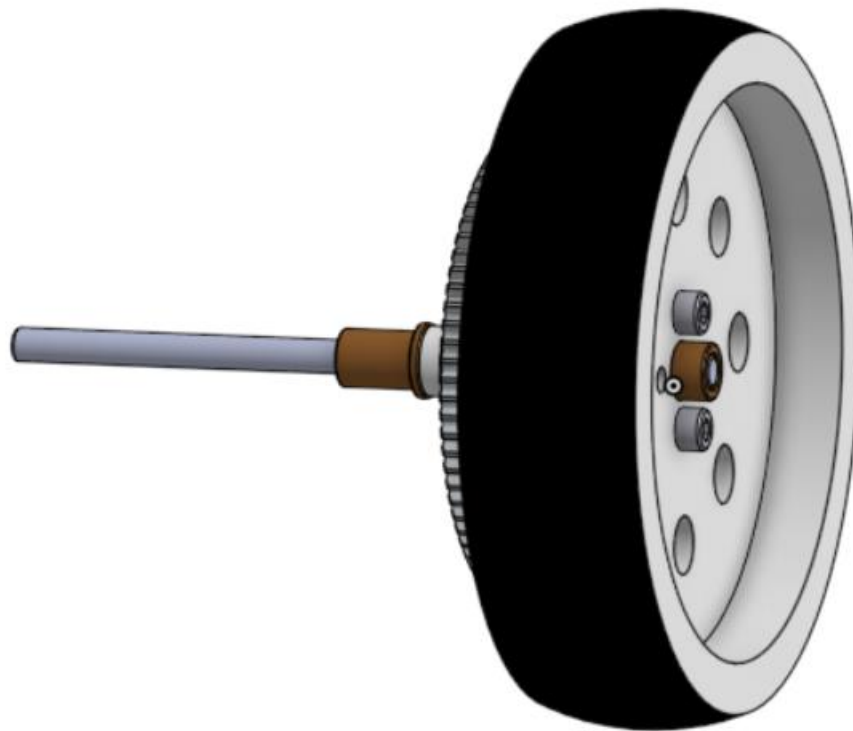
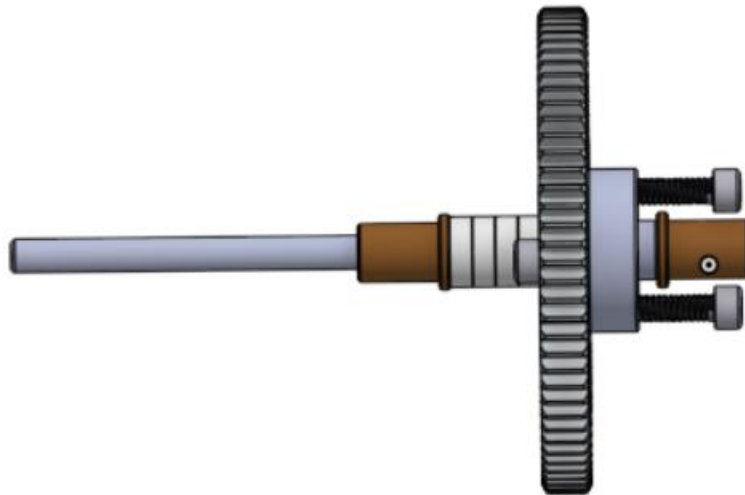
### Drive Wheel Assemblies

Faire en 2 exemplaires.

#### Step 1

39091 TETRIX MAX Bronze Bushing (2), 39172 TETRIX MAX Axle Hub (1), 39088 TETRIX MAX 100 mm Axle (1), 39100 TETRIX MAX Axle Spacer 1/8" (4), 39097 Socket Head Cap Screw 6-32 x 1/2" (4), 39055 TETRIX MAX 4" Wheel (1)





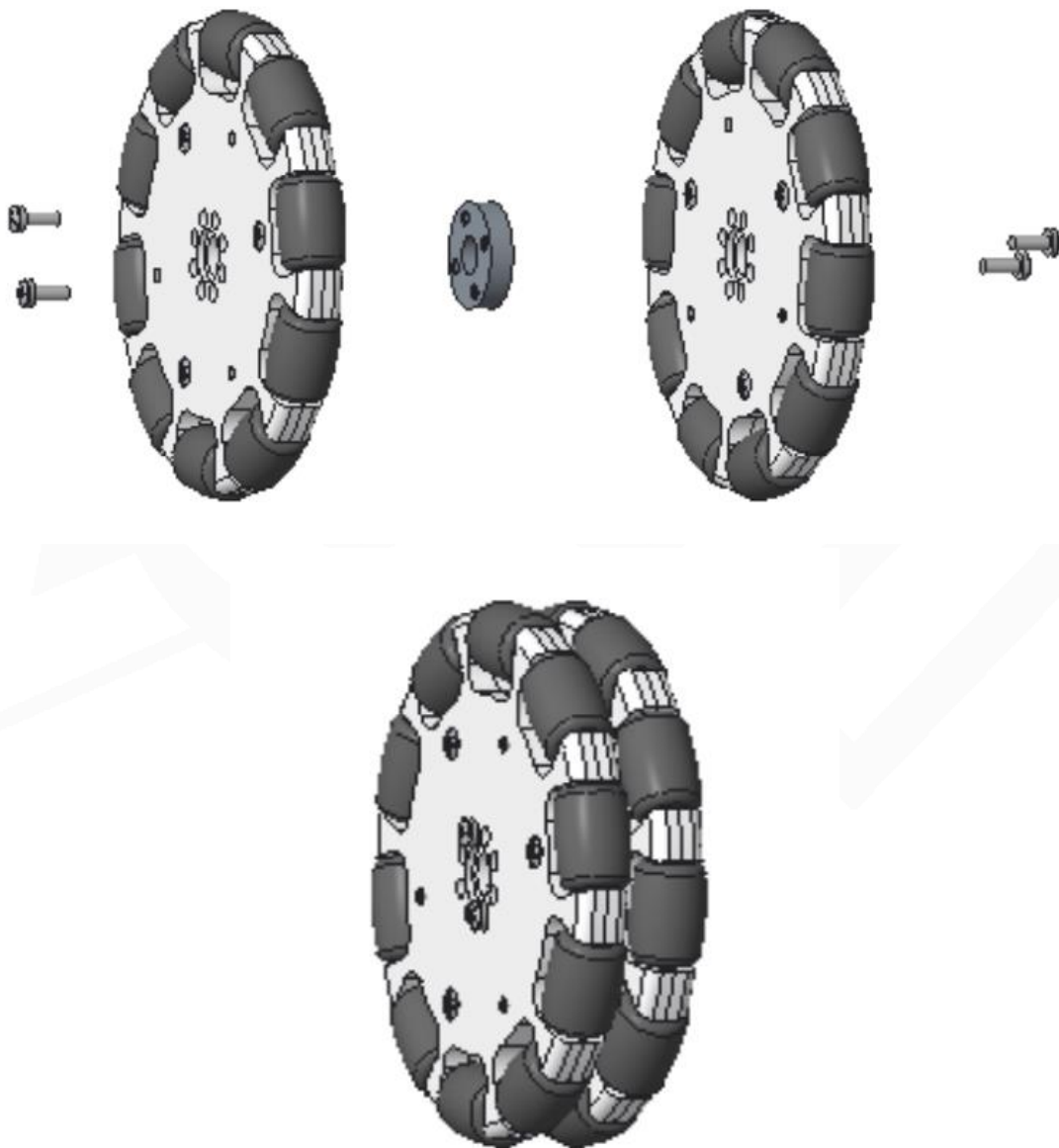
## Etape 6

### Omni Wheel Assembly

Faire en 2 exemplaires.

#### Step 1

36466 TETRIX MAX 4" Omni Wheel Pack (1)



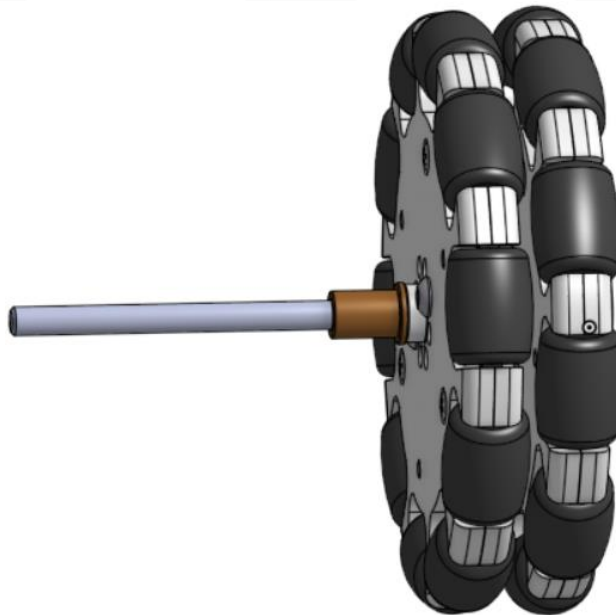
## Step 2

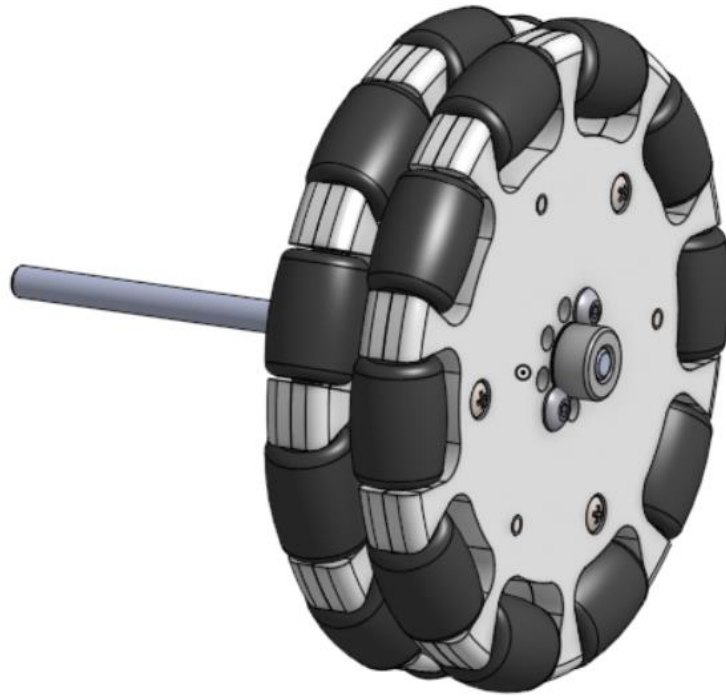
39091 TETRIX MAX Bronze Bushing (2)



## Step 3

39092 TETRIX MAX Axle Set Collar (1), 39100 TETRIX MAX Axle Spacer 1/8" (1), 39091 TETRIX MAX Bronze Bushing (1), 39088 TETRIX MAX 100 mm Axle (1)



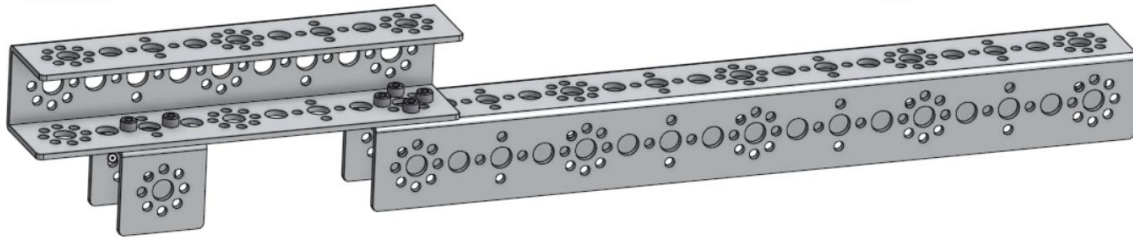


## Etape 7

### Right Rail Assembly

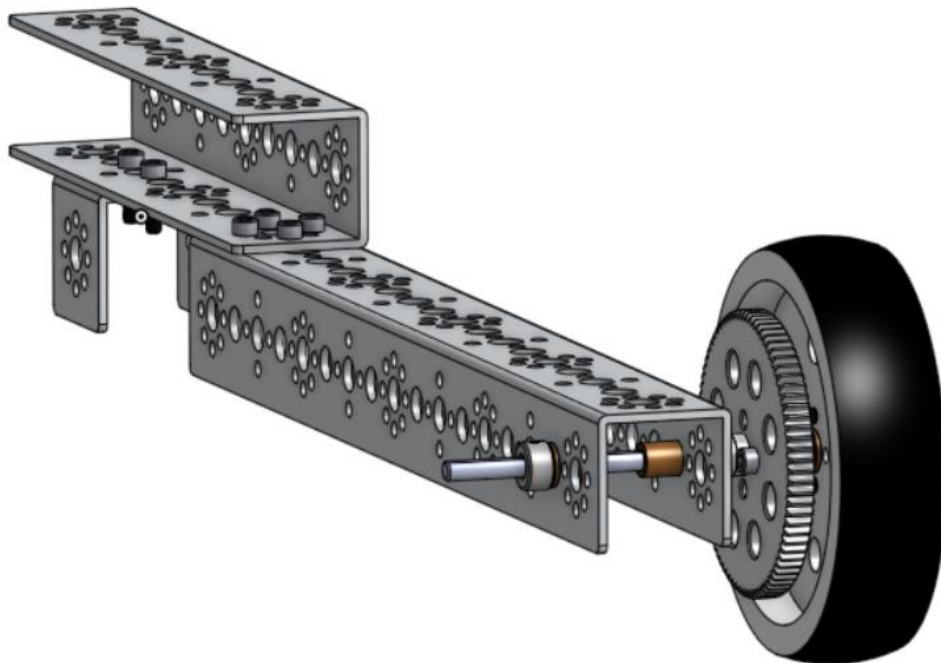
#### Step 1

39065 TETRIX MAX 32 mm Channel (1), 39067 TETRIX MAX 160 mm Channel (1), 39068 TETRIX MAX 288 mm Channel (1), 39098 Socket Head Cap Screw 6-32 x 5/16" (4), 39097 Socket Head Cap Screw 6-32 x 1/2" (2), 39094 Kep Nut (6)



#### Step 2

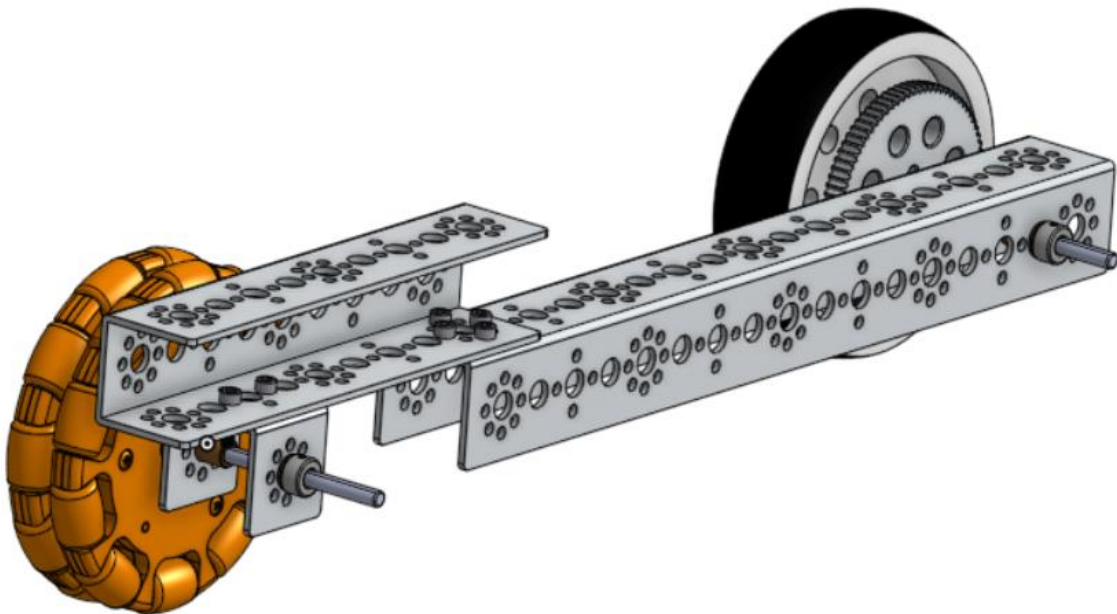
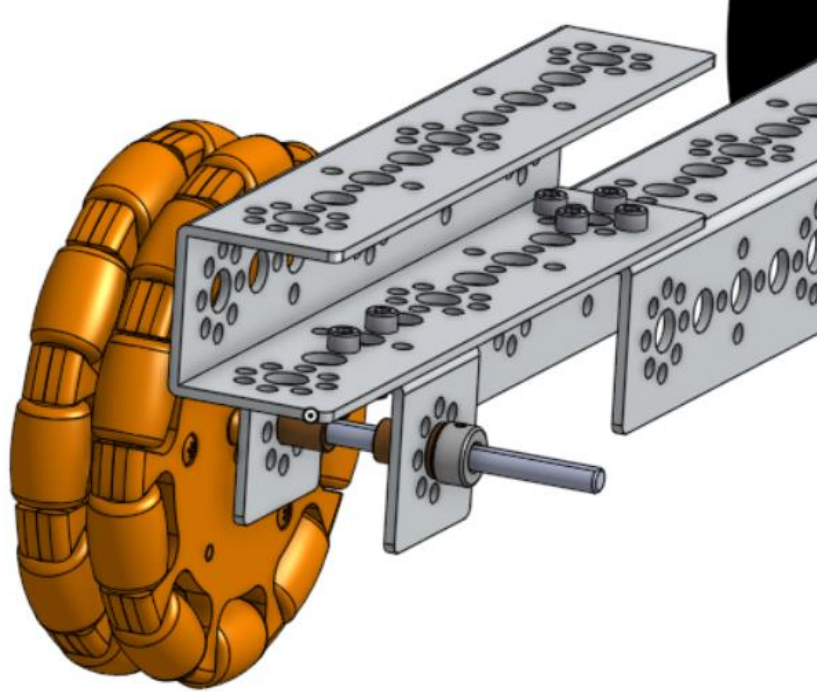
Drive Wheel Assembly (1), 39091 TETRIX MAX Bronze Bushing (1), 39092 TETRIX MAX Axle Set Collar (1)





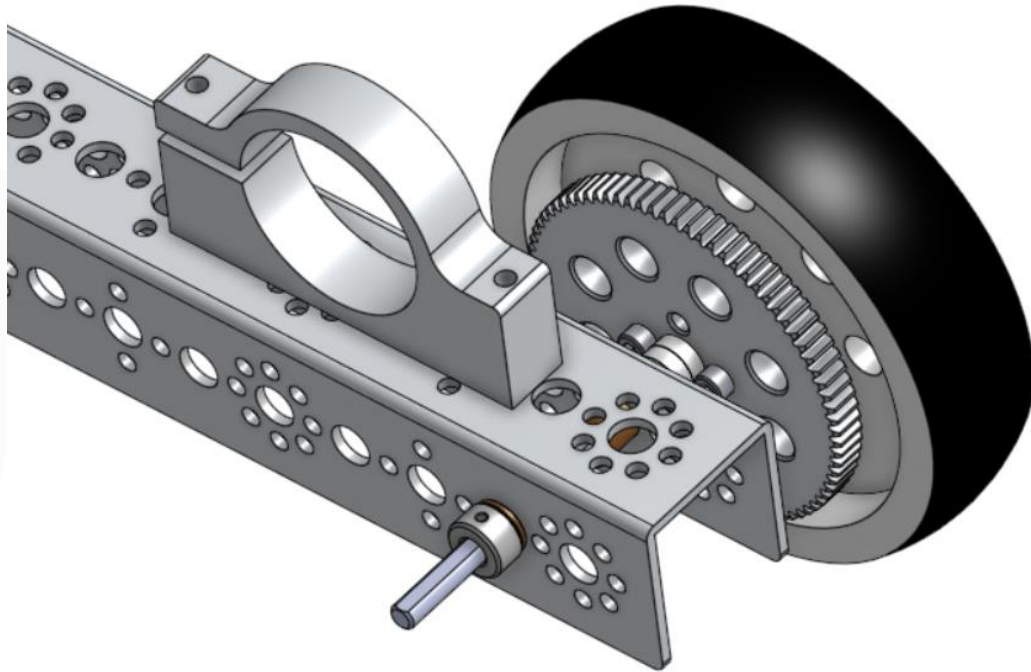
### Step 3

Omni wheel Assembly (1), 39091 TETRIX MAX Bronze Bushing (1), 39092 TETRIX MAX Axle Set Collar (1)



#### Step 4

39089 TETRIX MAX Motor Mount (1), 39094 Kep Nut (2)



## Etape 8

### Left Rail Assembly

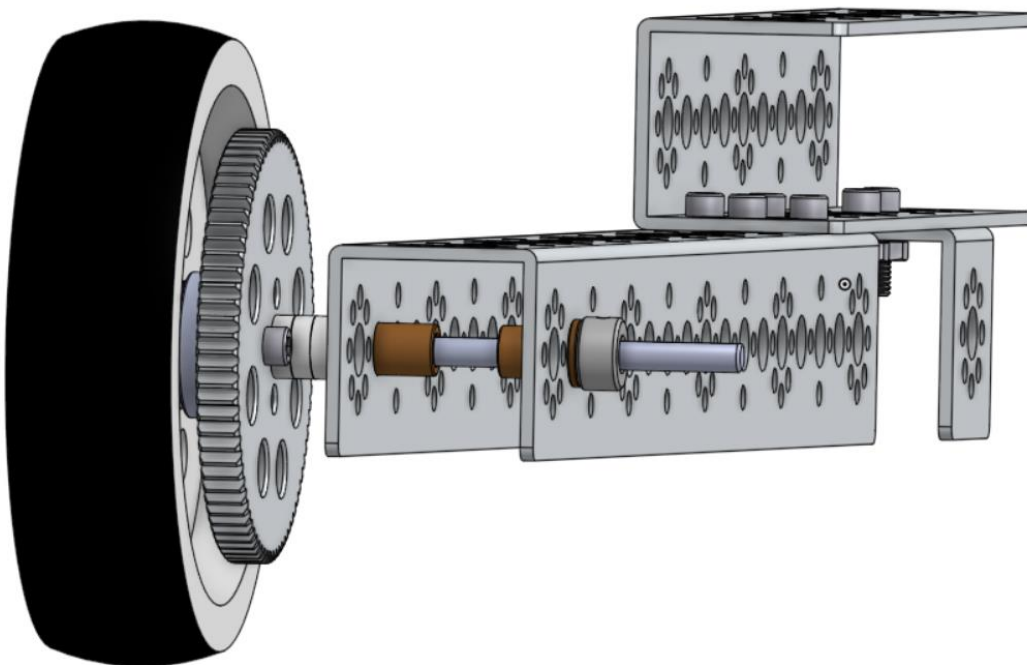
#### Step 1

39065 TETRIX MAX 32 mm Channel (1), 39067 TETRIX MAX 160 mm Channel (1), 39068 TETRIX MAX 288 mm Channel (1), 39098 Socket Head Cap Screw 6-32 x 5/16" (4), 39097 Socket Head Cap Screw 6-32 x 1/2" (2), 39094 Kev Nut (6)



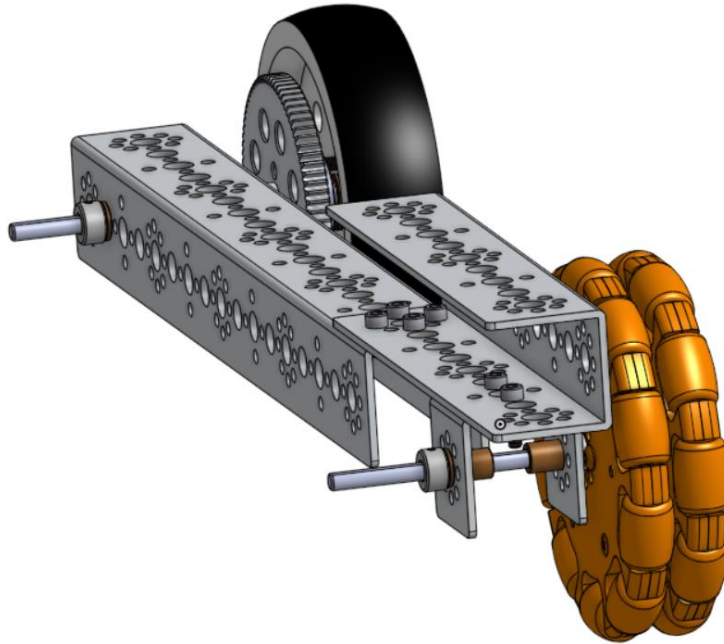
#### Step 2

Drive Wheel Assembly (1), 39091 TETRIX MAX Bronze Bushing (1), 39092 TETRIX MAX Axle Set Collar (1)



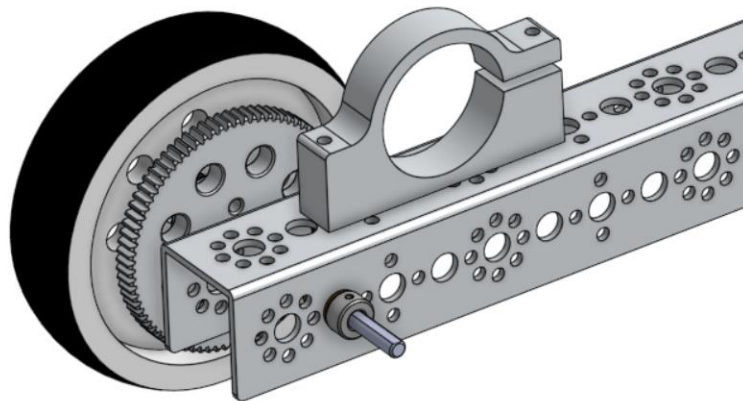
### Step 3

Omni wheel Assembly (1), 39091 TETRIX MAX Bronze Bushing (1), 39092 TETRIX MAX Axle Set Collar (1)



### Step 4

39089 TETRIX MAX Motor Mount (1), 39094 Kep Nut (2)



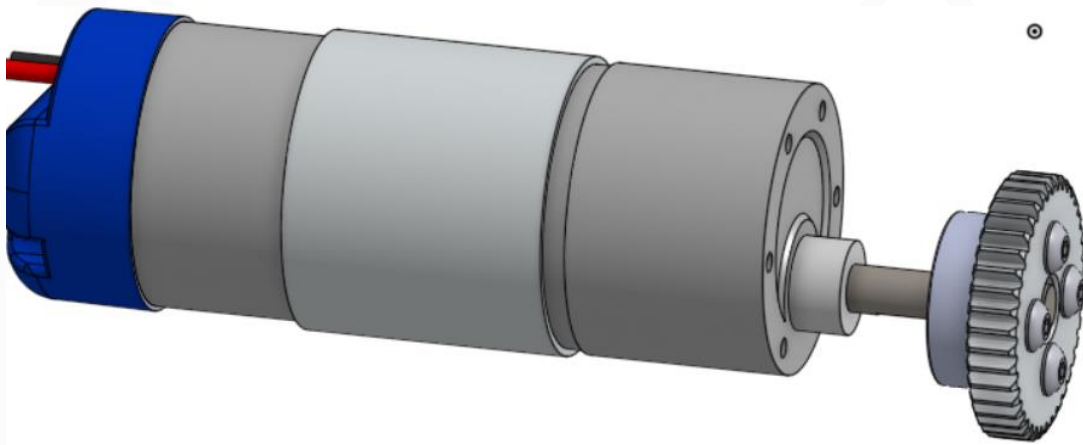
## Etape 9

### Motor Hub and Gear Assembly

Faire en 3 exemplaires.

#### Step 1

44260 TETRIX MAX TorqueNADO® Motor (1), 39079 TETRIX MAX Motor Hub (1), 39028 TETRIX MAX Gear 40-Tooth (1), 39111 Button Head Cap Screw 3/8" (4)

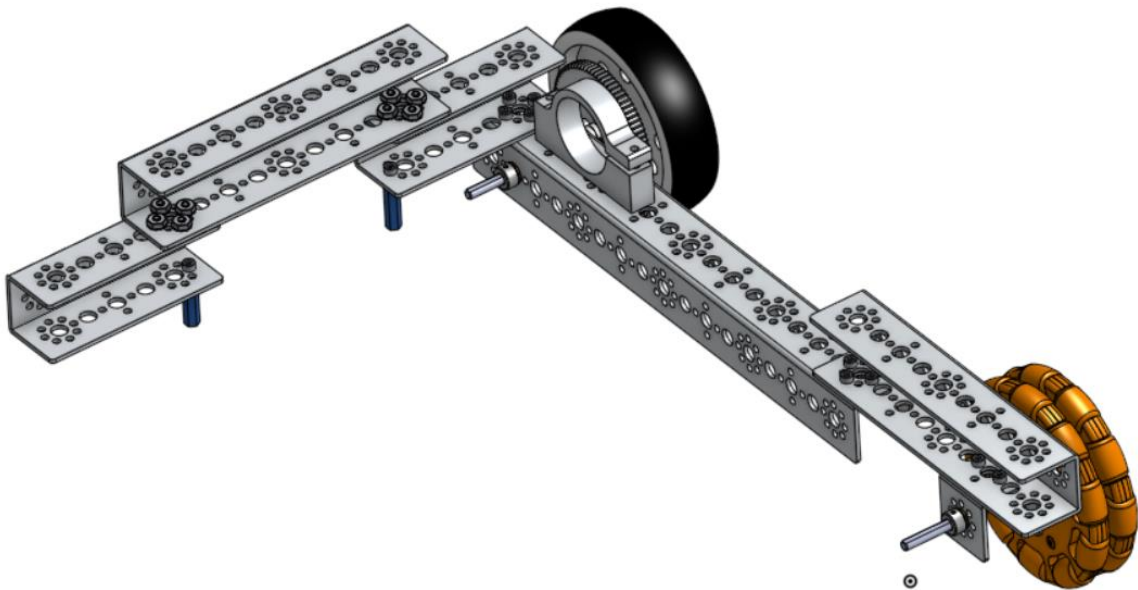


## Etape 10

### Chassis

#### Step 1

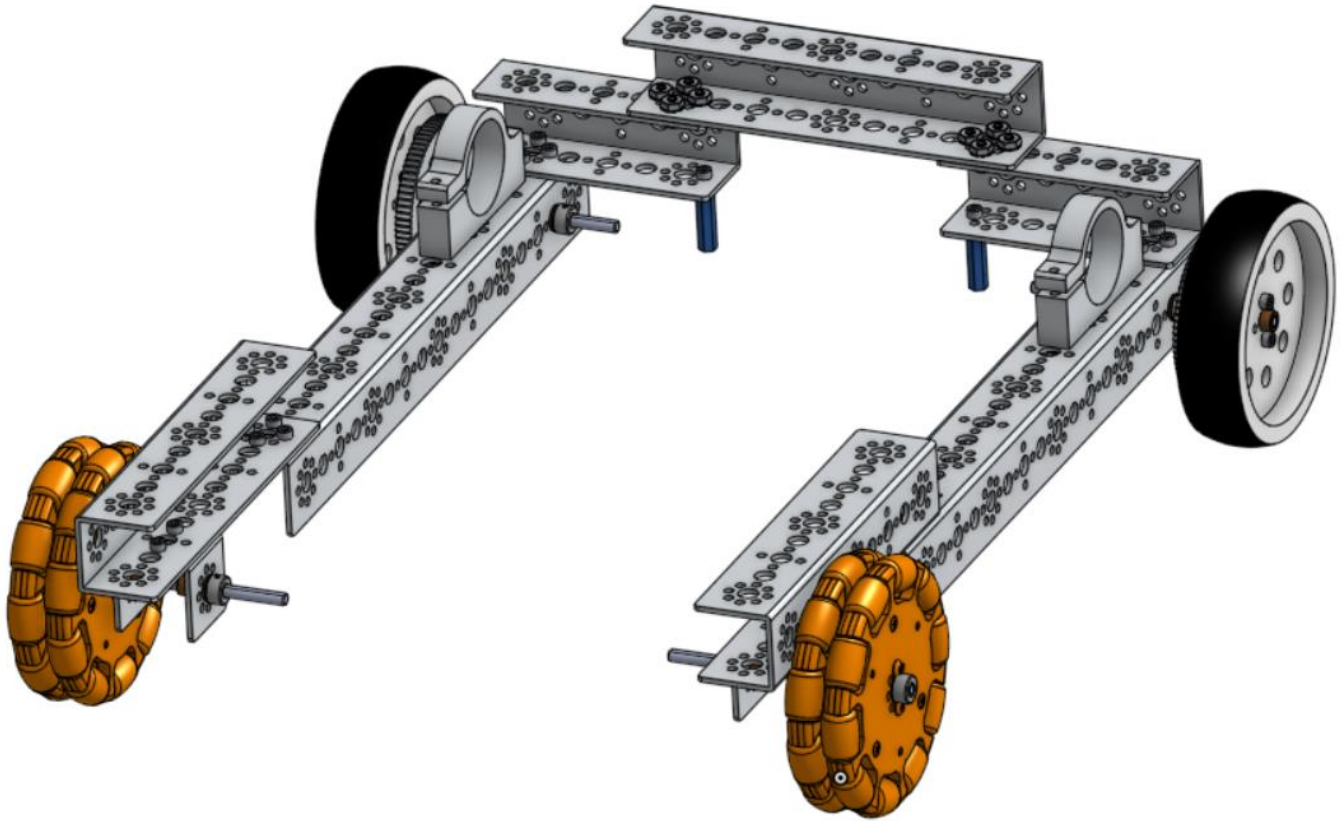
39098 Socket Head Cap Screw 6-32 x 5/16" (4), 39094 Kep Nut (4)





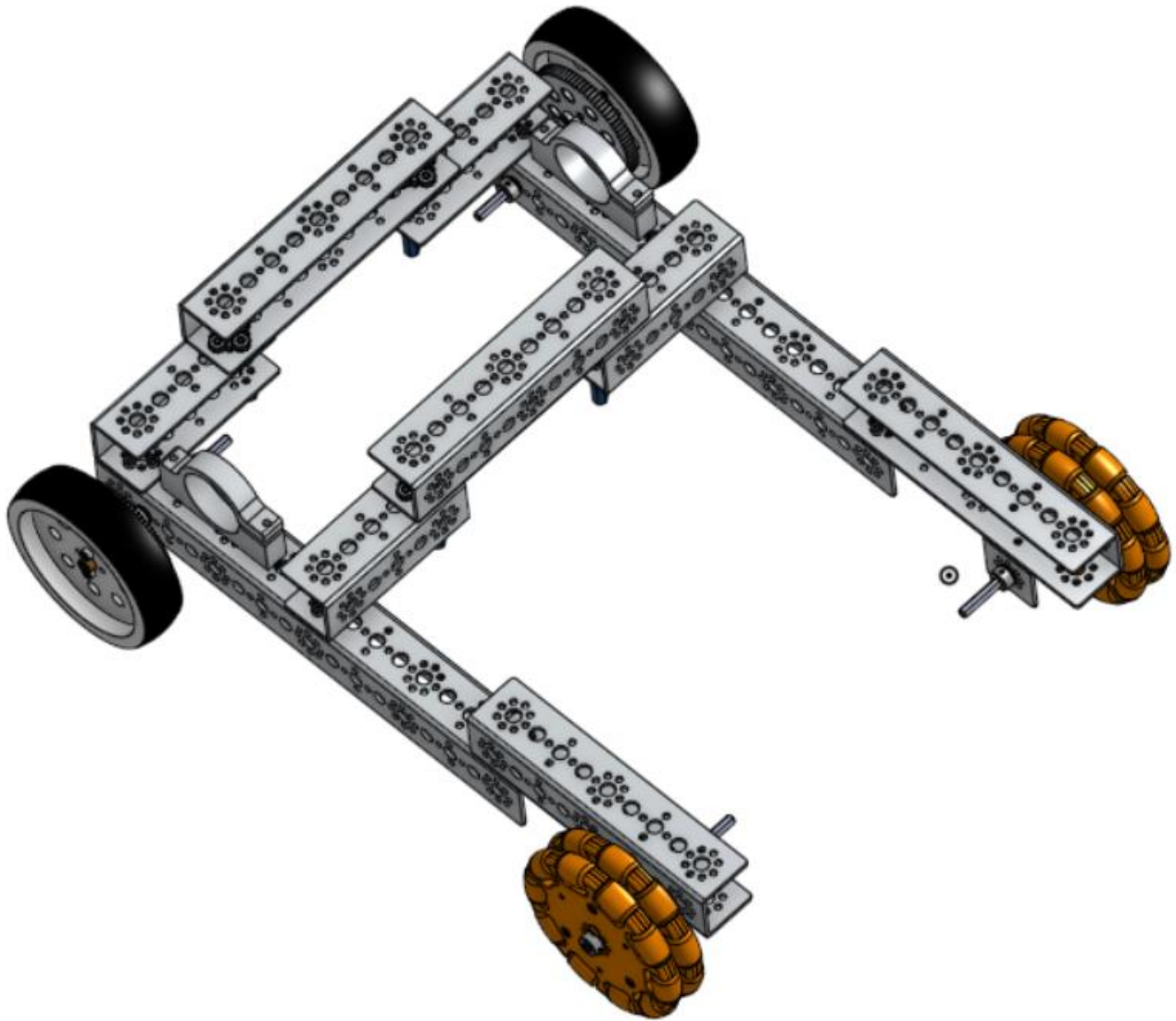
## Step 2

39098 Socket Head Cap Screw 6-32 x 5/16" (4), 39094 Kep Nut (4)



### Step 3

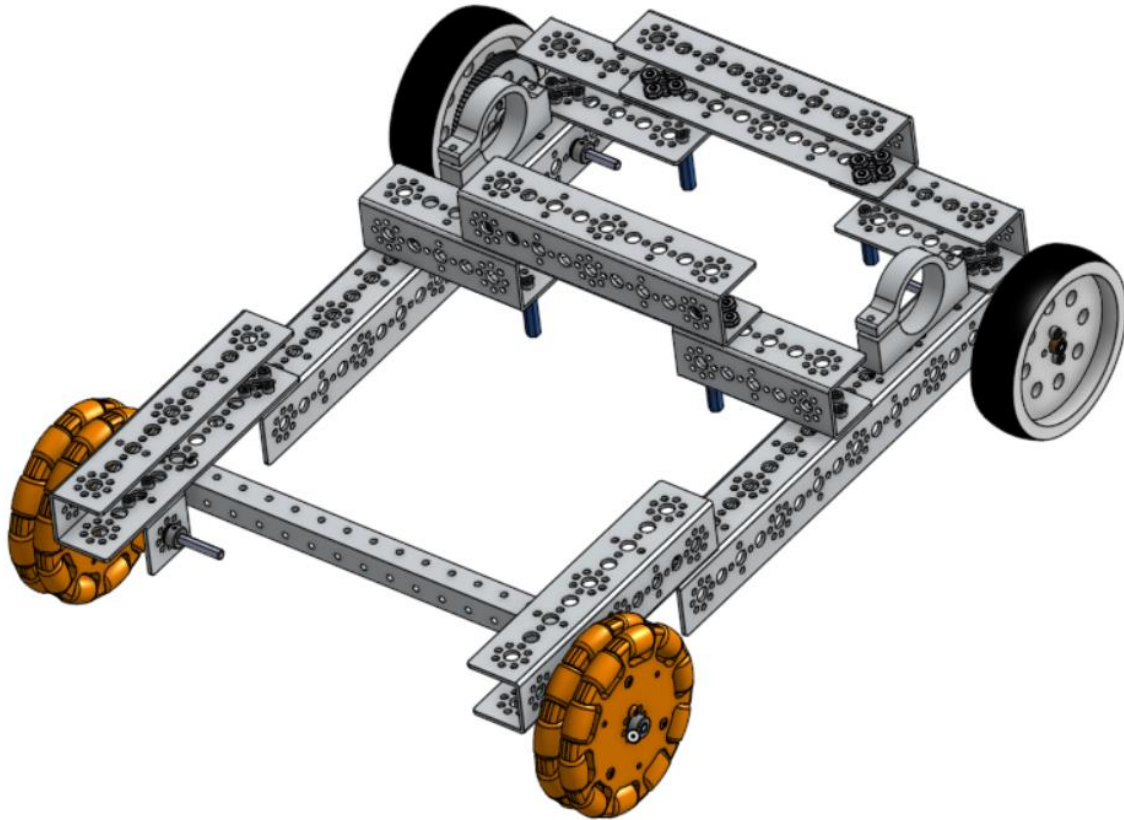
39098 Socket Head Cap Screw 6-32 x 5/16" (8), 39094 Kep Nut (8)





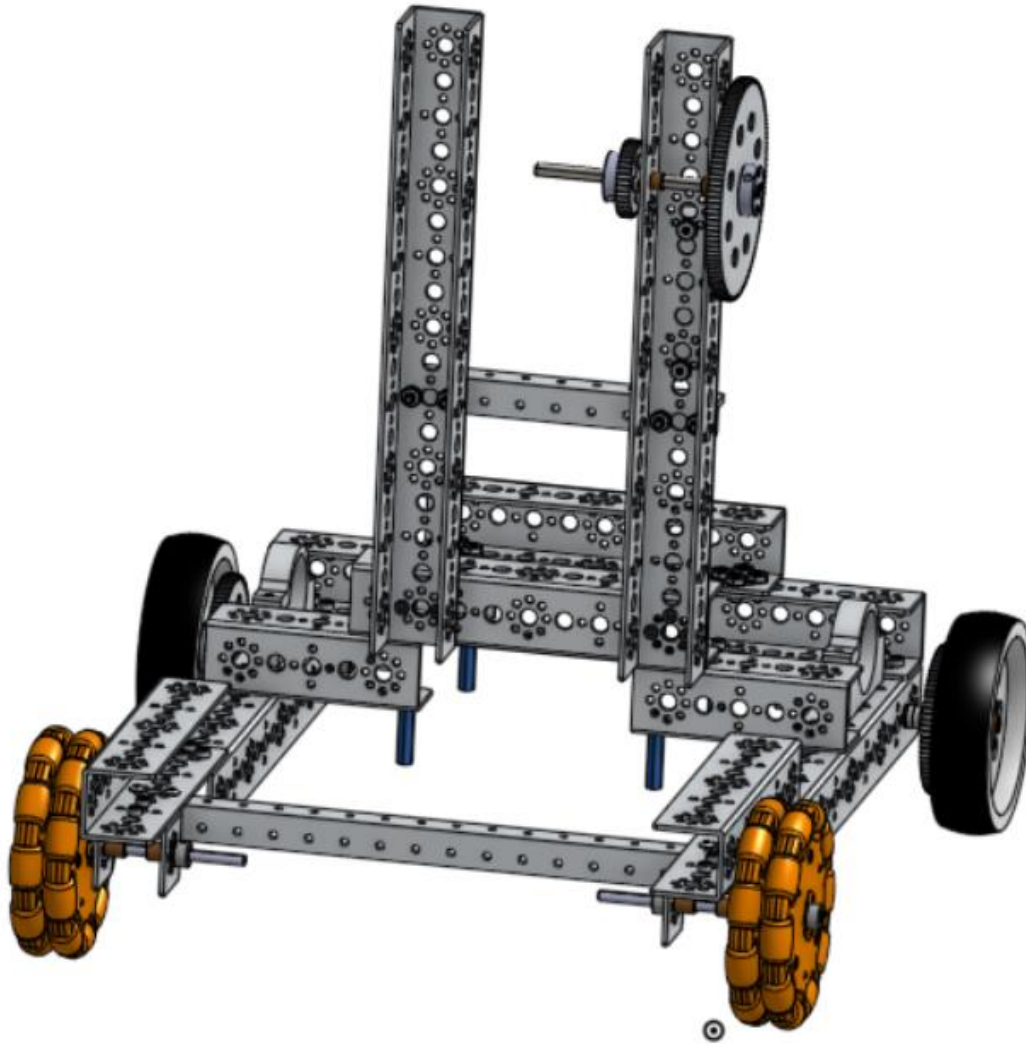
## Step 4

39071 TETRIX MAX 288 mm Angle (1), 39111 Button Head Cap Screw 3/8" (4), 39094 Kep Nut (4)

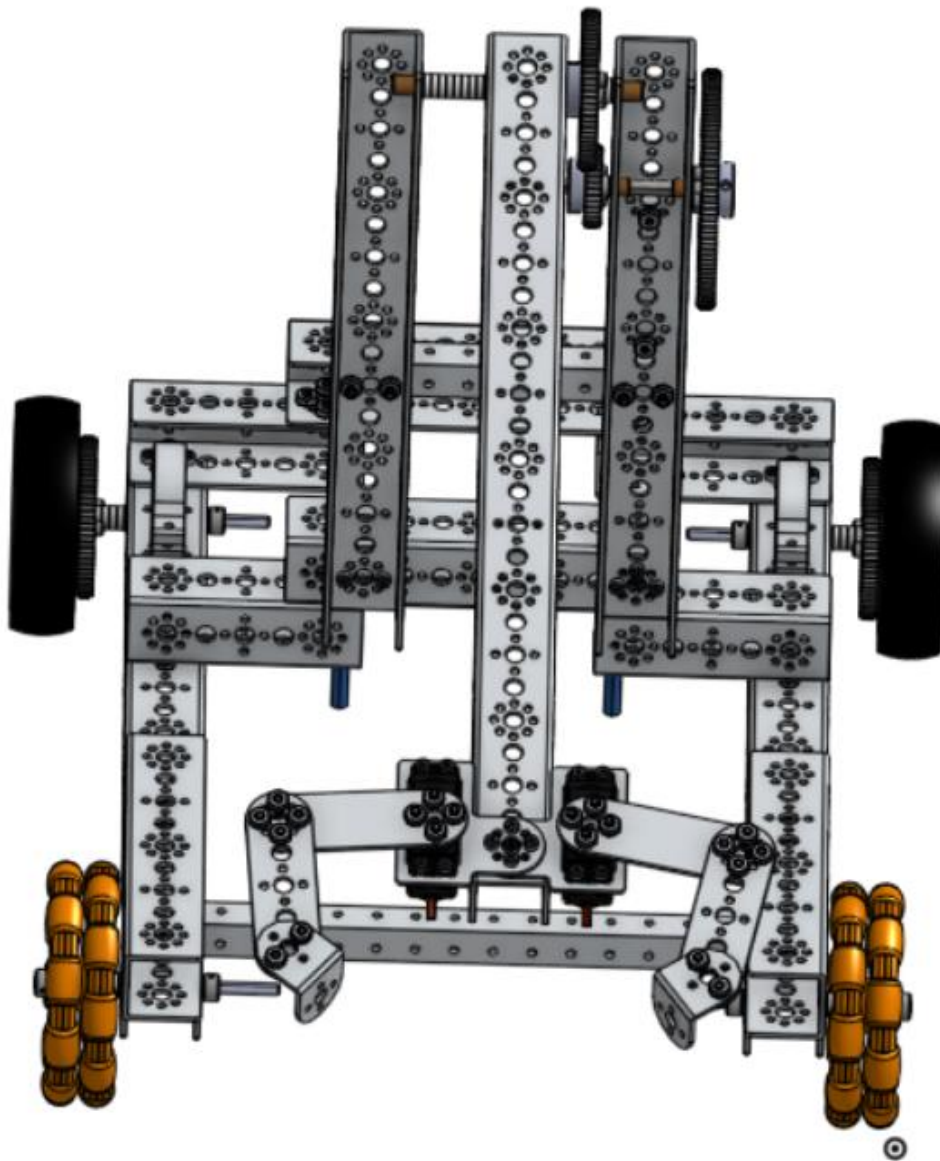


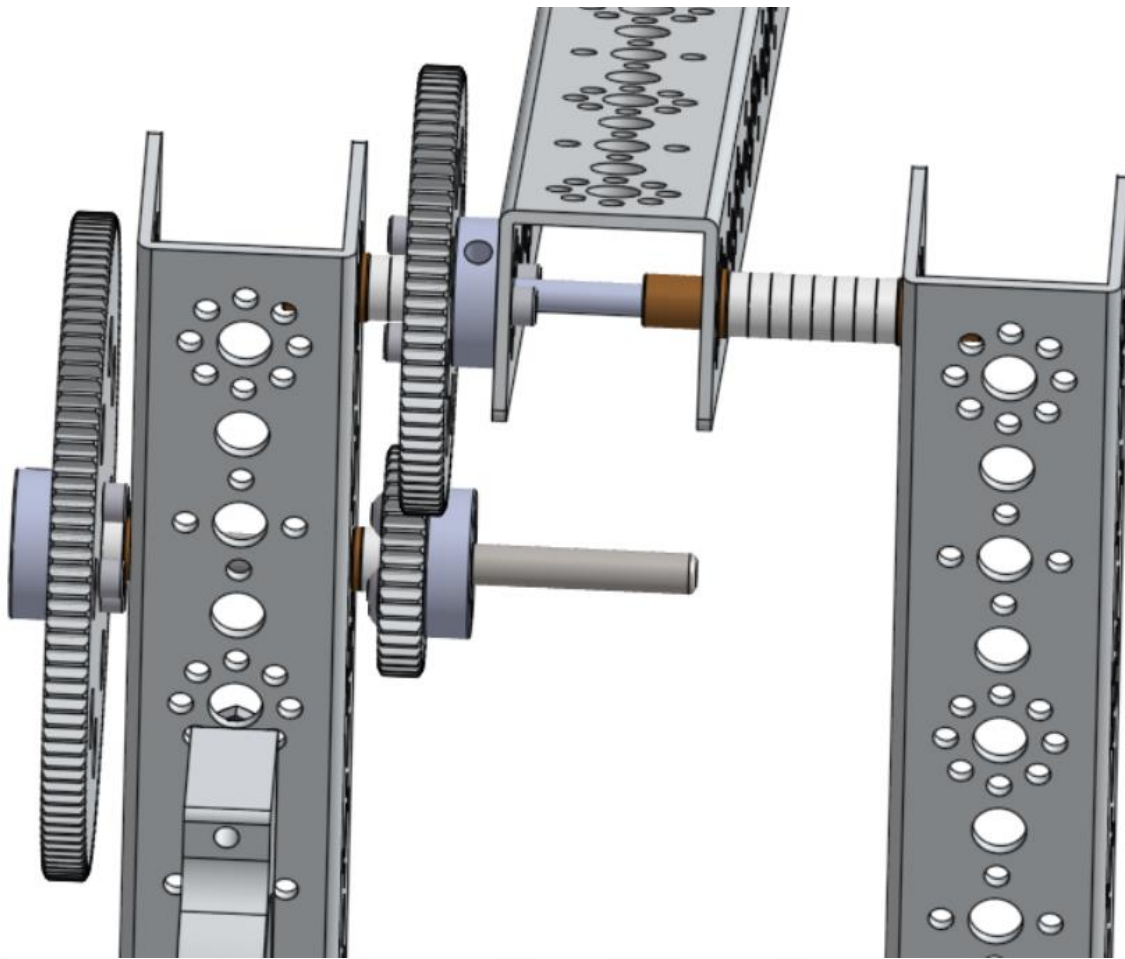
## Step 8

39097 Socket Head Cap Screw 6-32 x 1/2" (5), 39094 Kep Nut (5)



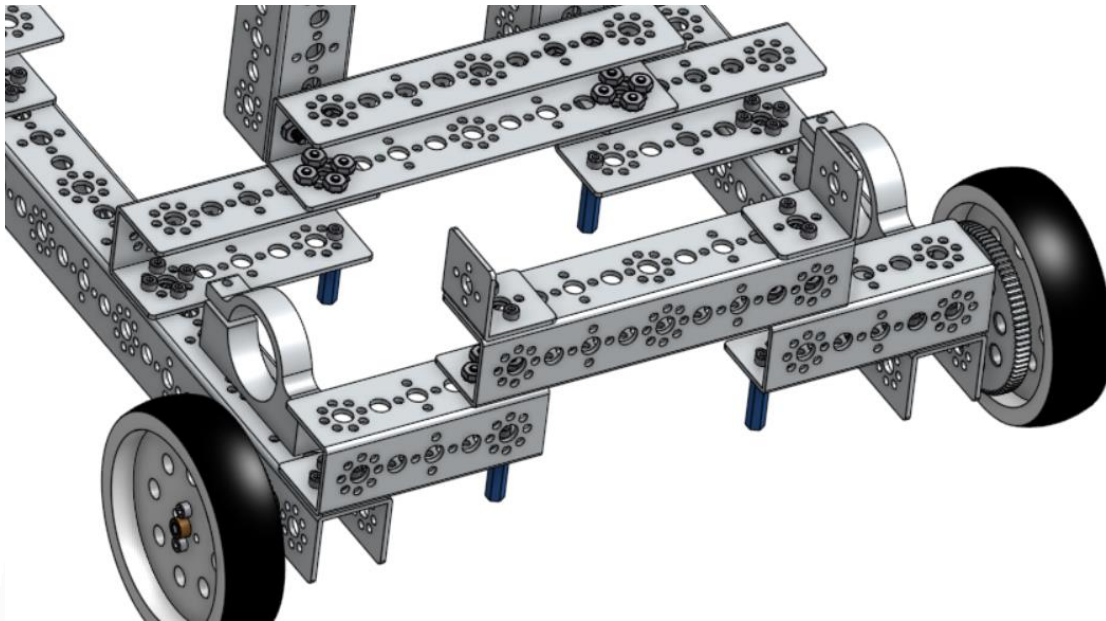
Step 6

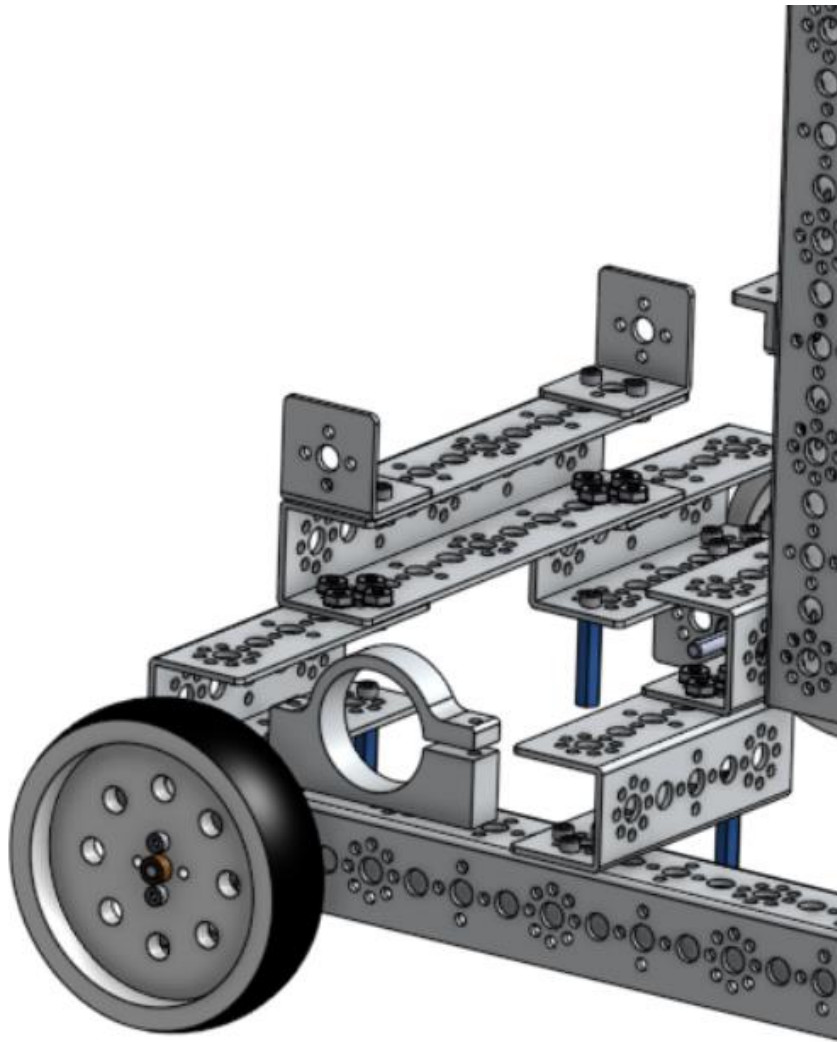




## Step 7

39281 TETRIX MAX Inside Corner Bracket (2), 39098 Socket Head Cap Screw 6-32 x 5/16" (4), 39094 Kep Nut (4)

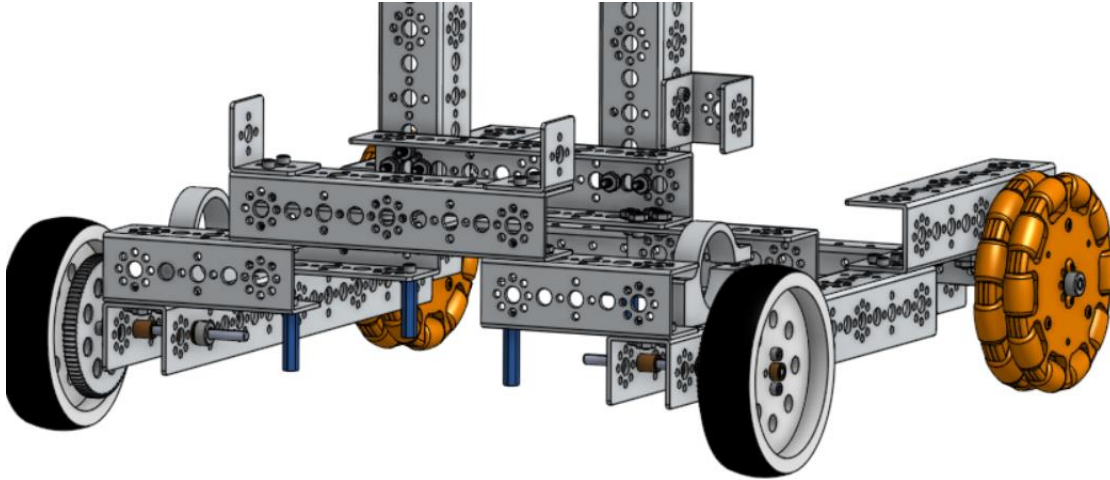






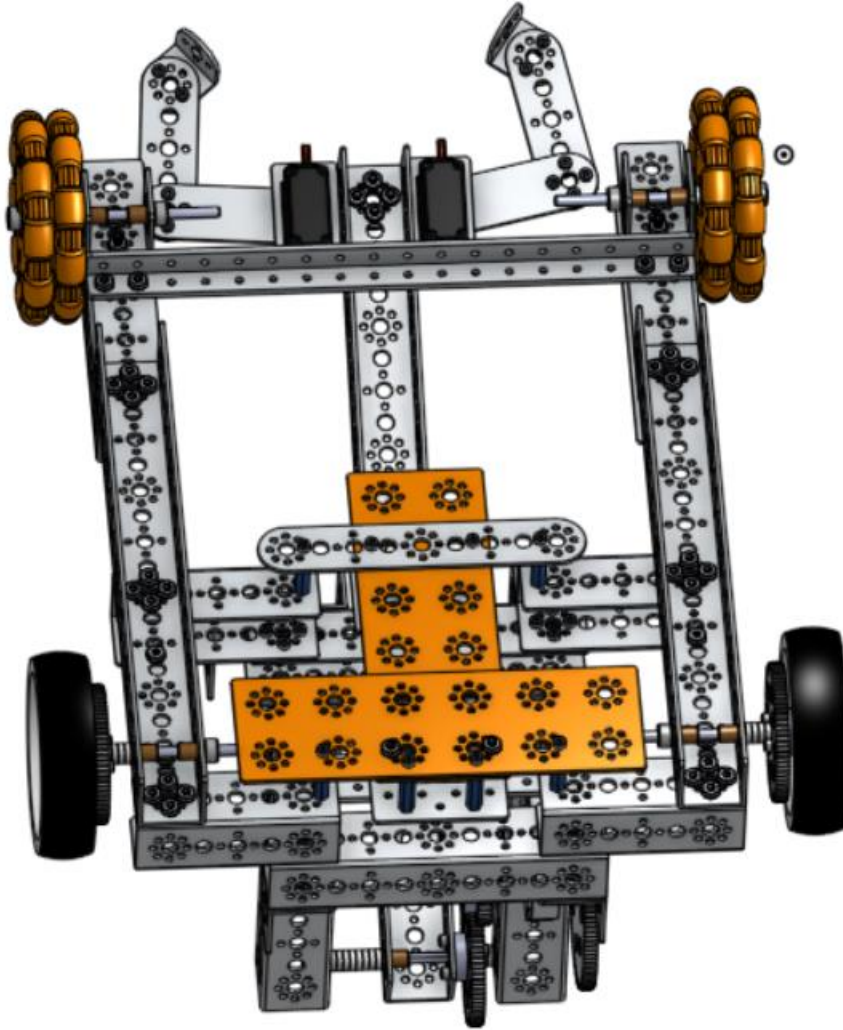
## Step 8

39065 TETRIX MAX 32 mm Channel (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (2), 39094 Kep Nut (2)

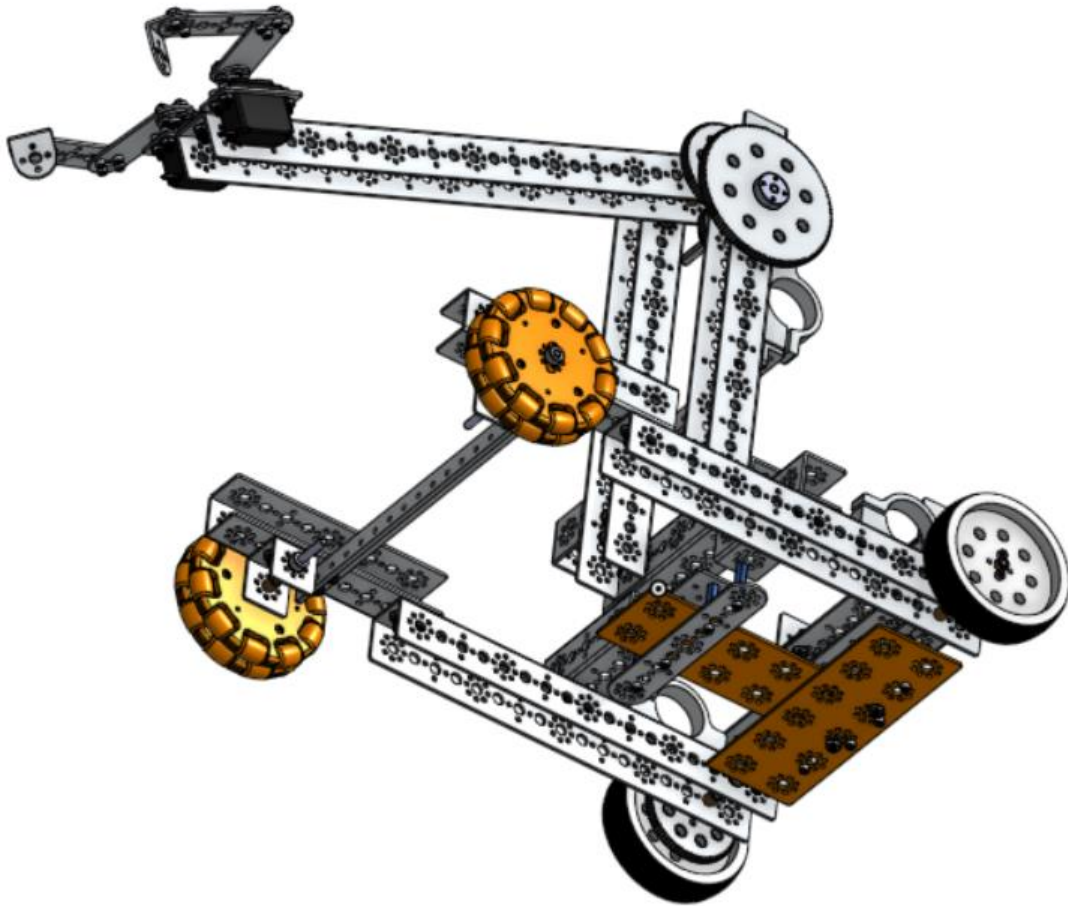


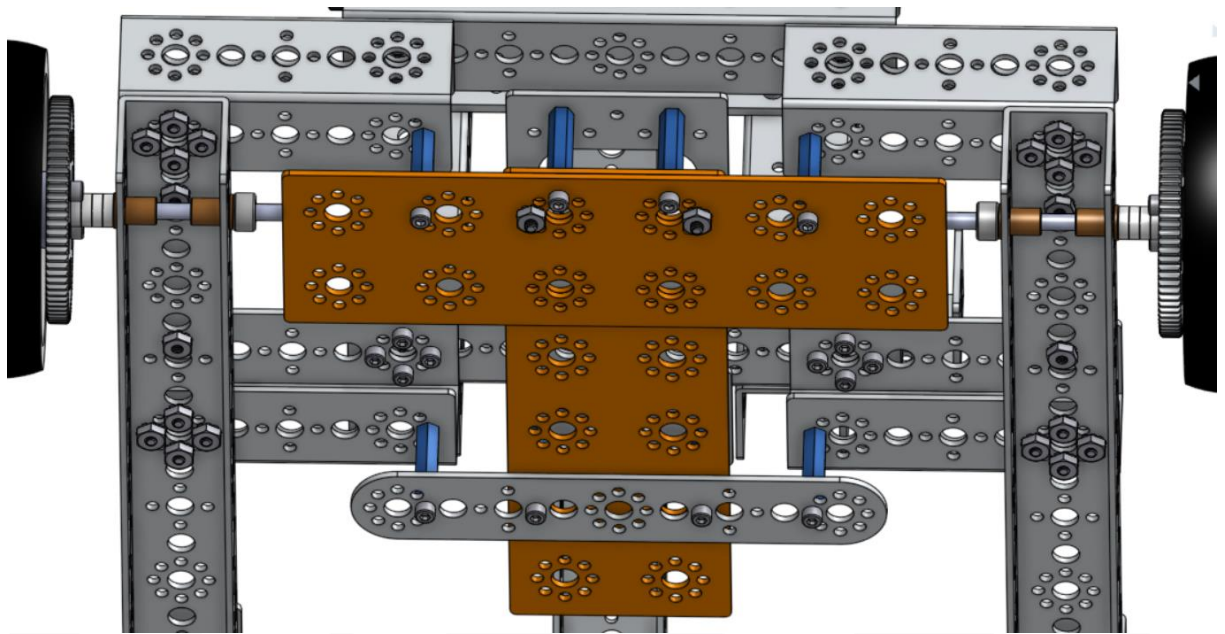
## Step 9

39097 Socket Head Cap Screw 6-32 x 1/2" (4)



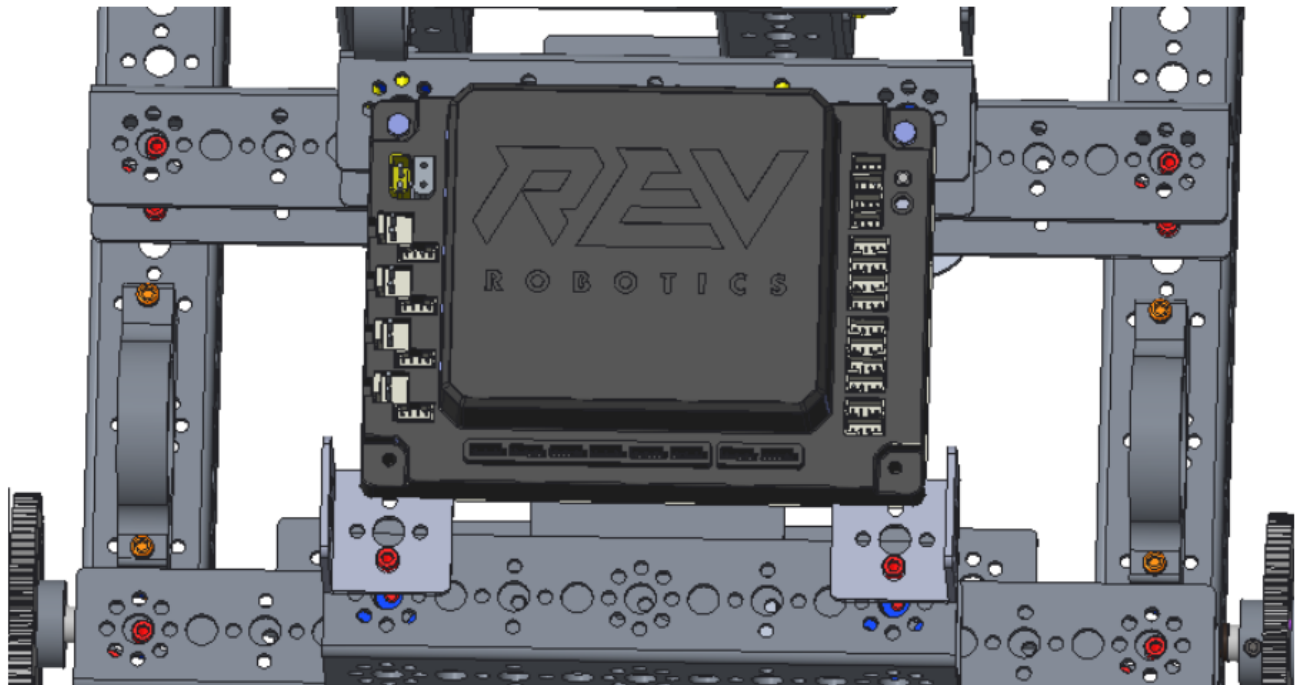






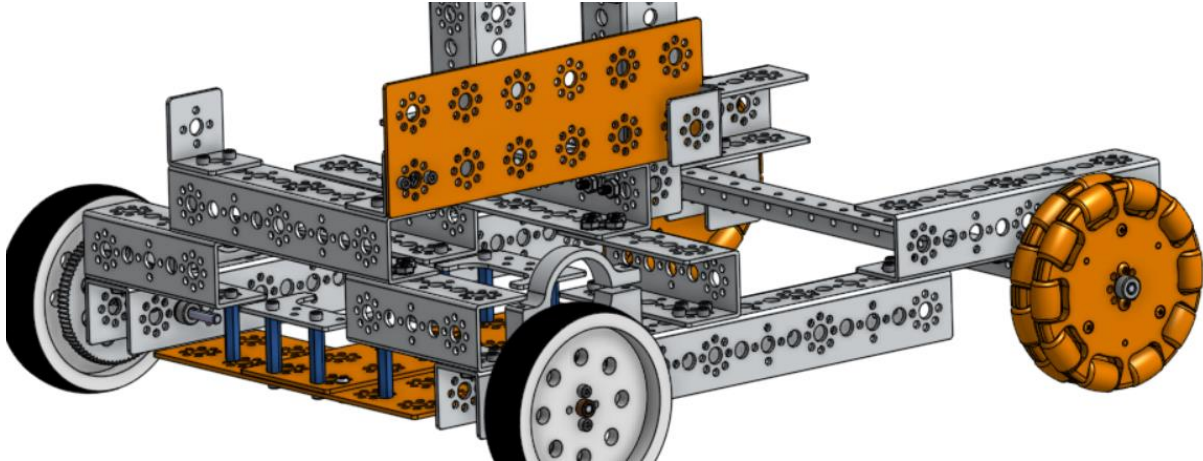
## Step 10

REV Robotics Control Hub



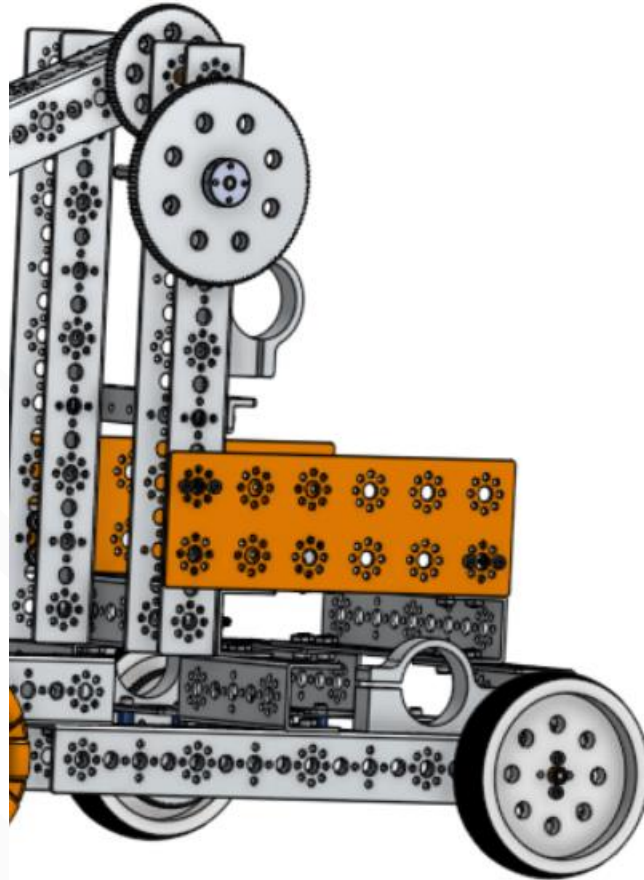
## Step 11

39073 TETRIX MAX Flat Building Plate (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (2), 39094 Kep Nut (2)

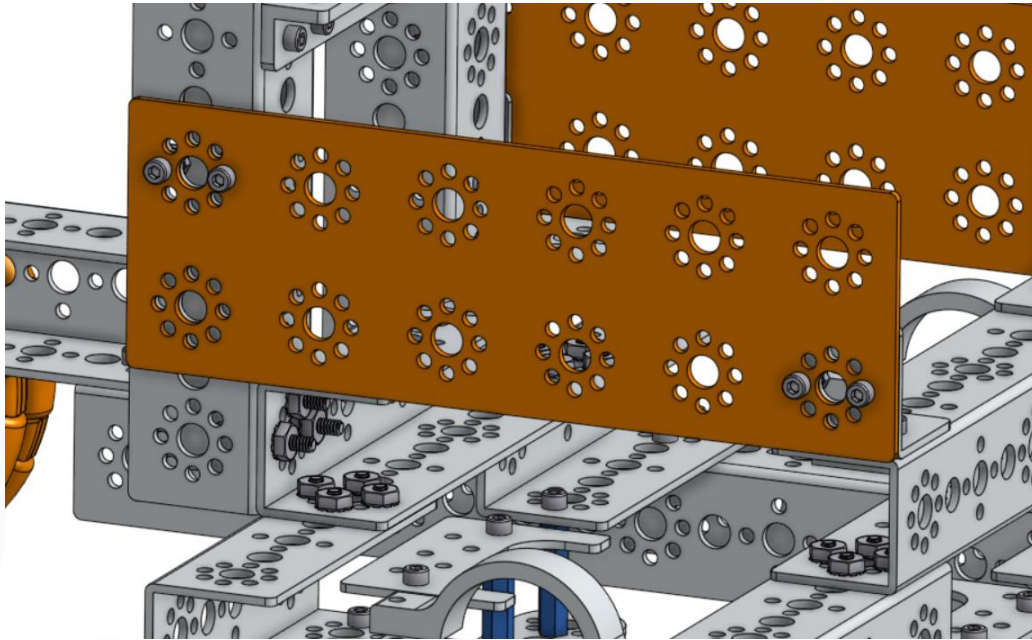


## Step 12

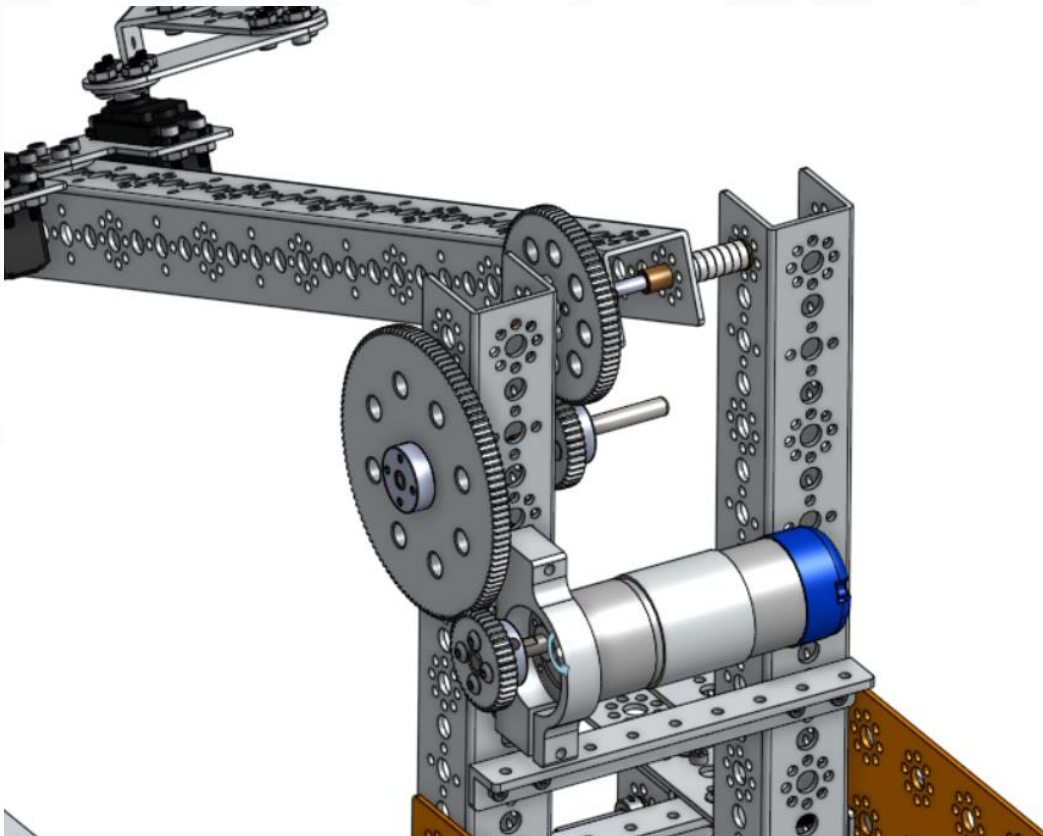
39073 TETRIX MAX Flat Building Plate (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (4), 39094 Kep Nut (4)







**Step 13**



Step 14

