

FIRST[®] Tech Challenge 2023-2024
**Notice de montage Tetrix[®] FIRST[®] 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. |

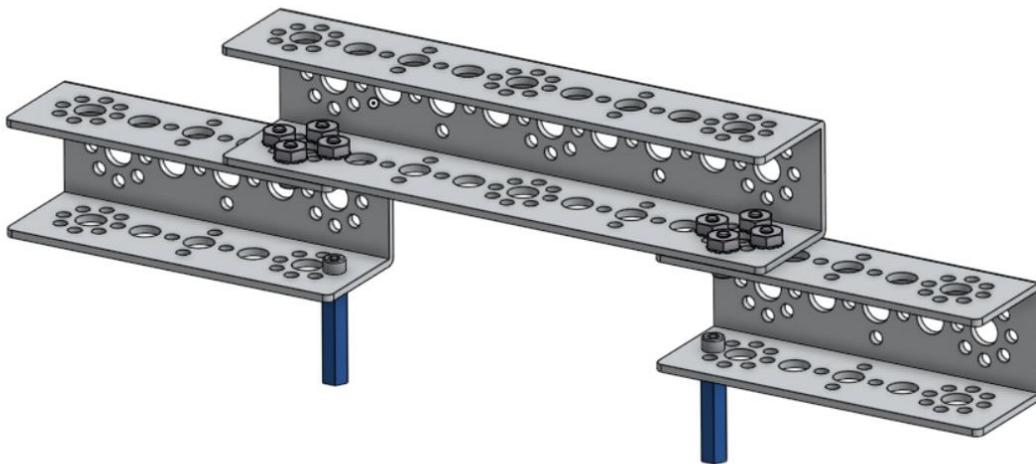


Etape 1

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)

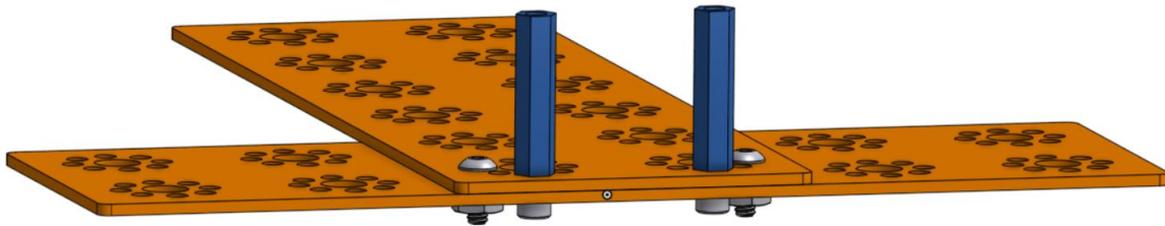


Etape 2

Battery Holder Assembly:

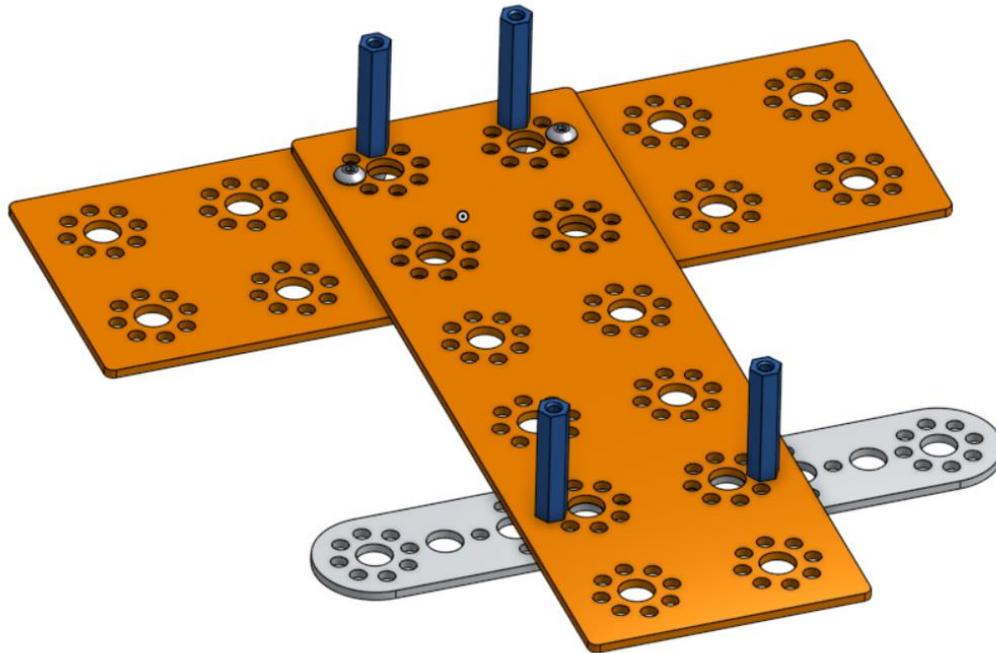
Step 1

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)



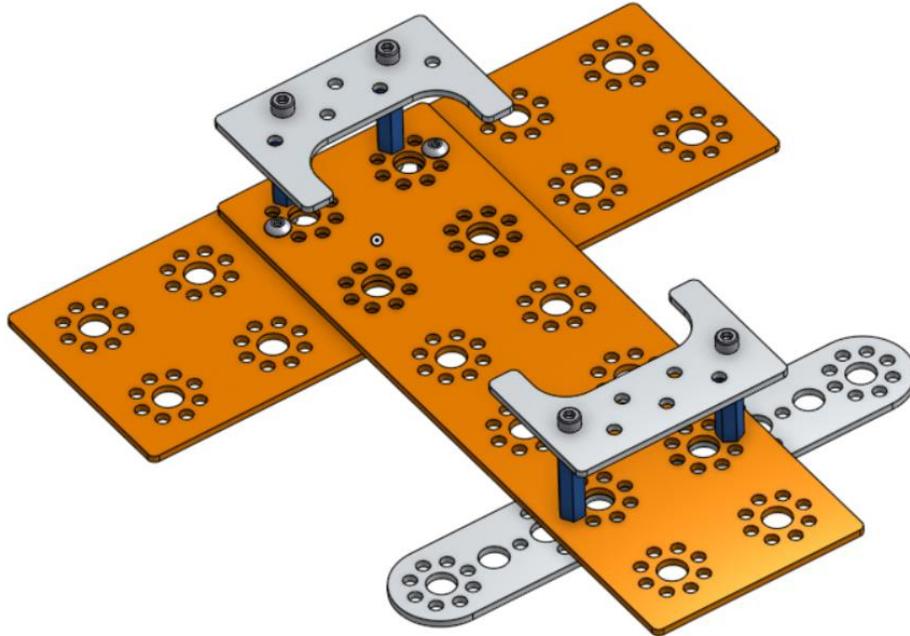
Step 2

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)

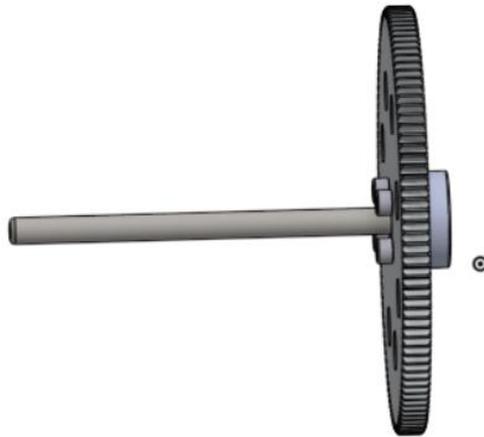


Etape 3

Tower Assembly

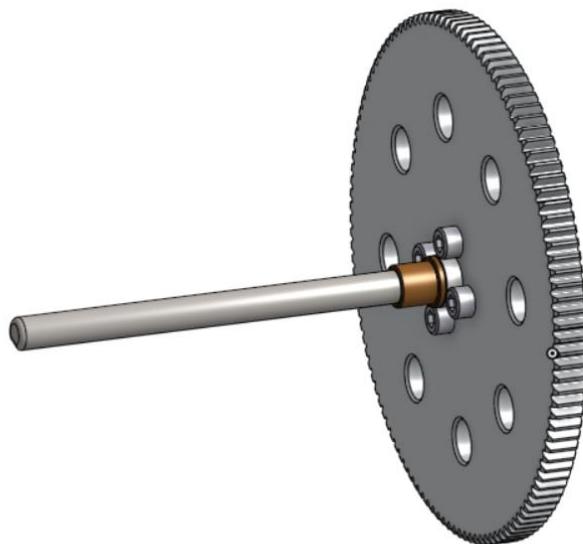
Step 1

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)



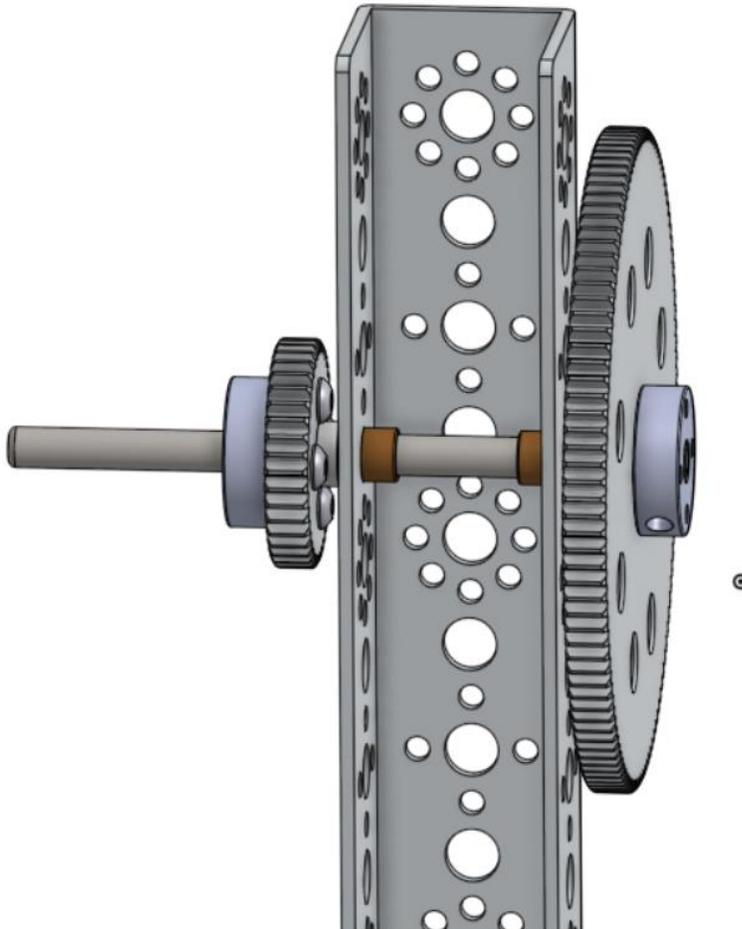
Step 2

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



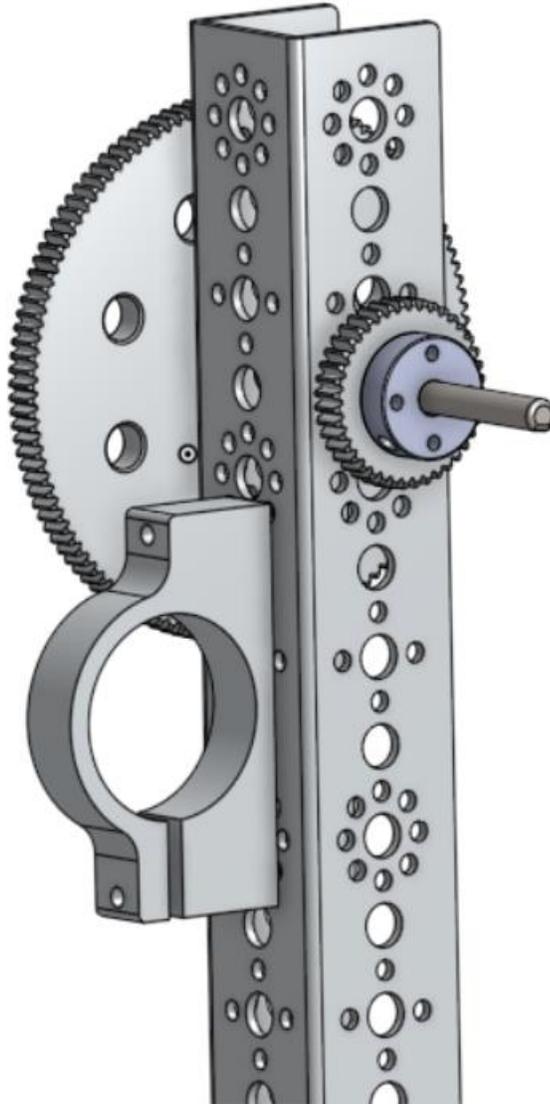
Step 3

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)



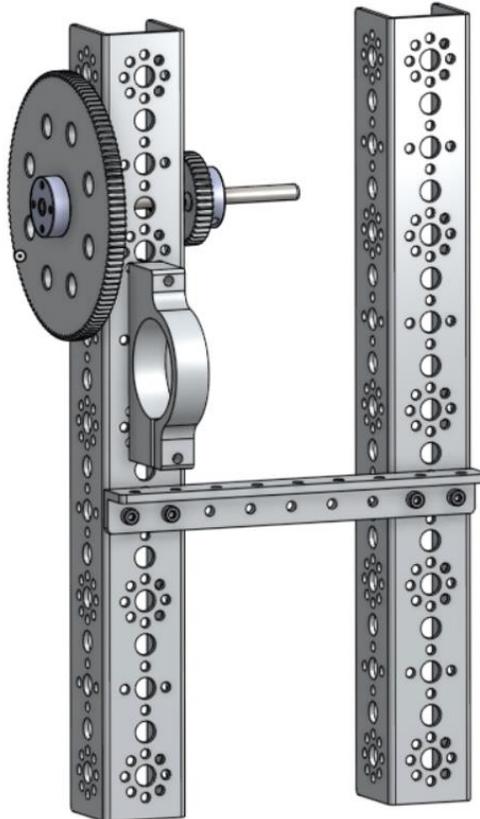
Step 4

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)

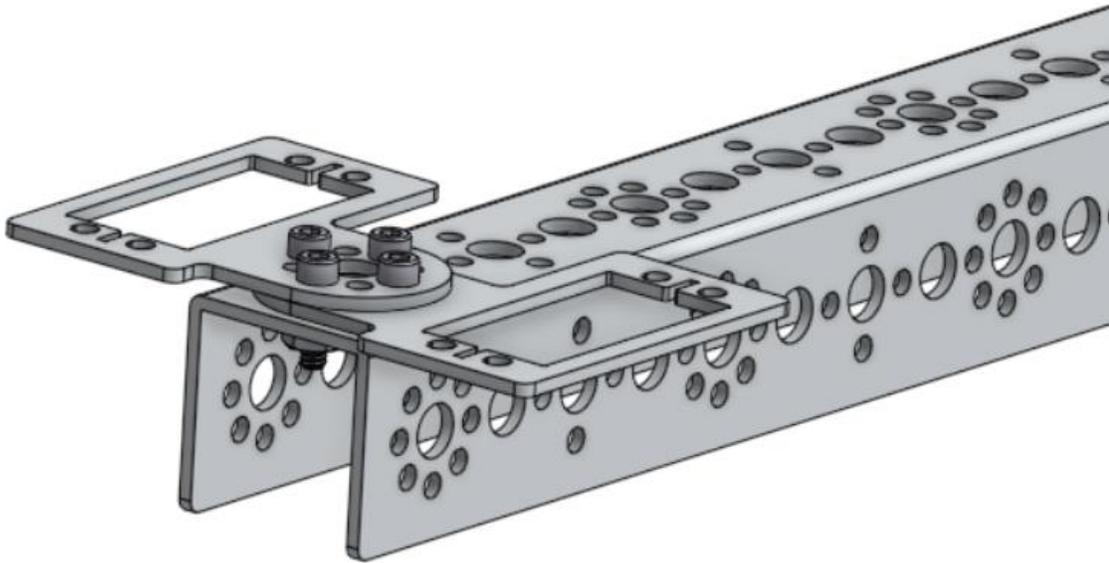


Etape 4

Arm Assembly

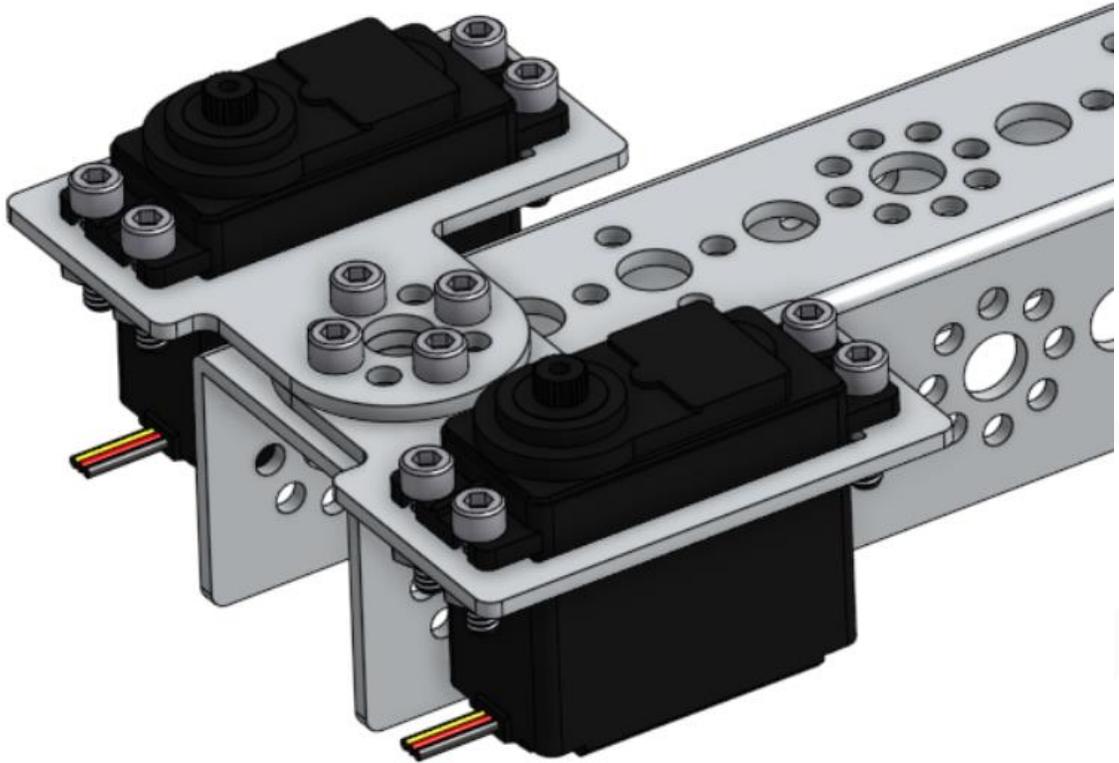
Step 1

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)



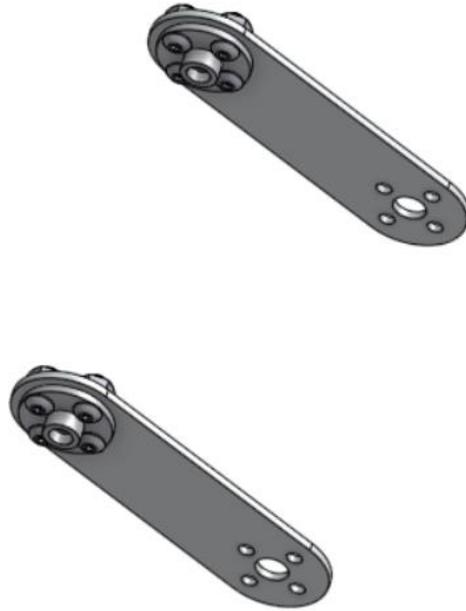
Step 2

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



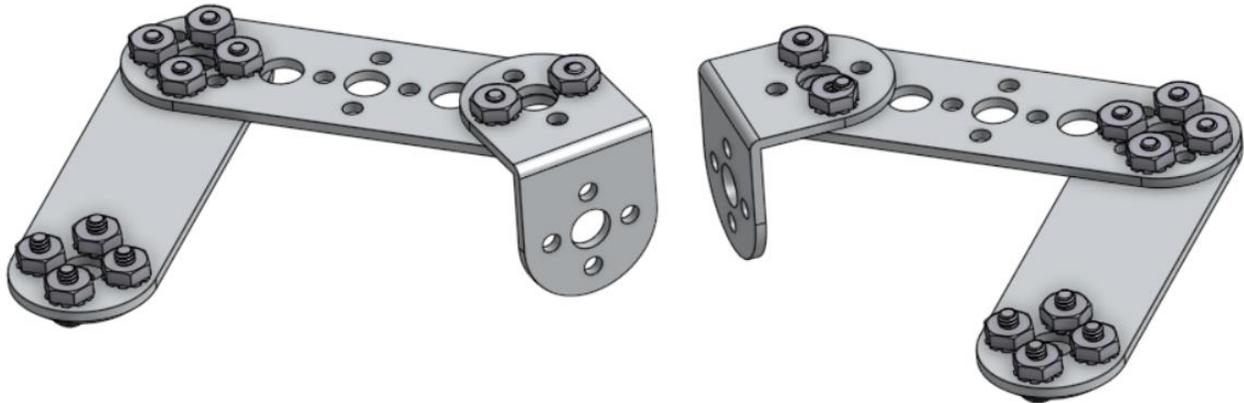
Step 3

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)

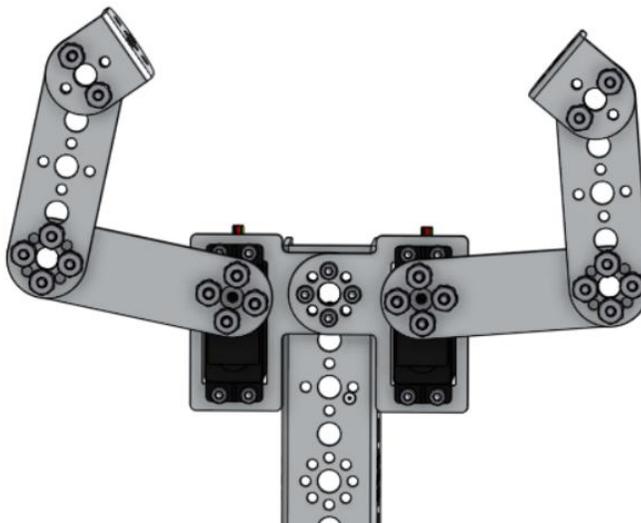


Step 4

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)

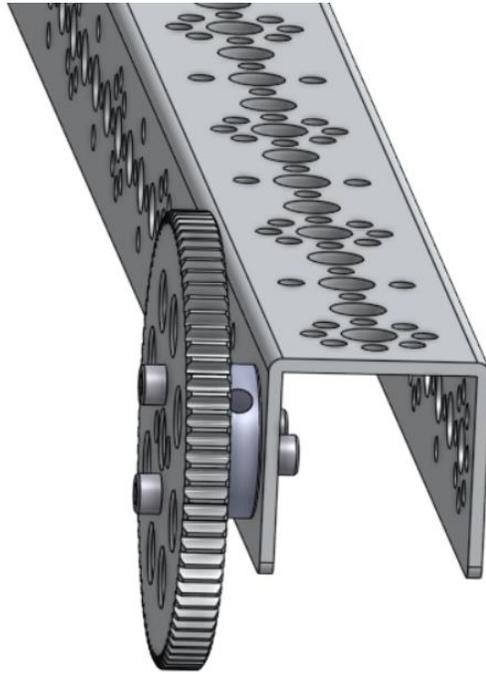


Step 5



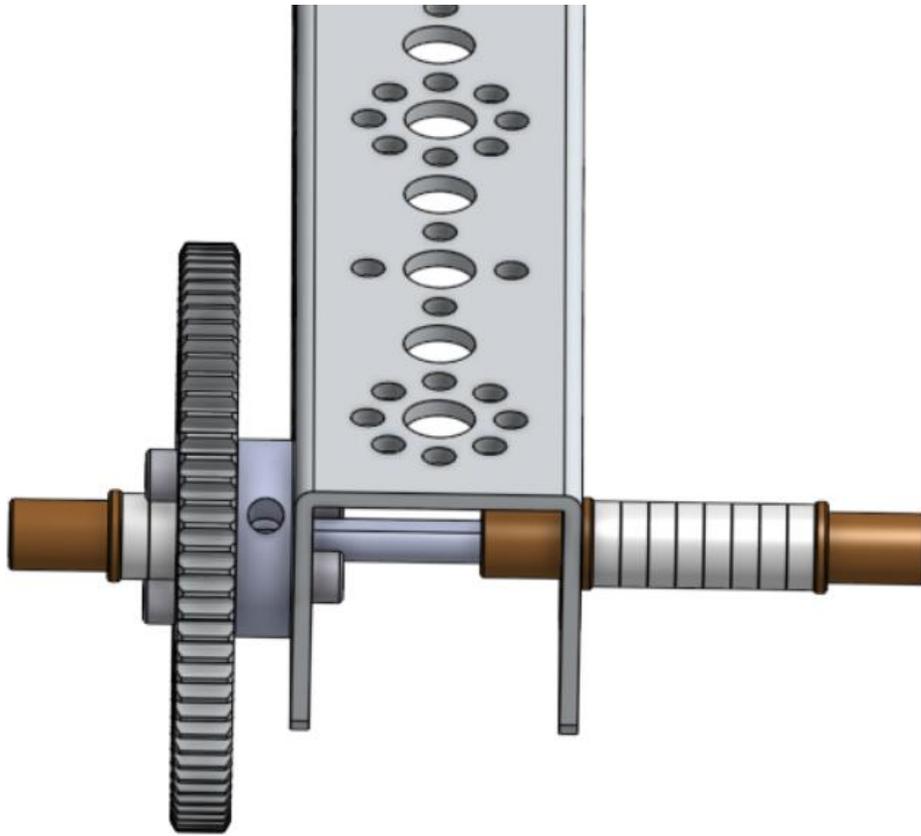
Step 6

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)



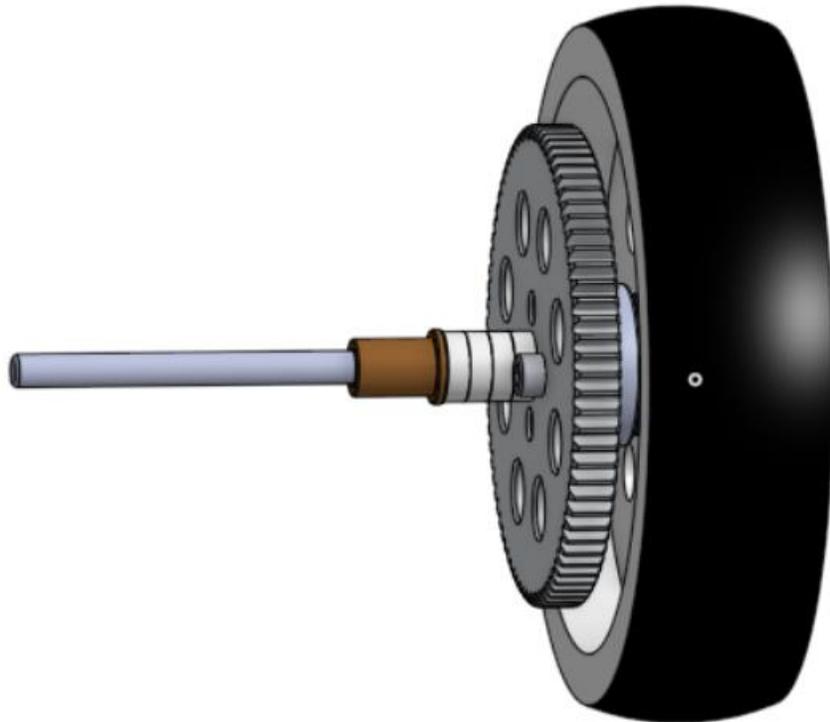
Etape 5

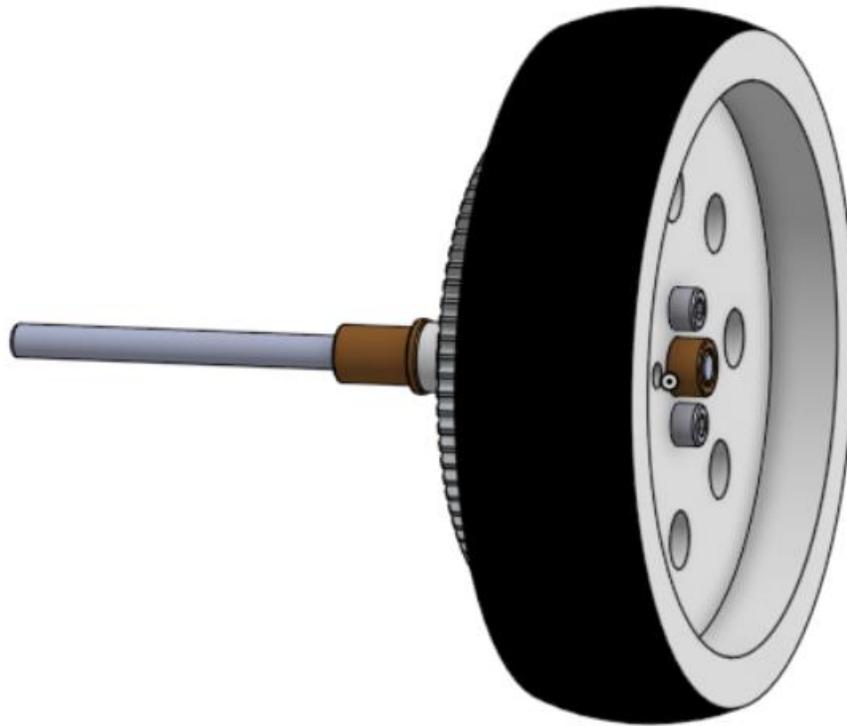
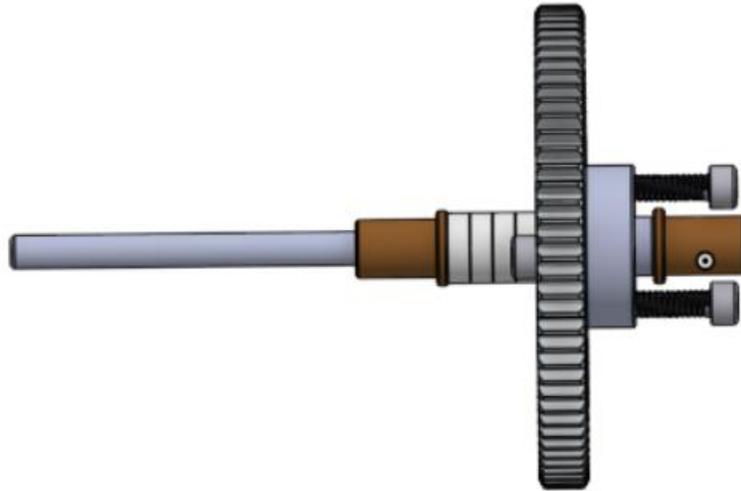
Drive Wheel Assemblies

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)





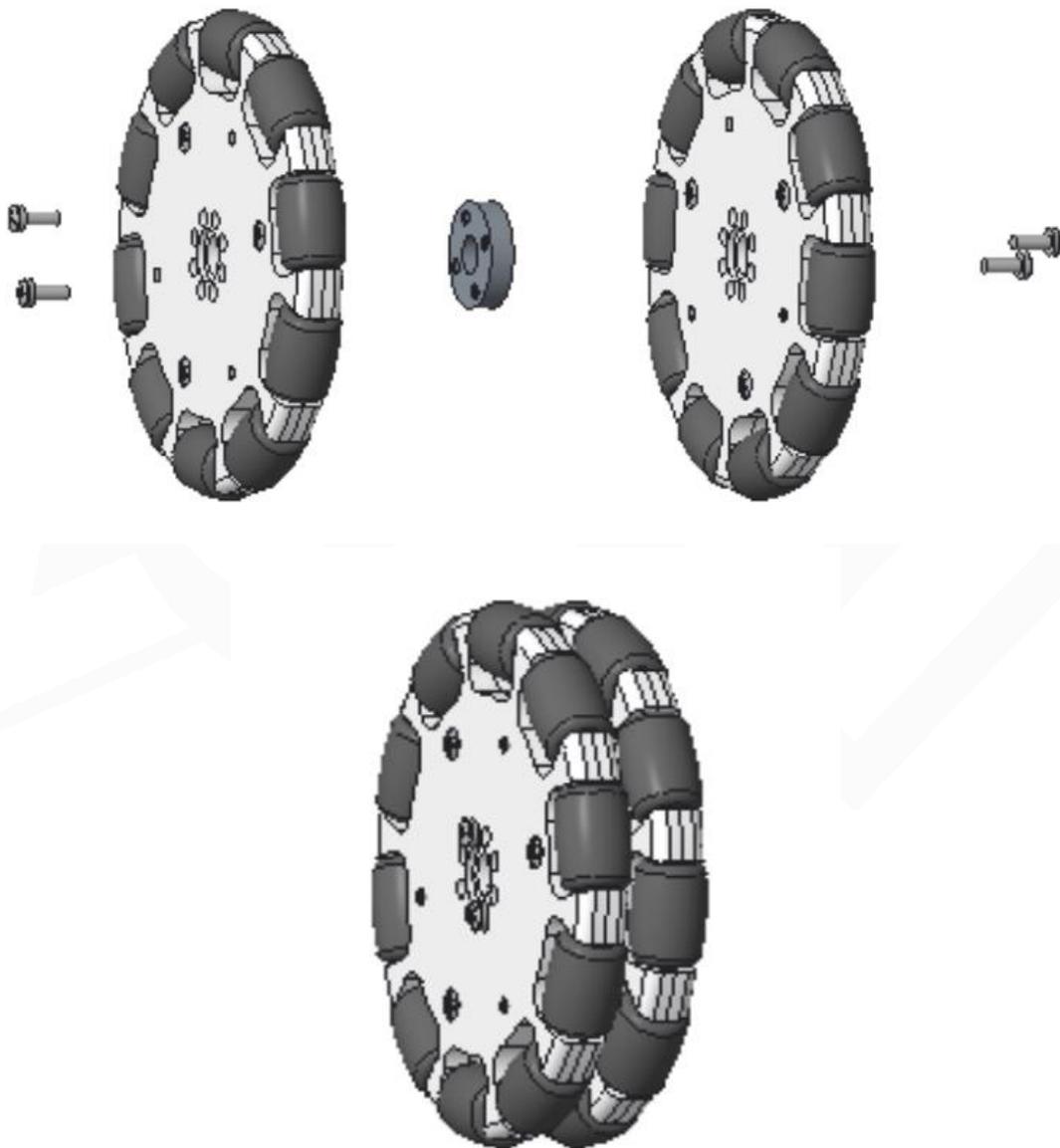
Etape 6

Omni Wheel Assembly

Faire en 2 exemplaires.

Step 1

36466 TETRIX MAX 4" Omni Wheel Pack (1)



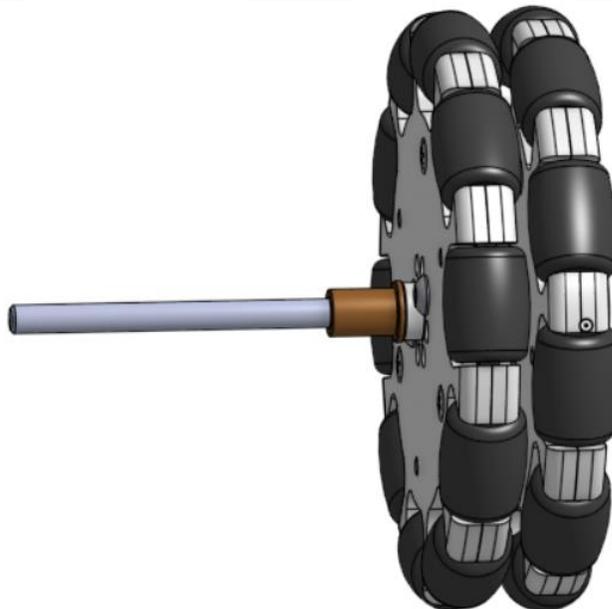
Step 2

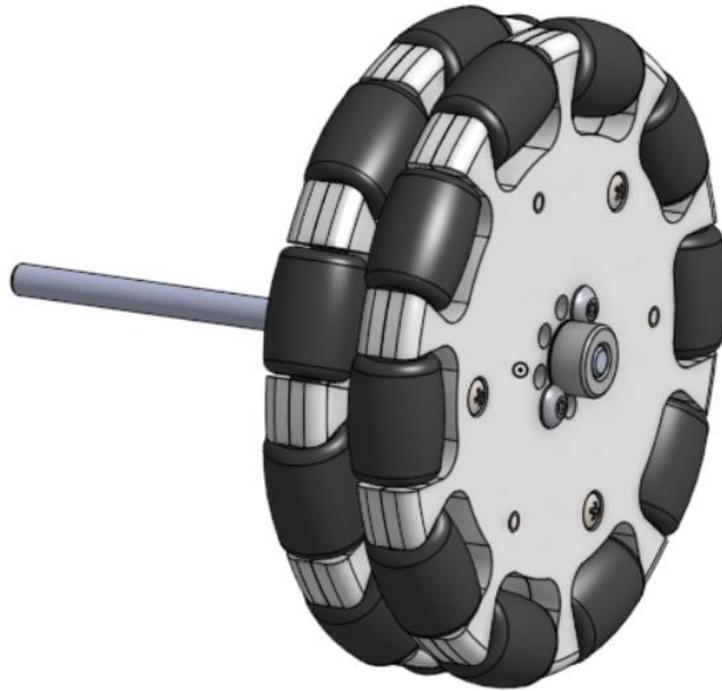
39091 TETRIX MAX Bronze Bushing (2)



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)



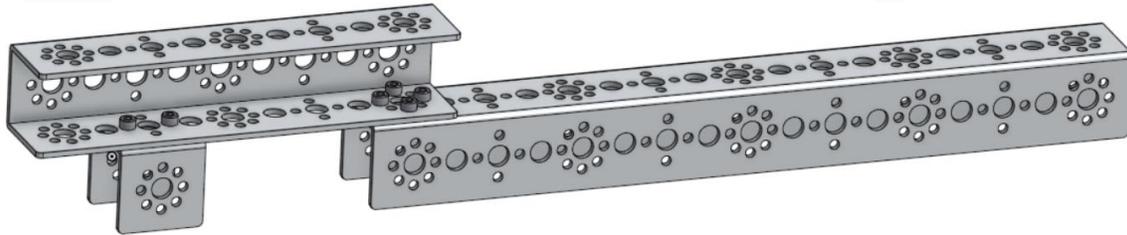


Etape 7

Right Rail Assembly

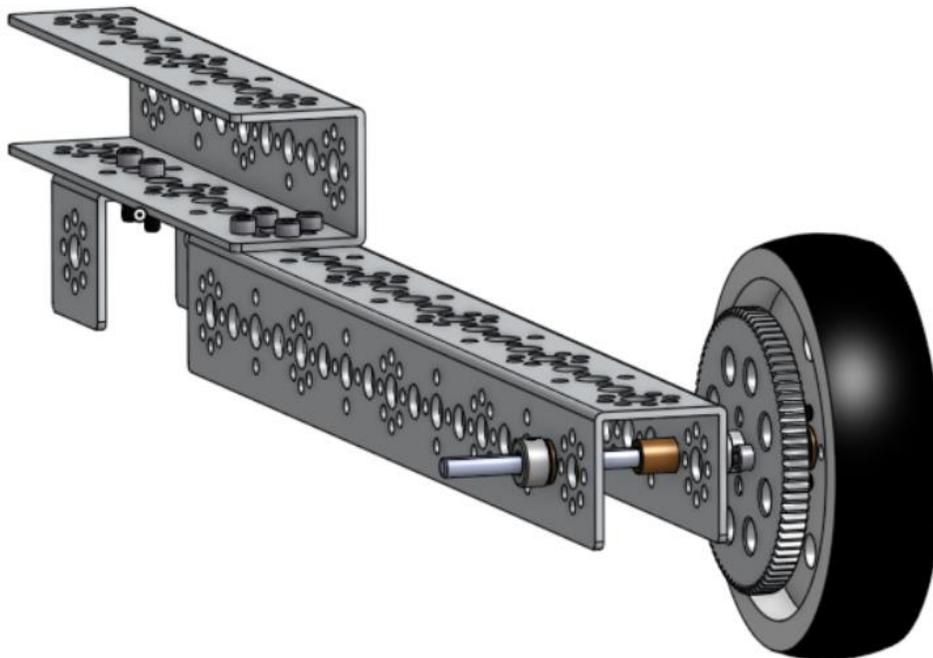
Step 1

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)



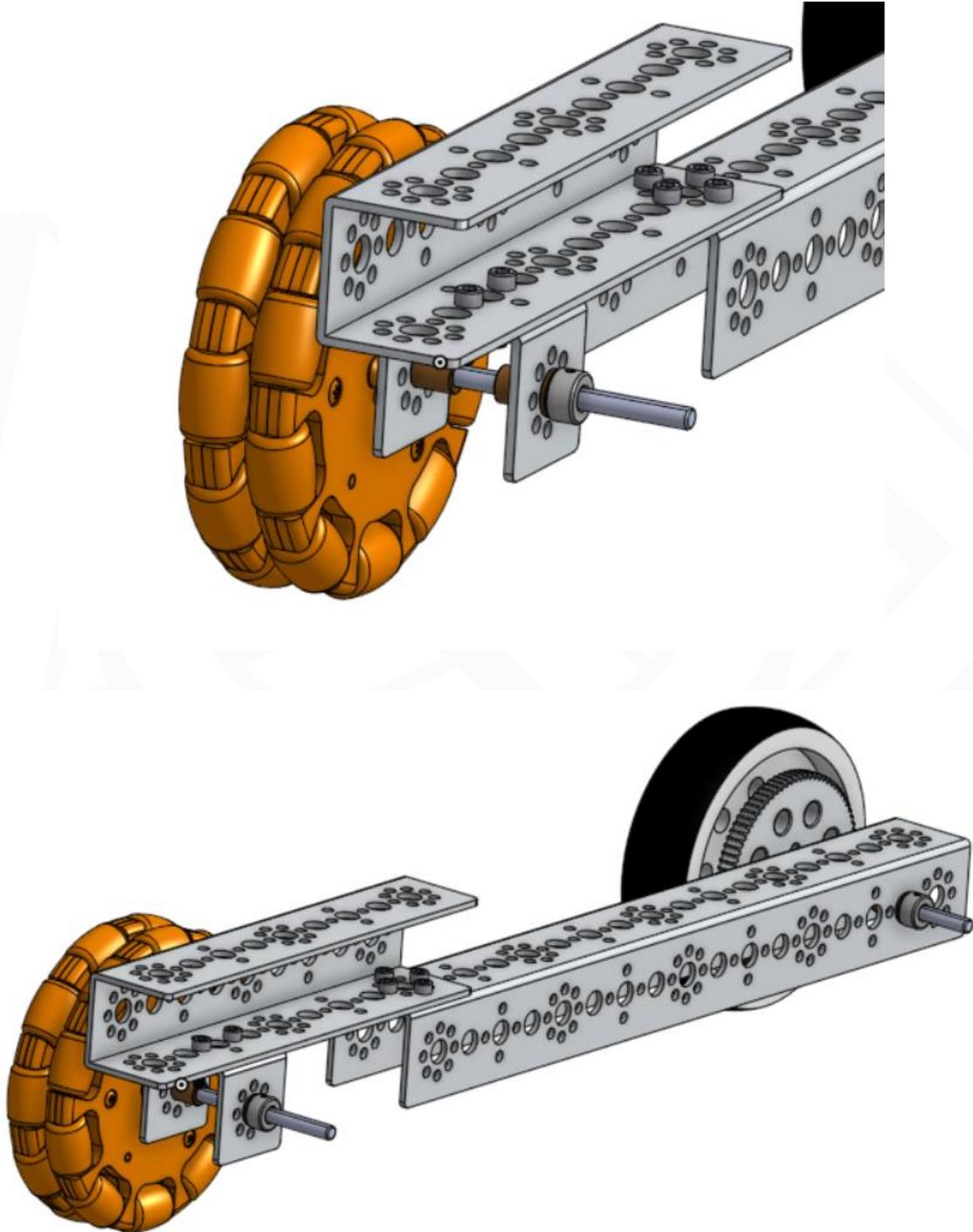
Step 2

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



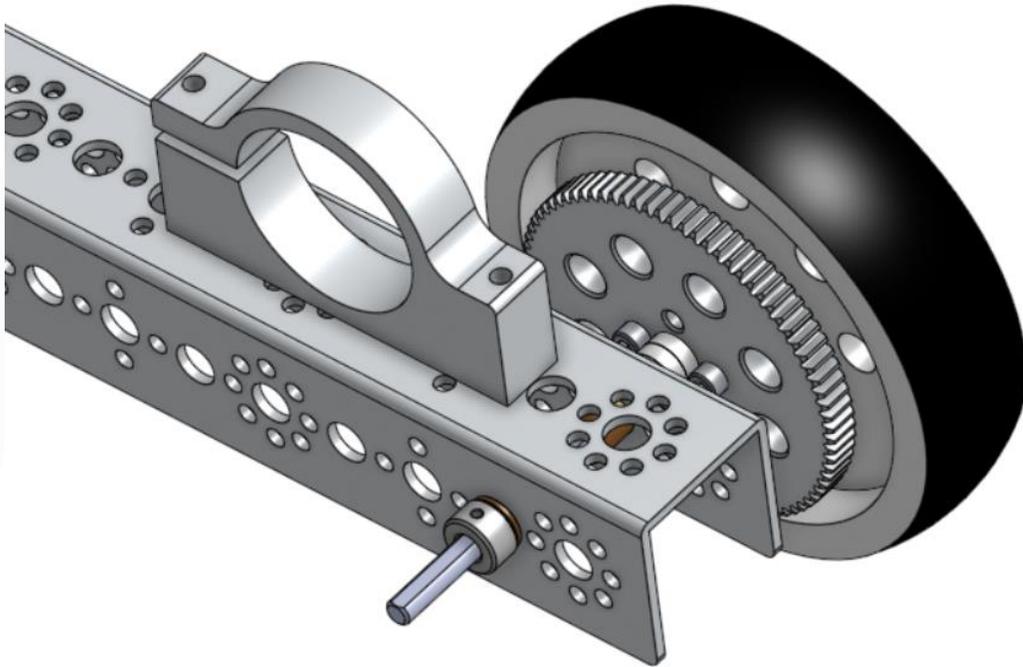
Step 3

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

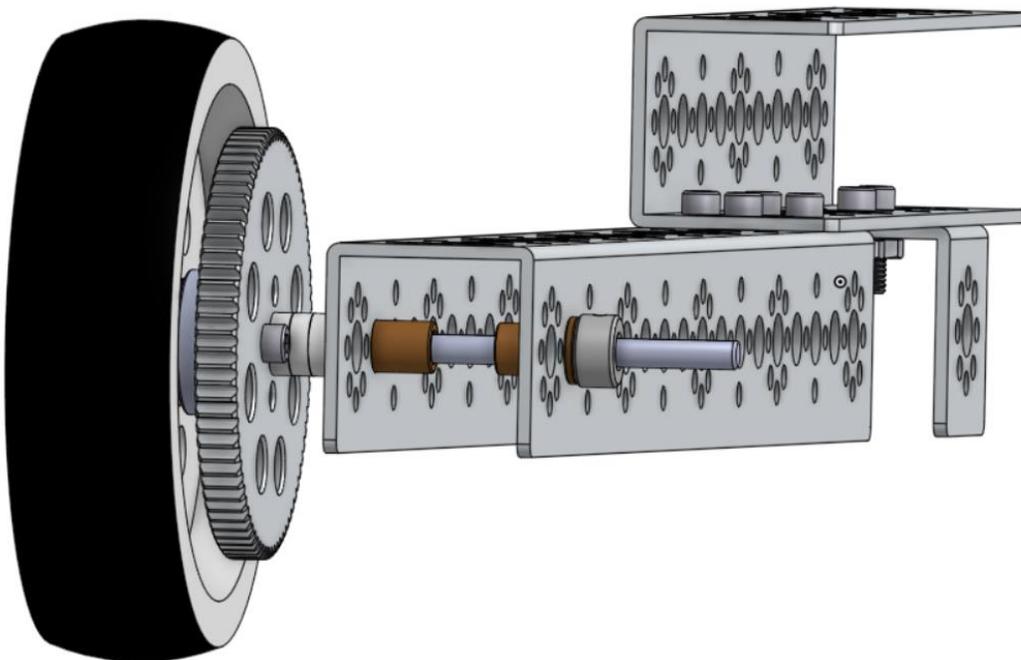
Step 1

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)



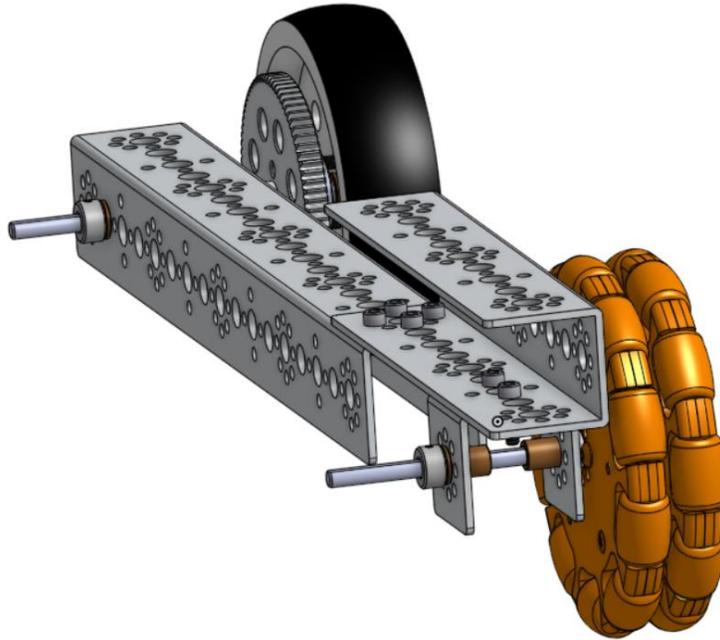
Step 2

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



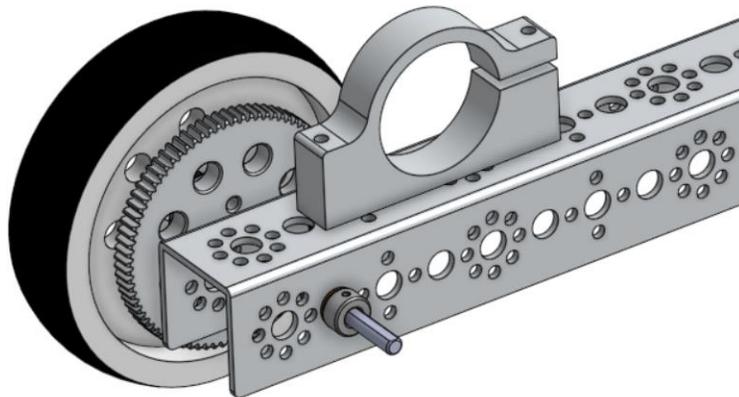
Step 3

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)



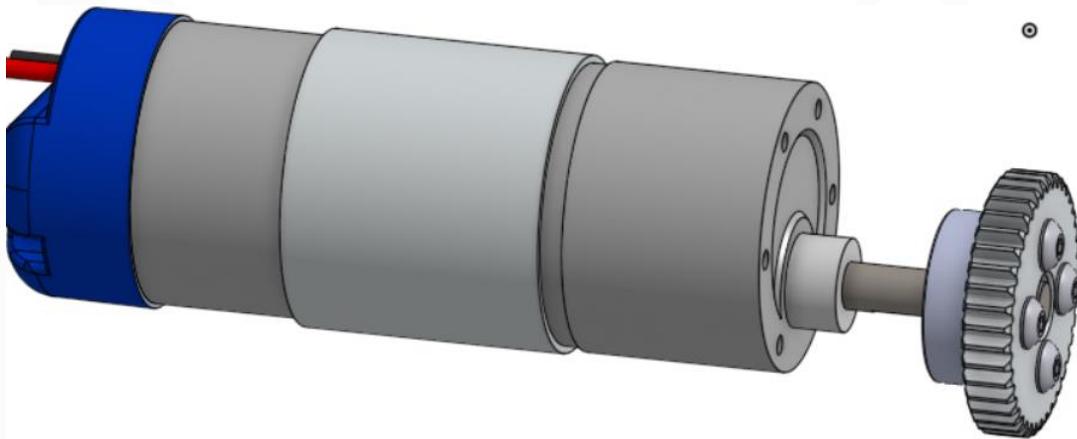
Etape 9

Motor Hub and Gear Assembly

Faire en 3 exemplaires.

Step 1

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

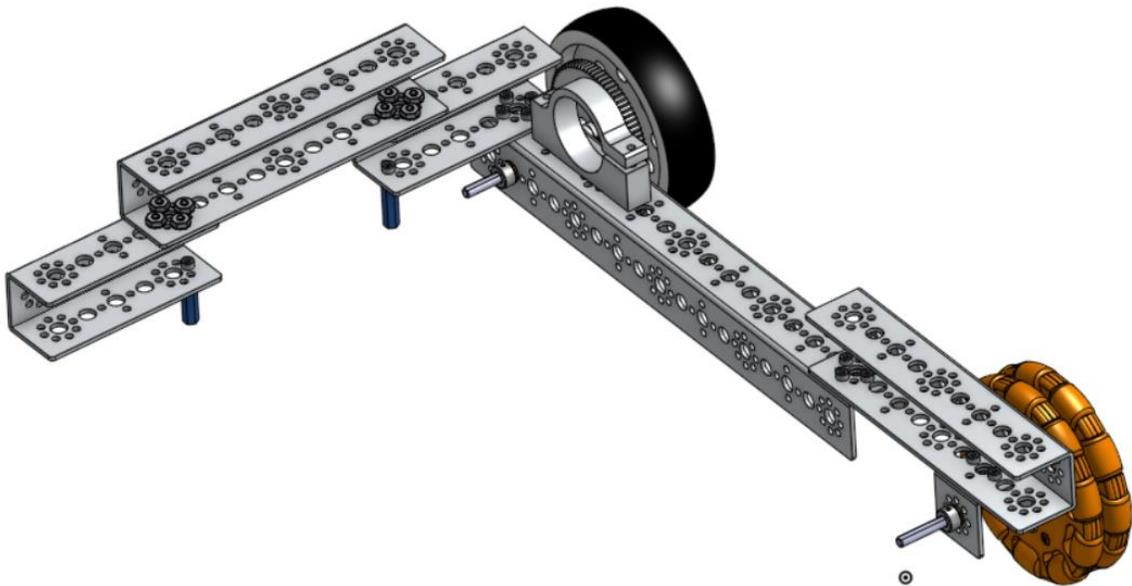


Etape 10

Chassis

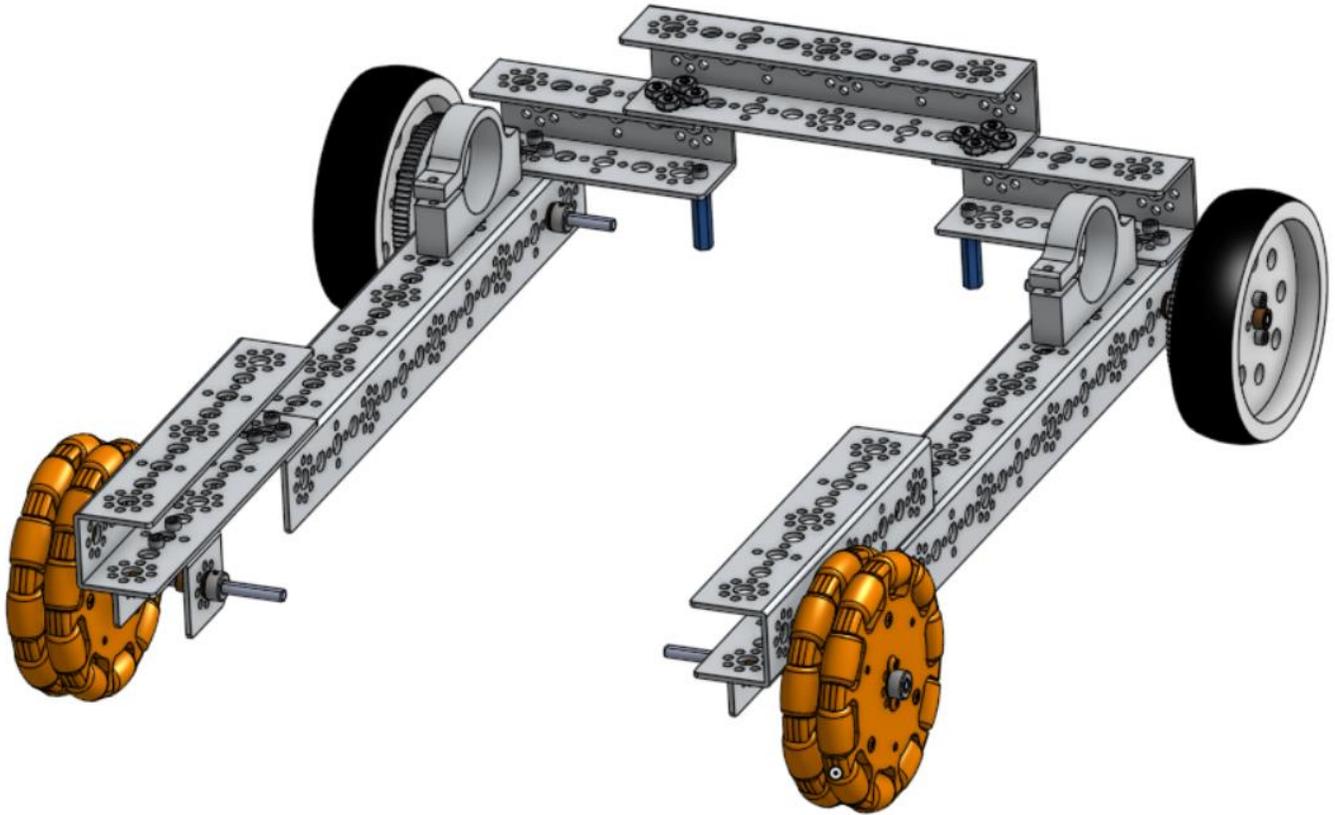
Step 1

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



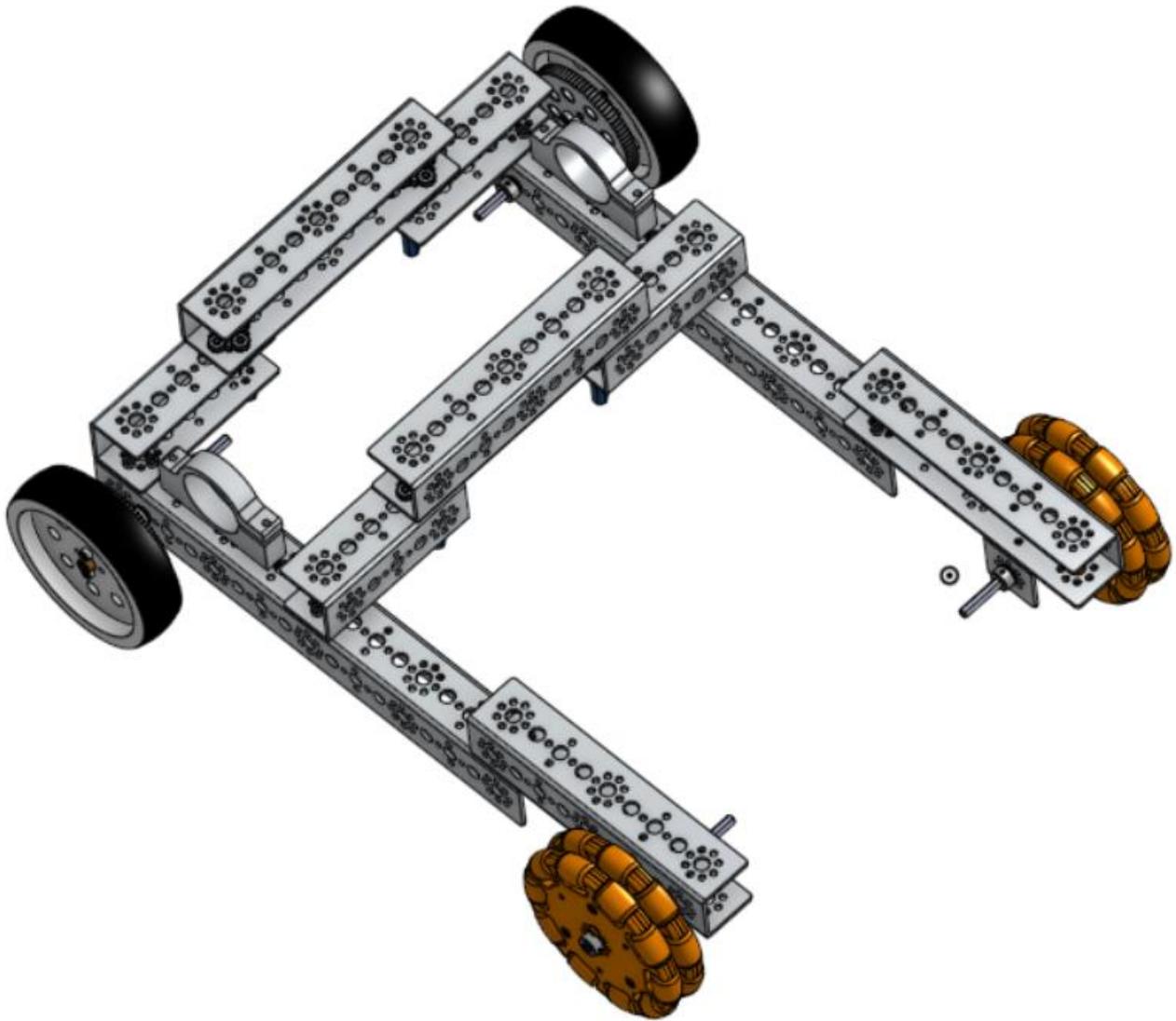
Step 2

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



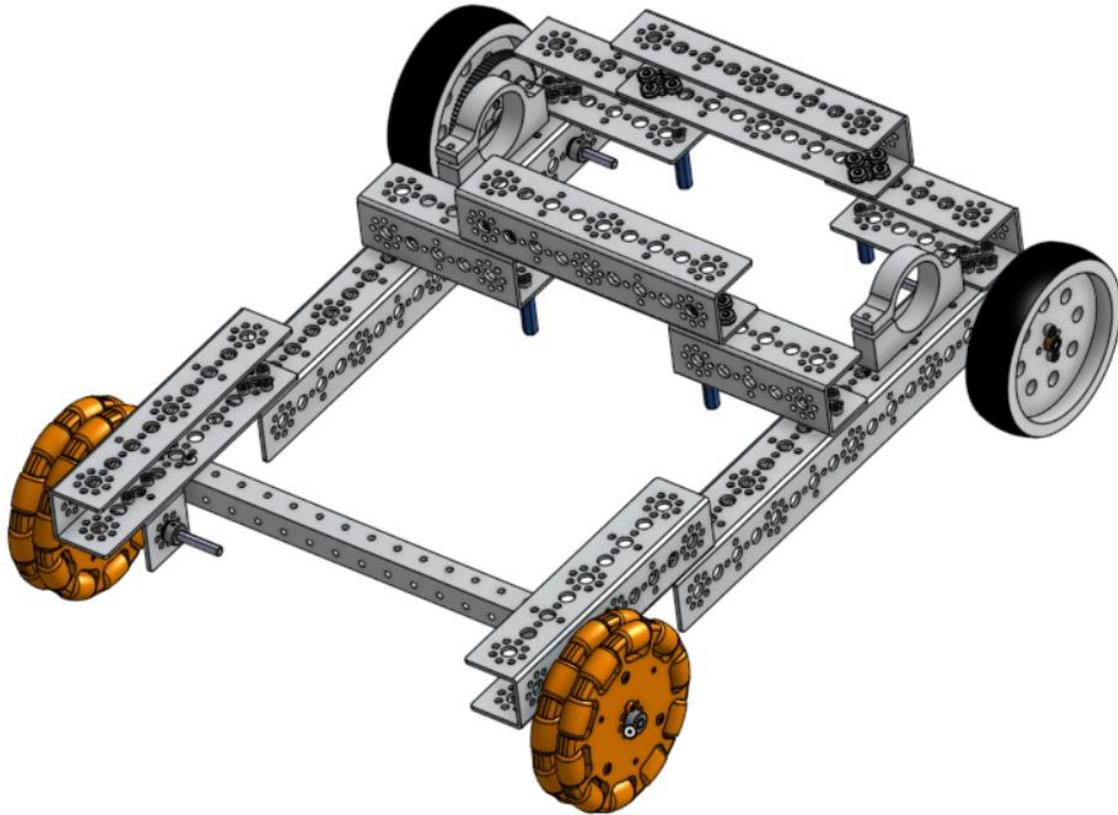
Step 3

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



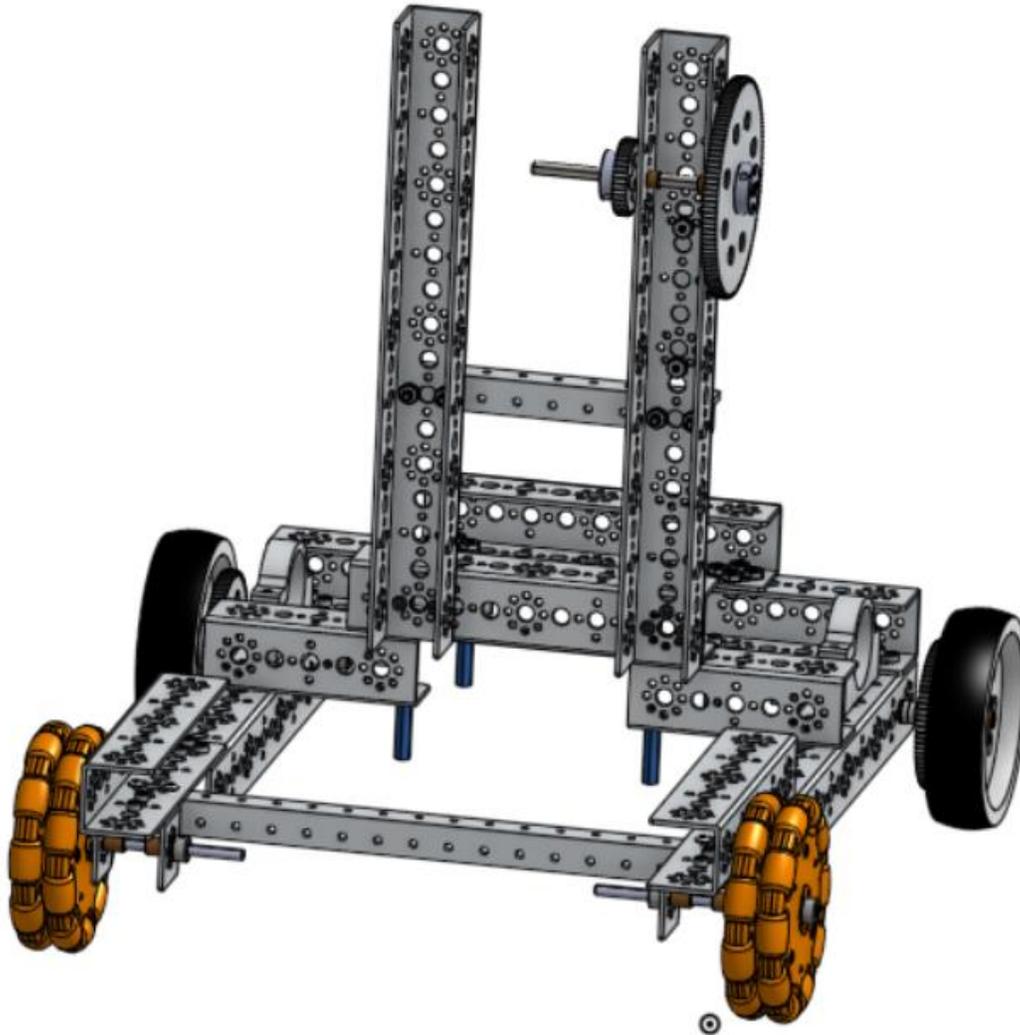
Step 4

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

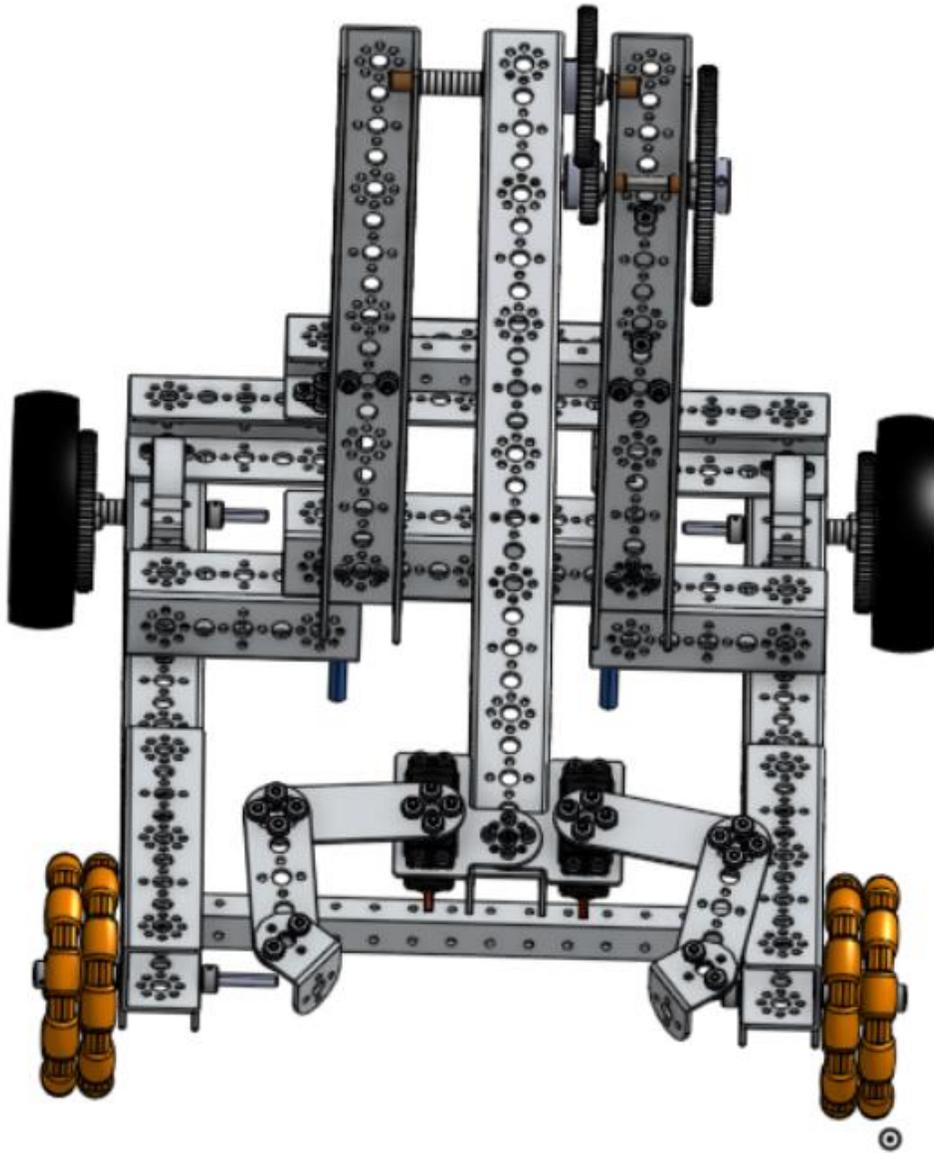


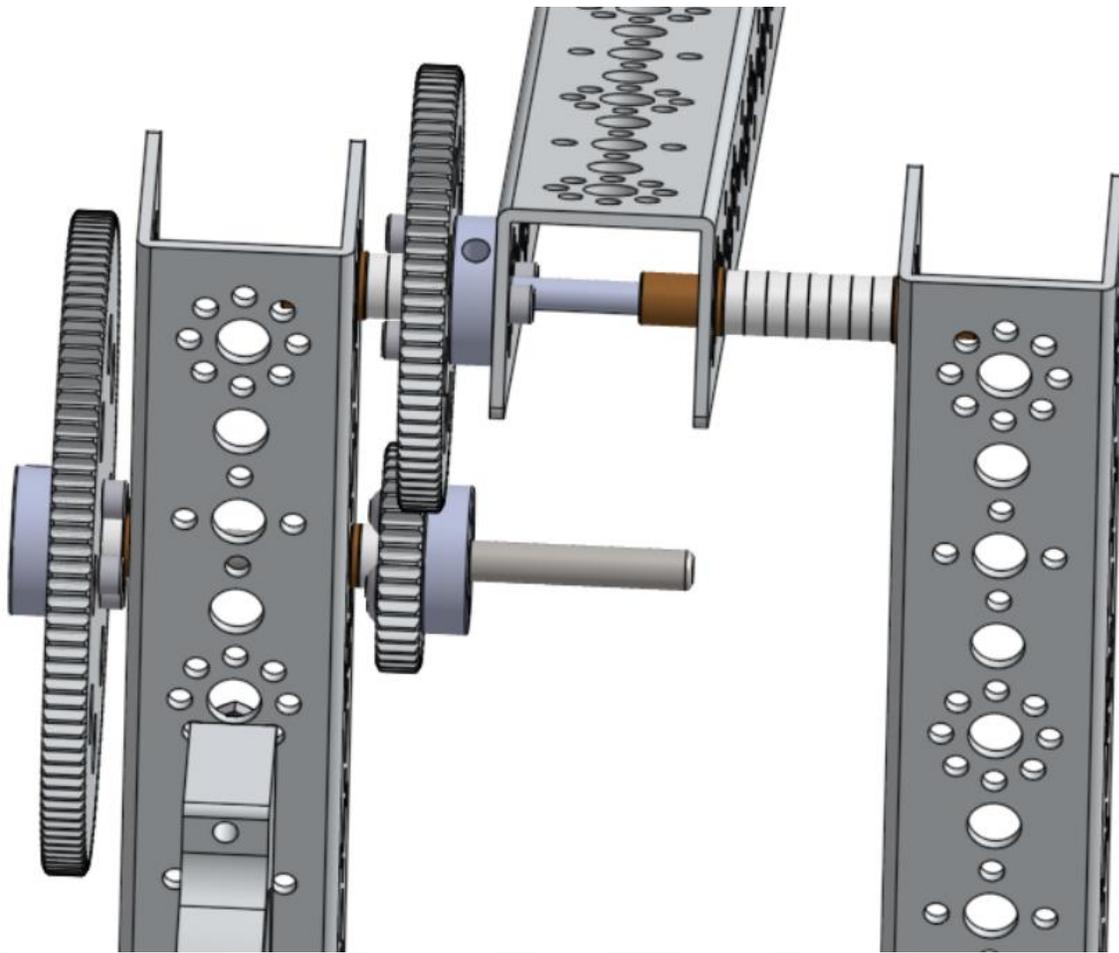
Step 8

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



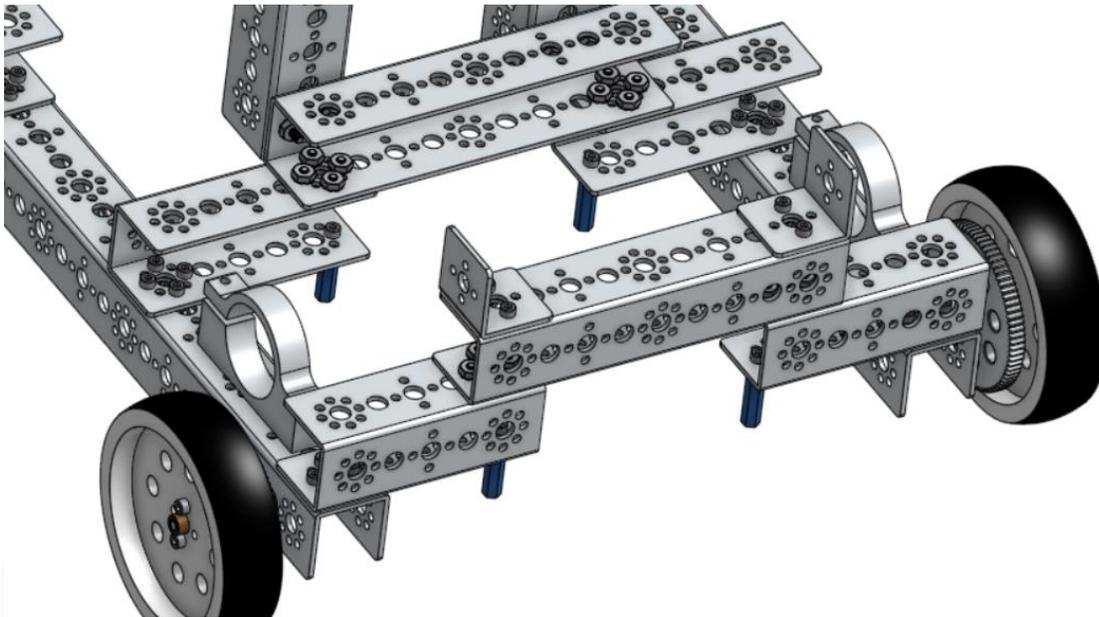
Step 6

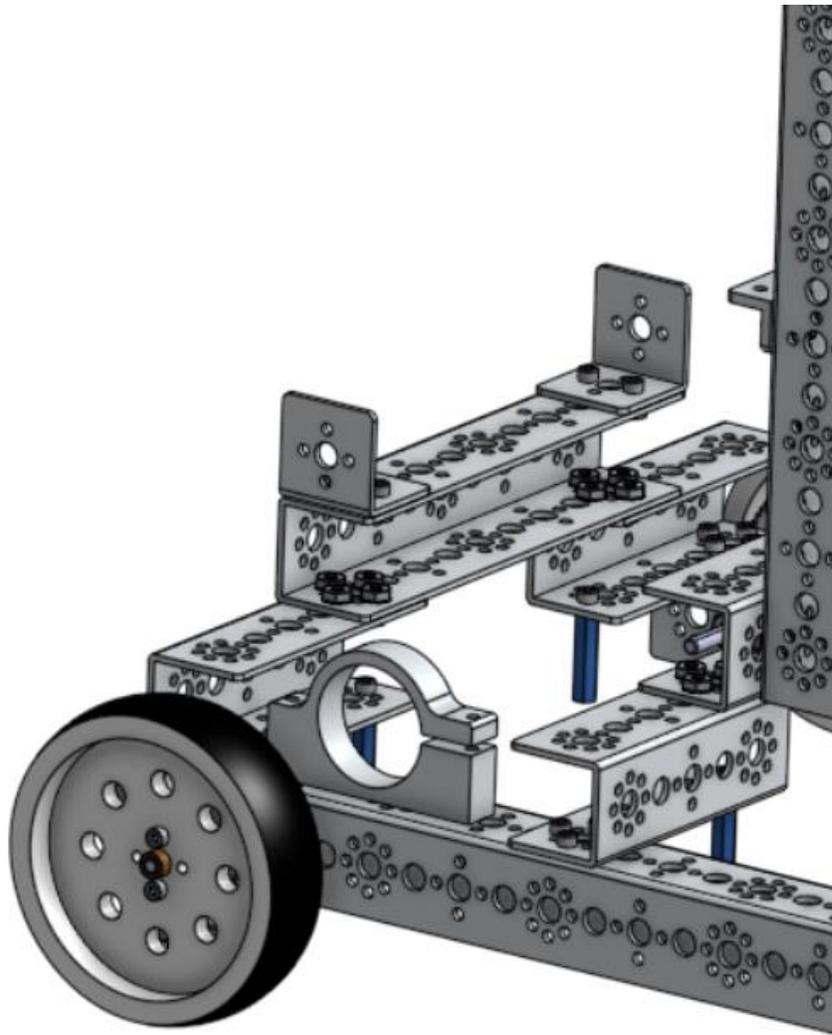




Step 7

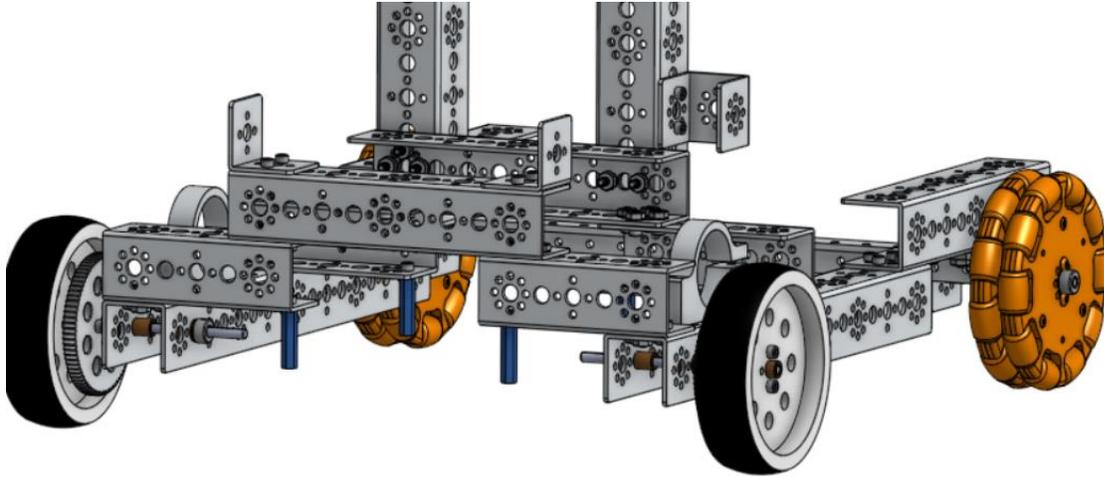
39281 TETRIX MAX Inside Corner Bracket (2), 39098 Socket Head Cap Screw 6-32 x 5/16" (4), 39094 Kep Nut (4)





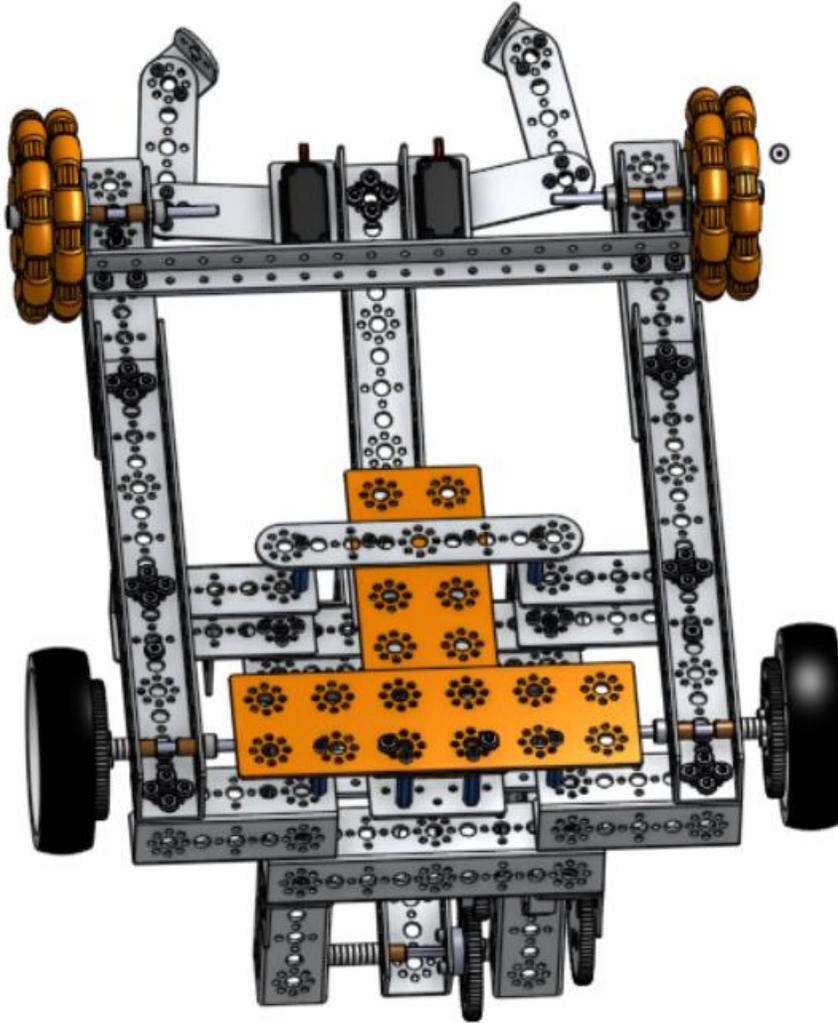
Step 8

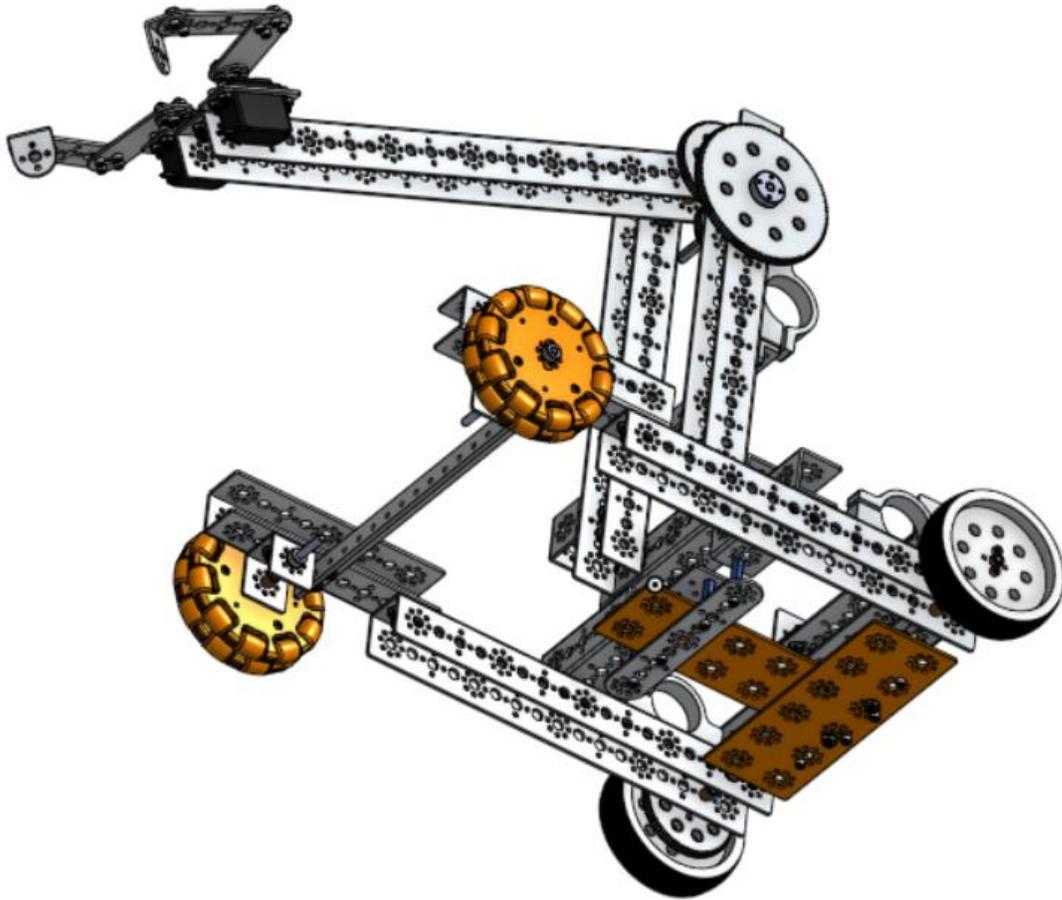
39065 TETRIX MAX 32 mm Channel (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (2), 39094 Kep Nut (2)

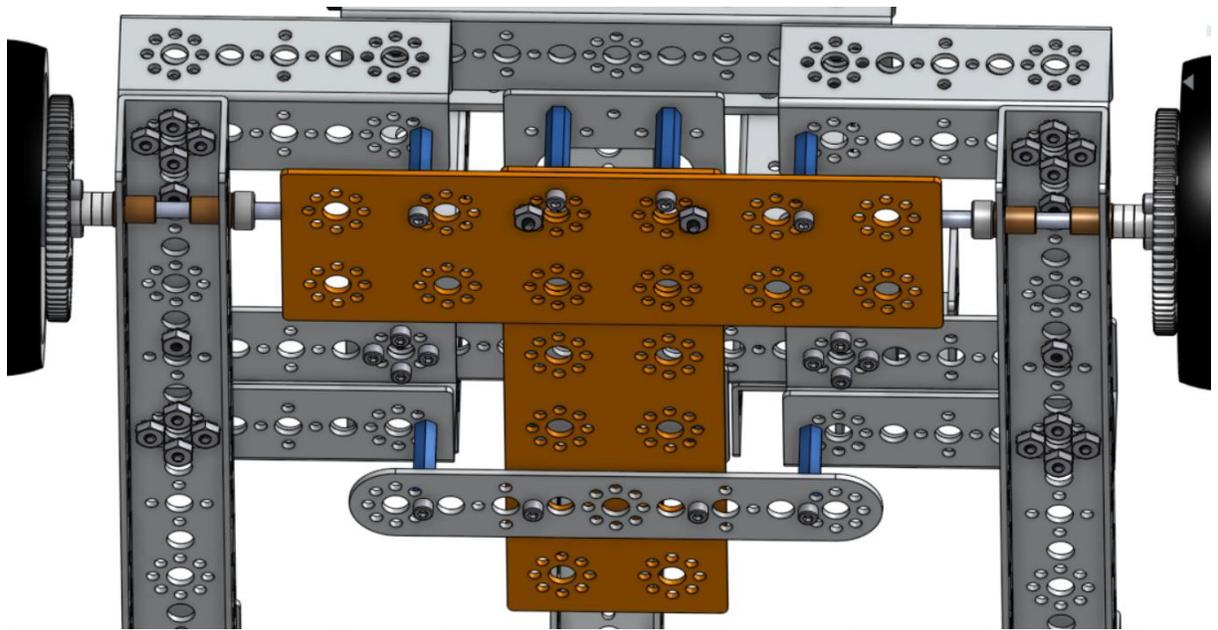


Step 9

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

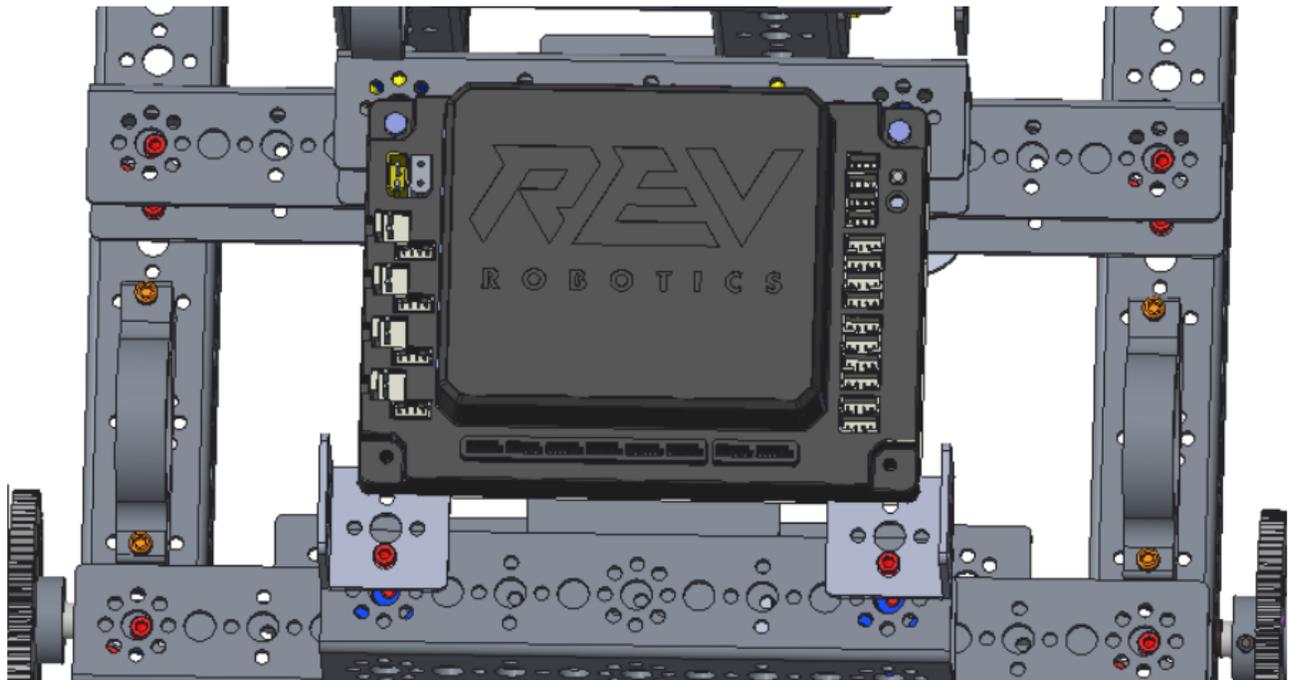






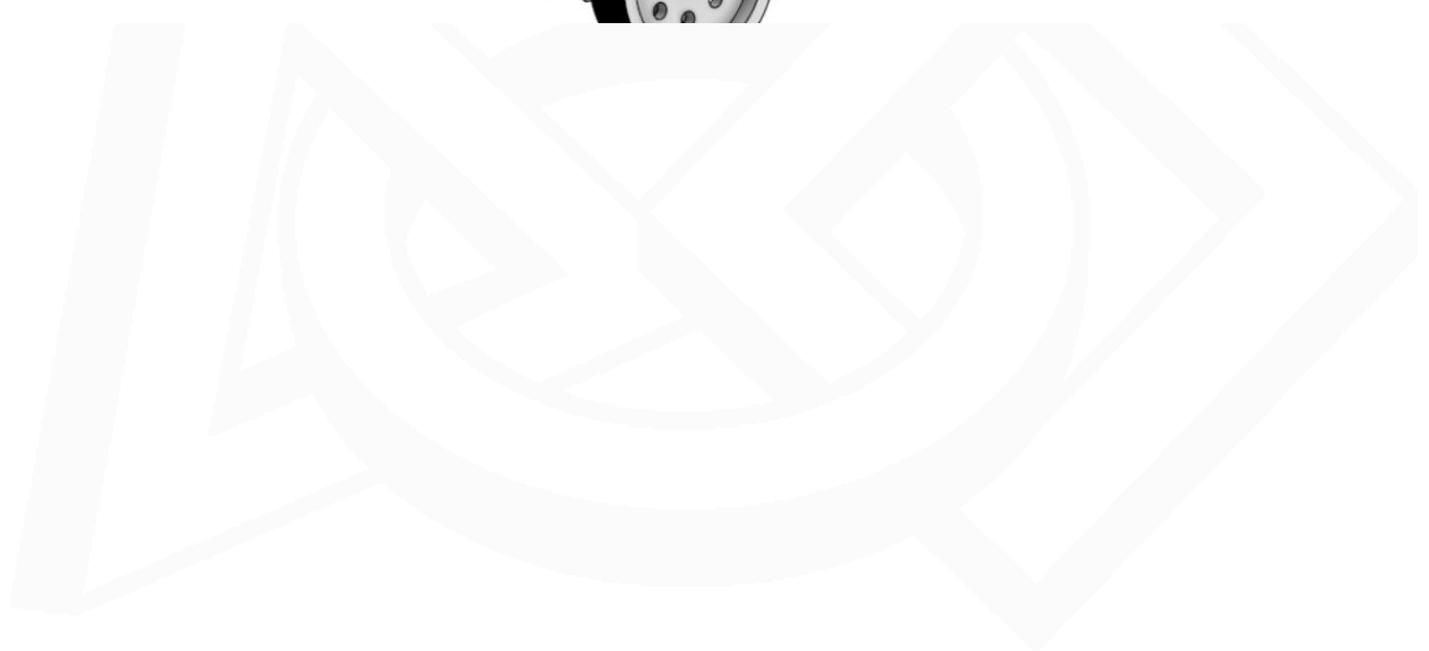
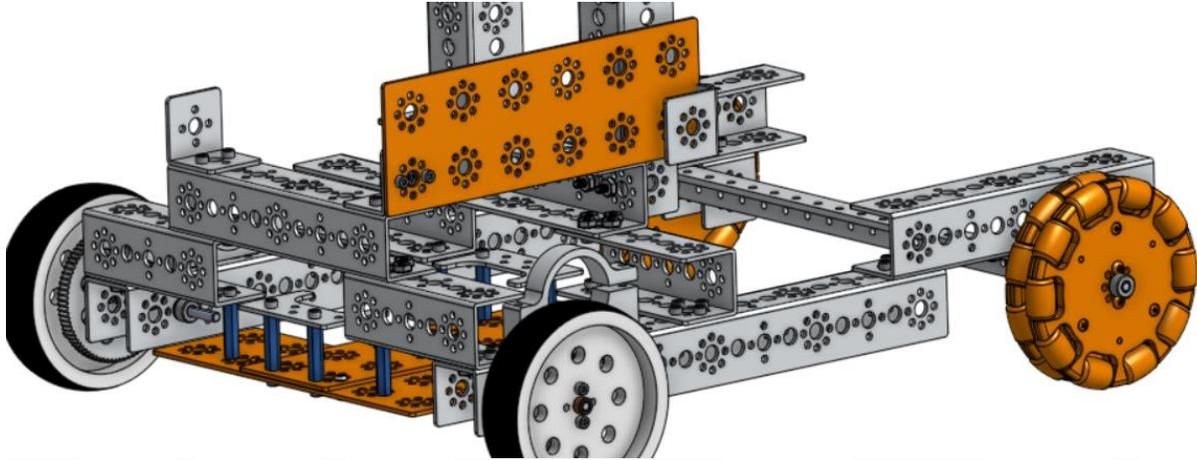
Step 10

REV Robotics Control Hub



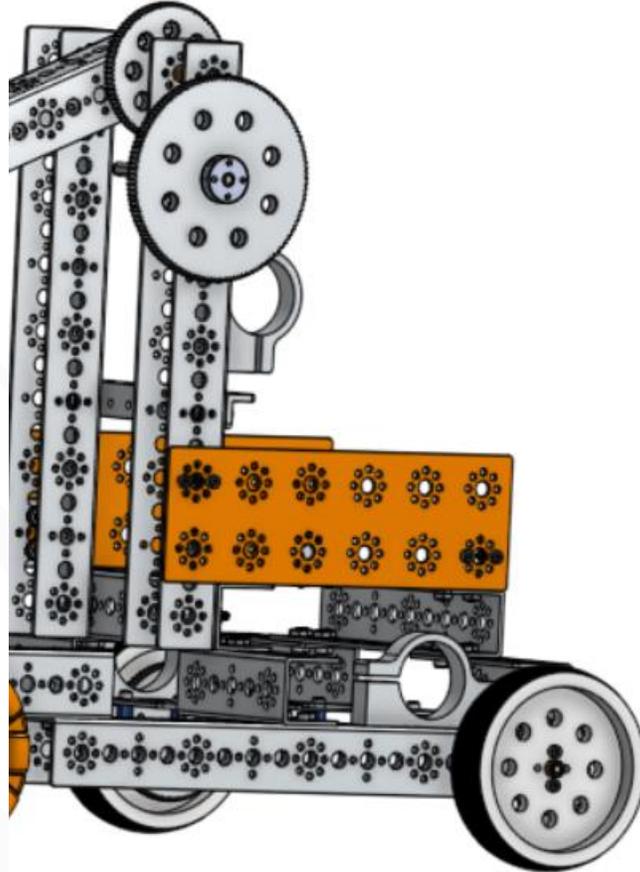
Step 11

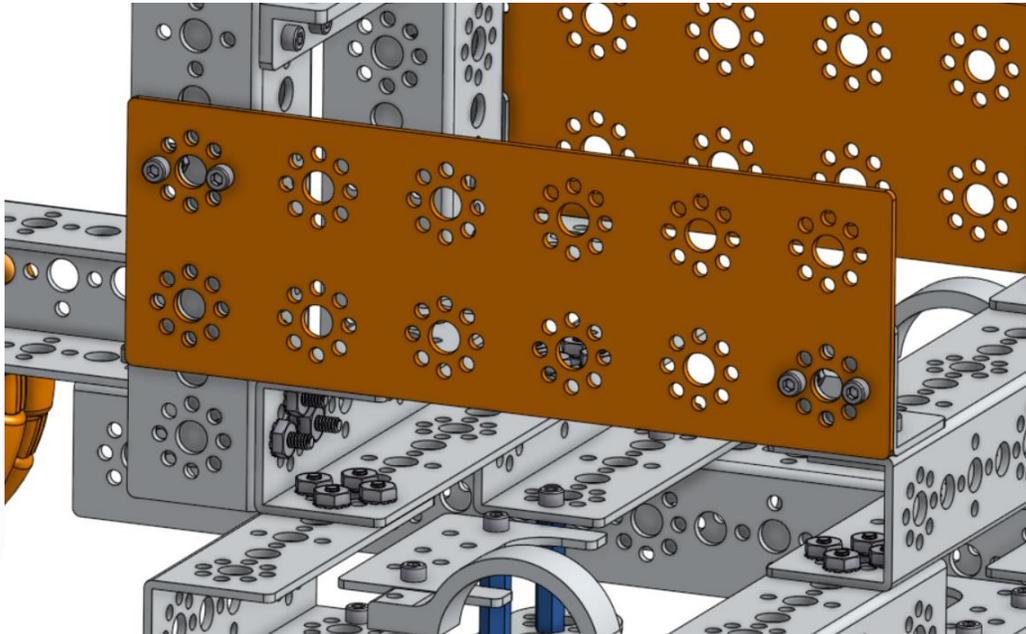
39073 TETRIX MAX Flat Building Plate (1), 39097 Socket Head Cap Screw 6-32 x 1/2" (2), 39094 Kep Nut (2)



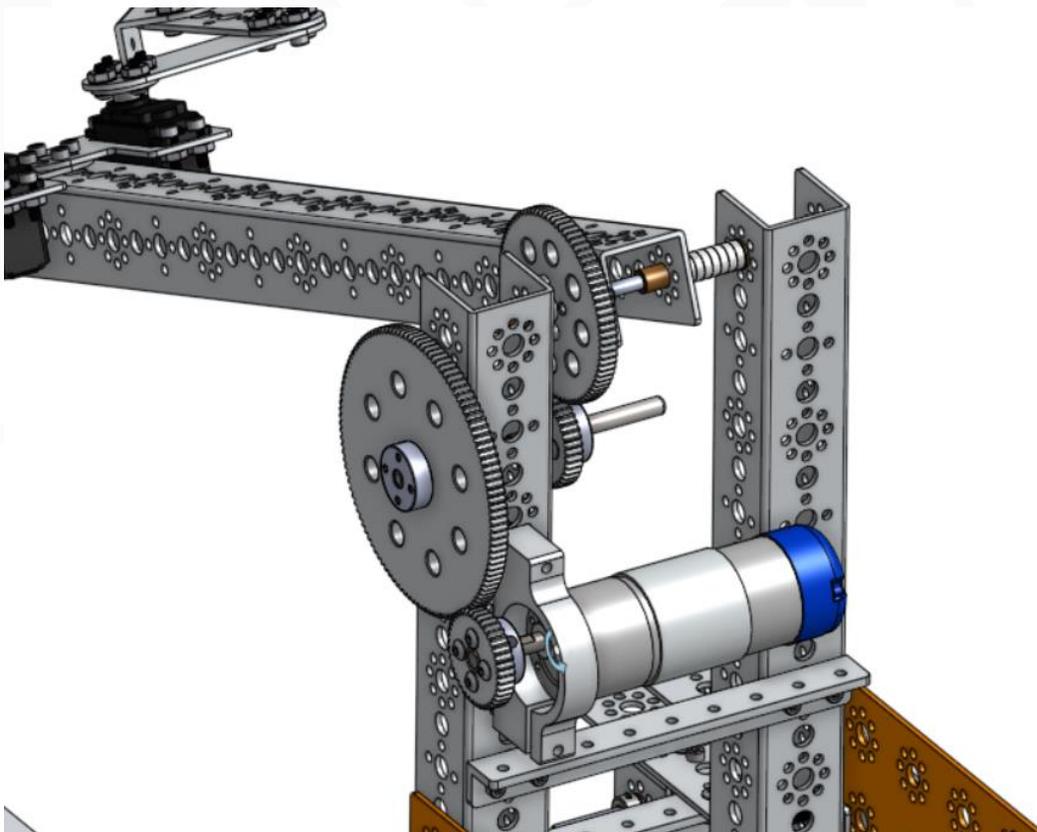
Step 12

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

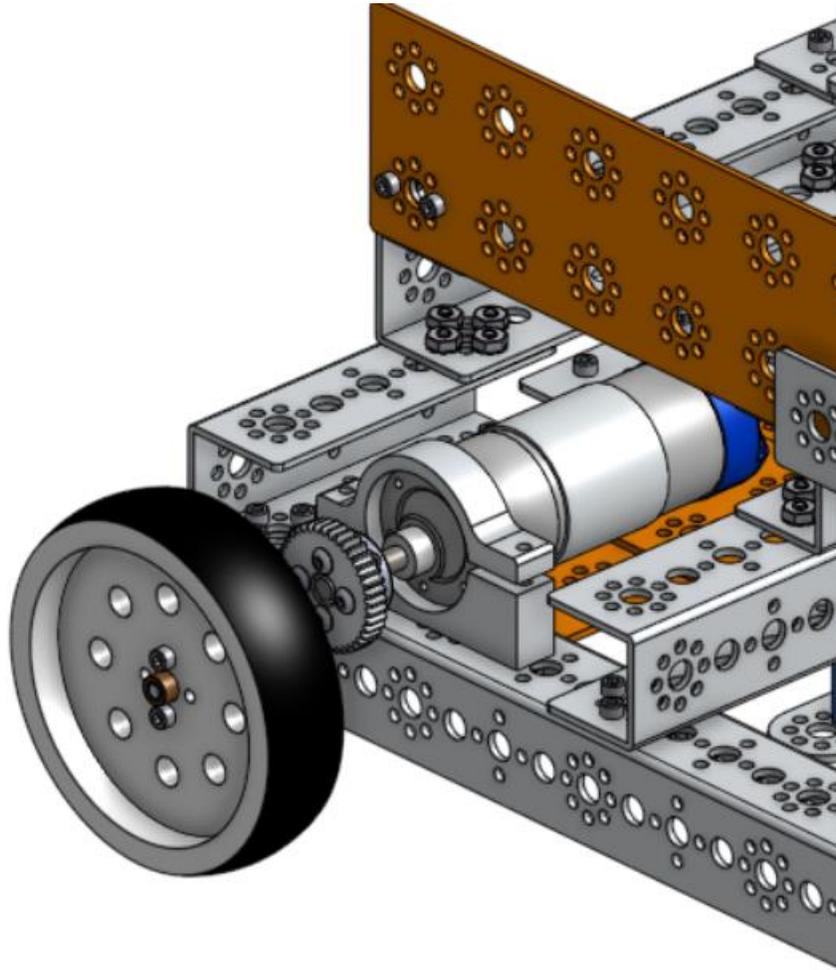


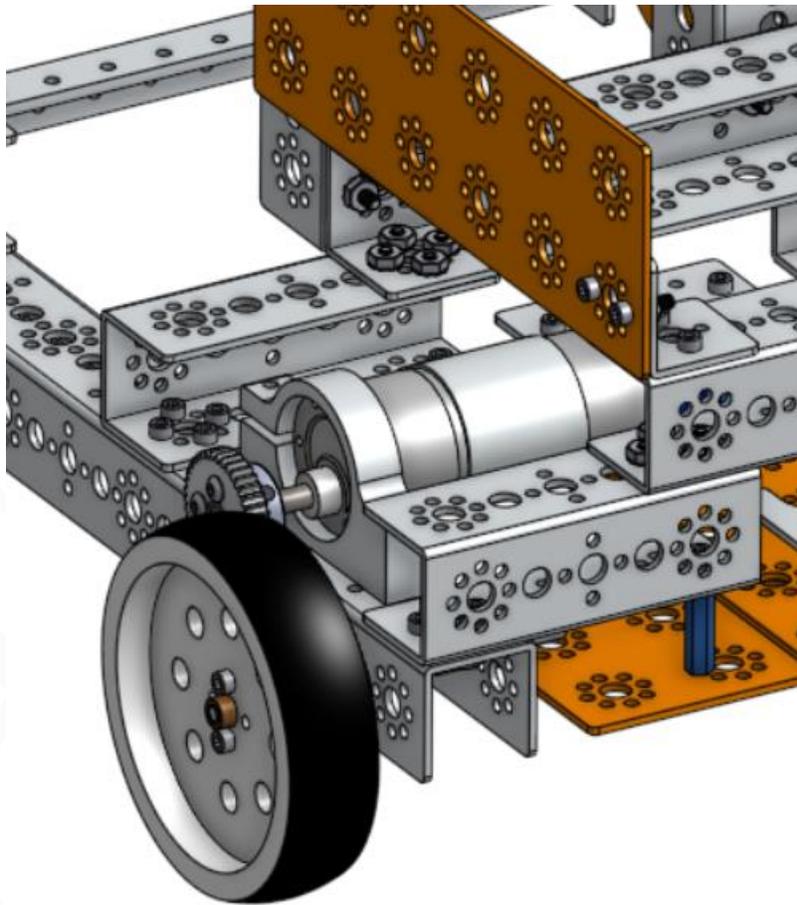


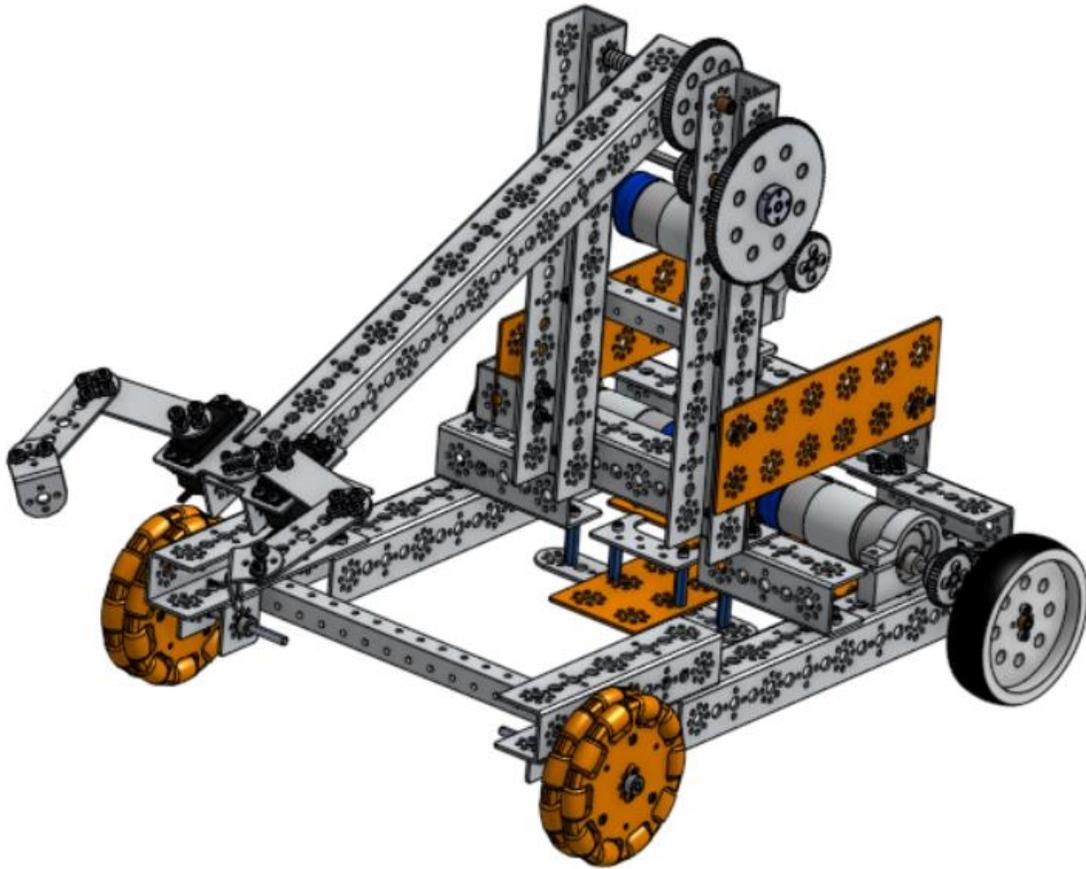
Step 13



Step 14







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