ЧАСТЬ IV

Роботы-животные и транспортные средства

12

FORMULA EV3: робот-гонщик

Теперь, когда вы научились разрабатывать программы для модуля EV3, позволяющие управлять моторами и датчиками, можно приступать к сборке более сложных роботов, таких как автономные транспортные средства, роботизированные животные и сложные механизмы. В этой главе представлен гоночный автомобиль FORMULA EV3, показанный на рис. 12.1.

В отличие от робота EXPLOR3R, которого вы сконструировали ранее, у гоночного автомобиля три мотора. Два больших мотора в задней части приводят автомобиль в движение, а средний мотор позволяет управлять передними колесами. Представьте, что задние моторы — это двигатель автомобиля, а передний — его рулевое колесо.

Сконструировав гоночный автомобиль, приступайте к программированию.

Создайте несколько контейнеров «Мой блок», чтобы можно было легко запрограммировать автомобиль ездить и рулить. Затем объедините эти блоки в программу, которая позволит управлять автомобилем дистанционно,

Рис. 12.1. Гоночный автомобиль FORMULA EV3

и в программу, которая позволит роботу ездить самостоятельно и объезжать препятствия. В заключение вы получите задание добавить функциональности текущей модели и увеличить его скорость передвижения с помощью зубчатых колес.

Сборка гоночного автомобиля FORMULA EV3

Соберите гоночный автомобиль, следуя инструкциям, приведенным далее. Перед началом сборки выберите необходимые детали, которые показаны на рис. 12.2.

Передвижение и рулевое управление

В гоночном автомобиле FORMULA EV3 используются два разных механизма для передвижения и рулевого управления. Для перемещения вы включаете большие моторы сзади. Управлять автомобилем можно, поворачивая передние колеса влево или вправо с помощью среднего мотора, расположенного спереди. Объединив передвижение и рулевое управление в одной программе, вы сможете перемещать автомобиль в любом направлении.

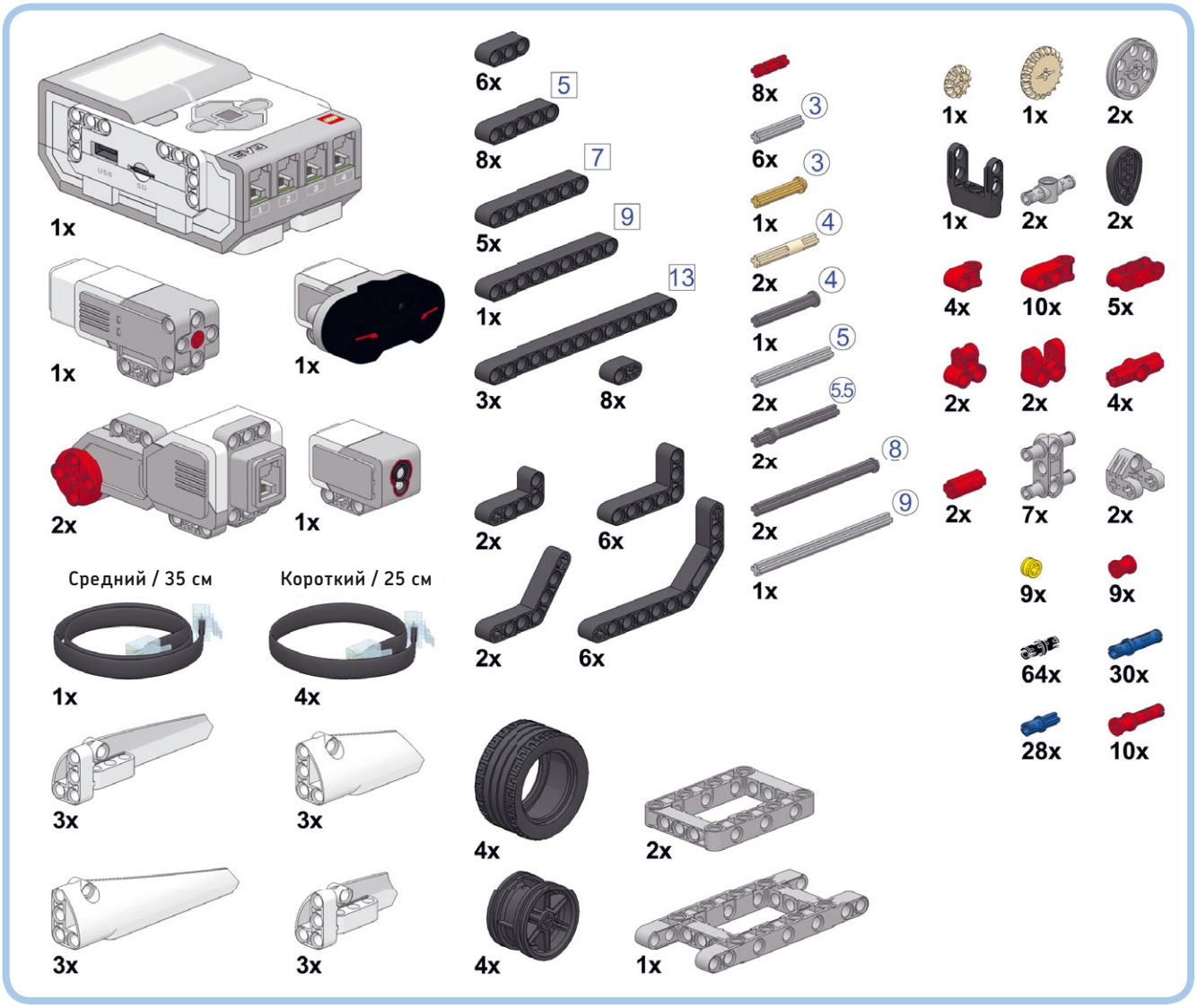
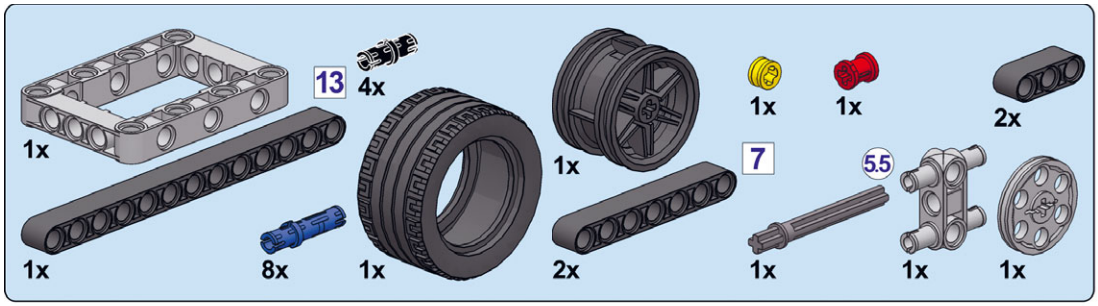


Рис. 12.2. Детали, необходимые для сборки гоночного автомобиля FORMULA EV3



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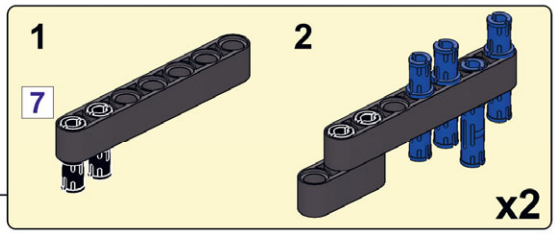

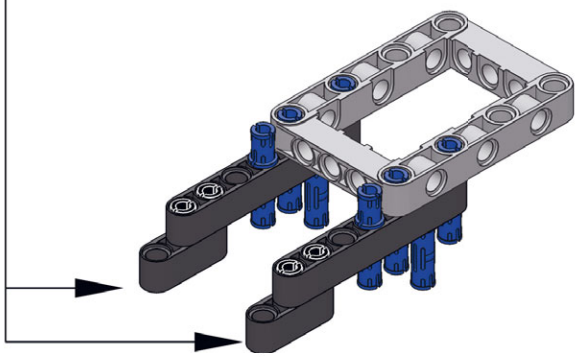

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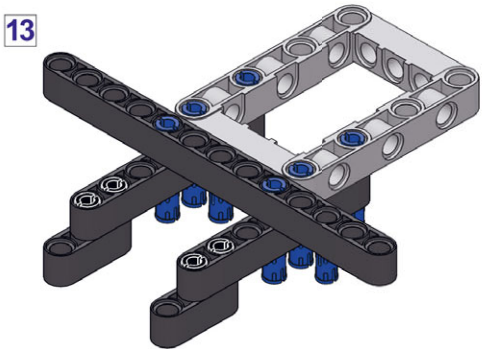

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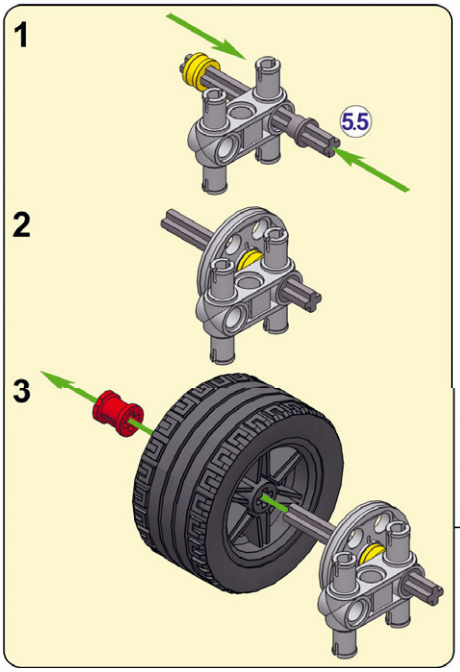

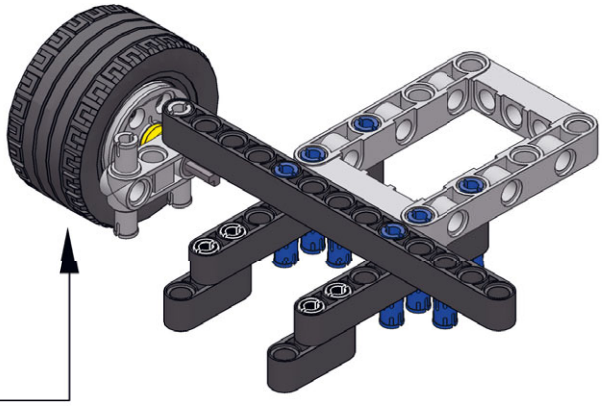

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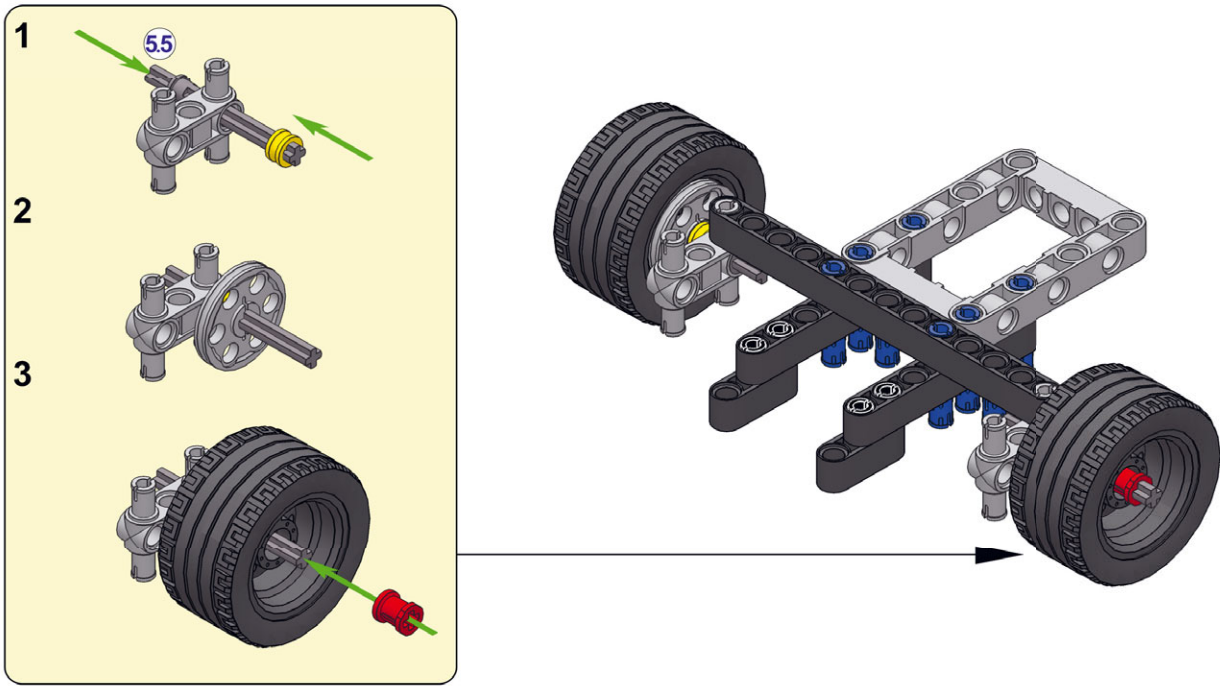

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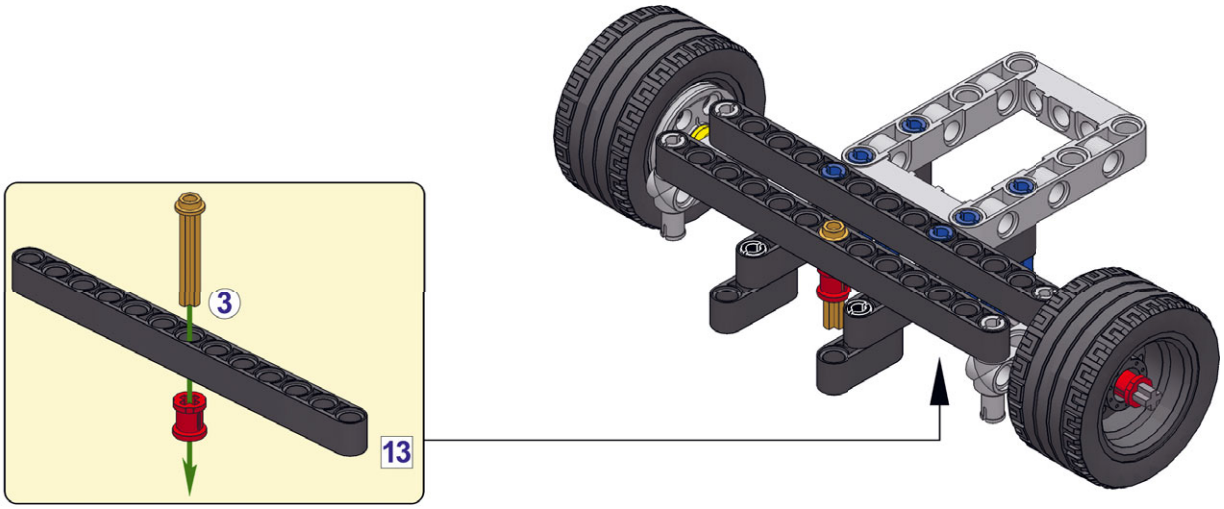

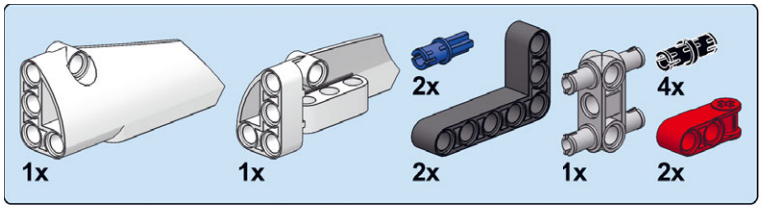

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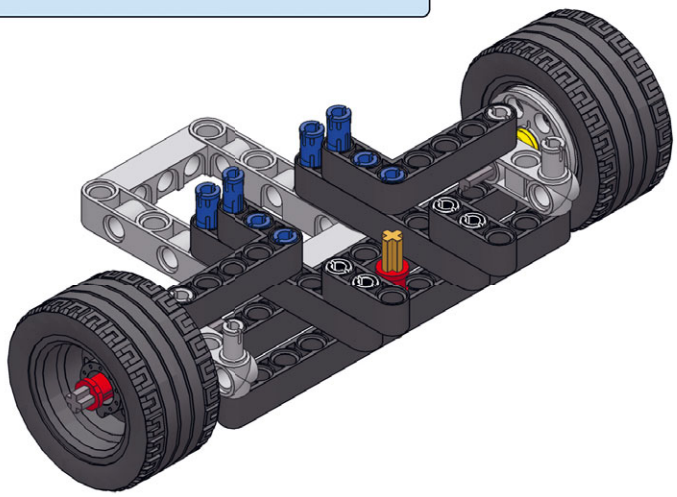

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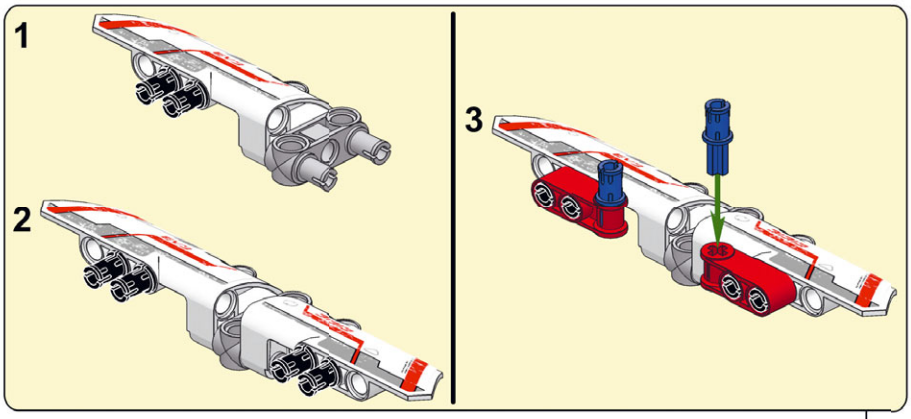

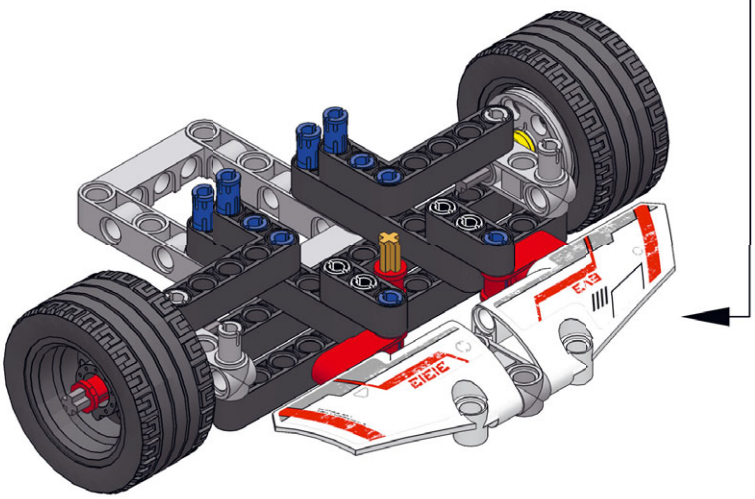

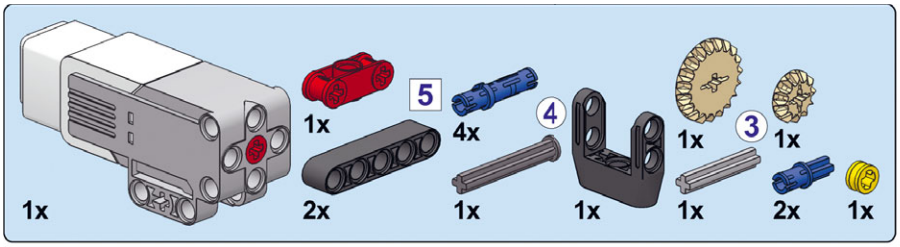

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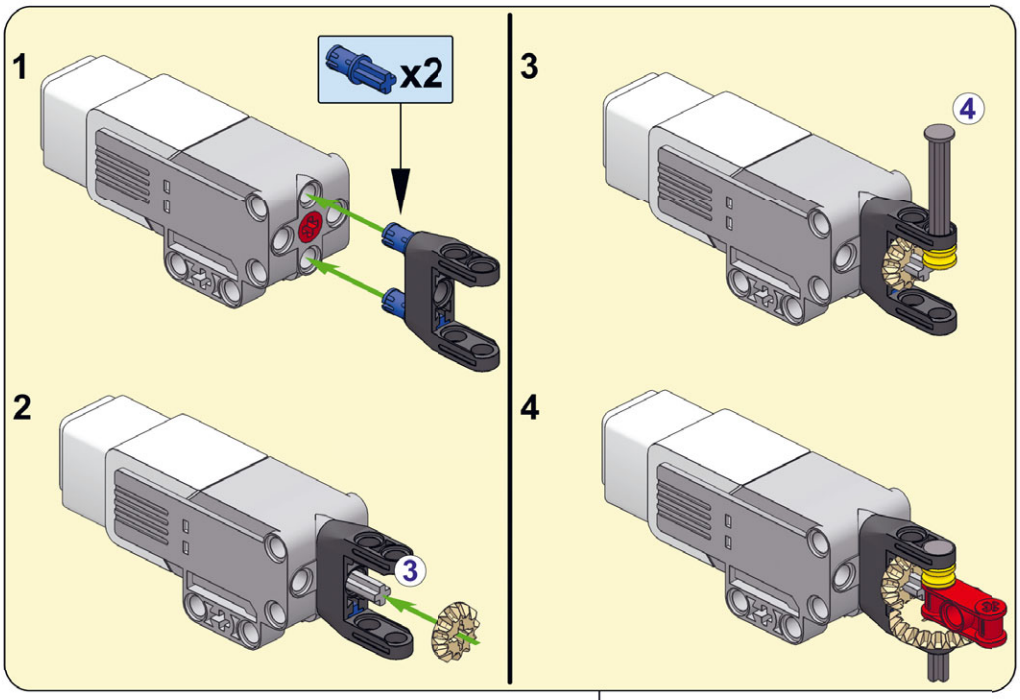

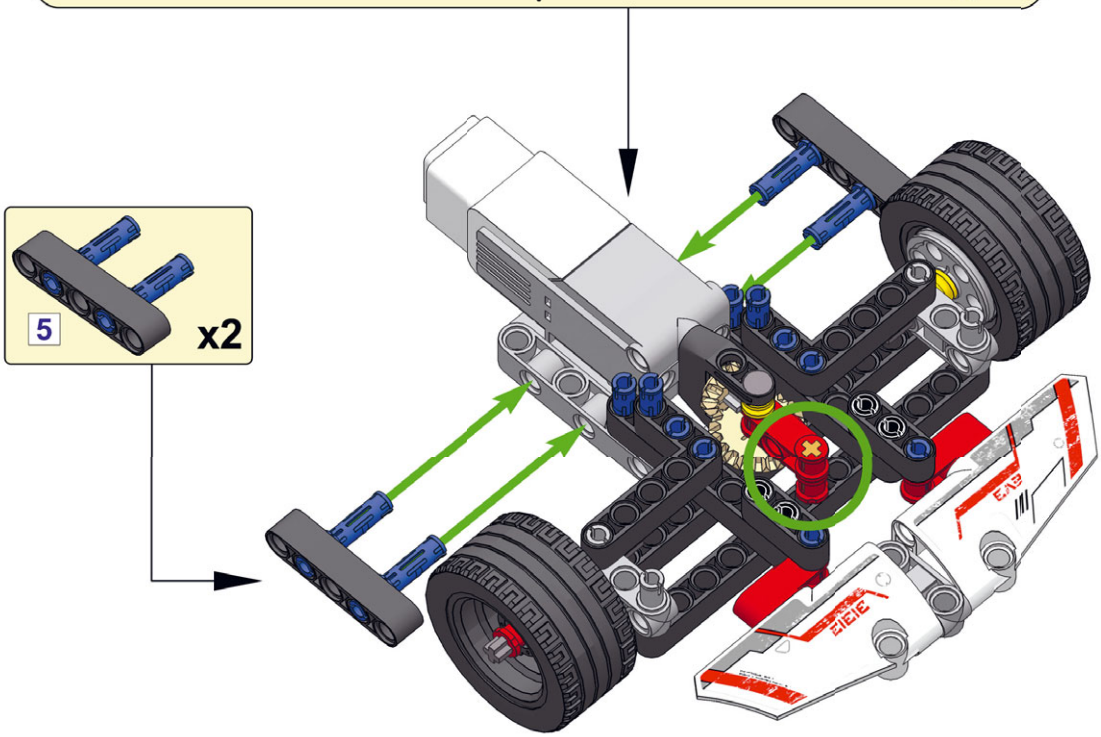

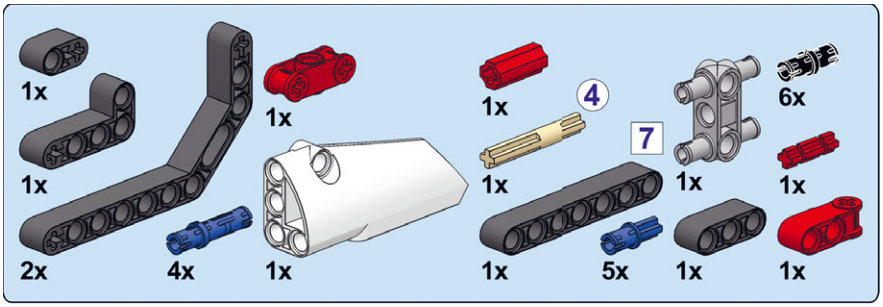
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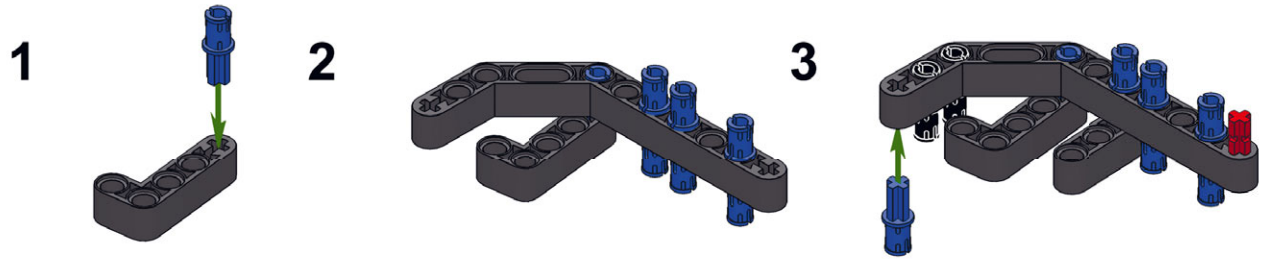
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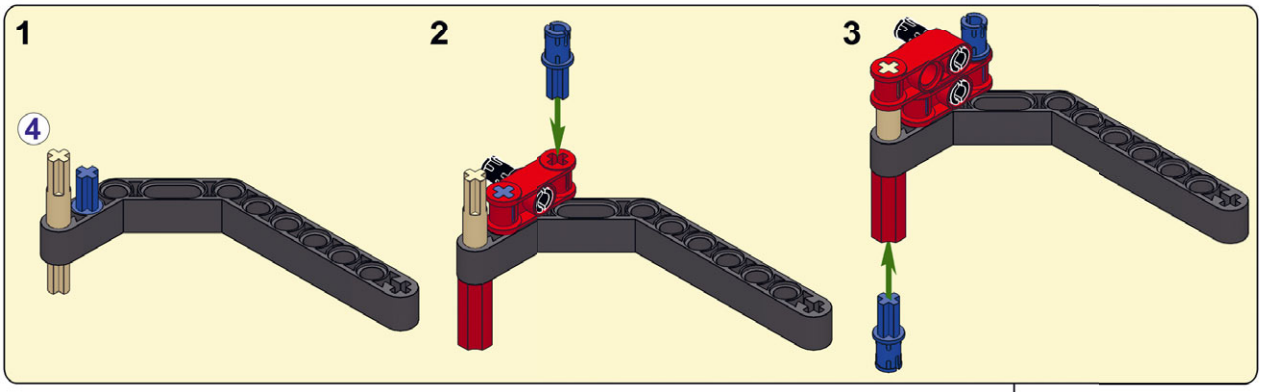
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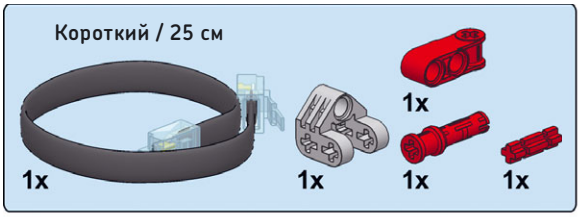

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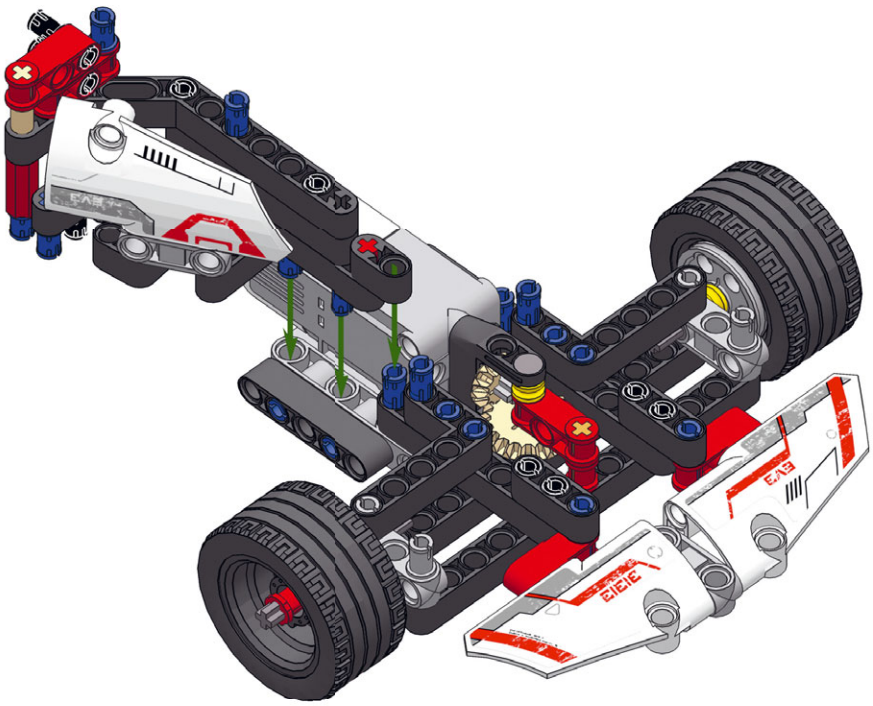

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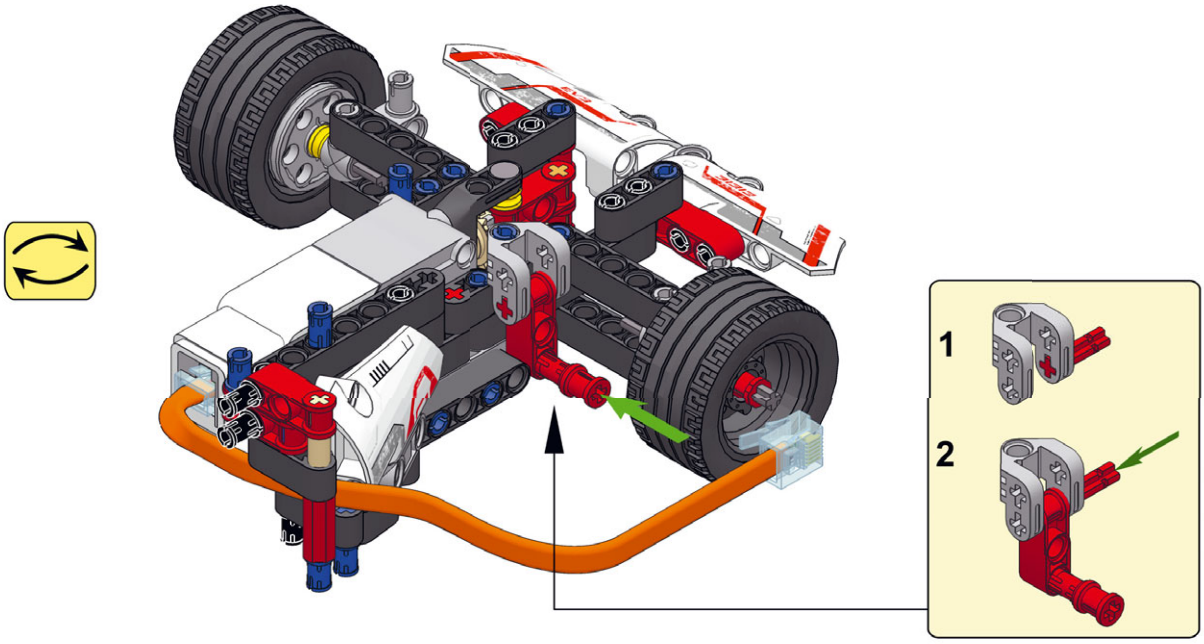

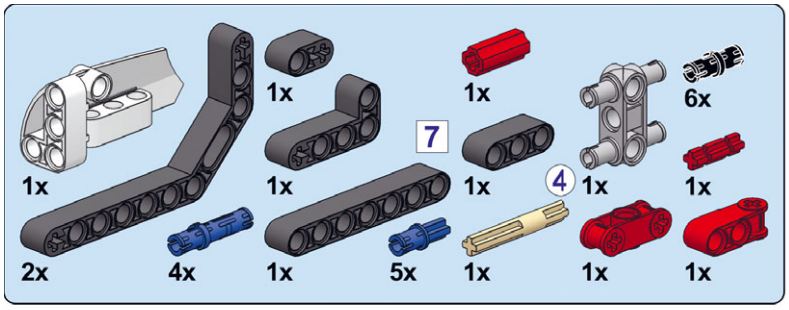
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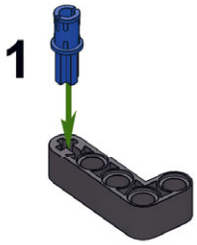
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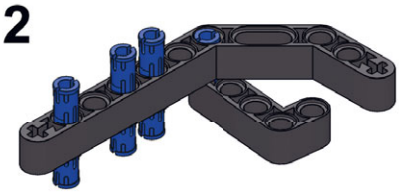
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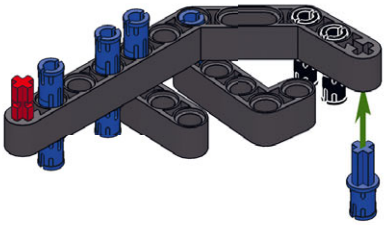
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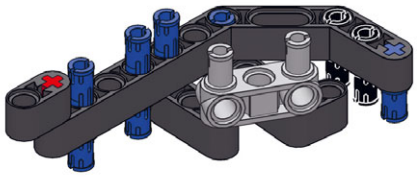
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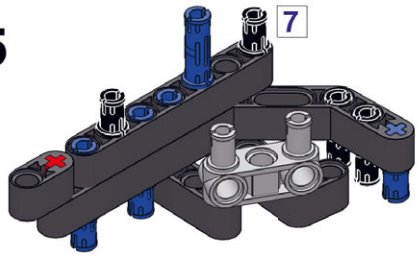
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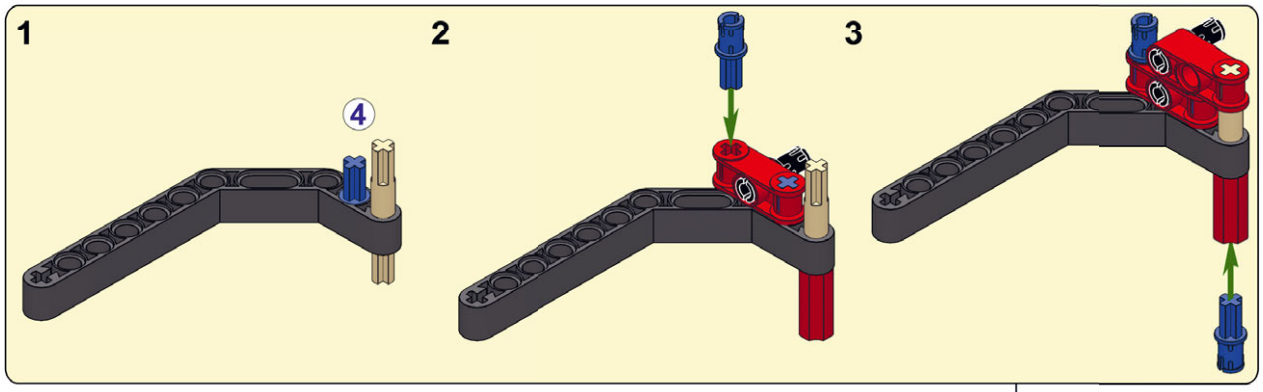
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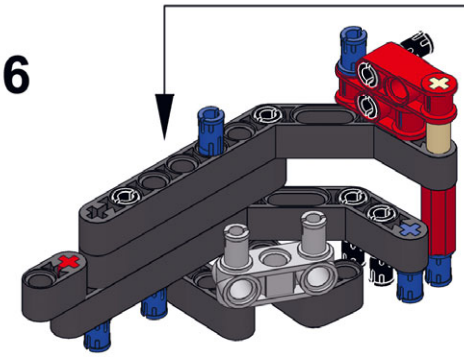
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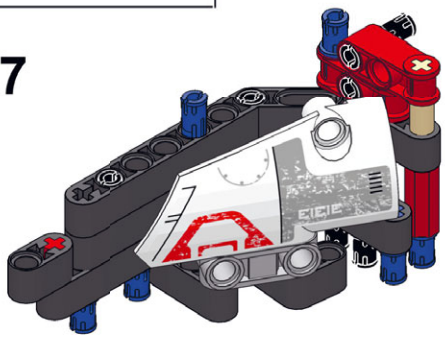
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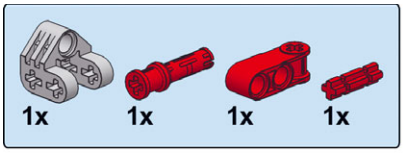

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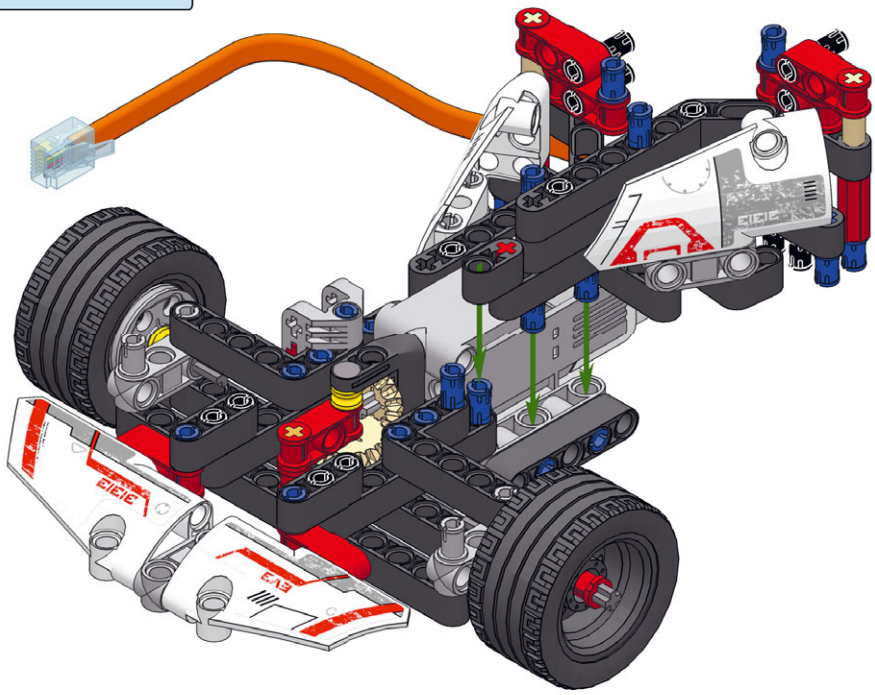

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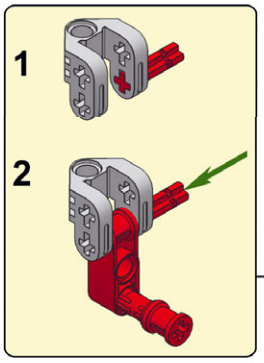

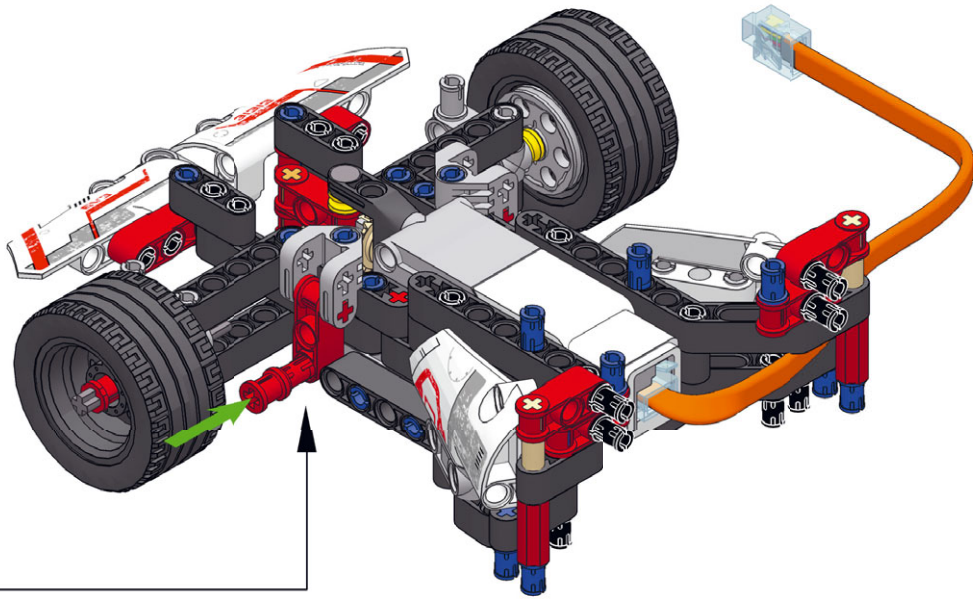

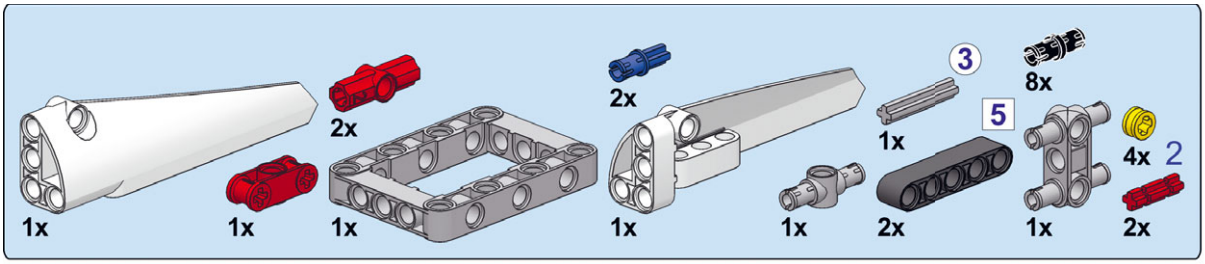

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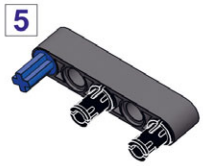

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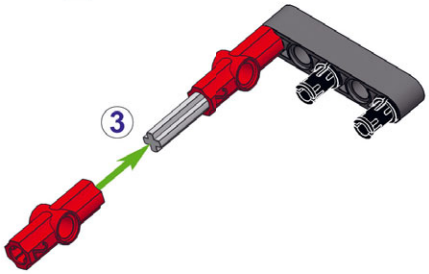

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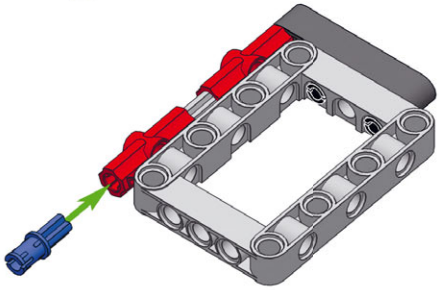

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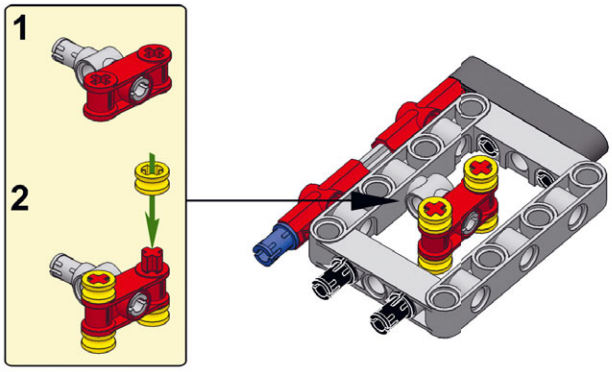

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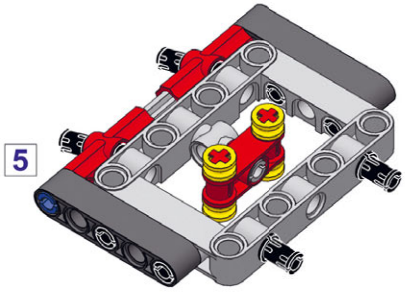

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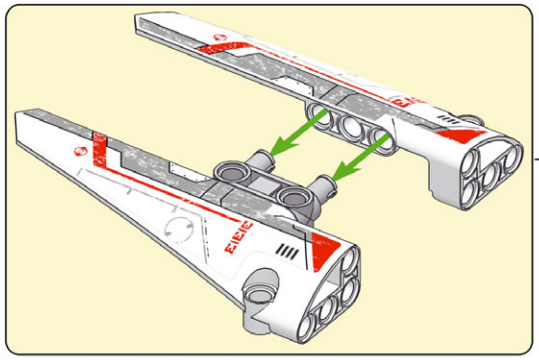

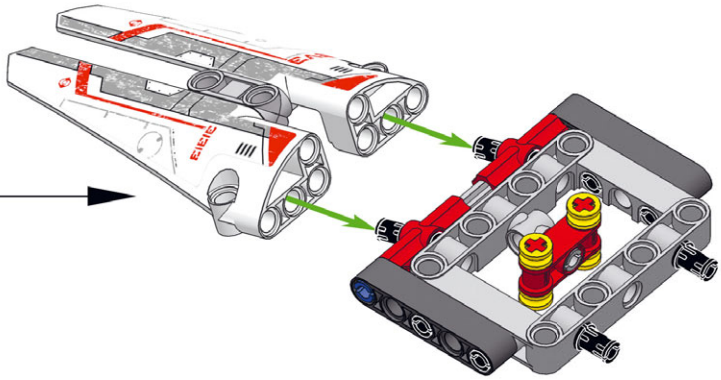

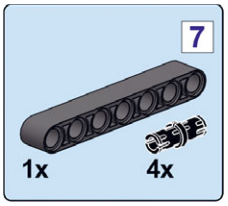

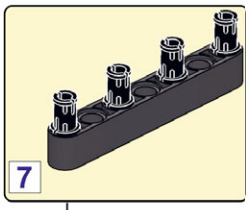

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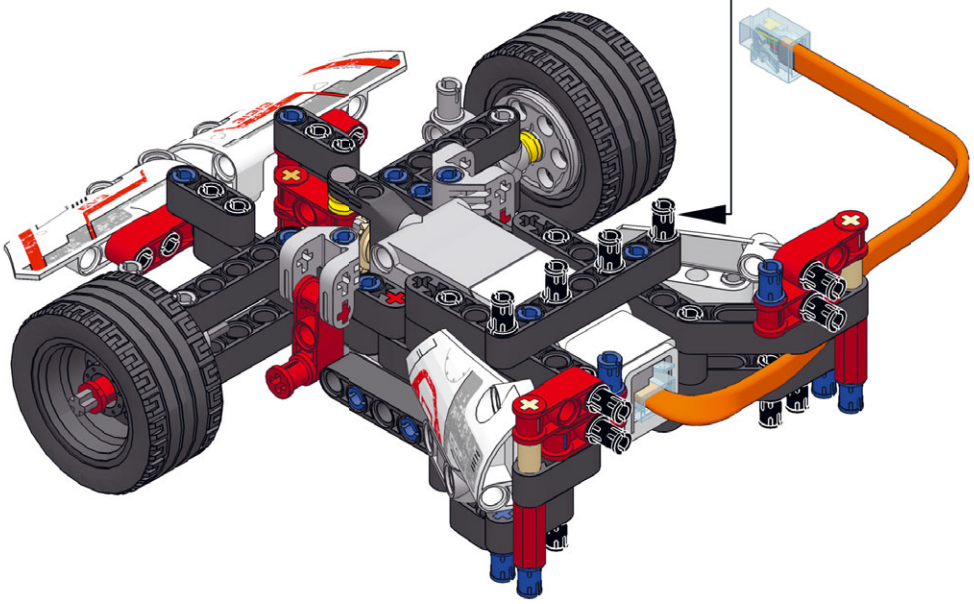

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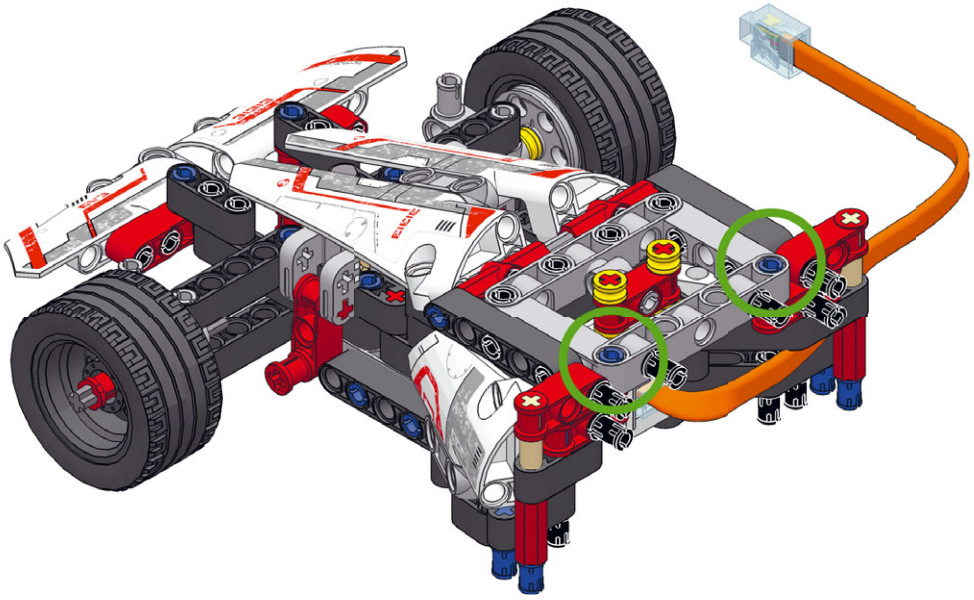

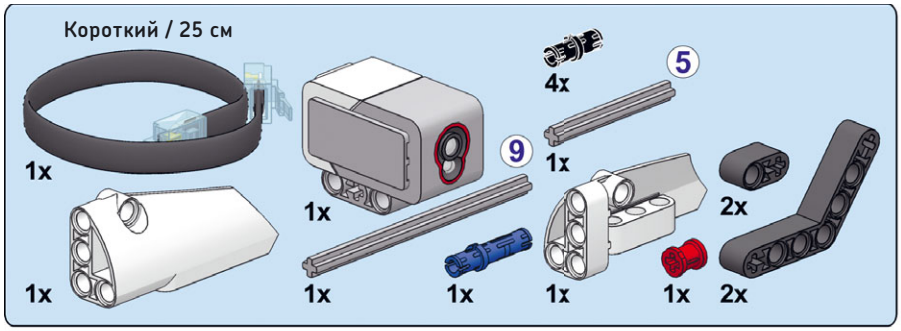

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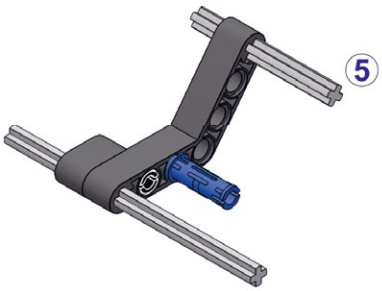

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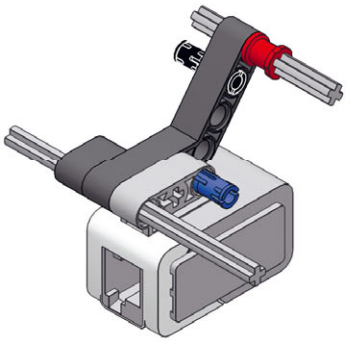

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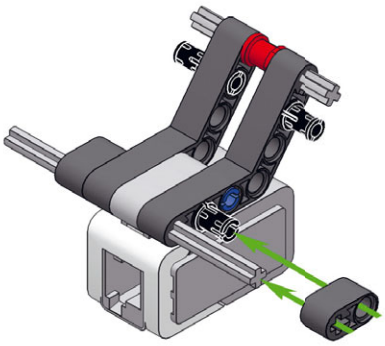

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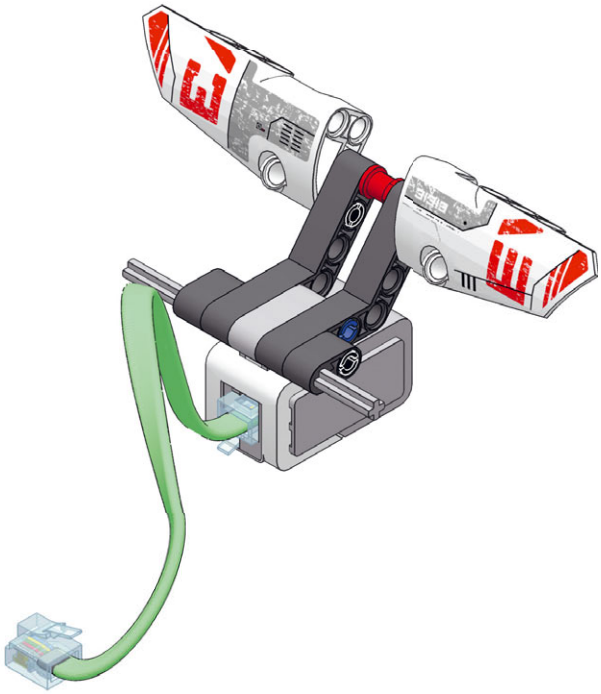

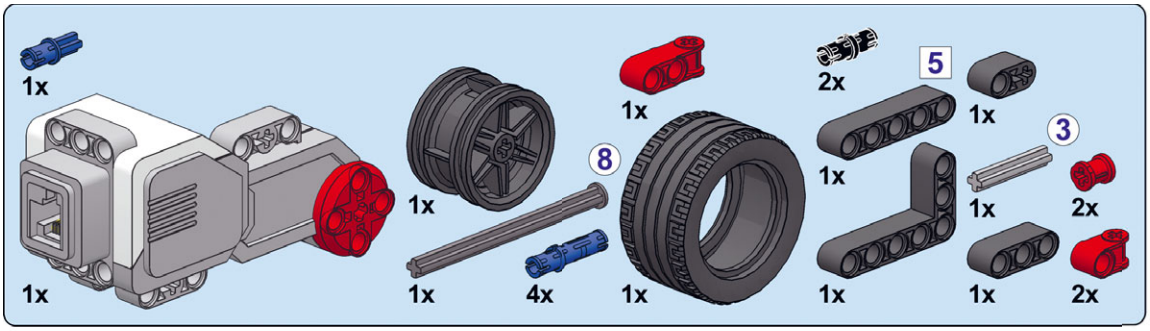
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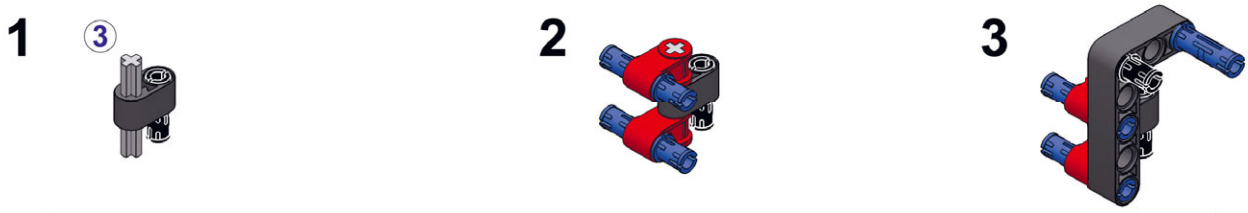
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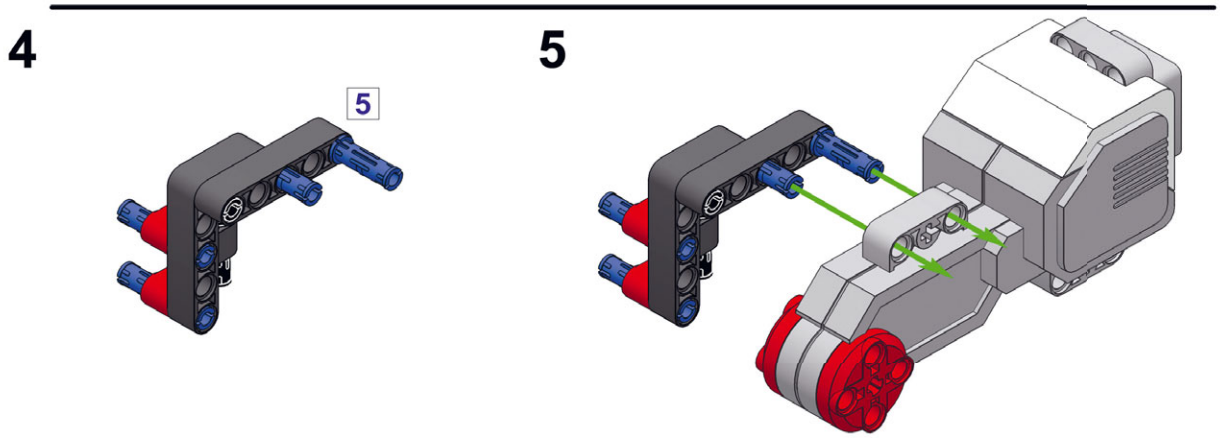
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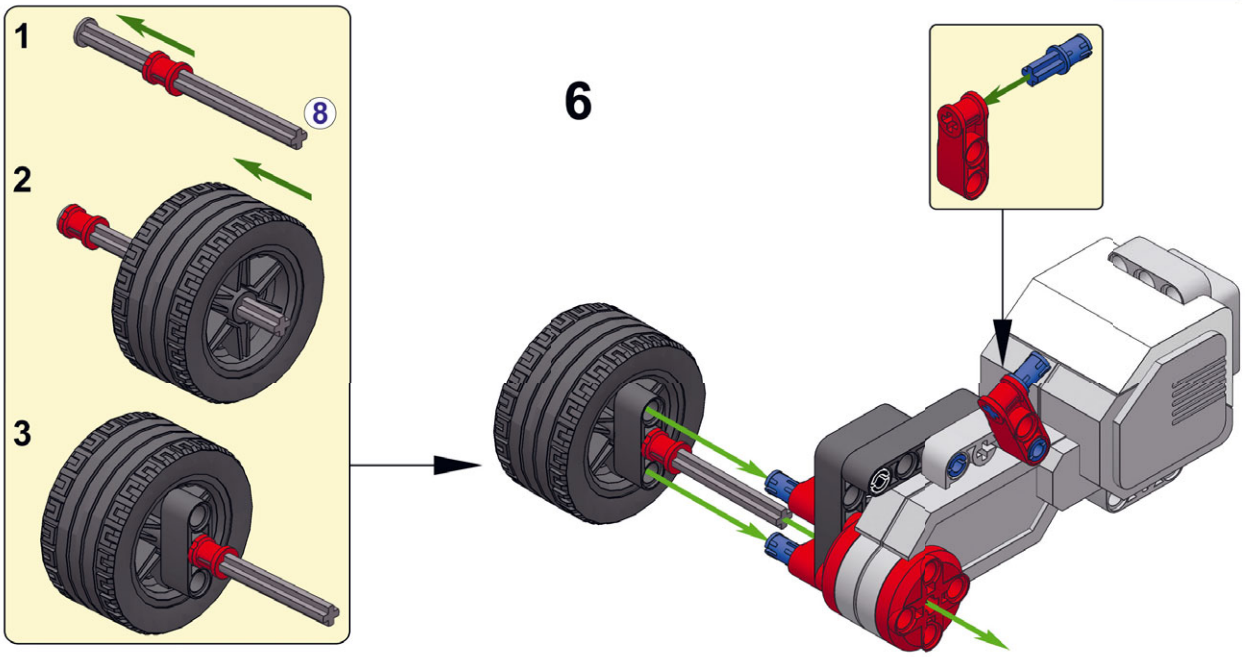
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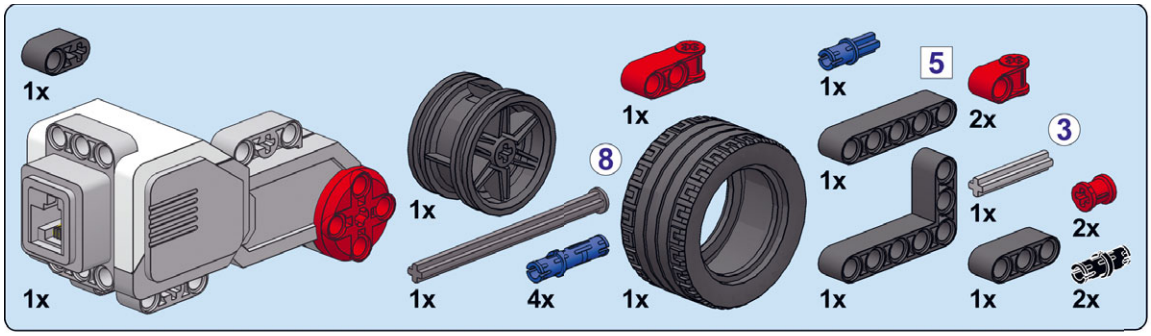

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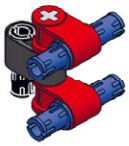

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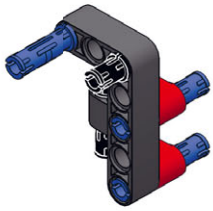

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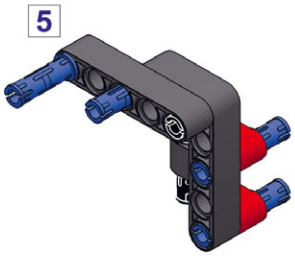

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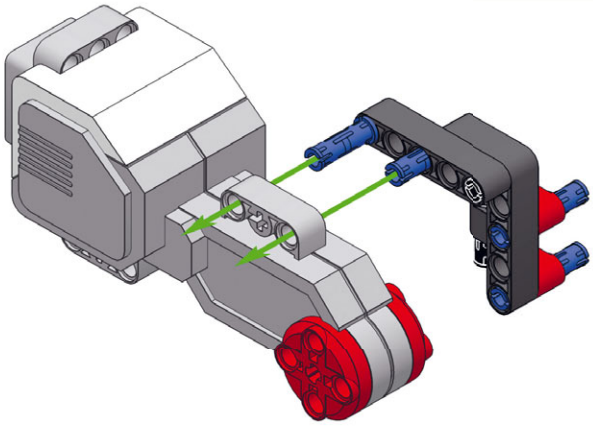

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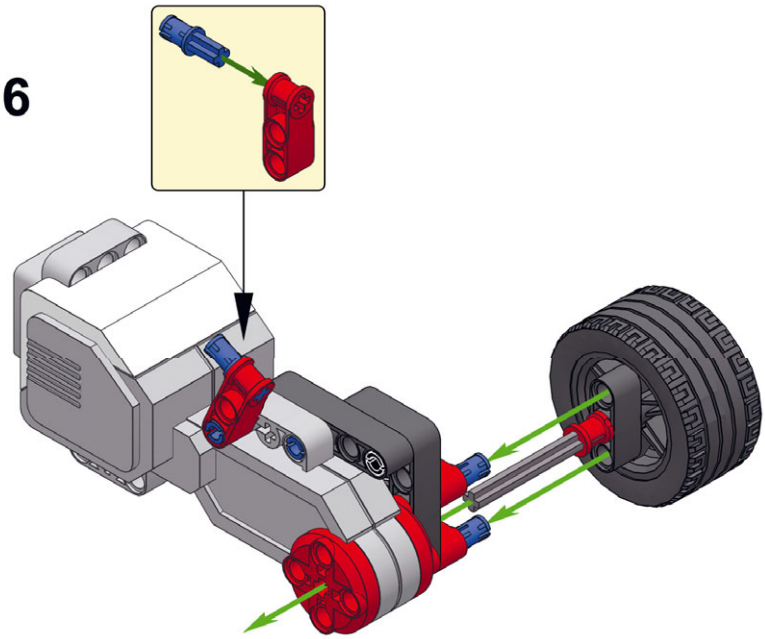

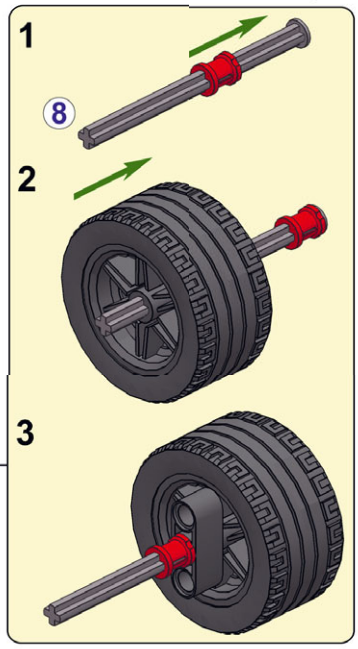

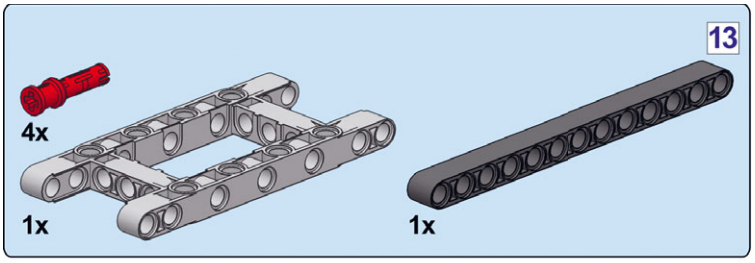

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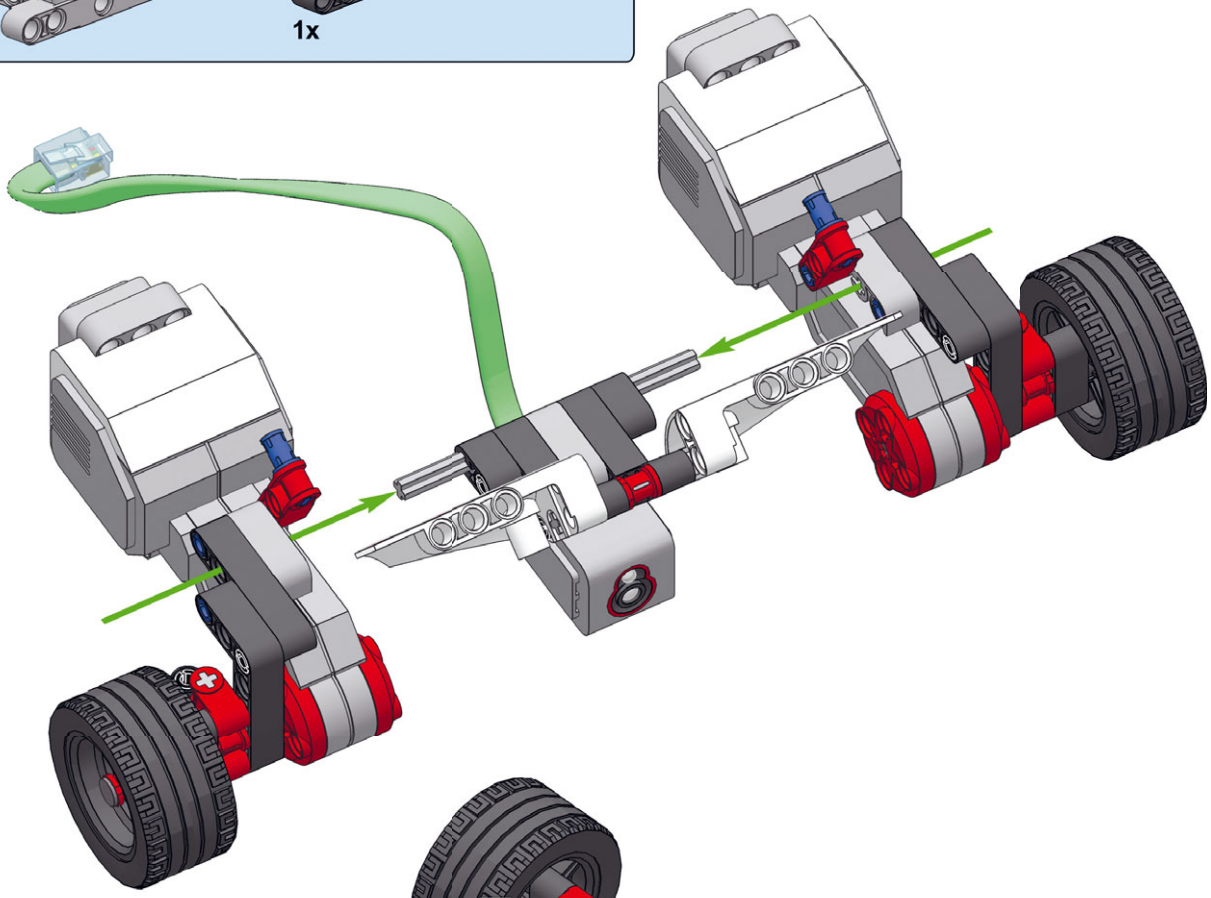
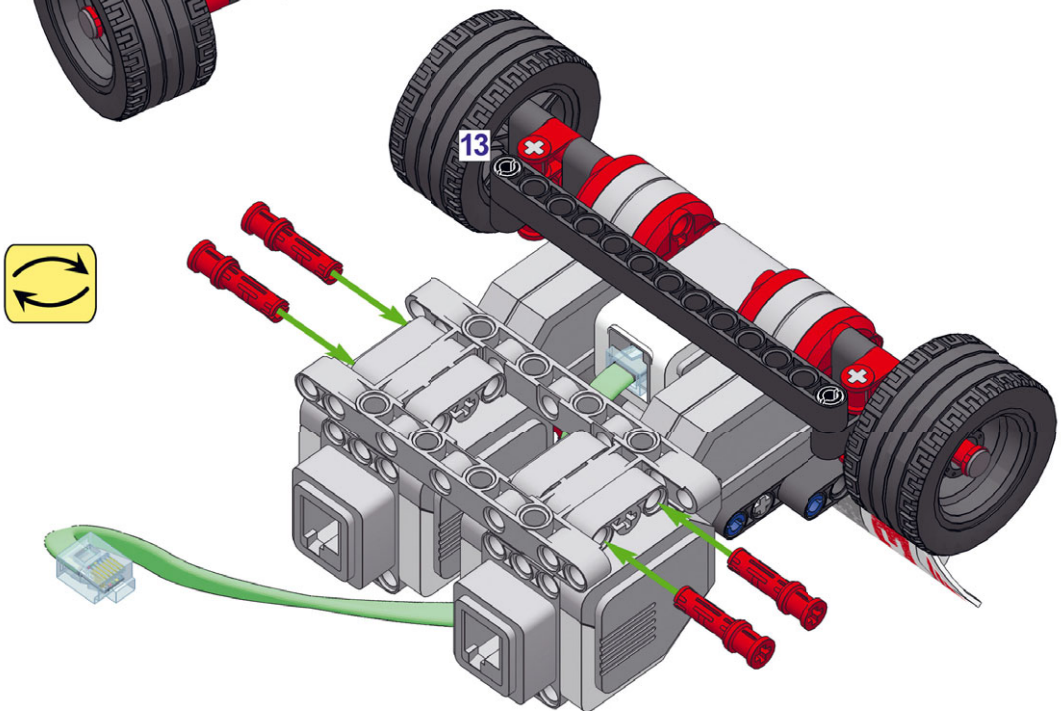
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