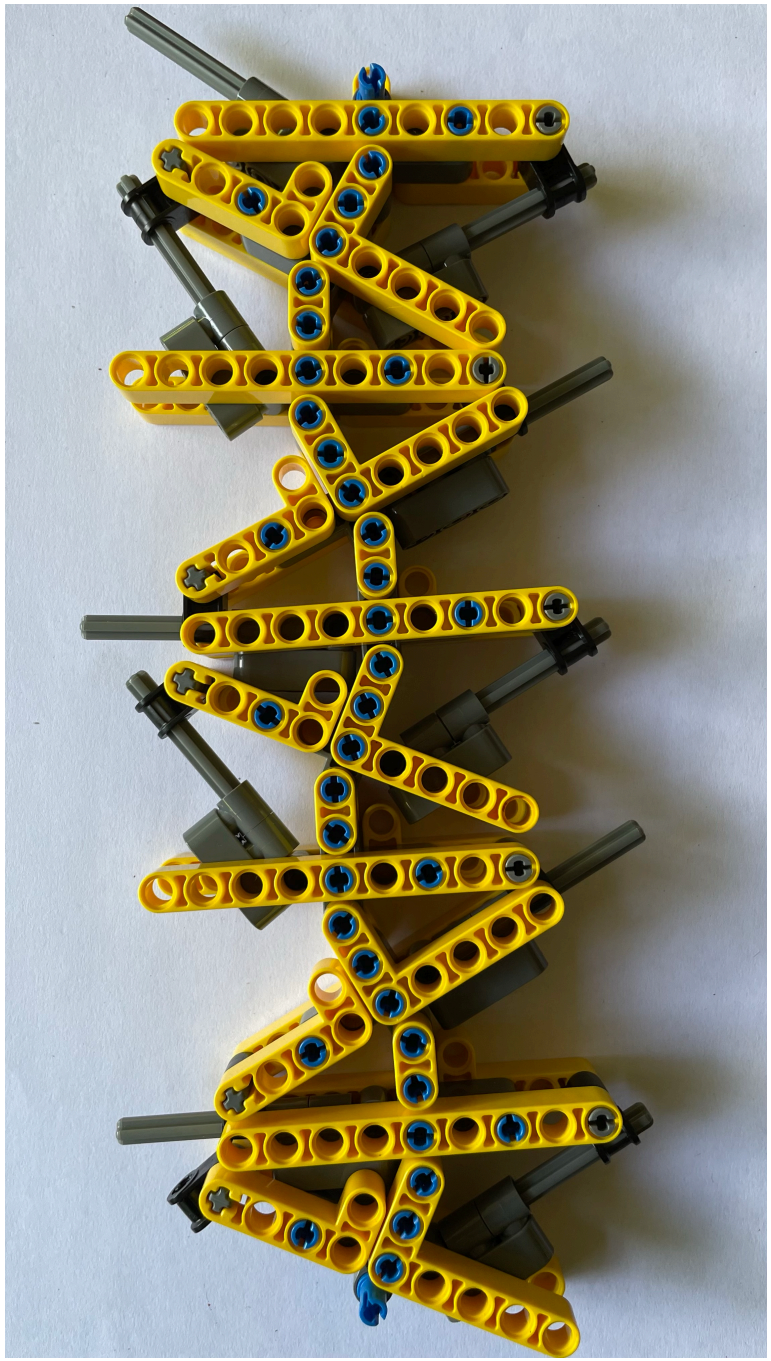
Stabilized ‘fish spine’

Frank van der Most

26 August 2024



If you paid anybody for this document,

then you wasted your money,

because it is available for free.

BUILDING NOTES

This is a demonstration mock to show an application of friction based stabilizers. See this page for an introduction.

In step 4, a regular black 2L friction pin is used. A stronger solution would be to use a blue 3L friction pin that connects with both bars above and below. However, with a 2L black pin, one can symmetrically use 3x3 pin connectors to add parts to the spine. With the 3L friction pin, that would not be possible.

If one uses the 3L friction pin, all ‘vertebra’ are the same. With the 2L friction pins, there are two versions. For clarity, in this manual, one version has one red liftarm, the other has only yellow liftarms.

Making the spine with the 2L friction pin, it is better to leave out the light bluish grey connector in steps 17, 21 and 24 (and so on). That connector creates extra friction. So much so that the 2L pins bend quite a lot. They might break after some/heavy use.

MORE INFORMATION

For more information about this model see

https://frankvandermost.com/mocs/stabilized-fish-spine/

Please leave any questions, suggestions, criticism or praise, in the comments at the bottom of that page, or write me at frank_drv@icloud.com

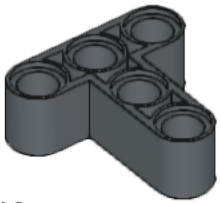
This model and others are also available at the Rebrickable website at

https://rebrickable.com/users/Frank_van_der_Most/

This manual was made with the Studio design software for the instructions, and Keynote to put it all together into a .pdf.

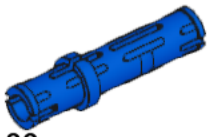
Parts list

10x
2780
Black



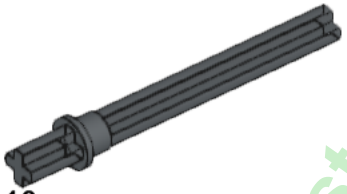
10x
60484
Dark Bluish Gray

9x
43857
Yellow

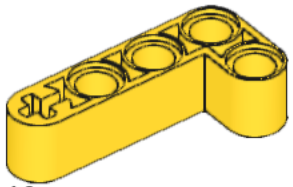


39x
6558
Blue

10x
6536
Black

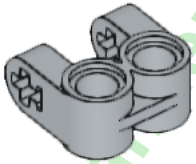


10x
32209
Dark Bluish Gray

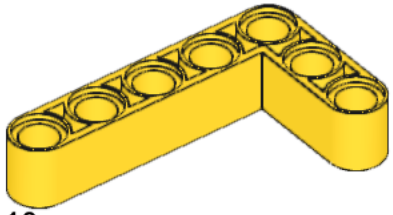


10x
32140
Yellow

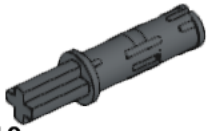
30x
15100
Dark Bluish Gray



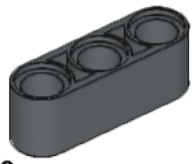
9x
41678
Light Bluish Gray



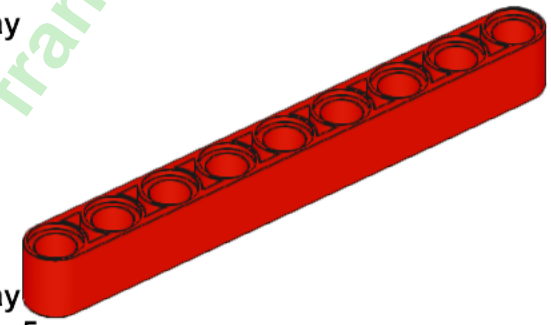
10x
32526
Yellow



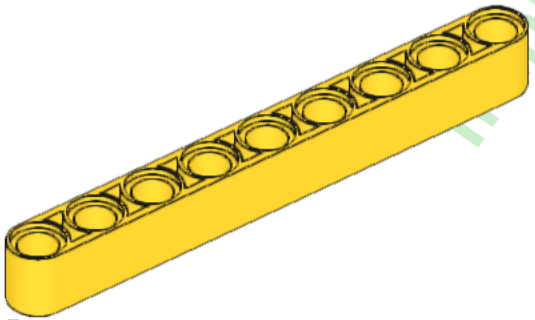
10x
11214
Dark Bluish Gray



10x
32523
Dark Bluish Gray



5x
40490
Red



5x
40490
Yellow

Building instructions

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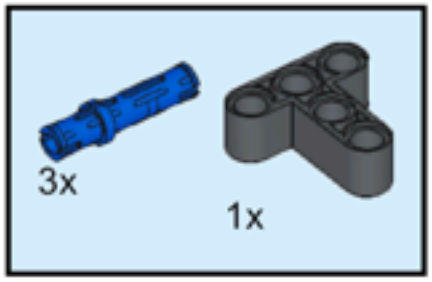

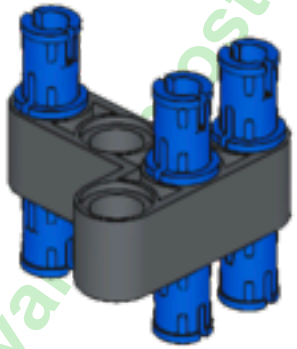

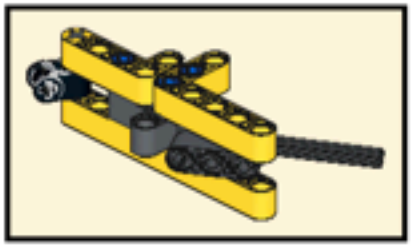

5x

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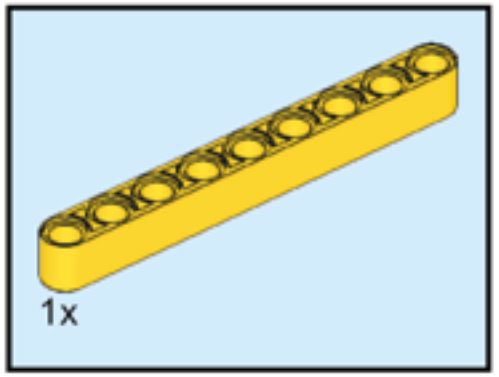

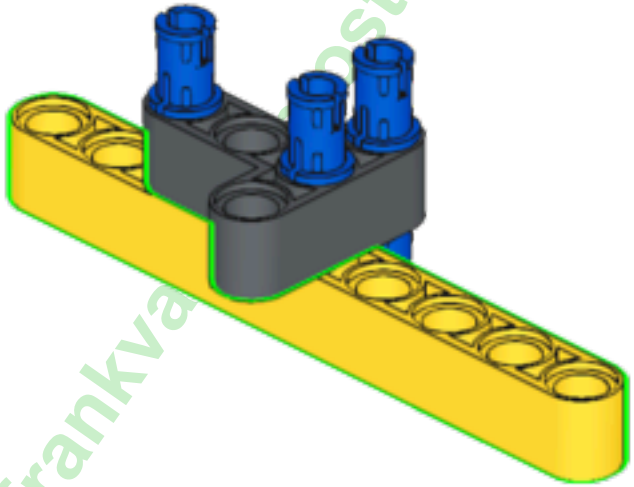

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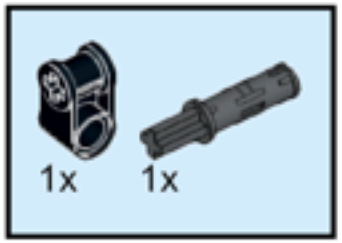

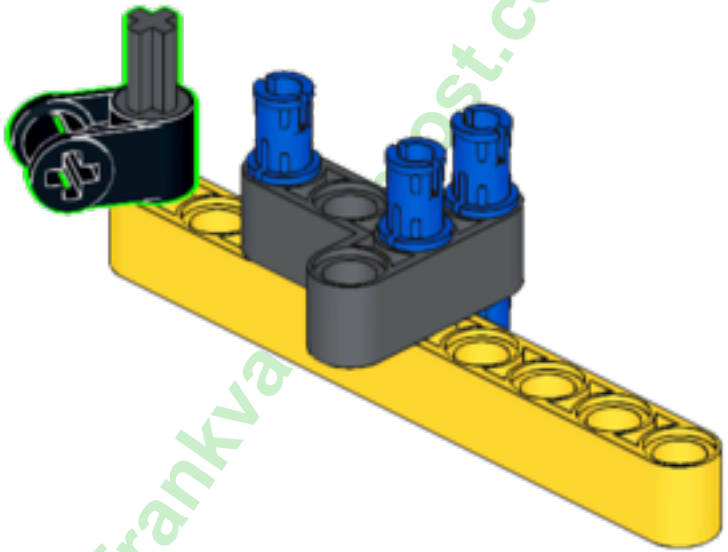

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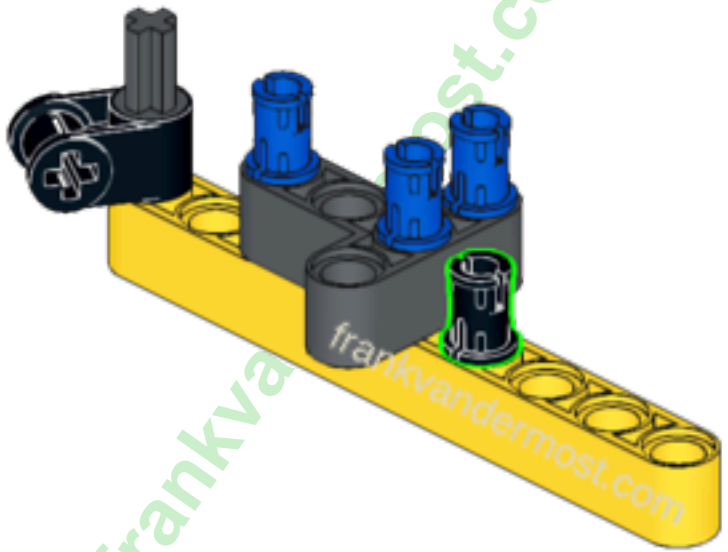

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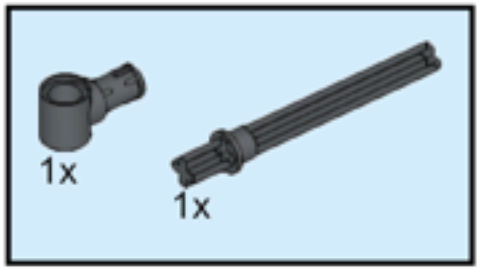

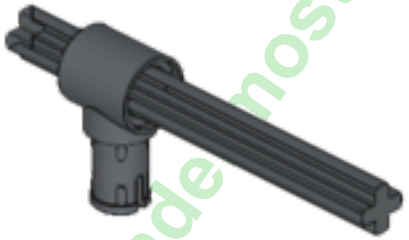

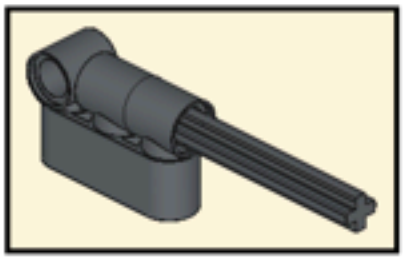

10x

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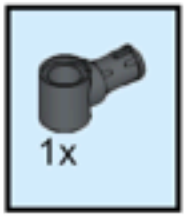

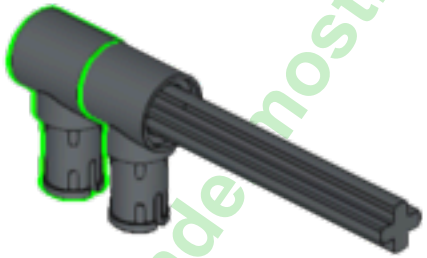

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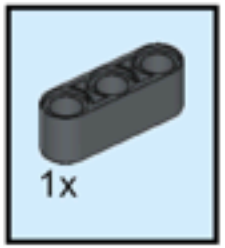

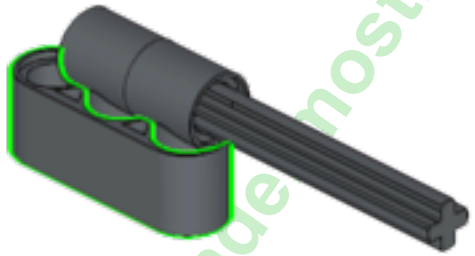

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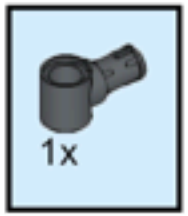

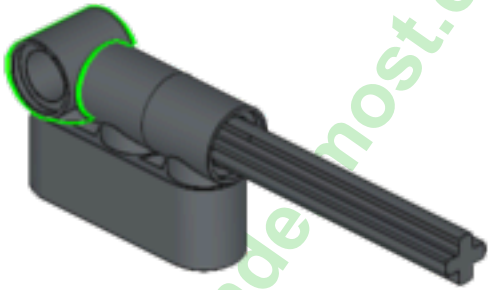

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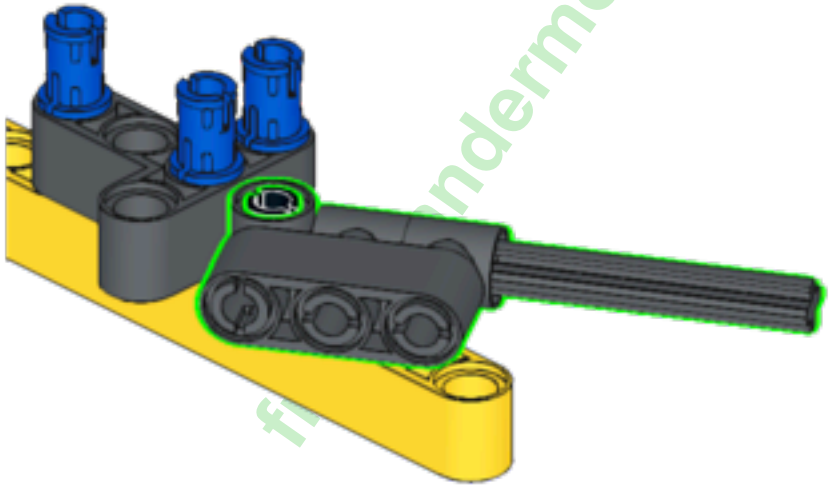

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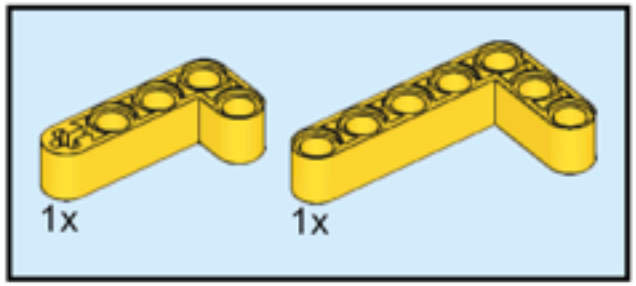

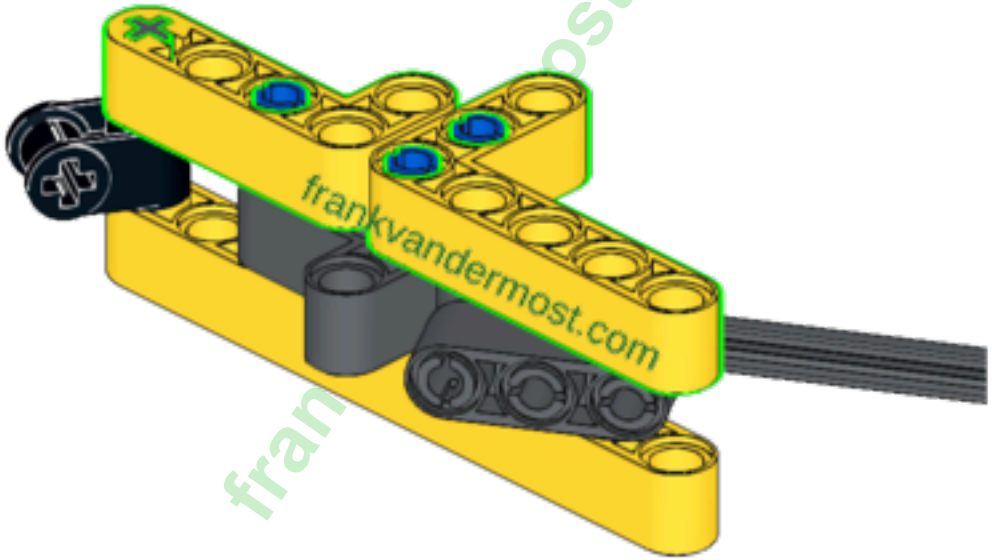

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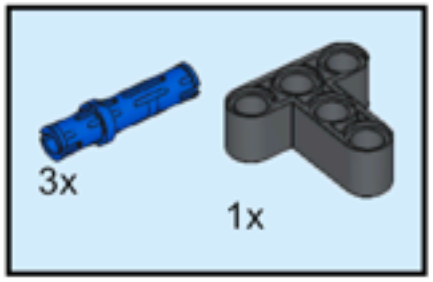

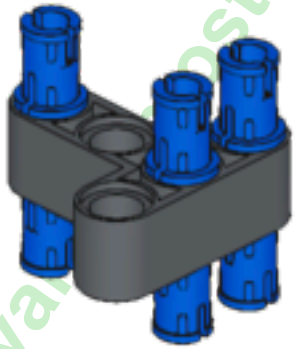

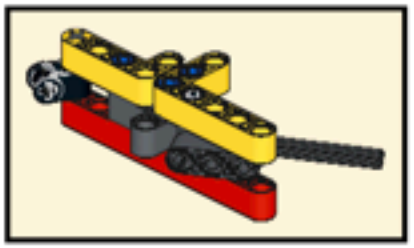

5x

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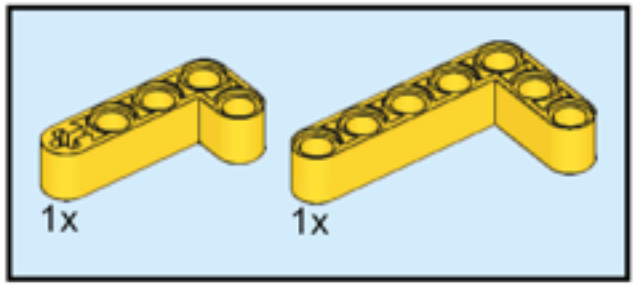

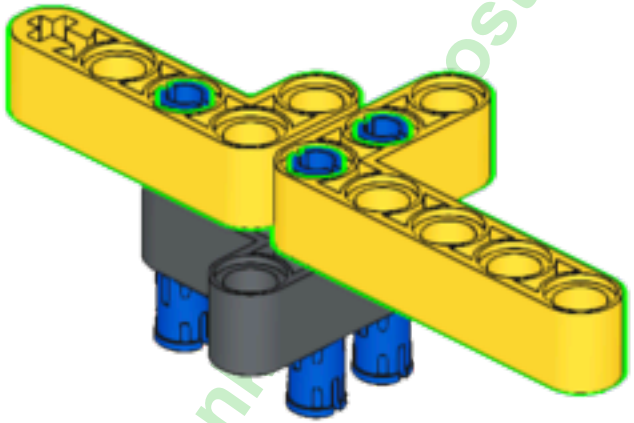

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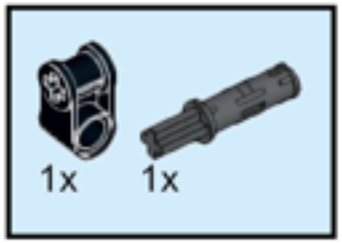

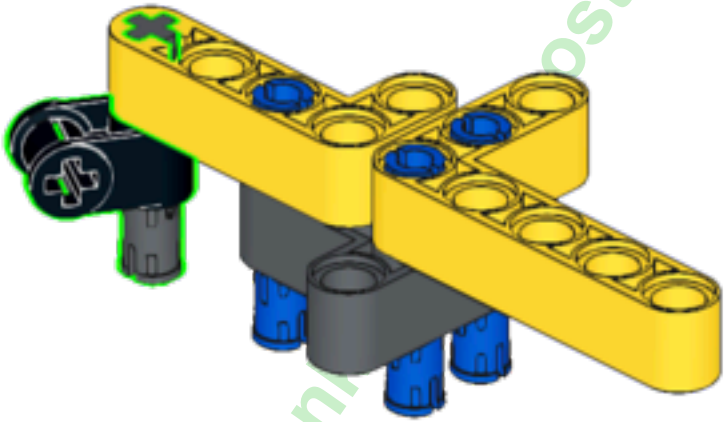

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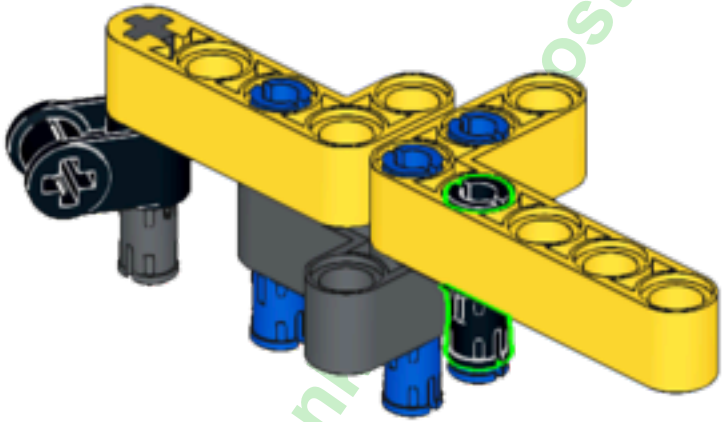

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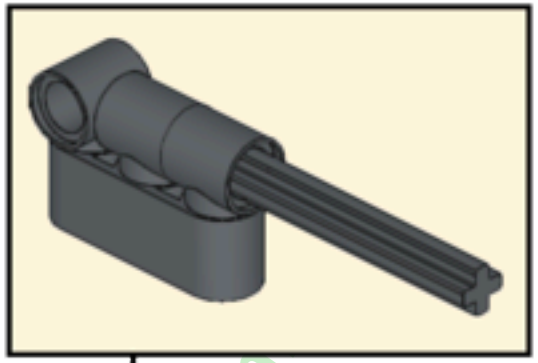

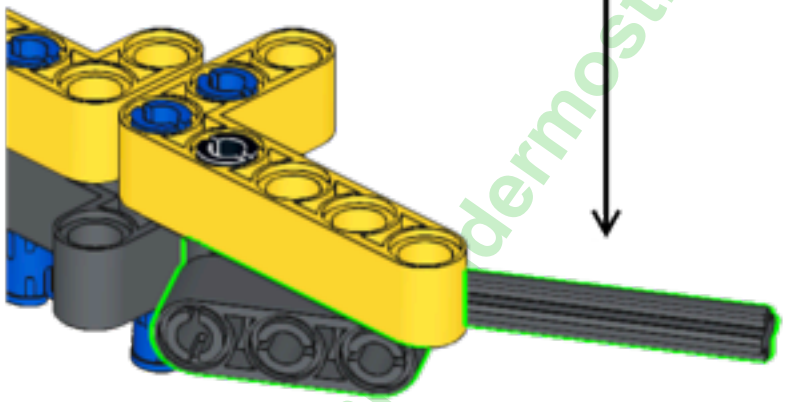

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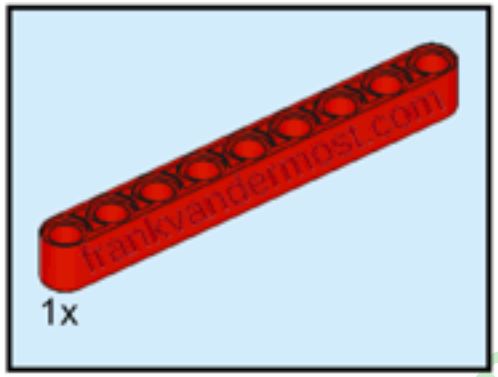

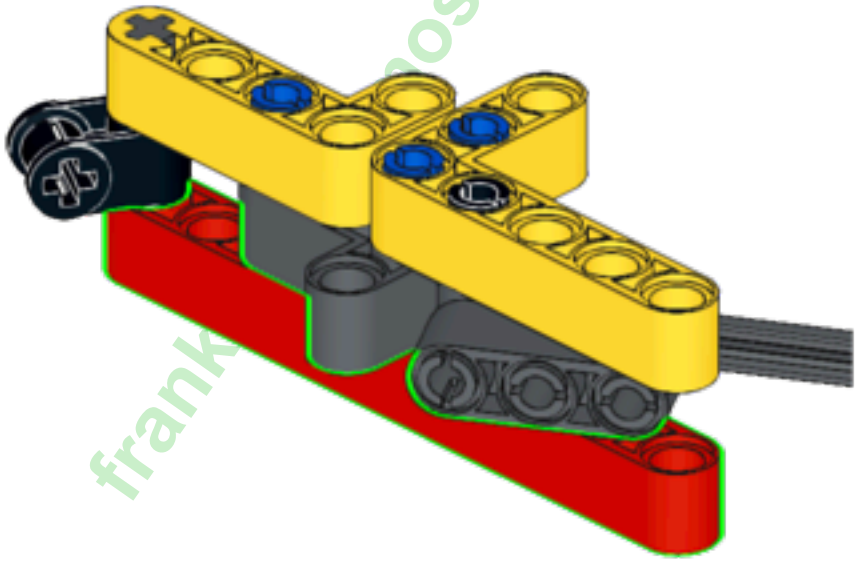

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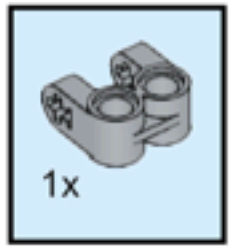

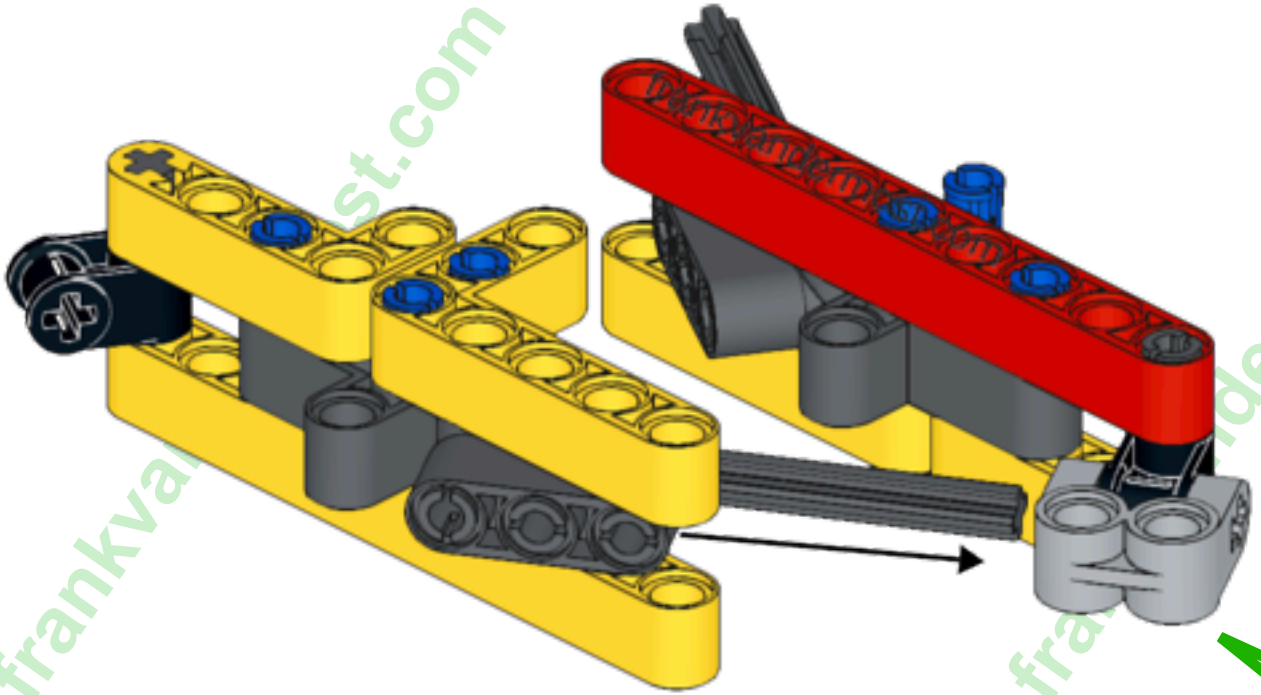

Leave out the connector for less friction

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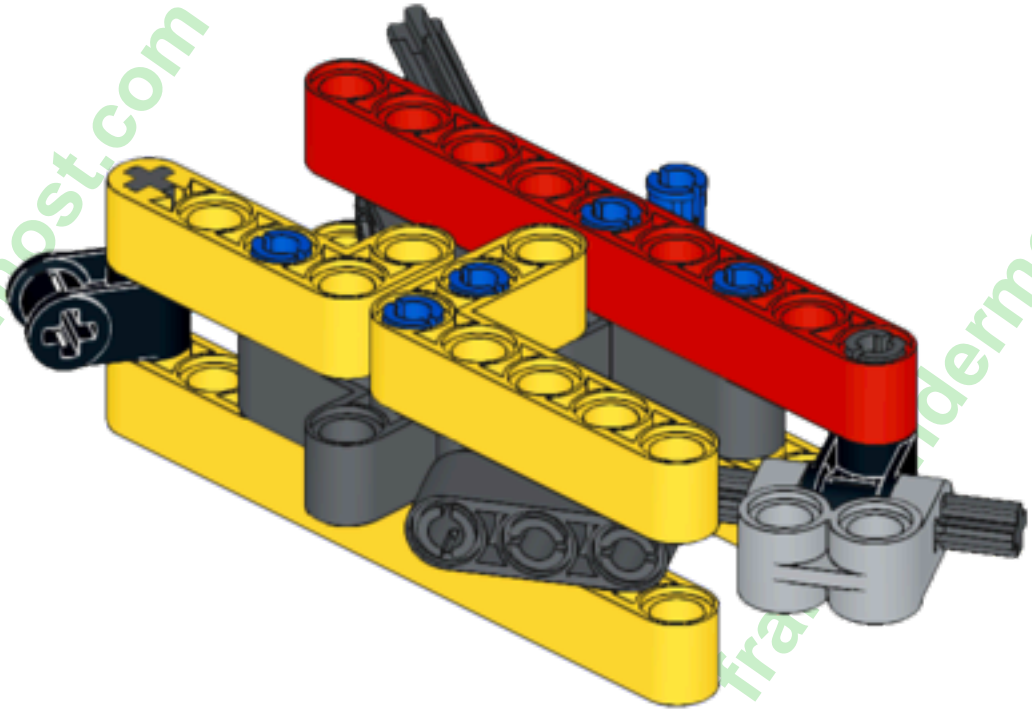

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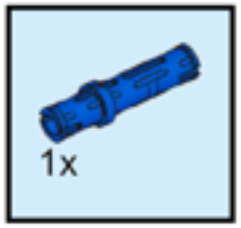

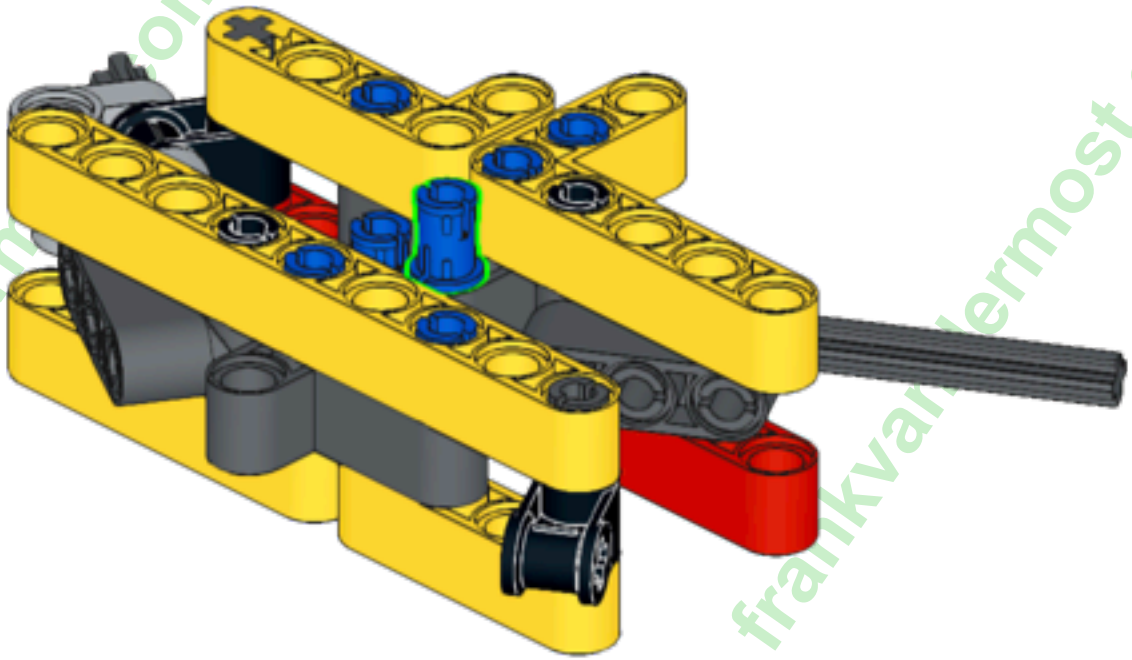

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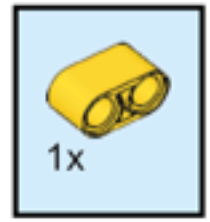

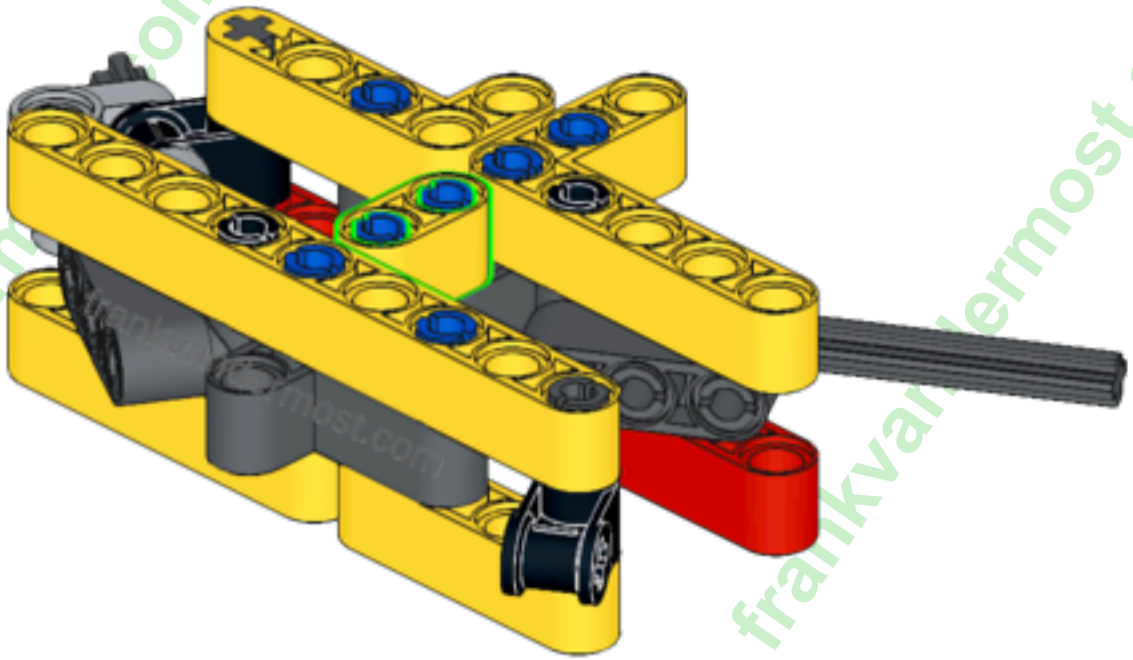

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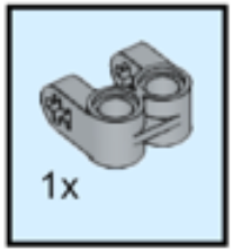
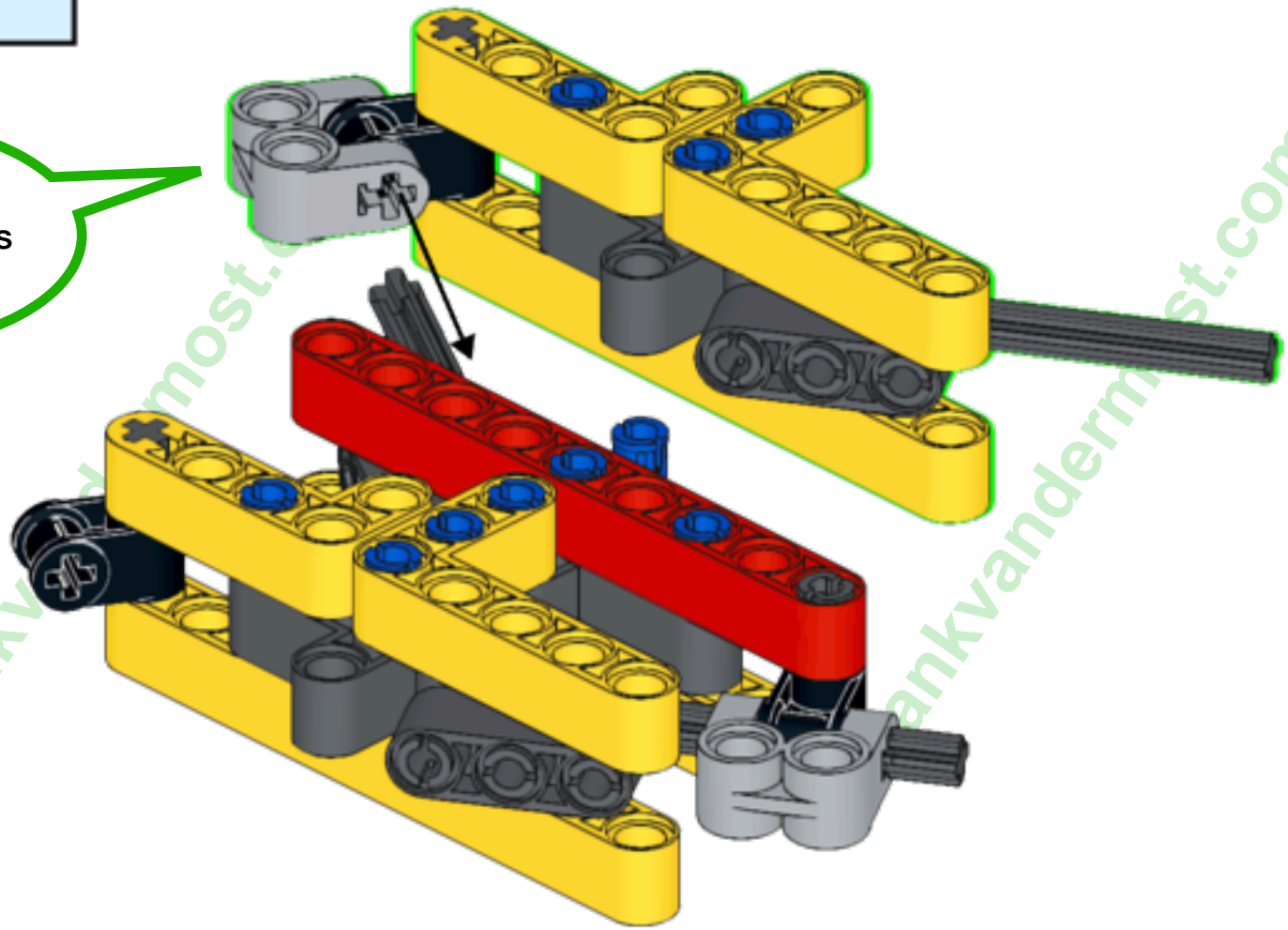


Leave out the connector for less friction



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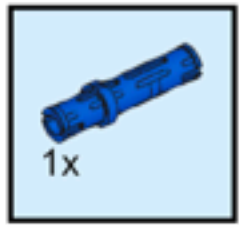

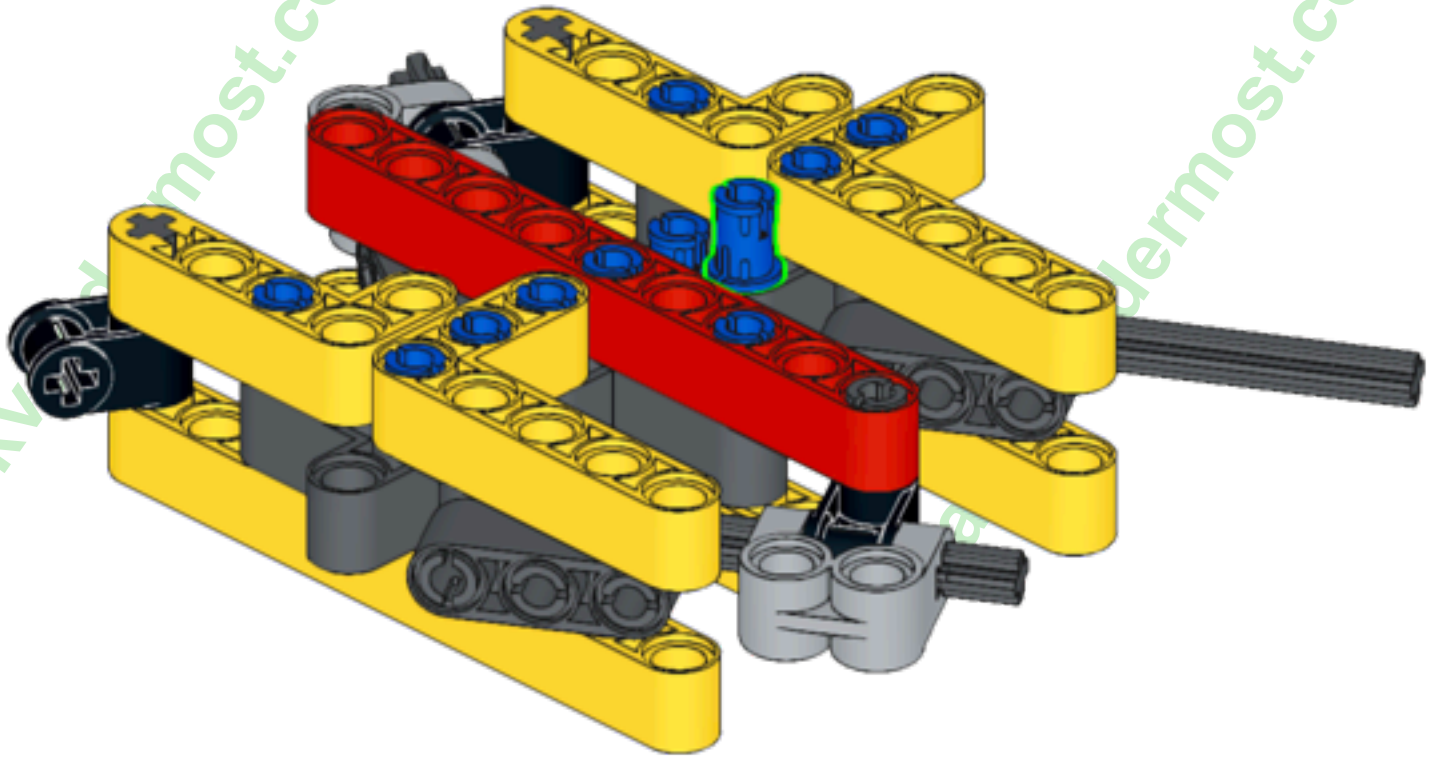

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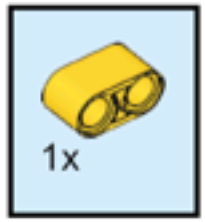

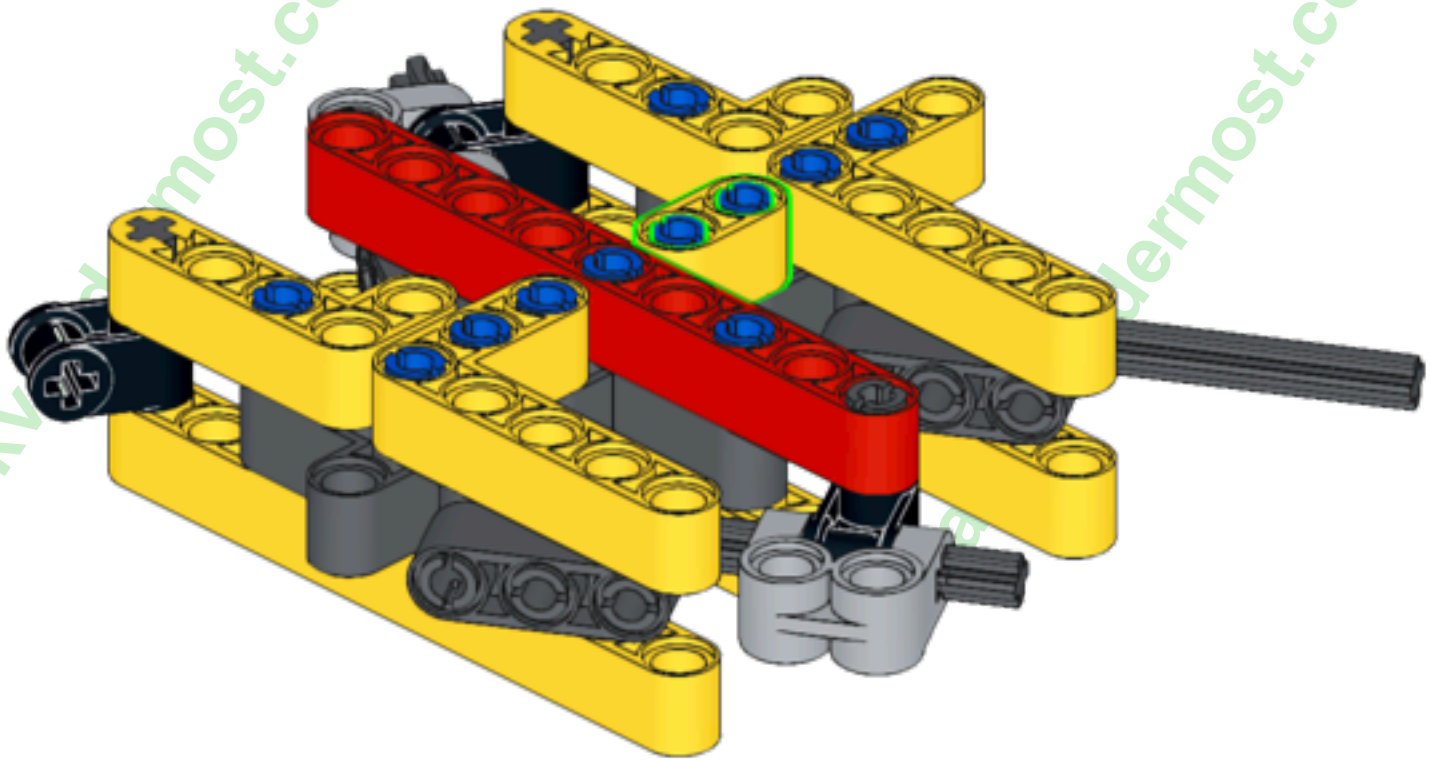

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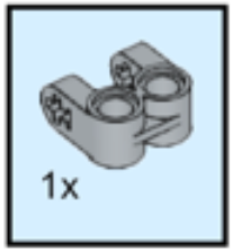

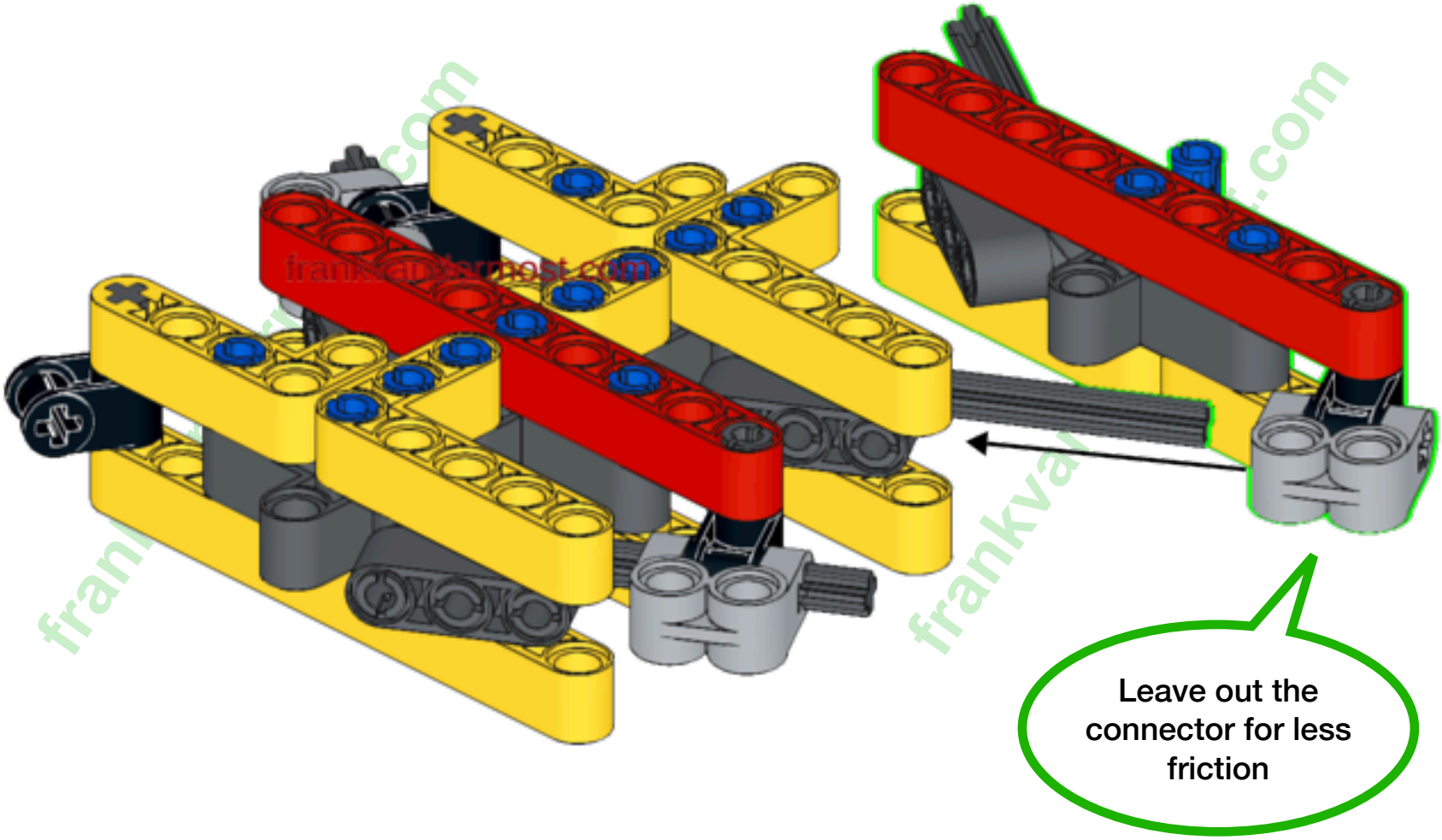

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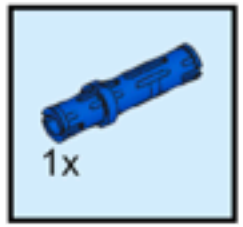

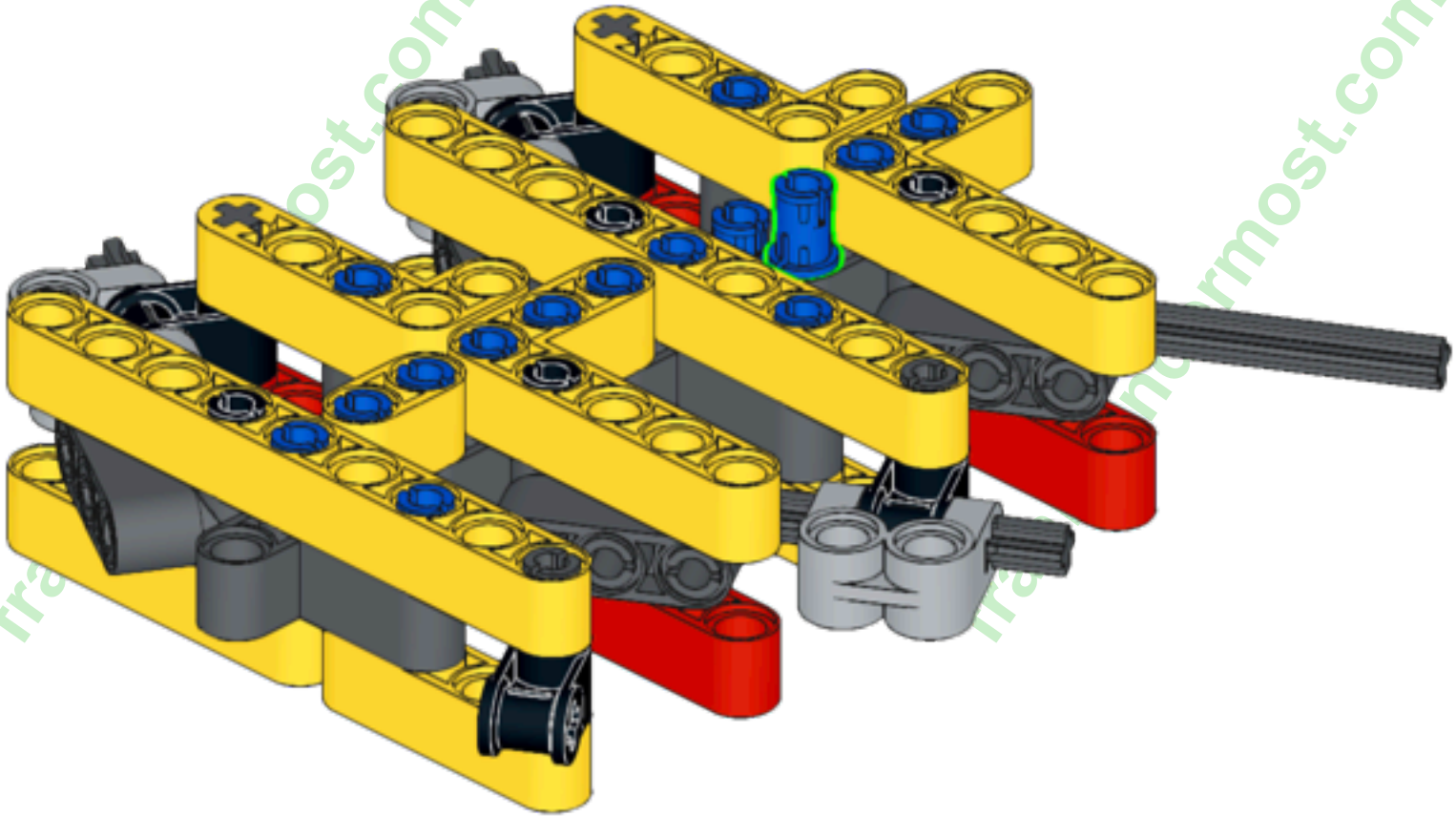

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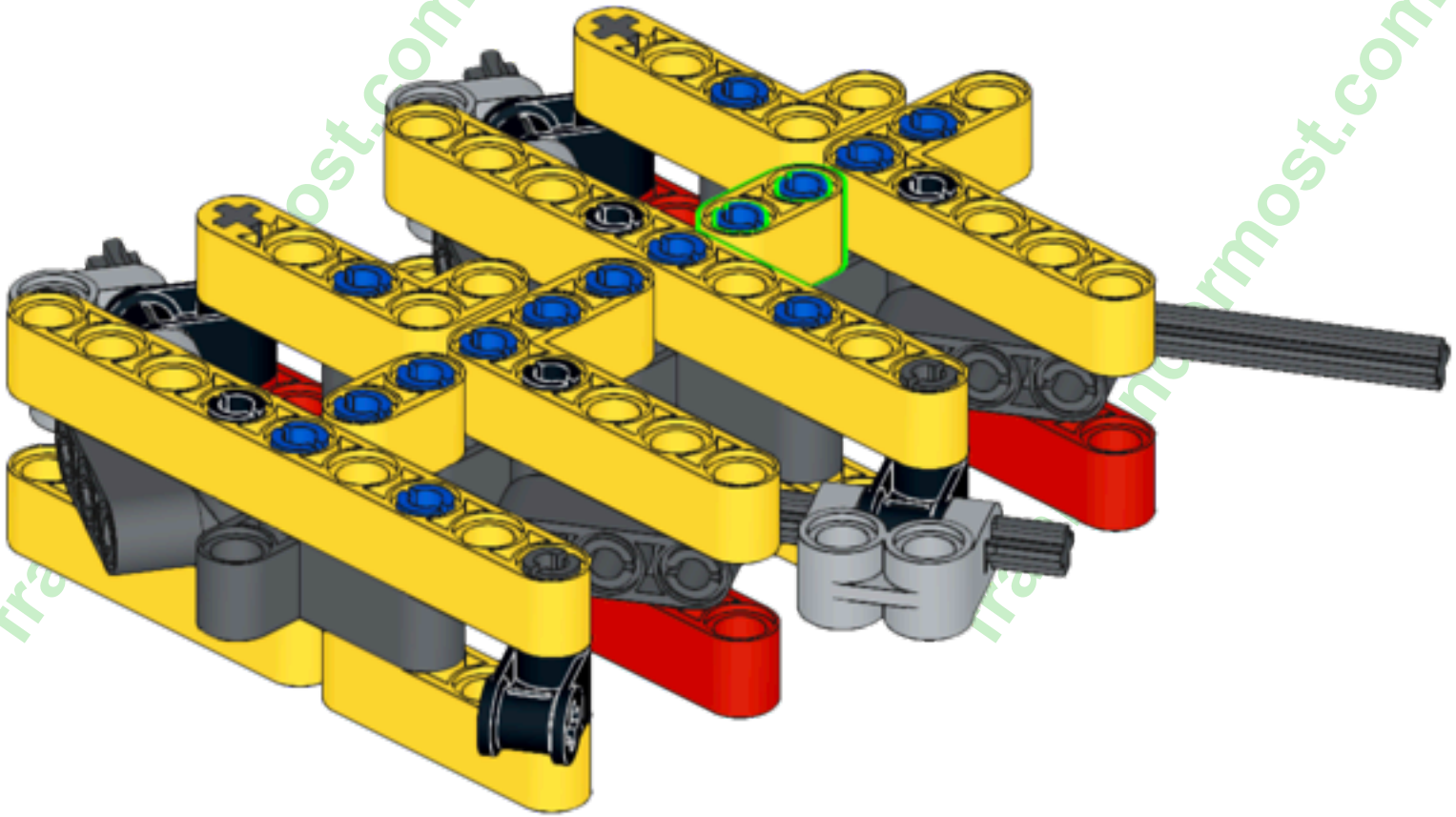

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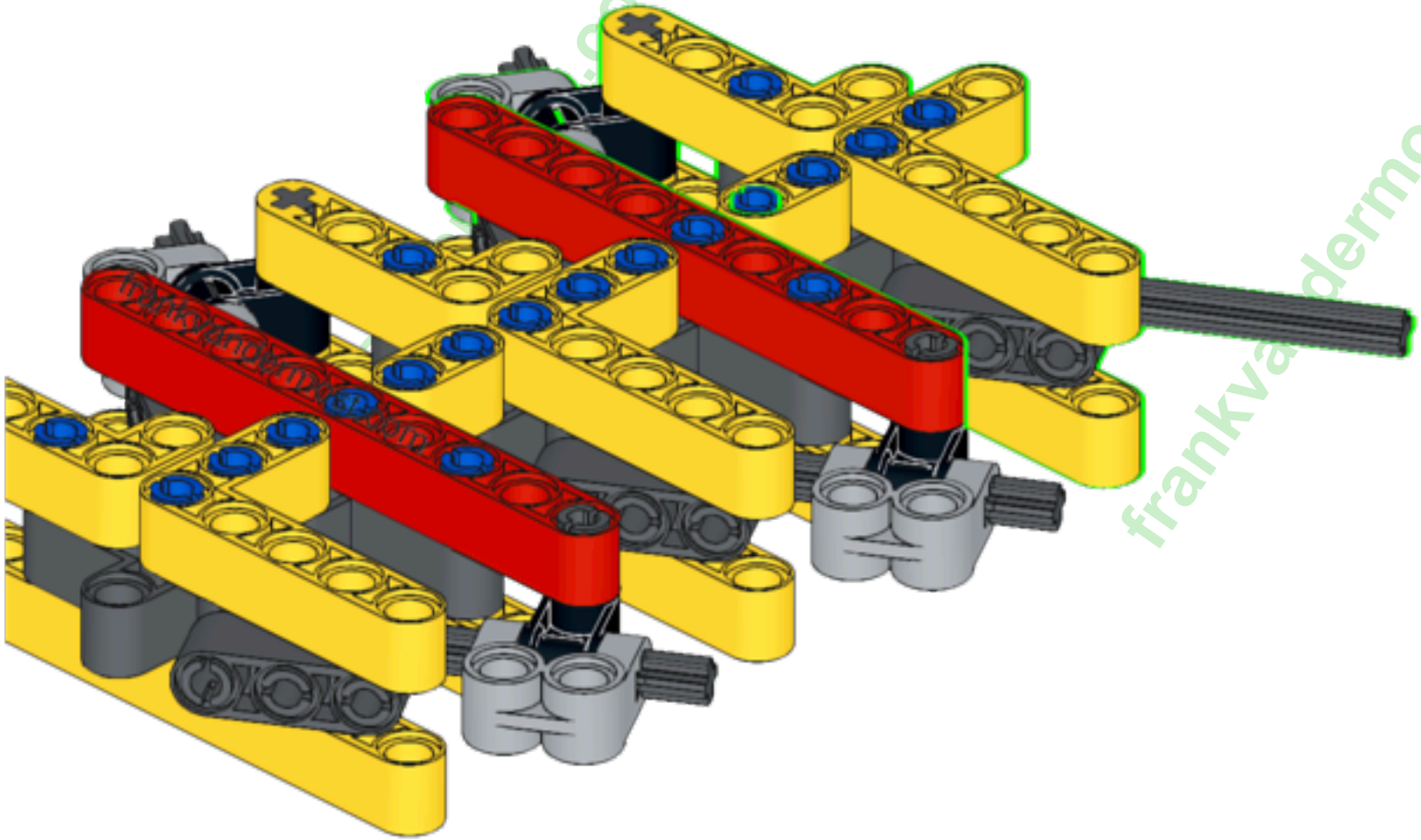

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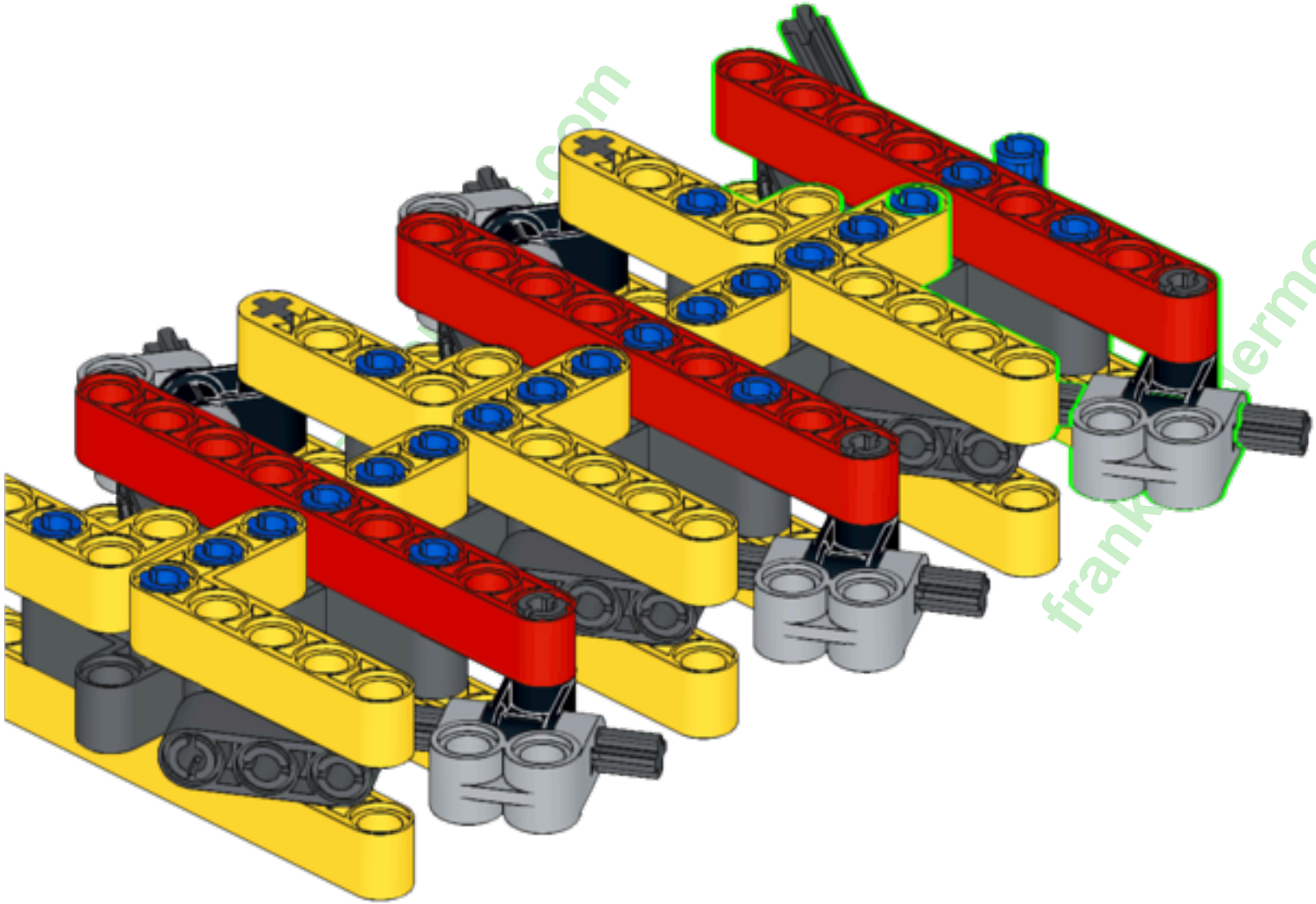

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