

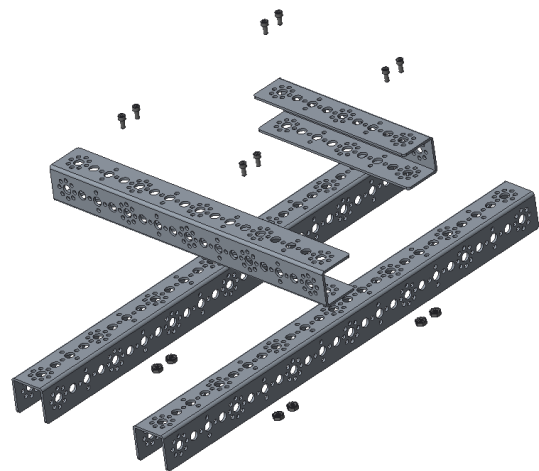


Robot Assembly Guide

Images from Creo can be used to create an assembly guide for putting your robot together. The guide can be useful if a mechanism needs to be rebuilt during a competition, if you hope to rebuild a similar robot or subsystem in future seasons, or if you are making your design available for outreach purposes.

There are a number of ways Creo can provide visual aids for an assembly guide. Exploded drawings, which were explained in *PTC Pointers #5*, show the required parts for a subsystem and their relative positions. An assembly plan may need to go deeper than this to show the sequence of assembly, similar to a *Lego* instructional assembly guide.

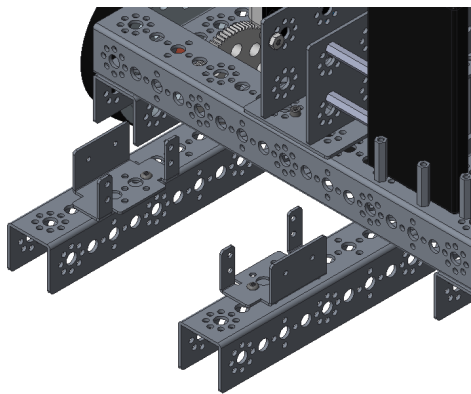
For example, the demonstration robot design used throughout *PTC Pointers* attaches the mechanism to the chassis at the servo brackets. An assembly guide can instruct users to secure the brackets to the chassis before putting the servo motors into the brackets so that the screws holding the bracket to the chassis channel pieces are available to be more easily fastened.



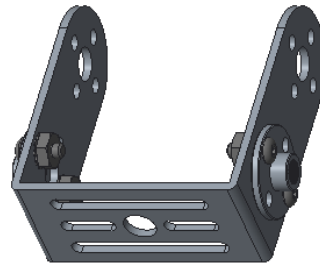
Exploded drawing of the chassis

The assembly guide can demonstrate the most efficient sequence through a series of images:

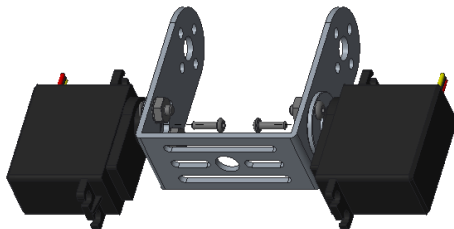
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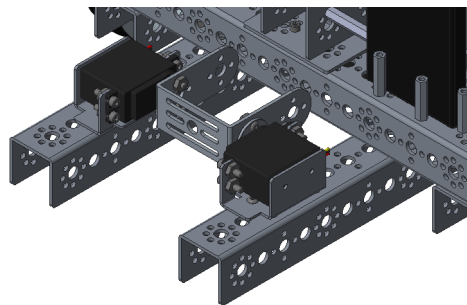
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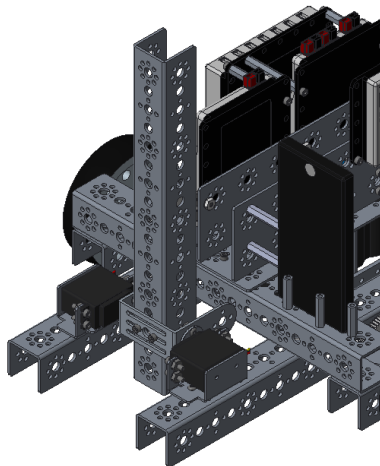
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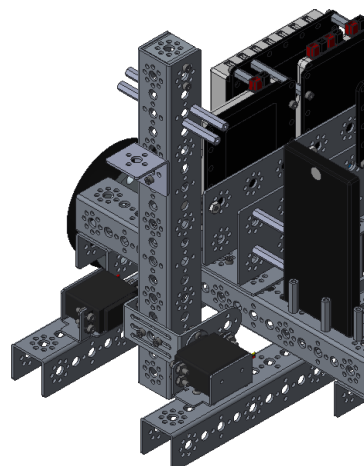
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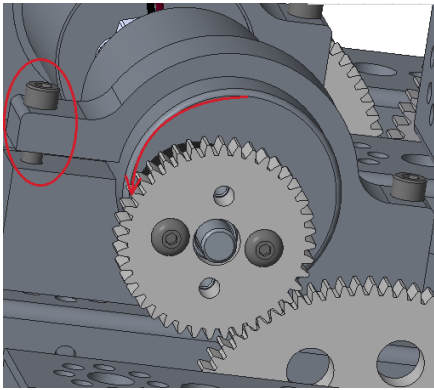
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There may be steps in the assembly process that need more explanation than what an exploded drawing can show. For example, the drive motors will likely need to be rotated in order to mesh the gears correctly. That may not be obvious from a picture or when assembling, leading users to think the spacing is wrong. Your assembly plan can make explain this step through visuals and written instructions.



After securing the motor bracket to the chassis and placing the drive motor inside the bracket, rotate the motor until the teeth of the drive gear mesh correctly with the teeth of the drivetrain gear. The gears should be aligned so that they don't slip, but not so tight that they grind.

When the gears are correctly aligned tighten the bolt that adjusts the bracket.

As you complete your assembly guide, pay close attention to other steps that may need more clarification, such as wiring.

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