EVEN IF XK2 had feelings, it wouldn’t mind being called flat-face; in fact, that would be a compliment! Take a look at Figure 5-1, which shows the sumo-bot we’re going to build in this chapter, to see what I mean.

Figure 5-1. Completed Zip-Bam-Bot Version XK2

Still retaining the trademark speed of the Zip-Bam-Bot design, XK2 uses this to assist a super-smooth, large slope covering its whole front—indeed, the slope is its “head!” However, this large slope, predominately made out of liftarms, is not the most important one in the robot. The more vital slope is smaller, but more lethal, and is positioned on the very front. This slope complements the bigger slope; it does the initial “running underneath,” while the larger one furthers the process. Together, their sole purpose is to allow XK2 to run underneath opposing sumo-bots in an attempt to push back or actually flip the opponent—a timeless trick in the robotic sumo world.

NOTE What I refer to as a slope can also be called by several other names, including inclined plane, wedge, and more. However, to stay consistent, I have chosen one name—slope—and will be referring to it as such throughout the book.
Among its other features, XK2 possesses a special subassembly that prevents other robots from flipping it. This subassembly is located in the back of the sumo-bot and comes in the form of specially positioned tires.

XK2’s substrategy is based on the second approach to the repeated ramming method discussed in the previous chapter: using a mechanism or subassembly to demobilize the opponent on contact. For XK2, the slope is the subassembly responsible for demobilizing the opponent. This is all very incredible, but the structural changes aren’t the only changes. There are new programming techniques to try out as well!

**Constructing Subassemblies for XK2**

Like the previous version of Zip-Bam-Bot, XK2 can be built with a single RIS. The bill of materials is shown in Figure 5-2.

*Figure 5-2. XK2's bill of materials*