1. **Load** - Or the weight of the objects you need to pick up or manipulate with the robot. Remember to consider the weight of the "end of arm tooling" you will need (end of arm tooling is industry jargon for the gripper, brackets, sensors, hoses or cables that you mount on the end of the robot arm). Also note that most robot manufacturers call out the max load capacity of their robots in their part numbers (MH5 denotes a 5 Kg max load capacity) but the rated load at which the robot is designed to work at full speed is anywhere from 1/2 to 1/3 of its max.
2. **Work Area** - This is the three-dimensional space that you need the robot to be able to reach. How restrictive is it?
3. **Cycle Time** - This the amount of the time it takes for the robot to complete an out-and-back move. Although robot manufacturers are fond of publishing this spec, it really doesn't help us much since it is an idealized situation that they define very vaguely. It is always best to find your worst case move requirements and have your provider simulate the move.
4. **Repeatability** - This is the amount of physical variance a robot will have in its ability to position to a programmed point in its work area. This is normally given in "plus or minus X" thousandths of an inch or mm.
5. **Planes of Operation** - There are certain robot types that lend themselves to certain applications based on their configurations. A key differentiation is whether or not the robot is just operating in the horizontal plane with a relatively small vertical travel or whether the robot will have a large vertical travel requirement and/or need to 'reach' into a vertical plan such as through an opening in the side of a machine.