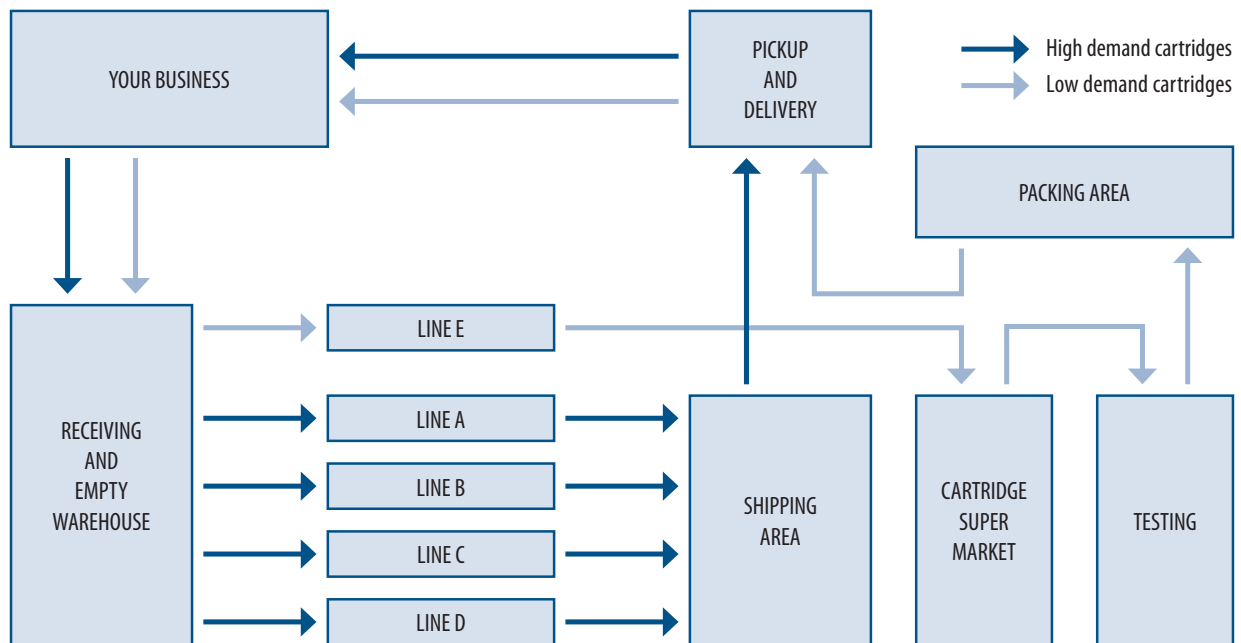


At American Laser Products the flow of a cartridge from the time it is received to the time it leaves the building is critical. To maintain efficiency and speed it is necessary to keep a product constantly moving and changing from start to finish. Any time a product or a person is in waiting or not being fully utilized it is a waste. The following product flow diagram illustrates how a cartridge moves and changes throughout the building process.



First, an order is received. Depending on the order, empty cartridges will either go from the warehouse to production lines A-D or from the warehouse to production line E. Lines A-D account for the faster moving, higher demand cartridges, or about 70% of all orders. Each of these lines can accommodate up to as many as four different types of cartridges. The cartridges on these lines are taken apart, rebuilt, tested, and packaged one at a time in assembly line fashion. From here they go directly to shipping or delivery. Unfortunately, it is not possible to build every single cartridge in this fashion because it would require too much space and many more employees. Therefore, line E accounts for the slower moving, lower demand cartridges, or about 30% of all orders. These cartridges are disassembled and rebuilt by an individual and then taken to a temporary holding area, or cartridge supermarket. The supermarket allows multiple types of cartridges to be grabbed at the same time when needed for an order. Most cartridges cycle through the supermarket rather quickly and nothing stays on the shelves for more than a few weeks. Cartridges pulled from the supermarket are taken to a testing area and undergo a series of standardized tests. The cartridges that pass all of the tests can finally be packaged and then taken to shipping or delivery. All cartridges that are sent out can eventually be returned as empties so that the process may repeat itself.