



# One-Piece Flow

**Batching is a very bad habit.**

**O**ne-piece flow is yet another Toyota Lean Manufacturing concept that is readily applicable in the PVF warehouse. This is an extremely simple but powerful technique where a product — or in the case of PVF, an order — flows through the warehouse, visiting each workstation, one at a time. At each station (picking, for example) the worker picks that order (and only that order) and when done, he passes the picked order on to the next station, packing. When practicing “one-piece flow,” an order is never partially done; it never sits at a station waiting for somebody to do something.

Before picking the next order, this order must be completely picked and passed on. It’s the same thing at the packing station. The packer takes the picked order just brought to him, packs all the components and sends the packed order to shipping. Then and only then will the packer take the next picked order and pack it.

The antithesis of one-piece flow is batching. We tend to batch a lot in our work, simply because we are under the illusion that batching is more efficient. In fact, we are certain that somehow batching saves us time. Admittedly, in some cases batching is the only way to go (I doubt anyone runs the dishwasher the instant one places a single dirty plate in it — instead, we wait until the dishwasher is full and then we run it, cleaning a batch of dirty dishes, not just one). At first, it may seem counter-intuitive — but trust me, batching is a very bad habit, right up there with carrying too much inventory.

## An evening at the Batch Bistro

Imagine for a moment you are a customer in a restaurant that batches orders, all in the name of efficiency.

**Ordering:** You order a hamburger on a toasted bun, with lettuce and tomato. This is a batch restaurant, so the chef only starts on your order when he has a batch of five burger orders. Lucky for you, four other diners show up who order burgers — so in about 20 minutes, the chef has a batch of five burgers to cook.

**Cooking:** First the chef makes up a batch of five patties, then he cooks a few on the grill. When they are cooked, he moves them over to a tray and cooks a few more. After about 10 minutes, all five burgers are done. He sends the batch of five burgers over to the assembly guy.

**Assembly:** This fellow has been waiting around for the burgers for 30 odd minutes (20 minutes waiting for five burger orders, and 10 minutes waiting for the burgers to come to his station). Finally, he has something to do. He pops the first bun into the toaster; takes it out; puts a rather cold burger, lettuce and tomato on it; and repeats the process four more times. Then he sends the five assembled burgers on to the set-up person.

**Set up:** The set-up guy pulls out five plates. He puts a burger, some chips and a pickle spear on each plate. When he is done with all five plates, he puts all of them on the “ready-to-go” shelf for the waiter. Remember, the clock is still ticking. By now, you, the customer, have been waiting for 40+ minutes.

**Serving:** The waiter sees five plates on the “ready-to-go” shelf. He now picks up the batch and proceeds to deliver five cold and unappetizing burgers to five different tables to five very unhappy customers.

Clearly, batching does *not* work in restaurants. Restaurants are all about one-piece flow. They make one and pass it on. They get orders out of the kitchen as fast as possible to ensure quality food and happy customers. Thanks to one-piece flow, they minimize the kitchen space needed, as there aren’t “batches” of orders stacked up waiting for the next step.

## Problems caused by batching

■ The time between when a customer orders and the delivery of products is longer. This leads to unhappy customers and a lag on your cash flow.

■ Batches take up room. You use a lot of space to “hold” incomplete and batched orders.

■ Your people are wasting time and effort stacking and restacking orders, searching for materials or a specific order.

■ Anytime employees are moving stuff around the warehouse (and not getting that order any closer to the shipping dock), the possibility that an order will get lost or damaged increases.

■ When working on a batch, people go into autopilot mode (think Charlie Chaplin with his two wrenches in “Modern Times”). When a worker is on autopilot, the quality goes down. If your picker batches five orders and picks them all at the same time, it’s a good bet that he’s going to mix something up. Or if your shipper decides to print out five labels at the same time, there’s a good chance he might slap the wrong label on the box.

### Make one, pass it on reduces or eliminates many problems

■ The order to delivery (and subsequently the order to cash) cycle can be greatly reduced. Customers are happy, your cash flow is looking good. What’s more, you are primed and ready to move to two or more deliveries a day if you want to.

■ Products go from the shelf to packing to shipping in a clean flow. There’s no stacking of half-filled orders here, two-thirds filled orders over there.

■ One-piece flow is a highly visual system. You can visit the warehouse and “see” exactly where each order is as it proceeds through the warehouse. Problems become obvious. When a problem arises, the worker can’t complete his task, so he can’t go on to the next order. You and the warehouse staff will know of the problem immediately, and thus you can address problems the moment they occur.

■ One-piece flow is another means by which you can start developing “Lean” thinking and “Lean” habits in your workforce.

Like a restaurant, one-piece flow is the way to go in the warehouse. And the beauty of implementing this “Lean” technique is it doesn’t require any new equipment, you don’t have to build any new workstations, and the employees aren’t required to work any harder either — all they need to do is remember to “make one and pass one on.” <<

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