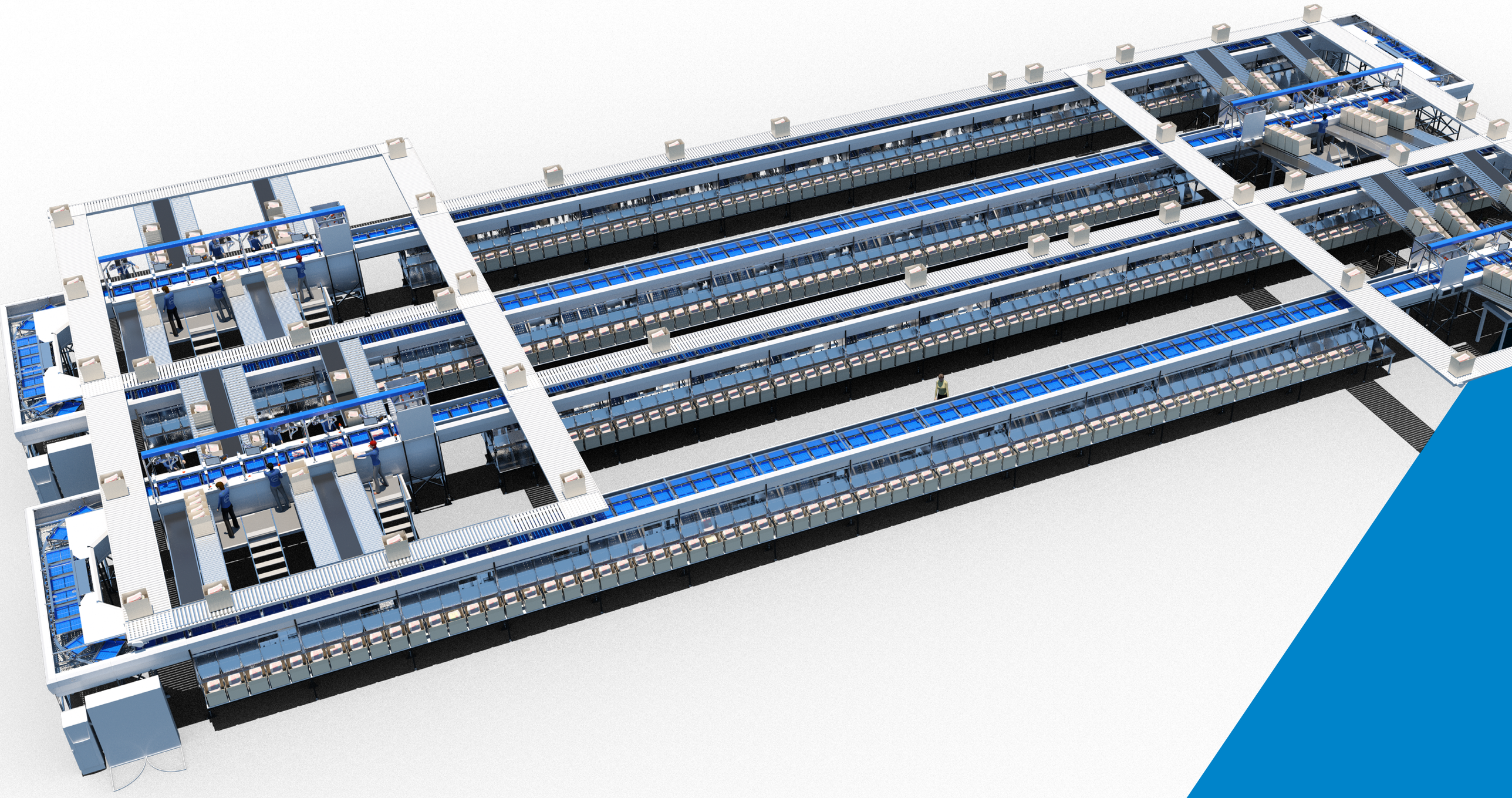
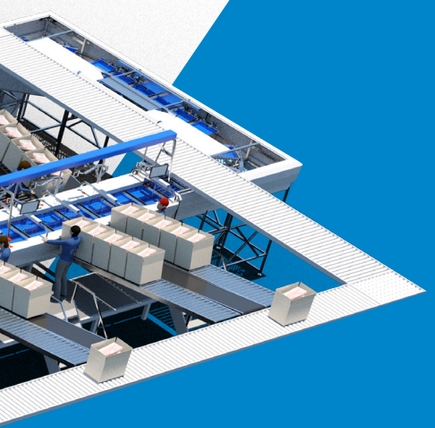
HOW MULTIPLE INFEEDS INCREASE SORTING THROUGPUT



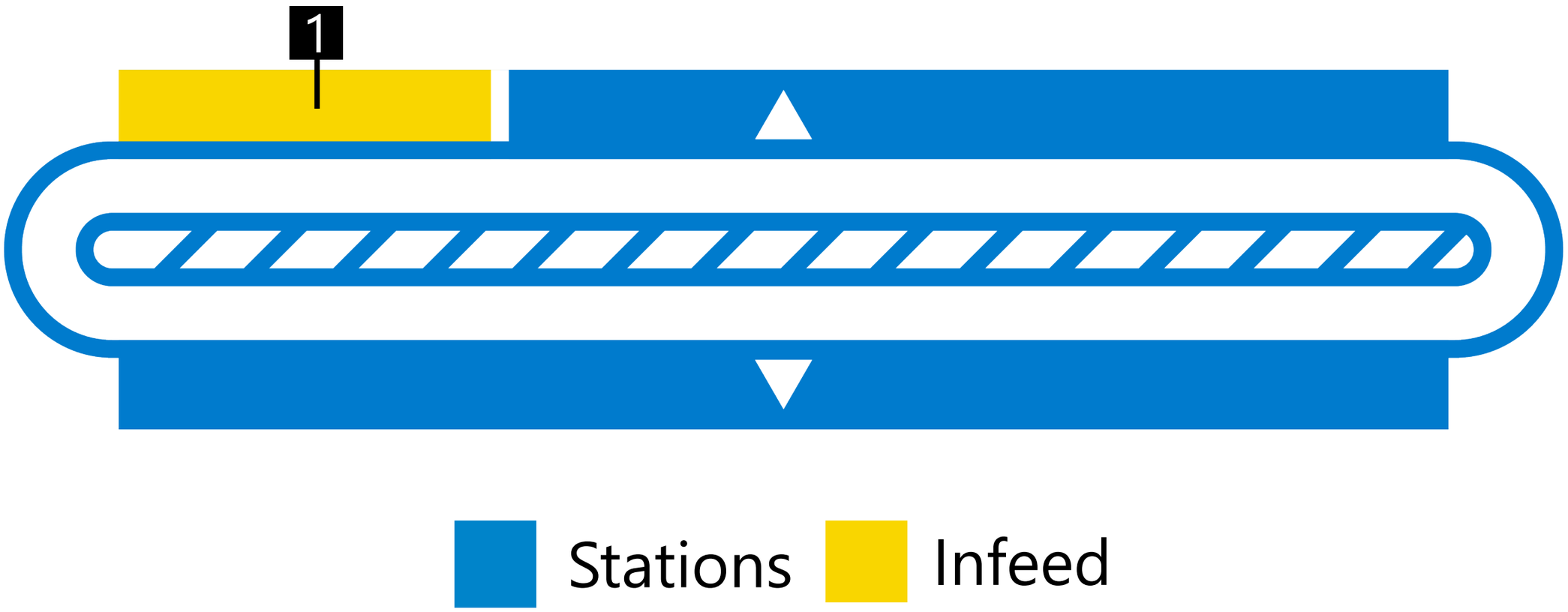


Flat sorters come in all shapes and sizes. However, some guiding principles of sorting transcend the differences and apply to all. One of these principles is adding **multiple infeed positions** to increase the overall **througput** of a sorter.

HOW DOES IT WORK?

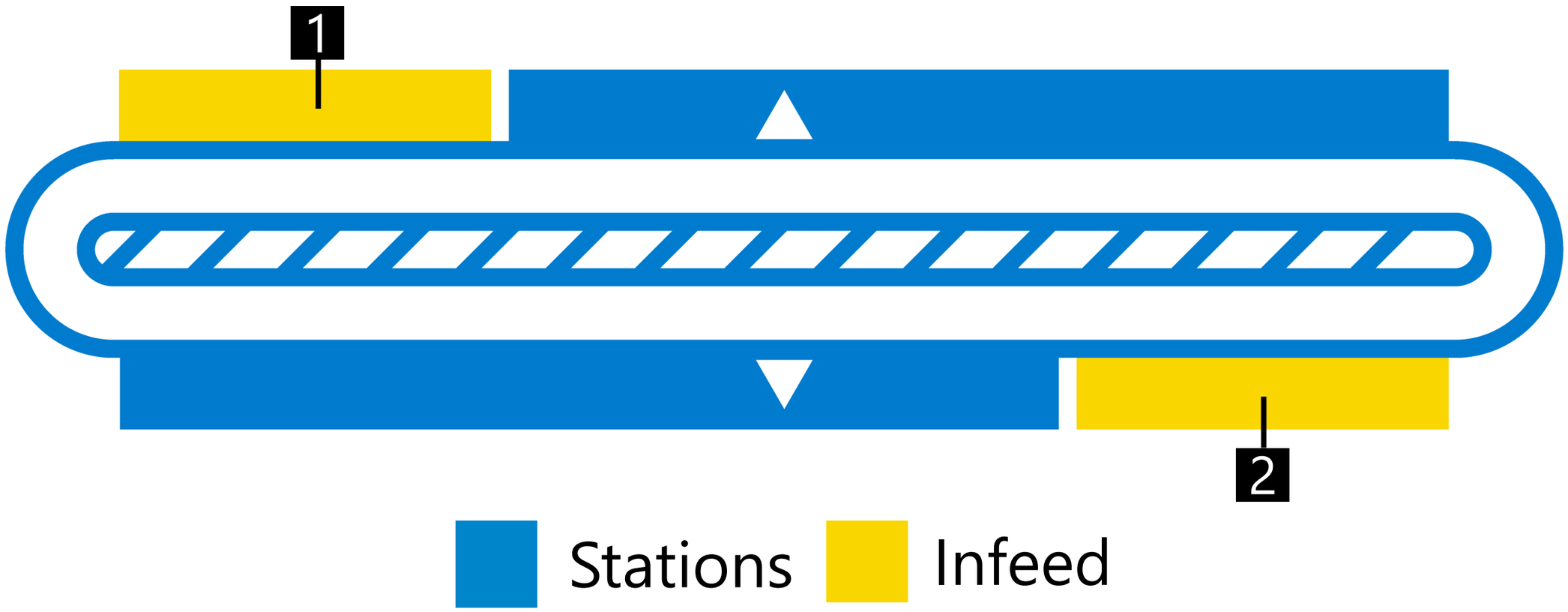
A sorter's throughput is limited by the speed and size of the trays. This is often translated to the number of **trays per hour**. With one infeed zone, the maximum amount of products that can be inserted equals the number of trays per hour. But by increasing the number of infeed positions, the throughput can be increased to **double** the number of trays per hour.

SCENARIO 1:
12.000 ITEMS PER HOUR



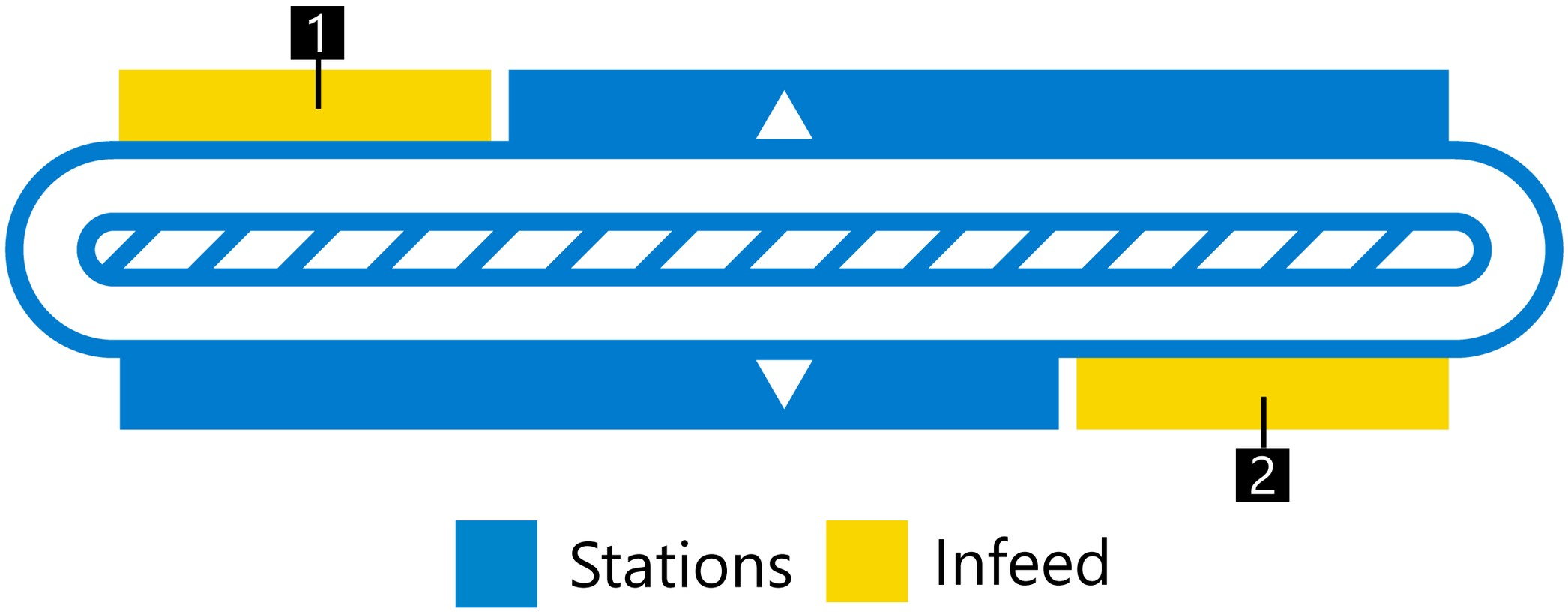
To explain this, we will use our **slide tray sorter** as an example. This sorter can reach a maximum of **12.000 products per hour** with one infeed zone.

SCENARIO 2:
15.960 ITEMS PER HOUR



However, when adding an **extra infeed** the througput will increase. Some of the trays will be emptied before reaching infeed 2. This allows operators to insert **another product** in the same round.

SCENARIO 2:
15.960 ITEMS PER HOUR

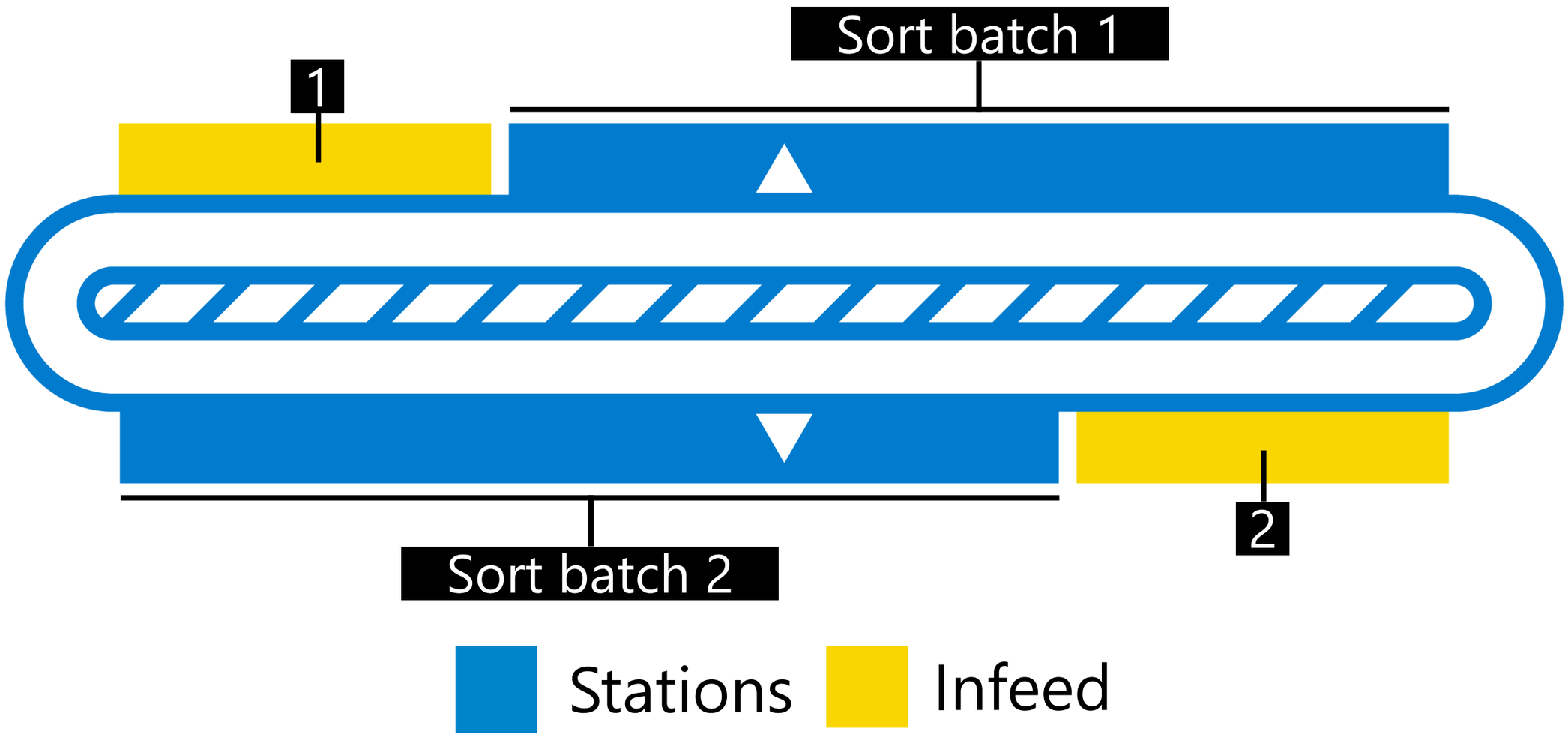


We use the **capacityfactor** to calculate the additional throughput. With this set-up we use factor 1.33 to estimate the expected throughput. Instead of 12.000 products per hour, the throughput is increased to **15.960 products per hour**.

But as mentioned earlier, this factor can be increased even more. To reach a capacityfactor of 2, we should dive deeper into the art of **batch picking**.

The first two scenarios were based on one batch pick that was randomly distributed to the two infeed positions. To reach more throughput, we should create a more **efficient distribution** of our batch.

SCENARIO 3:
24.000 ITEMS PER HOUR



Capacityfactor 2 can be reached by picking in **seperate batches**. All items picked for infeed 1 will be sorted before reaching infeed 2. All trays enter this infeed empty and **available for induction**. Items from infeed 2 will be sorted before reaching infeed 1.

Single SKU scenario
When working with boxes that contain single SKU's, an alternative solution should be considered to prevent inefficient picking or a high amount of opened boxes with leftover items.

A **conveyor carrousel** that connects the infeed zones is a proven solution for this scenario. When a single SKU is required for both infeed zones, its box can be opened at one infeed and the leftovers can be forwarded to the second infeed.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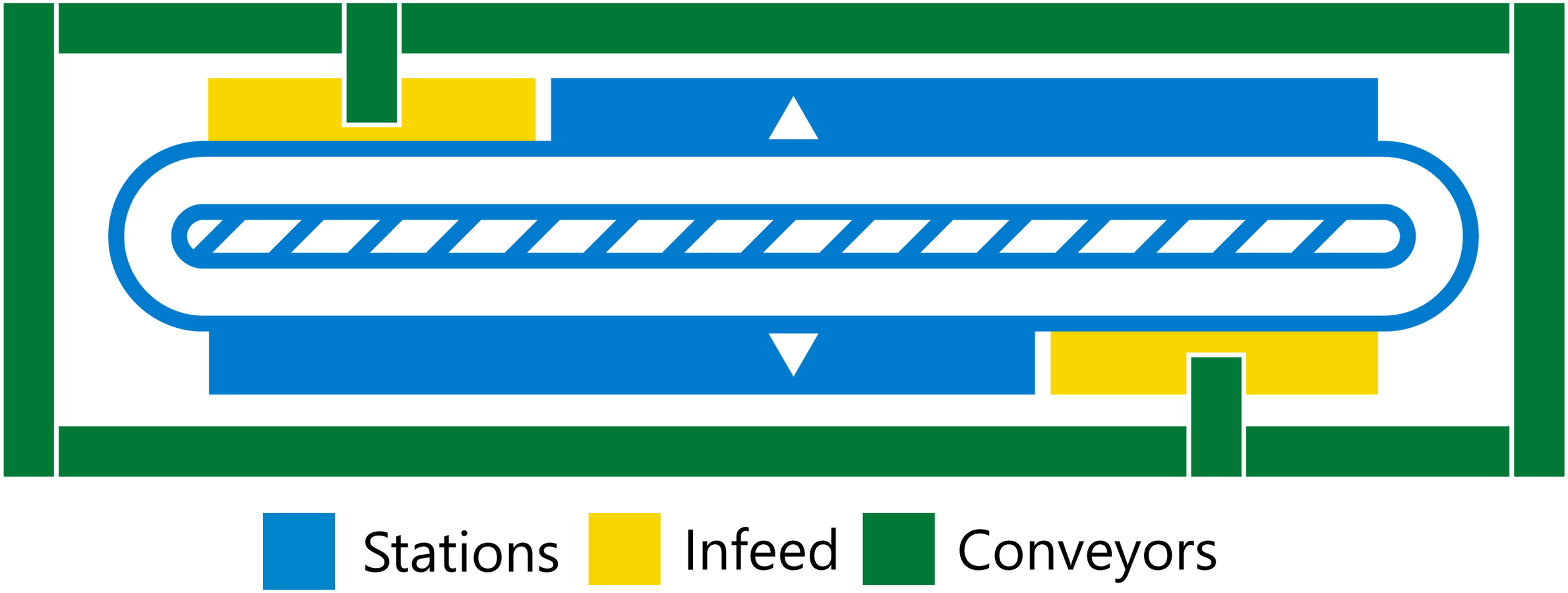
SCENARIO 4:
24.000 ITEMS PER HOUR



By using the conveyors as a carousel, items can be allocated to the correct station and single SKU boxes can be transported easily between zones. Capacityfactor 2 applies to this scenario as well.

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