

Medical manufacturer increases part throughput and efficiency by 300% with switch to concurrent part testing with the **Sentinel Blackbelt Pro**

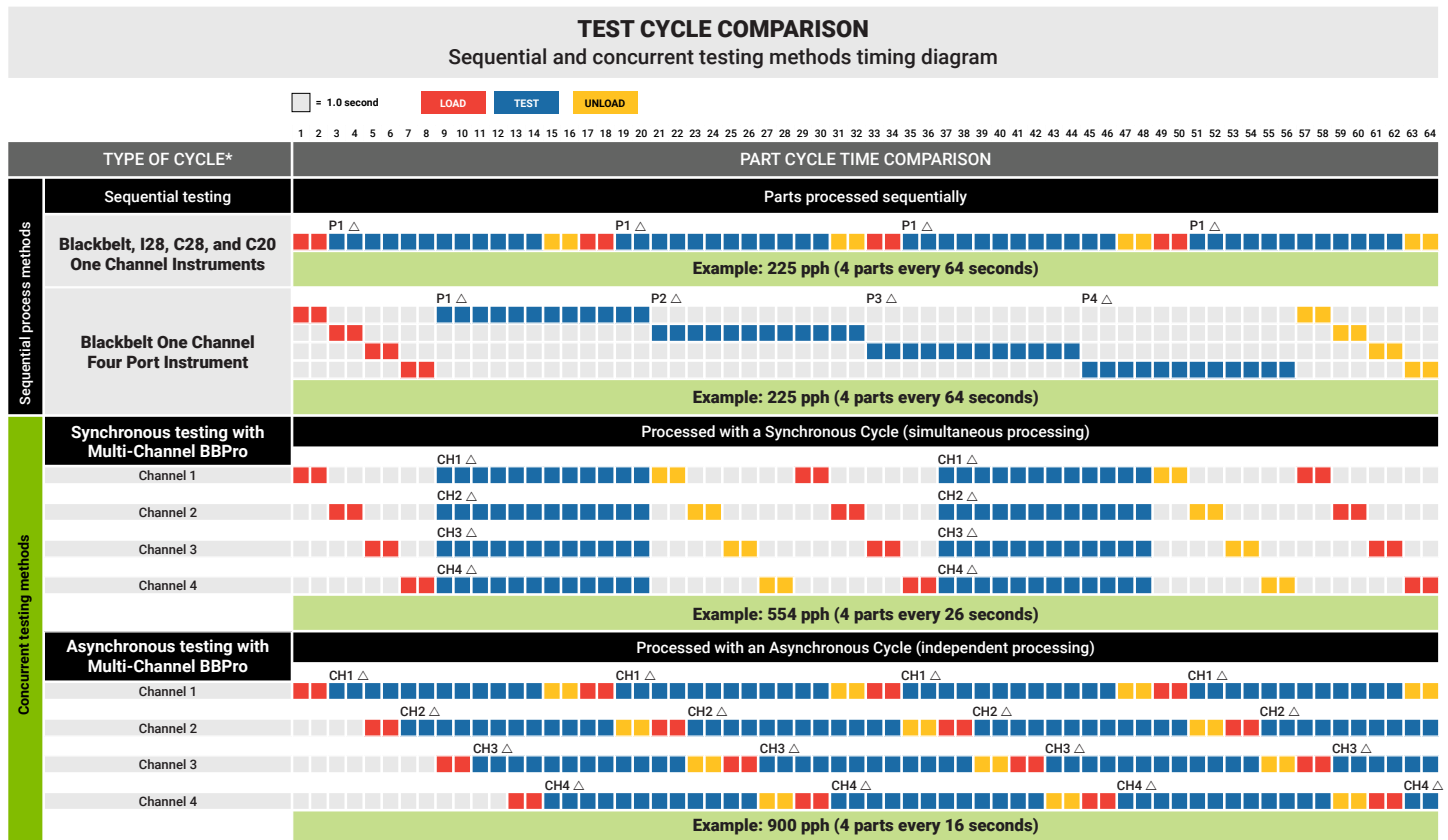


Achieving higher throughput was a problem for a medical manufacturer. They were leak testing medical fluid/solution bags with a manual operator and weren't sure how to improve their parts per hour (PPH). They thought their only option was to invest in additional, costly duplicate stations to achieve their goals — until they found the Sentinel Blackbelt Pro, which allowed them to drastically improve their throughput without additional stations or operators.

A top medical manufacturer came to CTS with a problem: They needed to boost the production volume of their small fluid/solution bags (50ml-500ml) but their current leak tester couldn't go any faster without sacrificing their current detection capability and test repeatability. They thought would need to add another station and operator to meet their goals, which would be costly—until they came to CTS and discovered their other options.

## Test options to boost throughput (without adding additional stations)

Boosting throughput and cycle time can be heavily impacted by the abilities of the leak test instrument you choose. Whether the instrument features multiple sequential ports, multiple concurrent channels, and whether it can perform asynchronous testing will greatly impact your maximum throughput potential. Learn about the capabilities and performance of each type of instrument below.



\*Cycle time comparisons illustrate improved throughput benefits

The above chart illustrates how different process methods, sequential vs. concurrent, can deliver drastically improved cycle times and throughput.

## Sequential process methods

### Single port sequential testing (one port, one channel)

225 PPH (4 parts/64 secs)

This manufacturer's current test setup was a sequential one channel test. The operator would load a bag, commence the test and await its completion, unload the bag, and then repeat the process. As they didn't have any other tasks for the operator during this test time, they were simply standing in wait during the test cycle — a prime opportunity to boost efficiency.

## Multi-port sequential testing (two, three, or four port, one channel)

225 PPH (4 parts/64 secs) – with potential for overall efficiency improvements

A two, three, or four port instrument can offer a marginal throughput and efficiency improvement over one channel, single port instruments. In this case, the manufacturer could have used four sequential test ports to maximize efficiency using one single-channel instrument. The operator would load all the bags, one after the other, commence the test, and then the system would test each bag one after the other. When the test sequences were over, the operator would unload all bags from the leak test station and repeat the process again.

In this case, the operator could at least tend to other duties around the station while these four separate test cycles occurred. Depending on the other operations present on the manufacturing line, this could be a way to boost overall efficiency as compared to a single port testing method, making better use of the operator on the floor.

## Concurrent process methods

Investing in a multi-channel instrument can substantially boost throughput – whether using synchronous or asynchronous processing.

### Synchronous Testing (Simultaneous Processing)

554 PPH (4 parts/26 secs) – INCREASE THROUGHPUT BY 146%

Using a synchronous process, the operator would load all 4 bags and commence the test. The bags are then tested simultaneously, then the operator unloads and repeats the process. This simultaneous testing saves a lot of time, minimizing the operator's idle time.

### Asynchronous Testing (Independent Processing)

900 PPH (4 parts/16 secs) – INCREASE THROUGHPUT BY 300%

A leak tester that provides multi-channel asynchronous testing gives you the best throughput time possible, by allowing for independent processing through each channel. In this scenario, the operator loads one bag and commences the test immediately. While the first bag is being tested, the operator continues to load the other bags and commence each of those tests as soon as they are ready. When the operator is done loading the fourth bag, the first bag test cycle is complete and ready to be unloaded. The operator then starts loading the next round of bags and repeats the process. This method leaves virtually no downtime for the operator, so both the test and the operator are working at maximum efficiency, for maximum throughput.

## Asynchronous testing is unique to CTS instruments

By offering asynchronous testing, the **Sentinel Blackbelt Pro** virtually acts as four instruments in one!

This processing method is particularly beneficial for applications that require four different channels to be tested on one part, such as an internal combustion engine block where coolant, lubrication and air intake systems could be tested simultaneously with unique test type, test pressure, and reject limit requirements.



## CTS implements asynchronous testing with the Sentinel Blackbelt Pro, improves manufacturer's throughput by 300%!

In order to meet their goals, this medical manufacturer chose to implement the test method with the highest return—asynchronous testing. The manufacturer was able to substantially boost efficiency (improved by 300% as compared to their previous single port sequential test process) without adding any further resources to the line—just a simple switch of leak tester! Using their new leak tester, the CTS Sentinel Blackbelt Pro, their leak test station was operating at its highest capacity, leaving virtually no downtime for the operator, boosting throughput and overall line efficiency.

### How to choose which test method is right for you

How you determine the right method for you starts with how many parts per hour you need to process to meet your production goals. Then, you would then consider the duties of your operator, and analyze the ratio of load and unload time vs. cycle time and how much impact a different processing method would make on your throughput.

**Contact the leak test experts at CTS to identify which test method is best for you!**

**FIND OUT HOW ASYNCHRONOUS TESTING  
COULD IMPROVE YOUR THROUGHPUT**



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