

## Study Guide: Takt Time



### What is Takt Time?

Takt Time is a term often used in manufacturing and production processes to help optimize workflow and production rates. It is a fundamental concept in lean manufacturing and is used to determine the rate at which a product needs to be produced in order to meet customer demand while maintaining an efficient and balanced production process.

Takt Time is used to ensure that production matches customer demand, thereby avoiding overproduction or underproduction. It helps in setting a target production rate to maintain a balanced workflow and meet customer orders on time.

Takt Time is typically calculated on a daily, shift, or production cycle basis. It helps set the pace for production over a defined time period.

## How do we calculate the Takt Time?

The Takt Time is the period of time in which we have to produce one pan in order to fulfill the customer request within the available working time. The calculation of the Takt Time is as follows:



It is very important that you do not mix up the Cycle Time mostly visual on the shop floor with the Takt Time which is driven by the customer demand.

### Let's breakdown the formula:

- **Available Production Time:** This is the total time available for production in a given time period, typically expressed in hours or minutes. It takes into account factors such as the number of shifts, working hours per shift, and any planned downtime (e.g., maintenance or breaks) during the production period.
- **Customer Demand:** This represents the rate at which customers require or demand the finished product. It is usually

expressed as the number of units or products needed within the same time period used to calculate available production time.

The result of this calculation, Takt Time, gives you the ideal production rate or cycle time required to meet customer demand while avoiding overproduction or underproduction. In other words, it tells you how frequently a product needs to be completed to fulfill customer orders on time.

Takt Time is sometimes associated with or confused with cycle time.

## Takt Time vs Cycle Time

### Takt Time

It refers to the rate at which a company should produce or manufacture a product or service to satisfy total demand

**Formula:** Total available production time/Demand

### Cycle Time

It refers to the average amount of time a company takes to complete the production from start to finish.

**Formula:** Net production time/# of units made

#### Notes:

- The ideal Scenario is when Takt Time and cycle time are aligned
- When Cycle Time > Takt Time it means that the company will not meet customer demand
- When Cycle Time < Takt Time it means there is overproduction
- When Cycle Time = Takt Time it means the customer will meet customer demand

## Let's talk about how they are different:

**Takt Time:** Takt Time is primarily focused on aligning production with customer demand. It helps determine the rate at which products should be produced to meet customer requirements and avoid overproduction or underproduction. Takt Time is used to establish a balanced production pace.

**Cycle Time:** Cycle Time, on the other hand, measures the actual time it takes to complete a single unit or product from start to finish in the production process. It reflects the time required for each unit to pass through all the necessary steps and processes.

Takt Time is highly linked to the customer orders and can only be defined if any customer orders exist.

### **Benefits of aligning the production process with the Takt Time:**

- **Smoother workflow:** Production processes become synchronized with customer demand, reducing bottlenecks and delays.
- **Just-in-time production:** Takt Time helps ensure that products are produced as they are needed, minimizing excess inventory.
- **Improved efficiency:** It allows for a balanced and predictable production pace, which can lead to reduced waste and improved resource utilization.
- **Enhanced customer satisfaction:** Meeting customer demand on time and without delays helps improve customer satisfaction and loyalty.

Takt Time is a key concept in lean manufacturing and is often used in conjunction with other lean tools and principles to optimize production processes and reduce waste.