Takt Time

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**Takt Time** – is a rate (in seconds) at which Customer requires finished product.

\[
\text{Takt Time} = \frac{\text{Scheduled Runtime}}{\text{Total Customer Requirements}}
\]

- **Scheduled Runtime** - is the total available production time per day (in seconds). It takes into consideration (subtract) time scheduled for meetings, maintenance, breaks and lunches.

- **Total Customer Requirements** - Quantity of parts required from the process or a cell per day
Why focus on Takt Time?

- The amount of time that material wastes (spends) in an organization is strongly tied to the amount of controllable cost incurred and the cash flow of the operation.

- Improve material flow - material requires floor space, tracking systems, processing and handling, most of which add little value while increasing the cost of the product.

- Creates a pace of production - Rhythm
Before calculating Takt Time

- Clearly identify a single part or a final product or a product family manufactured in the selected Work Cell
- Identify the number of parts and components going into the final product that is manufactured within the boundaries of the Work Cell
- Identify all major manufacturing steps within the Cell
- Use well documented history of shipments to the Customer when calculating Customer requirements
Scheduled Run Time

- Work time = three 8 hour shifts per day
- Each shift gets:
  - 30 minutes for lunch
  - two 10 minutes breaks
  - 10 minutes “end-of-the-shift” clean-up
- Each shift = (8 hrs x 60 Min)-30-20-10 = 480 - 60 = 420 min/shift.
- Total Scheduled Run Time = 3 shifts x 420 min = 1260 min = 75,600 seconds
Weekly Customer Requirements

- 6,750 parts per week
- How days per week do you operate?
- 5 day schedule = 1,350 parts per day
- 6 day schedule = 1,125 parts per day
- 7 day schedule = 965 parts per day
Takt Time Calculations - Example

- Scheduled Run Time = 75,600 sec.
- Weekly Customer Requirements = 6,750 parts
  - 5 day schedule - 1,350 parts/day
  - 6 day schedule - 1,125 parts/day
- Takt Time
  - 5 day schedule = $\frac{75,600}{1,350} = 56$ sec.
  - 6 day schedule = $\frac{75,600}{1,125} \approx 68$ sec.
Recommended Takt Time – 30 ?, 60 ?, 90 ? Seconds

- The most commonly Takt Time used in the automotive Industry is about 60 seconds

- It is proven (demonstrated) that 60 seconds Takt Time is:
  - Easier to balance production flow
  - Easier to train – number of work elements to remember
  - Easier to rotate and cross-train
  - Simplifies manpower planning
  - Elements move easier from station to station
  - Ease of auditing to see if operator following standardized work

- This does not mean that there is something wrong with Takt Times less or more than 60 seconds
Pacing the Line - Operating to a Steady Takt Time

- Operators can get into a rhythm
- Creates predictable flow - repetitive manufacturing
- Production planning becomes easier
- Operating efficiency goes up
- Makes problems obvious
Lean Transformation Solutions

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