

1st Assignment. Tubular Manuf. without Transportation

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1. VSM and explanation

We start with an storage of the tubular element.



Raw

Then we do the first process that consist of pressing the endings of the tubular element. That it is done on a first workstation.



Phase1

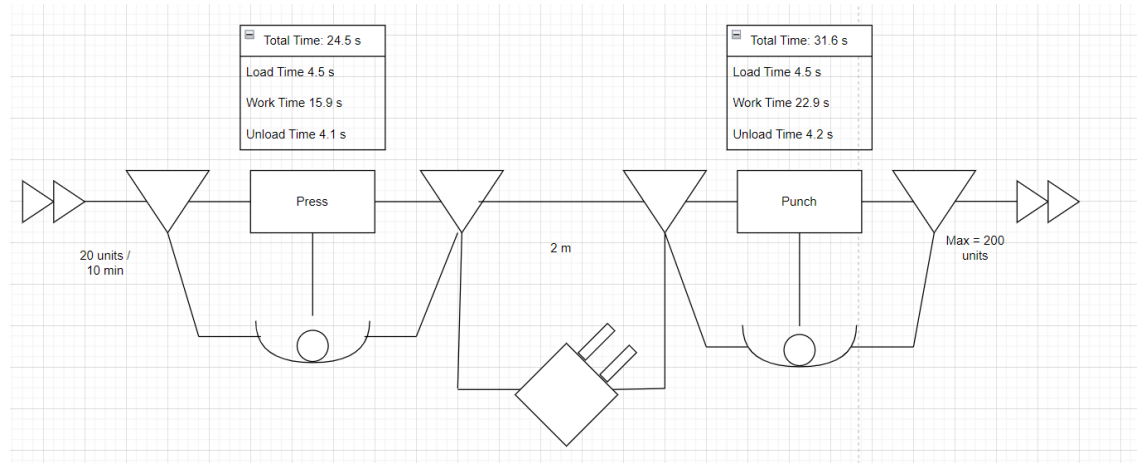
At the end of the first action, we storage the modification on a new storage section. In the instructions it says that this storage is moved from workstation one to two, that are separated 2 meters. For the FlexSim model, for this first assignment the teacher specified

not to use transportation, so we put a storage between the two workstations, without a forklift to move it.

Then we do the second process, on a new workstation, which consists of punching the same endings of the element.

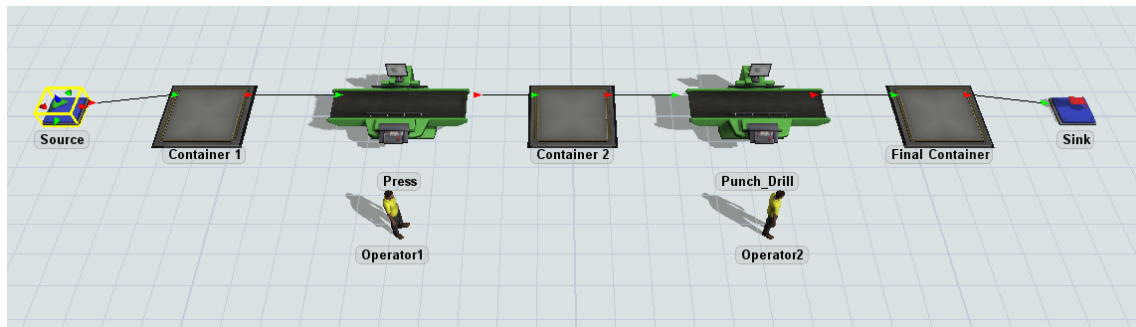


When finishing that process, the final product is unloaded on a new container. When the container is filled, it is moved to the next section.



2. Explanation of the FlexSim Model

We use the VSM above to create the FlexSim model.



On the different process we put a process time that is the result of the added times on the statements, or we can separate the operator time (both are correct for this case). And we engage the operator to the process.

For the first process, pressing:

| | | |
|---|--|---|
| Max Content | <input type="text" value="1"/> | <input checked="" type="checkbox"/> Animate Items |
| Setup Time | | |
| | <input type="text" value="11.70"/> | s |
| <input type="checkbox"/> Use Operator(s) | <input type="text" value="1"/> | |
| Process Time | | |
| | <input type="text" value="4.20"/> | s |
| <input checked="" type="checkbox"/> Use Operator(s) | <input type="text" value="1"/> | <input checked="" type="checkbox"/> Same as Setup |
| Operator | | |
| | <input type="text" value="By Name (Operator1)"/> | |
| Priority | Preemption | |
| <input type="text" value="0.00"/> | <input type="text" value="no preempt"/> | |

For the second, the punching:

Labels

☐ Automatically Reset

Processor

Max Content: 1 ☒ Animate Items

Setup Time: 0 s

☐ Use Operator(s): 1

Process Time: 31.60 s

☒ Use Operator(s): 1 ☒ Same as Setup

Operator: By Name (Operator2)

Priority: 0.00 Preemption: no preempt

Also, on the storage containers we set a maximum of 20 and 200 on the last one.

Queue

Max Content: 20

Item Placement: Stack inside Queue

Stack Base Z: 0.10 m

☐ LIFO

☐ Perform Batching

Queue

Max Content: 200

Item Placement: Stack inside Queue

Stack Base Z: 0.10 m

☐ LIFO

☐ Perform Batching

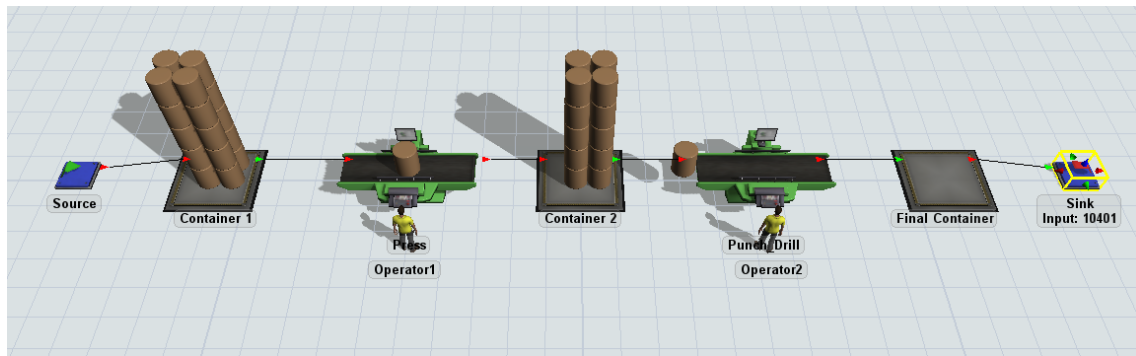
To follow the 20 units each 10 minutes we need to schedule the arrivals:

Arrivals - Source

Arrivals: 2 Labels: 0

| | ArrivalTime | ItemName | Quantity |
|----------|-------------|----------|----------|
| Arrival1 | 0 | Product | 20 |
| Arrival2 | 600 | Product | 0 |

If we simulate the process, we can see the following result:



For the model with transportation, we have no add an additional container between the two process.