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## TRANSFER SYSTEM WITH DYNAMIC SPEEDS

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## TRANSFER SYSTEM WITH DYNAMIC SPEEDS

### **Initial situation:**

Transfer systems are used in a production environment to convey workpieces from one workstation to the next. These workpieces are usually on a workpiece carrier. This rests on rollers of the transfer system. These rollers are driven by electric motors. Usually, such a transfer system runs at a constant speed, so that theoretically an electric drive and a corresponding transmission to the rollers and a transmission between the rollers would be sufficient. In practice, the torque of a motor or the power is not sufficient, so that additional electric motors are installed every few metres. The speed of such systems is limited and must be adapted to the heaviest condition of the workpiece. Stopping a workpiece carrier is done with a stopper that hooks into the workpiece carrier below it and is released again for further travel. Stopping and further travel thus take place abruptly from 0 to the transport speed of the belt.

### **Solution:**

The new idea is now to control the speed dynamically. To do this, the transfer system must be divided into logical smaller sections as needed, which are driven separately. There are acceleration sections, braking sections and sections with uniform speed, which can be higher than in a conventional transfer system because the acceleration and braking ramps can be designed accordingly. In addition, the movements can be adapted to the loading condition of the workpiece carrier, the weight of the workpiece usually increases during the manufacturing process. Another possibility is also to accelerate and brake within such a section. This is particularly advantageous for entry into and exit from a workstation in order to reduce the time required for this. This goes directly into the cycle time of the workstation and reduces the time of possible machining. A transfer of this principle is also possible for transport by a driverless transport system. Here the individual vehicles form the logical units and these can travel at will accelerated, braked or uniformly.

### **Advantages:**

With increased speed, the workpieces can be moved faster on the transfer system.