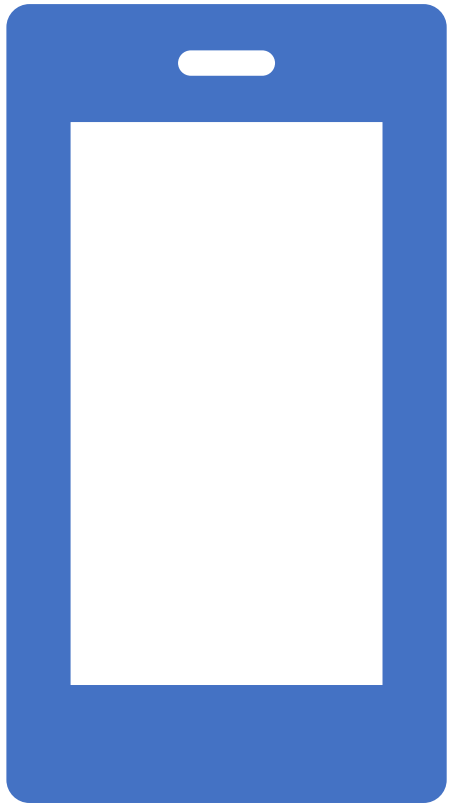
Conveyor Systems in Smartphone Manufacturing Process

Presentation in Basic Mechanical Engineering

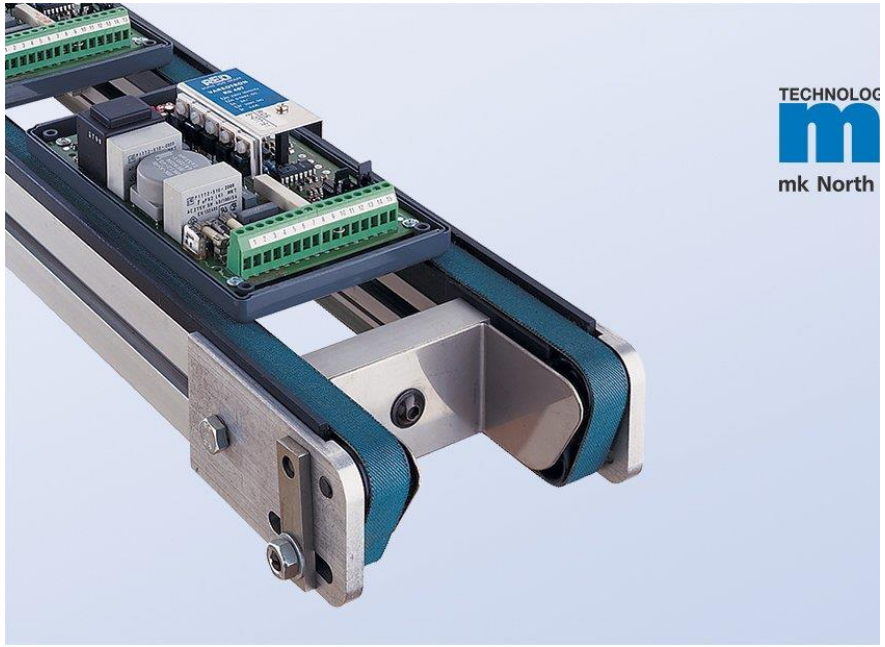


How a Smartphone is Made

The Inside of a Smartphone

A Robotic Arm usually does most of the technical work of Manufacture

Every Step is followed by an inspection process

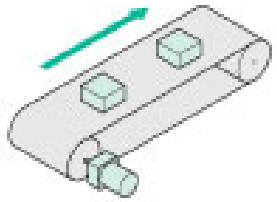
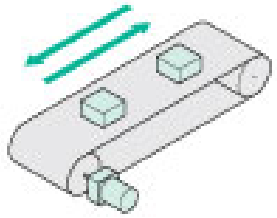
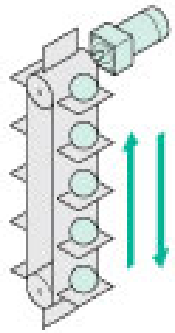


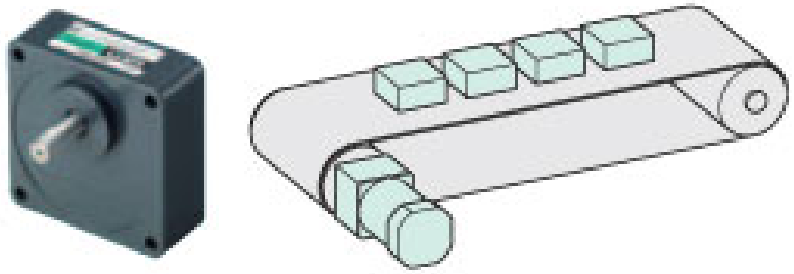
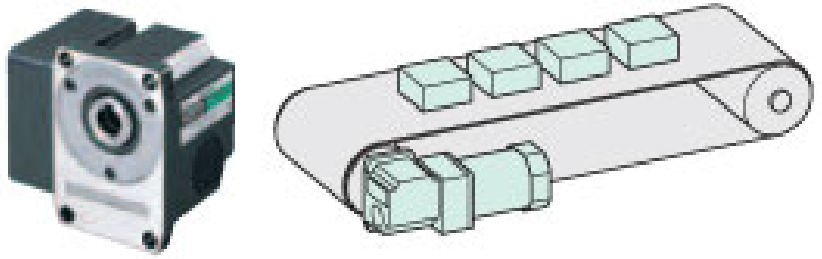
Electronics are transported by motor controlled conveyors

Moved With Motors and shafts

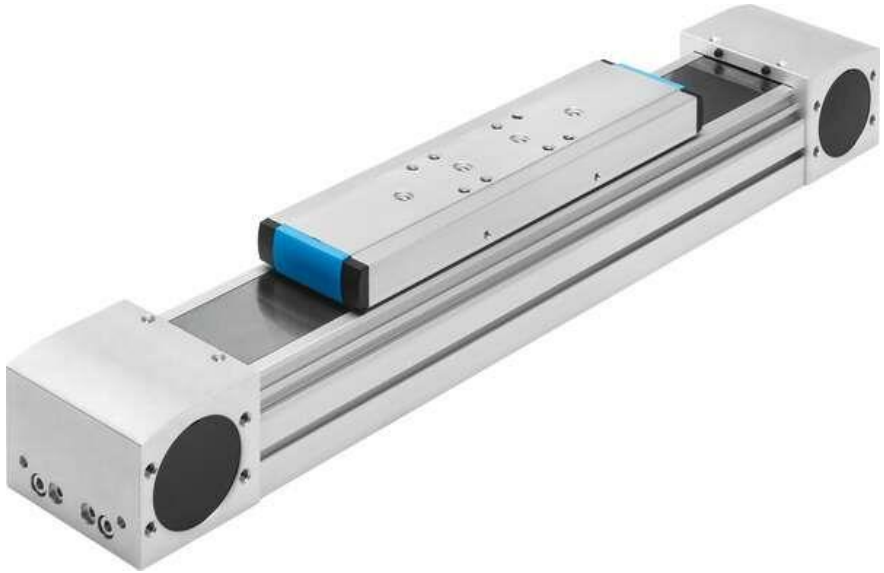
Advantages

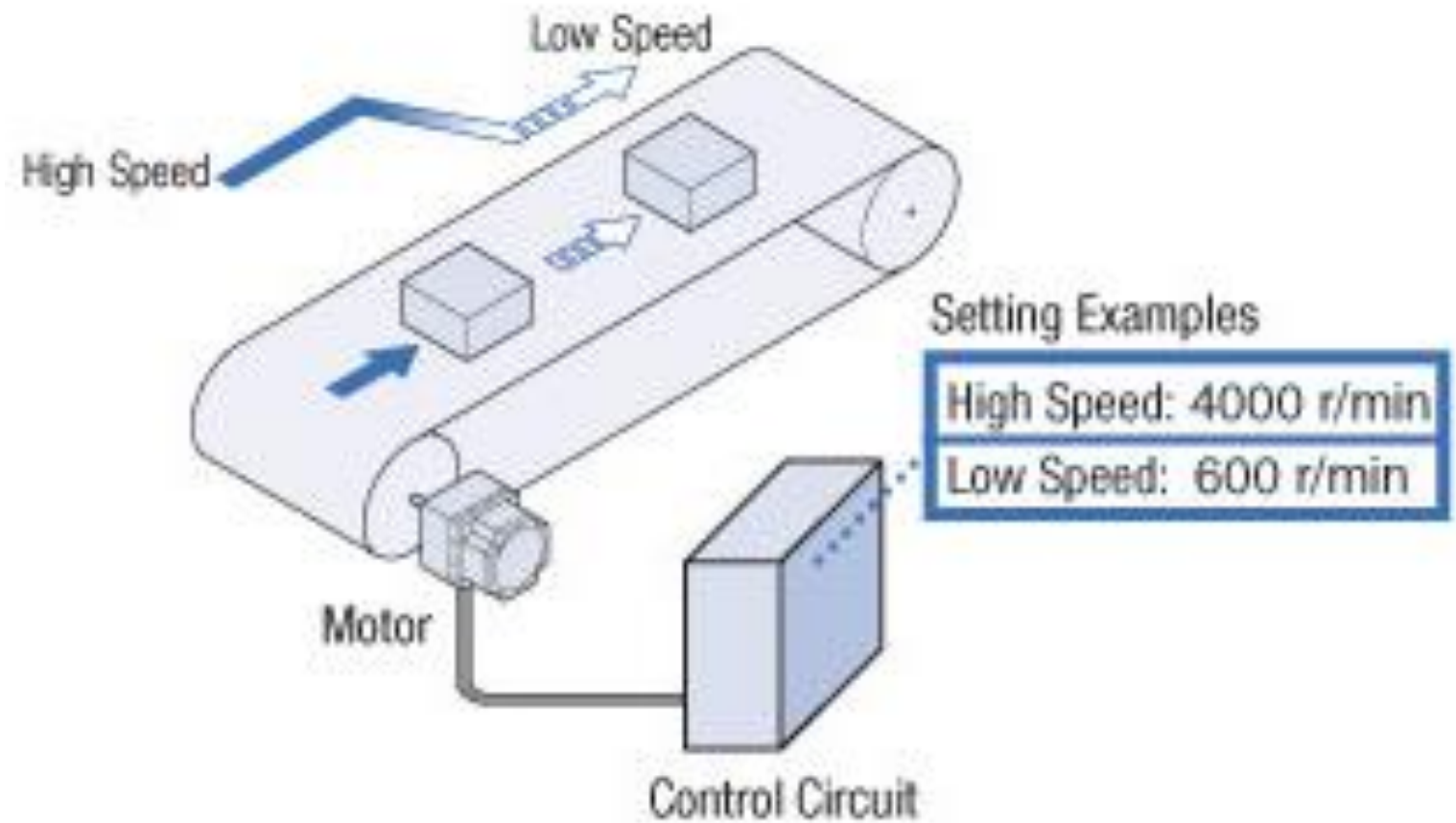
- The right conveyor control saves time, money and efficiency. It will optimize your material handling systems and warehouse operations.
- It will allow for variable production rates and quick production changes. Programmable Logic Controls (PLC) allow for this necessary direct system control.
- This centralized network-oriented approach is best primed for automation and attaining the numbers you need to thrive.

Type	Features	Output Power	Power Supply
	**AC Induction Motors** are suitable for applications where the motor is operated continuously in one direction.	1 W (1/750 HP) up to 3 HP	Single-Phase 100-120 VAC Single-Phase 200-240 VAC Three-Phase 200-240 VAC
	**AC Reversible Motors** are suitable for applications where the motor reverses its direction repeatedly.	1 W (1/750 HP) up to 3 HP	Single-Phase 100-120 VAC Single-Phase 200-240 VAC Three-Phase 200-240 VAC
	AC Motors with Electromagnetic Brake are suitable for applications where the load must always be held in place.	6 W (1/125 HP) up to 3 HP	Single-Phase 100-115 VAC Single-Phase 200-230 VAC Three-Phase 200-230 VAC

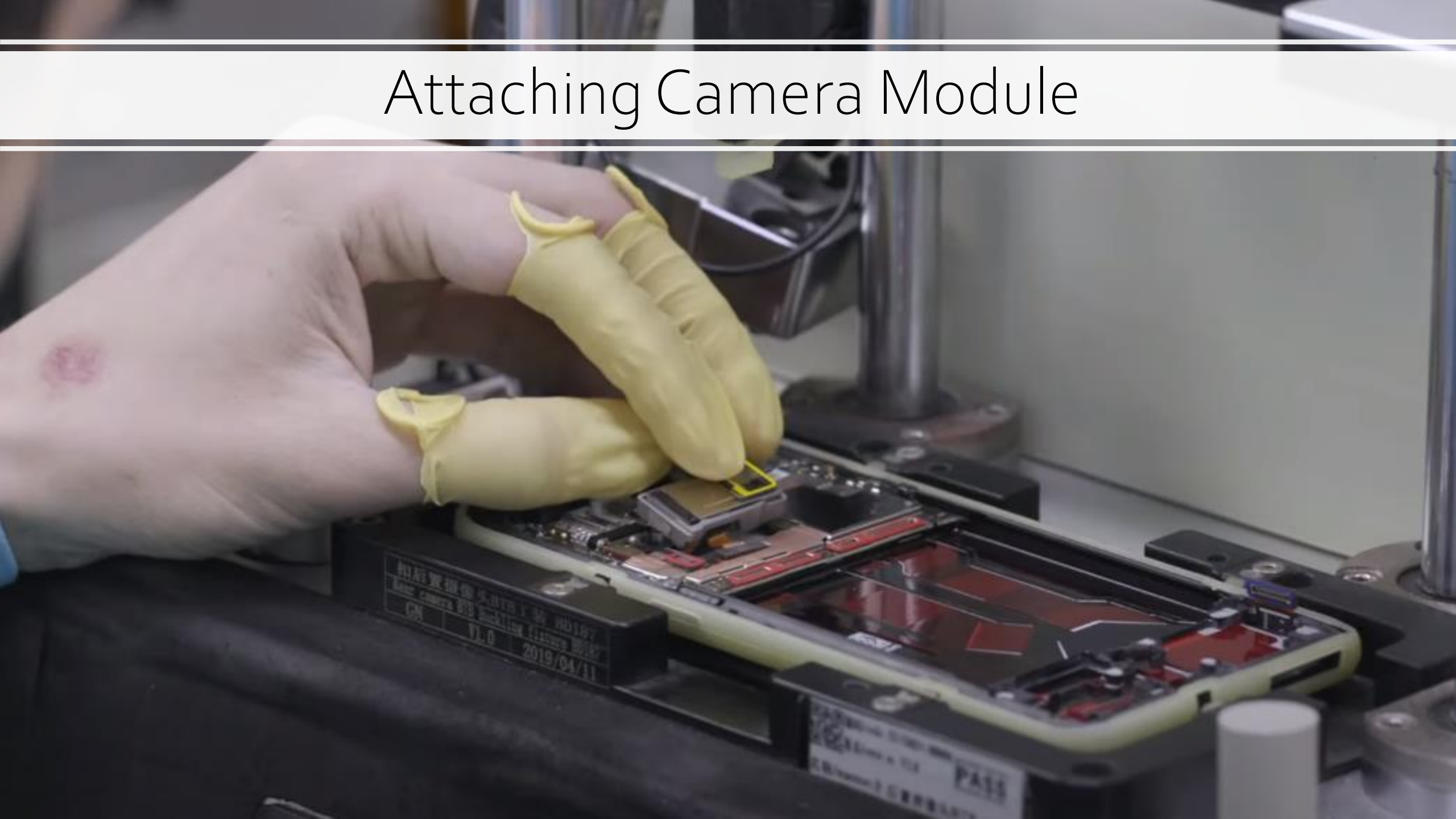
Parallel Shaft Gearheads	Right-Angle Gearheads
	
Parallel Shaft gearheads reduce the motor speed and generate greater torque. A wide range of gear ratios are available.	Right-Angle Gearheads are suitable for applications where space saving is required by allowing the motor to be mounted at a right-angle to the conveyor. Solid shaft and hollow shaft models are available.

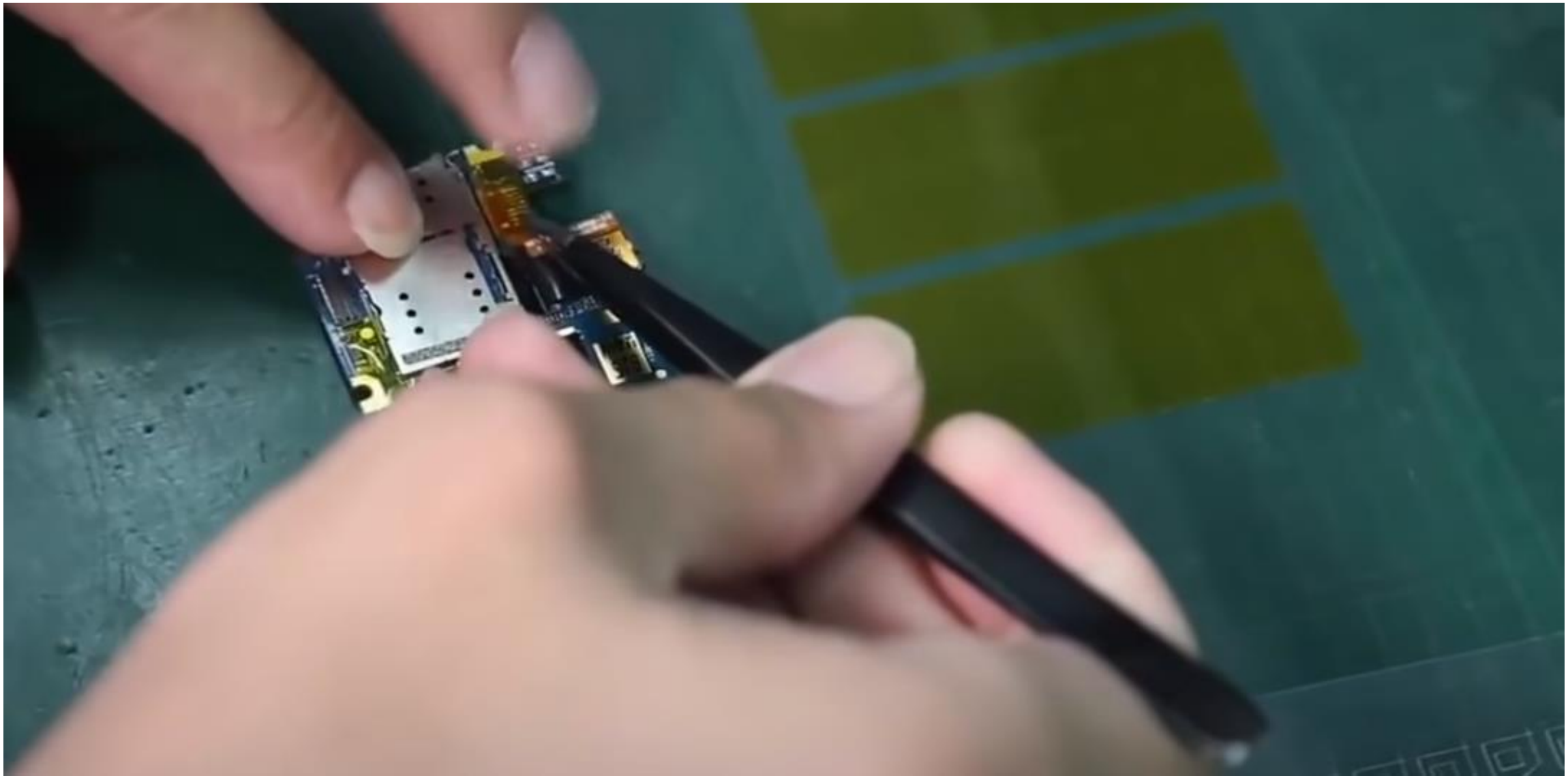
Conveyors used in Phone Manufacturing




Low Speed
High Speed
Setting Examples
High Speed: 4000 r/min
Low Speed: 600 r/min
Motor
Control Circuit

Attaching Camera Module





For parts, Belt conveyers are used

Advantages and Disadvantages of belt conveyers

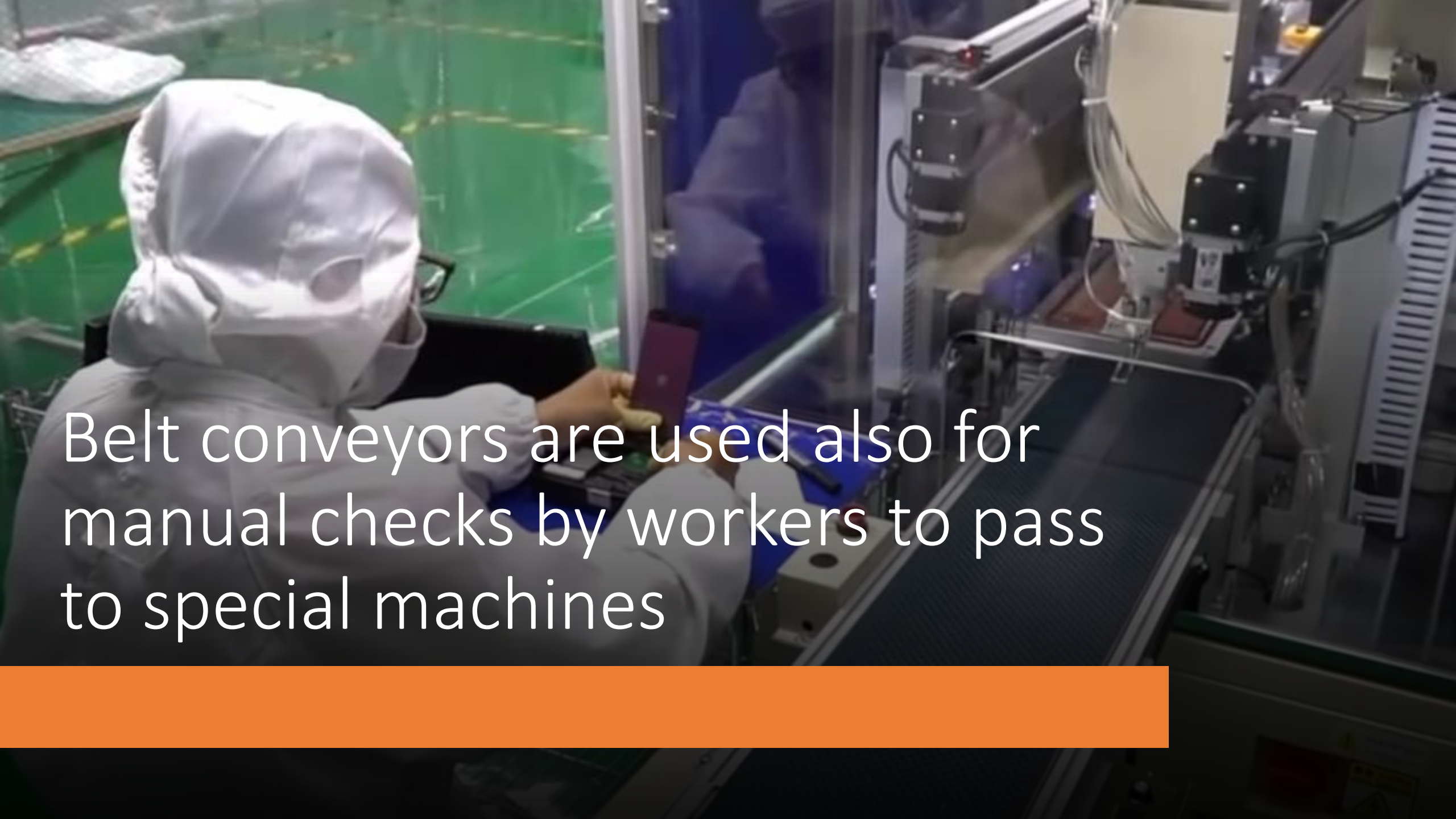
Belt Conveyor System

Advantages

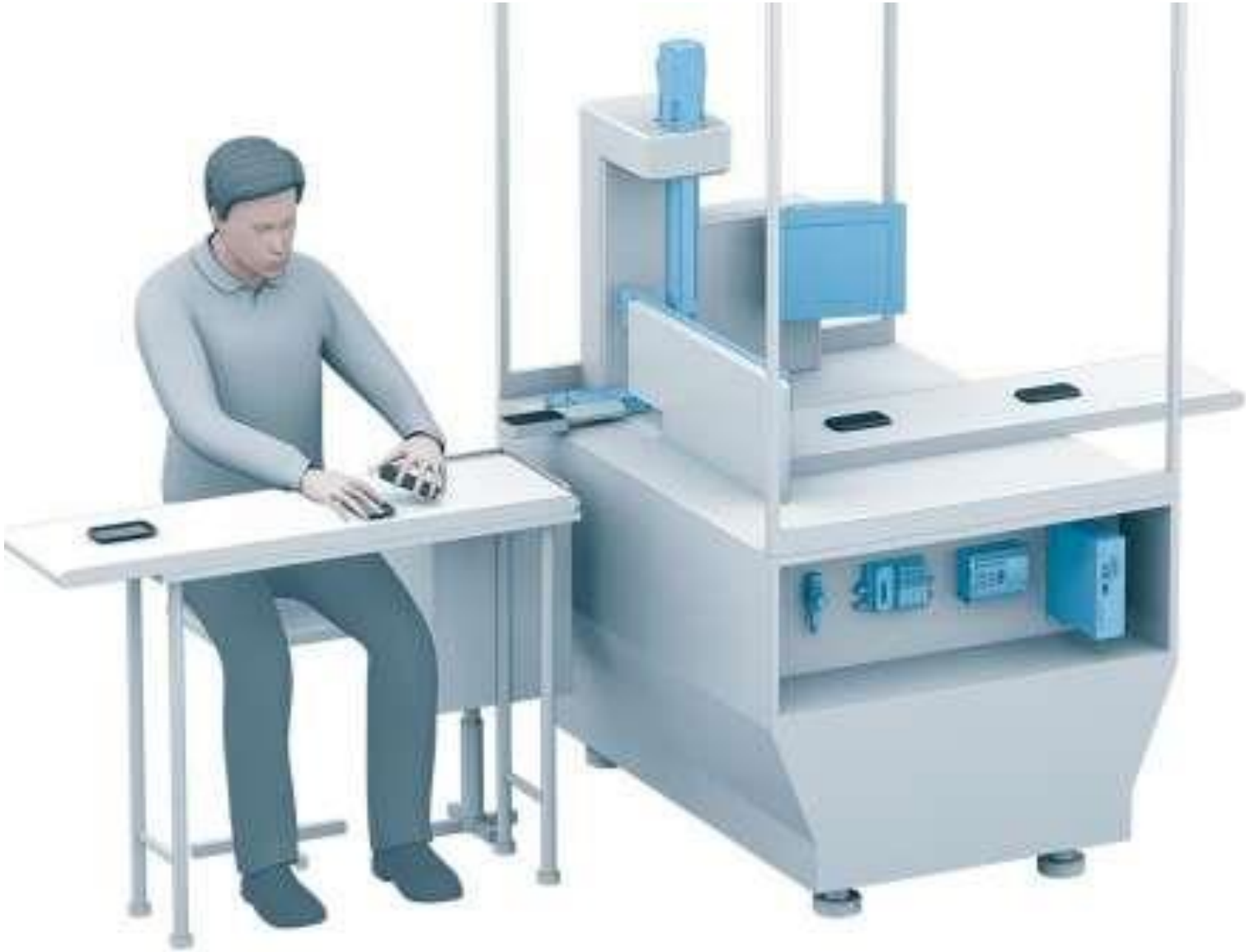
- One of the cheapest conveyors
- Simple and easy to use
- Can have changes in elevation
- Can be loaded from any place along the belt

Disadvantages

- The simplicity means very limited features
- Belt can be difficult to clean and generally does not leave a very successful result
- Sticky material can get stuck on the belt and transfer to the return side, the rolls, idlers and pulleys

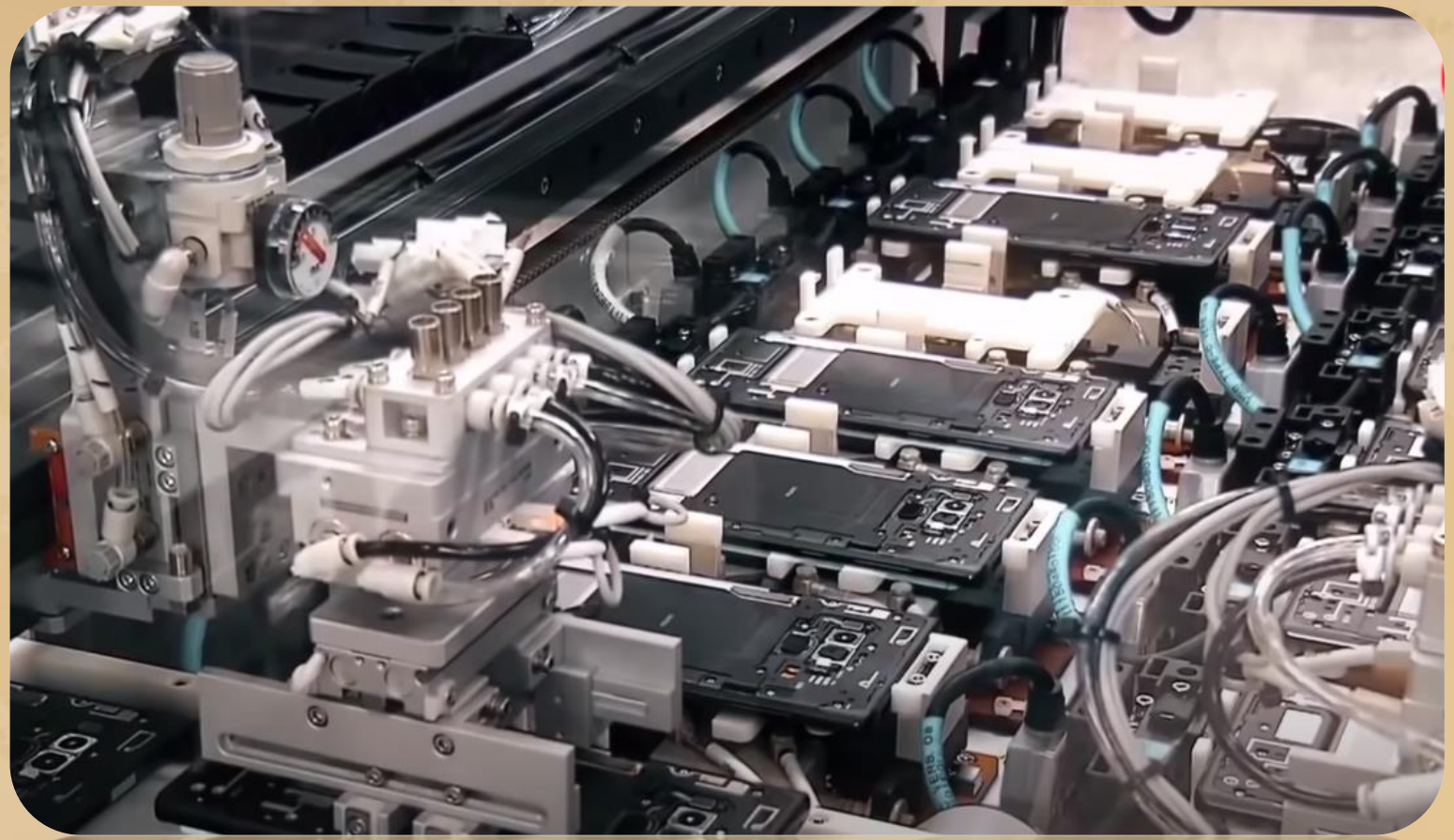


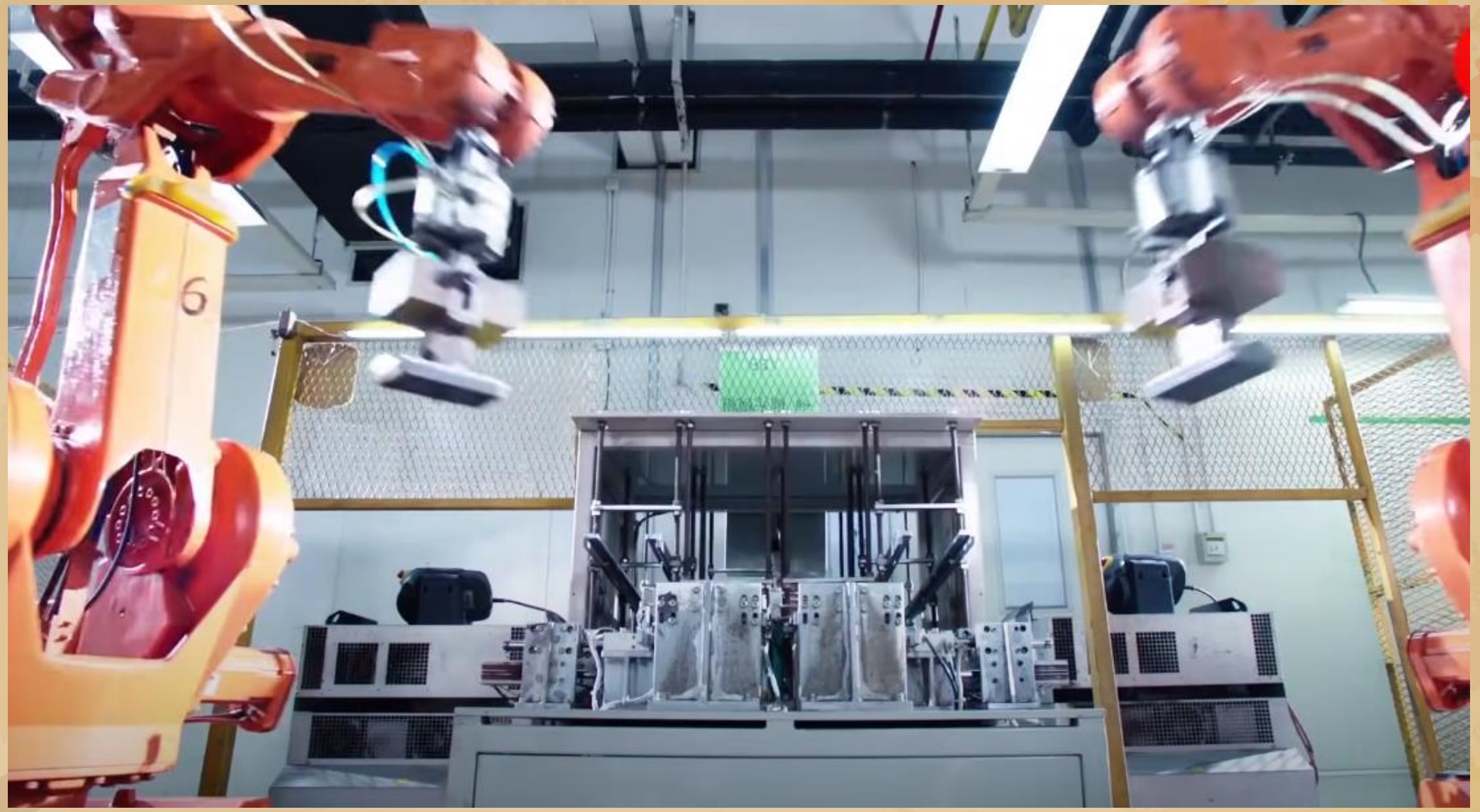
Belt conveyors are used also for manual checks by workers to pass to special machines



For Finished Products, rollers are used at the end

For Phones, Robotic Arms are used

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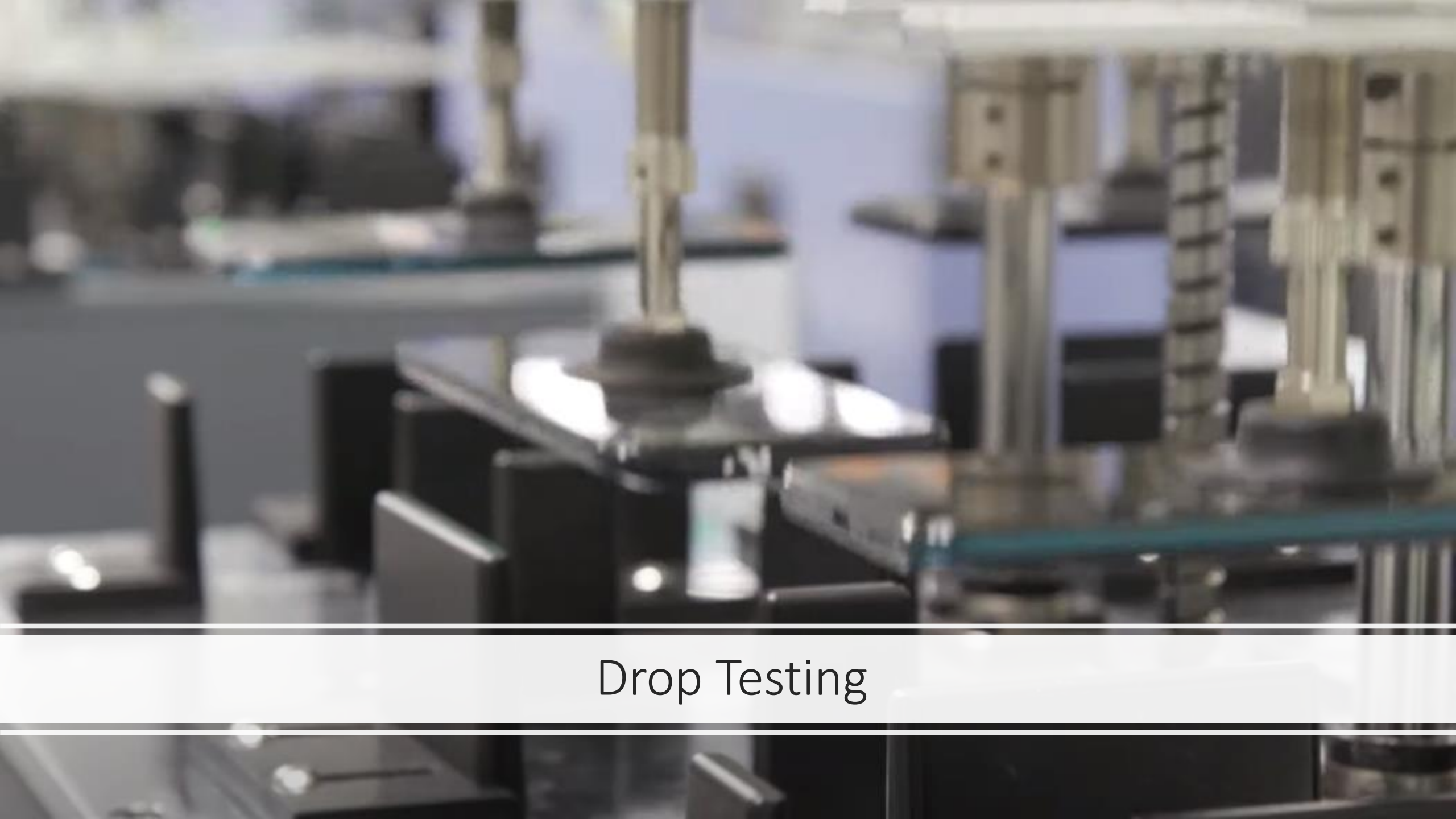
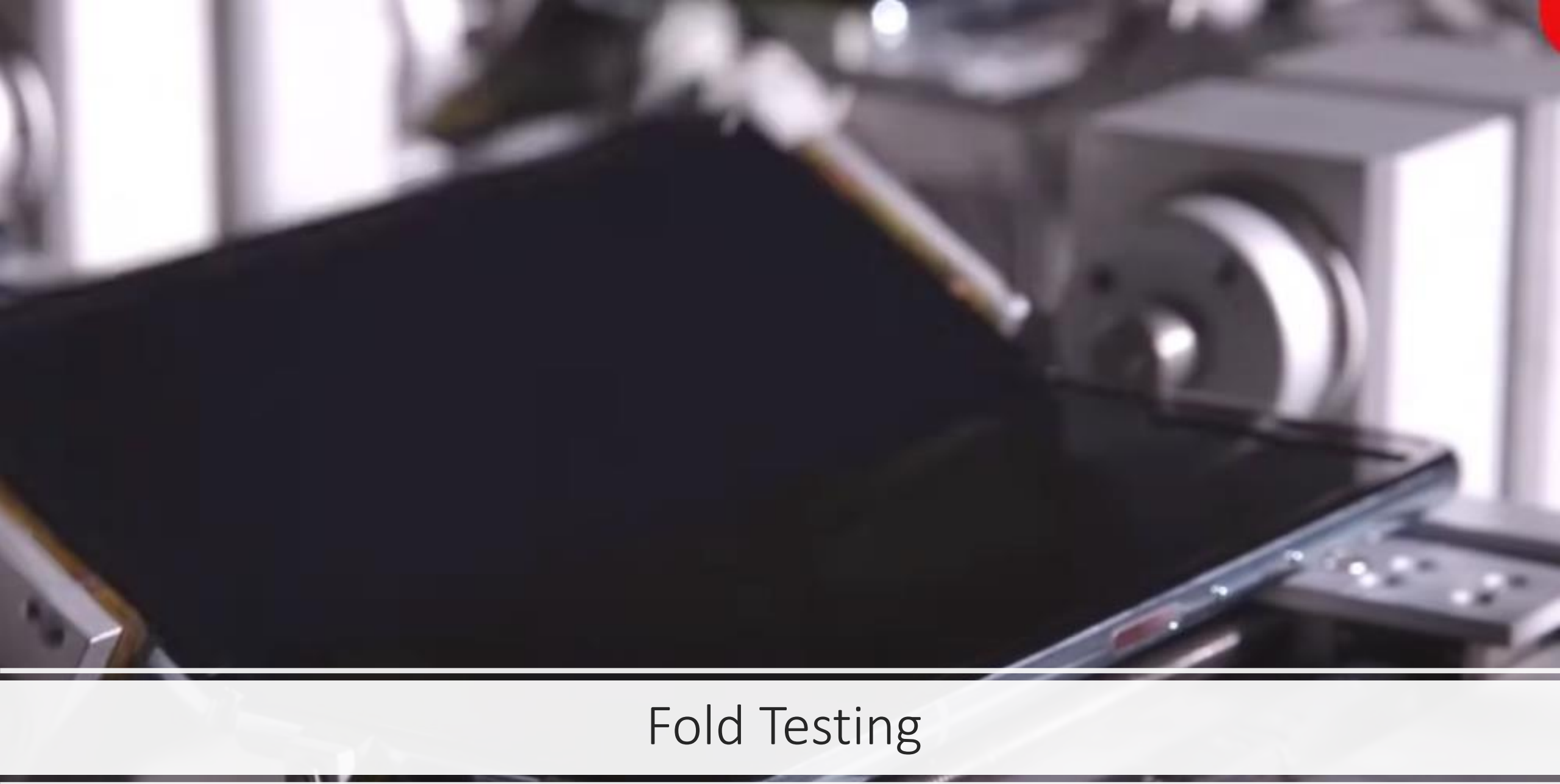
Testing is finally done by robots



Drop Testing

Jack Testing



Fold Testing

Thanks!