BME

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EXPERIMENT – 5

Objective:

To study conveyor systems and Robot assisted Material systems.

Theory:

A conveyor system is a common piece of mechanical ~~or~~ handling equipment that moves material from one place to another. They are especially useful in applications involving movement of heavy or bulky materials from one place to another.

They all have popular consumer applications as they are often found in supermarkets, airports etc.

Advantages of Conveyor systems:

1. They can be linked together with other machinery to become an integral component of a processing or a packaging line.
2. They can safely transfer materials from one level to another.
3. They can be installed anywhere.
4. Safer than forklifts and reduce labour

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(5) There are a variety of options available for running conveying systems eg. ~~Hydraulic~~ eg. Hydraulic, Mechanical, fully automated etc.

(*) Design and Selection of Conveyor Systems

→ We must consider and answer the following variables

(1) What are the goals and objectives for processing / assembly line?

(2) What is the product that needs to be moved?

(3) What is the weight size and packaging of the products?

(4) what is the rate of production for the applications

(*) Industry application

Conveyor systems are commonly used in many industries, including the mining, automotive, agricultural, computer, electronic, food processing, aerospace, pharmaceutical, chemical, bottling, and canning, print finishing and packaging.

Although a wide variety of materials can be conveyed, the most common ones

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include food items such as beans and nuts, bottles and cans, automotive components, scraps metal, pills, wood, furniture, grains, food etc.

(*) Latest Tsends in conveyor Systems

(1) The emergence of conveyors for flexible assembly lines.

(2) Conveyors are continuing to play a ~~g~~ greater role in robotic applications.

(*) Robotic Material Handling and Tending

→ Robotic material handling and tending systems are commonplace in the industrial sector. Material handling refers to robotic arms moving production parts, typically on or off a conveyor belt or to hold a part in place for production.

(*) Advantages

(1) The right conveyor control saves time, money and efficiency. It will optimize your material handling systems and warehouse operations.

(2) It will allow for variable production rates and quick production changes. Programmable logic controls (PLC) allow for this necessary direct system control.

(3) This centralized network oriented approach is best primed for automation and attaining the numbers you need to thrive.

(*) Application of conveyor systems in Smartphone manufacturing process.

→ The smartphone industry is heavily dependent on Robotic assistance in manufacturing

→ Parts needed to assemble are intricate, small and need precise placement.

→ Delicate parts are handled by the Robotic Arms, and chipsets are usually transported using specialised conveyor belts operated by motors.

(*) Conclusion

The working, advantages, disadvantages of Robot assisted Automatic Conveyor systems were studied and understood. Their application in ~~setup~~ smartphone industry was seen and ~~studied~~.

While they can be an investment on the side of the Manufacturers, this merits for exceed the demerits in large scale industry application.

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