

Components of an Automated Manufacturing System

- ❖ **AGV (Automatic Guided Vehicle)** is a vehicle used to carry the product from one work station to another. It is computer operated and runs along an "invisible" electric track throughout a factory. It is a very modern form of an assembly line.

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- ❖ **CAD (Computer- Aided Design)** is a method of planning and drawing a product using a computer. The designs and information is stored in the computer. computer can run test on the new product or part without the part even being there!

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❖ CAM (Computer- Aided Manufacturing) is a system where computers are used to operate the machinery in a factory.

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❖ **CAD/CAM** joins the two. The designer can create a part or product on the computer screen then sends it directly to a machine tool, which makes the part.

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- ❖ **CIM (Computer- Integrated Manufacturing)** uses one computer system to control many function of the manufacturing company. This main computer system handles marketing and sales, invoicing, production scheduling, design, equipment control and many other functions of a company.

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- ❖ **CNC (Computerized Numerical Control)** is a machine tool operation that is controlled by numerical commands from a computer.

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❖ **Fixture-** is a specialty tool usually designed and used only for one operation. A fixture holds material in place, while it is being processed, usually when holding the material by hand is too dangerous or not secure enough.

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❖ **Jig-** is another speciality tool usually designed and used for only one operation. A jig holds and guides the material to be processed during the operation. Again, a jig is used when holding the material by hand may be too dangerous or not secure enough. The jig moves but the fixture does not.

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- ❖ **Just- in- time-** With the aid of computers, manufacturers can order materials and parts from other suppliers "just in- time" to be used.
- ❖ This reduces the need for warehouse storage space and a costly inventory. This saves money and lowers product cost

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- ❖ Robotics- the technology that deals with the design, manufacture and use of robots in industrial and automated situations

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- ❖ **Stereo Lithography-** is a very new innovation that works like a three dimension picture