

Types of FMS

I. Depending Upon Kinds Of Operation

- I. **Processing operation.** Such operation transforms a work material from one state to another moving towards the final desired part or product. It adds value by changing the geometry, properties or appearance of the starting materials.
- II. **Assembly operation.** It involves joining of two or more component to create a new entity which is called an assembly/subassembly

Types of FMS

2. Depending Upon Level Of Flexibility

I. **Dedicated FMS.** It is designed to produce a particular variety of part styles. The product design is considered fixed. So, the system can be designed with a certain amount of process specialization to make the operation more efficient.

II. **Random order FMS.** It is able to handle the substantial variations in part configurations. To accommodate these variations, a random order FMS must be more flexible than the dedicated FMS. A random order FMS is capable of processing parts that have a higher degree of complexity. Thus, to deal with these kinds of complexity, sophisticated computer control system is used for this FMS type.

Types of FMS

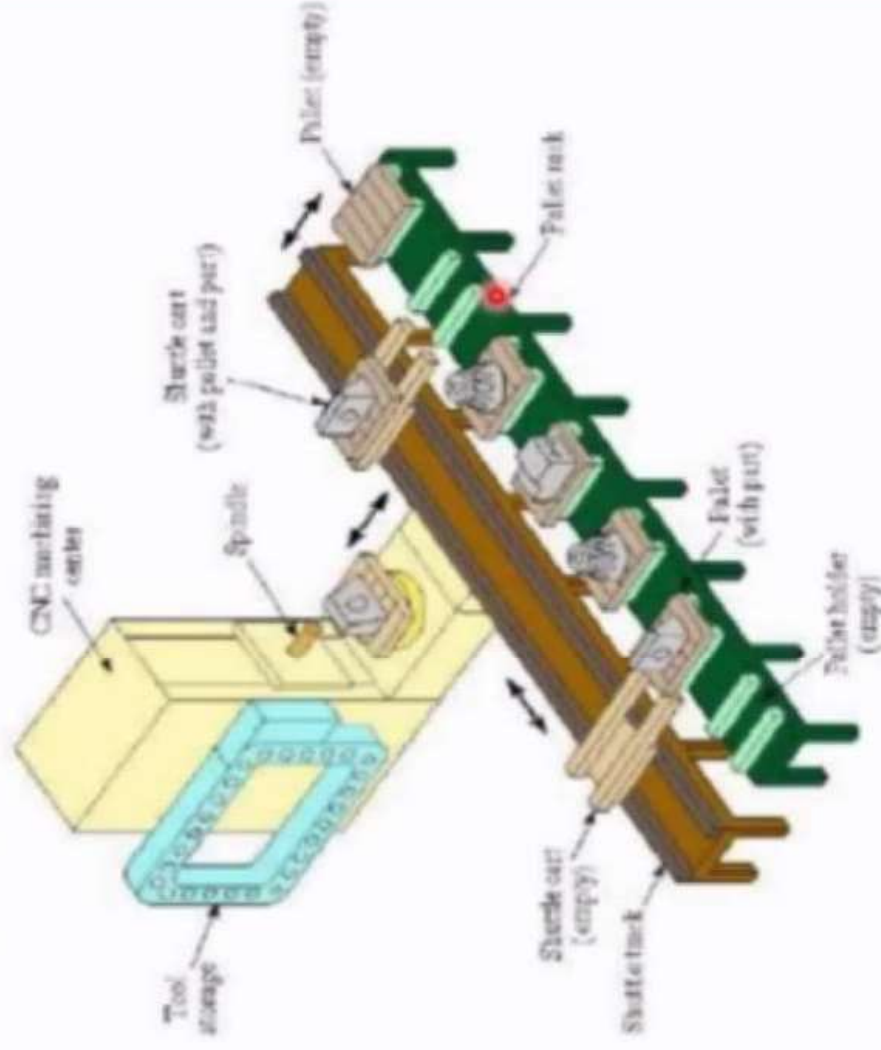
3. Depending Upon Number Of Machines

- I. Single machine cell (SMC).
- II. Flexible manufacturing cell (FMC).
- III. A Flexible Manufacturing System (FMS).

Types of FMS

1. Single machine cell—

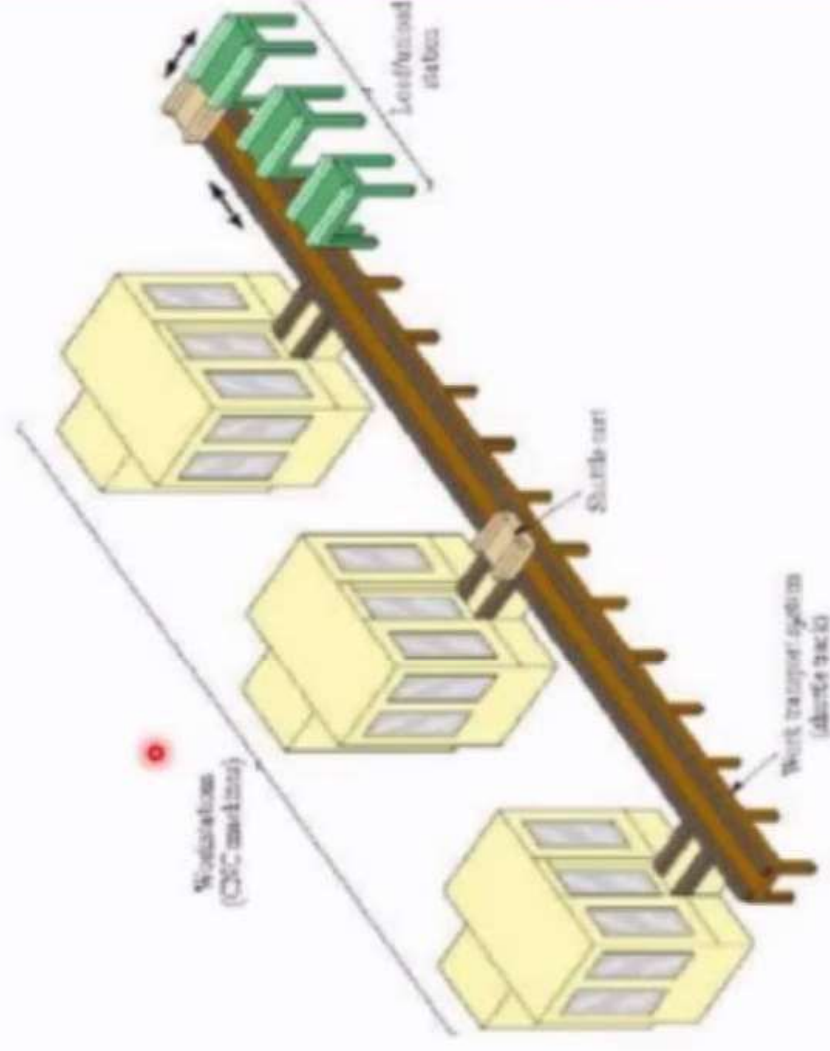
- It contains one machine (often a CNC machining centre) connected to a parts storage system, which can load and unload parts to and from the storage system.
- It is designed to operate in batch mode, flexible mode, or a combination of the two.



Types of FMS

2. Flexible manufacturing cell

- It contains two or three processing or workstations (often CNC machining or turning centers), plus a parts handling system.
- This set-up can operate in flexible mode and batch mode, as necessary, and can readily adapt to evolving production schedule and increased production volumes.



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2. Flexible Manufacturing System (FMS)

- It consists of four or more processing stations connected mechanically by a common parts handling system and electronically by a distributed computer system.
- FMS is larger than the flexible manufacturing cell, not only in the number of workstations it may contain, but also in the number of supporting stations in the system, such as part/pallet washing stations, coordinate measuring machines, storage stations and so on.

