

## Applications of Automations:– A few categorized as follows–

- \*Automated flow lines
- \* ” machining opns
- \* “ assembly syss AAS
- \* “ Guided vehicle AGVs
- \* “ Storages/Retrival sys
- \* “ machine tools
- \* “ inspections sys
- \* CAD/CAM

**1 – Automated flow lines** – these lines can be of two types:

- a) In line–this type of arrangement follows straight line movement and at the most a turn of 90degree due to factory layout limitations.
- b) Rotary– workparts are kept on rotating table at fixed locations. This type of equipment is known as dial index machine.

The Automated flow lines are incorporated at places such as–

- where product is stable
- high demand of product
- high rate of production

The **advantages** of automated flow lines are follows-

- it minimize the distance moved between opns.
- specialisation of opns can be done
- opns canbe integrated into one cell
- lesser WIP
- lesser mat handling labour cost
- Increased production rates



**2- Automated machining operations-** such m/cs perform a sequence of opns simultaneously on different work parts. these machines are:

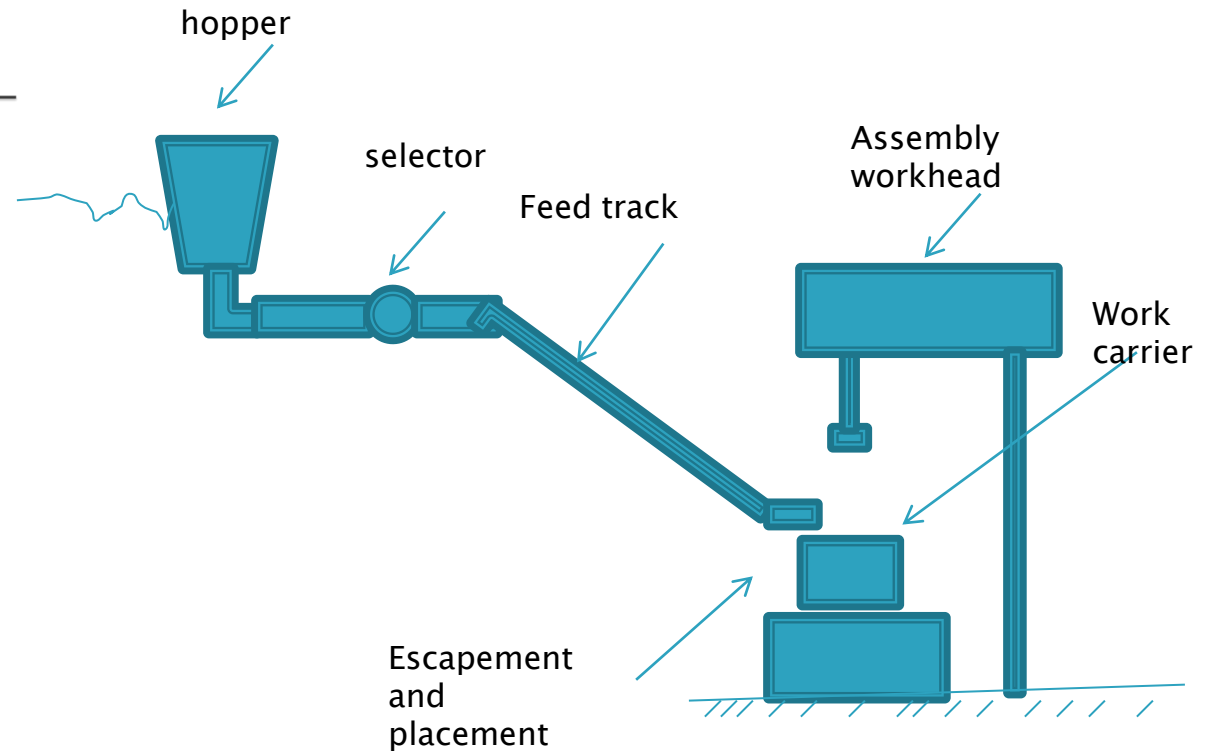
- Dial indexing machines
- Trunnion machines
- Transfer lines.

3- Automated Assembly sys(ASS)-The ASS are classified by the type of work transfer sys, used in sys as follows-

- Continuous assembly line e.g. beverage bottling.
- Synchronous line e.g. press work or progressive dies.
- Asynchronous lines e.g. power and free systems.
- Stationary base part e.g. Aero planes.

The basic elements/components of automated assembly lines consist of-

- hopper-
- parts feeder-
- feed track-
- Escapement devices-



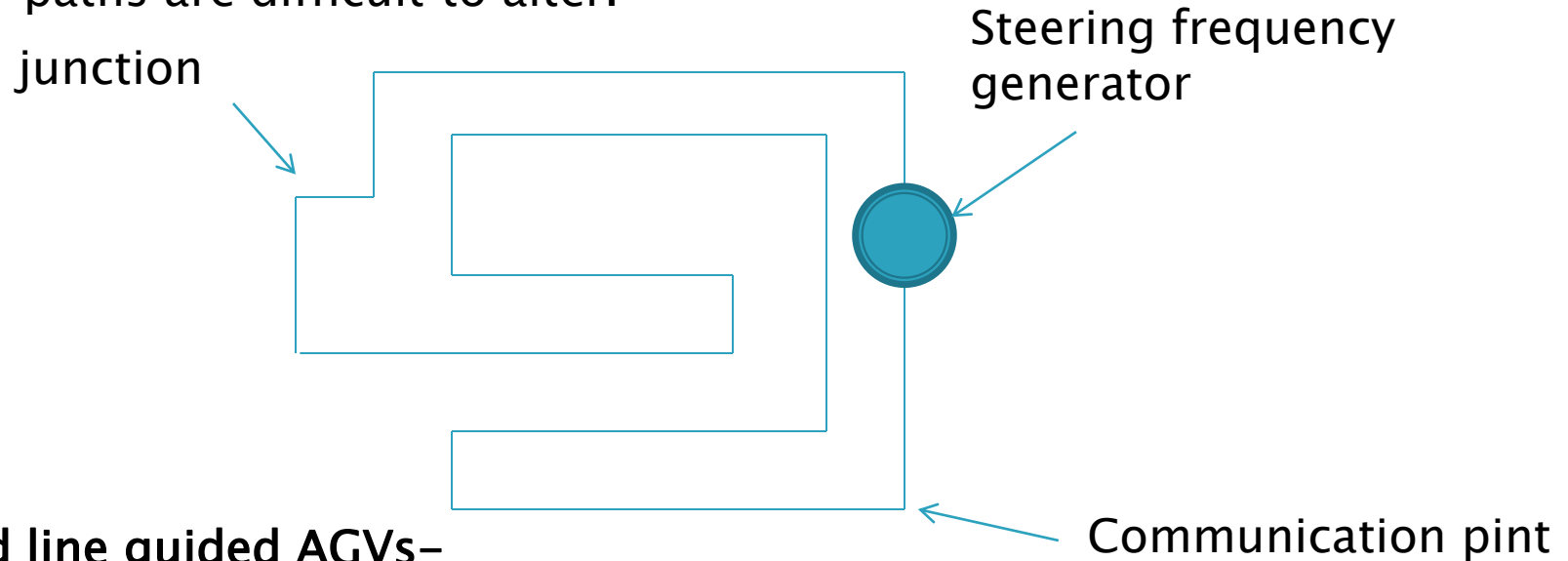
### 3- Automated Guided Vehicles(AGVs)–There are two types of AGVs–

- Wire guided AGV.
- Painted line guided AGVs.

#### 1 Wire guided AGV–

These AGVs are fairly reliable but have two disadvantages:

- The cost of erecting cable into ground is very high and is also labour intensive.
- AGV paths are difficult to alter.



#### 2 Painted line guided AGVs–

These AGVs are quickly erected and cheap, Alterrable easly. Some disadvantages: can not support complex networks,