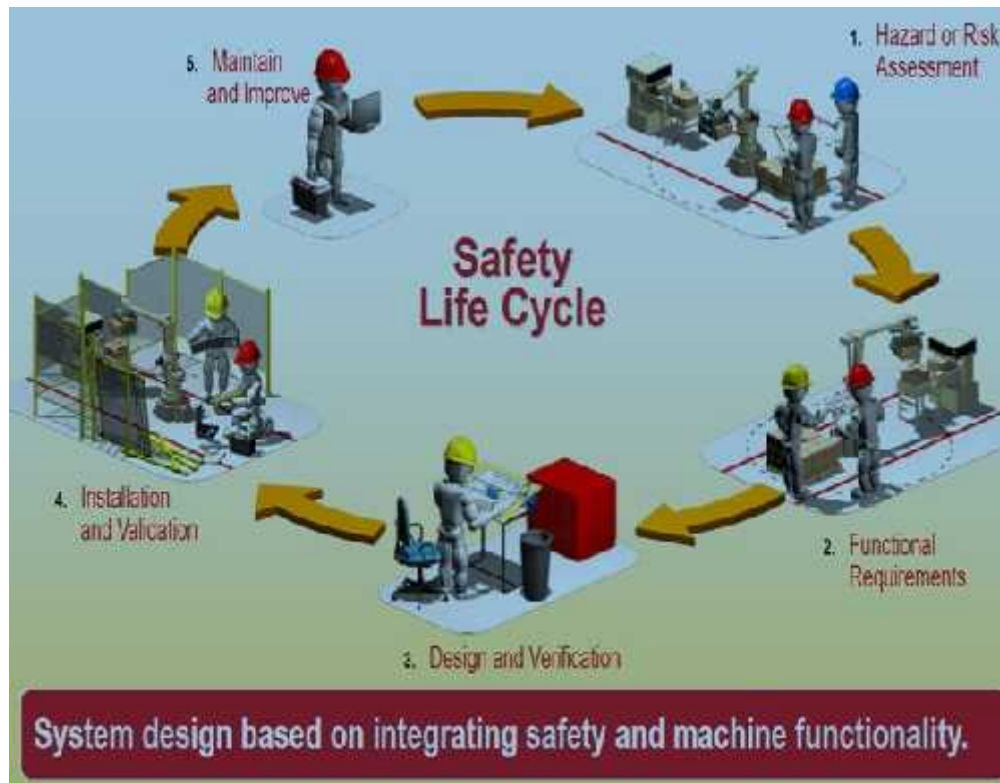


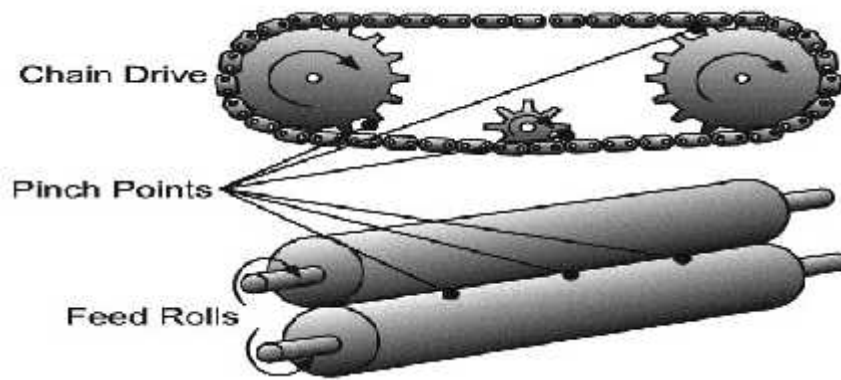
SAFETY WHILE WORKING IN MACHINERY



Machine safety means eliminating the hazards due to machines and providing safe operating condition.

Hazards:

- ❖ Contact with Moving Parts.
- ❖ Contact with Electricity, Heat, Fire, Cold, Other Energies.
- ❖ Contact with Pressurized Gas Or Liquid.
- ❖ Contact with Harmful Chemicals.
- ❖ Contact with Harmful Noise, Radiation, Vibration.
- ❖ Lack of Adequate Workplace Ergonomics: handling and process design.
- ❖ Harmful Actions to the Environment and Community.



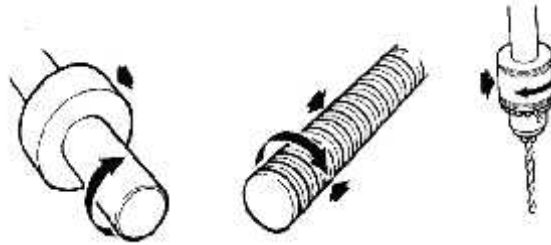
HAZARDS DUE TO:

- ❖ At the controls: starting or stopping, set-up, adjusting.
- ❖ Feeding of materials into the machine: loading and cleaning.
- ❖ Machine operations like cutting, turning, drilling, shaping, and punching.
- ❖ At the gears, wheels, cylinders, belts, rollers, chains, cables, sprockets & cams.
- ❖ Around lift trucks and moving equipment.
- ❖ Around conveyors, elevators, and cranes.
- ❖ Around any machinery and equipment that can release energy.

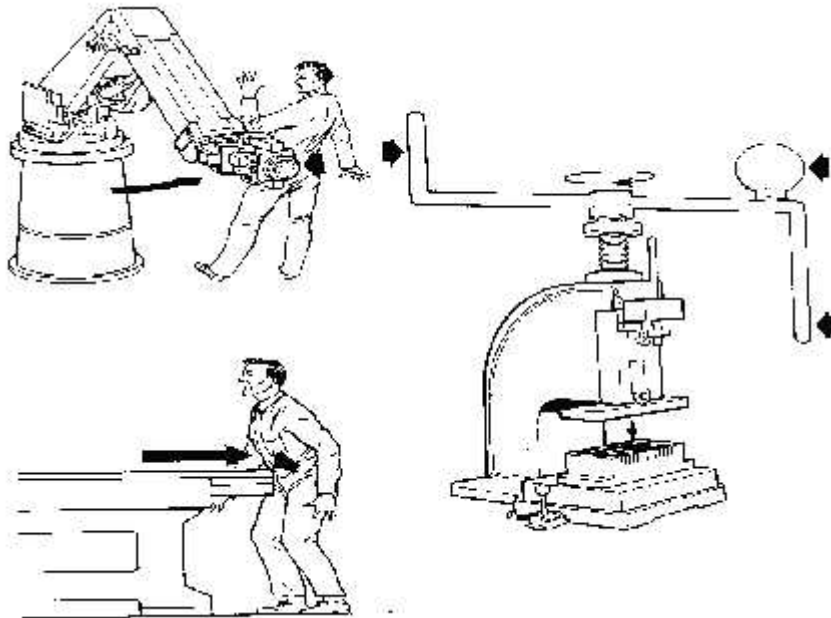


a. Hazardous Motions in Machines:

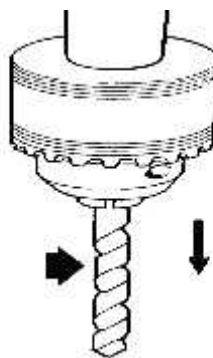
a. Rotational motion:



b. Reciprocating Motion:



c. Transverse Motion:



These motions have different actions and can therefore result in one or several types of injury.

| Motion | Action | Type of Injury |
|-----------------------------|----------------------------|---------------------------------------|
| Rotating | Cutting/ Trapping | Laceration/ Amputation |
| Back and Forth, Up and Down | Impact/ Struck by | Fracture/ Amputation |
| Straight Line | Entanglement/ Pulled by | Sprain/Strain Fracture, Amputation |

[b. Contact with Electricity, Fire, Heat, Cold, and other Energies:](#)

- At power panels, electrical circuits, power lines, ovens, and heating elements.
- Around chemical containers, vats, pipes, pumps, and compressors.
- Around cranes, hoists, other lifting devices.
- During service and repair jobs.

Effects:

- Burns and scalds.
- Freeze injuries.
- Electrocutation.

[c. Contact with Pressurized Gas or Liquid:](#)

- At nozzles of pressurized cleaning and painting spray lines and air jets.
- Around injectors, autoclaves, extruders, chemical containers, vats, pipes, pumps and compressors.
- During cleaning, service, and repair jobs.

EFFECTS:

- Puncture skin.
- Cuts.
- Reduce visibility.

CONTACT WITH HARMFUL NOISE, RADIATION, VIBRATION:

- At stamping, sawing, grinding and polishing jobs.
- At welding and cutting jobs.
- At finishing and curing job.

Effects:

- Harmful noise or radiation can destroy hearing or damage your internal organs.
- Vibrations can injure soft body tissues and joints.

Preventive Measures:

- Machine guarding will prevent from contact with hazardous motions.
- Isolation will prevent from extreme temperatures, noise and pressurized gas or liquid.
- Insulation will prevent from contact with electricity.
- Vibration dampers will prevent from vibration.
- Personal protective equipment's will be the least preventive measure for machine safety.