



DESIGN PHILOSOPHY 7: MANUAL TASKS



Objective

The objective is to prevent harm due to manual tasks during installation, maintenance and operations of equipment, to as low as reasonably practical, including consideration in design for foreseeable human error and anthropometric range.



General outcome

The intended design outcome should eliminate the need for manual tasks associated with equipment installation, operation and maintenance.

Where elimination cannot be achieved, the intended design outcome should include consideration of:

- Ergonomic positioning and anthropometric range
- Use of tools that minimise exposure to hazards
- Effective maintenance – e.g., components only fit in only one orientation



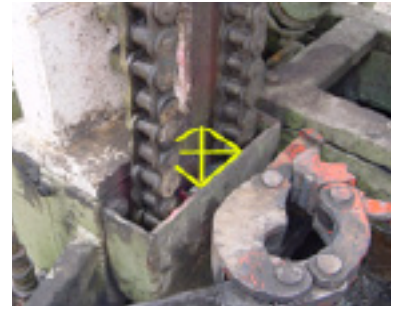
Causal Pathways

7.1 Musculoskeletal harm from exposure to the following hazards or combinations thereof:

- Over exertion
- Awkward or static posture – overreaching/overextending
- Repetition or prolonged duration
- Positioning of key controls and interfaces, i.e. Isolators, service stations, emergency ladder operation and emergency exit
- Hand arm and/or whole-body vibration due to manual tasks associated with installing, operating and maintaining the equipment



7.2 Harm occurring during operation and maintenance tasks due to inadequately designed equipment that introduces crush and pinch point hazards.



7.3 Hazards during operation and maintenance tasks (e.g. falling material, handling liquids, machine consumables and spillage) due to no/inadequate design for these activities.



7.4 Harm resulting from slips, trips and falls due to:

- Uneven, work surfaces or platforms
- Premature failure of components due to inadequate protection from corrosion



7.5 Harm due to use of inappropriate tools for manual tasks associated with installing, operating and maintaining the equipment, e.g.:

- Only be fitted as per design
- Accessible through common tool sets



7.6 Harm during manual handling of equipment components due to:

- Excessive weight
- Lack of suitable lifting points
- Inadequate access and egress
- Uncontrolled release of energy

