Manual Handling in the Food Industry

Working with you to achieve safer workplaces
WorkSafe Victoria

The Victorian food industry encompasses many diverse sectors, ranging from the manufacture of chocolates to the production of fine wines. The industry makes a crucial contribution to the Victorian economy, with employment growth in the last seven years reaching 29 per cent (approximately 60,000 workers).

The food industry is labour intensive and as a result many workers suffer unnecessary injuries. This publication is designed to help both employers and workers to overcome these challenges.

Manual handling is a long-standing issue in the food manufacturing industry. Each year more than 2000 claims are reported. Over half of these involve manual handling with expected costs exceeding $36 million. The human costs – for injured workers, their families and others involved – are far greater.

This publication details common tasks that are carried out within the industry and provides solutions to enable workers to complete the tasks safely. I urge you to implement the changes required within your workplace to ensure that you control and reduce the risks.

I commend the Food Industry OHS Working Party and other individuals who have contributed to the development of this publication for their continual dedication to improving health and safety in the food industry.

I hope this publication will help to turn manual handling problems around and trigger an industry-wide commitment to make safety a top priority.

Bob Cameron MP
Minister for WorkCover
Eliminating or reducing the risk

1. Involve the workers

Involving your workers is critical because they understand the workplace and are exposed to the risks. Their knowledge and experience will assist in identifying problem areas and providing practical solutions.

The best way to involve workers is by having trained Health & Safety representatives established in your workplace. Health & Safety representatives must be consulted when identifying hazards, and assessing and controlling risks.

2. Identify the hazards, assess and control the risks

Identifying hazards, assessing and controlling risks is the fundamental process of managing occupational health and safety risks within your workplace. This publication outlines 20 common hazardous manual handling tasks within the food industry and provides multiple long and short term control options.

Critical to the success of managing occupational health and safety risks is the implementation of the applicable control options. The risk controls adopted should be reviewed after a short period to assess their effectiveness and any required changes or improvements made.

If the risks cannot be eliminated immediately, use interim measures to reduce the risk of an injury occurring while you determine how and when you will implement long term controls.

By using this guide to assist in the review of your workplace, you may also identify inefficiencies in your operations that can contribute to the risk of injury. Unnecessary double handling is a common inefficient way of working which can increase the risk of injury. By reducing the risks, you may discover that you also reduce the impact of spillage and product damage.
Common manual handling issues

Heat

Manual handling tasks are often undertaken in a hot environment that may expose employees to increased manual handling risk. Increased fatigue due to heat and increased risk when employees are required to handle objects may occur. When using heat resistant gloves or gauntlets, dexterity may be reduced and the employee may use awkward hand, wrist and arm postures and may apply higher force to ensure a firm grip. Where an increased manual handling risk occurs, control measures are required.

Solutions:
- Reduce direct contact with hot objects by wearing personal protective equipment (PPE) such as heat resistant gloves or gauntlets
- Where practicable, a mechanical device should be used to reduce the manual handling risk associated with handling hot objects
- Where practicable, exposure to hot environments should be reduced by regular breaks in a cooler environment
- Cool fluids should be available at all times in the work area
- When a process is delayed or stops for a period of time, employees should, where practicable, move to a cooler environment rather than remain inactive in the hot environment
- Where practicable, it is recommended that a working environment is maintained at a temperature suitable for employees to undertake manual handling tasks

Cold

Working in cold conditions can reduce work capacity and refrigerated materials can become moist or wet, or develop a frost that can cause surface areas to become slippery, difficult to grasp or hold. Increased risk factors include:

Solutions:
- Ensure that employees wear appropriate clothing that’s not too bulky or restrictive
- Ensure regular rest breaks in a warm place are taken
- Ensure refrigeration plant is well maintained and humidity is kept to a minimum
- Supply appropriate personal protective equipment such as gloves and footwear designed to give good grip on slippery surfaces and protection from the cold
- Ensure the work area is kept tidy and floors are not slippery

Floor surfaces

Floor surfaces may become slippery due to wetness or are cracked and uneven, therefore requiring increased force to move trolleys, tubs and the like. Control measures may include:

Solutions:
- Grated floor surfaces can reduce slipping hazards
- Regular housekeeping ie cleaning, vacuuming, removal of liquids
- Regular repair and maintenance of floor surfaces
- Improved drainage

Trolleys

Trolleys that are overloaded, not maintained, or used for material and tasks that they are not designed for can create hazardous manual handling.

Solutions:
- Large wheels or castors with low-friction bearings reduce force
- Check wheels and castors are regularly cleaned and maintained to reduce forces involved in trolley handling
- Check that trolleys have suitable handle height, width and configuration to reduce bent postures and force while pushing and manoeuvring
- Use vertical handles to cater for employees of different height, reducing the force required to move the trolley

Proper maintenance of all equipment, including mechanical aids recommended in this publication is essential to minimise risk.
Handling sacks of raw material

All food manufacturing sites need to feed raw materials into hoppers, sieves, kettles or other processing plant. This plant frequently requires feeding material from the floor or an elevated work platform. Sacks are often unstable, unbalanced or difficult to hold.

Risks

High force
- lifting, lowering or carrying heavy loads
- applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
- using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
- holding, supporting or restraining a heavy object
- exerting high force while in an awkward posture

Main body parts affected
- Back
- Shoulders
- Arms
- Wrists
- Hands

Risk Controls

Alter the workplace
- redesign the workplace to improve working heights
- add a chute to increase the height

Change the objects used in the task
- reduce the weight or size of the sacks

Use mechanical aids
- replace sacks with automatic feeding, bulk feed or suction feed devices
- introduce vacuum lifters, manipulators or scissor lifts with turntables
- use conveyors or forklifts to eliminate carrying of heavy loads.

Other issues
- If working on a platform there may be a restricted work area, insufficient railings or slipping, tripping and falling hazards
- Exposure to dust or other hazardous substances

Handling drums, tubs and other containers

Shortcuts, for example, sliding tubs of material over a wet floor, are common. However, they increase manual handling hazards.

Risks

High force
- applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
- pushing or pulling objects that are hard to move or to stop
- exerting high force while in an awkward posture

Environmental factors
- low temperatures
- handling cold objects
- wearing gloves while working in cold conditions

Main body parts affected
- Back
- Shoulders
- Arms
- Wrists
- Hands

Risk Controls

Alter the workplace
- redesign the workplace to improve working heights
- add a chute to increase the height

Change the objects used in the task
- reduce the weight or size of the sacks

Use mechanical aids
- replace sacks with automatic feeding, bulk feed or suction feed devices
- introduce vacuum lifters, manipulators or scissor lifts with turntables
- use conveyors or forklifts to eliminate carrying of heavy loads.

Other issues
- The type of wheel must be suitable for the work surface and work task
Tipping material from bags and sacks

All food manufacturing sites need to feed raw materials into hoppers, sieves, kettles or other processing plant. Traditionally, knives are used to open the bags or sacks.

Risks
Repetitive or sustained postures, movements or forces AND long duration
- bending the back more than 20 degrees
- working with hands above shoulder height
- exerting force with one hand or one side of the body
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture
- holding, supporting or restraining an object

High force
- lifting, lowering or carrying heavy loads
- applying jerky forces during lifting and carrying
- exerting high force while in an awkward posture

Environmental factors
- high or low temperatures
- radiant heat

Risk Controls
Alter the workplace
- reduce or raise the working height
- install resting panels for the sacks

Change the objects used in the task
- replace stitched or heat-sealed sacks with tear-top sacks
- use vacuum lifts, bag manipulators, scissor lifts with turntables
- use conveyors

Other issues
- Steam
- Working at heights
- Restricted workspace
- Using a knife
- Exposure to dust or other hazardous substance

This guide should be used in conjunction with the Occupational Health and Safety (Manual Handling) Regulations 1999 and Manual Handling Code of Practice 2000.

Tipping material from drums and tubs

Many food manufacturing sites handle drums and tubs. These containers may contain waste, raw material or product. Often the entire container is tilted to empty it. Sometimes contents can be decanted first. Often the material is manually or semi automatically pumped into manufacturing process.

Risks
Repetitive or sustained postures, movements or forces AND long duration
- bending the back more than 20 degrees
- exerting force with one hand or one side of the body
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture
- holding, supporting or restraining an object

High force
- lifting, lowering or carrying heavy loads
- applying jerky forces during lifting and carrying
- exerting high force while in an awkward posture

Environmental factors
- high temperatures
- handling cold objects

Risk Controls
Alter the workplace
- provide a stable surface from which to open the container

Change the objects used in the task
- use automatic feeding devices from containers
- change the type of containers used
- ensure that containers are designed with handles to improve grip whilst handling the heavy load
- include a pouring lip in the containers

Use mechanical aids
- use drum lifters
- use scissor lifts with turntables

Other issues
- Steam
Lifting and handling material and product

There is a large variety of raw materials and product require to be loaded and unloaded onto production lines.

**Risks**

- Repetitive or sustained postures, movements or forces AND long duration
  - bending the back more than 20 degrees
  - reaching more than 30 cm from the body
  - twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
  - exerting force while in an awkward posture

- **High force**
  - applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
  - exerting high force while in an awkward posture

- **Environmental factors**
  - handling cold objects

**Risk Controls**

- **Alter the workplace**
  - horizontal loading of rolls reduces the need to twist the roll onto a vertical spindle and provides better visibility for the handler

- **Change the objects used in the task**
  - reduce the roll weight or material weight
  - introduce manipulators or slings or other plant that can incorporate a lifting mechanism that operates from floor or pallet level
  - automate the lifting process

- **Use mechanical aids**
  - reduce the roll weight or material weight
  - introduce manipulators or slings or other plant that can incorporate a lifting mechanism that operates from floor or pallet level

Lifting kettle lids

Many food manufacturers have kettles or cooking pots. These are often elevated and all require frequent cleaning. Often product requires to be inspected while cooking or additional ingredients inserted. Many lids are very heavy; most are of a non-transparent material.

**Risks**

- Repetitive or sustained postures, movements or forces AND long duration
  - bending the back more than 20 degrees
  - reaching more than 30 cm from the body
  - twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
  - exerting force while in an awkward posture

- **Environmental factors**
  - high temperatures
  - radiant heat

**Risk Controls**

- **Alter the workplace**
  - have a grated floor surface to reduce slipping hazard

- **Change the object**
  - extend the nozzle of the cleaning hose
  - install a counterbalance or a lock hinge to the lid
  - include an inspection window, or similar, in the kettle
  - introduce positive pressure so that the steam is directed away from the operator
  - install an automatic material feed system so that the kettle is only opened for cleaning

- **Other issues**
  - Direct contact with the steam or splashing product can result in serious burns

**Main body parts affected**

- Back
- Shoulders
- Arms
- Wrists
- Hands

This guide should be used in conjunction with the Occupational Health and Safety (Manual Handling) Regulations 1999 and Manual Handling Code of Practice 2000.
Decorating cakes

Cake decorating is indicative of some food manufacturing tasks that require dexterity for small items. Large producers are able to automate the process however there are many smaller cake manufacturers that undertake this task manually.

Main body parts affected
- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands

Risks
Repetitive or sustained postures, movements or forces AND long duration
- bending the back more than 20 degrees
- bending the head more than 20 degrees
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- excessive bending of the wrist
- exerting force with one hand or one side of the body
- gripping with the fingers pinched together or held wide apart
- holding and supporting an object or tool

Risk Controls
Alter the workplace
- install support seating for the decorator

Alter the environmental conditions
- improve lighting to highlight the work surface of the cake

Alter the systems of work
- introduce job rotation in combination with other risk controls
- change the objects used in the task
- install automatic icing feeders

Use mechanical aids
- install variable height work platforms
- install turntables for the cakes

Sustained and repetitive hand decorating has many risks

Sealing bottles

Bottles remain a major food packaging option. Large food manufacturers operate automated systems however, smaller operators, cottage industries and “boutique” product manufacturers may continue to undertake this task by hand. The inserting of corks or capping of bottles can be a highly repetitive task involving high force.

Main body parts affected
- Shoulders
- Arms
- Wrists
- Hands

Risks
Repetitive or sustained postures, movements or forces AND long duration
- bending the back more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- working with fingers close together or wide apart
- exerting force with one hand or one side of the body
- exerting force while in an awkward posture

Risk Controls
Altering the workplace
- reduce the risk by reducing the force required
- change to push button or other lever

Altering systems of work
- job rotation to reduce exposure to the risk factors in combination with other risk controls

Change the objects used in the task
- redesign the bottle to integrate a sealing mechanism

Use mechanical aids
- automate the process
- use mechanical jigs or lever-operated equipment

The sealing mechanism of this bottle has been integrated into the bottle and reduces risk

The task has been automated to eliminate the manual sealing task

The insertion of corks or capping of bottles can be a highly repetitive task
Handling hot trays and racks

The handling of hot racks and trays is common in the food industry. Racks can be of a considerable weight, and unwieldy shape and size. They are often handled while loaded with product and are frequently hot.

Main body parts affected
- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands
- Feet

Risks
Repetitive or sustained postures, movements or forces AND long duration
- bending the back more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wrenching actions with the fingers, hands or arms
- excessive bending of the wrist
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture

Environmental factors
- radiant heat

Risk Controls
Alter the system of work
- have two operators handle racks (team handling) as a short term control measure

Change the object
- use detachable handles to reduce the exposure to hot trays
- reduce weight of trays
- grease trays so that the product can slide

Use mechanical aids
- automate the process

Inspecting product

Some food manufacturers operate a separate inspection area on the production line. Inspectors are required to remove any product that does not match quality requirements and are unlikely to pack any product. This task could be one of those which is integral to a job rotation program.

Main body parts affected
- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands

Risks
Repetitive or sustained postures, movements or forces AND long duration
- twisting the back more than 20 degrees
- bending the head more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wrenching actions with fingers, hands or arms
- excessive bending of the wrist
- lifting and lowering

Risk Controls
Alter the workplace
- thinner production line at inspection point to reduce the reach distance
- introduce anti-fatigue matting
- provide support seating for the inspector
- provide an arm rest or sling above the production line
- include a buffer zone

Alter the systems of work
- introduce job rotation in combination with other risk controls

Other issues
- As with most production lines, the inspector will need to keep pace with the product throughput on the conveyor

Handling hot trays and racks

Trays loaded with product are frequently hot, heavy and of an unwieldy shape and size

In these two examples moving the product has been mechanised to eliminate manual handling

This conveyor requires excessive reach forward and reaching above the conveyor. There is no buffer zone.

This conveyor requires excessive reach forward and reaching above the conveyor. There is no buffer zone.

For this wide conveyor an employee is positioned on either side, reducing excessive bending and reaching

At this conveyor the employee is closer to the conveyor reducing excessive bending and reaching and a bin has been placed beside the employee for rejected product.
Weighing product

Manual handling tasks in food manufacturing cannot be separated from production timetables. A significant way of reducing production time is through the removal of practices known as “double-handling”. This also eliminates a manual handling task.

**Risks**
- Repetitive or sustained postures, movements or forces AND long duration
  - bending the back more than 20 degrees
  - twisting the back more than 20 degrees
  - reaching more than 30cm from the body
  - lifting or lowering
  - exerting force while in an awkward posture

- High force
  - lifting, lowering or carrying heavy loads
  - using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
  - exerting high force while in an awkward posture

**Risk Controls**
- Alter the workplace
  - elevate the scales from floor height
  - integrate weighing scales within the conveyor process

- Alter systems of work
  - weigh a loaded pallet rather than individual packs to eliminate manual handling

- Use mechanical aids
  - install an integrated pallet weigher and trolley

Labelling packages

There are large varieties of labelling practices in the food manufacturing industry. Large production companies with significant throughput and uniform packaging are likely to have this process automated or semi-automated. Smaller operators, or those with production lines of niche or gourmet products, are likely to continue labelling by hand.

**Risks**
- Repetitive or sustained postures, movements or forces AND long duration
  - bending the back more than 20 degrees
  - bending the head more than 20 degrees
  - reaching forwards or sideways more than 30cm from the body
  - twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
  - carrying with one hand or one side of the body
  - exerting force with one hand or one side of the body
  - holding or supporting an object or tool

- High force
  - lifting, lowering or carrying heavy loads
  - exerting high force while in an awkward posture

**Risk Controls**
- Alter the workplace
  - ensure that the package is labelled at a safe height

- Alter the systems of work
  - label the carton prior to assembly

- Change the object
  - request that suppliers provide pre-labelled cartons and packages
  - provide labelling guns that are designed to reduce the force required on the trigger or use a counter balance

- Use mechanical aids
  - automate wherever possible

**Other issues**
- Cutting hazards
- Dust or fumes
Loading flat-pack boxes

Boxes are mostly frequently delivered in packets of collapsed or flat-boxes and are often of considerable weight. The flat-packs may be fed into a packaging unit that is machine-paced.

Main body parts affected
- Back
- Shoulders
- Arms
- Wrists
- Hands

Risks
Repetitive or sustained postures, movements or forces AND long duration
- bending the back more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- lifting or lowering
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture

High force
- lifting, lowering or carrying heavy loads
- exerting high force while in an awkward posture

Risk Controls
Alter the workplace
- raise the height of a pallet by using a stand or lifter
- change the objects used in the task
- request supplier to provide fewer flat packs in each packet
- request supplier provides ready-made boxes

Use mechanical aids
- introduce vacuum lifters or mobile scissor lift tables
- introduce automated box assembler

Other issues
- Edges of cardboard and strapping can be very sharp and can easily cut a handler
- Handlers can wear suitable gloves
- Disposal of waste product

Packing finished product

Most industries require the packing of product. Frequently this involves twisting and lifting to pack individual items into tins, racks or packets.

Main body parts affected
- Neck
- Shoulders
- Arms
- Wrists
- Hands

Risks
Repetitive or sustained postures movements or forces AND long duration
- twisting the back more than 20 degrees
- bending the head more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wringing actions with fingers, hands or arms
- excessive bending of the wrist
- lifting and lowering
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture

High force
- lifting, lowering or carrying heavy loads
- exerting high force while in an awkward posture

Risk Controls
Alter the workplace
- place the tins or boxes in front of the operator to minimise any twisting
- tilt the tin or box towards the operator
- provide support seating for the operator

Alter the systems of work
- introduce job rotation

Use mechanical aids
- automate the product selection task, if possible
- automate the tin sealing process or seek alternative packaging

Other issues
- The operator needs to keep up with the production line speed

Handling flat-packed boxes may often involve repetitive and sustained postures, movements and force coupled with long duration and high force.

Managing flat-packed boxes may often involve repetitive and sustained postures, movements and force coupled with long duration and high force.
Palletising product

Most industries require the palletising of product. Frequently this involves bending and twisting when transferring product from racks, trolleys or the production line to pallets for despatch.

Main body parts affected
- Back
- Shoulders
- Arms
- Legs
- Feet

Risks
- Repetitive or sustained postures, movements or forces AND long duration
  - bending the back more than 20 degrees
  - twisting the back more than 20 degrees
  - reaching more than 30cm from the body
  - lifting or lowering
  - exerting force while in an awkward posture

High force
- lifting, lowering or carrying heavy loads
- using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
- exerting high force while in an awkward posture

Risk Controls
- Alter the workplace
  - provide adjustable work areas or tables
- Use mechanical aids
  - automate if possible
  - install a scissor lift with a turntable
  - apply a vacuum lifting device or manipulator
  - use a conveyor to transport product at a uniform height to the pallet
  - use a trolley and scissor lift combination

Other issues
- This process may occur in the loading bay which may expose the operators to variable environmental conditions

Transferring product between wooden and plastic pallets

In the food industry it is a requirement for only non-wooden pallets to be used in food production areas. As a result there is considerable time and effort spent relocating materials from wooden to plastic pallets, and vice versa.

Main body parts affected
- Back
- Shoulders
- Arms
- Legs

Risks
- Repetitive or sustained postures, movements or forces AND long duration
  - bending the back more than 20 degrees
  - twisting the back more than 20 degrees
  - reaching more than 30cm from the body
  - lifting or lowering
  - exerting force while in an awkward posture

High force
- lifting, lowering or carrying heavy loads
- using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
- exerting high force while in an awkward posture

Risk Controls
- Use mechanical aids
  - install a pallet inverter, which inverts the product from one pallet to another
  - apply a vacuum lifting device or manipulator
  - place both pallets on scissor lifts and turntables so that the height variation of the work surface is reduced

Other issues
- The use of a pallet inverter would require the loaded pallets to have a secure and stable load
- Due to the nature of inverters there would need to be an arrangement of safety fences and interlocks
Shrink wrapping and handling pallets

Wooden pallets are the major platform for moving product and material. Handling pallets is a common manual handling hazard. The dominant pallet stabiliser for finished product remains shrink-wrapping, with more manufacturers moving to automatic or semi-automatic units.

Main body parts affected
- Back
- Shoulders
- Arms
- Wrists
- Hands

Risks
- Repetitive or sustained postures, movements or forces AND long duration
  - bending the back and neck more than 20 degrees
  - bending the neck more than 20 degrees
  - working with hands above shoulder height
  - twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
  - gripping with the fingers pinched together or held wide apart
- High force
  - exerting high force while in an awkward posture

Risk Controls
- Change the objects used in the task
  - use an alternative packing product such as tape-wrapping
- Use mechanical aids
  - install an automated pallet wrapper
  - install a vacuum-sealing device
  - manually apply the shrink-wrap while the pallet is on a scissor lift and automated turntable combination to reduce the risk
- Risk Controls: Change the objects used in the task
  - reduce the heights of racks to improve stability and visibility
- Other issues
  - Waste shrink-wrap is a considerable waste product

Moving racks of product

All food manufacturers need to transport product from place to place within the plant.

Main body parts affected
- Back
- Shoulders
- Arms
- Wrists
- Hands
- Legs

Risks
- Sustained or repetitive postures, movements or forces AND long duration
  - bending the back more than 20 degrees
  - working with hands above shoulder height
  - reaching more than 30cm from the body
  - excessive bending of the wrist
  - pushing, pulling or dragging
  - exerting force while in an awkward posture
- High force
  - applying, fast or jerky forces during pushing or pulling
  - pushing or pulling objects that are hard to move or to stop
  - exerting high force while in an awkward posture
- Environmental factors
  - high or low temperatures

Risk Controls
- Alter the systems of work
  - introduce job rotation in combination with other risk controls

Risk Controls: Alter the systems of work
- Reduce the heights of racks to improve stability and visibility
- Use mechanical aids
  - use manipulators for product moving between close work areas
  - introduce automated or manual conveyors

Other issues
- Housekeeping
- Racks may not have specific handles or rails from which to grab the rack
- Racks may have sharp edges and burrs
Using trolleys safely

Most food manufacturing sites use trolleys of various designs to transport product, materials and finished product. These control mechanisms can prove to be hazards in themselves if not used appropriately.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands

Risks

Sustained or repetitive postures, movements or forces AND long duration
- bending the back more than 20 degrees
- backward bending of the back more than 5 degrees
- excessive bending of the wrist
- pushing, pulling or dragging
- exerting force while in an awkward posture

High force
- applying uneven, fast or jerky forces
- pushing or pulling objects that are hard to move or to stop
- exerting high force while in an awkward posture

Environmental factors
- low temperatures
- handling wide objects
- floor surface may be slippery from residual water or spilt product
- visibility may be restricted

Risk Controls

Alter the workplace
- ensure that ramps and level surfaces are used

Change the objects used in the task
- secure the objects to the trolley by means of straps or move objects in cages, containers or on pallets

Use mechanical aids
- ensure the trolley is designed for the specific task
- introduce mechanised trolleys wherever possible
- mechanised “tugs” can be used to transport substantial weights

Other issues
- Housekeeping
- Trolleys (refer to page 5)
- Preventative maintenance (refer to page 5)

Opening and closing heavy doors

A manual handling hazard often overlooked is the opening and closing of large refrigerator doors. These doors are often large enough to allow forklift traffic and are usually found in cool rooms. The doors are heavy and thick and, without a good maintenance program, the bearings or gliders of the doors can jam and the force required to operate them increases.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands

Risks

High force
- applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
- pushing or pulling objects that are hard to move or to stop
- exerting high force while in an awkward posture

Risk Controls

Alter the workplace
- install thick streamers or a flexible door

Alter the systems of work
- introduce a thorough maintenance program that examines the wheels, bearings or gliders of the doors

Use mechanical aids
- install a mechanical aid such as an automatic roll-fast PVC door

Other issues
- Doors must be of a design to maximise visibility
- A flexible door will require a specific clearway around the doorway
- Many doors operate with an electric eye mechanism that automatically opens the door

This trolley has been stacked too high requiring high forces and poor postures when stacking and unstacking.

This trolley has been chosen to safely move the specific load and is suitable for the work areas where it is used.

This mechanised tug is used to transport loads that can’t be moved with a hand trolley.

Opening and closing refrigerator and cool room doors can require high forces and awkward postures and movements.

The use of a flexible door reduces risks.

The automatic roll-fast PVC door eliminates the manual task.
WorkSafe Victoria offers a complete range of health and safety services:

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