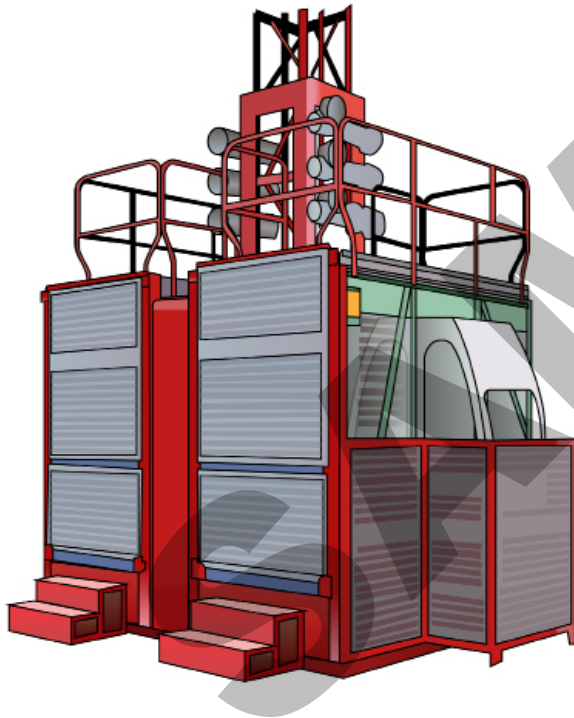


# PERSONNEL & MATERIALS HOIST

## SAFETY AND LICENCE GUIDE

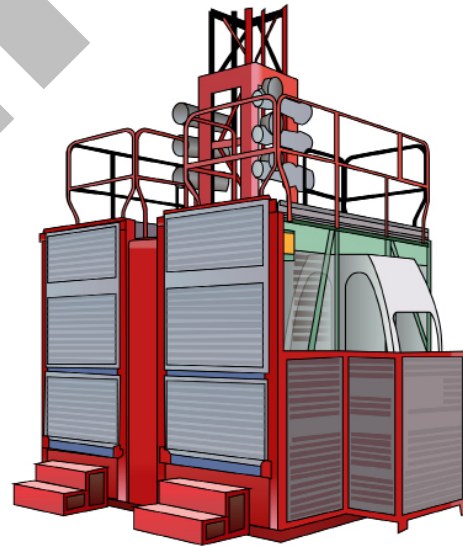


CPCCLHS3001  
Licence to operate a  
personnel and  
materials hoist

# CONTENTS

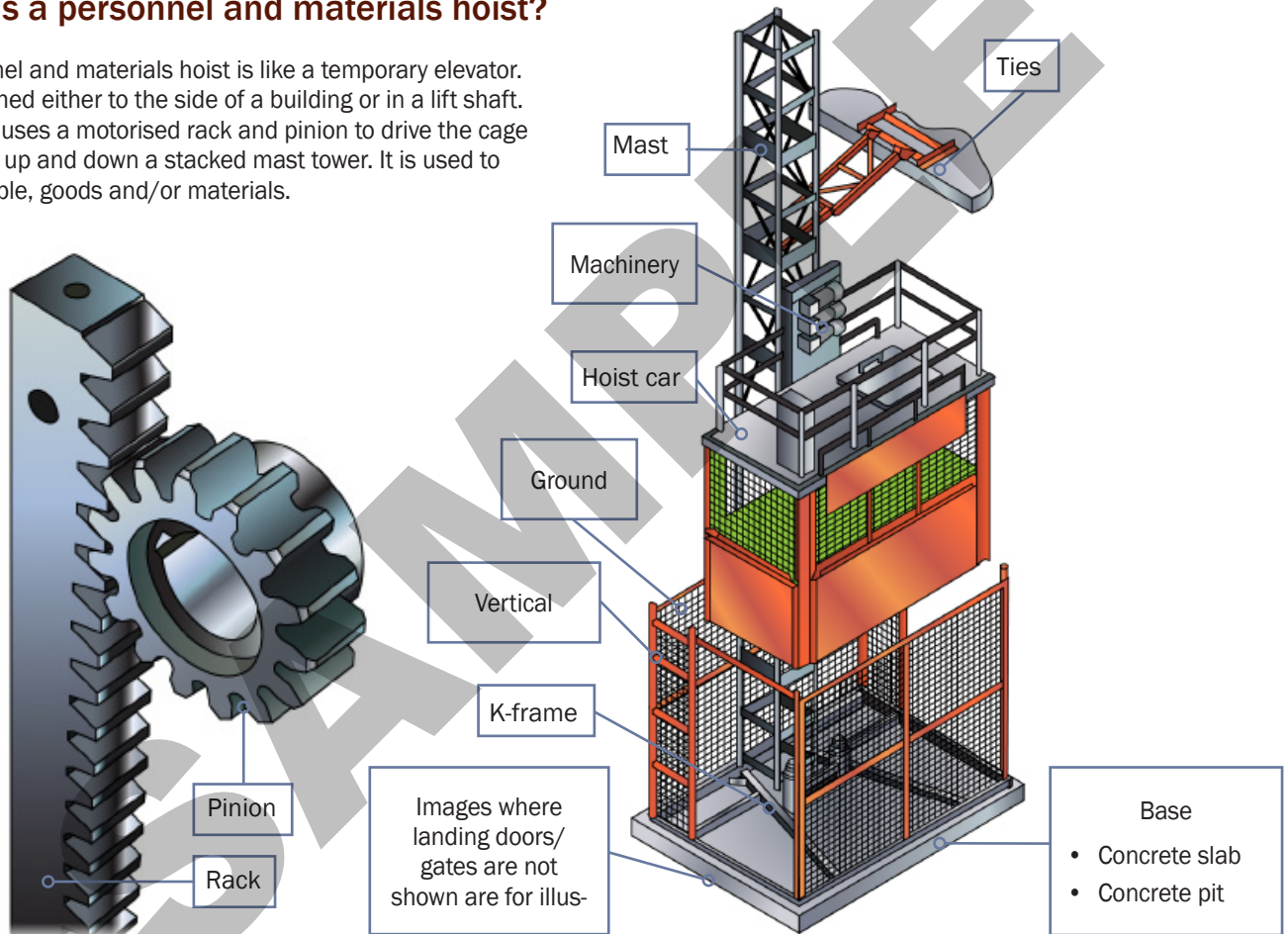
How to use this guide	4
Language – Literacy – Numeracy (LLN)	5
Acknowledgements	7
High risk licensing and the law	9
Element 1    Plan task	15
Element 2    Select and prepare equipment	59
Element 3    Conduct hoist operations	93
Element 4    Shut down and secure hoist	117
Test yourself – Learning tasks	127

# INTRODUCTION TO PERSONNEL & MATERIALS HOISTS



## What is a personnel and materials hoist?

A personnel and materials hoist is like a temporary elevator. It is attached either to the side of a building or in a lift shaft. The hoist uses a motorised rack and pinion to drive the cage assembly up and down a stacked mast tower. It is used to hoist people, goods and/or materials.



# PLAN TASK

## Element 1



## 5. Administrative controls

Using administrative controls is where policies, rules or changes to the way a company and workers operate can reduce risks.

It may include:

- Restructuring breaks and employee tasks thus reducing the amount of time workers are exposed to a hazard
- Using signs to make people aware of a hazard
- Having emergency procedures in place.



## 6. Personal Protective Equipment (PPE)

Wearing safety clothing and/or articles of PPE can be used in conjunction with other methods of controlling hazards and should not be relied upon as the only method.

Make sure the PPE is suitable for the person and task and that adequate training has been given.



**Skin cancer** is a major hazard for people working outdoors.

The best action to take when working out in the sun or other hot environments is to **SLIP** on a shirt, **SLOP** on some sunscreen and **SLAP** on a hat.

Sunglasses will also help to protect your eyes.



## Plan the move

### Check the Safe Working Load (SWL)

Hoists can lift anything from 1000 kg to 3.9 tonnes. Before you move a load, find out its weight and size. Check the safe working load (SWL) on the hoist's data plate to make sure your hoist can lift the load. New hoists have an overload system set to the SWL of the hoist. For example, if you get to 90 per cent of the SWL, a red light flashes. Once you reach 100 per cent of the SWL or exceed it, the red light stays on and breaks the control and safety circuits. You can't drive the hoist until you reduce the weight.

Important: If you use loading equipment (for example, a forklift or electric pallet trolley), make sure it does not exceed the SWL of the hoist. If the equipment is very heavy, there is a risk of extreme overloading. You could cause the hoist to fail or injure someone.



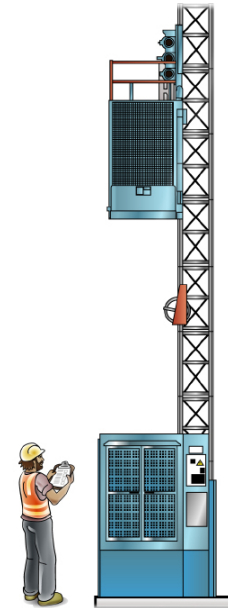
#### Data plate

- Model number
- Maximum lifting height
- Hoisting speed
- Power consumption
- Power fuses
- Voltage and power cycle
- Counterweight
- Wire rope diameter and breaking strength of rope
- Base unit weight
- Car weight
- Car buffer part number
- Safety device part number
- Manufacturer's number
- Year of manufacture.



# SELECT AND PREPARE EQUIPMENT

Element 2





## Check the hoist

### Look for any damage or defects

Look at the physical appearance of the hoist before you use it. You may notice the hoist looks different to the last time you used it.

For example, someone might have dropped a big pipe or tube on to the hoist. Or you might notice the handrails are bent.

While loading the hoist with a pallet jack or forklift someone might have put a hole or holes in the side of the hoist.

Do not use a damaged or defective hoist. Follow the tag out procedures, which are explained later.



### Danger tag

If you find a DANGER DO NOT USE tag on a hoist you are checking you should NOT take it off and use the hoist. Only the person who put the tag on can take the tag off. Some workplace safety procedures may allow others such as supervisors to take off the danger tag.

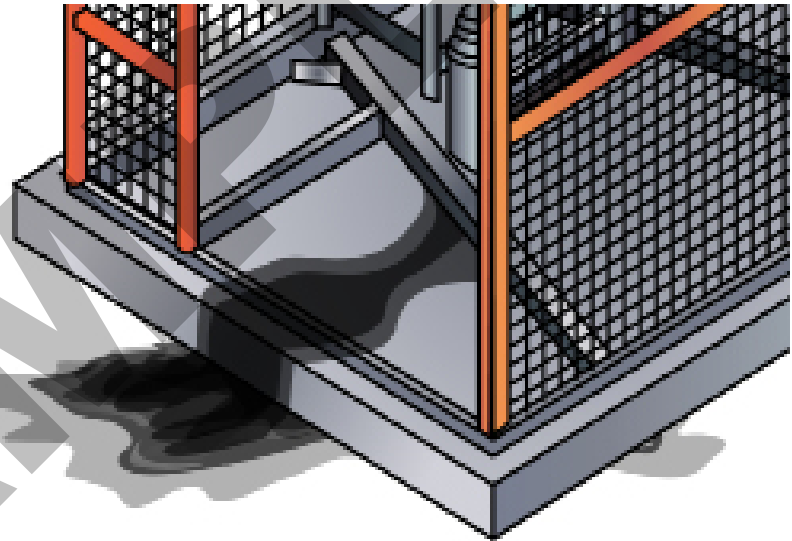


## Access Hoist Safely

### Check the surface of the hoist

It is important to make sure that the hoist can be accessed in a safe way. You can make the danger of accessing your hoist less by making sure that its surface is not slippery.

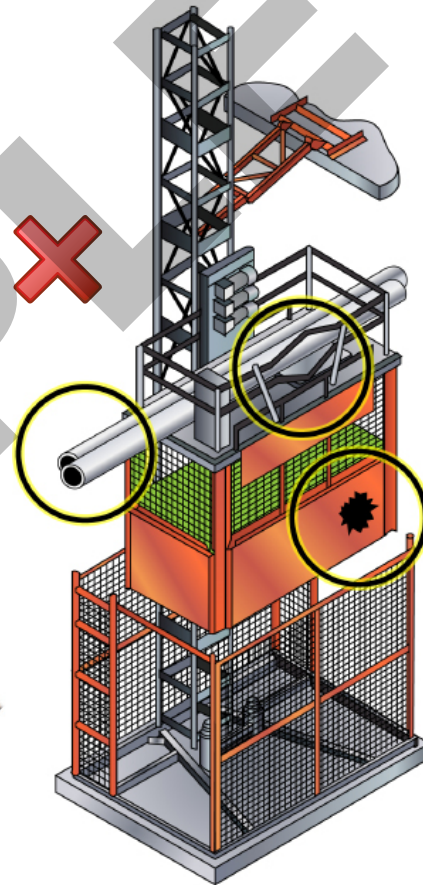
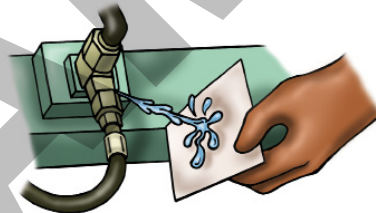
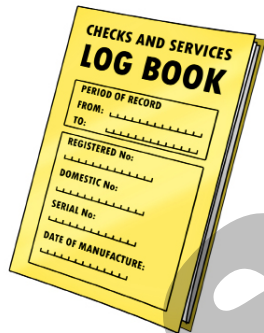
Look out for any oil, fluid or shiny surface on the hoist. If there is any fluid on your hoist, you must wipe it down properly before using it.



## Visual inspection

Check logbook for faults/problems which may have been recorded by the previous operator. Do not use the hoist if there are any safety faults which need fixing or if a danger tag is attached to the control station, main electrical isolation switch, meshing or any other part of the hoist.

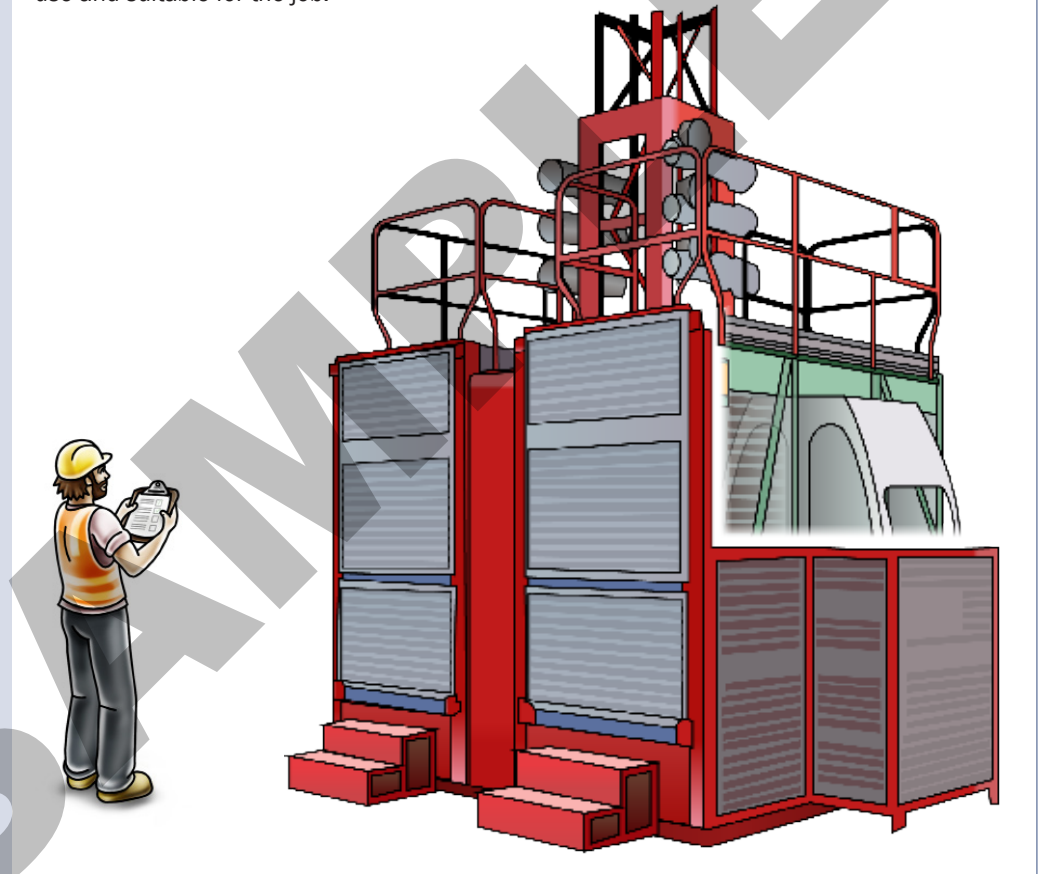
- Check the power supply cable from electrical base box to hoist is secure and off the ground.
- Check no one has fiddled with the doors/meshing between shifts.
- Check handrails are not damaged.
- Check there is no debris on car floor or roof.
- Check there are no leaks from drive motor gearboxes or hydraulics.
- Check no formwork, pipe work or power cables stick out from buildings and block the car's travel path.



**QUESTION 36**

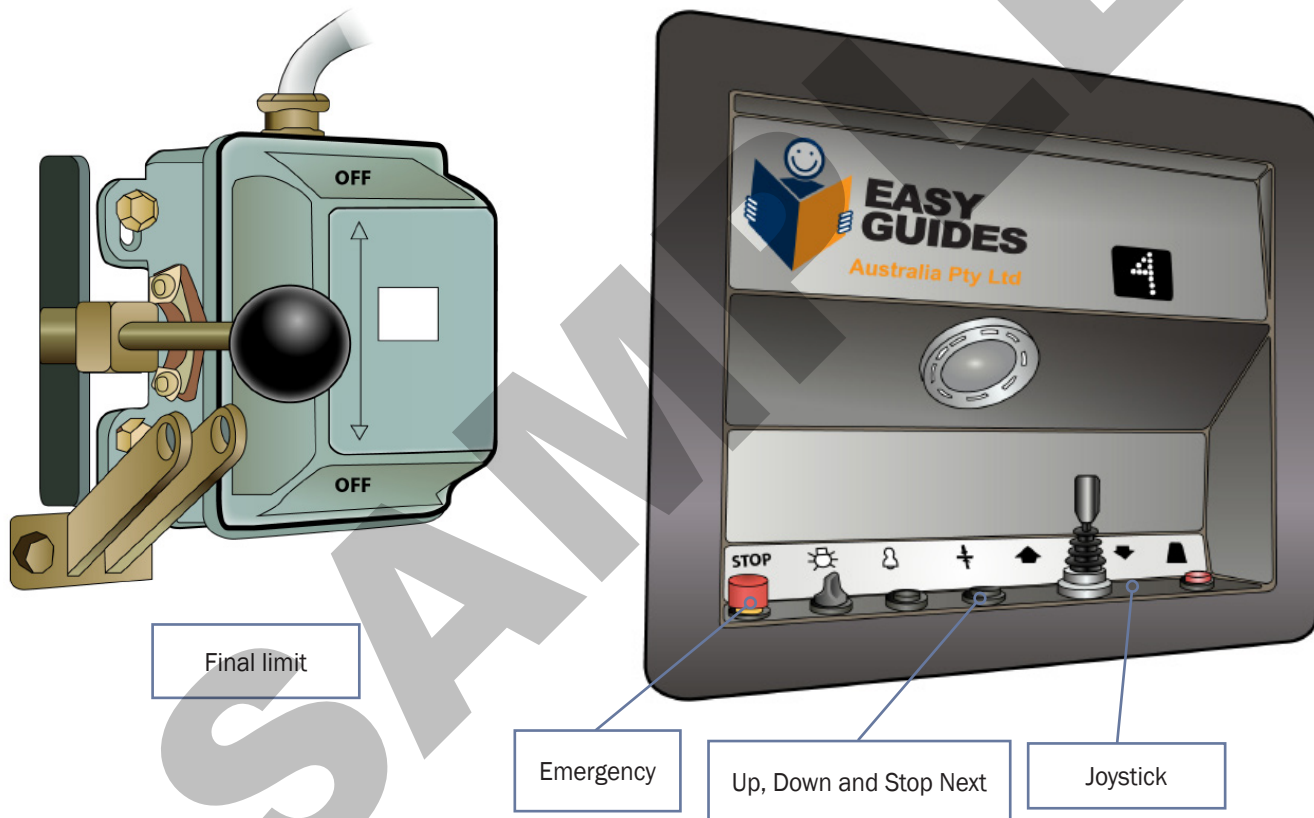
Why is it important to check the hoist and its equipment before you use it?

So you know the hoist is safe to use and suitable for the job.



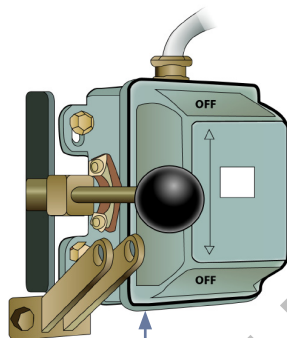
## Hoist controls

Get to know the position and use of all controls on the personnel and materials hoist. These include:



### QUESTION 49

What are the controls on a personnel and materials hoist?



Final limit switch



Emergency stop button

Up, down and stop next landing push buttons

Joystick

### QUESTION 50

Which controls do you check before you start a personnel and materials hoist?



Cage door button



Emergency stop button

Lever/joystick (up and down)

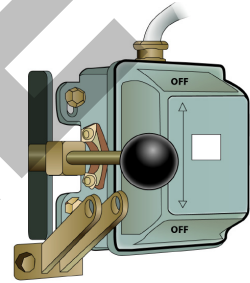
**QUESTION 53**

After starting the hoist, what do you need to check?

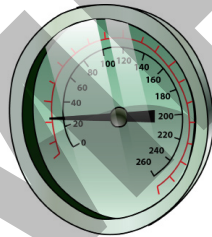
All gates



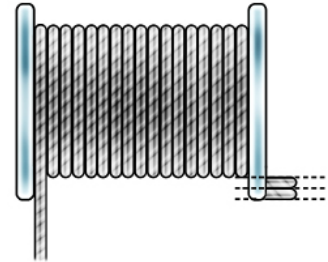
Limit switches and interlocks



All gauges are in the right range



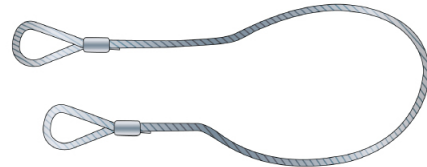
Hoist drum



Floor indicators (where fitted)



Hoist flexible steel wire rope (FSWR)



...CONTINUES ON NEXT PAGE

# CONDUCT HOIST OPERATIONS

## Element 3



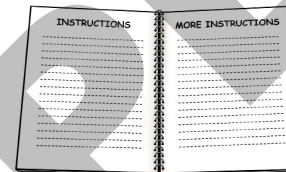


## Move the load

### Operate hoist according to procedures (rules)

Follow Australian Standard AS 1418.7 and site procedures when operating a personnel and materials hoist.

For example, if you don't know how to start the hoist, read the user manual or manufacturer's instructions.

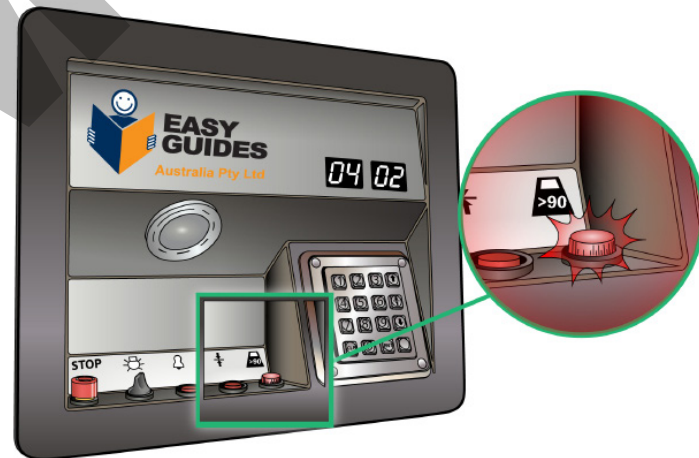


## Lights

Hoists have a number of safety lights. For example:

### Overload warning lights

The overload warning lights tell you if you are under or over the hoist's SWL. If the load is over 90% of the hoist's SWL, the overload warning light will flash red. If the load weighs more than the SWL, the red light will stay on. Do not use the hoist if the red light is on. If you are under 90% of the SWL, all warning lights will be off. Try to keep

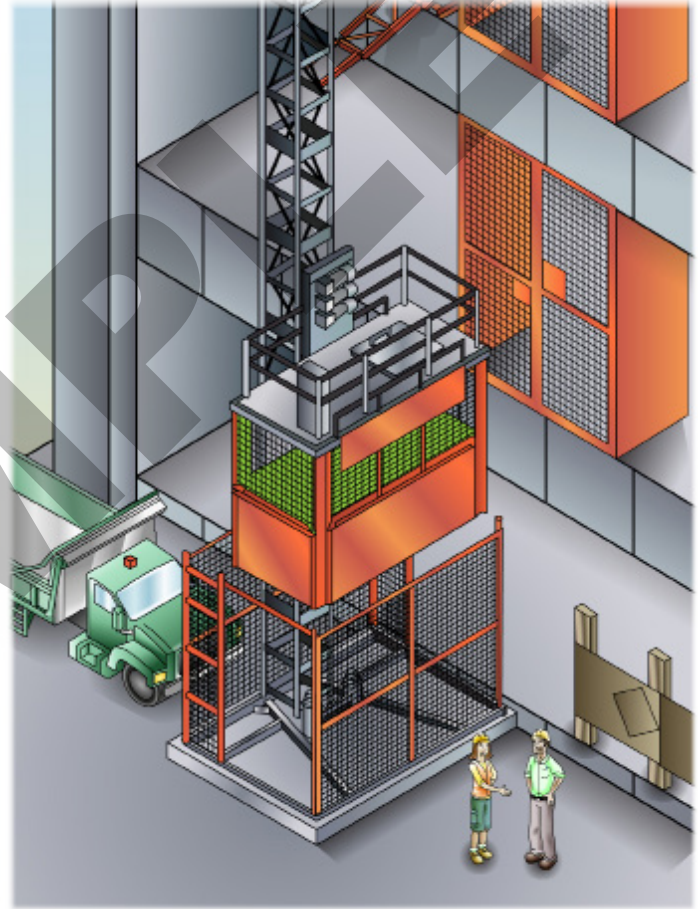


**QUESTION 81**

When should a personnel hoist:

- a) Have gates and
- b) Have lights?

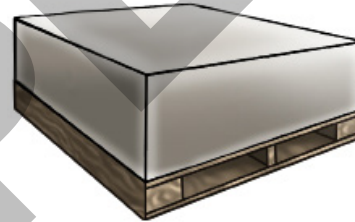
- a) It should always have gates.
- b) It must have lights when the hoist stops at more than three floors/levels.



**QUESTION 82**

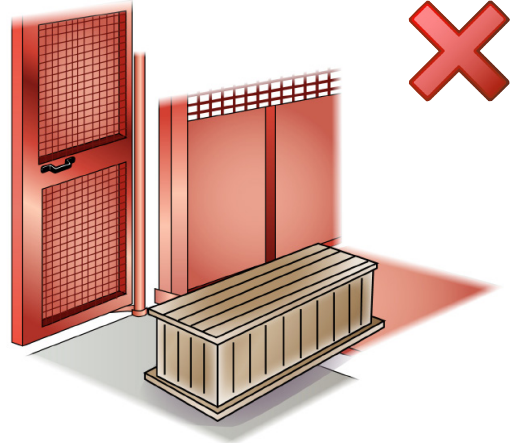
How often do you check the weight of a load?

Always check the weight of the load before each lift.

**QUESTION 83**

Can you move the platform if the load is bigger than the platform?

No, because the load could get caught on the scaffold or tower.



**QUESTION 85**

You need to hoist a load of boxes containing fittings. You want to take the pallet as well to store the boxes on the higher floor.

- Hoist has a working load limit (WLL) of 3000 kg
- Boxes are on a pallet. You'll need a trolley to move them.
- Pallet and trolley together are known to weigh 100 kg
- The operator weighs 100 kg
- Each box weighs 35 kg.

Work out (calculate) how many boxes, with the pallet and trolley, the hoist can safely lift.

Show how you worked out your answer.

**Step 1:** Subtract (take away) weight of the operator and weight of the pallet and trolley from the WLL.

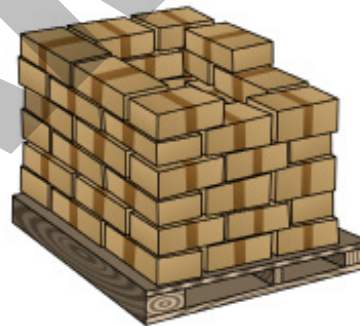
**Step 2:** Divide capacity after deductions calculated in Step 1 by the weight of one box.

**Calculations:**

WLL is  $3000 - 100 - 100 = 2800$  kg

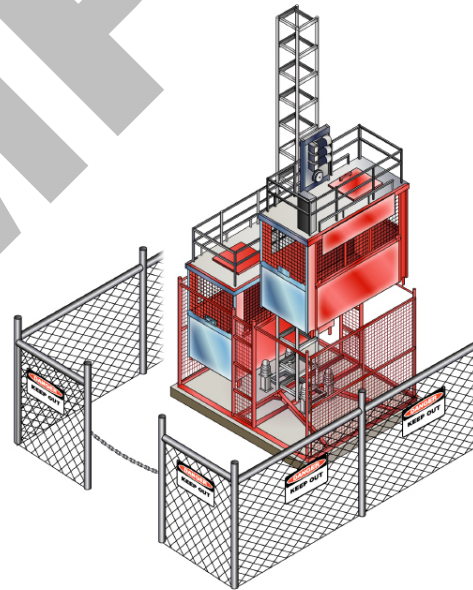
Number of boxes that can be safely lifted =  $2800 \text{ kg} / 35 = 80$  boxes

**Answer = 80 boxes**

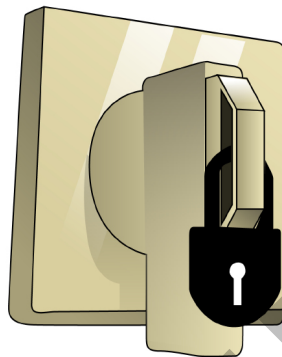


# SHUT DOWN AND SECURE HOIST

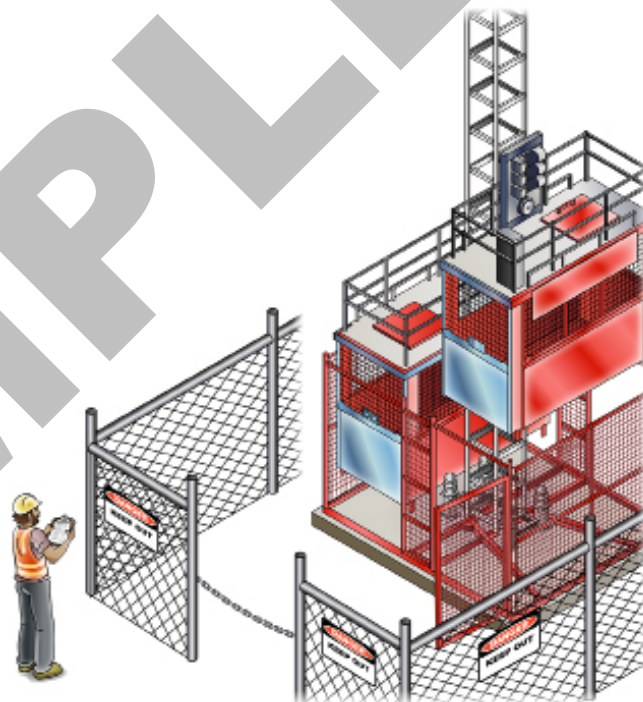
## Element 4



Switch off the power and lock the main switch with a padlock to prevent unauthorised use.



Remove key where applicable (some hoists have key-operated emergency stops).



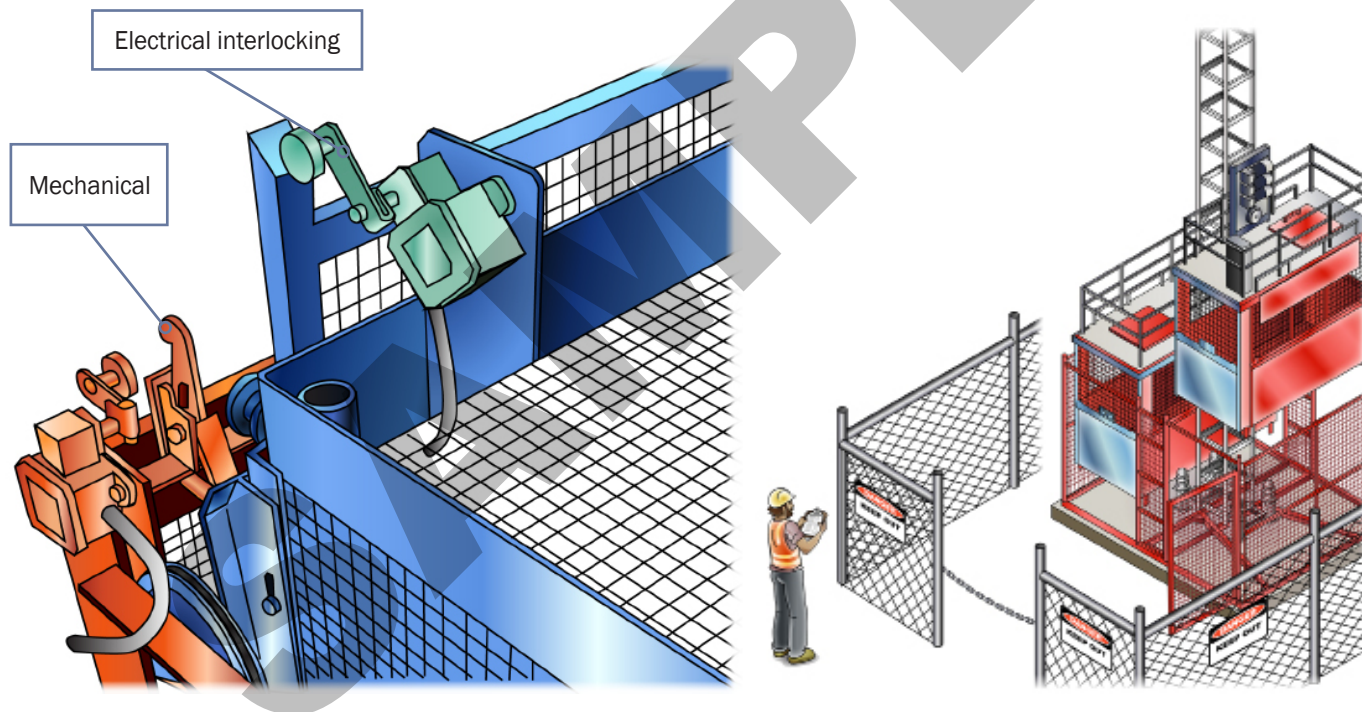
Barriers around base

## Secure all fences and gates

During your shift check all the protective fences around the landing areas. Look to see if someone has securely fixed them from floor to ceiling.

Every landing should have a gate to stop a person from falling when the hoist isn't at that level. Each landing gate has an electrical and mechanical interlock. The interlock triggers a red or green light. A red light means gate open. A green light means gate closed.

The hoist MUST NOT operate with ANY landing gate open.



## Post-operational checks

Do a post-operational check when you finish your shift. Look for any faults/problems. The purpose of a post-operational check is to make sure the hoist is safe to use for the next shift. Your check should include:

- Gates/doors/meshing are not damaged or faulty
- Handrails are secure and not damaged
- No debris in car or on car roof
- No oil leaks from drive motor gearbox and hydraulics
- No formwork, pipe work or power cables are sticking out from buildings into the car's travel path.



## Isolate and secure power against unauthorised access

After shutdown, switch off the power and lock the main ON/OFF switch with a padlock to prevent unauthorised access. The main ON/OFF switch is on the electrical panel at the ground landing.

