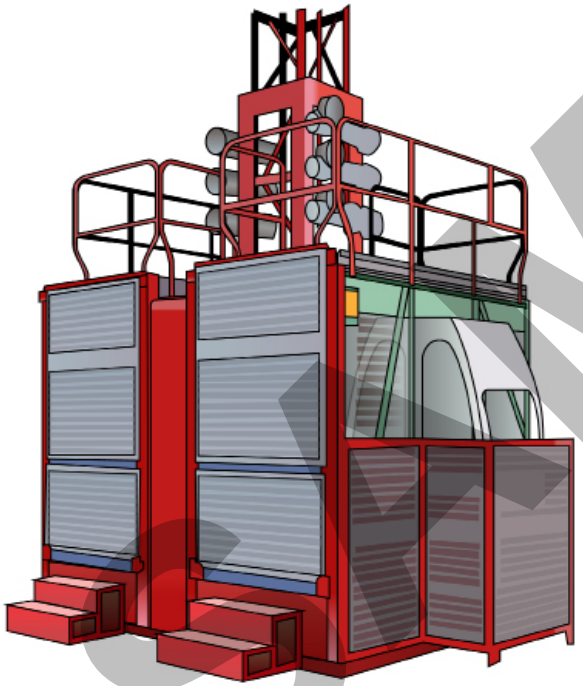
PERSONNEL & MATERIALS HOIST SAFETY AND LICENCE GUIDE

e-book

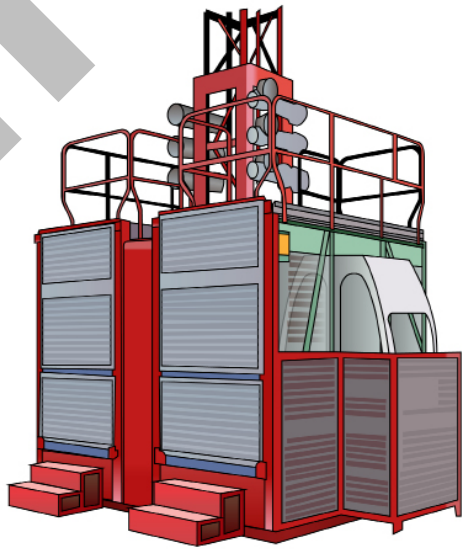


CPCCLHS3001
Licence to operate a personnel and materials hoist

EASY GUIDES
Australia Pty Ltd

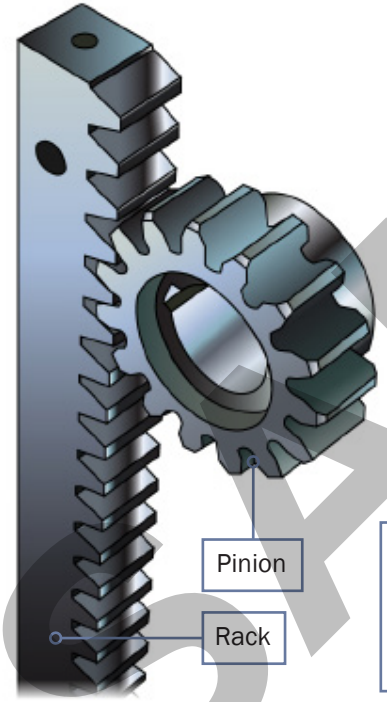
CONTENTS

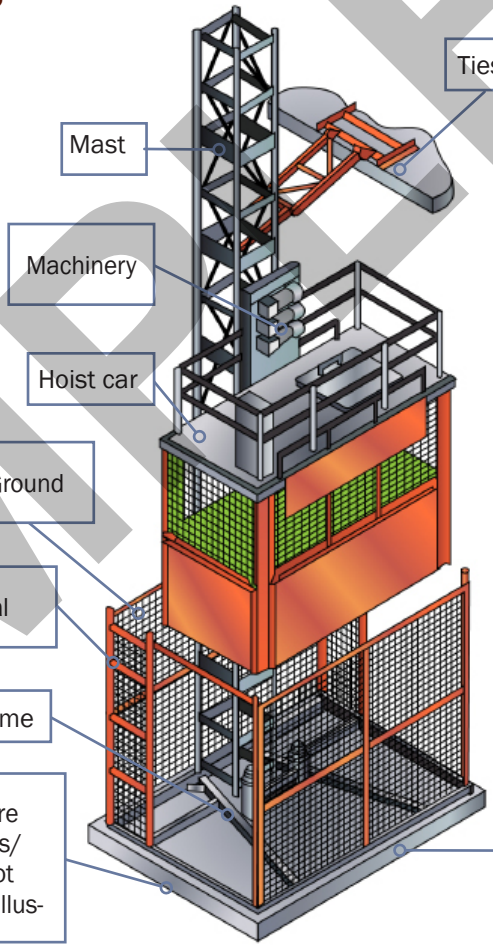
INTRODUCTION TO PERSONNEL & MATERIALS HOISTS



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.





Hierarchy of Hazard Control details

1. Elimination

If possible it is best to remove the hazard entirely. This may be done by changing the way you work or the equipment you're using. This is the best option for hazard control.

For example, removing dangerous materials from the work area.

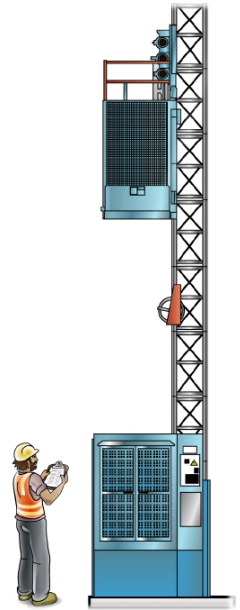
2. Substitution

If it is not possible to completely remove the hazard by elimination you should consider if a **safer method** can be used.

For example, using a pallet cage to lift a pallet of bricks instead of lifting the pallet without a cage.

SELECT AND PREPARE EQUIPMENT

Element 2



Check the hoist

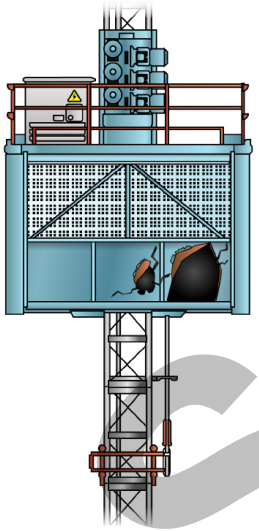
Look for any damage or defects

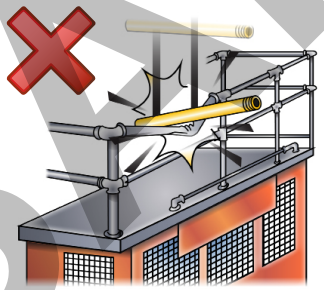
Look at the physical appearance of the hoist before you use it. You may notice the hoist looks different to the last time you used it.

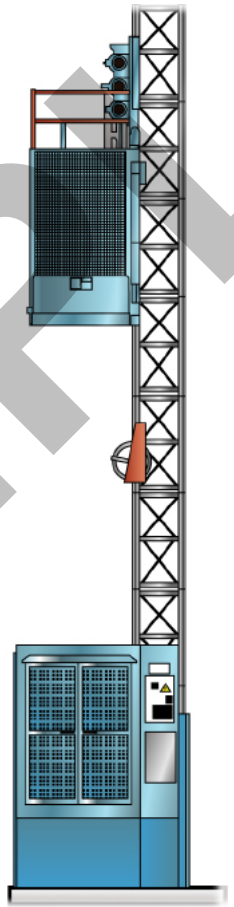
For example, someone might have dropped a big pipe or tube on to the hoist. Or you might notice the handrails are bent.

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.

Risk Controls and Safety Measures

First Aid Equipment and Personnel

In case of any injuries, it is important to have a first aid kit. It is also important to make sure that those who apply first aid are trained to use it.

First aid can assist an injured worker or pedestrian in minor or serious cases. In an emergency situation, they can provide support until emergency services arrive. It is possible that their help might be the difference between life and death.

When you are getting equipment ready, you must always make sure that first aid kits are safe and easy to access. Be sure to place them in locations known to workers. These locations can be tagged with signs to show workers that they contain first aid kits.

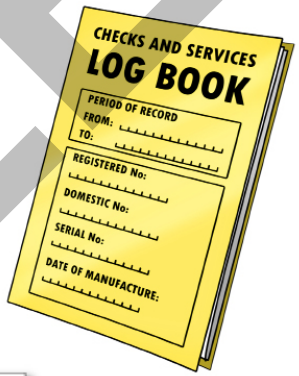
You should also make sure that your workers have completed CPR and first aid training. This will give them the skills to assist an injured worker or pedestrian.

Check the hoist service logbook

Check the service logbook before you use the hoist. The logbook records faults and servicing.

Look at the hoist logbook to see:

- It is the right logbook for the hoist being used
- The hoist meets Australian Standards (AS 1418.7) for builders' hoists and equipment
- There is a maintenance record
- A mechanic/fitter has fixed any faults.



Different workplaces use different forms or systems to check hoists. Shown below is a typical logbook. It clearly lists what you must check on the hoist before you use it. Your workplace may require you to complete a daily inspection checklist.

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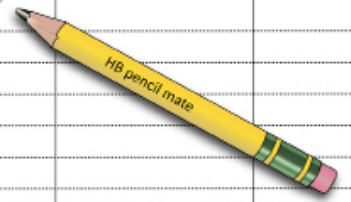
Check List

Name of company		Machine type		Serial No.
Site		Inspector	Month	Year

Item	Date / / / / / /	Remark	Taken care of ..... date
Sign plates/ instruction manuals			
Safety device			
Gearbox			
Counter roller(s) at the rear of the machinery plate and safety hooks, guide rollers on the hoist car frame			
Attachment of mahinery and safety device			
Electric motor breaks			
Hoist cable(s)			
Cable basket, where applicable			
Interlocks			

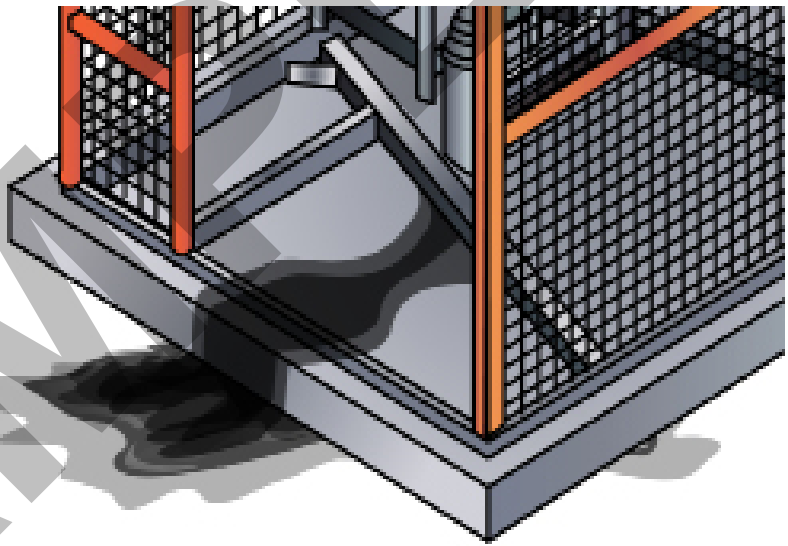


Access Hoist Safely

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.

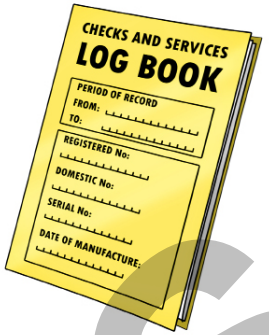
Look out for any oil, fluid or shiny surface on the hoist. If there is any fluid on your hoist, you must wipe it down properly before using it.

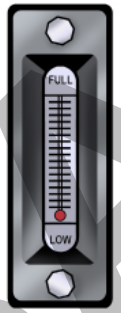


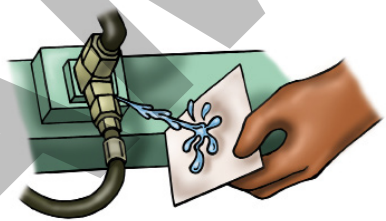
Visual inspection

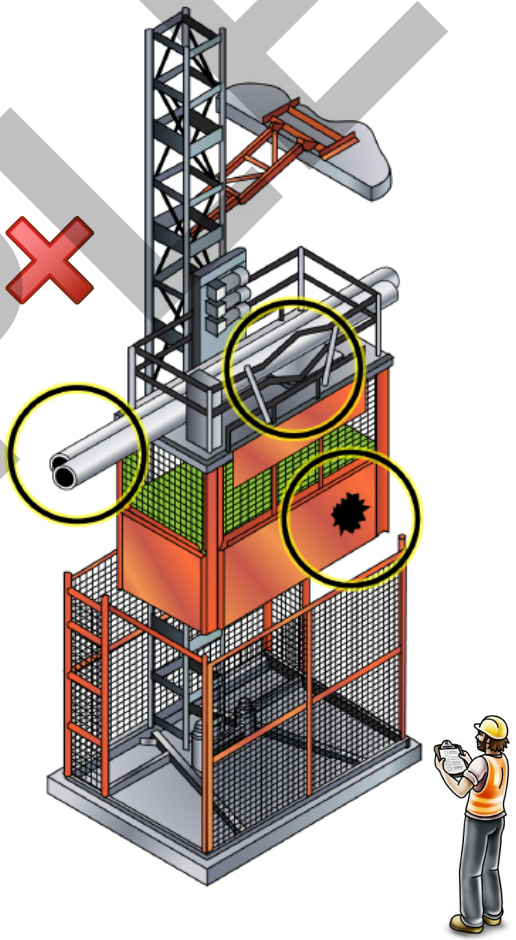
Check logbook for faults/problems which may have been recorded by the previous operator. Do not use the hoist if there are any safety faults which need fixing or if a danger tag is attached to the control station, main electrical isolation switch, meshing or any other part of the hoist.

- 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.





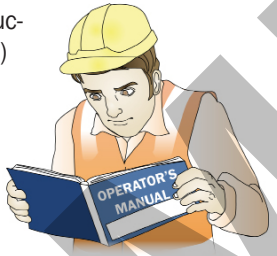
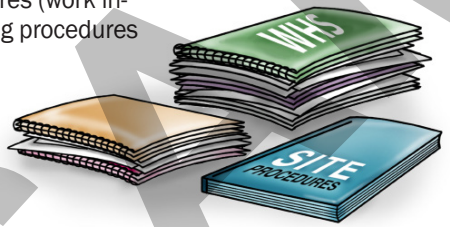




Do pre-start operational checks

Once you've looked at the hoist for damage or defects and checked the logbook, do a routine pre-start operational check. The purpose of a pre-start operational check is to make sure the hoist is safe to use. You may find a simple problem such as a damaged handrail or a more serious problem such as a pipe sticking out from a building and blocking the hoist's travel path.

Procedures (things you have to do)

Operations manual (logbook, instructions, specifications and checklists) 	Industry operating procedures 
Workplace procedures (work instructions, operating procedures and checklists) 	Australian Standards (AS 1418.7) 

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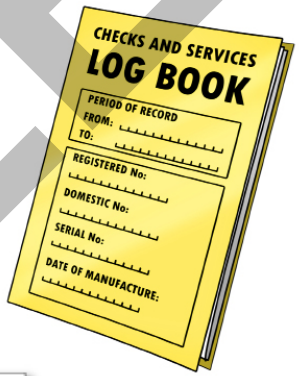

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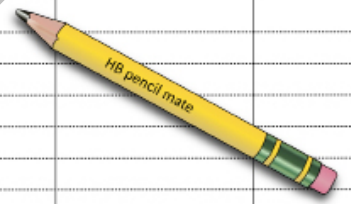
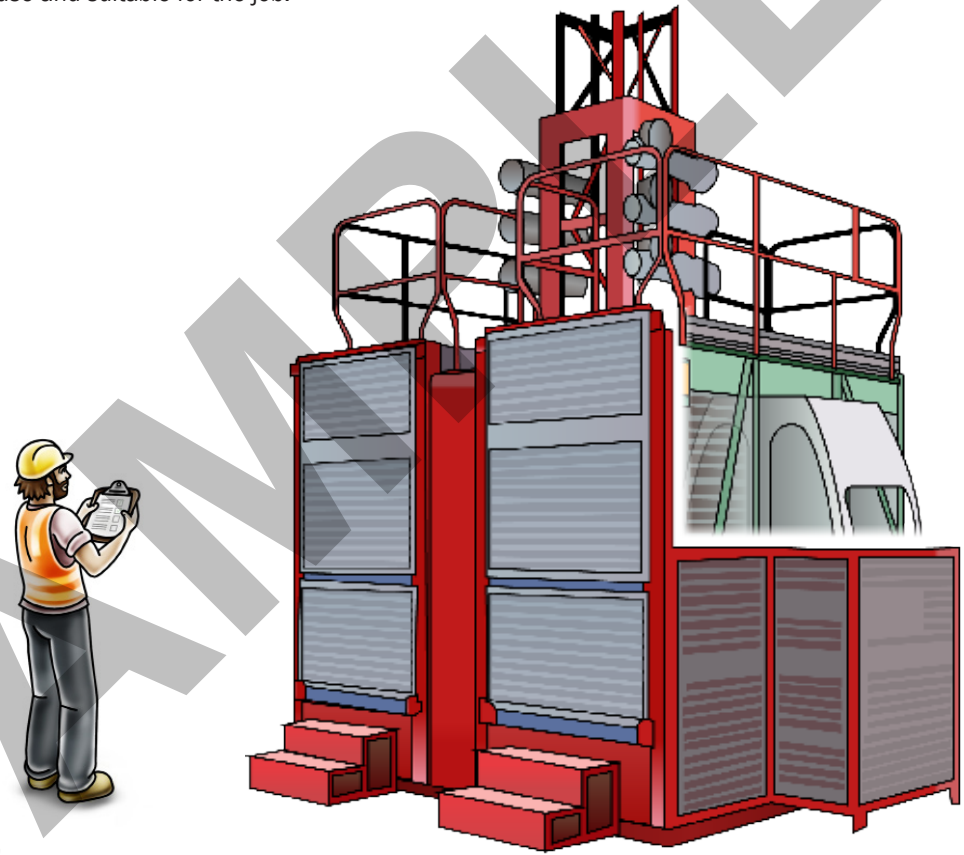


QUESTION 36

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

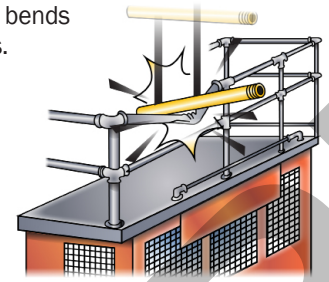
So you know the hoist is safe to use and suitable for the job.



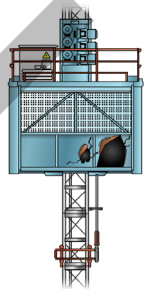
QUESTION 37

What kind of easy to see faults do you check the hoist for?

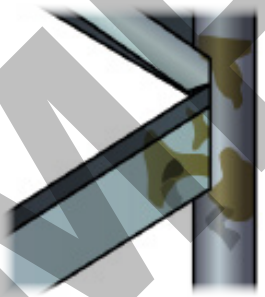
1. Structural bends and twists.



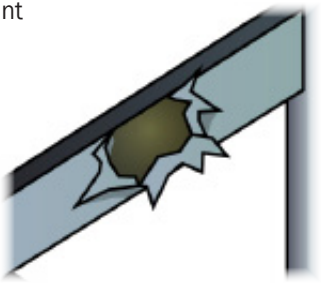
2. Make sure cage and door are not damaged and there are no cracks in the welds or structure.



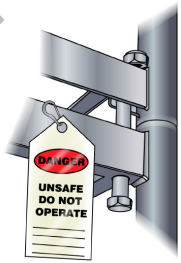
3. Rust on welds or joints



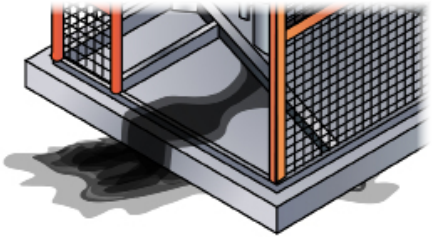
4. Flaking paint



5. Loose bolts



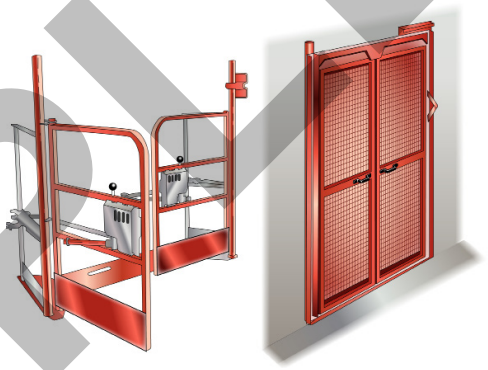
6. Oil leaks



General start-up procedures (contiinued)

3. Make sure the load does not exceed the maximum load on the hoist data plate.

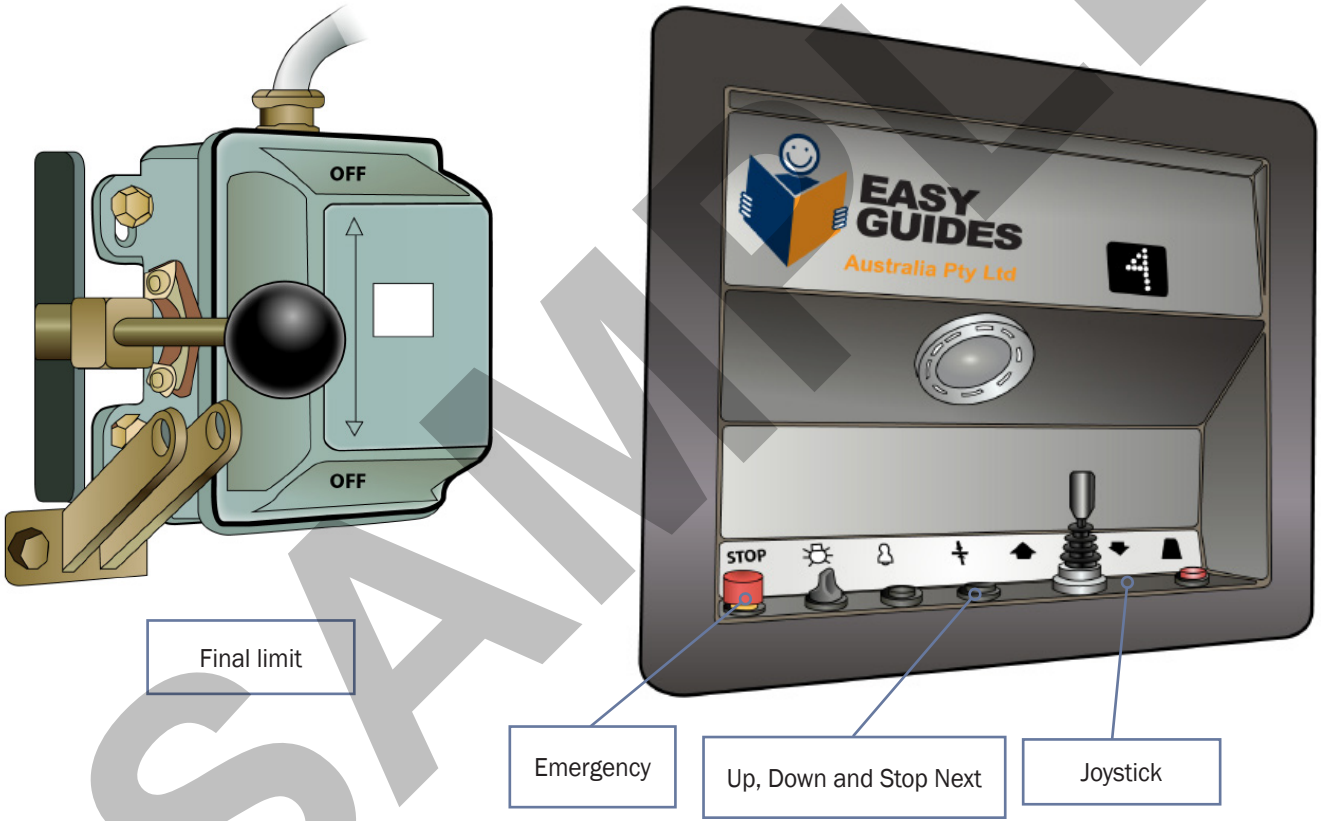
4. Fully close the landing gates and the hoist car gates.



5. Move the joystick or push the buttons to move the hoist up or down.

Hoist controls

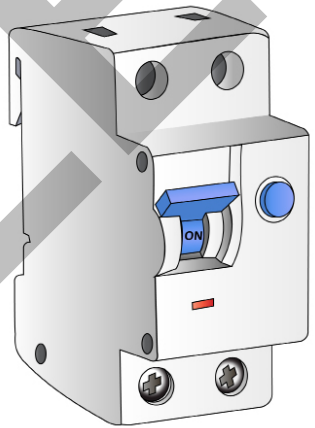
Get to know the position and use of all controls on the personnel and materials hoist. These include:



QUESTION 45

When should you switch on the power to the hoist?

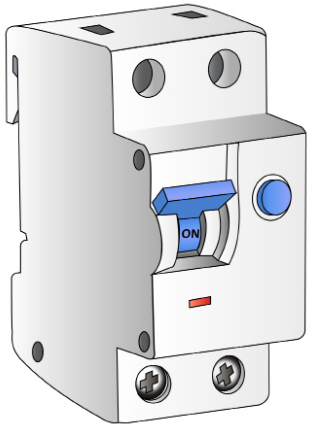
After you have done the pre-operational checks and before starting work.



QUESTION 46

What does the power supply board need to protect you from electric shocks?

It needs a device such as a safety switch that stops you getting shocked. If there is three-phase electricity supply, you need a device to detect earth leakage.



QUESTION 47

How do you start the personnel and materials hoist?

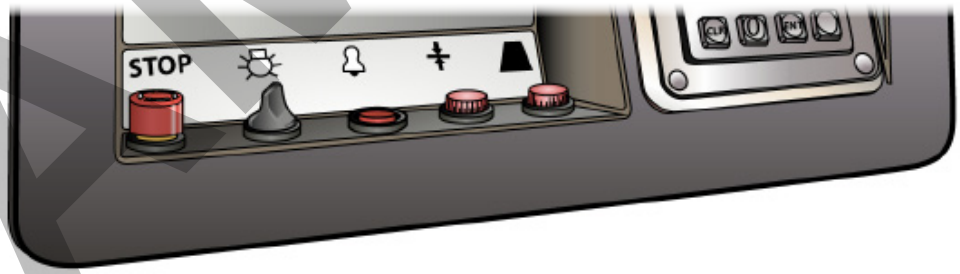
1. Switch the main **ON-OFF** button to **ON**.

2. If the power is turned off during the day check with the electrician before turning the power on.

3. Make sure you don't exceed the SWL stamped on the load plate.

4. Fully close the landing gates and the hoist cage gates.

5. Push the **UP** or the **DOWN** button.



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QUESTION 47

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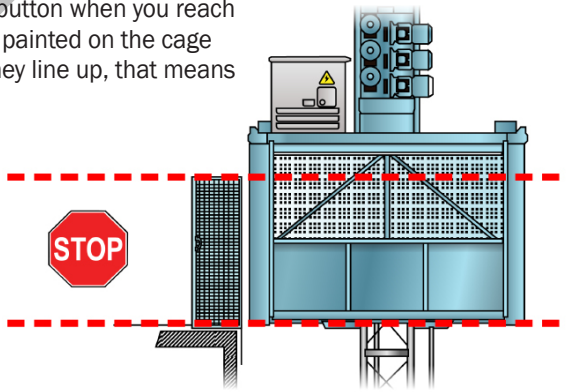
How do you start the personnel and materials hoist?

Non-hydraulic, push button control

1. Set the emergency stop button to the run position.
2. Press the **UP** or **DOWN** button.

3. Stop the hoist by pushing the stop button when you reach the landing. Most hoists have lines painted on the cage door and the landing gate. When they line up, that means you're in the correct stop position.



QUESTION 84

You need to hoist a load of concrete blocks.

- Hoist has a working load limit (WLL) of 2500 kg
- Blocks are on a pallet trolley
- Pallet trolley is known to weigh 120 kg
- The operator weighs 100 kg
- Each concrete block measures:
  - Length: 750 mm (0.75 metres)
  - Width: 150 mm (0.15 metres)
  - Height: 150 mm (0.15 metres)
- Concrete has a mass (weight) of 2400 kg per cubic metre.

Work out (calculate) how many blocks 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 trolley from WLL to get the remaining capacity.

Step 2: Work out cubic metre volume of one block of concrete. Multiply L × W × H.

Step 3: Work out weight of one block of concrete.

Step 4: Divide remaining capacity calculated in Step 1 by the weight of one block of concrete. This gives you the number of concrete blocks the hoist can lift.

Calculations:

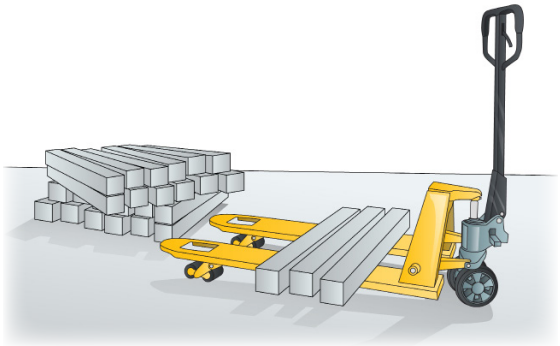
WLL is 2500 − 100 − 120 = 2280 kg

Volume of one block = 0.75 × 0.15 × 0.15 = 0.0168 cubic metres

Weight of one block = 0.0168 × 2400 = 40.32 kg

Number of blocks that can be safely lifted = 2280 kg/40.32 = 55.5 blocks

Answer = 55 blocks



QUESTION 86

You have to work out how many lifts will be needed to hoist a load of cement and water drums.

- Hoist has a working load limit (WLL) of 1800 kg
- Number of cement bags is 60, each weighing 20 kg
- Number of water drums is 10, each weighing 64 kg.

Work out (calculate) how many lifts will be needed.

Show how you worked out your answer.

Step 1: Work out total weight of cement bags.

Step 2: Work out total weight of water.

Step 3: Add weights of cement and water to get total weight.

Step 4: Divide total weight to be lifted by the WLL.
Round up the answer to get number of lifts needed.

Calculations:

Weight of cement = 60 × 20 = 1200 kg

Weight of water = 10 × 64 = 640 kg

Total weight to be lifted = 1200 + 640 = 1840 kg

1840/1800 = 1.02

So it will take more than one lift.

Answer = 1840 kg

is more than the WLL of the hoist

You will need to do 2 lifts