VPL MAINTENANCE OUTCOME GUIDEBOOK

Version 1.0

October 2025

INTRODUCTION

The goal of this guidebook is to provide the reader with a clearer understanding of the Vertical Platform Lifts ("VPL") maintenance requirements specified in Part 2 – Division 2 of the Fourth Schedule of the Building Control (Fixed Installations) Regulation 2025.

For the VPL Maintenance Outcome Guidebook, BCA would like to thank the Singapore Lift & Escalator Contractors & Manufacturers Association (SLECMA) for their contributions.

DISCLAIMER

This guide has been prepared by the Building and Construction Authority (BCA) to provide practical information on the various maintenance outcomes expected from proper VPL maintenance only.

This guidebook is **not intended to be**:

- a legal interpretation of provisions in the Acts or Regulations; and/or
- a substitute for independent legal and technical advice.

Readers should seek professional legal advice if they need to determine specific legal rights and duties applicable to them. The Commissioner of Building Control, BCA or any agency stated in this guide is not responsible for any inaccurate and/or incomplete information in this guide.

COPYRIGHT

Important Notice: Readers must not rely on this guide for legal advice.

Table of contents

1. User control device

Check

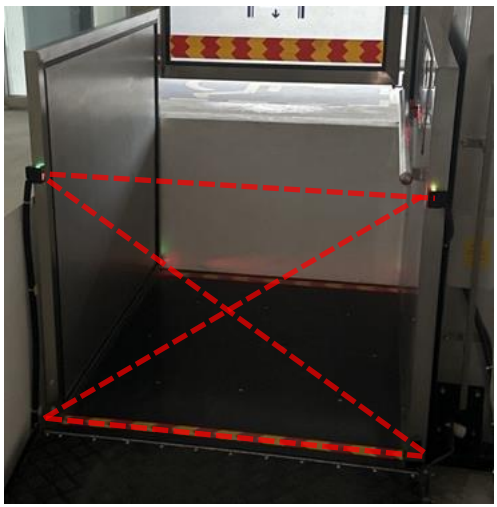
Ensure that lift platform moves only when a user control device is **continuously pressed and held**. Check that emergency stop button when activated, stops the lift platform.

Lift platform movement control & emergency stop button

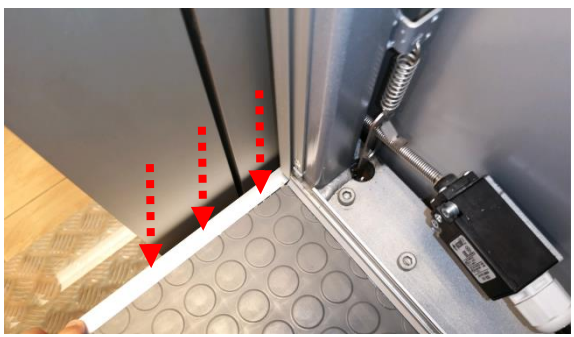
2. Edge protective devices

Check

Ensure that upon activation of any door protective devices and sensors (e.g. light curtain, edge protective device), the lift platform must **stop.**



Light curtain



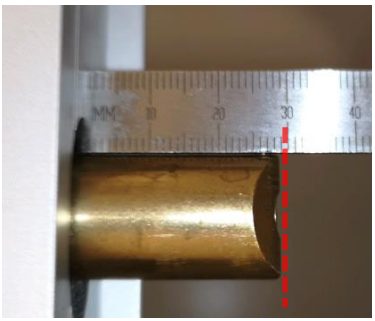
Edge protective device

3. Landing doors

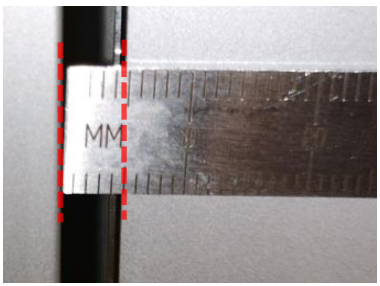
Check

Lift Platform Landing Door

Ensure that the locking element of the landing door is engaged to **at least 7 mm**.



Length of locking element



Door gaps

≥ 7mm engaged

Check

Lift Platform Landing Door

Make sure that lift platform only moves when all landing doors are closed and locked.

The locked landing door does not open upon an average person's pulling or pushing the landing door.

Check that the doors cannot be opened during platform operation.

Check that the platform cannot be operated when the door is not fully closed.

4. Emergency alarm device

Check

Press the lift platform emergency alarm to check if it can be heard from outside the lift well and at the designated floor.

Alarm bell is audible from outside the lift

Check

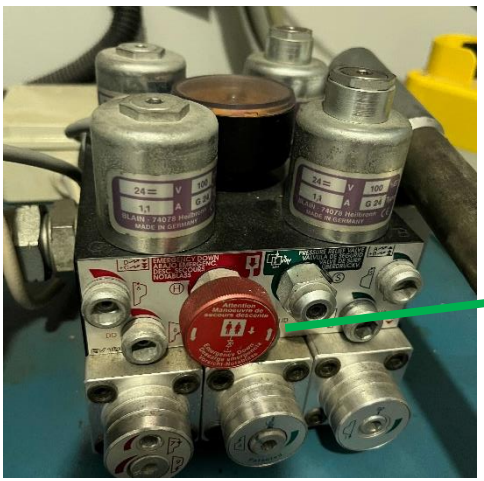
Test the intercom system to make sure that the voice communication can be heard and carried out in both directions.

Intercom system

5. Emergency operation of hydraulic drive system

Check

Ensure that the manually operated emergency lowering valve is functioning properly even if there is a power failure.



Emergency lowering valve

Check

Ensure that hand-pump is available for lift platform fitted with a safety gear or a clamping device.

Hand-pump lever is available and able to operate

6. Emergency power supply

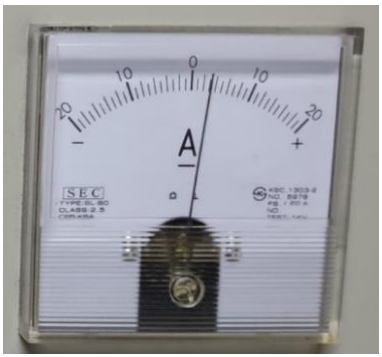
Check

Test that the emergency power supply (ARES / EBOPS) functions correctly when normal power is disrupted.

Check by pressing the test button on the ARES / EBOPS and see that the battery is discharging.

Step1

Press the Test button on EBOPS



Step 2

Confirm that it is discharging

**Note: EBOPS (older code) and ARES (SS550:2020) refer to the same emergency power supply*

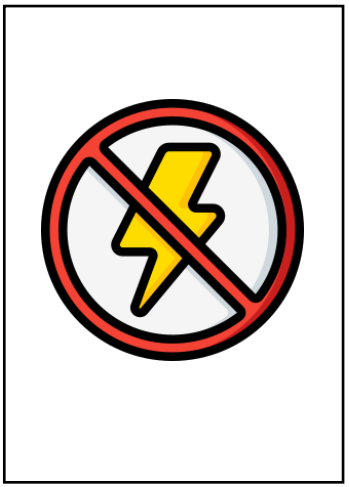
Check

Test that the emergency power supply is working.

Physically check to ensure that the **lights** in the lift platform are working when single-phase power supply is turned off.

Step1

Switch “OFF” main power supply



Step 2

Check at least one light in the lift platform is working

Note: The lift platform emergency alarm and intercom (mentioned on pages 8 & 9) shall also be tested to ensure they function when single-phase power supply is turned-off.

7. Movement of vertical platform

Check

Check that the lift platform's movement does not cause any abnormal sound or vibration.

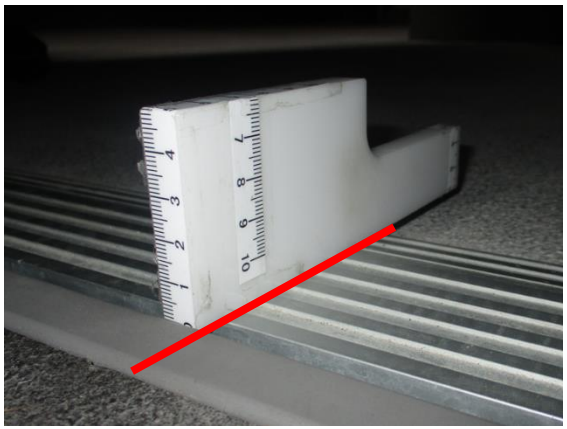
Abnormal sound / vibration

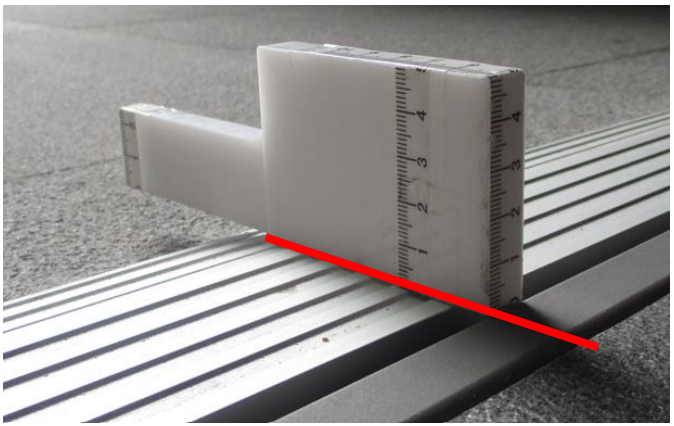
Smooth

8. Stopping, levelling, re-levelling, accuracy and inclination

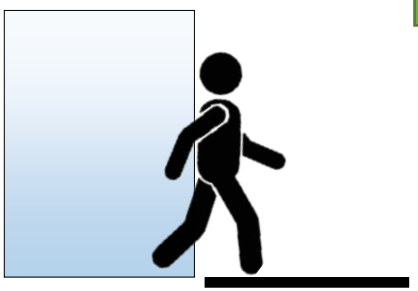
Check

Make sure that the stopping accuracy of the lift platform floor **must be ± 10mm**.



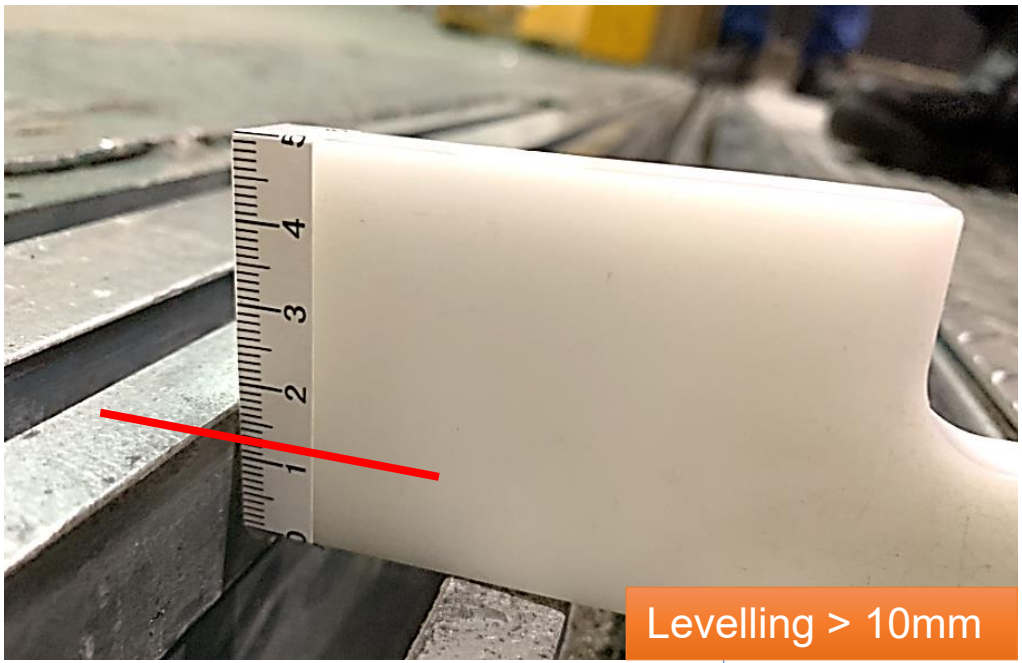


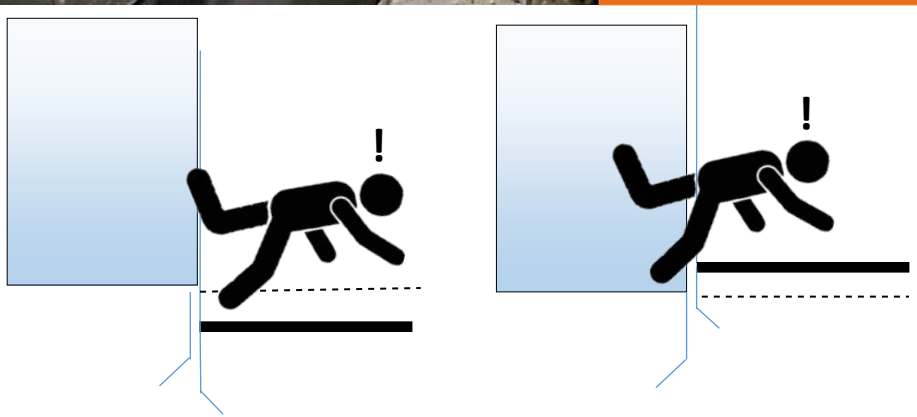
Levelling < 10mm



Prevent

Prevent poor leveling as it is a tripping hazard.





Check

Make sure the horizontal clearance between the platform and the enclosure **shall not exceed 20mm**.

clearance ≤ 20mm

9. Driving unit

Check

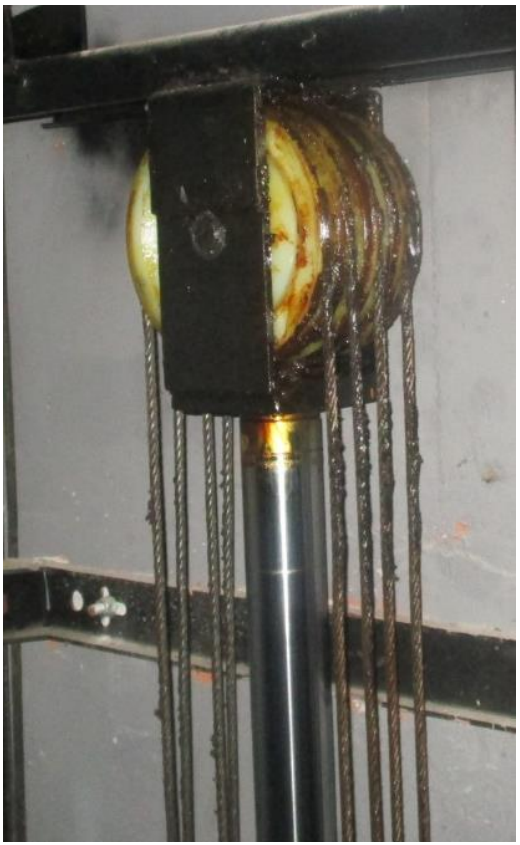
Check that the lift machine and drive are **securely mounted.**

Ensure that the moveable parts, joints and gear box are **well lubricated**.

Check for any abnormal noise or vibration during operation

Prevent

Oil leakage must not occur at the lift machine and drive.



Grease and oil contamination on drive sheave

Check

Ensure that all moving pinions on the rack (including any connected component) or moving chain (including any connected component) are **not obstructed**.

Rack is free of debris, foreign object and not covered in excessive oil.

Travelling cable is not obstructed

10. Driving unit brakes

Check

Make sure brakes are not contaminated or at risk of being contaminated with **foreign particles**.

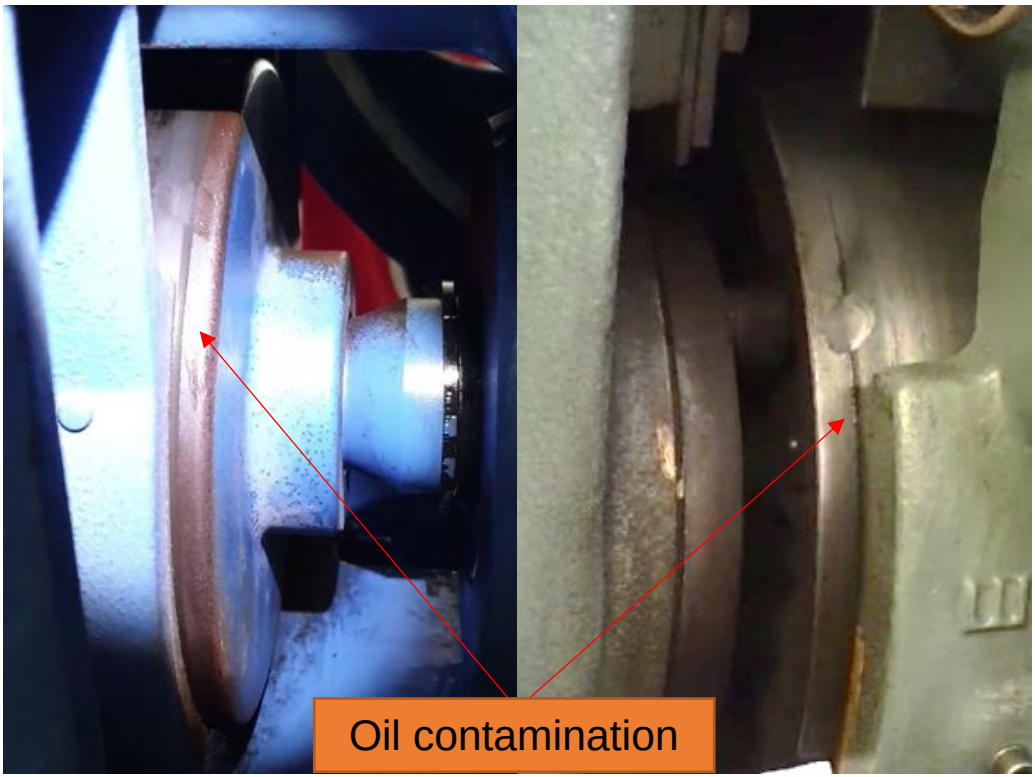
Brakes, when activated, must cause lift car to slow down, stop and stay at stopping position.

Braking surface is free of contamination

Prevent

Oil or grease contamination of brakes would reduce braking power which could lead to unsafe lift operation.

Contamination is unacceptable even if only a thin layer is seen on braking surface or its edges.



Oil contamination on edge of brake drum

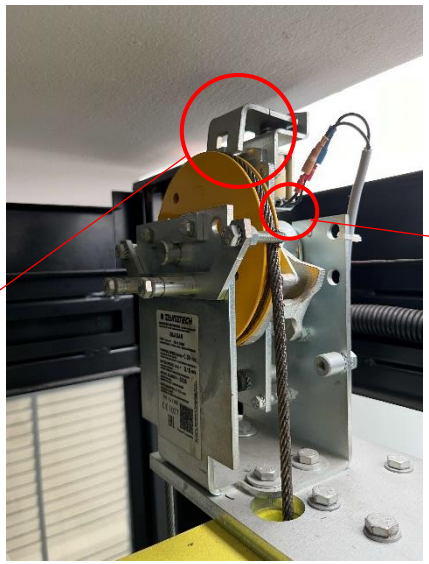
11. Overspeed governor

Check

Ensure that the overspeed governor can activate the lift safety gear.

Test the governor by mechanically tripping it. Movement of components should be fast and smooth and be able to grip the governor rope.

Also test by tripping the electrical switch. Upon tripping the electrical switch, lift platform must stop and remain stationary.



Overspeed governor

Check

The rope slack switch must be triggered before the tensioning sheave contacts the ground.

Using a gauge (e.g. Vernier Caliper) take the average of at least three measurements of the rope diameter to check that it is within manufacturer's specifications.

Governor rope tensioning sheave

Rope slack switch

Governor rope diameter measurement

12. Safety gear

Check

Ensure that the safety gear is always functioning.

When activated, it must be able to **stop and hold** the lift platform where it has stopped.

Conduct visual checks to ensure sufficient clearance between safety gear gripping surface and guide.

Safety gear components

Prevent

Ensure the safety gear are free from lubricants, or other contaminants that could reduce braking effectiveness or obstruct movement.

Surface contaminants

13. Safety device

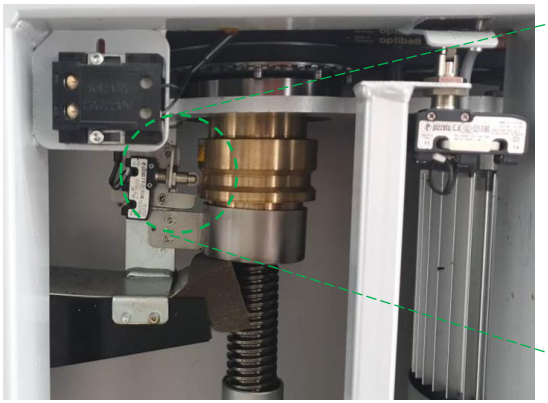
Check

Ensure that the safety device* is functioning properly when the lift is in operation.

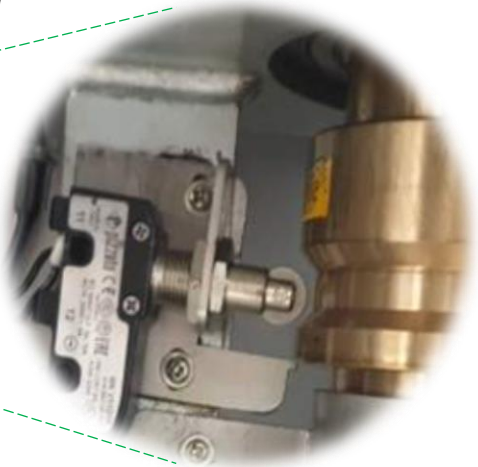
When activated, it must be able to **stop and hold** the lift platform where it has stopped.

Visually inspect for excessive wear, corrosion, damage, misalignment, or tampering.

Screw & Nut Drive system



Provision of a safety nut which engages if the driving nut fails



Provision of an electrical safety switch to trip motor power

**Note: Safety devices vary according to the driving system of the vertical platform lift.*

Check

Hydraulic Drive System

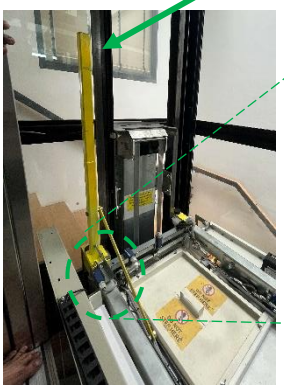
Check that safety devices such as pawl device is functioning properly and the electrical safety device is working.

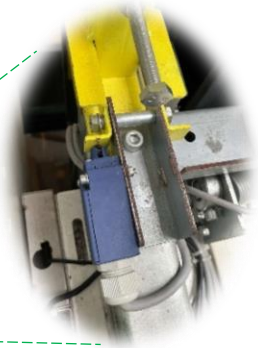
Check

Check that if mechanical blocking devices are provided, a free distance of at least 500mm shall be available when the device is being deployed.

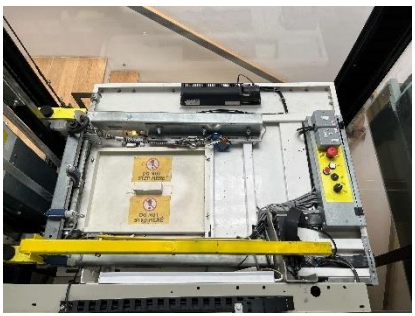
Mechanical blocking device at lift pit

Length of device shall be at least 500mm





Safety switch engaged



Mechanical blocking device at lift car top

14. Rack and Pinion

Check

Ensure that the rack and pinion gear tooth is not excessively worn, corroded or damaged.

Inspect the rack and pinion are properly meshed and aligned with each other

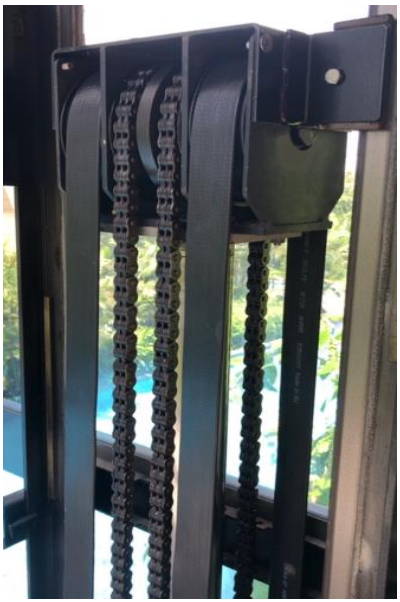
15. Ropes and chains

Check

Ensure that the main ropes have proper and even tension.

Check main and compensation ropes for wear against manufacturer's specifications or applicable standards.

Main ropes are properly tensioned



Chains are not broken or elongated

Check

Ensure that the safety monitoring device is functioning properly. When activated, it must be able to stop the lift platform.

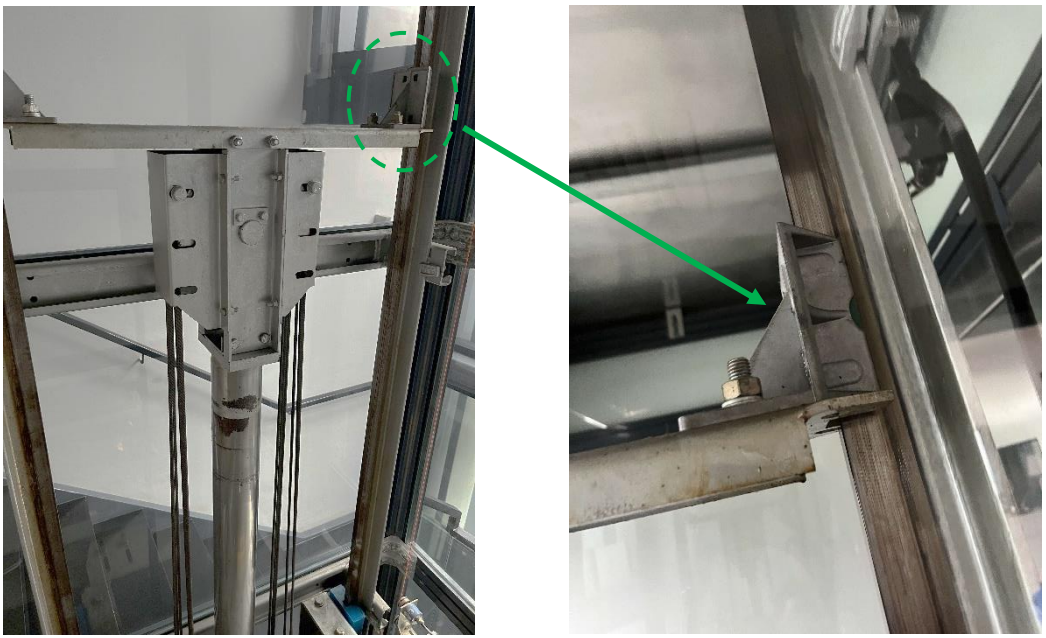
Belt drives are equally tensioned

Belt slack monitoring switch

16. Friction traction

Check

Ensure that traction wheel rail is not contaminated with any grease or oil, and inspect for any signs of wear, corrosion or damage.



Check guide and rail surfaces are free from any defects, such as cracks, dents or deformation.

Check

Make sure that the lift platform and counterweight must always be guided by guide shoes or rollers.

Roller guides lining is intact

Guide holder and guide shoe are intact

17. Hydraulic system

Hydraulic component & system integrity

Check

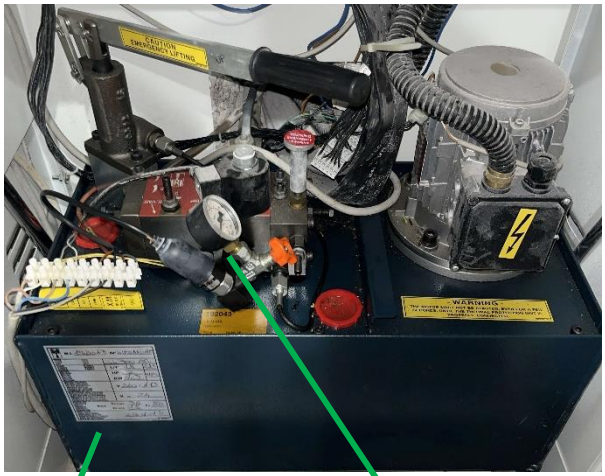
Ensure that all hydraulic valves (including rupture valves and restrictors) are functioning properly.

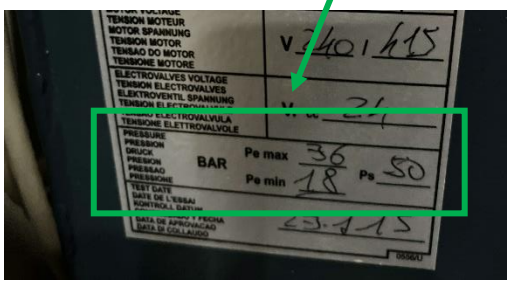
Ensure that all hydraulic components (jacks, pipes, flexible hoses, filters) show no signs of corrosion or deformation, and are free from oil or lubricant leakage.

Inspect fittings and connections are free from corrosion and leakage, and verify valves move freely without restriction.

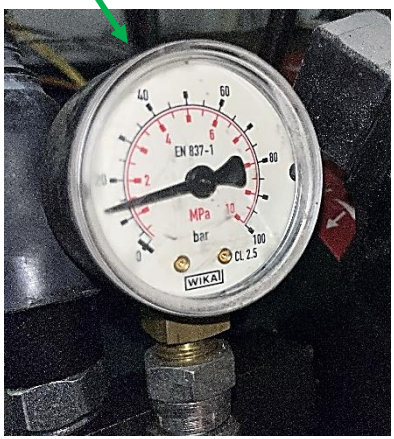
Check

Check that the operating pressure is within the design pressure.





Design parameters may be located on the data plate



Verify with pressure gauge

Hydraulic Tank

Check

Ensure that hydraulic tank is free from corrosion and leakage, with oil level maintained according to manufacturer's specifications.

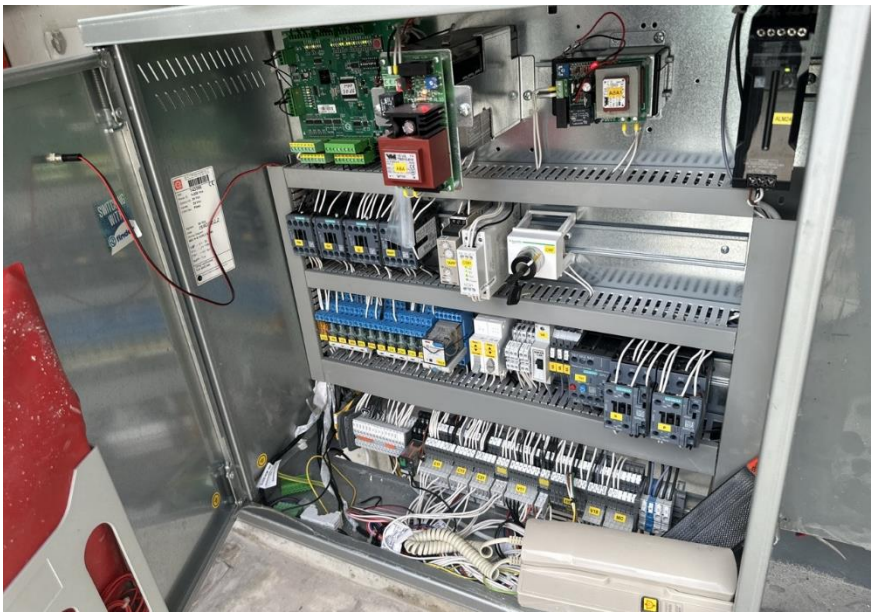
Inspect tank for any structural damage, leakage or accumulation of oil

Check that there is sufficient oil in the tank

18. Controller and electrical system

Check

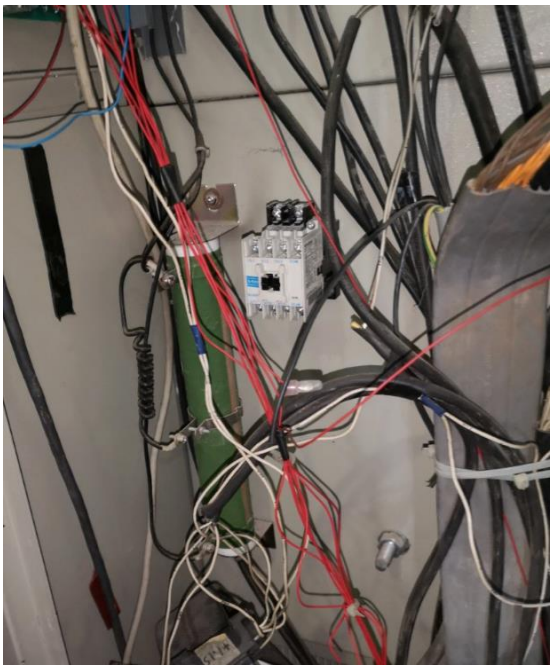
Ground and earth of controller, electronic and electrical systems and circuit boards must be firmly secured and well maintained.

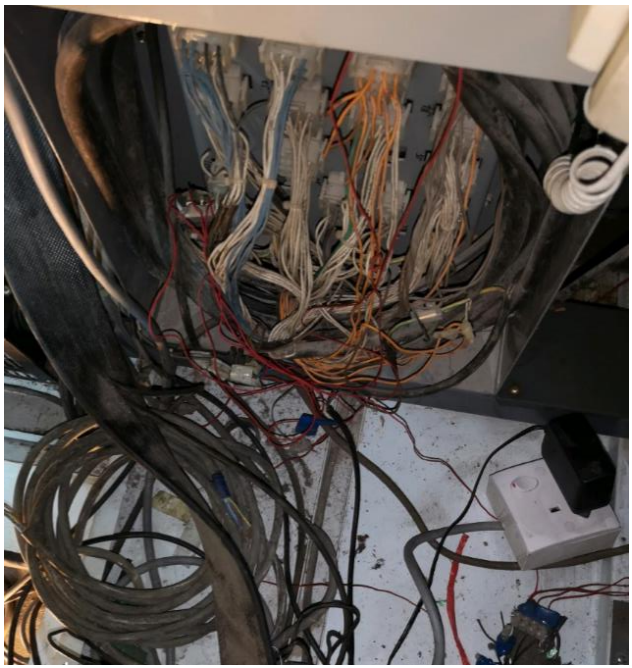


Electrical system properly grounded and secured

Prevent

Controller and electrical system must not show signs of overheating. All wiring is properly connected and insulated and does not have any wire conducting element exposed or other defects.





Untidy electrical system

19. Any lift parts

Prevent

Check that no part of the lift is so corroded, worn, damaged or dysfunctional so as to affect the safe operation of the lift.

Excessive wear on deflector sheave

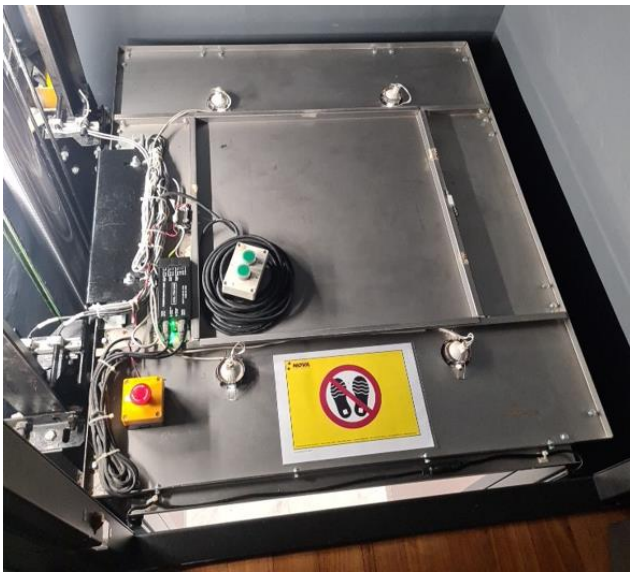
Rope Rouging

20. Housekeeping of lift

Check

Ensure that the lift pit and car top is kept clean and tidy.

Clean and tidy lift pit



Clean and tidy car top

Prevent

Do not let discarded item or leaked oil accumulate in the pit as it could lead to fire.

Oil accumulation in lift pit

Prevent

Do not store unnecessary or irrelevant items in machinery space.

Poor housekeeping of machinery space