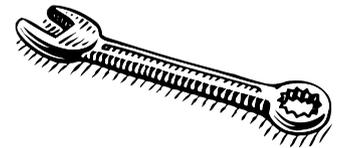


# FREEWAY

## S Series Mobile Hoists



## Technical Manual

*Trouble Shooting • Repairs • Replacement*

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# 1.0 Thorough Examinations and Periodic Inspection

The Lifting Operations and Lifting Equipment Regulations (LOLER) came into force on the 5 December 1998. Below is a guide from the HSE.

## Introduction

This guide gives a general indication of some of the main requirements of the Regulations. However, it is important that you refer to the Regulations and accompanying Approved Code of Practice to familiarise yourself fully with your duties.

## What is LOLER?

In the main, LOLER replaced existing legal requirements relating to the use of lifting equipment, for example the Construction (Lifting Operations) Regulations 1961, the Docks Regulations 1988 and the Lifting Plant and Equipment (Records of Test and Examination etc) Regulations 1992.

The Regulations aim to reduce risks to people's health and safety from lifting equipment provided for use at work. In addition to the requirements of LOLER, lifting equipment is also subject to the requirements of the Provision and Use of Work Equipment Regulations 1998 (PUWER).

## What does LOLER do?

Generally, the Regulations require that lifting equipment provided for use at work is:

- strong and stable enough for the particular use and marked to indicate safe working loads;
- positioned and installed to minimise any risks;
- used safely, ie the work is planned, organised and performed by competent people; and
- subject to ongoing thorough examination and, where appropriate, inspection by competent people.

## What equipment is covered by the Regulations?

Lifting equipment includes any equipment used at work for lifting or lowering loads, including attachments used for anchoring, fixing or supporting it. The Regulations cover a wide range of equipment including, cranes, fork-lift trucks, lifts, hoists, mobile elevating work platforms, and vehicle inspection platform hoists. The definition also includes lifting accessories such as chains, slings, eyebolts etc.

LOLER does not apply to escalators, these are covered by more specific legislation, ie the Workplace (Health, Safety and Welfare) Regulations 1992. If you allow employees to provide their own lifting equipment, then this too is covered by the Regulations.

## Do the Regulations apply to me?

If you are an employer or self-employed person providing lifting equipment for use at work, or you have control of the use of lifting equipment, then the Regulations will apply to you.

While your employees do not have duties under LOLER, they do have general duties under the HSW Act and the Management of Health and Safety at Work Regulations 1999 (MHSWR), for example to take reasonable care of themselves and others who may be affected by their actions and to co-operate with others. The Regulations cover places where the HSW Act applies - these include factories, offshore installations, agricultural premises, offices, shops, hospitals, hotels, places of entertainment etc.

## What do the Regulations require me to do?

You need to ensure that in using any lifting equipment the requirements of LOLER are met.

For example, you should ensure that all lifting equipment is:

- sufficiently strong, stable and suitable for the proposed use. Similarly, the load and anything attached (eg timber pallets, lifting points) must be suitable;
- positioned or installed to prevent the risk of injury, eg from the equipment or the load falling or striking people;
- visibly marked with any appropriate information to be taken into account for its safe use, eg safe working loads. Accessories, eg slings, clamps etc, should be similarly marked.

### **Additionally, you must ensure that:**

- lifting operations are planned, supervised and carried out in a safe manner by people who are competent;
- where equipment is used for lifting people it is marked accordingly, and it should be safe for such a purpose, eg all necessary precautions have been taken to eliminate or reduce any risk;
- where appropriate, before lifting equipment (including accessories) is used for the first time, it is thoroughly examined. Lifting equipment need to be thoroughly examined in use at periods specified in the Regulations (ie at least six-monthly for accessories and equipment used for lifting people and, at a minimum, annually for all other equipment) or at intervals laid down in an examination scheme drawn up by a competent person. All examination work should be performed by a competent person; and
- following a thorough examination or inspection of any lifting equipment, a report is submitted by the competent person to the employer to take the appropriate action.

## How do the Regulations relate to other health and safety legislation?

The requirements of the Regulations need to be considered alongside other health and safety law. For example, section 2 of the HSW Act requires all employers to ensure, so far as is reasonably practicable, the health, safety and welfare of all their employees. Similarly, the MHSWR contain important duties which relate to the carrying out of a risk assessment to identify measures that you can take to eliminate, or reduce, the risks presented by the particular hazards in your workplace. Guidance on how to do this is set out in *5 steps to risk assessment*.

Other more specific legislation, for example the Personal Protective Equipment at Work Regulations 1992, may also apply. Under these particular Regulations there may be a need to provide a safety harness for rope access work during activities such as window cleaning.

## How are the Regulations enforced?

Health and safety inspectors enforce the Regulations. If you have duties under LOLER you will be given time to assimilate the new requirements. However, where there are serious risks, or the requirements are not new, inspectors will be prepared to take firm enforcement action.

## Further reading

The following publications are available from HSE Books:

*Safe use of lifting equipment. Lifting Operations and Lifting Equipment Regulations 1998. Approved Code of Practice and guidance L113* HSE Books 1998  
ISBN 0 7176 1628 2

*Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance L22 (Second edition)* HSE Books 1998  
ISBN 0 7176 1626 6

*Simple guide to the Provision and Use of Work Equipment Regulations 1998*  
Leaflet INDG291 HSE Books 1999 (single copy free or priced packs of 15  
ISBN 0 7176 2429 3)

*Five steps to risk assessment* Leaflet INDG163(rev1) HSE Books 1998 (single copy free or priced packs of 10  
ISBN 0 7176 1565 0)

*Managing health and safety: Five steps to success* Leaflet INDG275 HSE Books 1998 (single copy free or priced packs of 10  
ISBN 0 7176 2170 7)

*Buying new machinery: A short guide to the law and some information on what to do for anyone buying new machinery for use at work* Leaflet INDG271 HSE Books 1998 (single copy free or priced packs of 15  
ISBN 0 7176 1559 6)

*Workplace transport safety: Guidance for employers* HSG136 HSE Books 1995  
ISBN 0 7176 0935 9

*Managing vehicle safety at the workplace: A short guide for employers* Leaflet INDG199 HSE Books 1995 (single copy free or priced packs of 10  
ISBN 0 7176 0982 0)

*Hiring and leasing out of plant: Application of PUWER 98, regulations 26 and 27*  
Information Sheet MISC156 HSE Books 1998

While every effort has been made to ensure the accuracy of the references listed in this publication, their future availability cannot be guaranteed.

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For information about health and safety ring HSE's Infoline Tel: 08701 545500  
Fax: 02920 859260 e-mail: [hseinformationservices@natbrit.com](mailto:hseinformationservices@natbrit.com) or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

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**Extract from Health and Safety Executive Guidance.**

## 1.1 Thorough Examinations

The S-Series range of mobile hoists and associated accessories should be examined every 6 months and be load tested to the maximum working load of the hoist every 12 months. The examination and tests should be carried out by an authorised competent person and the load test should be completed using test weights through a complete lifting range of the hoist.

### Daily Inspection—Hoist Unit

It is advised by Freeway that the following checklist of inspections be carried out on a daily basis prior to using the hoist.

- Ensure that the carry bar is free to rotate and that it is securely attached to the boom of the hoist.
- Ensure that the hooks on the carry bar that facilitate sling connection are not damaged, bent or have any sharp edges.
- Ensure that the hoist moves freely and that all the castors are in full working order.
- Ensure that the leg adjustment works correctly.
- Ensure that boom raises and lowers correctly via the handset.
- Ensure that there is sufficient charge in the battery to complete the task to be undertaken. If battery is low, place on charge for a minimum of 1 hour.
- Ensure that the emergency stop button cuts the power to the hoist when operated.
- Ensure that the mast is correctly inserted into the base and that the securing knob is tightened correctly.

### Daily Inspection—Sling

Prior to each use the sling MUST be visually inspected and checked for the following:-

- Any signs of damage to the sling straps. i.e. cuts, frays, tears, burns etc.
- Any stitching coming loose on any part of the sling.
- Any signs of the fabric tearing, stretching or any undue wear and tear.
- Is the sling complete? i.e. all straps present, stiffeners in place or available (if applicable).
- The label should be clearly legible showing all the information.
- Ensure that the sling is compatible with the hoist.

DO NOT use the sling if any faults are found.

## 2.0 Periodic Inspection & Testing of the S-Series Hoist and associated accessories - Mechanical Parts

### Base - Castors

- Ensure all castors are free to rotate through 360 degrees.
- Ensure that the wheel of the castor is free running.
- Ensure that the castor is free from foreign bodies i.e. hair, fluff etc.
- Ensure that the castor is securely attached to the leg.

### Base - Leg Attachment Points

- Ensure that there is minimal movement other than rotational in the leg pivot connection point.
- Ensure that the Allen screws are tight into the leg boss. If they are loose, remove fully and apply medium strength loctite.
- The leg boss bearing is made from oilite and therefore should not have additional lubricants added.

### Base - Leg Adjustment Mechanism

- Using the hand control, operate the leg adjustment actuator to ensure that the action is smooth and continuous.
- Ensure that both legs adjust equally and that they are parallel to each when in the closed position.
- Ensure that the legs are 'square' with the base unit.

### Carry Bar

- Visually check for any excessive wear & tear on the carry bar attachment bracket and securing pin. Do not use Allen keys to check tightness as it will affect the integrity of the threadlocker on the threads.
- Check for any wear on the boom at point of carry bar attachment.
- Ensure that the carry bar rotates freely through 360 degrees.
- Inspect the sling hooks for any damage or sharp edges that could affect the slings whilst in use.
- Ensure padding is present, complete and free from damage.

### Mast

- Ensure the mast is correctly mounted to the base and the star handle is in place and adequately tightened.
- Ensure that the actuator mounting bracket is secure, undamaged and has no signs of excessive wear where the actuator securing bolt passes through.
- Ensure that the boom mounting points are undamaged and free from excessive wear at the point where the boom securing bolt passes through.

### Boom

- Visually check that the boom attachment bolt is present and secure. Do not use Allen keys to check tightness as it will affect the integrity of the threadlocker on the threads
- Check that there is limited lateral movement on the boom.
- Ensure that the actuator mounting bracket is secure, undamaged and has no signs of excessive wear where the actuator securing bolt passes through.
- The boom boss bearing is made from oilite and therefore should not have additional lubricants added.
- Ensure the padding is present, complete and free from damage.

## 2.0 Periodic Inspection & Testing of the S-Series Hoist and associated accessories - Electrical Components

### Control Box, Handset connections

- Check all leads and plugs for damage.
- Check that the handset correctly operates the lifting actuator, in both directions using the correct button.
- Ensure that all connections in the base of the control box are in the correct locations and that they are fully inserted into their sockets.
- Test the Emergency stop button to ensure it isolates the power to the actuator functions when depressed.
- Check the Emergency stop button for mechanical integrity and that it resets correctly when twisted.
- Test the emergency lowering and raise button on the front of the control box.
- Check that the 'Handset' & 'Charging' lights are operational on the control box.

### Batteries

The battery pack is a fully enclosed unit on the S series mobile hoists and no maintenance is required. Replace any faulty batteries found.

- Ensure the mains lead is present with the hoist and is in full working order with the correct fuse size fitted.

### Disposal of Waste Electrical and Electronic Equipment

The W.E.E. E. Regulations ( Waste Electrical and Electronic Equipment Regulations;2006 ) have been introduced to control how waste electrical and electronic equipment is disposed of. These regulations aim to promote reuse, recovery and recycling of electrical parts.

### Lifting Actuators

- Check that the actuator has a smooth operation in both directions for the entire length of the stroke.
- Listen for uncharacteristic noises that could indicate a potential future failure.
- Ensure that the actuator cuts out when it reaches the limits of the stroke in both directions.
- Check the function of the manual emergency lowering device.
- Test function of the anti-crush switches on the lifting actuator.

## **3.0 Symptoms & Problems**

### **3.1 Issue - Hoist will not operate with the handset**

#### Possible Causes

1. Emergency stop button is depressed.
2. Battery is not charged.
3. Handset is not correctly plugged into the control box.
4. Lifting Actuator is not correctly plugged into the control box.
5. The hoist is on charge.

Check all of the above and then try to operate the hoist.

If the Emergency stop button is depressed, turn it slightly in a clockwise direction and the button will automatically release.

Check that all the leads into the control box are fully inserted into the correct sockets.

Charge the batteries if required by connecting the mains lead to the control box and plugging into the mains supply.

If the initial checks do not correct the Issue, other possible faults are :

- Actuator is faulty
- Actuator Jack plug or lead is damaged
- Handset, lead or connector plug is faulty or damaged.
- Batteries are dead and need replacing
- Control box is faulty

### **3.2 Issue - Hoist will not operate with the Control Box Up / Down buttons (if applicable).**

Check the same items as in section 1.1 with the exception of the handset components.

### **3.3 Issue - Hoist has become difficult to manoeuvre**

Possible Causes:

1. The brakes on the rear castors have been left on.
2. The hoist is caught on an obstacle  
Check the above and then try to operate the hoist.

If the initial checks do not correct the Issue—Possible faults

- Brake has become faulty and will not release.
- Castor has become damaged

In both cases, the castor(s) will need to be replaced.

### **3.4 Issue - Hoist will not Charge**

Possible Causes:

1. Mains Lead is not plugged in to control box correctly.
2. Mains Plug is not plugged into wall socket correctly.
3. Wall Socket is not switched on.
4. Emergency stop button is depressed.

NOTE: Red Emergency Stop button must be in the out position when charging the batteries.

Check the above and then try to charge the hoist.

If the initial checks do not correct the Issue—Possible faults

- Fuse has blown in the mains plug—Check fuse
- Cable lead is damaged—inspect and test.
- Control box is faulty—Try a spare control box.
- Battery has become faulty, damaged or at the end of it's life
- Wall socket circuit has tripped—Test output using a volt meter.

## 4.0 Control Box and LCD display

The “Jumbo care” control box has a range of options available that can be viewed during the operation of the hoist

By pressing the “UP” button on the handset, the LCD display indicates the following:

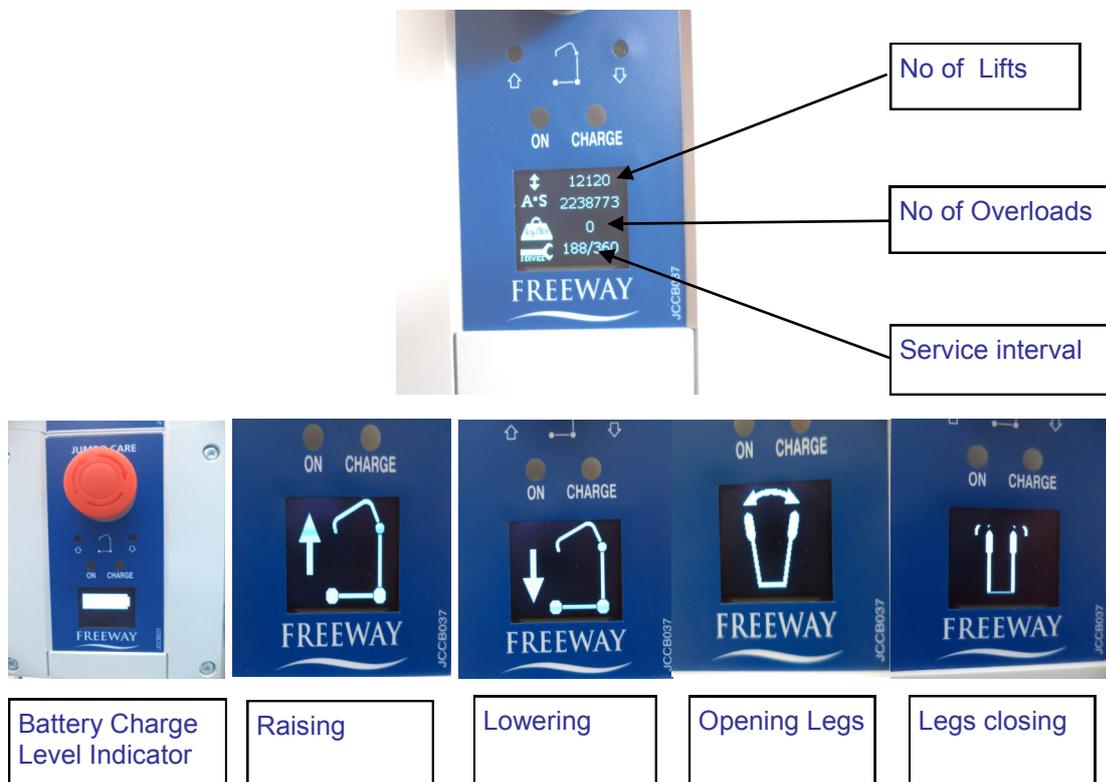
- (a) How many lifts the hoist has completed
- (b) How many times the lift has been overloaded
- (c) Service interval - date service due (measured in days)

The LCD also displays the function during use. See photos below

Note: The service interval cannot be altered / changed using the standard hand set. A special hand set for servicing is required.

Only Freeway approved personnel can alter this feature. The equipment guarantee shall be void if the equipment is not serviced by Prism Medical UK or its authorised agents, or if any unauthorised persons carry out work on the equipment.

See separate manual for re—setting the service interval on the control box.



## 5.0 Repair Procedures

### 5.1 Replacing the Handset

- Remove the handset plug from the hoists control box. Plug the replacement handset in to the hoists control box (NOTE: If the plug has not been fully engaged the hoist will not work).



### 5.2 : Replacing the lifting actuator

- Remove the actuator jack plug from the hoists control box. Using 2 x 4mm Allen keys remove the screws from the actuator mounting pins located on the mast and boom as shown in figures 2 & 3 below. (NOTE: Only one screw should be fully removed as the opposite screw has a strong type thread locker used on it).

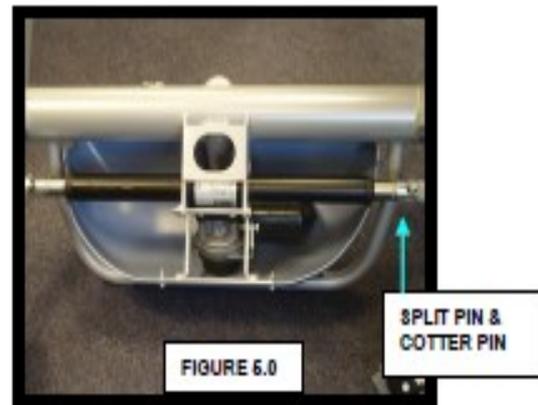
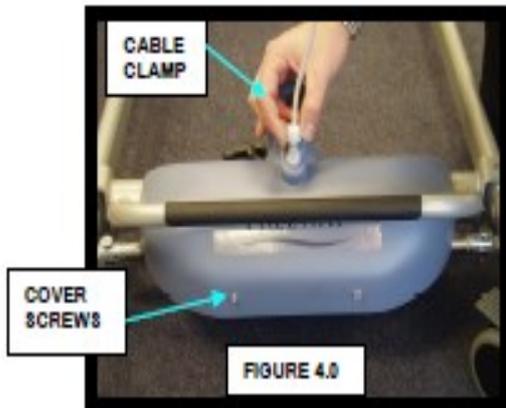


- Carefully support the boom and remove the 2 off actuator mounting pins from both ends of the actuator.
- Mount the replacement actuator on to the mast and boom and re fit using the 2 off actuator mounting pins.
- Re fit the two screws removed from the actuator mounting pins.
- Apply a small amount of medium strength thread lock to the screws to prevent screws working loose at any time.
- Tighten up screws, and remove any excess threadlocker from screws.

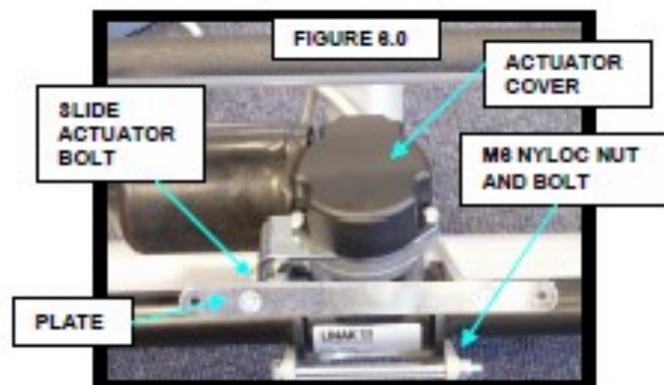
### 5.3 Replacing the leg spreader actuator

- Remove the actuator jack plug from the hoists control box.
- Unwind the two mast clamps on the base and remove the boom mast assembly from the base.

Remove the two screws from the base cover and slacken the cable clamp to remove the cover as shown in figure 4.0.



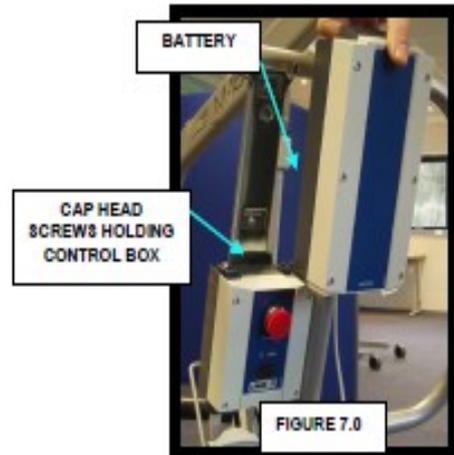
- Remove the two split pins from the pivot points and remove the two cotter pins shown in figure 5.0.
- Remove the plate as shown in figure 6.0.
- Remove the M6 nyloc nut and bolt shown in figure 6.0. Remove the actuator slide bolt as shown in figure 6.0. Lift the actuator out of the base and remove the actuator cover to expose the electrical connection as shown in figure 6.0.



## 5.4 Replacing the battery.

- Remove the battery from the hoists control box, as shown in figure 7.

To refit a new battery, clip the replacement battery into position



## 5.5 Replacing the control box unit

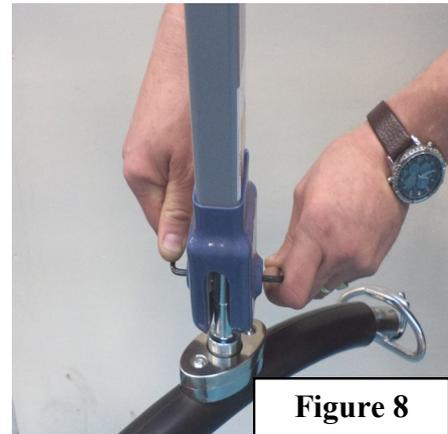
- Remove the jack plugs from the control box.
- Remove the battery from the hoist control box, as shown in figure 7 above.
- Remove the two black plastic dust covers.
- Using a 3mm Allen key remove the cap heads screw, as shown in figure 7, above.

To refit the control box, reverse removal instructions

## 5.6 Replacing the carry bar

- Remove the two plastic caps from the boom end cap.  
Using two 4mm Allen keys remove the screw from the carrybar pin, as shown in figure 8.

(NOTE: Only one screw should be fully removed as the opposite screw has a strong type thread locker used on it).



## 5.7 Replacing a castor

The castors are secured by a M8 x 80mm csk bolt and M8 nyloc nut. To remove a castor, undo the nyloc nut using a 13mm spanner and a 5mm Allen key. To refit a castor, reverse removal instructions



Front castor



Rear castor

## 6.0 Part Replacement Recommendations

For list of available replacement parts, please refer to Spare parts manual

### Actuator

The actuator should be replaced after 40 000 cycles or sooner if deemed necessary following inspection.

### Carrybar

The carrybar should be replaced after 5 years or sooner if deemed necessary following inspection.

## 6.1 Required Repair Tools

1 X 3mm Long Allen Key	1 X 17mm combo spanner
2 X 4mm Long Allen Key	1 X No. 2 Pozi drive screwdriver
1 X 5mm Long Allen Key	1 X Pointed nose pliers
2 X 6mm Long Allen Key	1 X Flat nose pliers
1 X 8mm combo spanner	Medium Strength threadlock
2 X 10mm combo spanner	High strength threadlock

If you have any questions about the manufacture or operation of this equipment, please contact Freeway, or your local authorised dealer.



**This document conforms to BS EN ISO 10535:2006 Requirements**



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