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PHOENIX LIFTING SYSTEMS LIMITED

SERVICE INSTRUCTIONS

FOR THE

UTILITY LIFT

INSTALLED AT



Service Instructions.

Manufacturers Details **Phoenix Lifting Systems Ltd**
 Units 5B and C.
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 Wiltshire.
 SP1 6QX.

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E-Mail Address

Model Type **Utility Lift**

Serial Number

.....

Load Carrying Capacity 2 Persons or 300kg

Amendment Record

All amendments to this manual must be recorded below.

| Issue No. | Issue Date | Date Inserted | Issued by (signature) | Remarks |
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1. FORWARD.

1.1. DEFINITIONS

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|-------------------------------|---|
| Contactor or Relay: | An electromechanical device of suitable rating for switching an electrical circuit. |
| Controller: | An assembly of relays, contactors, overload devices and other electrical components, which control the movement of the Phoenix Lifting System "Utility Lift" . |
| Landing: | Any level at which disabled passenger(s) can board or alight from a Phoenix Lifting System "Utility Lift" with or without a wheelchair. |
| Hydraulic Ram: | A hydraulic lift cylinder with a single or two stage telescopic shaft. |
| Lift Platform: | A platform that is raised by a hydraulic ram and lifts disabled passenger(s) between landings. |
| Lift-way: | A protective vertical enclosure through which the lift platform travels. |
| Journey: | The vertical distance moved by the lift platform between upper and lower landings. |
| Limit Switch: | An electromechanical switch, which detects when the lift platform has reached a normal level at each landing. |
| Terminal Limit Switch: | An electromechanical switch, which detects when the lift platform has moved past its normal level to a maximum permissible level at each landing. |
| Working Pressure: | The highest normal working pressure permitted in the hydraulic lifting system. |
| Pressure Relief Valve: | A valve, which limits hydraulic pressure in the hydraulic system to a safe working value. |
| Hydraulic Power Pack: | The combination of hydraulic pump, drive motor and pressure relief valve needed to power the hydraulic ram. |
| Guide rails: | Guides that control vertical movement of the lift platform. |

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| Mechanical blocking device: | A device often referred to as a scotching device, which physically blocks downward movement of the lift platform so that personnel can safely work underneath the lift platform or in the pit at the bottom of the lift-way. |
| Rated Load: | The normal load that the Phoenix Lifting System "Utility Lift" has been rated to support. |
| Rated Speed: | The nominal speed of the Phoenix Lifting System "Utility Lift" as agreed in the contract for each installation. |
| Restricted Access: | The term used when access is restricted to a known category of user(s). |
| Rupture valve: | A valve that closes automatically when the fluid pressure across the valve drops by a predetermined amount due to increased flow in a particular flow direction. |
| Safety circuit: | An electrical circuit, which has been subjected to failure analysis to confirm that it is fault tolerant. |
| Positive Break Switch: | A switch in which the contacts are forced apart by a positive mechanical action irrespective even if contacts have become welded. |
| Sensitive Edge: | A strip of material that contains a continuous pair of switch contacts that is fitted to detect when a person or obstacle has become lodged between a fixed and moving part of the lift. |
| Unlocking Zone: | The zone, extending above and below a landing, in which the lift platform floor must be positioned to enable the appropriate landing door to be unlocked. |
| User: | The person or persons who own a Phoenix Lifting System "Utility Lift" and are responsible for its safe operation while in normal use. |

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1.2. INTRODUCTION

This manual contains information about the servicing and routine maintenance of
A **Phoenix Lifting System "Utility Lift"** and covers the following topics:

Section 1 - Introduction:

Gives a general description of the **Phoenix Lifting System "Utility Lift"**, its operation and a description of its control and protection devices.

Section 2 - Maintenance:

Gives details of routine inspection and maintenance procedures to ensure safe operation of a **Phoenix Lifting System "Utility Lift"**. Any service or repair work necessary is identified.

Section 3 - Testing:

Defines test procedures to be undertaken following a service, maintenance or repair.

Section 4 - Troubleshooting:

Contains details of possible symptoms, likely faults and corrective action.

Section 5 - Service:

Details procedures for the removal and re-assembly of faulty components and setting up instructions following a service, maintenance or repair.

2. Description of the Phoenix Lifting System 'Utility Lift'.

The **Phoenix Lifting System "Utility Lift"** is manufactured in accordance with BS.6440: 1999 and proposed European standard ISO 9386-1.

The **Phoenix Lifting System "Utility Lift"** is a permanently installed vertical lifting platform which is designed for moving persons with impaired mobility between two fixed landings while standing or when sitting in a wheelchair, with or without an attendant. The equipment is designed for internal or external use in private or public buildings. Each unit is individually tailored to meet the needs of end users. Some constructional details may therefore vary but the principles of operation are the same.

The lift platform is raised and lowered hydraulically and operates between either two or three fixed landings. The maximum lift travel is 4 metres. A hydraulic ram raises a carriage that carries a cantilevered lift platform. The carriage has four support rollers and runs in rigid vertical guides that are anchored to the walls, threshold and floor of a building. The platform runs within a totally enclosed steel structure. For lifts that travel less than 2000mm, the structure extends from the lower floor landing to a position 1100mm above the floor of the upper landing. For lifts that travel from 2000 to 4000mm the structure extends from the lower landing to a position 2110mm above the floor of the upper landing. The guide section on enclosures with travels exceeding 3 metres may extend above the main structure.

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At the lower landing access is afforded by either a single 2 metre high manually operated door that is hinged on one side or a pair of 1980mm high powered doors each hinged on one side and opening in the middle. At the upper landing, for lifts that travel less than 2000mm, access is afforded by a single 1100mm high manually operated hinged gate. For lifts that travel from 2000 to 4000mm, access is afforded by either a single 2 metre high manually operated door that is hinged on one side, or a pair of 1980mm high powered doors each hinged on one side and opening in the middle. Access to the lift, is only possible when the platform of the lift is at the required landing.

The electrical controls and hydraulic power pack are housed in an IP66 rated enclosure, which may be located up to 5 metres from the base of the Phoenix 'Utility' Lifting Platform or in another room. Lift platform control panels are located at each floor landing and on the carriage of the lift platform. See illustration 1. All calls are controlled on a first come first serve basis. Some units may be fitted with key switches to restrict access for added security. Landing controls consist of a **CALL** button. Lift platform controls consist of **UP** and **DOWN** direction, **STOP** and **ALARM** press buttons. Some units may be fitted with key-switches to restrict access for added security. The main controller and hydraulic power pack may be sited up to 5 metres from the lift-way.

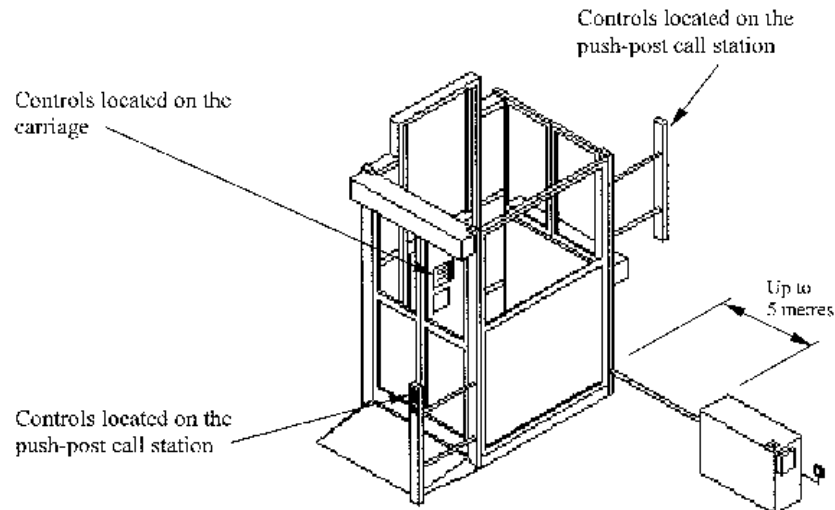


Illustration 1

Service Instructions.

2.1. HYDRAULIC OPERATION.

The hydraulic cylinder that raises the lift platform is a displacement single acting type for travels up to 1400mm, or a two-stage synchro for travels exceeding 1400mm and up to a maximum of 4000mm. When pressure is applied to its piston it raises the lift platform and when pressure is released its piston lowers under the weight of the lift platform.

Once an up call is received, the electric motor of the hydraulic power pack is energised to operate the pump. Hydraulic fluid under pressure is then conveyed through a hydraulic hose to the hydraulic cylinder via a non-return valve. A pressure relief valve in the hydraulic power pack controls working pressure. A rupture valve fitted in the pressure port of the hydraulic cylinder prevents hydraulic fluid from escaping from the cylinder should the hose break.

When pressure is applied to the pressure side of the hydraulic cylinder, its piston raises the load on the lift platform.

If a down call is received, a down solenoid valve is energised. This valve bypasses the non-return valve and allows hydraulic fluid to return from the hydraulic cylinder via a filter to a reservoir. A unidirectional flow control valve limits the rate at which hydraulic fluid can return from the cylinder. Provided there is back-pressure due to the unidirectional flow control valve the rupture valve will remain open. If there is a hose break, the rupture valve closes to prevent the lift platform from falling freely.

If there is a hose break and the hydraulic cylinder remains locked by the rupture valve in one position it is possible to lower the lift platform by opening a manual lower valve. This also returns hydraulic fluid to tank via a unidirectional flow control valve.

The pressure relief valve protects the lift and hydraulic system against overloading. This is factory set and must not be altered.

2.2. ELECTRICAL CIRCUITS

The controller requires a dedicated 240V 50 Hz a.c. supply rated at 13A. This supply is connected to a circuit breaker. The output of the circuit breaker is connected via contactors MAIN and UPC to the motor of the hydraulic power pack and the primary side of an isolating transformer the output of which is connected to a rectifier. The rectifier produces an unregulated 24 volts dc supply, which is needed to power the control circuits. The hydraulic power pack operates at 240V 50Hz a.c.

The hydraulic power pack receives its power via a pair of normally open (n/o) contacts in contactors MAIN and UPC. One set of contacts in each of these contactors is wired in series with the positive side of the 240V supply and the pump motor. The negative side of the 240V supply is connected to the pump through a further pair of normally open contacts in UPC.

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2.3. UPWARD TRAVEL

The lift platform will not move up if any of the following conditions exist.

1. The contacts of a landing door, gate or lock limit switch are not made.
2. The contacts of an up limit or ultimate up limit switch are broken.
3. The up sensitive edge contacts are broken.
4. The journey timer has timed out.
5. A down call has been registered.

Pressing the STOP button situated on the platform will stop upward movement of the lift platform at any time.

When an UP call button is pressed relay TC is energised which in turn energises relays UR and URDR and contactors UPC and MAIN. Relay TC remains latched on when the n/o contacts of UR and TC close. UR remains latched on when the n/o contacts of TC close. URDR remains latched on when the n/o contacts of UR close. UPC remains latched on when the n/o contacts of UR, close. MAIN remains latched on when the n/o contacts from UPC close. The pump motor is then energised through the n/o contacts of UPC and MAIN on the positive side and n/o contacts of UPC on the negative side.

The platform then ascends to the upper landing until the upper limit switch opens. If any of the conditions listed above are registered relays UR, URDR and TC will not latch and contactors UPC and MAIN cannot be closed.

2.4. DOWNWARD TRAVEL

The lift platform will not move down if any of the following conditions exist.

6. The contacts of a landing door, gate or lock limit switch are not made.
7. The contacts of a down limit or ultimate down limit switch are broken.
8. The down sensitive edge contacts are broken.
9. The journey timer has timed out.
10. An up call has been registered.

Pressing the STOP button situated on the platform will stop downward movement of the lift platform at any time.

When a DOWN call button is pressed relay LC is energised which in turn energises relays DR, URDR and DN and contactors MAIN. Relay LC remains latched on when the n/o contacts of DR and LC close. DR remains latched on when the n/o contacts of LC close. URDR remains latched on when the n/o contacts of DR close. MAIN remains latched on when the n/o contacts of DN close. The down solenoid is then energised through the n/o contacts of MAIN. The platform then descends to the lower landing until the bottom limit switch opens. If any of the conditions listed above are registered relays DR, URDR and LC will not latch and contactor MAIN cannot be closed.

Service Instructions.

2.5. LOCKS

The limit switches that indicate when the lift platform has reached its normal upper or lower levels employ change over contacts so that as the platform stops at a landing, one set of contacts opens while the other makes. The contacts that close energise a lock solenoid, which causes a spring loaded shoot bolt to be withdrawn from the door or gate allowing access to the lift platform. The contacts that break indicate that the lift platform has reached its upper or lower level.

There is also a limit switch on the gate or door. This has wiping contacts that break mechanically whenever a gate or door is opened. When a gate or door is closed the contacts of the gate or door limit switch make and energise relay LBR. Relay LBR then breaks the feed to the lock solenoid allowing the spring to engage the shoot bolt. The gate or door is then locked in the closed position. To regain access to the platform it is necessary to press the CALL button causing LDT to be de-energised for 5 seconds. After 5 seconds n/o contacts in the lock circuit are closed and the lock solenoid is re-energised allowing the gate or door to be reopened.

2.6. ANTI CREEP CONTROL

The anti-creep control is a safety feature that prevents the lift platform from creeping down should the platform be left at the upper landing for an appreciable length of time. The anti-creep system will operate irrespective of whether the upper landing gate or door is open or closed.

Should the platform creep below the upper landing by more than 15mm the contacts of an anti-creep limit switch make energising a 1 second anti creep timer ACT. The anti creep limit switch has wiping contacts that will always make and break mechanically. A pair of normally closed (n/c) contacts in ACT remains closed while ACT is timing out. While the contacts of the anti-creep limit switch and timer ACT are closed contactor UPC and MAIN are energised causing the hydraulic pump to run and the lift platform to be raised. The pump then continues to run until the contacts of either the anti-creep limit switch or normally closed contacts of timer ACT open. UPC and MAIN are then de-energised and the lift platform stops.

Should the pump continue to run in error the lift platform will reach a terminal limit switch at the uppermost lift height causing contactors UPC and MAIN to be de-energised. Operation of the anti-creep function can be prevented at any time by operating the STOP button.

2.7. CALL CANCEL TIMER (CCT)

If following an acknowledged call to either level there is no movement of the lift platform all call buttons will be disabled. This is achieved by a timer CCT that starts running whenever call is acknowledged and times out after 3 seconds if no platform movement is detected. Once CCT has timed out all landing and platform call buttons are inhibited except for the stop button. The STOP button can be used to reset CCT but it cannot clear a fault.

Service Instructions.

2.8. JOURNEY TIMER (JT)

A journey timer is used to confirm that the lift platform has travelled its full distance in an acceptable time. In the event of a call being acknowledged a timer JT begins to time out. If the lift platform does not reach its destination within its pre-determined travel time, (dependant on travel) plus 10 seconds, n/c contacts in timer JT open and remove all power from the control circuit. Contactors UPC, Main and DN are then de-energised preventing the lift platform from being raised or lowered any further.

3. MAINTENANCE.

3.1. PERIODIC EXAMINATIONS AND TESTS.

The lifting platform should be thoroughly examined within 6 months of commissioning or on completion of major modifications and at intervals not exceeding 12 months. Particular attention should be given to the effectiveness of the following features:

- i. Limit switches used by control interlocks.
- ii. The electrical control circuits.
- iii. Earth continuity.
- iv. The hydraulic power pack hoses and piping.
- v. The alarm system.

An inspection report should be prepared following examination of the above items. One copy of the report should be handed to the purchaser or purchaser's representative and Phoenix Lifting Systems should retain one copy.

The competent person conducting the examination should advise whether more frequent inspection and service will be necessary to ensure continued safe operation.

If defects are reported the recommended repair, and the period within which the repair should be executed must be stated.

If any defects affecting safety are found and immediate repair is not possible, the lift must be taken out of service and the user advised.

Every examination, service or repair action must be recorded in the Service/Call-out Report Log in the Operating Instructions and User Guide.

Service Instructions.

3.2. TEST AND EXAMINATION AFTER MAJOR MODIFICATION.

If any major modifications are carried out on the lift platform, the procedure specified in 3.1 above must be repeated.

The following are deemed major modifications:

- i change of rated speed
- ii change of rated load
- iii change of carriage
- iv change of travel
- v change of position or type of drive unit
- vi change of interlock, control or safety circuit
- vii change of any pressure sensitive safety edge or surface

3.3. SAFETY INSTRUCTIONS

Before attempting to work on the underside or beneath the platform, ensure that:

- i the platform is at the highest level and the scotch device (See Illustration 2), on to which the carriage can be lowered, is placed in the hole in the side of the guides.

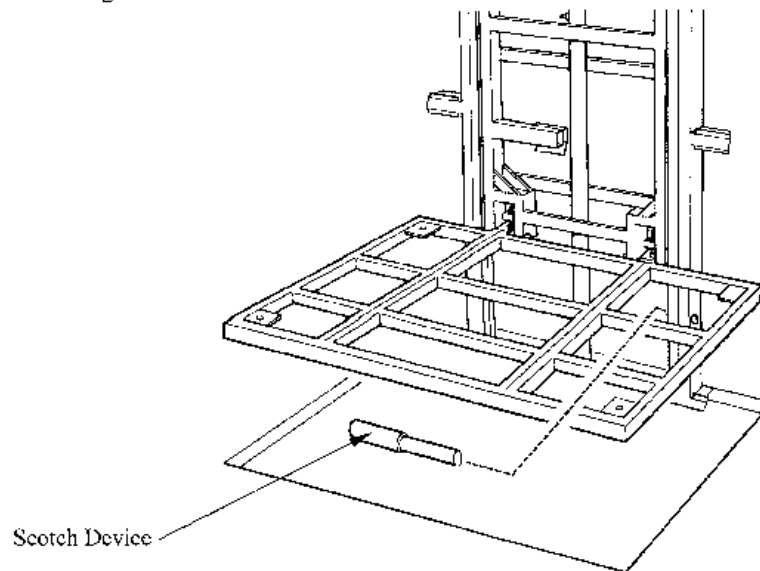


Illustration 2

Service Instructions.

3.3 SAFETY INSTRUCTIONS Cont'd..

- ii the main electrical power supply to the control panel has been isolated and locked in the OFF position, and pit stop switch is depressed.
- iii the hydraulic shut-off valve on the valve block of the hydraulic power pack is turned OFF. (See Illustration 3)
- iv barriers have been erected around the area about the platform to prevent unauthorised access to the liftway.
- v warning notices have been displayed advising that the liftway may be open.

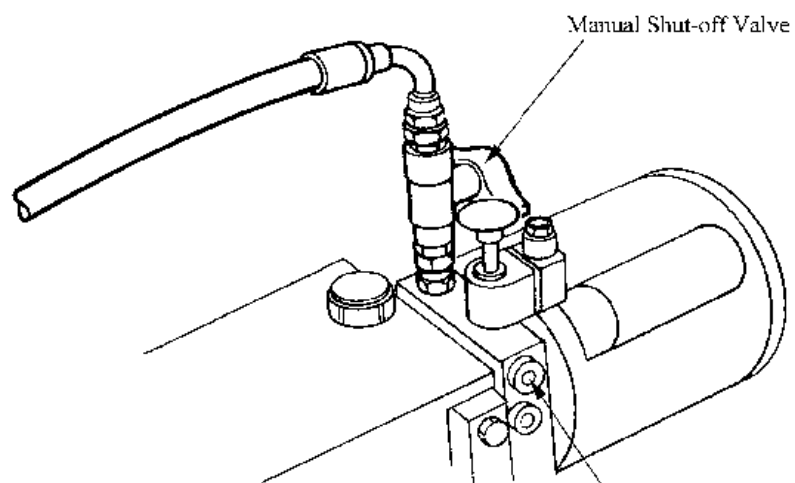


Illustration 3

Port 4 – Pressure Gauge Test Port
(For setting only)

Service Instructions.

3.4. DOCUMENTATION.

This section to be read in conjunction with the "Certificate for Periodic Examination" a copy of which can be found in the Appendix.

- | | | |
|-----------|-----|---|
| Section A | i | Print name of owner/occupier |
| | ii | Print address |
| Section B | i | Type of lift: Utility platform lift |
| | ii | Lift serial number: Obtained from service log or load plate |
| | iii | Description of lift: Disabled access platform lift |
| | iv | Date of installation: Obtained from service log or load plate |
| Section C | | Check whether any panels or structures are bent, buckled, bowed or rusted. If any of these items are damaged it must be considered that the lift is in poor mechanical order and should be repaired or taken out of service. |
| Section D | i | Pipework, hoses and unions: Check pipework for signs of rust and replace if necessary. Check flexible hoses for signs of deterioration, ageing and chafing. Check unions for leaks and tighten if necessary. |
| | ii | Hydraulic Power Pack: Check unit for leaks and tighten joints if necessary. Check that the hydraulic fluid level as indicated by the site glass on the side of the reservoir is between upper and lower limits as indicated by hairlines on the sight glass. Top up the reservoir if necessary using "EP32" or recommended equivalent hydraulic fluid. Note. Hydraulic fluid may only be topped up when the platform is at its lower level. Check the filler breather cap on the reservoir for blockages and clean if necessary. Check that the hydraulic fluid is not contaminated with metal particles, dirt, rubber or water. If contaminants are found, report this to the service manager. Check, that the anti-vibration mounts under the pump motor have not deteriorated or become soft. Check that the maximum working pressure of the system does not exceed 65bar (942psi) for a single-stage ram, or 35bar (507psi) for a two-stage ram. For this purpose, a pressure gauge should be fitted in port 4. See Illustration 3. |

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3.4. DOCUMENTATION (Section D) Cont'd..

- iii Shut off valve:
Check that the shut off valve functions correctly. When the valve is closed, hydraulic fluid should not feed to the hydraulic cylinder. Run the pump with the valve closed to confirm that there is no fluid flow. The valve should be placed in a receptacle to catch any hydraulic fluid should there be a leak under pressure.
- iv Emergency lowering:
Pull red manual lowering valve to check that the platform descend at a controlled speed.
- v Electrical control system:
Check all wire terminations in the controller. Tighten screw terminations if necessary.
Check that solder joints have not fatigued.
Check that spade connections are secure.
Check that crimped connections are not loose.
Check the contacts of contactors and relays for signs of excessive arcing and replace if necessary.
Check that the terminals of the battery (if fitted) have not corroded and that the level of the electrolyte is above the plates. Clean and protect battery terminals with silica gel
Check that the panel back plate is secure.
Check that the control box is securely held against its support member and tighten fixing bolts if necessary. Remove any oil that may have accumulated in base of the control enclosure.
- vi Hydraulic cylinder:
Check that seals round the shaft and pipe connections to the hydraulic cylinder are not leaking. If leaks are detected, inform the service manager.
Note : Hydraulic cylinder may only be repaired or serviced by the original manufacturer.
Check that the shaft of the hydraulic cylinder is not scored, marked or scratched. If blemishes are identified, inform the service manager.
Check the tightness of the piston and carriage fixing bolts. Remove any residual oil from the surface of cylinder.
Refer to Table 1 (section 8) for tightening torque.
- vii Guides:
Check the tightness of all anchor bolts between the structure and support members.
Check the tightness of guide joint fixings.
Refer to Table 1 (section 8) for tightening torque.

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3.4. DOCUMENTATION (Section D) Cont'd..

- viii Lift Platform:
Check operation of pit-step switch.
Check that the sensitive edge on the carriage operates with minimal effort when it is depressed by no more than 3 mm on coming into contact with an obstacle and adjust if necessary.
Check the operation of all push buttons on the carriage of the lift platform to ensure that they function as described above.
Remove the carriage panel and check that the normal up limit switch, terminal up limit switch and anti creep limit switches operate in the correct positions as follows:
- The normal up limit switch should stop the lift platform when it is within ± 2 mm of the upper or lower landing.
 - The terminal up limit switch should stop the lift platform when it is above the upper landing by ± 2 mm.
 - The anti-creep limit switch should start the pump when the lift platform is 15 ± 2 mm below the upper landing.
- Check that the guide rollers of the lift platform are tight against their guide rails. Adjust the guide rollers to reduce slack between these and their guide rails if necessary.
Check all fixings for tightness.
- ix Landing controls and Locks:
Check operation of all landing control buttons to ensure that they function as described above.
Check that locks on the doors or gates at both landings are engaging fully and that they hold them securely.
Check if a door or gate is open, the lift platform cannot be moved.
Check when the lift platform reaches each floor level the lock releases freely and that the lock can be released by pressing a call button if it is necessary to re-open a door or gate.
Check that hinge, fixing screws are tight and tighten if necessary.
Check that the door closer does not exert a force of greater than 150N/m at the point when doors are about to close. Adjust the drive torque on the door closer if necessary.
- x Battery Back-up: (If fitted)
Check that the battery back-up system comes into operation by switching off the 240V ac mains power supply with the platform at the upper level.
Check upper gate can be opened if the upper level call button is pressed.
Check lift platform will descend if a down call is pressed and that the lower door can be opened once the platform arrives at the lower landing.

Service Instructions.

3.4. DOCUMENTATION (Section D) Cont'd..

- x1 Alarm: (If fitted)
Check that the audible alarm functions. If it fails it may be necessary to charge the batteries.
 - xii Trailing Cable:
Check that the anchors that support the flexible chain trunking are secure.
Check wiring within the flexible chain trunking is not damaged or worn.
 - xiii Anti-creep System:
Check operation of the anti-creep system by raising the platform to the upper level and lower the platform using the manual-lowering valve. The platform should descend approx. 15mm and the anti-creep system should then start the pump and return the lift platform to the upper level. Check that the anti-creep system also operates correctly, when an upper gate or door is open.
 - xiv Platform creep:
Check that over a 10 minute period the platform does not creep downwards by more than 5mm per metre of journey distance.
- Section E Accessibility:
Check that it is possible to remove all panels without restriction and that it is then possible to access all parts of the installation for inspection. If access is restricted, obstructions should be removed.
- Section F Repairs, renewals or alterations:
Safety Critical Situations:
Should immediate repairs, renewals or alterations be required and replacement parts are not available the utility lift should be isolated from its electrical supply by turning the circuit breaker to the OFF position and locking it in the OFF position. As an added precaution, fuses can be removed. The owner should be informed of the reasons for taking this action and advised of the time when repairs, renewals or alterations can be carried out.
N.B. Before any remedial work is carried out, clearance should be sought from the service manager.
Non-Safety Critical Situations:
If the repairs, renewals or alterations required do not affect the safety of the utility lift the remedial action required should be identified and the time by which such action should be taken, identified.
- Section G Defects:
List defects other than those above which require attention. e.g. damaged panels.

Service Instructions.

| | |
|------------|--|
| Section II | Safe Working Load: Check that the lift platform is capable of raising the safe working load advised on the load plate. This can be achieved by using suitable passengers provided their weight has been checked. |
| Section I | Other observations: This section should be filled in if any other features on a lift platform or ways in which it is being used need to be recorded because they could signal problems that require attention in future. |
| Section J | Declaration: Self-explanatory |

3.5. CLEAN DOWN

- i Clean away any oil in the base of the control cabinet that has spilled out of the pump and check that the drain is open. Check that the barrier between the hydraulic power pack and electrical control equipment is sound and that no oil is reaching electrical switchgear.
- ii Clean away any oil that has leaked out of oil seals onto the case of the hydraulic cylinder. If an excessive amount of oil is leaking, investigate seal failure.
- iii Clean internal faces of guides.
- iv Remove dust and debris that has entered the pit beneath the lift platform.
- v Clean the floor of the lift platform.
- vi Clean glass panels.

Service Instructions.

4. TESTING

4.1. GENERAL

Following any major modifications or repair work, the installation should be re-tested to confirm compliance with the latest requirements of British Standard 6440.

The following are considered major modifications:

- i change of rated speed
- ii change of rated load
- iii change of carriage
- iv change of travel
- v change of position or type of drive unit
- vi change of interlock, control or safety circuit
- vii change of any safety sensitive edge or surface

4.2. TEST EQUIPMENT.

The following test equipment will be required to perform the tests listed below:

- i Pressure gauge 0-100 bar
- ii 10 Amp earth continuity tester.
- iii Multimeter
- iv Test weights
- iiiv Stopwatch
- iiiv 500V d.c insulation resistance Megger Tester with a 1mA current trip

4.3. DOCUMENTATION.

A copy of the Certificate of Test and Examination should be completed once Installation and testing are complete. A copy of the certificate to be completed can be found in the Appendix

Service Instructions.

4.4. TEST PROCEDURE.

Listed below are guidelines to assist in the completion of the test certificate.

4.4.1. Description of installation:

| | |
|--------------------------|---|
| Location: | Site address |
| Manufacturer: | Phoenix Lifting Systems |
| Serial Number: | To be found on load plate |
| Electrical Supply: | Obtained from load plate and specification |
| Travel: | The journey distance of the lift between upper and lower floors. This should be measured on site. |
| Number of levels served: | Specify |
| Location of controller: | Specify |
| Rated load: | Obtained from load plate and specification. |
| Rated Speed: | 0.08 ~ 0.1m/s Check on site. |

4.4.2. Examination and Test:

Listed below are a number of tests and inspections that must be completed. In some cases, these are based on the requirements of BS6440 and where this is the case appropriate comment about how compliance may already have been achieved are made.

WARNING: The following procedures must only be performed when all electrical power has been isolated from the controller and the mains disconnect device locked in the OFF position.

a. Earthing Arrangements.

- i Phoenix Utility Lifts are bonded to earth. The incoming earth terminal, which is marked PE (Protective Earth) must only receive the incoming earth conductor for the site and a second conductor, which is connected to an earth connector block. Separate bonding conductors terminate in the earth connector block and bond different parts of the Phoenix Utility Lift to PE.
- iii Connect the 10A earth continuity tester between the Protective Earth terminal in the control cabinet and the following and measure earth resistance:
 - a Metalwork of the guides
 - b Metalwork of the carriage
 - c Metalwork of the platform
 - d Metalwork of doors or gates.In each case, the measured resistance must be less than 0.25 Ohms

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b. Insulation Resistance to Earth

The following tests should be conducted using a 500v d.c. Megger Tester set to trip if a current in excess of 1 mA is detected. Tests should be made between Protective Earth and each of the following as explained: In all cases, the resistance measured must be greater than 1.0 Megohm.

- i. Remove the mains power input connections from terminals 1,2 and 3 and independently measure between terminals 1, 2 and 3 and PE while manually engaging the MAIN and UPC contactors.
- ii. Remove the connections on terminal 7, which connect to terminal 8 and the input side of terminal 3. Measure the insulation resistance between each of these wires and PE.
- iii. Disconnect the wires that connect to the motor of the hydraulic power pack and measure the insulation resistance between each of these and PE.
- iv. Disconnect the power cables from the torque control device for the doors and measure the insulation resistance between each of these and PE.

c. Voltage.

The following tests must be performed when the mains disconnect device has been turned to the ON position and the controller is live. The following tests are therefore hazardous and must only be performed by trained and qualified electrical engineers.

- i. Measure the mains voltage between terminals 1 and 2 when power is applied. The voltage should be 230V \pm 10% / -6%.
- ii. Measure the voltage of the control circuit with the lift travelling upwards under full rated load. Set the multimeter range to 0-50V d.c. and measure between terminals 7 (+ve) and negative (-ve). The voltage should be 12V \pm 2%.

d. Platform Underside Protection.

- i. Reference is made to clause 6.6 of BS6440. This lists the requirements for under floor protection to eliminate the hazards stated in clause 4.1 of BS6440, crushing, shearing or trapping. Because the Phoenix Utility platform lift is enclosed by its own structural enclosure, all risks of crushing, shearing or trapping is eliminated. There is therefore no need for inspectors to address this requirement. The response should therefore be N/A.

Service Instructions.

c. Levelling Accuracy.

- i. The levelling accuracy with the platform loaded and unloaded should be within the tolerances specified in clause 6.9 of BS6440, namely $\pm 12\text{mm}$.

f. Liftway Protection.

Reference is made to clause 6.4 of BS6440.

This clause addresses the precautions required to prevent injury to personnel using or located near to the Phoenix Utility Lifting Platform. Areas to be considered include the following:

- a) Shearing, crushing, trapping or abrading
- b) Entanglement
- c) Falling and tripping
- d) Physical shock and impact
- e) Electric shock
- f) Fire attributed to use of the platform lift

This clause also addresses construction of the enclosure, openings for access, which must be at least 750mm wide, methods of operation location of call stations, locking of landing doors and gates and emergency release requirements for landing doors and gates in the event of a breakdown. The Phoenix Utility Lifting Platform has been designed to satisfy all of these requirements in order to meet the requirements of the Machinery Directive. There is therefore no need for inspectors to address this requirement. The response should therefore be N/A.

g. Enclosure Interlocks

All enclosure doors and gates should be fitted with interlocks as required by clause 6.4.6 of BS6440. All enclosure doors and gates are fitted with interlocks and the operation of interlocks should be checked as follows.

- i. That it is not possible to open doors or gates if the lift platform is not at a landing.
- ii. That it is not possible to operate the lift platform if a door or gate is open other than in anti-creep mode.
- iii. That the lock release operates freely when the lift platform is at a floor level and resets when doors or gates are closed.

Service Instructions.

h. Clearances

Check that clearances between the lift platform and lift enclosure are as required by clause 6.5 of BS6440 throughout the journey distance. The running clearance should be 10 ± 2 mm.

i. General

Check that the load plate is fitted to the carriage, that the load rating and serial no are correctly displayed and visible to platform users.

j. Overload Test

Overload tests should be conducted when the lift platform is carrying 110% of its rated load. For a 300kg lift platform the test load should therefore be 330kg. Tests with test weights should be performed as follows.

- i. To determine whether the lift platform completes its journey in the pre-set time when the test load is raised from the bottom to top level. The test result must be recorded.
- ii. To determine whether the lift platform completes its journey in the pre-set time when the test load is lowered from the top to the bottom level. The test result must be recorded.

k. Scotch Device

Hydraulically powered platforms.

- i. Check that a scotch device is supplied with each Phoenix Utility Lift. The scotch device should be located within the controller cabinet. The device is coloured red and labelled scotch device.
- ii. Inserting the scotch device in the access hole in the side of the guide rails. Check the operation of the scotch device by lowering the lift platform onto the scotch device to confirm that the lift is firmly held in position.

Mechanically Driven Platforms.

- i. Not applicable
- ii. Not applicable

Service Instructions.

l. Safety Gear and Braking System.

- i. Not applicable
- ii. Not applicable
- iii. Not applicable
- iv. Not applicable

m. Limit Switches.

- i. Not applicable.
- ii. Check operation of the normal limit switches by confirming that the platform stops at the normal level.
- iii. Check operation of the terminal limit switches by confirming that the platform stops at the terminal level. The lift platform should stop before it comes in contact with end of travel buffers.
- iv. When the lift platform is at the terminal limit switch check that the lift platform will move downwards on receiving a landing or carriage call.

n. Hydraulic Platform Lifts.

- i. Connect the pressure gauge to the pump valve block. Place the rated load on the lift platform raise the platform to the upper level. Record the hydraulic pressure while the lift platform is being raised. For single stage hydraulic cylinders, the pressure reading should be 35 to 60 bar and for a two-stage hydraulic cylinders 10 to 30 bar.
- ii. Using test weights place 120% of the rated load on the lift platform and raise the platform to the upper level. While raising the lift platform adjust the pressure relief valve so that it begins to bypasses hydraulic fluid to tank at this load. To gain access to the pressure relief valve adjuster remove the hexagonal plug from the valve block. Insert a large flat-ended screwdriver in the screw head that is uncovered. Turn the screwdriver clockwise to increase and anti-clockwise to decrease the pressure at which the relief valve opens to bypass. Once the pressure relief valve is consistently bypassing hydraulic fluid to tank while raising 120% of the rated load the pressure relief valve is set. Replace the hexagonal plug and record the pressure reading that was obtained. The pressure should be approximately 63 bar for a single stage and 35 bar for a two stage hydraulic cylinder.

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- iii. With the platform above the lower landing check that the manual-lowering valve operates correctly.

o. Load Test

With rated load on the lift platform raise the platform to the upper floor level and record its position. After 10 minutes check position of the platform and record any change in level. If the platform has crept more than 1mm per metre of journey distance check for leaks. If no leaks are evident, the pump valve block may need overhaul or replacement. If the valve block is overhauled or replaced the above tests 'm' and 'n' must be repeated.

p. Deviations.

List any deviations from those recommended in BS6440 and identify the authority that approved the deviations.

Service Instructions.

5. TROUBLESHOOTING.

The table below will assist in the identification and elimination of some common faults. For more detailed fault finding information reference should be made to the electrical wiring diagram kept inside the controller.

| Symptoms | Possible Cause | Action |
|---|---|--|
| The platform will not respond to a direction call or doors will not open. | There is no mains power | Check supply |
| The platform will not respond to a direction call or doors will not open. | The main overload has tripped. | Reset trip. If continued tripping is experienced the cause must be investigated. |
| The platform will not respond to a direction call or doors will not open. | Stop button pressed or stuck. | Check operation of all buttons |
| The platform will not respond to a direction call or doors will not open. | Fuse 1 has blown. | Replace fuse. If the fuse continues to blow the cause must be investigated. |
| The platform will not respond to a direction call or doors will not open. | The ultimate limit switch has operated. | Lower the lift platform using the manual-lowering valve. Investigate the reason for over travelling. |
| Platform will not move away from landing | A door or gate is not closed or a door or gate lock contacts have not closed. | Close door or gate or check that door or gate lock contacts have closed. |
| The platform will not travel up. | The up sensitive edge on the platform has operated. | Check that the sensitive edge on the lift platform is not obstructed. |
| The platform will not travel down. | Fuse 2 has blown. | Replace fuse. If the fuse continues to blow the cause must be investigated. |
| The door or gate will not open. | The lift platform has not reached the required level. | Press the appropriate UP or DOWN call button to return the lift to the required level. |
| The door or gate will not open. | Fuses 3 or 4 have blown. | Replace fuses. If the fuses continues to blow the cause must be investigated. |

Service Instructions.

6. REPLACEMENT OF COMPONENTS.

6.1 SAFETY INSTRUCTIONS.

WARNING: The following procedures must only be performed when all electrical power has been isolated from the controller and the mains disconnect device locked in the OFF position.

WARNING: Inadvertent lowering of the platform during inspection or servicing could cause serious injury or death. Observe the following safety instructions.

Before attempting to work on the underside or beneath the platform, ensure that:

- i. Raise the lift platform is at the highest level and engage the scotch device. Lower the carriage onto the scotch device as described previously.
Or
Insert a prop of sufficient strength between the base of the pit and underside of the carriage.
- ii. Isolate the controller from its main electrical power supply by locking the mains disconnect device in the OFF position.
- iii. Set the hydraulic shut-off valve on the valve block located in the base of the controller in the off position.
- iv. Erect barriers in the area around the upper and lower level lift access points to guard against unauthorised access.
- v. Display warning notices to keep out.

This section gives guidance and procedures to be followed for the removal and installation of serviceable parts and sub-assemblies. Setting up procedures, which may be required following replacement have also been included.

Minor procedures, which are deemed self-evident, have not been included.

Do not disassemble more than is necessary to replace a defective part.

Before removing any electrical wires, make a note of their location and identification to assist re-assembly.

Service Instructions.

6.2 PLATFORM ASSEMBLY AND REPLACEMENT.

a. Removal. (ref: Appendix 8.2.)

- i. Position the platform at the upper level or at a height that is convenient for access beneath the platform.
- ii. Remove the side rail assembly by removing four Binx nuts from the underside of the platform.
- iii. Place four suitable support blocks of equal size and shape about the location of the platform floor sub frame. Lower the platform by means of the emergency-lowering valve until it is resting on the blocks.
- iv. Switch off the power supply and isolate the batteries (if fitted) by removing the battery fuse.
- v. Remove screws securing the carriage cover panel, lift panel free from carriage. Remove cable ties securing the push button terminal blocks. Separate push button terminal blocks. Remove the carriage cover panel to a safe location.
- vi. Withdraw the carriage hitch bolts. Remove from the carriage panel the push button assembly and reconnect to the push button loom. Switch the power supply on. Using the controls raise the carriage until it is clear of the platform floor. Switch off the power supply. The platform floor assembly can now be removed.

b. Installation

- i. Position the platform at the upper level or at a height that is convenient for access beneath the platform. With the four support blocks still in place locate the platform floor on the blocks. Switch on the power supply. Lower the carriage until the carriage support lugs locate between the floor frame legs. Switch off the power supply. Fit the carriage hitch bolts.
- ii. Switch on the power supply and raise the platform clear of the support blocks. Remove support blocks. Switch off the power supply.
- iii. Using a spirit level, level the platform floor by adjusting the two M16 bolts located between the support lugs. Lock off the bolts once level with the nuts provided.
- iv. Remove the carriage push buttons. Refit the platform floor panel, side rail, push button station and carriage panel.
- v. Reconnect battery (if fitted) and switch on power supply. Check operation of carriage call station.
- vi. Return platform to service.

Service Instructions.

6.3 HYDRAULIC CYLINDER REPLACEMENT

a. Removal (ref: Appendix 8.3.)

Position the platform at the upper level or at a height that is convenient for access beneath the platform. With the four support blocks still in place (see iii. above) place the platform floor on the blocks. Switch on the power supply. Lower the carriage until the carriage support lugs locates between the floor frame legs. Switch off the power supply. Fit the carriage hitch bolts.

- i. Remove the platform assembly as described above. Reconnect the carriage call station. Lower the carriage to the bottom level using the emergency-lowering valve. Switch off the power supply and isolate the batteries (if fitted) by removing battery fuse.
- ii. Remove the M16 bolt securing the piston to the carriage.
- iii. Manually raise the carriage assembly within the guides to a height sufficient to clear the hydraulic cylinder. Tie off, stump or support the carriage within the guides.
- iv. Close the hydraulic shut-off valve on the valve block.
- v. Disconnect the hydraulic hose from the anti-rupture valve at the base of the hydraulic cylinder ensuring minimum oil spillage.
- vi. Remove the saddle clamp securing the top of the hydraulic cylinder. The hydraulic cylinder can now be removed.

b. Installation

- i. Lift and locate the replacement hydraulic cylinder into position between the guides ensuring the base of the hydraulic cylinder locates in the hole in the base plate. Refit the saddle clamp securing the top of the hydraulic cylinder.
- ii. Make sure the pump reservoir is full of hydraulic oil.
- iii. Place the free end of the hydraulic hose in a clean container (bottle, can, etc.,)
- iv. Switch on the power supply and turn the shut-off valve on.
- v. Press the UP button on the carriage or upper call station. Oil will flow from the hydraulic hose into the clean container. When clean oil with no air bubbles appears, press the stop button.
- vi. Reconnect the hydraulic hose to the anti-rupture valve at the base of the hydraulic cylinder ensuring minimal oil loss.
- vii. Check oil level and top-up if required.
- viii. Press the UP button on the carriage or upper call station. The hydraulic piston will extend. When the piston is extended by 200mm, press the STOP button.
- ix. Switch off the power supply.
- x. Remove the restraint on the carriage assembly and lower the

Service Instructions.

- xi. carriage to sit on the piston. Refit the M16 bolt.
- xii. Bleed the hydraulic cylinder. See instructions below Bleeding Air from Hydraulic System.
- xiii. Install the carriage panel and platform as above.
- xiv. Retest installation to instructions given within this manual.
- xv. Return platform to service.

6.4 BLEEDING AIR FROM HYDRAULIC SYSTEM

a. Bleeding Single and Two Stage Hydraulic cylinders

- i. If, or when air is found within the hydraulic system (platform sinks when being loaded or rises when load removed) move the platform to within 100mm of the bottom landing.
- ii. Remove the carriage cover panel to gain access the hydraulic cylinder.
- iii. Give the air time to "settle" at the top of the hydraulic cylinder.
- iv. Loosen the bleed screw by half a turn or until air and oil can be seen or heard. **Do not undo screw by more than two turns. If no air or oil is evident, the port may be blocked.** Once a steady flow of oil only is seeping from the bleed screw, tighten screw.
- v. Replace carriage panel and top up oil reservoir (if required) and run platform. Repeat procedure if necessary.

b. Re-synchronising Two Stage Hydraulic cylinders. (Platform travel over 1400 mm.)

If the platform will not reach the upper or lower landings when previously it had, the two-stage hydraulic cylinder may be out of synchronisation.

- i. If, or when air is found within the hydraulic system (platform sinks when being loaded or rises when load removed) move the platform to within 100mm of the bottom landing.
- ii. To re-synchronise, position the platform at the bottom landing or as close to landing as possible. Switch off the power supply.
- iii. Remove the carriage cover panel to gain access to the hydraulic cylinder. The first stage piston should be fully collapsed within the hydraulic cylinder. (20mm from top of hydraulic cylinder head to underside of first stage, if dimension is larger than stated the first stage requires bleeding. See instructions on Bleeding Air from Hydraulic System)

Service Instructions.

Re-synchronising Two Stage Hydraulic cylinders Cont'd..

- iv. Loosen the synchronising bleed screw by half a turn or until oil can be seen seeping from port. **Do not undo screw by more than two turns. If no oil is evident, port may be blocked.** Once a steady flow of oil is escaping the second stage, the hydraulic piston will start to descend into the first stage. Once the second stage is within 35mm of the first stage tighten bleed screw.
- v. Replace carriage cover panel. Switch on power supply.
- vi. Run platform.

6.5 HYDRAULIC HOSE REPLACEMENT.

a. Removal

- i. Position the platform at the lowest level. Switch off the power supply disconnect batteries if fitted. Use the emergency-lowering valve to relieve the pressure within the hydraulic system. Remove the carriage panel and disconnect the platform call station.
- ii. Position a suitable container (bottle, can, etc..) adjacent to the outlet port of the hydraulic cylinder to collect oil, which will drain from the hose. Disconnect the hose from the anti-rupture valve on the hydraulic cylinder and place end of hose in container.
- iii. Disconnect the hose from the valve block on the pump unit. Remove access cover from trunking and remove saddle clamps from hose. Withdraw hose assembly ensuring any oil is drained into container.

b. Installation.

- i. Connect the replacement hose to the valve block on the pump unit. Run the hose to the base of the hydraulic cylinder. Reinstall hose within trunking and secure with saddle. Fit access covers to trunking.
- ii. Place the free end of the hose in a clean container (bottle, can, etc..)
- iii. Connect the platform call station to the loom on the carriage. Switch on the power supply.
- iv. Press the UP button on the carriage call station. Air then oil will flow from the hose. When clean oil, no air bubbles, appears press the STOP button. Switch off the power supply. Disconnect the platform call station.

Service Instructions.

Installation Cont'd..

- v. Attach the free end of the hose to the anti-rupture valve on the hydraulic cylinder ensuring minimal oil loss.
- vi. Top up the oil reservoir with clean oil.
- vii. Bleed the hydraulic cylinder. See instructions Bleeding Air from Hydraulic System.
- viii. Refit the carriage panel and the platform call station.
- ix. Reconnect batteries if fitted. Switch on the power supply. Run the platform. Check for any leaks.
- x. Remove any oil spillages.
- xi. Return the platform lift to normal service.

Service Instructions.

6.6 HYDRAULIC PUMP/MOTOR ASSEMBLY REPLACEMENT

a. Removal

- i. Call the platform to the lowest level. Use the emergency-lowering valve to relieve the pressure within the hydraulic system. Switch off the power supply. Disconnect batteries if fitted.
- ii. Disconnect the hydraulic hose from the valve block. Disconnect the wiring from the pump/motor and the down solenoid (terminals 4,5,6 and 23, -ve)
- iii. Remove the four M8 nuts securing the pump/motor brackets to the resilient mountings. Remove pump/motor assembly from the control cabinet. (If brackets are to be reused remove from pump/motor)

b. Installation

- i. Install the replacement pump/motor assembly into the control cabinet ensuring alignment with the resilient mounts. Fit M8 nuts securing pump/motor brackets to resilient mounts.
- ii. Connect the pump/motor and solenoid wiring to terminals; brown-4; blue-5; yellow/green-6; green-23; black(-ve)
- iii. Connect the hydraulic hose to the outlet port on the valve block.
- iv. Remove the carriage panel. Remove the call station from the carriage panel and reconnect.
- v. Place a container (bottle, can, etc.,) adjacent to the hose connection at the base of the hydraulic cylinder. Disconnect the hose from the anti-rupture valve. Place the free end of the hose in the container.
- vi. Switch on the power supply. Press the UP button on the call station. Air and oil will flow from the hose. When clear oil with no air bubbles appears press the STOP button. Switch off the power supply.
- vii. Reconnect the hydraulic hose to the anti-rupture valve ensuring minimal loss of oil.
- viii. Top up the reservoir with clean hydraulic oil.
- ix. Disconnect the carriage push buttons. Refit the carriage panel and the push buttons. Reconnect batteries if fitted. Switch on power supply.
- x. Retest installation to instructions given within this manual.
- xi. Return platform to service.

Service Instructions.

6.7 CARRIAGE ROLLER ASSEMBLY REPLACEMENT

a. Removal

Note : Each roller should be replaced individually

- i. Two holes are provided each side of the guides, which give access to the shoulder. bolts securing the rollers to the carriage.
- ii. To gain access to the holes, side infill panel will have to be removed. Locate roller positions, one at the top of the carriage and one at the bottom. Position the platform so that the bottom roller is approximately 200mm above pit level. Remove the adjacent side infill panels. Access holes in the back of the guides should now be visible.
- iii. Position the platform so that the centre of the top carriage roller is aligned with the access hole. Switch off the power supply.
- iv. Remove the sensitive edge from the top of the carriage.

Note: When removing the top carriage roller it should not be allowed to fall down inside the guides, as removal is difficult.

- v. Insert a screwdriver or other suitable object between guide and carriage to support the top roller to prevent it from falling and to assist in removal.
- vi. Use an Allen key/hexagonal wrench to unscrew and remove the shoulder bolt. Ensure bolt does not fall into the hollow section of the guide, as retrieval is impossible.
- vii. Remove the carriage roller and any packing washer (if fitted) from the top of the carriage.

b. Installation

- i. Measure the new roller to determine if packing will be required to eliminate side play in carriage.
- ii. If packing is required use a cyanoacrylate adhesive to temporarily attach M10 packing washers to the roller assembly.

Note: When replacing the top carriage roller it should not be allowed to fall down inside the guides, as removal is difficult.

- iii. Apply "Nutlock" to the shoulder bolt thread.
- iv. Position the roller and insert the shoulder bolt through the rear of the guides. Care must be taken to ensure that no "Nutlock" comes into contact with the internal surface of the roller bush.
- v. Tighten the shoulder bolt.
- vi. Repeat procedures for the other rollers.

Service Instructions.

Installation Cont'd..

- vii. Once all rollers have been replaced, disconnect the platform call station. The carriage sensitive edge, carriage panel and platform call station can be refitted.
- viii. Switch on the power supply. Run the platform.
- ix. Return the platform to service.

6.8 CONTROL PANEL COMPONENT REPLACEMENT

- i. The electrical components of the control panel are mounted on DIN rail with the exception of the transformer and the bridge rectifier, which are attached directly to the panel.
- ii. Should any element of the control panel require replacement ensure that the power supply is switched off.
- iii. Before removing any wire, make a note of its location to assist when reassembling.

6.9 LIMIT SWITCH REPLACEMENT

- i. Before attempting to adjust or replace any switch ensure the power supply is switched off and the batteries (if fitted) are disconnected.
- ii. Replacement of switches is a self-evident procedure. To assist in the location of the switches and means of access see list below.

| Switch | Location | Access |
|--------------------|---------------------|-----------------------|
| Ultimate limit | On carriage | Remove carriage panel |
| Up limit | On carriage | Remove carriage panel |
| Anti-creep | On carriage | Remove carriage panel |
| Down limit | On guide back panel | Access from pit |
| Door/gate contacts | Slam post | Remove lock housing |

6.10 FUSE REPLACEMENT

- i. All fuses in relation to the control panel are incorporated into the DIN rail mounted terminals.
- ii. Access to the fuse is gained by pulling out the fuse carrier from the top of the terminal. Ensure power supply is switched off prior to replacing fuse.
- iii. Only replace fuses with the correct type and current rating.

Service Instructions.

6.11 BATTERY REPLACEMENT

- i. The battery is located within the control cabinet. Observe polarity prior to disconnection.

Note: The battery is a sealed for life, lead acid rechargeable type which may be connected to a regulated battery charger.

6.12 SETTING UP AND ADJUSTMENT

a. Up Limit Switch

- i. With the platform at the upper landing, adjust the limit switch so that the contacts break when the platform reaches landing.

b. Ultimate Limit

- i. With the platform 25mm above the upper landing, adjust the limit switch so that the contacts break.

c. Down Limit

- i. With the platform at the lowest landing, adjust the limit switch so that the contact breaks when the platform reaches landing.

d. Anti-creep

- i. With the platform 25mm below the upper landing set the anti-creep switches so that both switches are closed.
- ii. Check operation of anti-creep by emergency lowering the platform from the upper landing with the power left on. When the switches close, the pump unit should energise, release lowering valve, the platform should re-level.

e. Carriage Sensitive Edge

- i. Remove the sensitive edge cover from the top of the carriage; adjust the switch roller arm until the required sensitivity is obtained. Replace sensitive edge cover.

f. Door/Gate Lock

- i. To adjust the door/gate lock contact remove unit from slam post.
- ii. Adjust microswitch to give required sensitivity to prove lock beak engagement.

Service Instructions.

7. TECHNICAL SPECIFICATION

7.1. STANDARD UTILITY PLATFORM LIFT

| | | | |
|--------------------------|---|---|-----------|
| Enclosure overall sizes | 1077 wide | x | 1374 deep |
| Platform floor area | 900 wide | x | 1250 deep |
| Useful floor area | 840 wide | x | 1250 deep |
| Access door/gate | Manual side hinged single panel with integral door spring closer. (Left or right side hung) | | |
| Clear access to platform | 825 wide | x | 2000 high |
| Maximum travel | 4000 mm | | |
| Hydraulic cylinder | Single stage up to 1400mm travel Two stage hydraulic cylinder from 1400-4000mm travel | | |
| Rated lifting capacity | 2 persons or 300kg | | |
| Rated speed | 0.08 ~ 0.10m/s | | |
| Electrical requirements | 13A 240v dedicated supply | | |
| Starting current | 6.5A | | |
| Running current | 3.5A | | |

Service Instructions.

7.2. LARGE UTILITY PLATFORM LIFT

| | | | |
|--------------------------|---|---|-----------|
| Enclosure overall sizes | 1277 wide | x | 1524 deep |
| Platform floor area | 1100 wide | x | 1400 deep |
| Useful floor area | 1040 wide | x | 1400 deep |
| Access door/gate | Manual side hinged single panel with integral door spring closer. (Left or right side hung) | | |
| Clear access to platform | 1025 wide | x | 2000 high |
| Maximum travel | 4000 mm | | |
| Hydraulic cylinder | Single stage up to 1400mm travel Two stage hydraulic cylinder from 1400-4000mm travel | | |
| Rated lifting capacity | 2 persons or 300kg | | |
| Rated speed | 0.08 ~ 0.10m/s | | |
| Electrical requirements | 13A 240v dedicated supply | | |
| Starting current | 6.5A | | |
| Running current | 3.5A | | |

Option

Fully automatic unit with powered doors.

| | | | |
|--------------------------|----------|---|-----------|
| Clear access to platform | 975 wide | x | 2000 high |
|--------------------------|----------|---|-----------|

Service Instructions.

7.3. ELECTRICAL COMPONENT DATA

| Component | Reference | Rating |
|-----------------|-------------------------|--------------------------------------|
| Relays | RY4 | 24V d.c. |
| Timers | TY4 | 24V d.c. |
| Contactors | K1-09D01 | 24V d.c. |
| Circuit breaker | C60HB | |
| Transformer | RSC850-271 | 230V primary 2x0-12V secondary |
| Locks | TYPE61 | |
| Limit switches | LR531 | |
| Push buttons | SERIES 44 "HANDICAP" | |
| Pump/motor | SAVERY | |
| Battery | 597-813 | 12V 2.1Ah |

7.4. HYDRAULIC DATA

| | |
|--------------------|-----------------------------|
| Pump/motor | SAVERY |
| Hydraulic oil | EP32 or approved equivalent |
| Reservoir capacity | 7 litres |

Service Instructions.

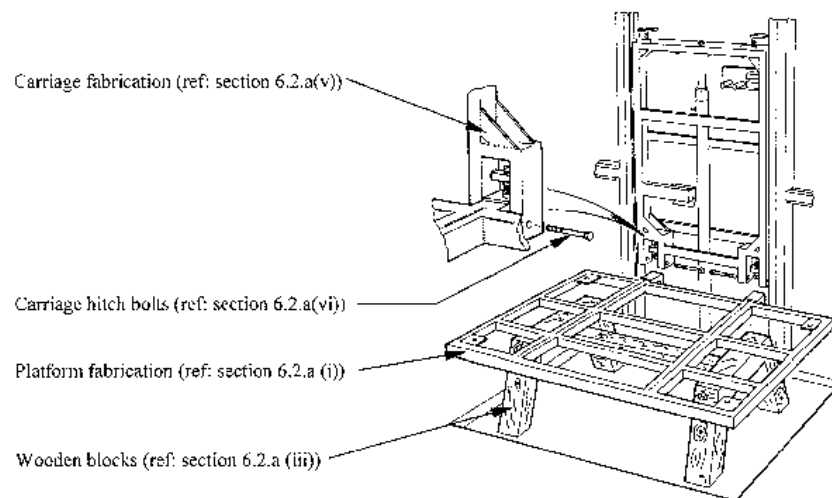
8. APPENDIX

1. TABLE NO 1 - TIGHTENING TORQUE VALUES
2. DIAGRAM FOR PLATFORM REMOVAL
3. DIAGRAM FOR CYLINDER REMOVAL
4. CERTIFICATE OF PERIODIC EXAMINATION
5. TEST CERTIFICATE

8.1. TABLE No1 – TIGHTENING TORQUES

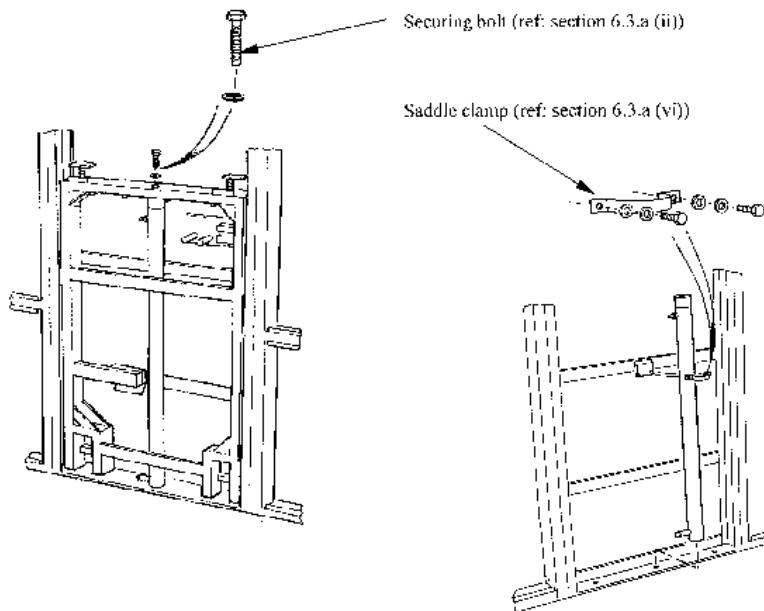
| Page reference | Description of application | Torque Value |
|----------------|---------------------------------|--------------|
| Page 17 | Piston and carriage fixing bolt | N/m |
| Page 17 | Guide joint fixings | N/m |

8.2. DIAGRAM FOR PLATFORM REMOVAL



Service Instructions.

8.3. DIAGRAM FOR CYLINDER REMOVAL



Service Instructions.

8.4. CERTIFICATE OF PERIODIC EXAMINATION

CERTIFICATE OF PERIODIC EXAMINATION

I/We certify that on this lifting platform was tested and thoroughly examined and found to be free from obvious defects and is consistent with the recommendations of BS 6440 (except for travel) .

Signature

Name

Company: **Phoenix Lifting Systems Limited**
Units 5B/C Castlegate Business Park
Old Sarum
Salisbury
Wiltshire SP1 6QX

Date

Service Instructions.

8.5. TEST CERTIFICATE

TEST CERTIFICATE

PHOENIX LIFTING SYSTEMS LIMITED

hereby certifies that the

UTILITY LIFT

Serial Number U.....

Sited at

.....
has been built, installed and fully tested according to the requirements of

British Standards BS6440 : 1999
(except for travel)

| Action | Date | Signed |
|-----------|------|-----------------|
| Tested | | Print Name..... |
| Certified | | Print Name..... |