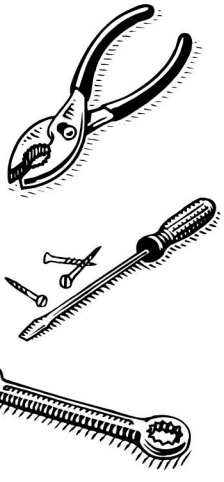
VANCARE®
We move body and mind

P-440

Technical Manual



Troubleshooting
Repairs
Replacement

Manufactured for:

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P-440 Lift

1.0 SYMPTOMS AND PROBLEMS

1.1 Finding the Problem – Before Getting Inside

It is important to remember that the majority of technical problems that can occur with the P-440, occur with external system components. The following are the key components to check before removing any lift cover:

- Hand Control and Airline Problems
- Charger and Charger Connections
- Twisted Strap or Slack Tape Issues
- Review Trouble Shooting Points in Owner's Manual

The ceiling lift is a pneumatically operated electro-mechanical device. To diagnose performance interruption it is useful to think of the product as three separate systems:

1. Pneumatic System

- Hand Control Unit
- Hand Control's Airline (2 way)
- Grommet Connectors
- Connector Pins
- Air Tubes
- Air Receiver Mechanism

2. Electrical System

- Charger and Charger Connections
- Main PCB – Printed Circuit Board
- Battery and wire Harnesses
- Microswitch Upper and Lower Limits
- Quick Disconnects
- LED Indicators
- Emergency Shut-off and Emergency Lowering

3. Mechanical System

- Lifting Strap
- Lifting Hook
- Motor and Gears

⚠ CAUTION: Prior to performing any service on this lift the battery should be removed per section 4.1 "Test or Replace Battery P-440".

1.2 PNEUMATIC SYSTEMS

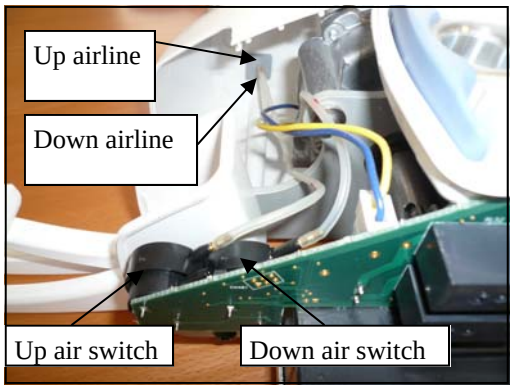
The pneumatically operated functions control the up and down functions. Below there is a methodical check of the pneumatic system which starts from the hand control and works backward through the pneumatic switches on the circuit board.

1. Hand Control & Airline

Unplug the hand control airline from the lift and *check for blockage of the airlines* by pressing each of the function buttons in turn. A small blast of air can be felt from the brass pins at the end of the curly cord.

2. Air Tubes

- Re-attach the airline to the lift. *Check to see that the air tubes have been routed free and clear*. If not routed properly, air tubes can get trapped by wires, other lift components or the lift cover.
- *Check to see that the air tubes are correctly connected to the air receiver mechanism on circuit board* . The two air tubes attached to the air receiver switches on the circuit board. The up function airline is connected to the air switch closest to the hook as shown in the picture. The down function air switch is located next to the up function air switch.



- Next detach one air tube at a time from the circuit board. *Check for leaks in an air tube* by pressing the function key of hand control corresponding to that air tube, *then* pinch the open end of the air tube between two fingers, *then* release the function key. The key should stay down when the key is released. Repeat for each air tube.
- *Air tubes are fragile*. In detaching and re-attaching air tubes, do not press on the air tubes with fingernails and be careful not to pierce the tubes with the connector pins.

1.2 PNEUMATIC SYSTEMS

3. Grommet Connectors and Pins

Check the grommet connectors' pins for any blockages by viewing in front of light.

4. Pneumatic Receiver Switch

To test the Pneumatic Receiver Switch press each of the function keys in sequence, press the up function key and see if the lift is responding to the input. Repeat the procedure for the down function.

If an air leak is found:

- *A hand control with a leak needs to be replaced.*

If the Pneumatic Receiver Switch and the Pneumatic PCB appear in order and no air leak is found:

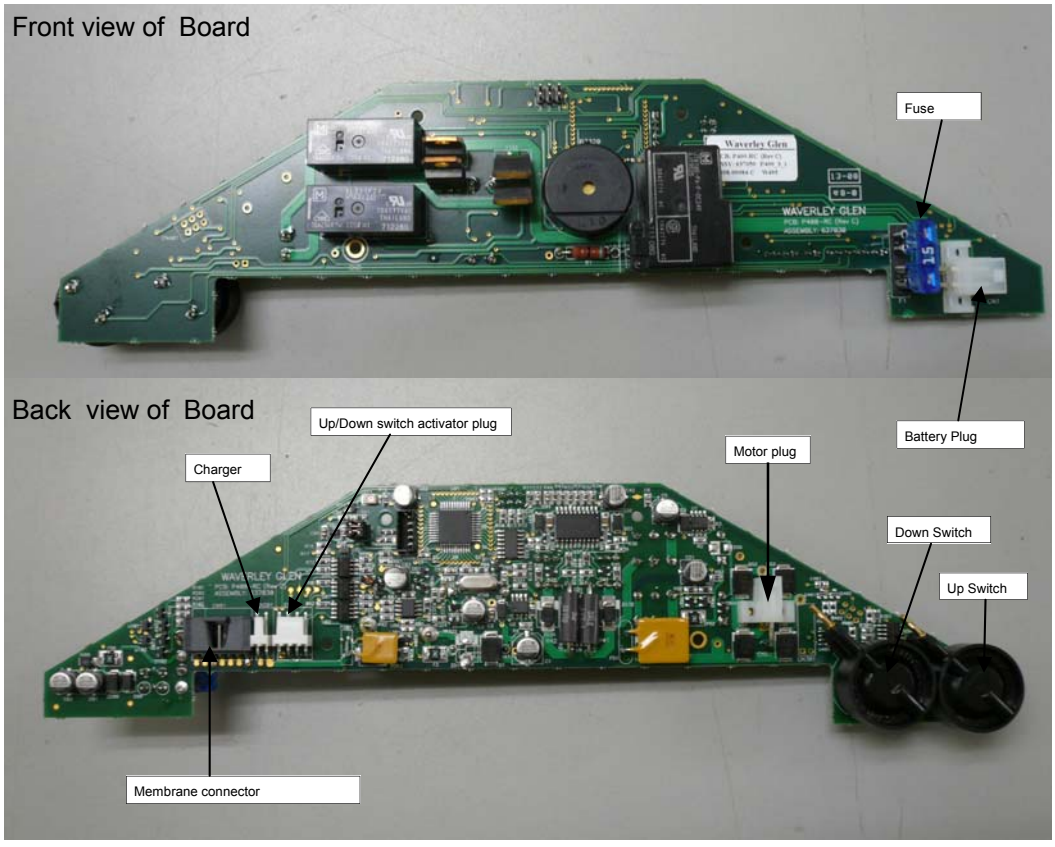
- ***Proceed to check the Electrical System***

1.3 Electrical System

This section illustrates a methodical check of the electrical system which starts from the battery and works forward through the motor. *Ensure that the batteries are charged*. If the batteries are not charged, put them on charge before servicing the equipment or connect a fresh set of batteries. If the charger indicator does not give any reading, batteries can be tested "outside the system" with a load tester or, again, a fresh set of batteries should be hooked up. An occasional battery problem is acid leaks at the vents. Sometimes a leak shows up as corrosion of the battery leads. Do a preliminary inspection of the circuit boards for burn marks or the smell of burns. *A single or series of components may have failed. The PCB will have to be replaced.*

1. The Main Board

The picture below illustrates the main PCB components. The three *white power plugs* connect the Batteries, Motor, and Charger to the circuit board. The board and motor plugs are shaped to prevent erroneous hook-up. The battery cables are color-coded black and red to match the battery leads. ***Check to see that the Board, Motor and Battery plugs are properly inserted.***
The membrane connector controls functions such as up/down, emergency lowering button, and LED. The plugs are shaped to prevent erroneous hook-up. *Check to see that the functionality plugs are properly inserted* (when inserting a plug, it is easy to miss a prong) *and that the wires do not pull out of the functionality plugs* (if a wire does pull out, it was either inserted incompletely or inserted upside down). The PCB contains one fuse F101. If the fuse is burnt, replace the fuse and test the lift, if the fuse blows again change the Main PCB. If the problem still persists, **contact your local Vancare distributor.**



1.3 Electrical System

2. Pneumatic Switch Receiver

The board contains two pneumatic switches which control the up/down functions.

If the battery and PCBs appear in order, no air leak is found and no fault in the wiring:

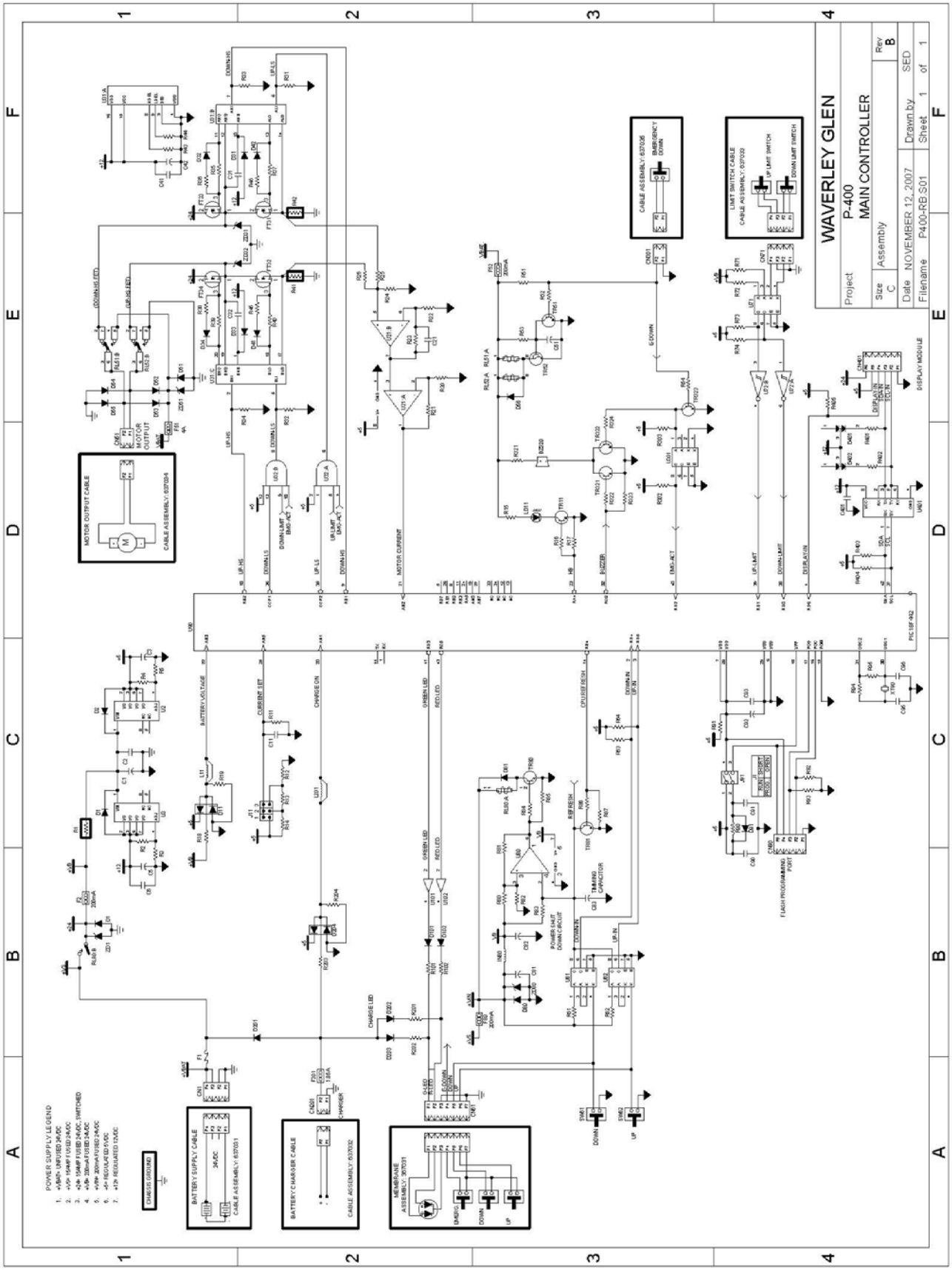
Proceed to check that motor is functioning or not by following procedure.

A. Disconnect motor cable assy. from motor.
B. Use a jumper cable, and spare 2 batteries 12V, 2.3 Amps or higher current ratings and connect spare batteries with jumper cable to motor. The motor starts working.
C. Reversing polarity makes the motors run in reverse but does not affect the test.

If no fault is found in the motor:

The most likely cause of failure is a circuit board failure that is not readily visible to the naked eye. To confirm, connect the non-functioning lift to a board from service parts or from another working lift. *(There is no need for a complete board installation: the replacement board used for confirmation can be hooked up provisionally outside the lift.)*

ELECTRICAL SYSTEMS SCHEMATIC DIAGRAM



1.4 MECHANICAL SYSTEMS

1. The lift intermittently performs a pneumatically controlled function by itself *(pneumatically controlled functions are up/down).*

There is likely a slow leak in the pneumatic system. The first elements of the pneumatic system to be checked are the grommets *(there is one on the hand control and one on the lift).* For a complete check of the pneumatic system, see section 3.0, Pneumatic Systems Instructions. Frequent detachment and re-attachment of the airline or rough usage causes wear and tear in the air holes of the grommets.

> ⚠ **CAUTION: The hand control and airlines must never be used to pull the lift along the track**

2. The lift motor seems to be running, but does not work in UP or DOWN direction.

The motor output shaft or worm wheel of the motor may have worn. The acceleration activated the over speed cam, which is designed to prevent further use until the lift has been repaired. *(The over speed cam is a universal, failsafe mechanical brake, which is triggered by centrifugal force and functions independently of the lift's pneumatic electro-mechanical system). Call your local Vancare distributor if the over speed cam is activated*.

3. The charger system of P-440 lift does not work

The portable lift charger system has three components: a charger, wiring harness and circuit board.

- Check to see that power is coming into the charger: the indicator light on the charger should be green when the lift is not plugged into the charger. See section 4.0 Electrical Systems Instruction.
- Check the plugs along the wiring harness, especially the white plug on the circuit board. *(If the charger wires pull out, they were inserted incompletely or upside down. Does the plug cover all the prongs? Are the prongs clean: they may need brushing with paint thinner.)*
- Check the board by plugging the membrane connector, and charger plug into a replacement board.
- The female charger socket connector may be damaged and may need to be repaired or replaced.

4. The *up and down functions* on both the hand control and the lift do not work

The up and down are the only lifting functions that can be operated both pneumatically and electrically. Simultaneous failure of the independent pneumatic and electrical systems points strongly to main PCB failure. Confirm this by changing the fuse or trying out a replacement PCB, see section 4.6, Repair or Replace Main PCB (Printed Circuit Board).

1.4 MECHANICAL SYSTEMS

5. The lift goes down to the end of the strap and then goes up again with the up and down functions reversed

The “slack strap” safety feature is not working:

- The lower limit switch activator is not activating the lower limit switch. Inspect and replace the activator pin, limit switch spring, roller and shaft as required.
- A wiring problem exists. Check the wiring from switch to the main circuit board.
- The Micro switch is malfunctioning. Replace the switch.

If this problem persists contact your local Vancare distributor.

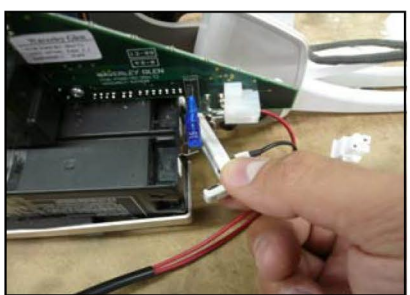
2.0 BASIC INSTRUCTION PROCEDURE

2.1 Getting Inside the P-440 Lift (Opening the Cover)

IMPORTANT NOTE: Service lift in clean, dust free environment. *Extreme care must be exercised when removing the cover. Electric shock can occur*

1. Turn the emergency red switch “off”.
2. Disconnect hand control airline tubing from the gray grommet.
3. Remove four (4) Phillips screws from the back cover of the P-440 lift.
4. Before proceeding, *immediately disconnect the battery plug connector, followed by the batteries* clip *connector* to prevent shock and damage.
5. Be extremely careful and remember that the PCB (Printed Circuit Board) is exposed. *Contact with any metal will short and destroy the PCB*.
6. Disconnect the two airlines, charger connector and membrane connectors from the circuit board.
8. Gently separate the front cover from lift unit.
9. Store the disconnected harnesses, hand control and Phillips screws in the back cover. Don’t store parts in the front cover as the membrane connector may get damaged.

Remove Phillip screws



Disconnect power harness and battery clip

Store parts in cover

2.0 BASIC INSTRUCTION PROCEDURE

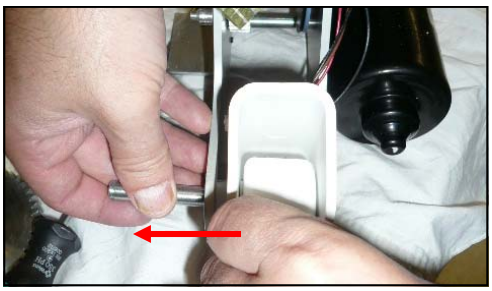
2.1 Opening the P-440 Lift

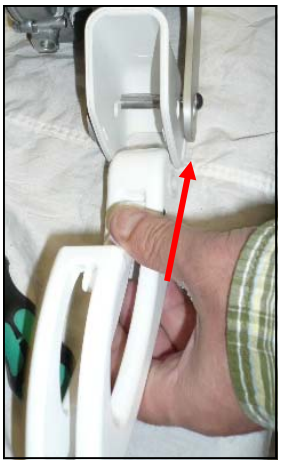
IMPORTANT NOTE: Service lift in clean, dust free environment. *Extreme care must be exercised when removing the cover. Electric shock can occur*

1. Use a Phillips screwdriver to remove the four screws to remove the circuit board
2. Remove the battery bracket by using an Allen key size 3 MM to remove the batteries.

To replace the hooks in the P-440

1. Remove the two retaining rings using a flat head screw driver.
2. Remove the carry bar shaft from the plates assembly.
3. Replace the hook.





2.0 BASIC INSTRUCTION PROCEDURE

To replace motor in the P-440 lift.

1. Review the section “opening the lift”
2. Remove the three motor mounting screws using an Allen key size 4 MM.
3. Remove the motor gear and motor through the opening in the right plate.
4. Apply grease to the motor gear of the new motor
5. Install the motor gear through the opening in the right plate
6. Apply Blue Loctite no. 242 to the three screws before tightening to the right plate.

3.0 PNEUMATIC SYSTEMS INSTRUCTIONS

3.1 Replace Hand Control - Air Leak Test

IMPORTANT NOTE: If an air leak is suspected, it is important to check the entire pneumatic system for air leaks. *There are NO serviceable parts inside the pneumatic Hand Control.*

1. Separate the Hand Control and Airline tubing from the grommet in the lift. See picture 1.

2. Take note of the force required to separate these items. The connection should be very tight. If the connection appears somewhat loose, an air leak may develop and cause a problem.

3. Test for air leaks in each Button separately, by depressing a button and covering the appropriate air pin at the end of the airline.

4. Release the depressed button. If the button stays in the depressed position, there are no air leaks in the button. If the button rises slowly after a few seconds, an air leak MAY be present. Repeat a couple of times to ensure that the end of the pins are completely covered.

5. Repeat Steps 3 to 4 for the other button.

3.2 Replace Lift Grommet

1. *Before starting, take note of the positions of the individual airline tubes inside the lift unit.* These should be marked in a way, that they can be replaced in the exact same places. Check the wire diagrams if not sure.

4. Disconnect the airline tubing from both sides of the grommet. See picture 2.

5. To remove the old grommet, carefully use a knife to cut the grommet out of the slot in the cover. Discard the old grommet.

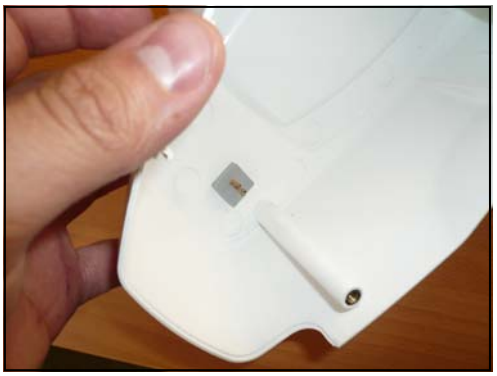
6. Replace the new grommet by gently PULLING the grommet through the slot.

7. Reattach the internal air tubes and hand control airline. See picture 3.

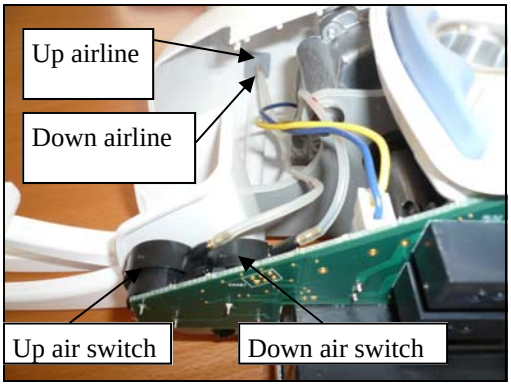
8. Retest the entire pneumatic system to ensure that all hand control buttons function.

Picture 1

Picture 2



Picture 3



3.4 Test or Replace Blocked Pneumatic Receiver Switches

IMPORTANT NOTE: These switches are not serviceable and must be replaced if they fail. *As this is part of the pneumatic system, it is important that all connections are airtight.*

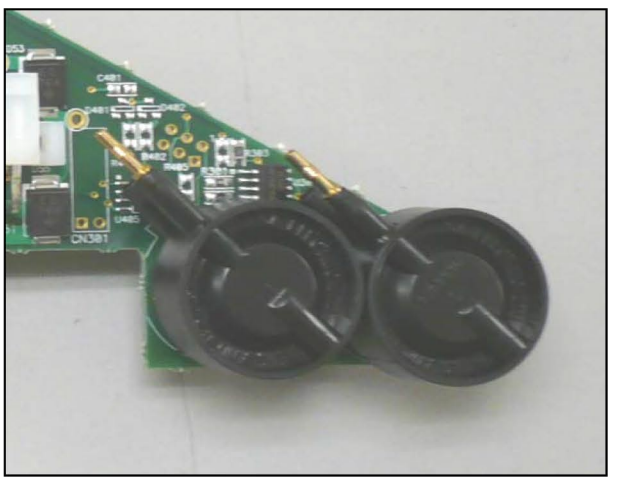
1. If there are no leaks in the hand control, airline tubing and grommets, there could be a leak in air tubes to the pressure switch or failure of Pneumatic Receiver switch. Check by performing the air leak test with the hand control buttons.

2. If there is an air leak, *tighten all air tubes and recheck*. See picture 1.

3. With the tubes completely connected, hand control to Grommet to pneumatic receiver switch. Press each of the function keys on the hand control in sequence, press the up function key and see if the lift is responding to the input, see picture 2. If there is no reaction found from the lift, replace the Main PCB.

4. Repeat the above procedure for on/off, emergency lowering, and down keys on the hand control unit.

5. To replace PCB refer to section 4.6, Replace or Repair Main PCB (Printed Circuit Board)



Pneumatic tubing ①

Function keys ②

4.0 ELECTRICAL INSTRUCTION PROCEDURE

4.1 Test or Replace Batteries P-440

IMPORTANT NOTE: Sealed Lead Acid batteries must be handled with extreme care. *Any leakage or distortion of the battery cover indicates battery failure. Replace immediately.*

1. If the indicator light (LED) on the control membrane turns RED, the batteries may not have sufficient power to operate the lift under load. Lift should be returned to charger.

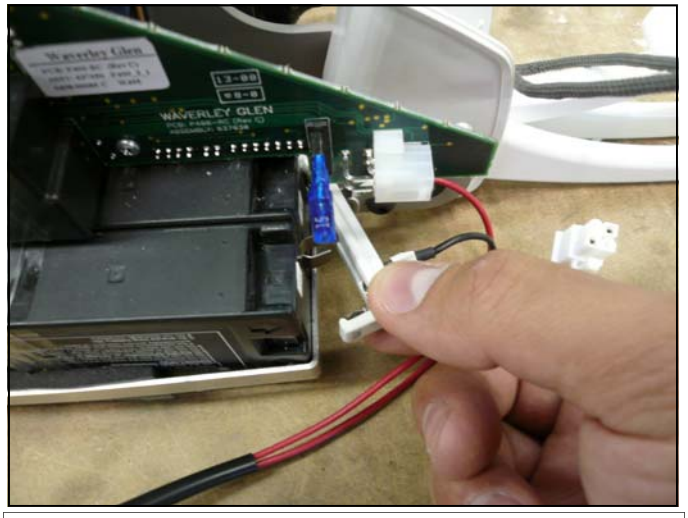
2. *Disconnect the battery power harness and the battery clip.*

3. Unscrew the battery bracket and remove batteries.

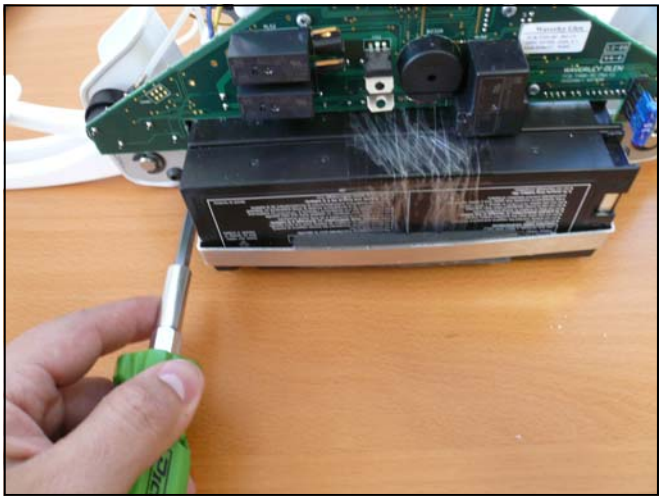
4. Ensure that an equivalent battery set is used to replace the original batteries (see specifications).

5. Install the batteries. Ensure that any wire harnesses or airline tubing are loose, free of obstructions. *A blockage of the airlines will cause hand control problems*.

6. Connect the battery clip to the batteries observing the polarity. Reconnect the RED and BLACK wire harness wires to the matching terminals on the batteries.



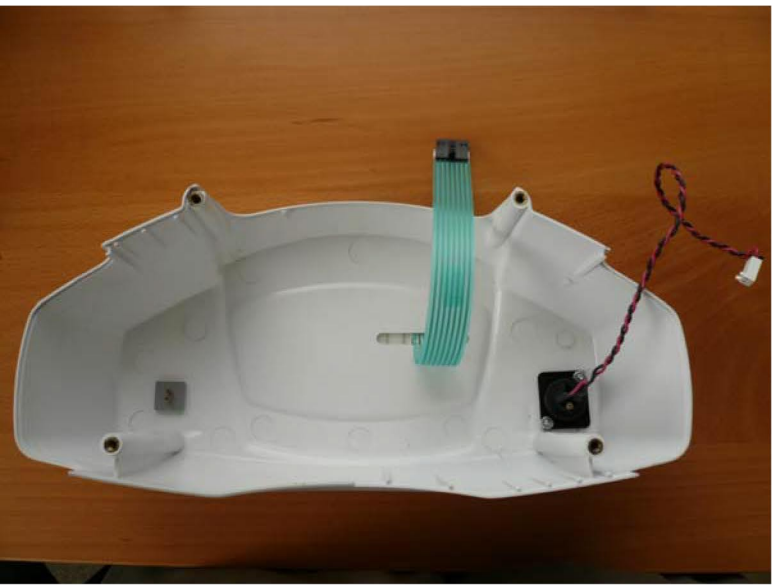
Disconnect batteries



Remove batteries

Replacing membrane switch:

Peel off membrane label slowly to avoid any adhesive left over on the cover. If any adhesive left over, clean it using Isopropyl Alcohol. Remove back paper of membrane label and stick on the cover firmly.



4.3 Repair or Replace Emergency Shut-Off

If the electrical Emergency Shut-Off Button on the lift is not functioning, follow the steps below to test, repair and/or replace it as required.

1. To repair or replace the Emergency Shut-Off Button, open the cover as described on section 2.1, Getting Inside the P-440 Lift *(Opening the Cover).*

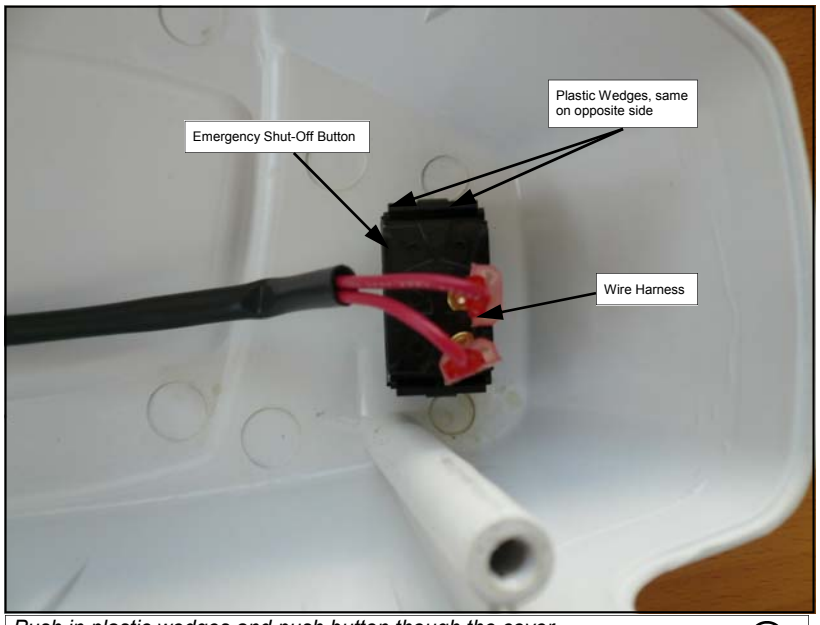
2. Check the connection between the Emergency Shut-Off Button, the plug on the main PCB and battery clip. If the connection is loose, attach it properly, then test the Emergency Shut-Off Button.

3. If it is still not working, check the wire harness for any cuts. If a cut is found, replace the wire harness and test the button.

4. To replace the Emergency Shut-Off Button, unhook the wire harness from button. From the inside front cover, push in all 4 plastic wedges and push the button through the cover. See picture 1.

5. Attach the new Emergency Shut-Off Button to the cover by pressing it in from the front until it is flush with the cover. Plug on harness to the button, then test the Emergency Shut-Off Button.

6. Assemble the lift cover.



Push in plastic wedges and push button though the cover ①

4.5 Repair or replace P-440 Charger Socket

IMPORTANT NOTE: Use extreme caution when performing internal servicing on the lift. *The wire connection polarity of the RED and BLACK wires are critical.*

1 You will need a Soldering Iron and 60/40 Solder to perform this task.

2. The front cover of the P-440 lift is fitted with a charger connector socket. To open the front cover refer to section 2.1, Getting Inside the P-440 (Opening the Cover) and disconnect the wire harnesses, see picture 2.

3. In some cases, the RED and/or BLACK wires have become unsoldered. This is a simple reconnection of wires to the charger socket, *ensure that the polarity is correct (RED wire to the keyed side of the socket*.

4. Remove the socket by unscrewing the two Phillips head screws. Replace with a new charger connector socket.

5. Insert the wire through the hole on the front cover, then secure the socket to the lift cover using the two screws. *Do not over tighten as the threads will strip and the problems will re-occur.*

6. Test the charger connector with the P-440 lift. If the charging indicator light becomes orange then the socket is functioning properly.

7. Reattach the cover.

Socket assembly inside cover ①

Socket assembly outside cover ②

4.6 Repair or Replace Main PCB *(Printed Circuit Board)*

IMPORTANT NOTE: Use extreme caution when servicing the lift. The PCB should be handled with care. *Contact with metal objects (screw drivers, rings, etc.) will damage the PCB.* Always perform PCB replacement in standing position to avoid any damages to circuit board due to electro static discharge. Always remove the battery while performing any repairs or replacements.

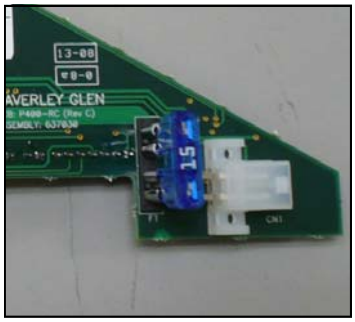
If the up/down, emergency down button, on/off functions on the lift and on the hand control are not working, this strongly indicates that the failure is on PCB fuse or the PCB. To test or replace the main PCB follow the steps below.

1. Open the cover. Refer to section 2.1, Getting Inside the P-440 Lift *(Opening the Cover)*

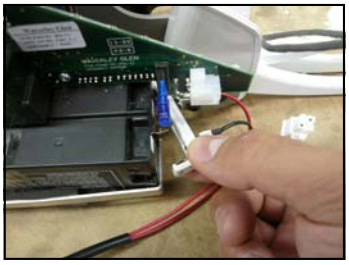
2. If the emergency down is not functioning and the battery is fully charged, refer to section 4.1, Test or Replace Batteries P-440, this indicates that fuse F101 is burned out, see picture 1, and/or the motor is dead, call customer service.

3. Unhook all wire harnesses from the main PCB, see picture 2. Then carefully unscrew the main PCB from the carry bar, see picture 3. Use a Phillips head screw driver to remove the four screws. (*Take note on how the main PCB is placed on the carry bar*). Use a new PCB to test if the motor is working. If the motor is functioning properly then the board needs to be replaced.

4. Fasten the new PCB and attach all wire harnesses, see picture 4. If the problem persists call customer services.



Fuse location F101 ①



Remove wire harnesses from PCB ②

Unscrew the PCB ③

Hook wire harnesses to new PCB ④

5.0 MECHANICAL INSTRUCTION PROCEDURE

5.1 Replace Lifting Strap

IMPORTANT NOTE: Use extreme caution when performing internal servicing on the lift. *Ensure that the battery has been disconnected before starting.*

1. Using the DOWN button on the hand control release the entire strap (until the lower limit switch engages and stops the strap).

2. Remove the lift cover, refer to section 2.1, Getting Inside the P-440 Lift *(Opening the Cover)*. Also, remove the circuit board and the battery to gain access to the strap pin.

3. Remove the C-Clip from the battery side of the main drive axle.

4. Using the large vice grips, grab hold of the free end of the shaft. *Leave the C-clip attached to prevent accidental damage to the shaft. If damaged, the shaft will not fit back into gearbox.* Gently rotate and pull at the same time to release shaft. Pressure may be applied to the gearbox to assist in the shaft removal.

5. Pull out and replace the old strap. *It is very important that the correct end of the strap is inserted with the double thickness being inserted and the triple thickness remaining free. Also, the strap must be inserted with the overlapped section on strap, on the end that is being inserted, facing towards the motor side of the lift.* Use two fingers to guide the strap.

6. Use a pencil or ballpoint pen to centre the strap through the gearbox.

7. Reinsert the shaft into the gearbox. *DO NOT USE FORCE*. If the strap has been centered properly, the shaft should move easily into position.

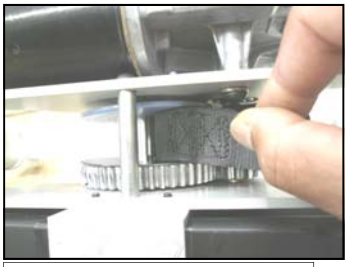
8. Replace the C-clip on the drive axle using needle nose pliers.

9. Operate the lift in the UP direction and the strap should start to wind into the gearbox.

10. Reassemble lift and test.

Remove c-clip ①

Remove shaft ②



Place strap into slot ③

5.2 Replace Up/Down Micro Switch Assembly

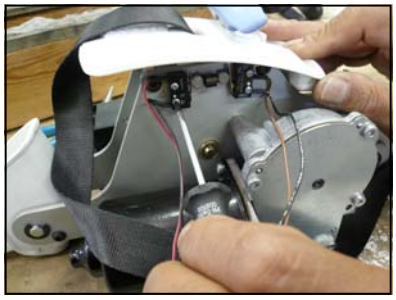
IMPORTANT NOTE: Use extreme caution when performing internal servicing on the lift. *Ensure that the battery has been disconnected before starting.*

The UP/DOWN micro switch assembly controls numerous safety functions and maintains an absolute control over the polarity logic of the entire system. The primary functions are to control the UP limit, Down limit, monitor “slack tape” condition and prevent the motor from winding the lift strap in the wrong direction.

1. Remove the lift cover, refer to section 2.1, Getting Inside the P-440 Lift *(Opening the Cover)*.

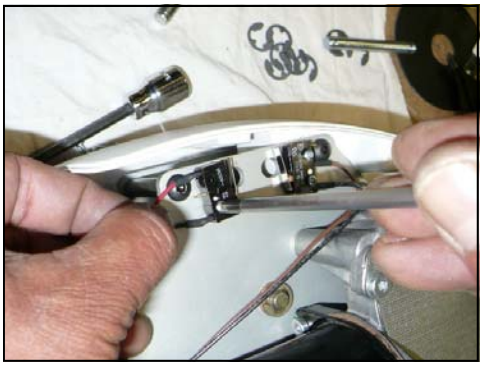
2. Using a Phillips screwdriver remove both micro switches and replace the whole micro switch wire harness. *Be very careful when handling this part as the micro switch can be easily damaged.*

3. Reassemble lift and test.



Remove limit switch screws ①

Remove springs and rollers if required ②



Adjust/replace micro switch ③

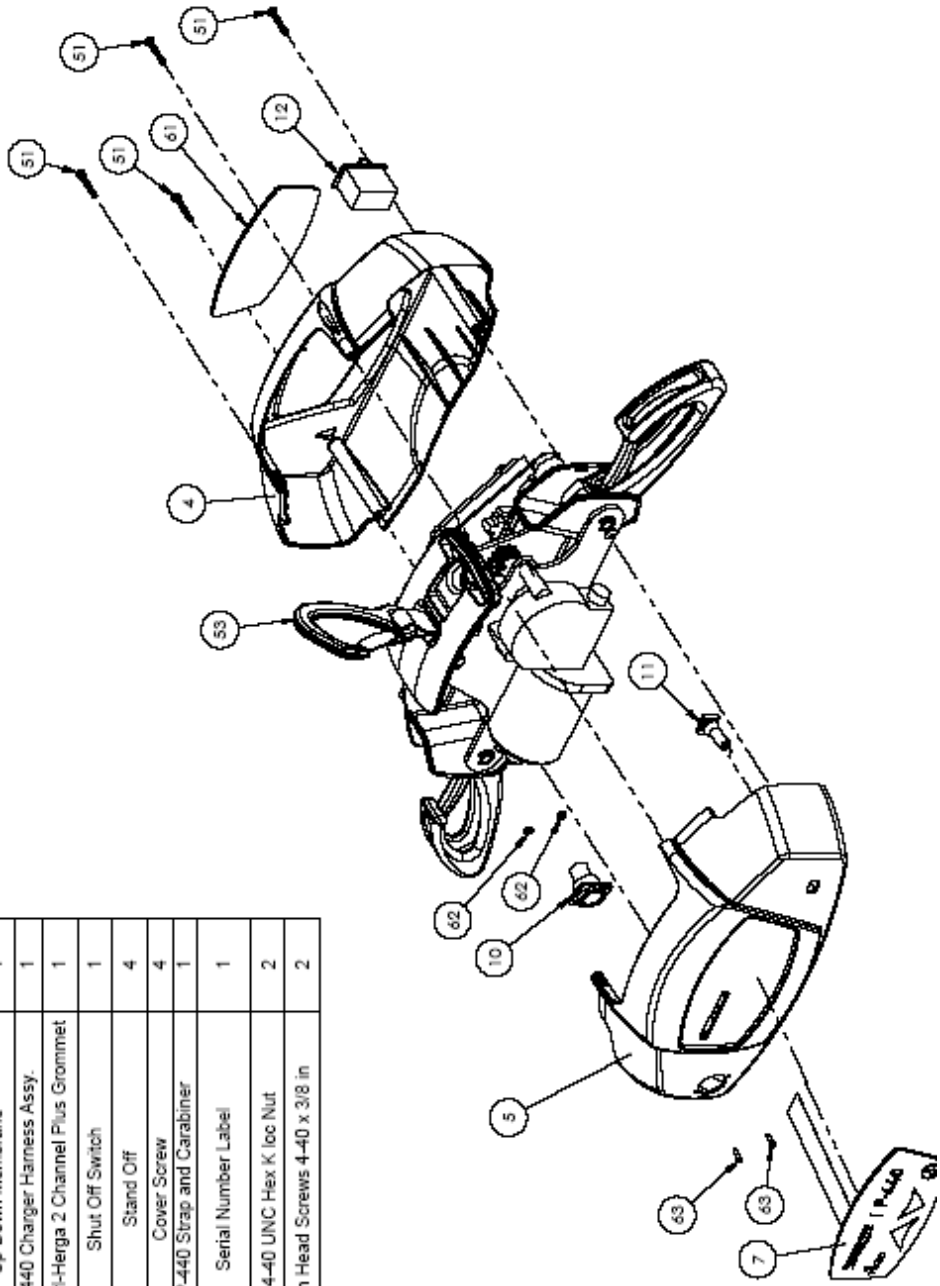
6.0 Required Repair Tools

The following is a list of tools required for basic repairs and services:

Philips Screwdriver – medium
Phillips Screwdriver - small
Robertson Screwdriver – medium
Power Drill
Allen keys (2mm, 3mm, 4mm)
Pliers
Cutting Pliers
Circlip Pliers

7.1 Replacement Parts List

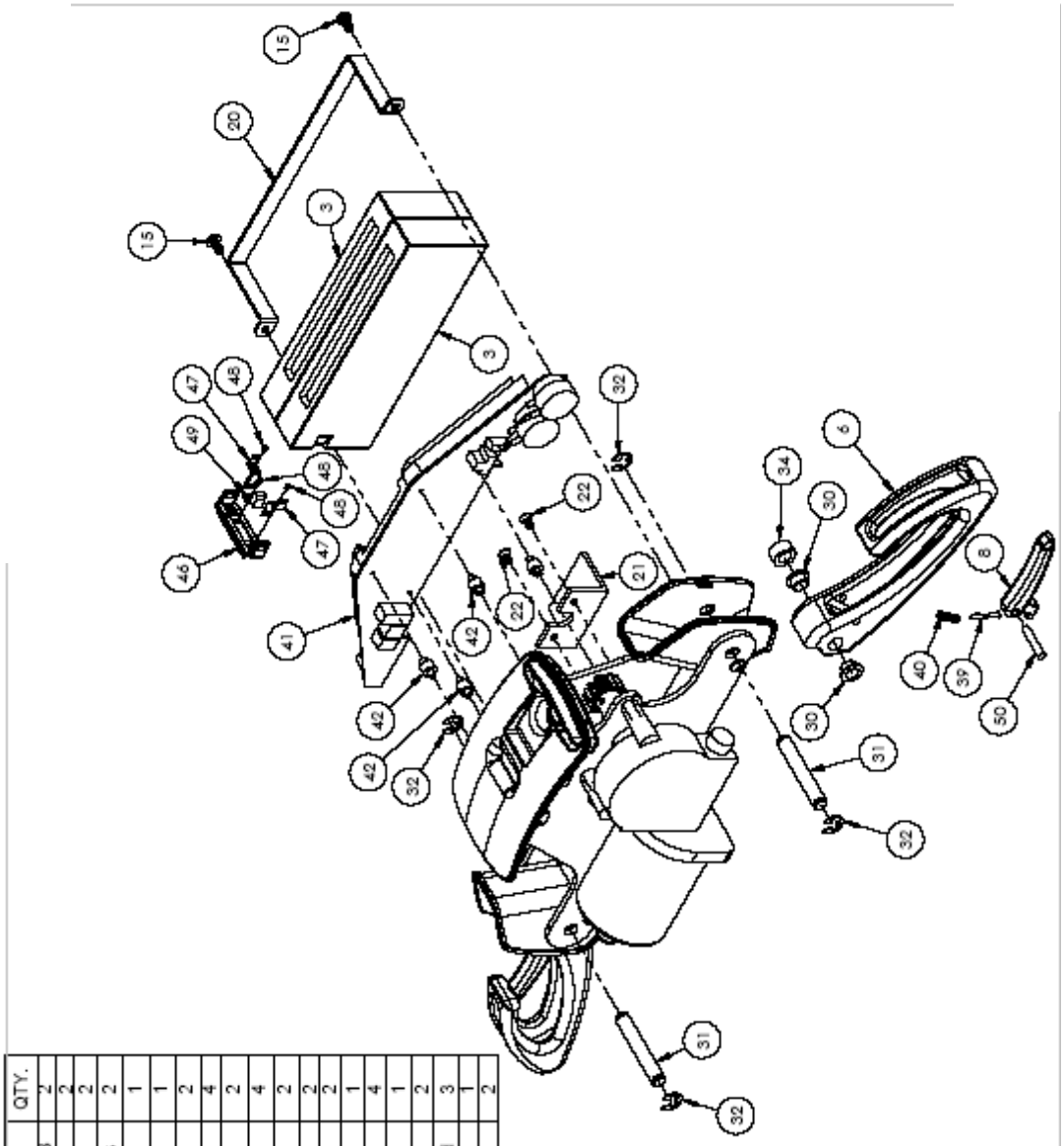
The following is a list of available service components for the P-440™ lift.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
4	637029	Back Cover	1
5	637028	Front Cover	1
7	637032	Up-Down Membrane	1
10	637070	P-440 Charger Harness Assy.	1
11	635600	Hand Ctrl-Herga 2 Channel Plus Grommet	1
12	632001	Shut Off Switch	1
42	637012	Stand Off	4
51	637072	Cover Screw	4
53	403633	P-440 Strap and Carabiner	1
61	637031	Serial Number Label	1
62	410840	4-40 UNC Hex K loc Nut	2
63	430420	Pan Head Screws 4-40 x 3/8 in	2

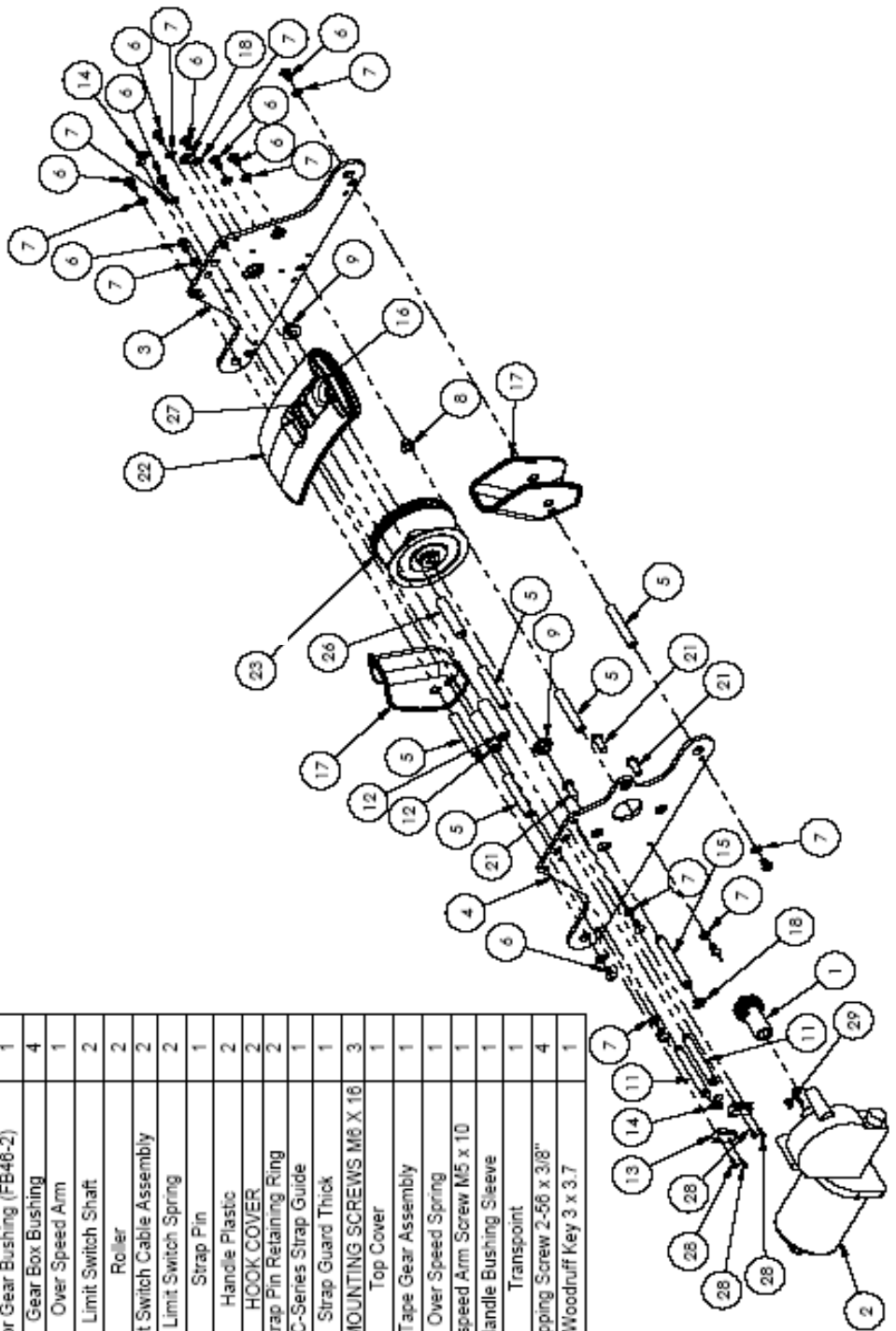
7.1 Replacement Parts List

The following is a list of available service components for the P-440™ lift.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	637027	Power Sonic Battery PS-1223	2
6	637030	Hook	2
8	637021	Latch	2
15	637034	M5 x 10 Button Head Screws	2
20	637003	Battery Holder	1
21	637001	Battery Bracket	1
22	637036	M4x8 Battery Bracket Screw	2
30	637038	Igus bushing GFM-0810-065	4
31	637008	Carry Bar Shaft	2
32	637040	Hook Shaft Retaining Ring	4
34	637017	Carry Bar Spacer	2
39	632210-A	SPRING ARM TP2	2
40	637047	Latch Spring	2
41	637050	Board	1
42	637012	Stand Off	4
46	637043	Battery Connector	1
47	637002	Battery Connector Terminal	2
48	630513	2-56 x 1/2 Hex Sos Flat Head	3
49	637004	Battery Jumper Terminal	1
50	637044	Hook Dowel Pin	2

7.2 P-440 Gearbox Exploded Drawing



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	637014	Motor Gear - 14 Teeth	1
2	430100	24V Portable Motor	1
3	637018	Left Plate	1
4	637019	Right Plate	1
5	637006	Gear Box Connecting Bars	5
6	637034	M5 x 10 Button Head Screw	13
7	631625	INTERNAL LOCK TOOTH WASHER #10	13
8	637035	Motor Gear Bushing (FB46-2)	1
9	635033	Gear Box Bushing	4
10	637016	Over Speed Arm	1
11	637010	Limit Switch Shaft	2
12	637011	Roller	2
13	610446	Limit Switch Cable Assembly	2
14	637022	Limit Switch Spring	2
15	637013	Strap Pin	1
16	637037	Handle Plastic	2
17	637038	HOOK COVER	2
18	635029	Strap Pin Retaining Ring	2
19	635125	C-Series Strap Guide	1
20	637041	Strap Guard Thick	1
21	631613	MOTOR MOUNTING SCREWS M6 X 16	3
22	637042	Top Cover	1
23	TAPE GEAR	Tape Gear Assembly	1
24	637023	Over Speed Spring	1
25	635028	Overspeed Arm Screw M5 x 10	1
26	637025	Handle Bushing Sleeve	1
27	637024	Transpoint	1
28	610348	Tapping Screw 2-56 x 3/8"	4
29	610115	-Woodruff Key 3 x 3.7	1

General Inspection and Preventative Maintenance for Ceiling Lift & Track products

Below is a non-inclusive list of services Vancare will provide during their visit(s):

- ✓ **Visual Inspection 1x yearly (Ceiling Lift & Track products):**

- The lift lifting tape shows no signs of fraying or breaking along its entire length.
- The stitching on the lift lifting tape where it connects to the carry bar shows no signs of fraying, or breaking.
- The sling (s) that will be used shows no signs of unusual wear and tear. The straps of the sling that connect to the hanger bar of the lift show no signs of fraying or breaking. Refer to specific sling instructions.
- The airline tube that connects the hand control to the lift is not kinked, twisted, knotted, cut or damaged.
- All the functions on the hand control work correctly (e.g. UP/DOWN/LEFT/RIGHT, etc.)
- The brackets that hold the track in place on the ceiling are secure and do not move or appear loose.
- There are no cuts, dents or sharp edges on the carry bar that may damage the straps of the sling.
- Ensure the lift makes no unusual sounds when the carry bar is moved UP/DOWN or the lift is moved LEFT/RIGHT.
- Ensure that there are end stops installed at each end of the track.
- Ensure the lift moves freely along the entire length of the track.
- Certify and record of lift inspection for inspector records

- ✓ **Preventative Maintenance 1x yearly (Ceiling Lift & Track products):**

- Complete all steps outlined above under Visual Inspection
- Record then reset the PM lifts counter
- Inspect complete lift operation
- Inspect all power connections and record all power volts
- Check and load test Batteries
- Lubricate moving parts as needed
- Clean all rails and trolleys within rails
- Check strap limit switches
- Certify and record of lift inspection for inspector records

- ✓ **Load Testing to EN10535 standards 1x yearly (Ceiling Lift & Track products):**

- Tracks will be load tested at 100% of the safe working load; each track attachment will be point load tested. The deflection of the track will be measured and determined if it is acceptable to (EN10535) standards. - Lifts will be load tested per manufactures specifications
- Inspect above ceiling attachments
- Certify and record of lift inspection for inspector records

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Final Checklist and Inspection Commissioning Cover Sheet

Client Name: _____

Client Address: _____

_____

_____

Order Number: _____

Number of Pages Including Cover Sheet: _____

Date: _____

Client Signature: _____

The above signed acknowledges the receipt of the completed Certified Inspection Information attached herein.

SO#_____

Delivery Ticket

Delivered to: _____

Address: _____

_____

Product Description: _____

_____

_____

Serial #'s: _____

_____

_____

I, the client, or an authorized representative of the above client, acknowledge receipt of the attached equipment, service and/or supplies and am satisfied with work completed by Vancare and/or Vancare representative. I was demonstrated the proper use of the slings, hand controls, and the operations of the lift(s) or products I received, if applicable. I am in receipt of the owner's manual with information. I understand that any system must be periodically inspected for loose fittings, and I will not operate the lift with a frayed or worn sling. Every product sold or rented by our compnay carries a manufacturer's warranty. Vancare will notify all clients of the warranty coverage, and we will honor all warranties under applicable law. I understand that using the system other than instructed, using unauthorized equipment and/or having repairs or modifications by others not certified to complete the work will void the warranty. The warranty does not cover misuse or unauthorized maintenance or any other events beyond our control. Shipping of parts or any other shipping charges that occur at the responsibility of the owner/client and will be invoiced accordingly, if applicable. I have been instructed and understand the coverage on the product that I have received.

Client Signature: _____

Print Name: _____ Date: _____

Vancare Representative Signature: _____

Print Name: _____ Date: _____

Vancare, Inc.
1515 1st St Aurora, NE 68818
800-694-4525
www.vancare.com

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Ceiling Lift System Installation
Final Checklist and Inspection

Refer to the bulletin entitled "Initial and Preventative Manintenance Procedure" for further instruction.

Facility: _____

Address: _____

Room Number: _____

SWL of System: _____

Checklist Item	Inspection			Installer initials	Specification
Track Inspection:					
Endstops	Yes	No	N/A		Endstops are in place and tightened to 12-14 ft. lbs.
Set Screws	Yes	No	N/A		Apply Blue Loctite (243). Tighten to 40-45 in. lbs
Ceiling brackets	Yes	No	N/A		Fully tightened
End stop safety pins	Yes	No	N/A		All track ends have a safety pin and split ring behind the endstop
Endcaps	Yes	No	N/A		Installed.
Track joints	Yes	No	N/A		Level and smooth. Lift rolls over gaps smootly.
Gate assembly	Yes	No	N/A		Ensure that the gate safety system is functioning corectly. Should be bolted securely so that no movement is apparent.
Turntable	Yes	No	N/A		All stops in place, turntable rotates freely.
Track	Yes	No	N/A		Track is level
Track placement	Yes	No	N/A		Track is installed per correct dimensions and placement in the room in accordance with either shop drawing or customer verification
Structure Inspection					
Support Bracing	Yes	No	N/A		Support points shall feel structurally firm and display little perceptible movement laterally or longitudinally when a force of approximately 160N (35 lbs of force) is applied in a horizontal plane by firmly grasping and shaking the rail.
SWL Sticker (8-620720)	Yes	No	N/A		Complete and place SWL stickers (8-620720) on the track system no more than 20ft. apart so they are visible to user. The SWL will determine the parameters for Load, Diflection and Function Test.
Tested Weight: _____lbs	Yes	No	N/A		Anchors tightened per anchor manufacturers' specifications. Using 150% of system's SWL, test all attachment points by hanging weights below them.
Deflection Measured: _____	Yes	No	N/A		1 mm over every 200mm measured from middle of span. 100% of SWL.
Function test	Yes	No	N/A		100% of system's SWL through entire track system (including accessories such as smoke doors); system should be visually/audibly observed for movement or loud noises
Vertical rods and structural fittings	Yes	No	N/A		As per approved drawing and/orVancare, Inc. Recommendation.
Lift Inspection					
Lift Charging	Yes	No	N/A		LED display on charger and lift indicates charging function is operational.
Trolleys	Yes	No	N/A		Fixed Lifts - All rings & retaining rings in place. Portable Lifts - Cotter/thrust-pin in place. No movement of nut.
Carry Bar	Yes	No	N/A		Install strap pin. Verify swivel function.
Lifts	Yes	No	N/A		Any controls on unit (including emergeny lowering) work properly.
Upper Limit Switch	Yes	No	N/A		Ensure that the lifting motion stops when the triple tape thickness meets the rollers.
Lower Limit Switch / Slack Tape Switch	Yes	No	N/A		Ensure that the lowering motion stops when the tape is completely unwound. Also ensure lowering motion stops when there is slack in the lift strap.
Handset Functions	Yes	No	N/A		Test all functions on the hand control to confirm they are functioning properly.
Charging Endstop	Yes	No	N/A		Installed and operating properly. Lift docks and charges properly. Tightened to 12-14 ft. lbs.
Cleaning/Miscellaneous					
Interior Track Cleaning	Yes	No	N/A		Use a dust wand to clear out any dust and debris within the track
Exterior Track Cleaning	Yes	No	N/A		Use a soft scrub bleach to clean any scuff marks on the track

Lift Serial Numbers: _____

Facility Representative: _____ (Print Name) _____ (Signature)

Vancare Representative: _____ (Print Name) _____ (Signature)

Date / Time _____

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Ceiling Lift - Preventative Maintenance

Facility:				Contract Dates:		To:	
Address:				Scheduled:		Actual:	
Room Number:				Next PM Check:			
Lift Model:				Number of Lifts Since Last PM:			
Lift Serial Number:				Additional Service Needed?		☐ PASS	☐ FAIL

Lift Functions:	Description:	Pass Inspection:			Problems:	Fixed:	
UP, DOWN, EMRG. DOWN, TRAVERSE, ON/OFF, EMRG. ON/OFF	Check functions using the buttons on the lift.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Mechanical Functions:	**Description:**	**Pass Inspection:**			**Problems:**	**Fixed:**	
Load Test Per CSA Z10535.2-17	Lift 100% of the load capacity of the Motor 20" off of the ground	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Trolley Wheels	Inspect wheels for flat spots, and excessive wear and tear	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Portable Trolley	Ensure nut and pin are intact and tight	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Motor, Gears, and Traversing Drive	Inspect for damage and excessive noise	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Carry Bar	Inspect for damage; verify insert and hooks and strap pass through hole.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Fraying of Strap Edges	Lower the strap down to the ground and inspect the full length of the edges. Remove the plug from the carry bar; inspect the strap integrity around the pin.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Pneumatic Hand Control:	**Description:**	**Pass Inspection:**			**Problems:**	**Fixed:**	
UP, DOWN, EMRG. DOWN, TRAVERSE, ON/OFF	Press each button on hand control for 10 seconds, make sure button function works continuously.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Airline Tubing	Inspect for damage/leaks	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Grommet Connectors	Check that they are tight	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Limit Switches:	**Description:**	**Pass Inspection:**			**Problems:**	**Fixed:**	
Upper Limit Switch and Angle Detection	Hold **UP** until the carry bar is at the top. Motor should stop automatically.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
	Let the strap out all the way to the ground. Motor should stop before strap winds backwards.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
	While using either **UP** or **Down**, angle the strap more than 15 degrees. Motor should stop automatically.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Slack Tape Switch	Hold **DOWN** and lift up on the carry bar. Motor should stop automatically.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Electrical Functions:	**Description:**	**Pass Inspection:**			**Problems:**	**Fixed:**	
Battery Voltage:	Check batteries with multimeter and confirm 12V reading while engaging the motor during load test. **Be sure to fully tighten brackets after removal.**	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Battery Inspection	Check physical condition and ensure battery has install date on it.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Charing End Stop	Confirm that lift enters charging end stop without resistance; lift docks and charges properly.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Miscellaneous	**Description:**	**Pass Inspection:**			**Problems:**	**Fixed:**	
LCD Screen:	Check that LCD works properly	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
LED Light:	Check that light turns green when on, dark when off, and amber when charging.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
Casing	Check for cracks or wear in case	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
PM Reset	Use hand control to end program mode. Log # of lifts in upper right corner on this sheet. Reset the PM Counter.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
PM Sticker (8-620710	Complete and place a PM Sticker on the track.	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL
SWL Sticker (8-620720)	Ensure SWL information is still accurate and readable	☐ PASS	☐ FAIL	☐ N/A		☐ PASS	☐ FAIL

Vancare Distributor:			
Customer:			Page 32

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Ceiling Track - Preventative Maintenance

Facility:	Contract Dates:	To:	
Address:	Scheduled:	Actual:	
Room Number:	Next PM Check:		
SWL of System:	Additional Service Needed?	☐ YES	☐ NO

Track Inspection:	Description:	Pass Inspection:			Problems:	Fixed:	
Endstops	Check that endstops are in place and tightened to 12-14 ft. lbs.	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Set Screws	Visually inspect; reapply Blue Loctite (243) and tighten to 40-45 in-lbs. of torque if required	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
End Stop Safety Pins	Confirm that all track ends have a safety pin and split ring behind the endstop	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Endcaps	Confirm that all track ends have endcaps installed	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Gantry Trolleys	Check for flat spots on wheels and any excessive wear and tear; Safety pins in place and functional; Set screws tightened; Loctite used on set screws.	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Track Joints	Run a lift or trolley through a track joint and confirm that the transition is smooth	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Transition Gate	Inspect track joints into the transition gate, confirm that it is functioning properly and the pin falls down easily, roller bearing in place; pin and connection are working properly.	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Turn Table	Inspect track joints into the turntable, confirm that it is functioning properly	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Smoke Barrier Assembly	Doors spring back and forth without hinderence; no visual damage to any of the gaskets; all screws are tight; no signs of wear/ deformation on any components including the hinge doors	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Track	Track is level	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Structure Inspection:	**Description:**	**Pass Inspection:**				**Fixed:**	
Bracing	Wiggle the ends of the track to confirm minimal movement	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Anchor Testing	Using 100% of system's SWL, test all attachment points by hanging weights below them	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Deflection Test	1 mm over every 200 mm measured from middle of span. 100% of system's SWL	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Function Test	100% of system's SWL through entire track system (including accessories such as smoke doors); system should be visually/ audibly observed for movement or loud noises	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Charging System:	**Description:**	**Pass Inspection:**			**Problems:**	**Fixed:**	
Charger and connections	Visually check all contact points and connections	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Voltage	Use a voltmeter to check output (24-28V)	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Charging End Stop	Confirm that lift enters charging endstop without resistance; end stop has power and motor charges.	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Cleaning/Miscellaneous:	**Description:**	**Pass Inspection:**			**Problems:**	**Fixed:**	
Interior Track Cleaning	Use a dust wand to clear out any dust and debris within the track	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
Exterior Track Cleaning	Use a soft scrub bleach to clean any scuff marks on the track	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
PM Sticker (8-620710)	Complete and place a PM sticker (8-620710) on the track.	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
SWL Sticker (8-620720)	Ensure SWL information is still accurate and readable	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO

Vancare Distributor:			
Customer:			
	Print	Sign	Date