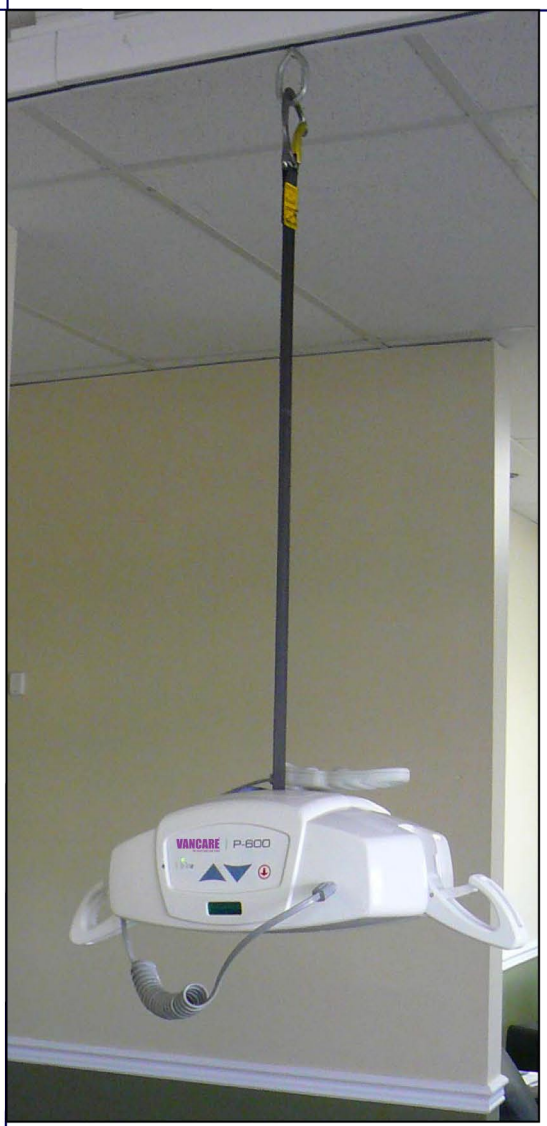
VANCARE®
We move body and mind

P-600



Technical Manual

Troubleshooting
Repairs
Replacements

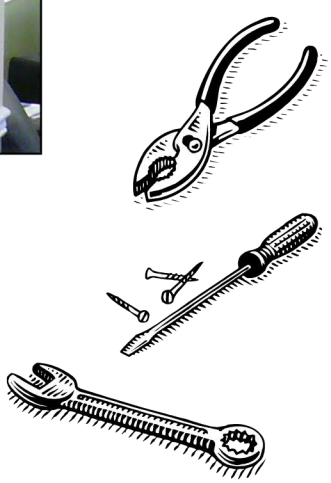


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Table of Contents
P-600 Lift

SYMPTOMS AND PROBLEMS

Finding the Problem – Before Getting Inside

Please note that the majority of technical problems that can occur with the **P-600** occur with external system components. The following are the key components to check before removing any lift cover:

- Charger and Charge Connections
- Hand Control and Airline Problems
- 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
- Airline Tubing
- Grommet Connectors
- Connector Pins
- Air Tubes
- Air Receiver Mechanism

2. Electrical System

- Charger and Charger Connections
- Main PCB – Printed Circuit Board
- Wire Harnesses
- Microswitch Up Limit Switch
- Microswitch Down Limit switch
- Quick Disconnects
- LED Indicator & LCD Display
- Electric ON/OFF, Emergency Lowering and Emergency Shut-Off

3. Mechanical System

- Lifting Hooks
- Lifting Strap
- Tape Switch Assembly
- Motors and Gears

Pneumatic Systems

The pneumatically operated functions up and down functions . A methodical check of the pneumatic system starts from the hand control and works forward 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 hand control airline to the lift. (The airline end plug has a cap that has a raised ridge on one face. The raised cap ridge aligns with and slides over the ridge on the grommet. Correct insertion can thus be verified by touch and by sight.) *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 circuit board switches*. The two air tubes attached to the main board are color coded to correspond to the colored stickers on the switches.

- Next detach one air tube at a time from the circuit board. *Check for leaks in an air tube* by pressing the function key corresponding to that air tube (the function is printed on the PCB), *then* pinch the open end of the air tube between two fingers, *then* release the function button. The dome of the button should stay slightly compressed when the button 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.

If NO air leak is found then proceed to check the electrical system.

Electrical Systems

Ensure that the batteries are charged. Turn the lift on & look at the LCD reading to check the battery charge level. 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 burns odours**.** *A single or series of components may have failed. The PCB will have to be replaced.*

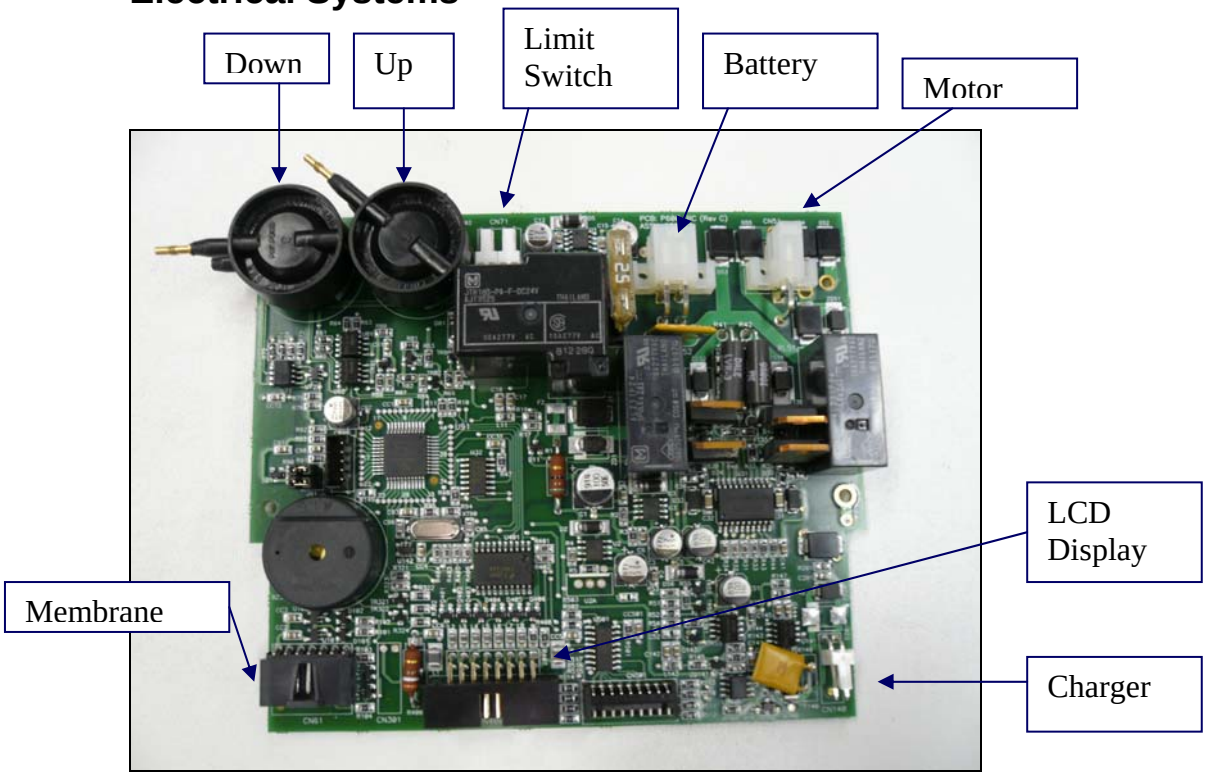
When an electrical problem seems to be the cause of the malfunction, it is important to first check that all the wire harnesses are plugged in. Secondly, it is important to check all wire harnesses for cuts and/or exposed wires. If this is found, the wire harness must be replaced.

2. The P-600 main board

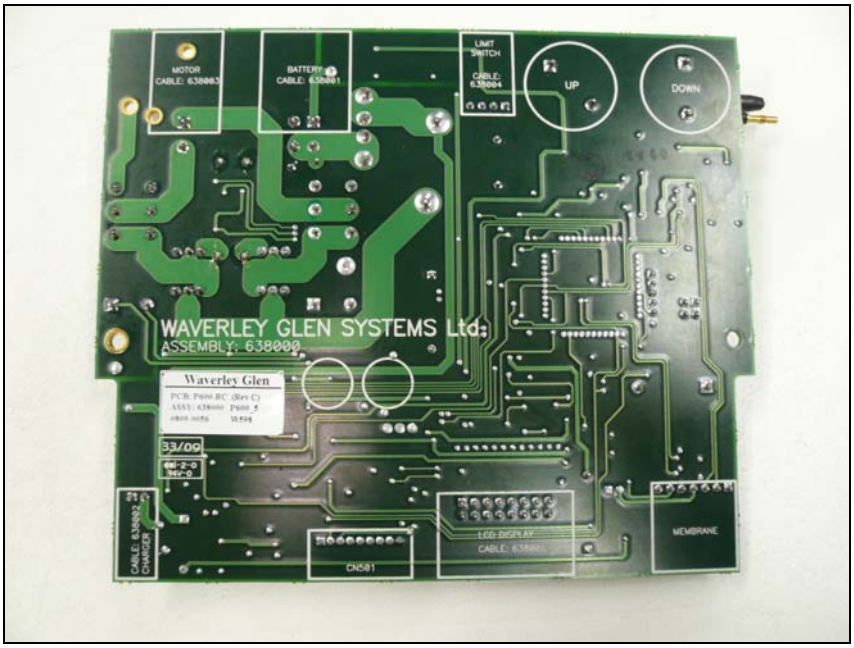
The *white power plug*, second from left, connects the batteries to the circuit board. The circuit board is connected to the main motor via the *white plug* on the right most side of the board. The board and main motor plugs are shaped to prevent erroneous hook-up. The battery cables are color-coded black and red to match the battery leads. **Check to see that the board, lift motor and battery plugs are properly connected**.

The *white plug* on the far PCB side, connects the charger to the PCB. The 16 pin connector*, second* from the left connects the LCD display to the PCB. The *4-pin white plug*, next to the air switches, connects the "slack tape" and "tape thickness" limit switches on the tape switch assembly to the circuit board. *Check to see that the functionality plugs are properly connected* (when connecting 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 connected incompletely or connected upside down).

Electrical Systems



Front side of the PCB



Back side of the PCB

Electrical Systems

3. If the batteries and circuit board appear in order, no air leak is found and no fault is found with the wiring

- Proceed to check that the lift motor is functioning by removing the motor and battery leads and running jumper cables from the motor leads to the battery leads. (Reversing polarity causes the motors run in reverse)

4. If the batteries and circuit boards appear in order, no air leak is found and no fault is found with the wiring or with the motor

- The most likely cause of failure is a blown fuse on the circuit board. To confirm, check the fuse on the board and verify that it is operable. If a fuse is blown replace it with another fuse 25 amp fuse and test the lift. *Under no circumstances should a fuse with a fuse rating other than the specified amperage be used. Using such a fuse can result in damage to the lift and /or personal injury.* If the problem persists after testing, replace the circuit board. If the problem still persists contact your local Vancare distributor.

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

2. If the Up/Down buttons on the hand control and/or lift; or the lift emergency lowering do not work

- Check the Emergency Shut-Off Switch. If it has been activated during an emergency, call customer service. If it has been activated accidentally turn the switch to the “ON” position. This will allow you to operate the lift again. If the lift still fails to operate examine the Emergency Shut-Off switch to make sure it is not obstructed and activates and deactivates the lift. If the problem persists, replace the Emergency Shut-Off switch.

2. If 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:

- Because the roller assembly inside the tape switch assembly is stuck and is therefore not activating the micro switch. Clean the inside assembly of all debris and make sure all parts are loose. Then check for the click of the switch as the roller assembly comes to the end of the slot. If there is no click, The 2 switch screws should be loosened and the switch pushed closer to the tape switch roller. Make sure that nothing is stuck or jammed in the assembly.
- Because the switch is too close to the roller assembly. The 2 switch screws should be loosened and the switch pushed farther away from the tape switch roller.
- Because of a wiring problem. Check the wiring from the tape switch assembly to the main circuit board.
- Because the micro switch is malfunctioning. Replace the switch.

2. The lift intermittently performs a pneumatically controlled function by itself (pneumatically controlled up or 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 sections P1 to P3. 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 strap goes all the way into the gearbox

The "thick strap" safety feature is not working:

- Because the moving roller assembly does not activate the switch. Introduce a slight bend in the metal strip (which activates the switch) such that activation takes place when a double thickness of strap is forced between moving rollers inside the tape switch assembly. Make sure that nothing is stuck or jammed in the assembly.

- Because of a wiring problem. Check the wiring from tape switch assembly to the main circuit board.
- Because the Microswitch is malfunctioning. Replace the switch or re-align it.

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 out. The acceleration activated the overspeed governor, which is designed to prevent further use until the lift has been repaired. (The overspeed governor is a universal, failsafe mechanical brake, which is triggered by centrifugal force and functions independently of the lift's pneumatic electro-mechanical system.) The motor will need to be replaced.

Mechanical Systems

1. The charger system does not work

The **P-600** lift charger system has three components: a charger, wiring harness and circuit board.

- Check that power is coming into the charger: the indicator light on the charger should be green when the lift is not parked in the charging station.
- Check the connections from the charger to the neutrik port on the lift
- Check the board by plugging the white plug into a replacement board.

2. The Up/Down buttons on the hand control and the lift do not work

- Simultaneous failure of the pneumatic and electrical systems, strongly indicate a circuit board failure. Confirm this by hooking a replacement board. In the case of emergency lowering, if the replacement board does not resolve the problem, the fault is in the "slack tape" lower limit switch. (See point #1 'If the lift goes down to the end of the strap and then goes up again with up and down functions reversed.')

BASIC INSTRUCTION SHEETS

B1 - Getting Access to the P-600

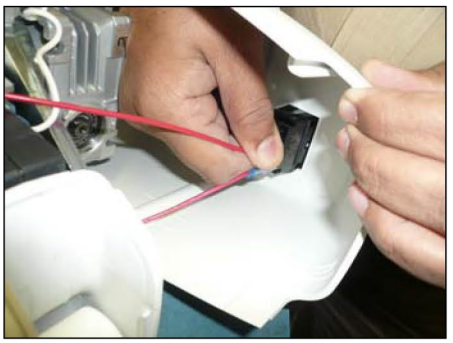
IMPORTANT NOTE: Service lift in a clean, dust free environment. *Extreme care must be exercised when removing the cover. Electric shock may occur.*

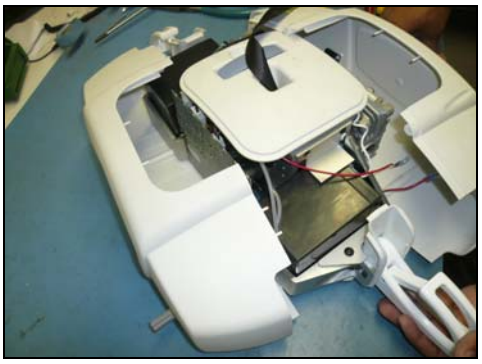
1. Disconnect the hand control airline tubing from the grommet on the lift unit.
2. Use a Phillips screwdriver to remove the screws fastening the covers.
3. Separate the covers and disconnect the emergency shut off switch harnesses.
4. Disconnect the charger, LED and membrane harnesses from the circuit board.
5. Disconnect the airlines.
6. Place the covers in a safe place. Store the cover mounting screws inside one of the covers for safekeeping.

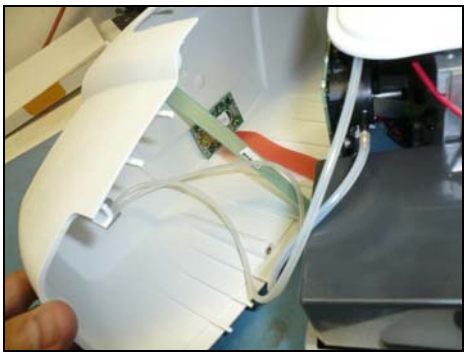
Disconnect the airline


Unscrew the covers

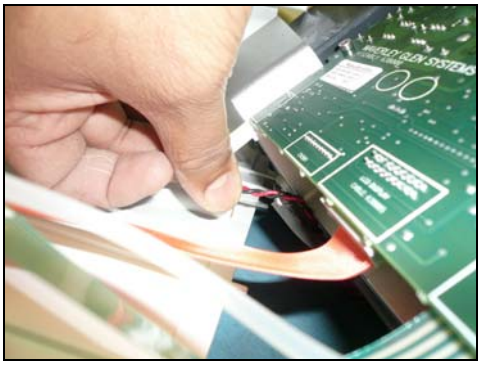

Separate first cover


Disconnect the emergency shut off switch harnesses

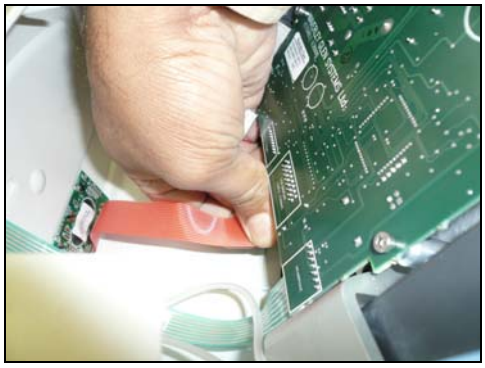




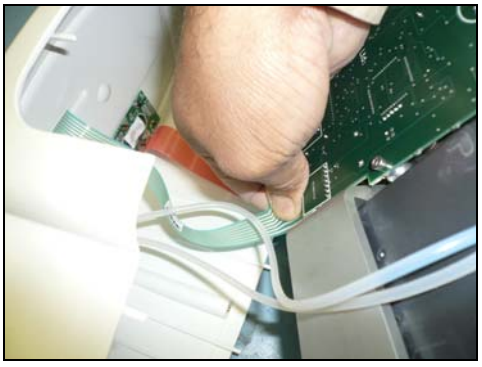
Separate the second cover



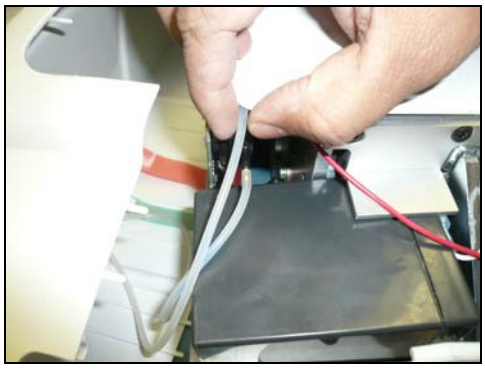
Disconnect the charger harness



Disconnect the LED harness



Disconnect the membrane harness



Disconnect the airlines

Disassembled covers

P1 - Replace Airline Tubing

IMPORTANT NOTE: If an air leak is suspected, it is important to check the entire pneumatic system for air leaks.

1. Separate the Airline tubing from the grommet on the lift unit.

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. Air leaks occur at the grommet connections because the hand control and airline tubing are frequently used to pull the lift along the track. This results in the frequent disconnection of the airline and grommet.

4. Remember to reassemble the airline to the grommet by aligning the ribs. *If not connected correctly, operating buttons on the hand control will not function properly.*

Separate the airline from the grommet

P2 - Replace Grommet

IMPORTANT NOTE: *There are NO serviceable parts inside the pneumatic Hand Control*.

1. If an air leak is suspected but there is no detected failure, there may be an air leak at the lift grommet because the airline pins do not fit tightly. This lift grommet may be replaced using the following steps.

2. Follow steps 1 - 6 in section B1.

3. *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 PCB to the grommet.

5. Use a knife to cut the grommet. The grommet is secured with Loctite to the cover so it cannot be removed without cutting it.

6. Reinstall a new grommet by inserting it through the opening in the cover.

7. Reattach the internal air tubes and replace covers to reattach hand control airline.

8. Add a few drops of Loctite 401 under the square back section of the grommet to secure it to the cover.

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

Disconnect airlines from PCB

Cut the grommet with a knife

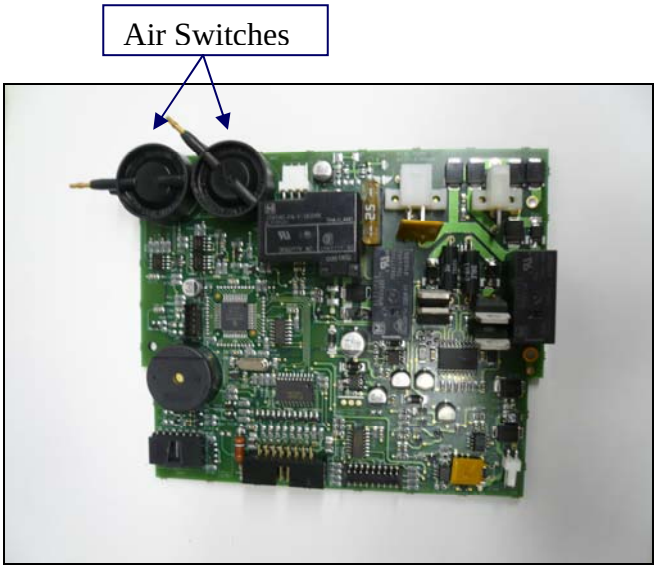
Use Loctite 401 to secure the new grommet to the cover.

P3 – Faulty Main PCB Air Switches

IMPORTANT NOTE: There are no serviceable parts on the Main PCB. These air switches are not serviceable and the whole board 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 air 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.*



ELECTRICAL INSTRUCTION SHEETS

E1 - Test and/or Replace Batteries

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

1. If the indicator light (LED) on the control panel indicates “Low Batt!” and an audible alarm sounds, the batteries may not have sufficient power to operate the lift under load. Lift should be returned to charger.

2. Using a voltmeter (set for DC volts 100 scale) measure the voltage across the RED and Black wire terminals on the batteries. The reading should be greater than 27.5 VDC if fully charged.

3. With the lift on charge, measure VDC. The reading should be between 27 to 30 VDC indicating that the batteries are being charged. The lift should be left on charge for 30 minutes and retested. If the low battery indication still persists, the batteries should be replaced.

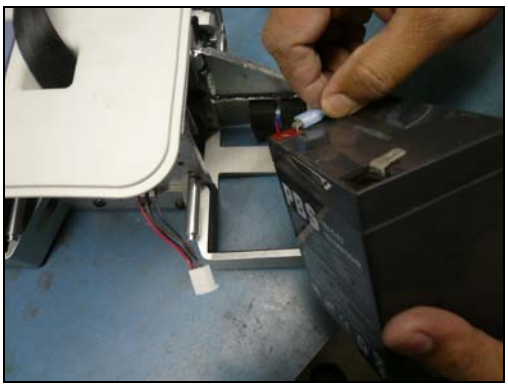
4. *Disconnect all wires from the batteries.*

5. Using an Allen Key (M4) to remove two screws M4 x 12mm to remove the battery holding bracket.

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

7. Install the batteries and reinstall the battery holding brackets. Ensure that any wire harnesses or airline tubing are loose, free of obstructions. *A blockage of the airlines will cause hand control problems*.

8. Connect the SEPARATE BLACK wire across the inside RED and BLACK battery terminals. Reconnect the (+) and (-) wire harness wires to the matching terminals on the batteries.



E2 - Replace Main PCB (Printed Circuit Board)

IMPORTANT NOTE: Use extreme caution when servicing the lift. The PCB should be handled with care. Use of proper E.S.D. protection to prevent damage to the circuit board is highly recommended. *Contact with metal objects (screw drivers, rings, etc.) will damage the PCB.*

1. Before starting, *disconnect the RED battery wire* and all wire harnesses and all air tubes (remove off from the steel pins) from the PCB.

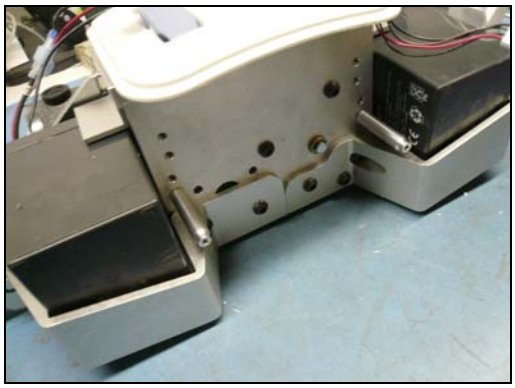
2. Before installation of new PCB, test the new PCB to ensure that the diagnosed problem will be solved. Attach all wire harnesses and reconnect the battery wire. *Test lift unit. If lift unit still does not function, the problem is elsewhere.* Contact customer service for further instructions.

3. Remove the mounting screws (M3 x 8mm hex socket cap screw) using a 3mm allen key.

4. Carefully remount the PCB and tighten screws. *Do not over-tighten screws*.

5. Attach all wire harnesses and reconnect the battery wire. Test lift unit.

Remove the circuit board using a 3mm allen key.



Install a new PCB onto the stand offs.

E3 - Adjust/Replace UP/DOWN Microswitch Assembly

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

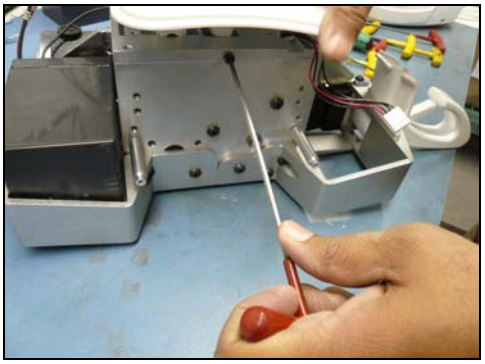
The UP/DOWN micro switch assembly controls numerous safety functions and maintains an absolute control over the polarity logic of the entire system. The primary functions are to control the UP limit, Down limit, monitor “slack tape” condition and prevent the motor from winding the lift tape in the wrong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

1. Have the strap extended out about 1’ & remove the lift covers as per section B1, Getting Access to the **P-600**.
2. Remove the PCB as per section E2.
3. Use a 4mm Allen Key to remove the two M4X10 screws on the front and back of the gearbox.
4. Using an Allen Key (M4) to remove two screws M4 x 12mm to remove the one battery holding bracket
5. Remove this battery as per section E1.
6. Remove the motor and gearbox by unscrewing 3 M6 x 50 motor mounting screws.
7. Remove the motor and gearbox.
8. Remove the hook brace using an allen key to remove the 2 M6x12 screws.
9. Remove one hook bracket assembly by using an allen key to remove 4 M6 x 12 screws.
10. Separate the hook bracket assembly.

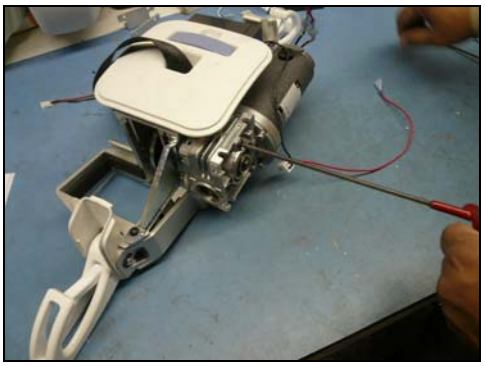
11. Slide off the top extrusion to gain access to the limit switches.

12. Use a Phillips screwdriver to remove both microswitches and replace the whole microswitch wire harness.

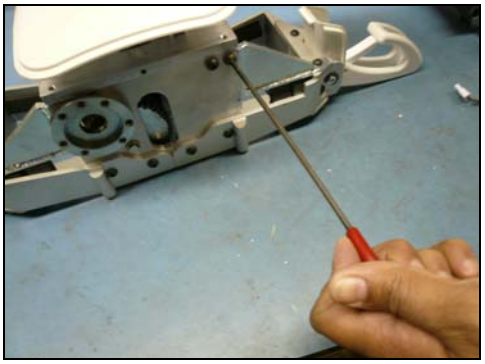
13. Reassemble lift and test.



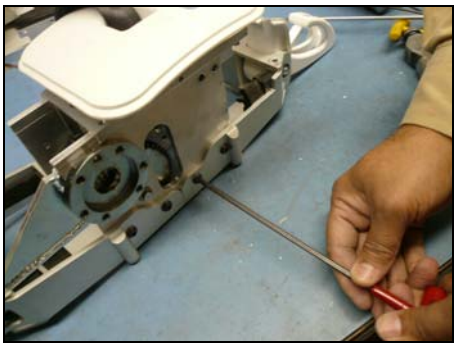

Remove the screws from the front and back of the gearbox

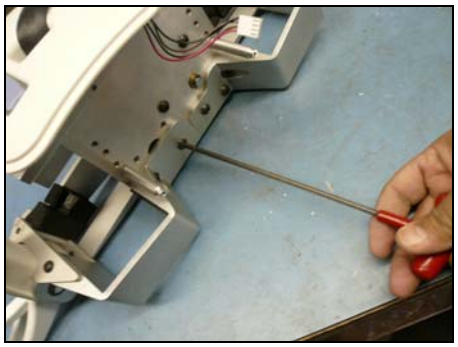



Remove the motor/gearbox assembly




Remove the hook bracket assembly

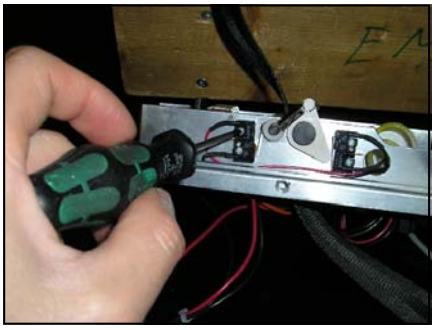




Remove Hook Bracket Assembly

Separate Hook Bracket Assembly

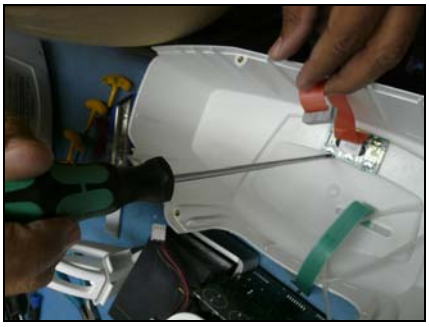
Slide Off Top Cover



Replace the microswitches

E4 – Replacing the LCD, Charger port, Emergency Shut Off Switch.

1. Use a Phillips screw driver to remove the LED or the charger port from the required lift cover.
2. Replace the afftected LCD or Charger port with a new component as required.
3. To remove the emergency shut off switch, press on the sides of the shut off switch and push it through the opening in the side cover.


LCD replacement


Charger replacement


Shut Off Switch Replacement

MECHANICAL INSTRUCTION SHEETS

M1 - Replace Lifting Strap – Frayed, Stress Streaks, Length

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 per section B1, Getting Access to the **P-600**. Also, remove the battery & its brackets (nearest to the strap pin) as per section E1, and remove the PCBs as per section E2.

3. Remove the C-Clip from the motor 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 end of the strap that is inserted into the shaft is oriented with the overlapped side facing towards the motor side of the lift & away from the gearbox side.* 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.

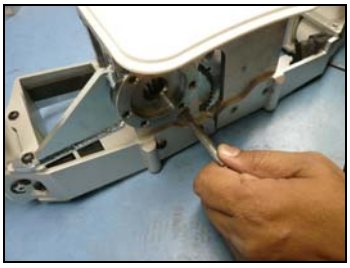
8. Replace the C-clip on the drive axle using needle nose pliers.

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

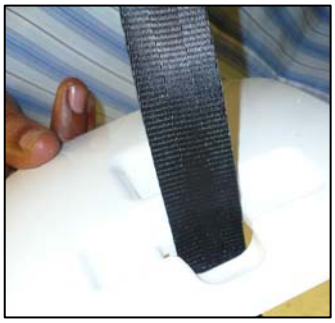
10. Reassemble lift and test.



Remove C-clip


Push strap pin out



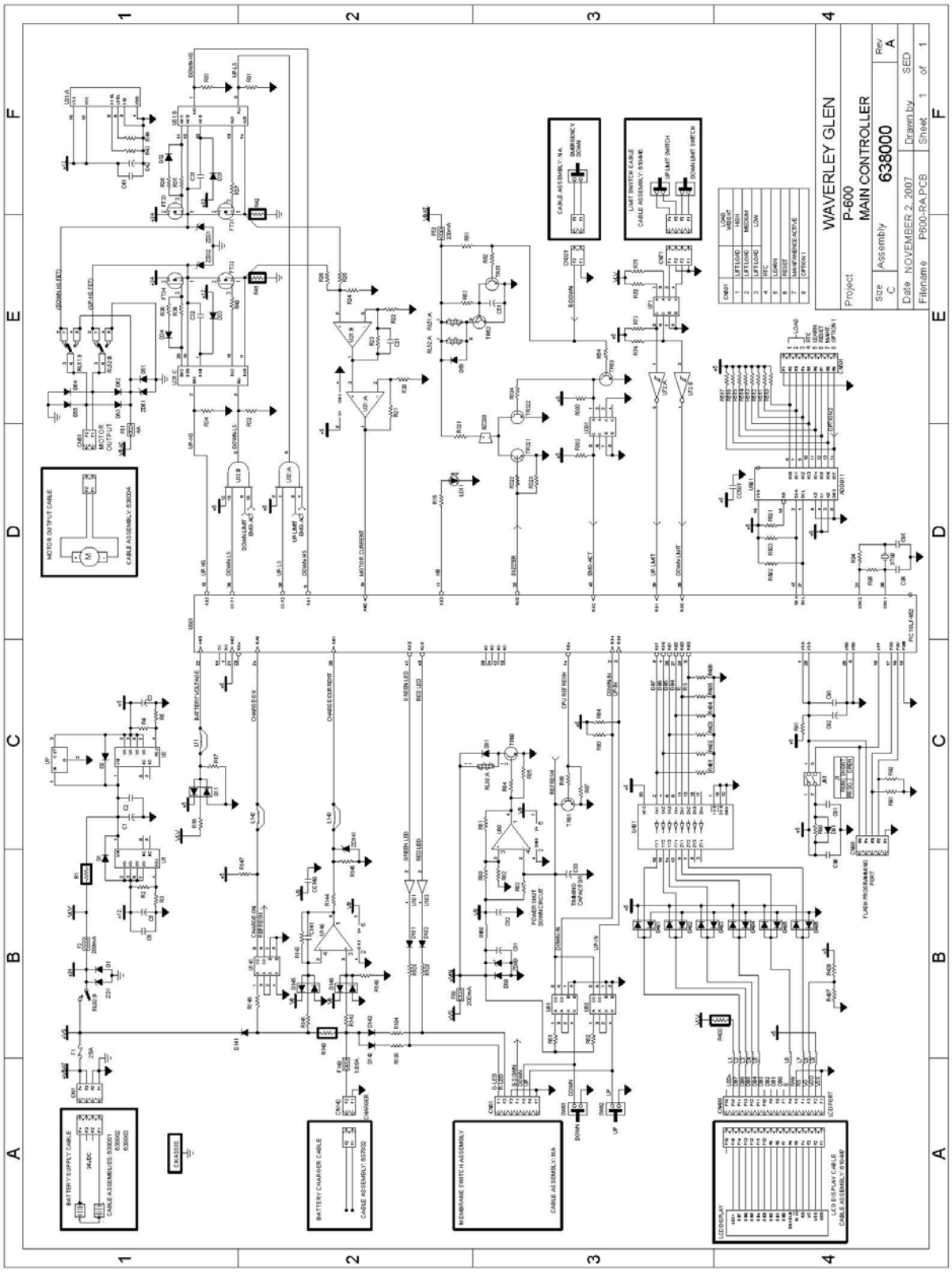
Insert the new strap through the middle cover in the lift

Tool List

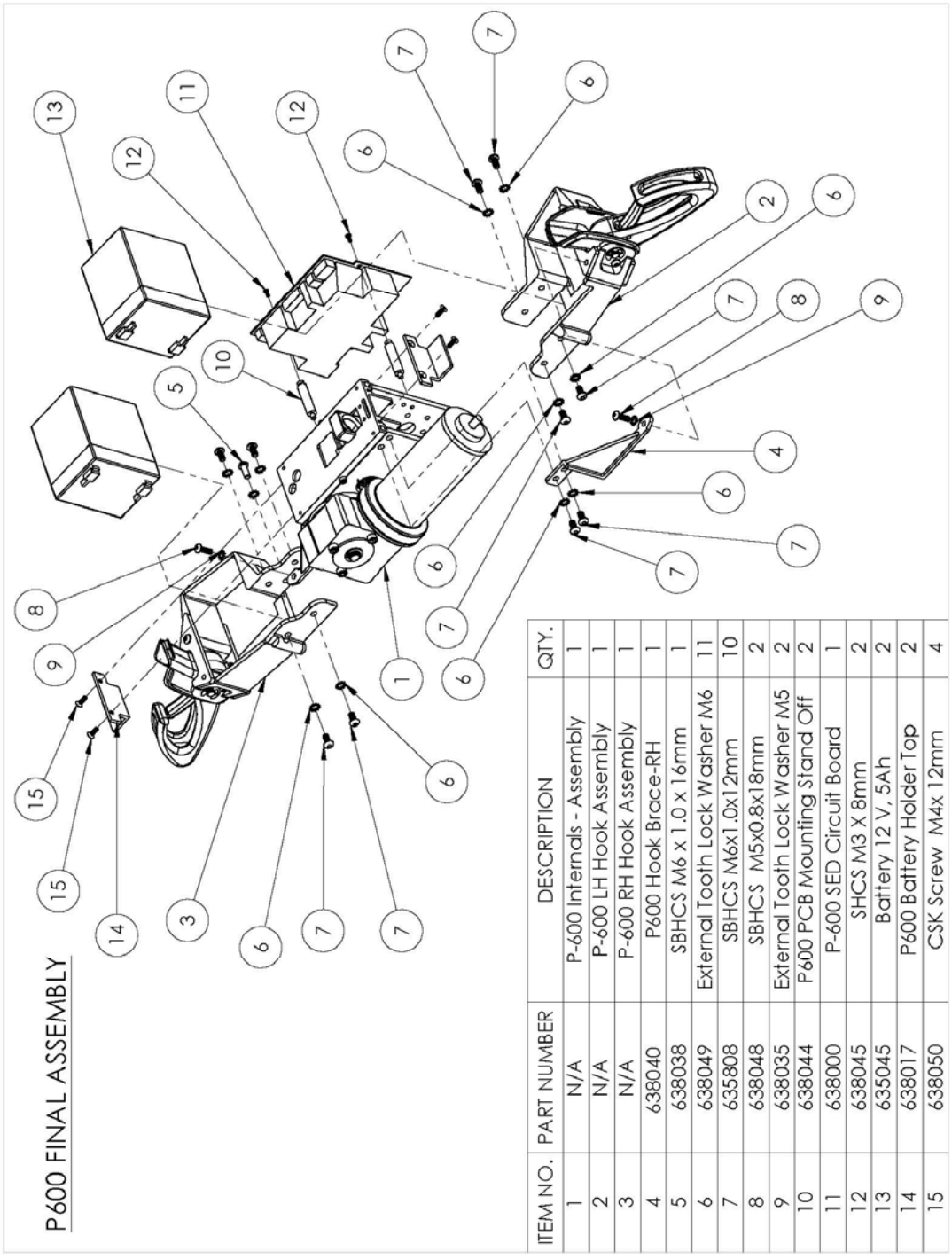
The lifts have been designed to minimize the tools required for servicing the lifts. Common and swappable components provides for efficient servicing.

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

a) Philips Screwdriver – medium
b) Phillips Screwdriver - small
c) Robertson Screwdriver - medium
d) 3mm, 4mm, 5mm & 6mmAllen key
e) box cutting knife
f) Pliers
g) Cutting Pliers
h) Circlip Pliers
i) Ratchet Wrench with 5/16” Socket & Extension

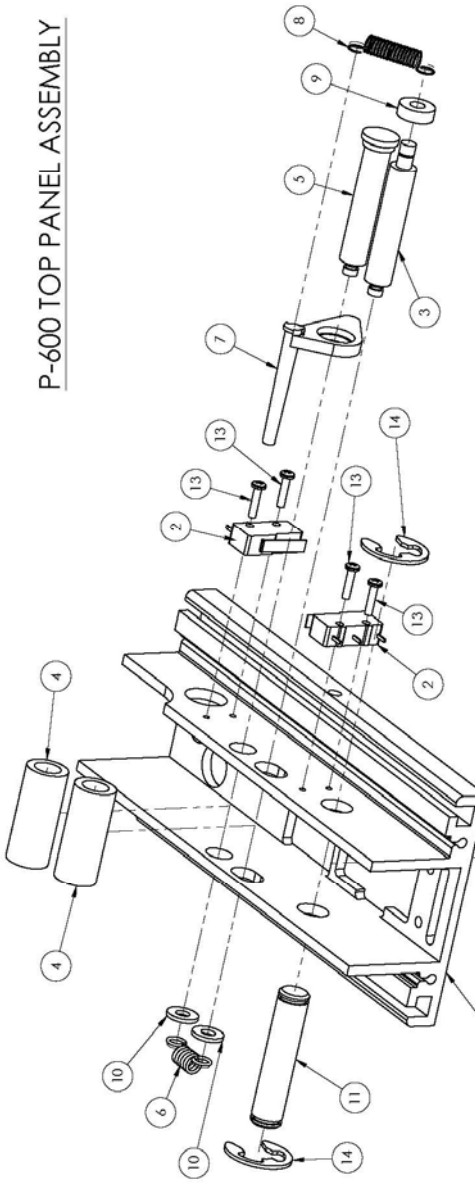

WAVERLEY GLEN
Project P-600
MAIN CONTROLLER
Size C
Assembly 638000
Rev A
Date NOVEMBER 2, 2007
Drawn by SED
Filename P600-RA.PCB
Sheet 1 of 1

Service Parts List (P-600)



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	N/A	P-600 Internals - Assembly	1
2	N/A	P-600 LH Hook Assembly	1
3	N/A	P-600 RH Hook Assembly	1
4	638040	P600 Hook Brace-RH	1
5	638038	SBHCS M6 x 1.0 x 16mm	1
6	638049	External Tooth Lock Washer M6	11
7	635808	SBHCS M6x1.0x12mm	10
8	638048	SBHCS M5x0.8x18mm	2
9	638035	External Tooth Lock Washer M5	2
10	638044	P600 PCB Mounting Stand Off	2
11	638000	P-600 SED Circuit Board	1
12	638045	SHCS M3 X 8mm	2
13	635045	Battery 12 V, 5Ah	2
14	638017	P600 Battery Holder Top	2
15	638050	CSK Screw M4x 12mm	4

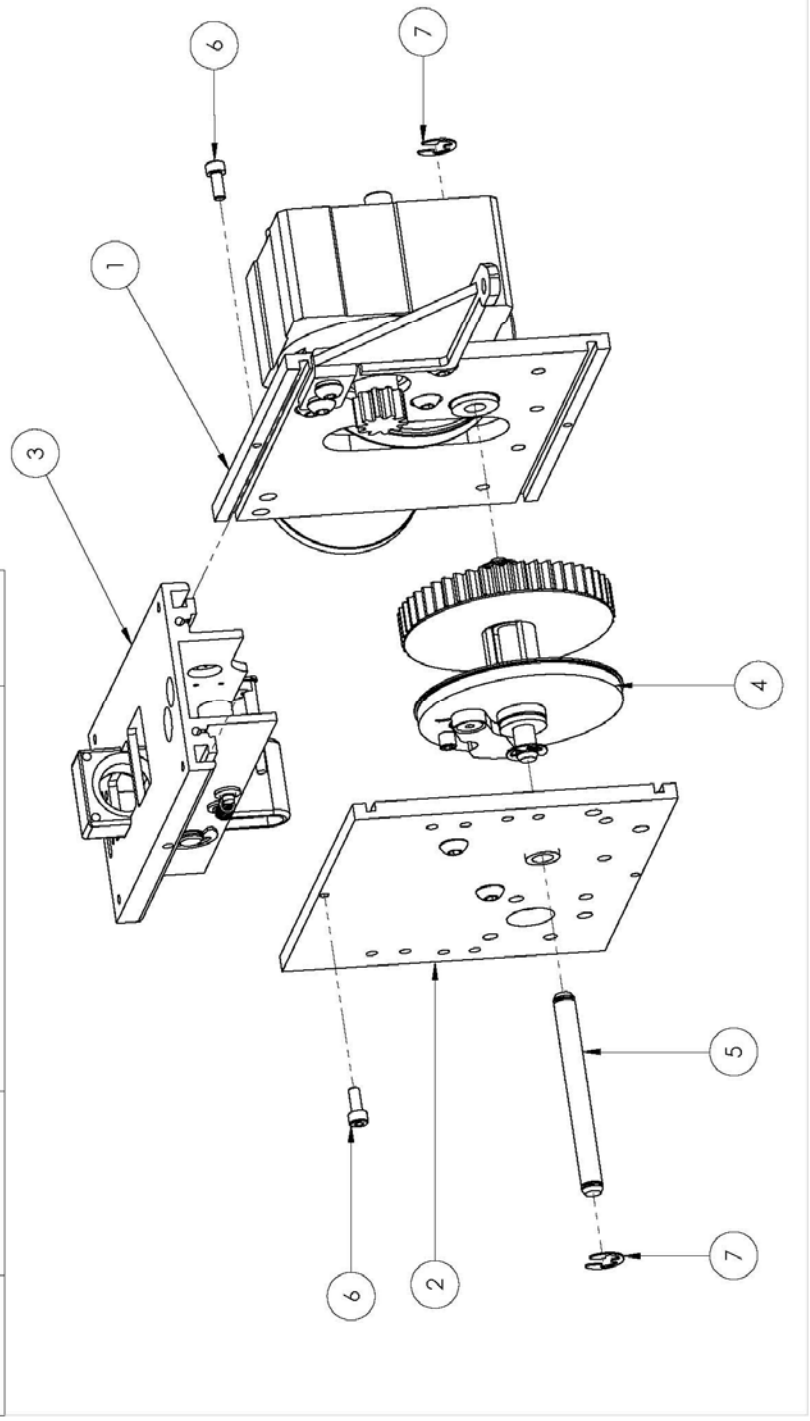
P-600 TOP PANEL ASSEMBLY



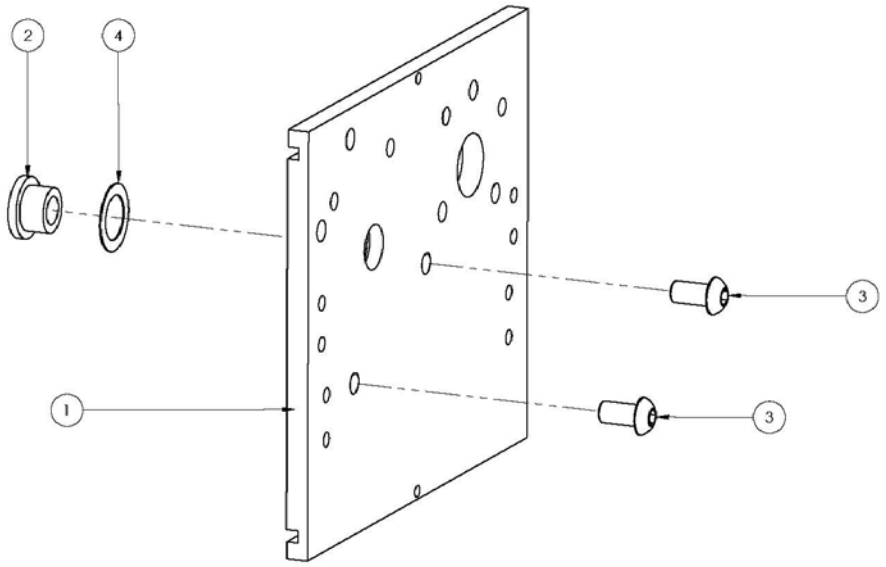
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	638041	Gear Box Bottom Panel	1
2	610446	Limit Switch Cable Assembly	1
3	635012	Upper Limit Roller Shaft	1
4	635019	Strap Roller	2
5	635011	Slack Tape Roller Shaft	1
6	635018	Extension Spring Joining	1
7	635010	Slack Tape Activator	1
8	635014	Slack Tape Extension Spring	1
9	635013	Upper Limit Activator	1
10	635017	Roller Shaft Washer	2
11	638018	P-600 Transpoint Shaft	1
12	638019	P-600 Transpoint Bracket	1
13	610348	Tapping Screw 2-56 x 3/8 inch	4
14	637040	Hook Shaft Retaining Ring	2

P600 INTERNAL ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	N/A	P-600 Motor Plate Assembly	1
2	N/A	P-600 Left Side Plate Assembly	1
3	N/A	P-600 Top Plate Assembly	1
4	440251	Tape Gear Assembly	1
5	635031	Strap Pin	1
6	635803	Socket Head Cap Screw - M4 x 10	2
7	635029	Strap Pin Retaining Ring	2



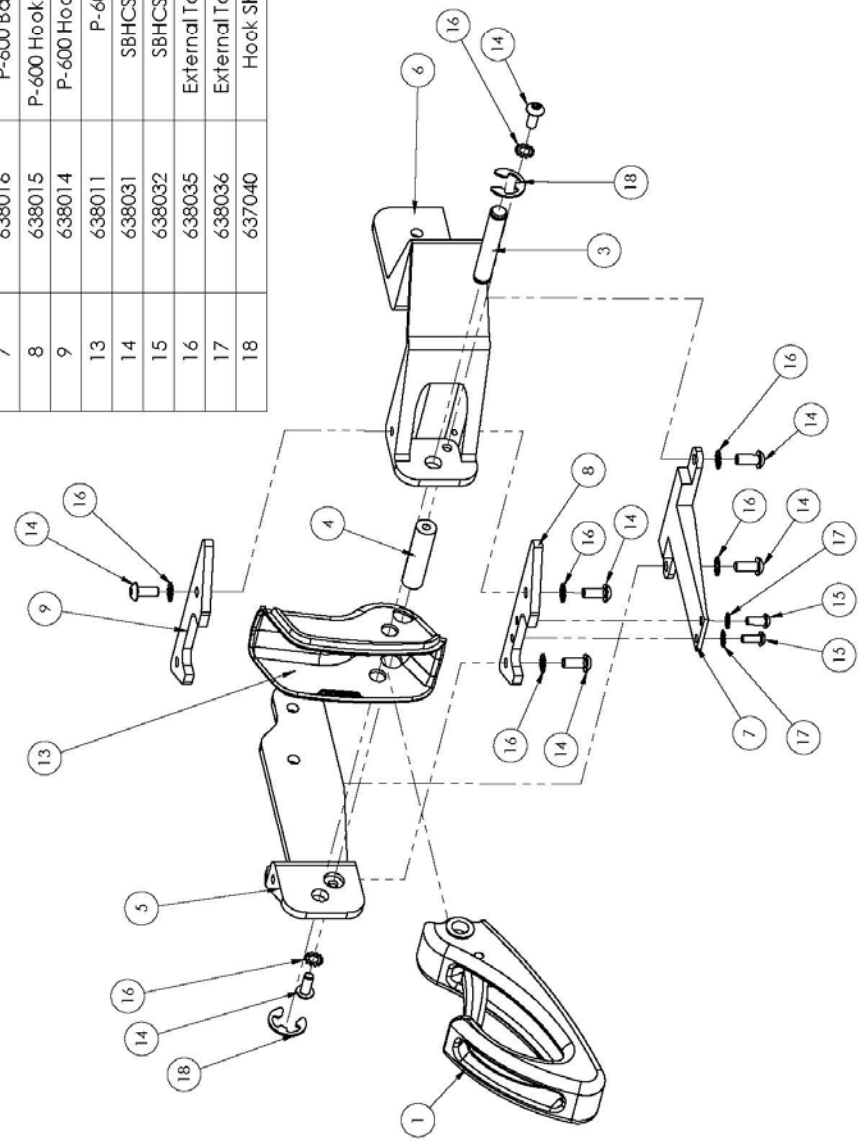
P600 LEFT SIDE PLATE ASSEMBLY

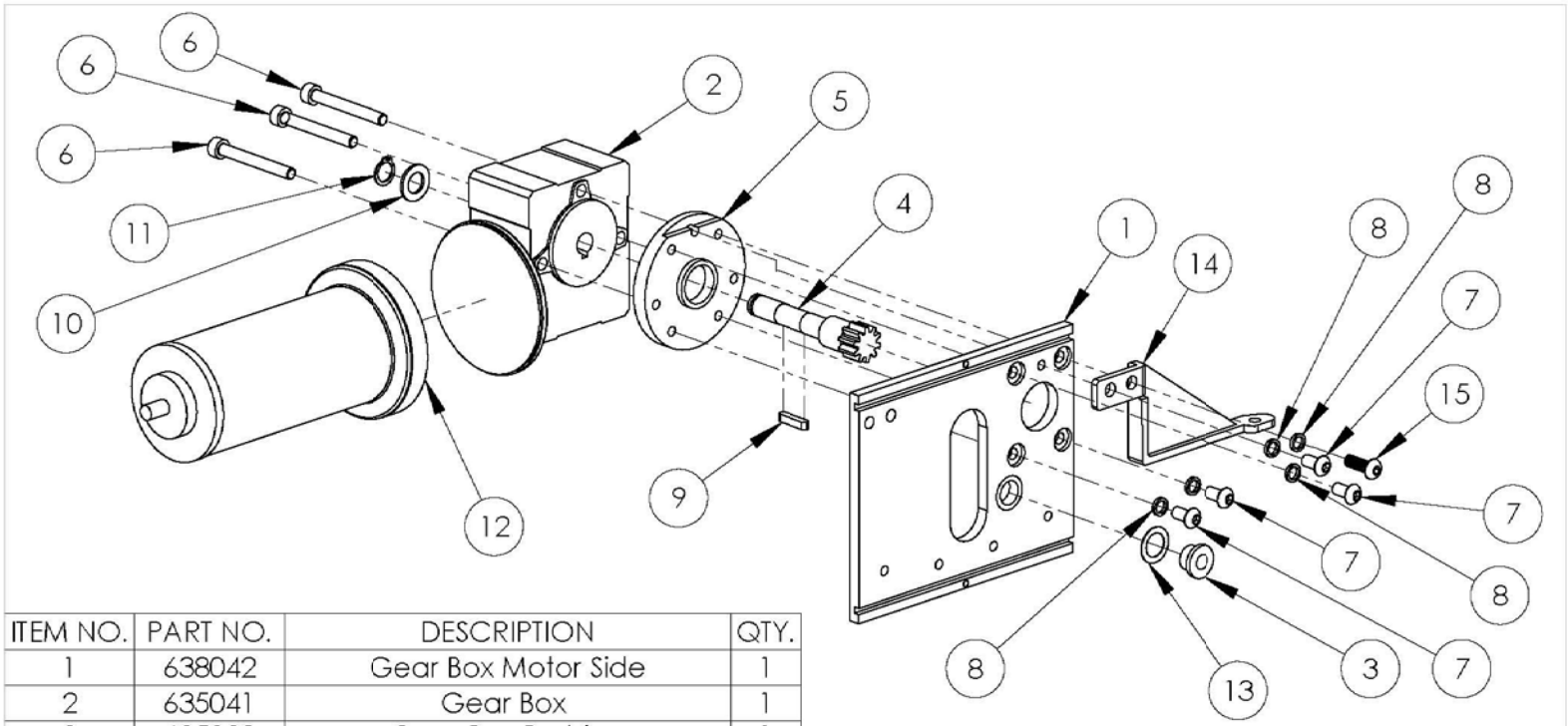


ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	638043	Gear Box Left Side Panel	1
2	635033	Gear Box Bushing	1
3	635808	Socket Dome Head Screw - M6 X 12	2
4	635094	Trolley Wheel Washer , 1/2 x 3/4 x 0.015	1

P600 LH HOOK ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	440252	P-600 Hook Assembly	1
3	638012	P-600 Hook Shaft	1
4	638013	P-600 Hook Support Bar	1
5	638027	P-600 Hook Bracket Back LH	1
6	638025	P-600 Hook Bracket Front LH	1
7	638016	P-600 Battery Holder Bottom	1
8	638015	P-600 Hook Bracket Brace Bottom	1
9	638014	P-600 Hook Bracket Brace Top	1
13	638011	P-600 Hook Cover	1
14	638031	SBHCS M5 x 0.8 x 12mm	7
15	638032	SBHCS M4 x 0.7 x 10mm	2
16	638035	External Tooth Lock Washer M5	7
17	638036	External Tooth Lock Washer M4	2
18	637040	Hook Shaft Retaining Ring	2

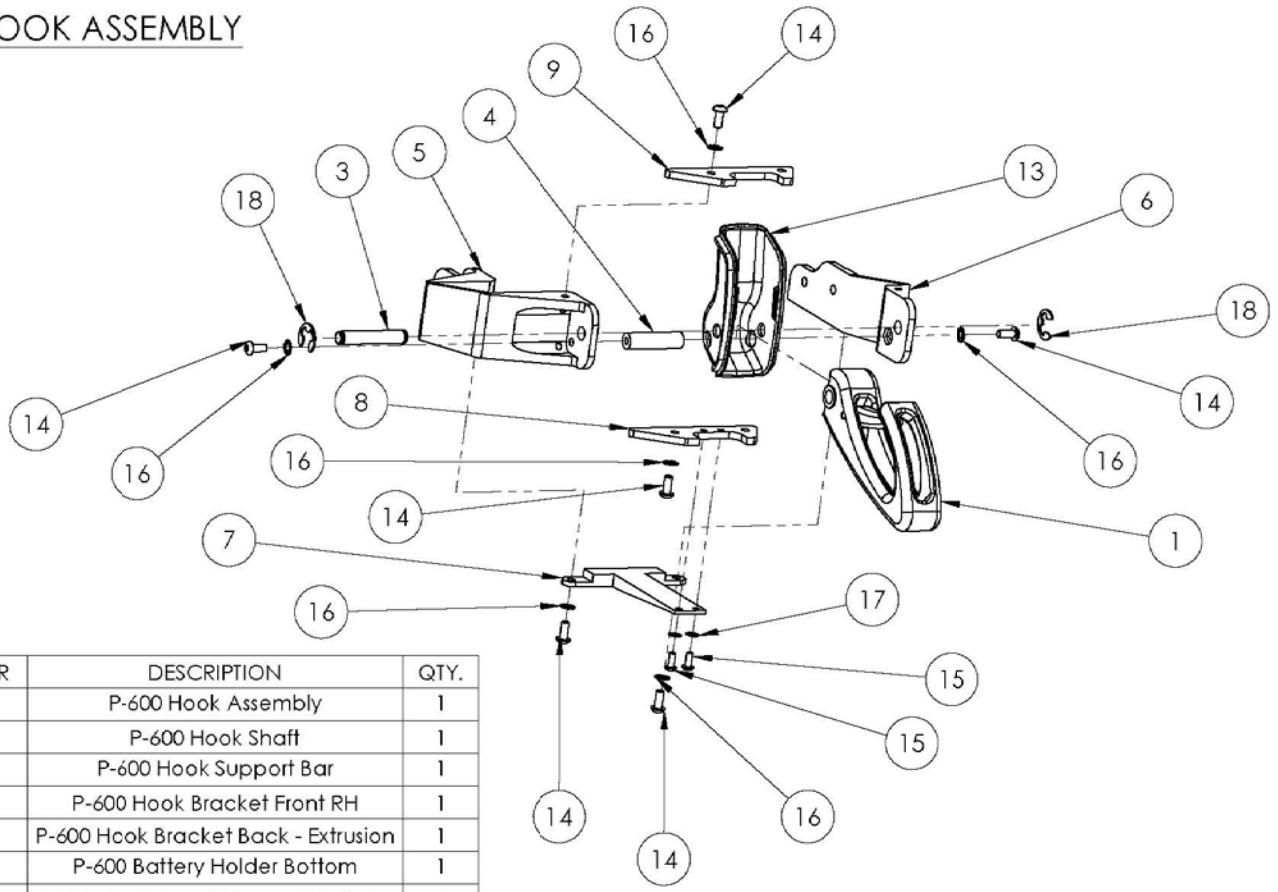




ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	638042	Gear Box Motor Side	1
2	635041	Gear Box	1
3	635033	Gear Box Bushing	1
4	635035	Motor Gear - 10 Teeth	1
5	635037	Motor Mounting Plate	1
6	635809	Socket Dome Screw - M6 X 50	3
7	635808	SBHC Screw - M6 X 12	4
8	635043	Lock Washer - M6	5
9	635036	Motor Gear Shaft Key	1
10	635038	Flat Washer - 3/8	1
11	635039	Motor Gear Retaining Ring	1
12	635042	Motor	1
13	635094	Trolley Wheel Washer	1
14	638039	P600 Hook Brace-LH	1
15	638047	SBHC Screw - M6 X 18	1

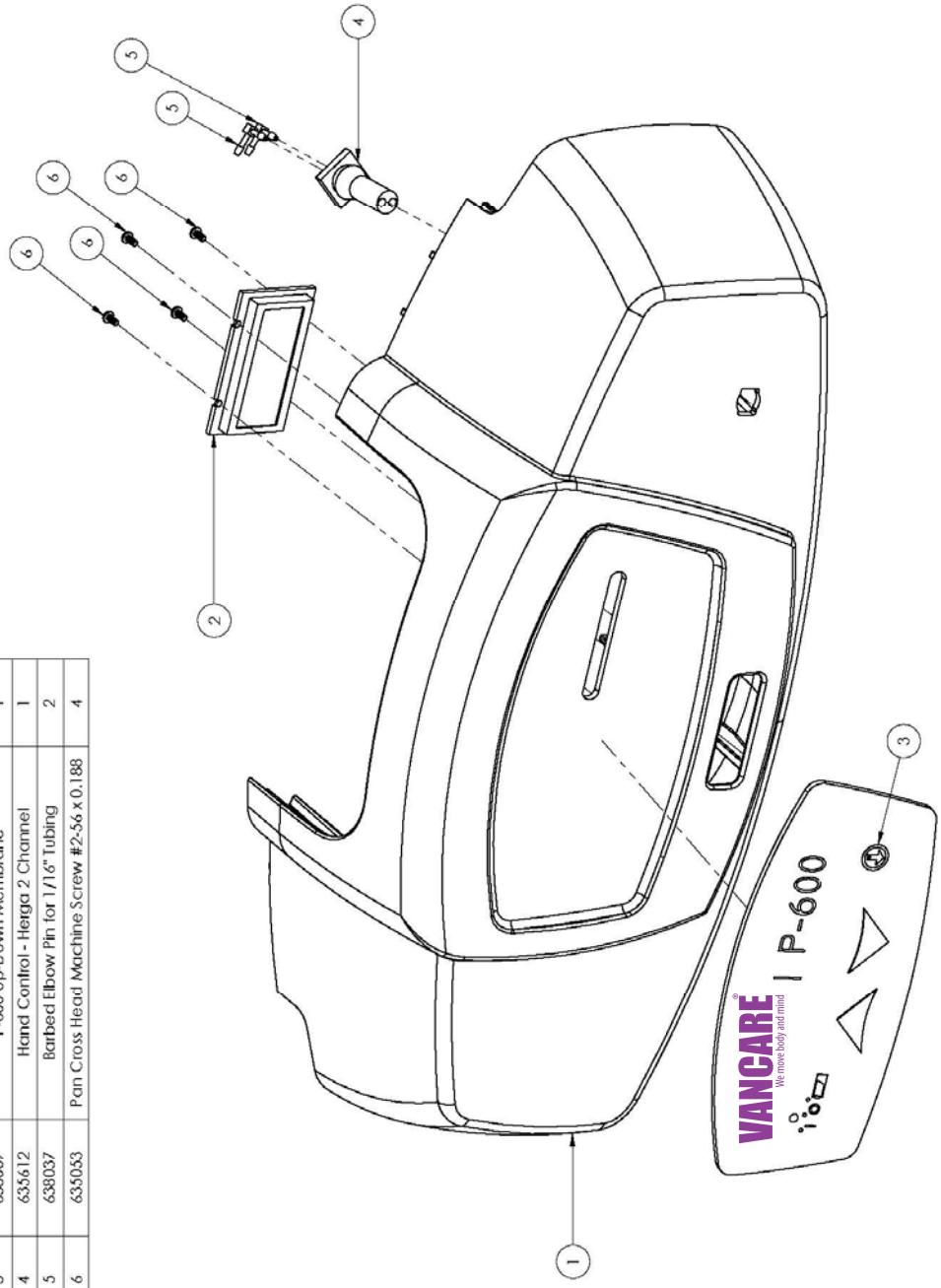
P600 MOTOR PLATE ASSEMBLY

P600 RH HOOK ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	440252	P-600 Hook Assembly	1
3	638012	P-600 Hook Shaft	1
4	638013	P-600 Hook Support Bar	1
5	638024	P-600 Hook Bracket Front RH	1
6	638026	P-600 Hook Bracket Back - Extrusion	1
7	638016	P-600 Battery Holder Bottom	1
8	638015	P-600 Hook Bracket Brace Bottom	1
9	638014	P-600 Hook Bracket Brace Top	1
13	638011	P-600 Hook Cover	1
14	638031	SBHCS M5 x 0.8 x 12mm	7
15	638032	SBHCS M4 x 0.7 x 10mm	2
16	638035	External Tooth Lock Washer M5	7
17	638036	External Tooth Lock Washer M4	2
18	637040	Hook Shaft Retaining Ring	2

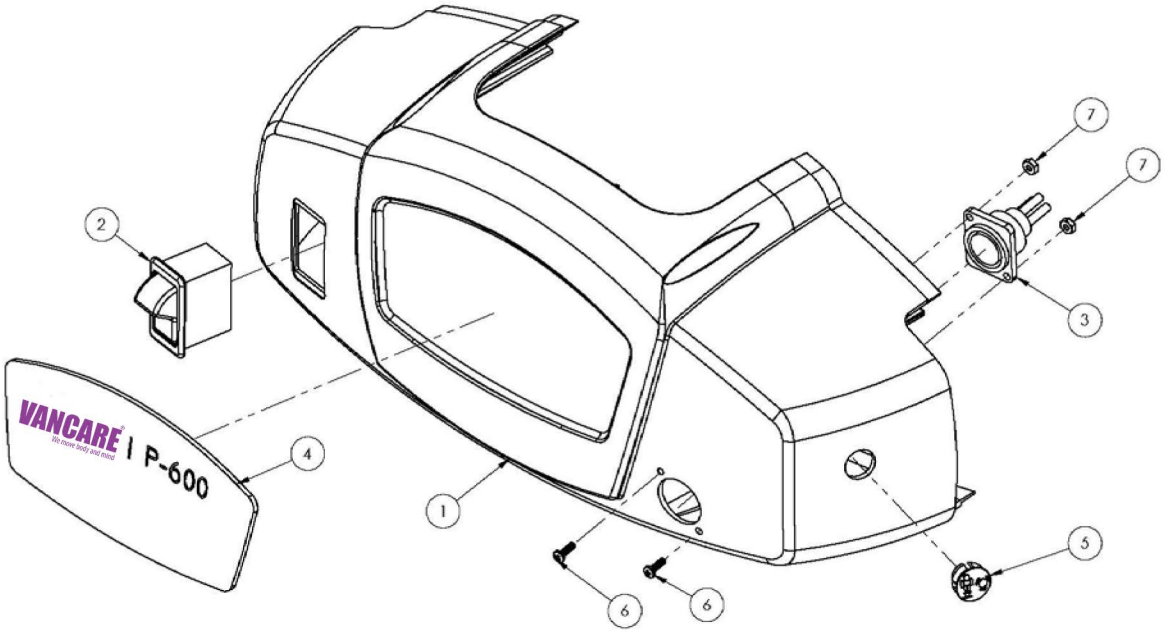
P600 FRONT COVER ASSEMBLY



ITEM NO.	PART NUMBER	Description	QTY.
1	638008	P-600 Main Cover Front	1
2	610447	Crystal Font Display	1
3	638007	P-600 Up-Down Membrane	1
4	635612	Hand Control - Herga 2 Channel	1
5	638037	Barbed Elbow Pin for 1/16" Tubing	2
6	635053	Pan Cross Head Machine Screw #2-56 x 0.188	4

P600 BACK COVER ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	638009	P-600 Main Cover Back	1
2	632001	Emergency Shutoff Switch	1
3	637070	Charger Harness Assembly	1
4	638006	P-600 Serial Number Membrane	1
5	635106	Emergency Stop Plug	1
6	430420	Pan Head Screws 4-40 x 3/8 in	2
7	410840	4-40 UNC Hex K loc Nut	2



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 to 1.25 times 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.

Ceiling Lift System Installation
Final Checklist and Inspection

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					
Crossbracing	Yes	No	N/A		As per approved drawing and/or Vancare Recommendation.
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/or Prism Medical 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
PM Sticker (620710)	Yes	No	N/A		Complete and place a PM sticker (620710) on the track.
SWL Sticker (620720)	Yes	No	N/A		Complete and place SWL stickers (620720) on the track system no more than 20ft. apart
Smoke Barrier Assembly	Yes	No	N/A		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

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?		☐ YES	☐ NO
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.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Mechanical Functions:	Description:	Pass Inspection:			Problems:		Fixed:	
Load Test Per ISO10535	Lift 100% of the load capacity of the Motor 20" off of the ground	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Trolley Wheels	Inspect wheels for flat spots, and excessive wear and tear	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Portable Trolley	Ensure nut and pin are intact and tight	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Motor, Gears, and Traversing Drive	Inspect for damage and excessive noise	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Carry Bar	Inspect for damage; verify insert and hooks	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
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.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
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.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Airline Tubing	Inspect for damage/leaks	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Grommet Connectors	Check that they are tight	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Limit Switches:	Description:	Pass Inspection:			Problems:		Fixed:	
Upper Limit Switch	Hold **UP** until the carry bar is at the top. Motor should stop automatically.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
	Let the strap out all the way to the ground. Motor should stop before strap winds backwards.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
	While using either **UP** or **Down**, angle the strap more than 15 degrees. Motor should stop automatically.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Slack Tape Switch	Hold **DOWN** and lift up on the carry bar. Motor should stop automatically.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
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.**	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Charger:	Engage unit with charger and check that unit is charging properly. Light on the lift should turn amber.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Miscellaneous	Description:	Pass Inspection:			Problems:		Fixed:	
LCD Screen:	Check that LCD works properly	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
LED Light:	Check that light turns green when on, dark when off, and amber when charging.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
Casing	Check for cracks or wear in case	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO
PM Reset	Use hand control to end program mode. Log # of lifts in upper right corner on this sheet. Reset the PM Counter.	☐ YES	☐ NO	☐ N/A			☐ YES	☐ NO

Vancare Distributor:			
Customer:			

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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
Trolleys	Check for flat spots on wheels and any excessive wear and tear	☐ 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, rollar bearing in place	☐ 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 125% 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; lift docks and charges properly	☐ 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 (620710)	Complete and place a PM sticker (620710) on the track.	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO
SWL Sticker (620720)	Ensure SWL information is still accurate and readable	☐ YES	☐ NO	☐ N/A		☐ YES	☐ NO

Vancare Distributor:			
Customer:			
	Print	Sign	Date