

BARTONTM

MEDICAL CORPORATION

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Ceiling Track Lift Service Manual

RTB-400-70
RTB-415-70
RTB-600-70
RTB-615-70
RTB-1015-70

SM 003

Revision: C

Revision Date: 6/24/2008

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PREPARATION

Cleaning & Disinfecting

WARNING

Gloves and protective clothing should always be worn when carrying out cleaning procedures.

All surfaces can be cleaned by wiping with a disposable cloth moistened with hand hot water and a neutral detergent. Rinse using clean water, dry with paper towels.

When used by a patient known or suspected of having an infection this piece of equipment should be disinfected. After washing, wipe over with NaDCC at 1,000 ppm of available chlorine (or other chlorine releasing agent). Alternatively wipe over with a 70% Isopropyl Alcohol wipe.

CAUTIONS

DO NOT use Hypocarbonate or Phenol based cleaning agents

DO NOT use any volatile liquids such as thinners or petroleum

DO NOT use abrasive compounds or pads.

Tests show undiluted Dettol may damage paint and plastic parts if prolong contact is allowed.

Recommended Tools

Below is a list of tools required to carry out the service procedures contained in this manual:

Adjustable Wrench

Socket Set 7/16" and 9/16" with extension

Adjustable Torque Wrench – Adjustable up to 40ft/lbs

Screw Driver Set (W/ Multiple Bits)

Multi-meter (0-50VDC)

Step Stool or ladder

Gloves

Needle nosed pliers

Metric Allen wrench set

Flashlight

C-clip removal tool

Punch

Hammer

WARNING

All tools can be dangerous if used incorrectly.

CAUTION

DO NOT attempt to perform service on the ceiling lift without proper training and understanding of this document. Failure to adhere to this warning may result in serious injury to the operator, and/or the individual being lifted /transferred

SECTION 1: TO REMOVE MOTOR FROM TRACK. : Unplug the charger from electrical source before perform this task.

1. Charger Connector
2. Charger End Plate
3. Charger End Screw



4. Safety Pin
5. Safety Pin Ring
6. End Stop Plate
7. End Stop Bolts



1.1 Remove ring



1.2 Remove pin



1.3 Remove screw



1.4 Remove end plate



1.5 Remove charger connector



1.6 Loosen end stop bolts



1.7 Remove end stop block and plate



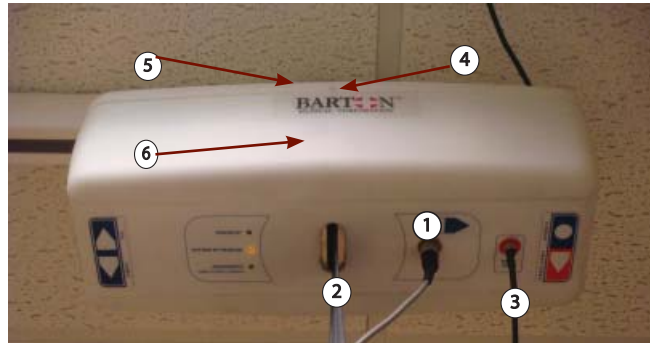
1.8 Remove motor

CAUTION

A sturdy ladder is required in order to access the underside of the lift to remove the motor from the track. Motor and carry bar is a heavy object. Use caution when perform this task.

SECTION 2. TO REMOVE PLASTIC COVER: Move carry bar down to the lowest position before performing this procedure.

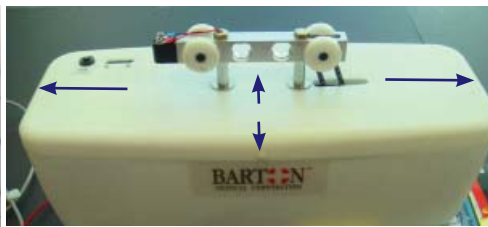
1. Hand Control Connector
2. Strap
3. Emergency Cord
4. Housing Screws
5. Top Housing
6. Bottom Housing



2.1 Remove hand controls crew



2.2 Remove hand controller



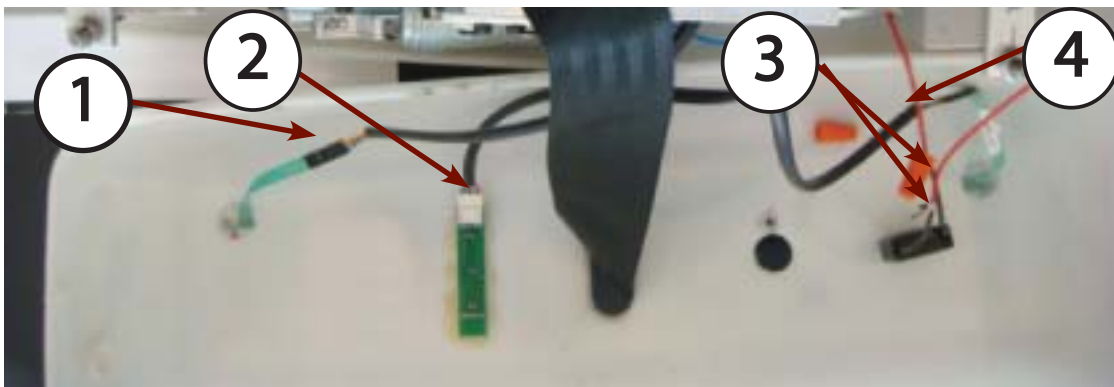
2.3 Remove housing screws (4)



2.4 Turn unit over to remove Bottom Cover

2.5 Remove all electrical connectors and remove the bottom cover.

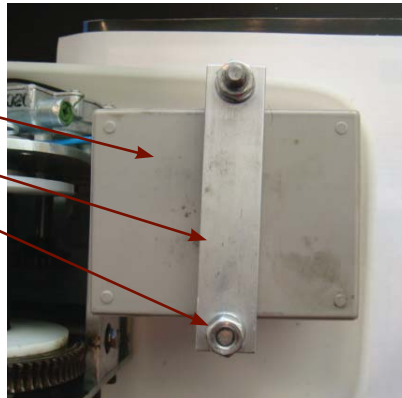
NOTE: This step is not necessary in most case. Refer to the specification section to determine if this step is required or not.



1. Up/Down connector
2. LEDs Display connector
3. Emergency Pull Cord connector
4. Power/ Emergency Down connector

SECTION 3: TO REPLACE BATTERY

1. Battery
2. Bracket
3. Securing Nuts



3.1 Remove bottom cover per instructions in section 2.1-2.4 **DO NOT** disconnect cables attached to the bottom cover



3.2 Remove one nut



3.3 Loosen other nut and rotate the bracket 90 degree



3.4 Remove battery and flip it over



3.5 Transfer the terminal from old battery to the new battery as followings:
BLUE: - NEGATIVE terminal (BLACK)
RED - POSITIVE terminal (RED)



3.6 Flip battery and fasten both nuts.

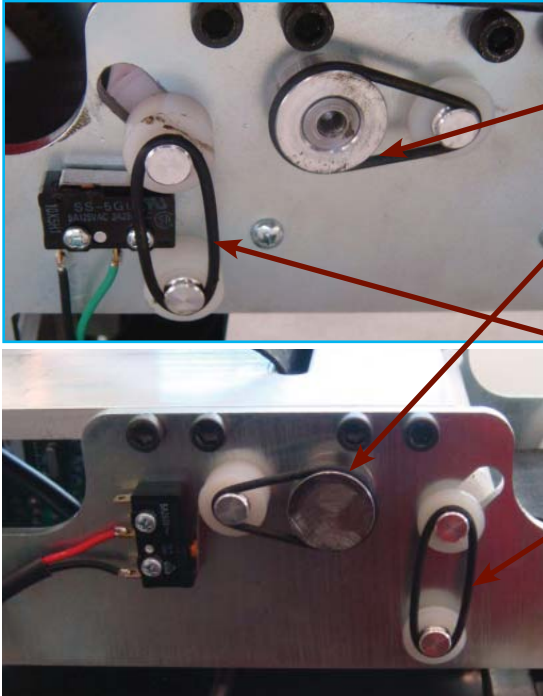
3.7 Repeat step 3.2 - 3.6 for the other battery

SECTION 4: TO REPLACE O-RINGS

Notes:

Before handling replacement O-ring, be sure your hands are free of grease or oil.

It is recommended O-rings be replaced every 6 months



O-ring (00-500-199 Ø.739 x .070) for
Upper Limit Switch

O-ring (00-500-463 Ø.801 x .070) for
Lower Limit Switch

4.1 Remove bottom cover per instructions in section 2.1-2.4
DO NOT disconnect cables attached to the bottom cover

4.2 Remove old O-rings and replace with new ones as shown
above

NOTES:

O-RINGS FOR THE LOWER LIMIT SWITCHES ARE SLIGHTLY LARGER THAN THE ONES
FOR THE UPPER LIMIT SWITCHES

CAUTION:

Check the tightness of each O-ring after installation to ensure the proper size O-ring has been used.
Installation of wrong size O-rings could cause serious malfunction of the lift and potentially cause injury.

SECTION 5: TO REMOVE CARRY BAR



**Carry Bar for all models
except RTB 1015-70**



5.1 Remove C-Clip



5.2 Remove cover



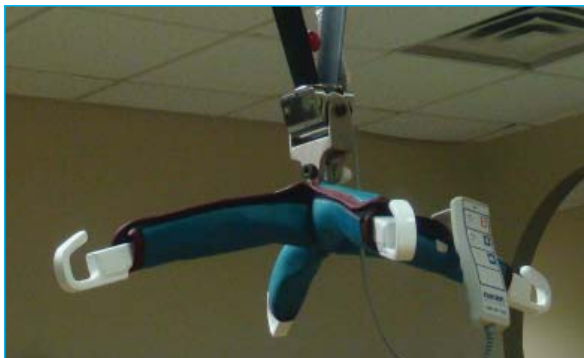
5.3 Push center HUB down



5.4 Remove center dowel pin



5.5 Remove strap



Carry Bar for RTB 1015-70



5.5 Remove securing nuts
and pin to remove carry bar

SECTION 6: TO REPLACE STRAP

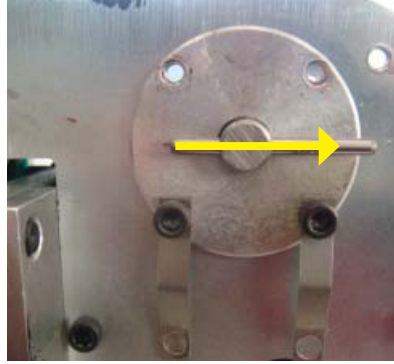
6.1 Remove motor from track per SECTION 1. Using the handset, unwind the belt to its full length.

6.2 Remove Bottom Cover per SECTION 2

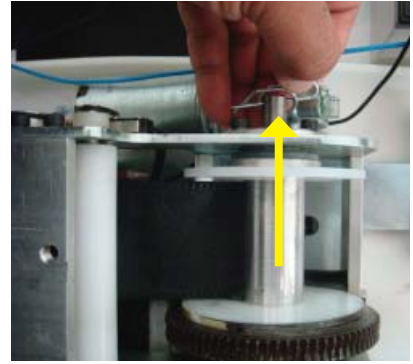
6.3 Remove Carry Bar per SECTION 5



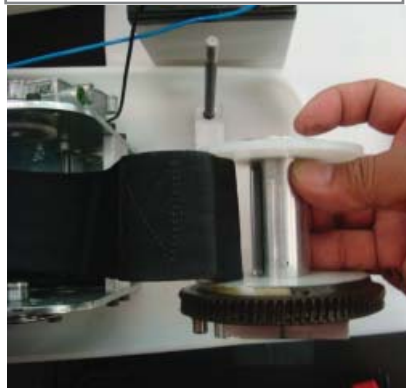
6.4 Remove all 4 screws and bridges to remove pin



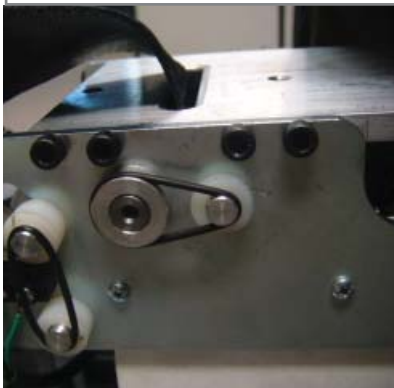
6.5 Slide pin away from shaft



6.6 Pull center pin out



6.7 Remove strap by pulling it away from the wheel



6.8 Remove bottom plate by removing 8 screws (4 on each side)



6.9 Remove both O-rings for the upper limit switch pin and pull out pin and roller.

6.10 Removing strap and replace with new strap

6.11 Follow steps 6.1 through 6.9 in reverse order to put strap back in. Ensure to engage the emergency break before placing the spool back into the assembly.



SECTION 7: TO REPLACE CONTROL BOARD

CAUTION:

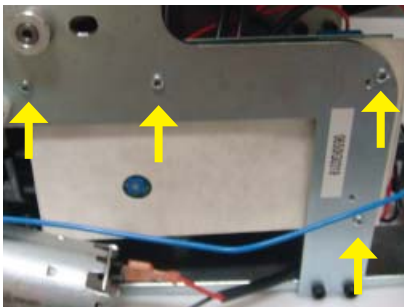
ESD (electrostatic discharge) protection is required before handling the control board to prevent damage to sensitive devices

7.1 Remove motor from the track per SECTION 1.

7.2 Remove Bottom Cover per SECTION 2. Disconnect all cables to cover. Disconnect the cable to the battery per SECTION 3.5

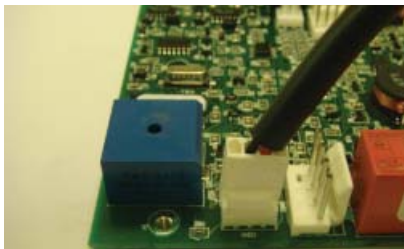
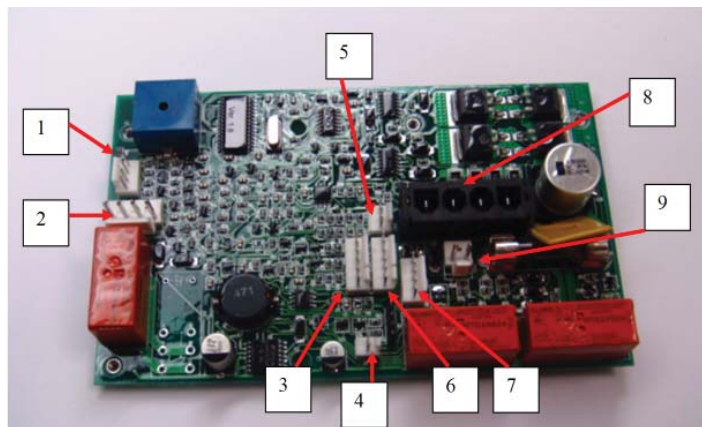
7.3 Remove Bottom Plate per SECTION 6.8

7.4 Remove upper limit switch roller per SECTION 6.9



7.5 Remove 4 control board screws

7.6 Remove control board and remove all connectors



7.7 Hand Control connector
(Connector #1 - 4 pins)



7.8 Traversing Motor
(Connector #2 - 4 pins)



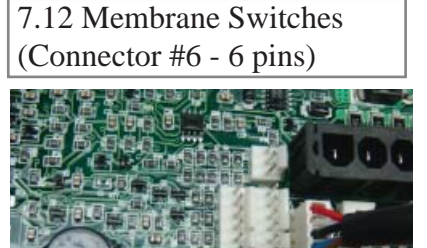
7.9 Hand Control connector
(Connector #3 - 6 pins)



7.10 Hour Meter
(Connector #4 - 2 pins)



7.11 Limit Switches
(Connector #5 - 3 pins)

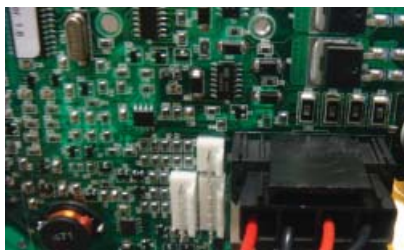
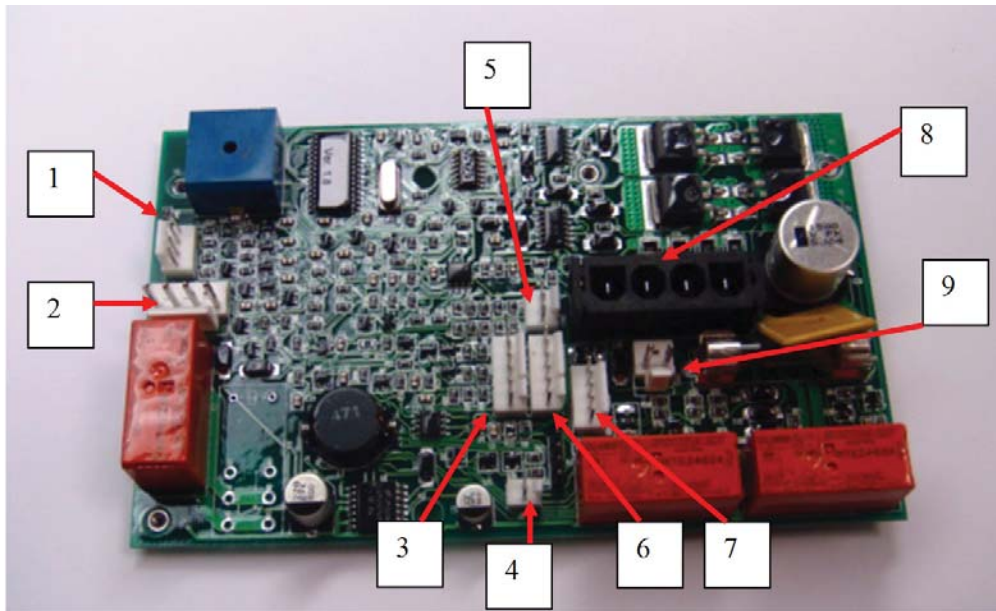


7.12 Membrane Switches
(Connector #6 - 6 pins)

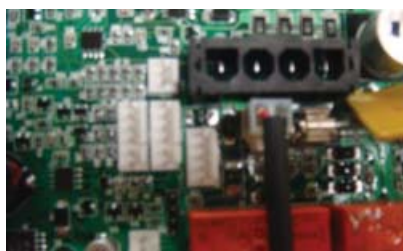


7.13 Main Housing LEDs
(Connector #7 - 5 pins)

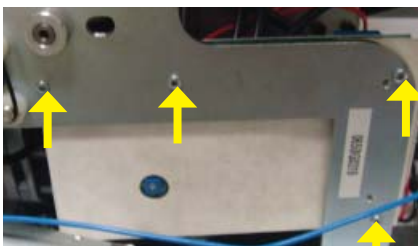
SECTION 7: TO REPLACE CONTROL BOARD (Continued)



7.14 Main Motor
(Connector #8 - 4 pins)



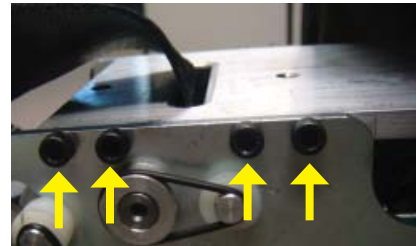
7.15 Charger Connector
(Connector #9 - 2 pins)



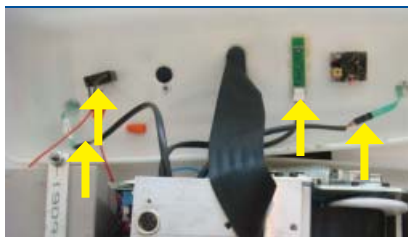
7.16 Fasten control board to
the chassis with 4 screws



7.17 Reinstall the upper limit
switch roller and O-ring



7.18 Reinstall bottom plate
with 8 screws (4 on each side)



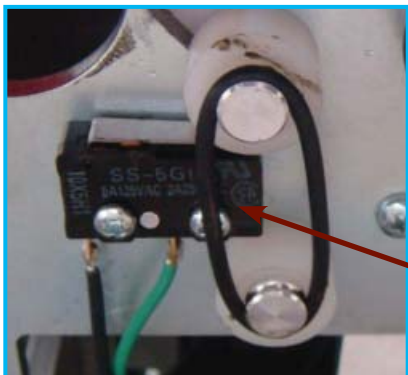
7.19 Re-connect the cables to
the bottom cover

7.20 Follow step 2.1 through
2.3 in reverse order to fasten
cover.

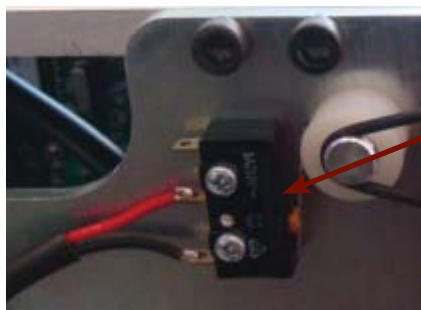
SECTION 8: TO REPLACE LIMIT SWITCH

CAUTION

ESD (electrostatic discharge) protection is required before handle the control board to help prevent damage to sensitive devices



LOWER LIMIT SWITCH



UPPER LIMIT SWITCH

8.1 Remove motor from the track per SECTION 1.

8.2 Remove Bottom Cover per SECTION 2. Disconnect all cables to cover. Disconnect the cable to the battery per SECTION 3.5

8.3 Remove screws (2) that fasten the limit switch to the chassis

8.4 Install the new switch and fasten the screws to secure the switch

8.5

SECTION 9: TO REPLACE MEMBRANE SWITCH

9.1 Remove motor from the track per SECTION 1.

9.2 Remove Bottom Cover per SECTION 2 (disconnect all cables to cover)



UP / DOWN MEMBRANE
SWITCH

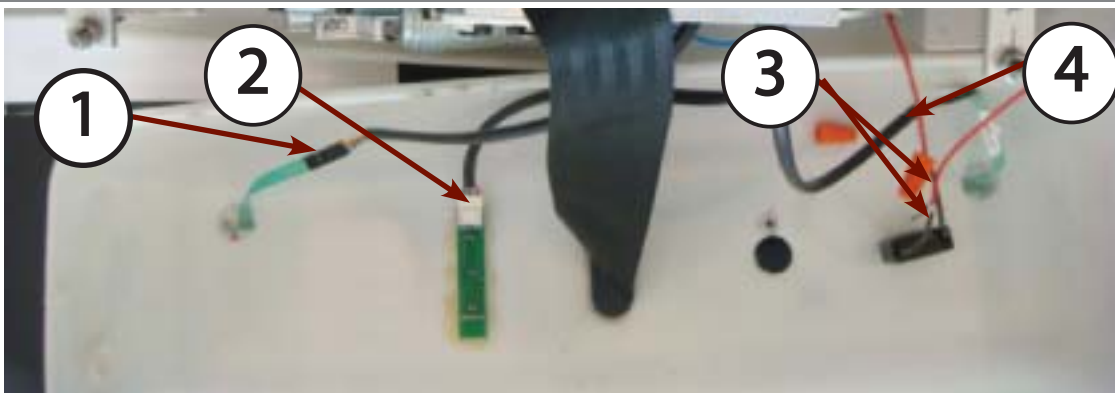
POWER / EMERGENCY
DOWN SWITCH

9.3 Remove the desire switch by peeling away from cover.

9.4 Install new switch by peeling the back adhesive away and place the switch in the original location

9.5 Re-connect all of the Cables per diagram below

9.6 Follow steps 2.1 through 2.4 in reverse order to put bottom cover back in.



1. Up/Down connector
2. LEDs Display connector
3. Emergency Pull Cord connector
4. Power/ Emergency Down connector

SECTION 10: TO REPLACE EMERGENCY STOP SWITCH

10.1 Remove motor from the track per SECTION 1.

10.2 Remove Bottom Cover per SECTION 2 (disconnect all cables to cover)



10.3 Remove the knob by loosen knot at the end.



10.4 Remove the fastener on the switch



10.5 Remove the switch from the other side by rotating the switch counter clockwise.

10.5 Replacing the switch and reverse steps 10.1 to 10.5 to install new part

SECTION 11: INSTALL EMERGENCY PULL CORD



BEFORE



11.1 Remove existing hardware



AFTER



11.2 Install the emergency pull cord ball chain connector to the ball chain on the switch. Use pliers to crimp the two parts together.

SECTION 12: TO REPLACE TRAVERSE CHAIN

12.1 Perform step 6.1 to 6.6 (SECTION 6 - REPLACE STRAP)



12.2 Assemble the chain to a complete loop

12.2 Drop the chain on top of the traverse gear through the top housing



12.3 Flip the unit over to remove the traverse wheel on the trolley. Ensure that the chain does not fall through the housing by putting tape on it. Remove the wheel and bearing on one side of the trolley and pull the assembly away

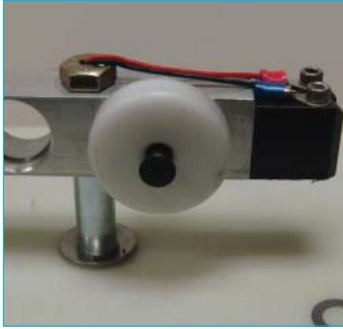


12.4 Install the chain over the Trolley wheel and ensure full engagement. Reinstall the trolley wheels and bearing

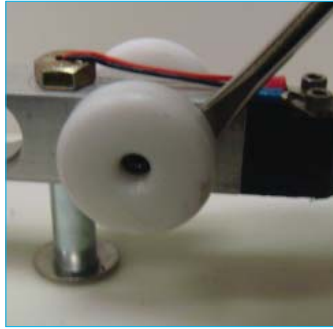
10.5 Following step 6.1 to 6.6 in reverse to put unit back together

SECTION 13: TO REPLACE TROLLEY WHEELS

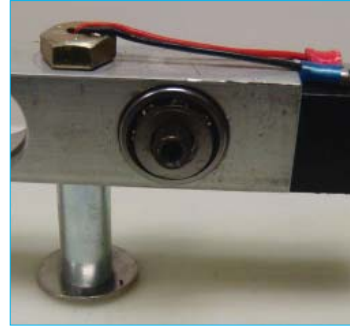
13.1 Remove motor from track per SECTION 1



13.2 Remove the screw



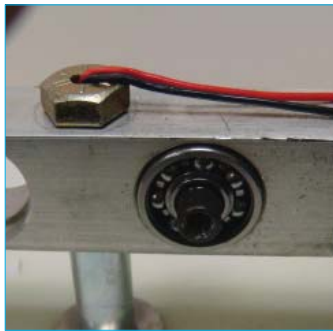
13.3 Remove the wheel



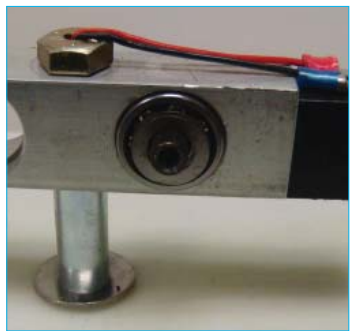
13.4 Remove the washer and bearing



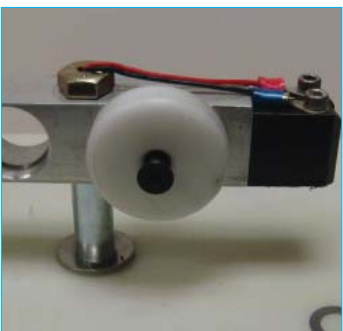
13.5 Remove the bearing and shaft



13.6 Install new bearings and shaft



13.7 Install washers(2) washer and bearing



13.8 Install new wheels and fasten the screws. Ensure to apply locktite to the screws before the installation.

APPENDIX A: PREVENTATIVE MAINTENANCE - CONTINUED

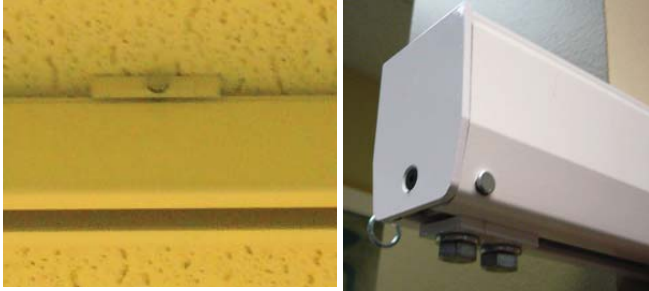
A1 - CHECK LIST PRIOR TO EACH USAGE

- Check lift strap, make sure there is no fraying (See SECTION 6 for Service Instructions)
- Check all Strap stitching (See SECTION 6 for Service Instructions)
- Visual inspect to ensure there is no damage to lift or carry bar
- Listen to ensure that lift is not making any unusual sounds when in use
- Be sure that all end stops are installed and secured at every track end
- Visual inspect to ensure that the lift is getting charged from charger - Amber light should come on while in Charging position.
- Visual inspect to ensure that all end stops are installed and secured at every track end

APPENDIX A: PREVENTATIVE MAINTENANCE - CONTINUED

A2 - CHECK LIST FOR QUARTERLY MAINTENANCE

- Complete the entire visual inspection in Section A.1
- Check that all brackets holding track are secured and do not move



- Check that all bracket bolts are tightened to 5 ft/lb
- Check that all endstops bolts are tightened to 25 ft/lb (two bolts per end stop)
- The lift should move freely and traverse entire length of track system

- All O-rings (4) should be inspected and replaced if there are any signs of brittleness or stretching. It is recommended to change O-rings every 6 months regardless of their condition. O-rings are subject to ambient air condition, temperature, frequency of use, etc. ; all of which may affect life expectancy. Indicators of O-ring issues are:

- If slackening of belt does not immediately engage lower limit switch
- If fully wound belt does not immediately engage upper limit switch. (Refer SECTION 8)

CHECK FUNCTION UPPER LIMIT SWITCH

- Using the handset, check the function of the Upper Limit Switch (Refer to SECTION 8) by winding in the belt fully, thereby activating the Upper Limit Switch. If the switch does not shut down the unit, change both O-rings and repeat this procedure. In the event the switch still does not activate, the metal arm of the switch can be adjusted slightly in order to make better contact with the roller. To adjust: bend the metal arm out slightly using a pair of needle -nose pliers. (Refer to SECTION 8)

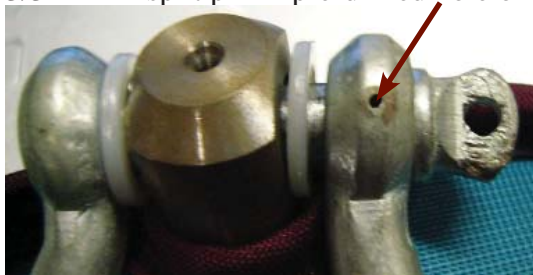
CHECK FUNCTION LOWER LIMIT SWITCH

- Check the function of the Lower Limit Switch (Refer to SECTION 8) by using the down button on the hand control to unwind the belt. While the belt is unwinding under weight of the CARRY BAR, grab the CARRY BAR with your free hand allowing the belt to slacken. The strap should cease to unwind. If the belt continues to unwind, check the O-rings on the Lower Limit Switch and replace if necessary. Alternately, check to ensure the roller (the O-ring is attached to this roller) moves freely in the slot on the side plate. If necessary, clean / remove any debris in this area.

APPENDIX A: PREVENTATIVE MAINTENANCE - CONTINUED

A3 - CHECK LIST FOR SEMI-ANNUAL MAINTENANCE

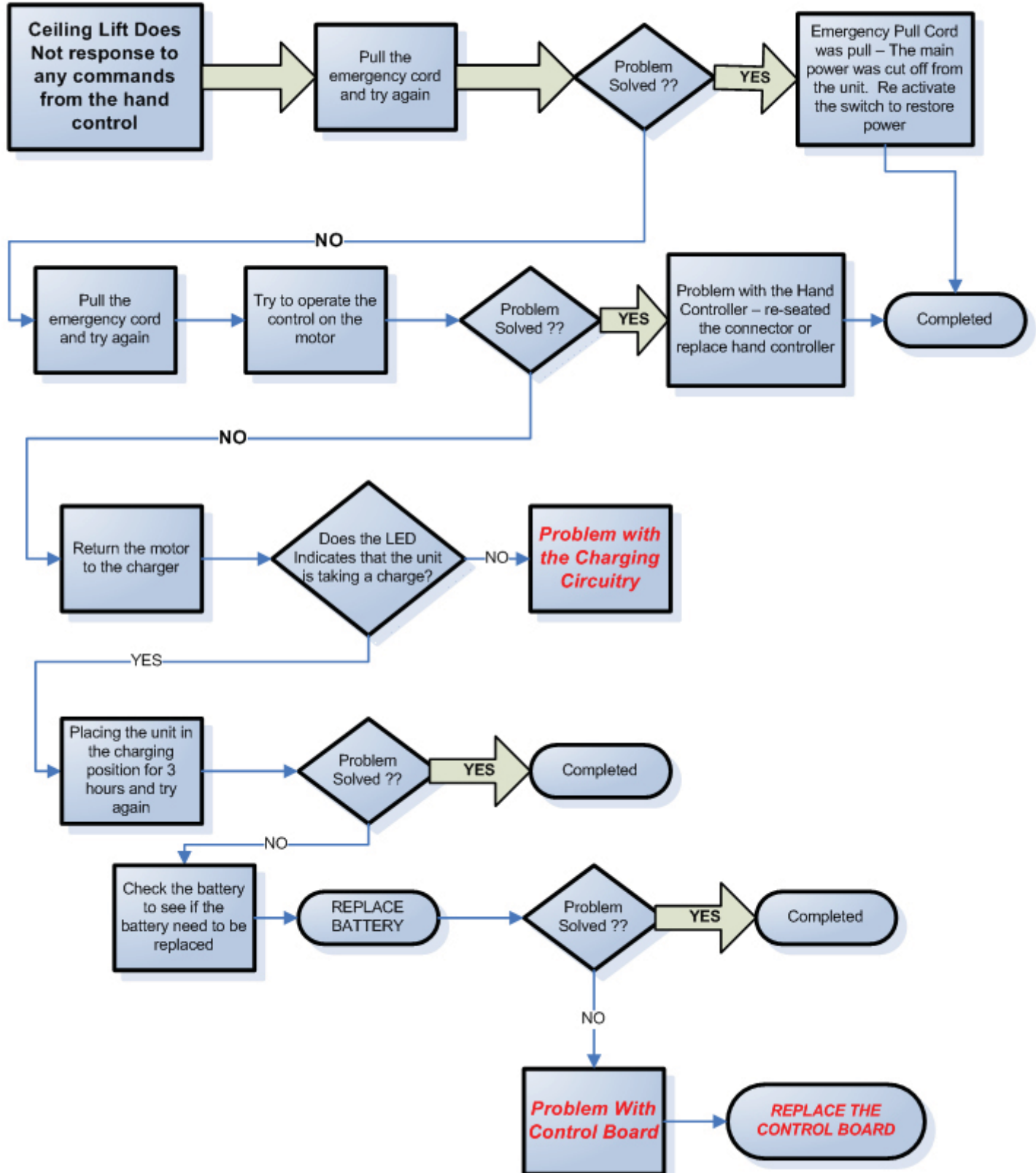
- Complete all steps noted above in section A.1 AND A.2.
- Remove track lift from track and place it on a clean and flat surface. (SEE SECTION 1)
- Remove cover of the ceiling lift by removing all four nylon screws. (SEE SECTION 2). As you separate the cover from the lift chassis, you will need to unplug the connector to the cover mounted electronics.
- Engage the Emergency Lowering on the lift unit. The belt should unwind and a high-pitched sound should be heard within the lift casing. If there is no sound, then there is likely an issue with the PC Control Board. If this is the case, REPLACE PC BOARD per SECTION 7.
- Check that all other buttons and switches on the lift and the handset function properly.
- Inspect the shackle at the top of the carry bar to ensure the split pin is still in place. If not, insert a 3/32" x 1" split pin in pre-drilled hole on shackle.



- Using the Up and Down buttons, on the handset, move the Carry Bar in both directions and check for smooth descent & ascent of belt. If vibration of lift is deemed excessive, then contact Barton Medical.
- Examine the strap for any fraying or broken stitching. In the event of either being present, change the belt using the procedure in SECTION 6:
- Inspect all hardware fasteners on unit to ensure they are secured tightly. Hand tightens if required.
- Visually inspect for uneven wear around the motor and gear parts. Should excessive wear be evident contact the Barton Medical at 1-877-8-BARTON
- Reinstall the cover.

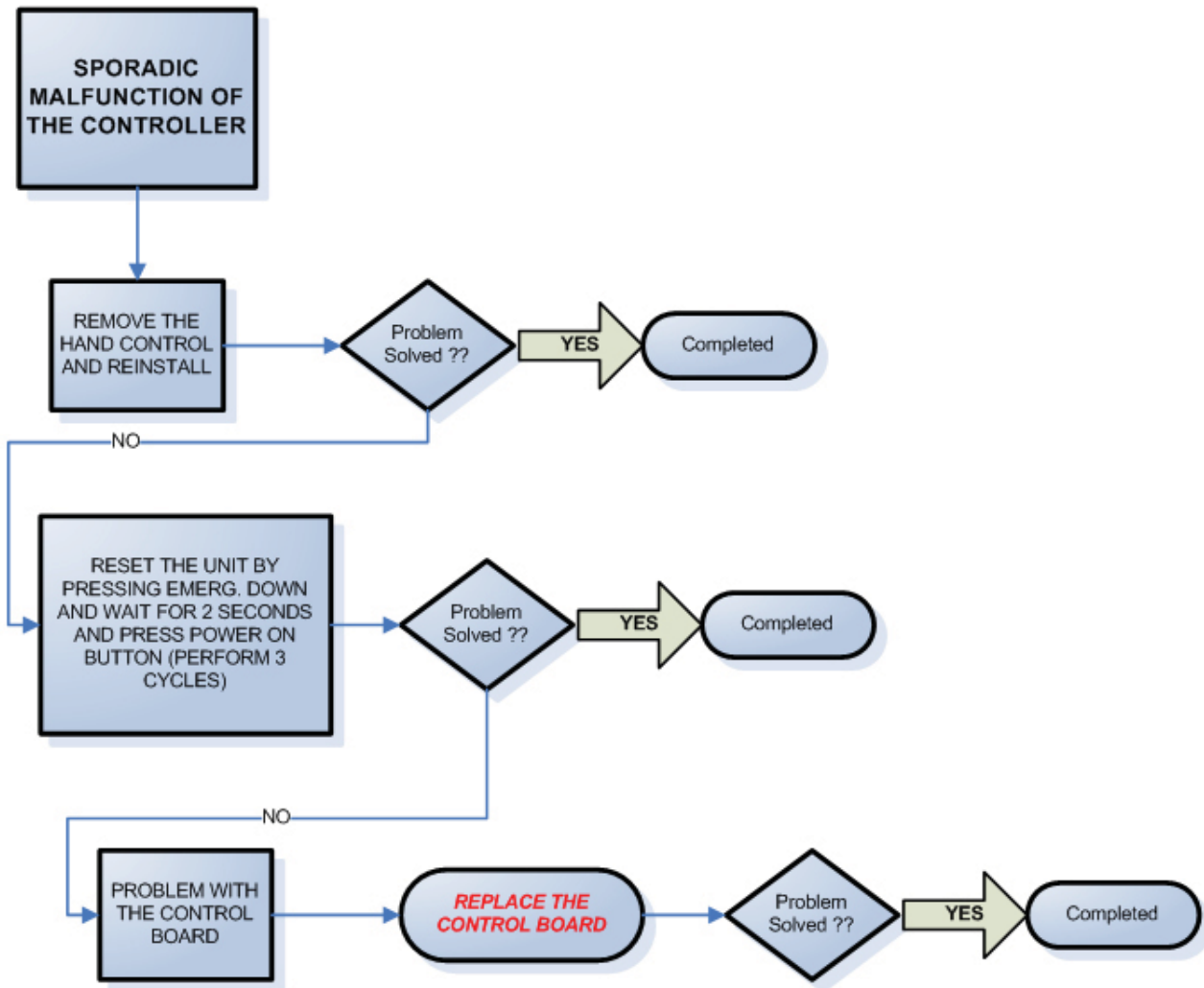
CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

NO RESPONSE TO ANY COMMANDS FROM HAND CONTROL



CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

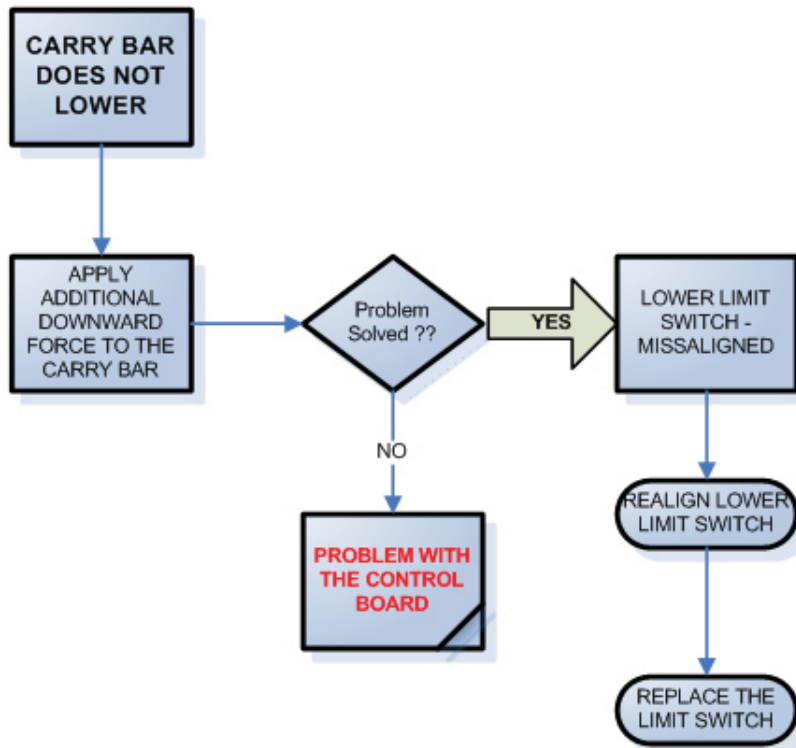
SPORADIC MALFUNCTION OF THE CONTROLLER



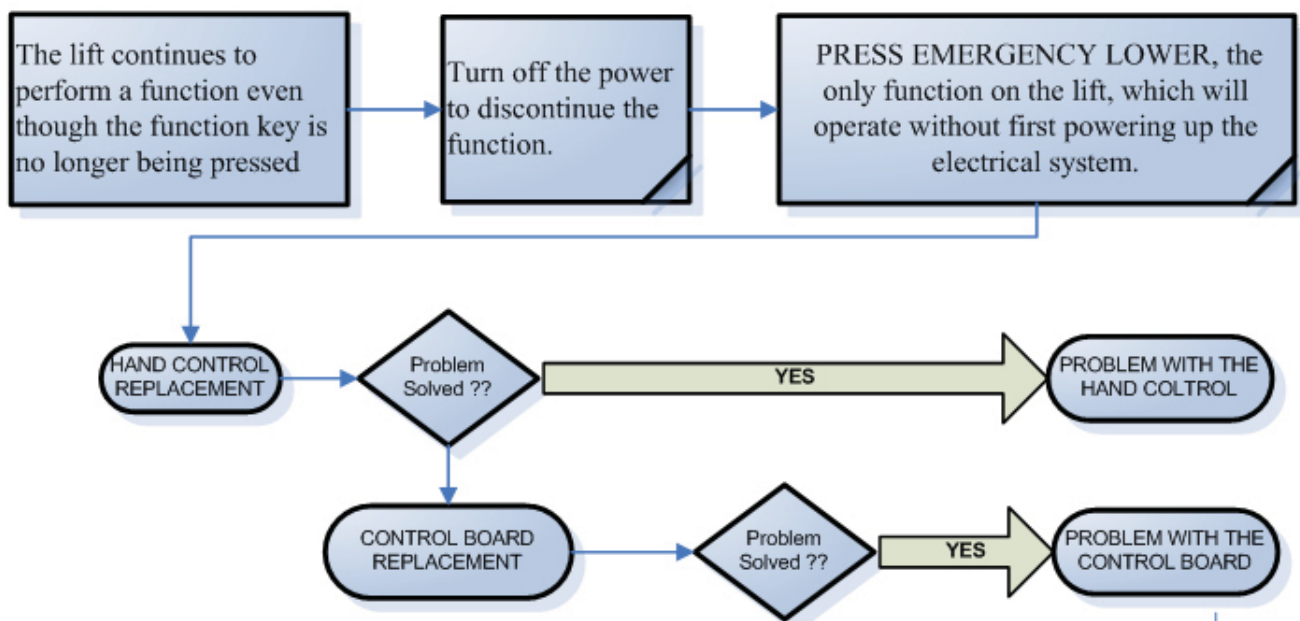
APPENDIX B: TROUBLE SHOOTING - CONTINUED

CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

CARRY BAR DOES NOT LOWER

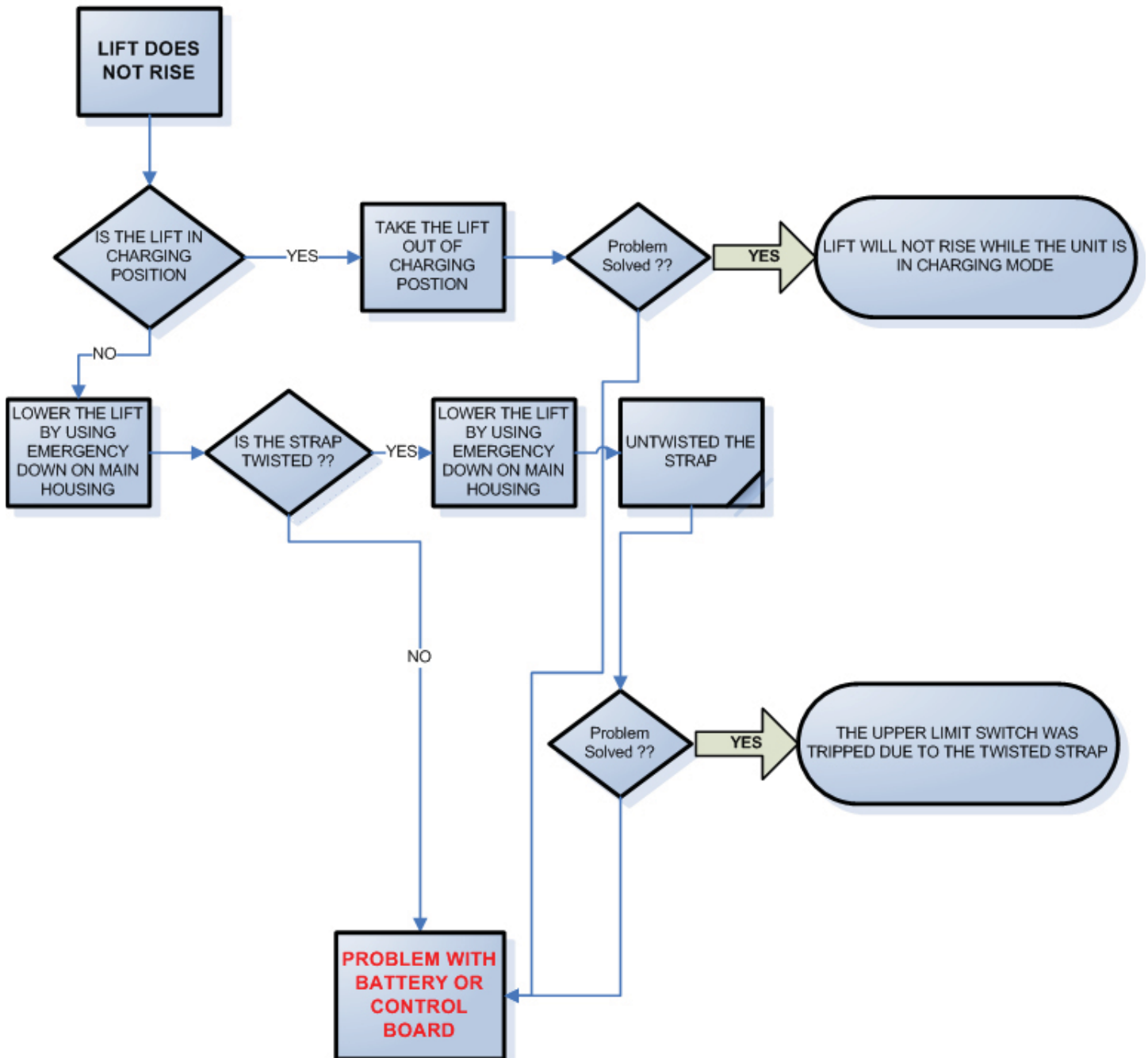


Lift continues to perform a function even though the function key is no longer being pressed



CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

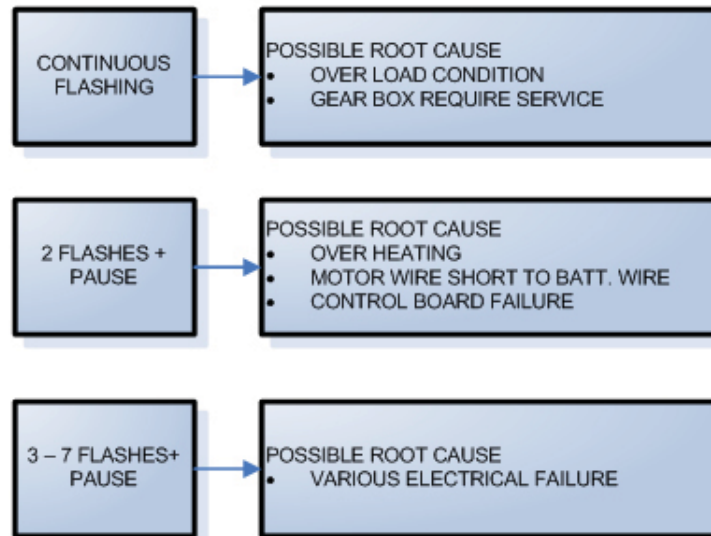
CEILING LIFT DOES NOT RISE



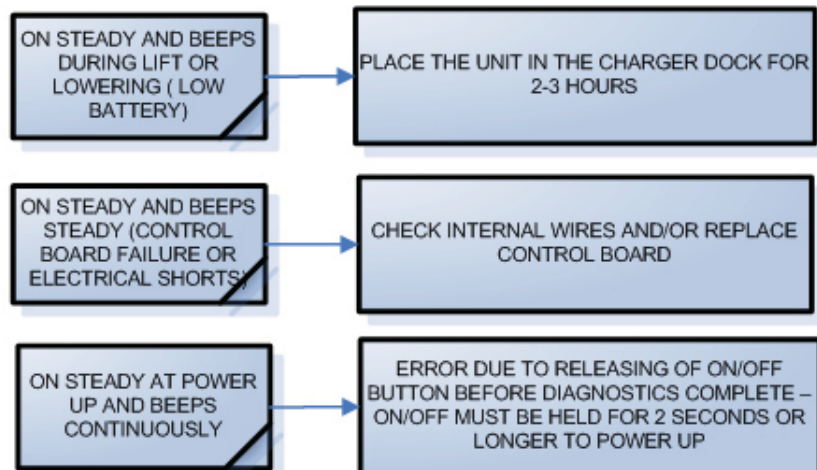
CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

LED (DIAGNOSTICS) ACTIVATED

BLINKING LEDs

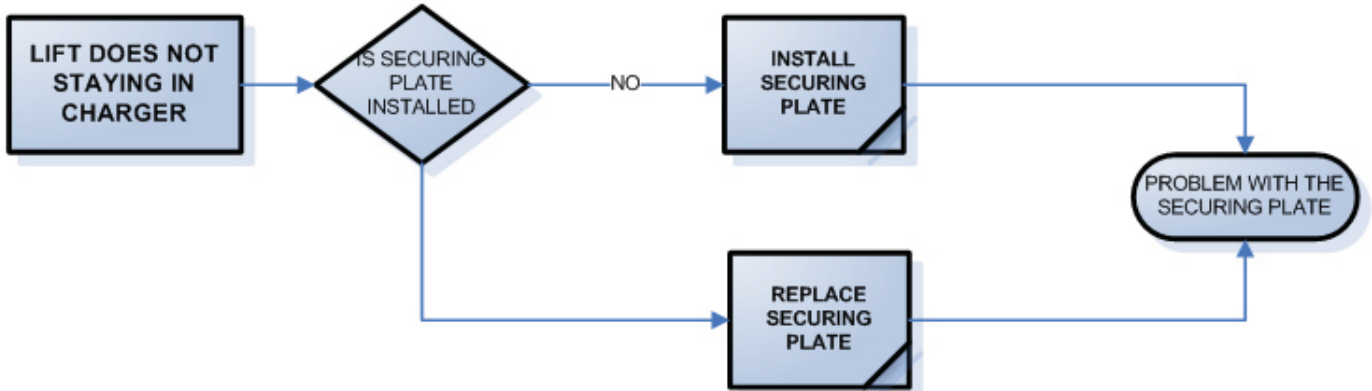


STEADY -ON LEDs

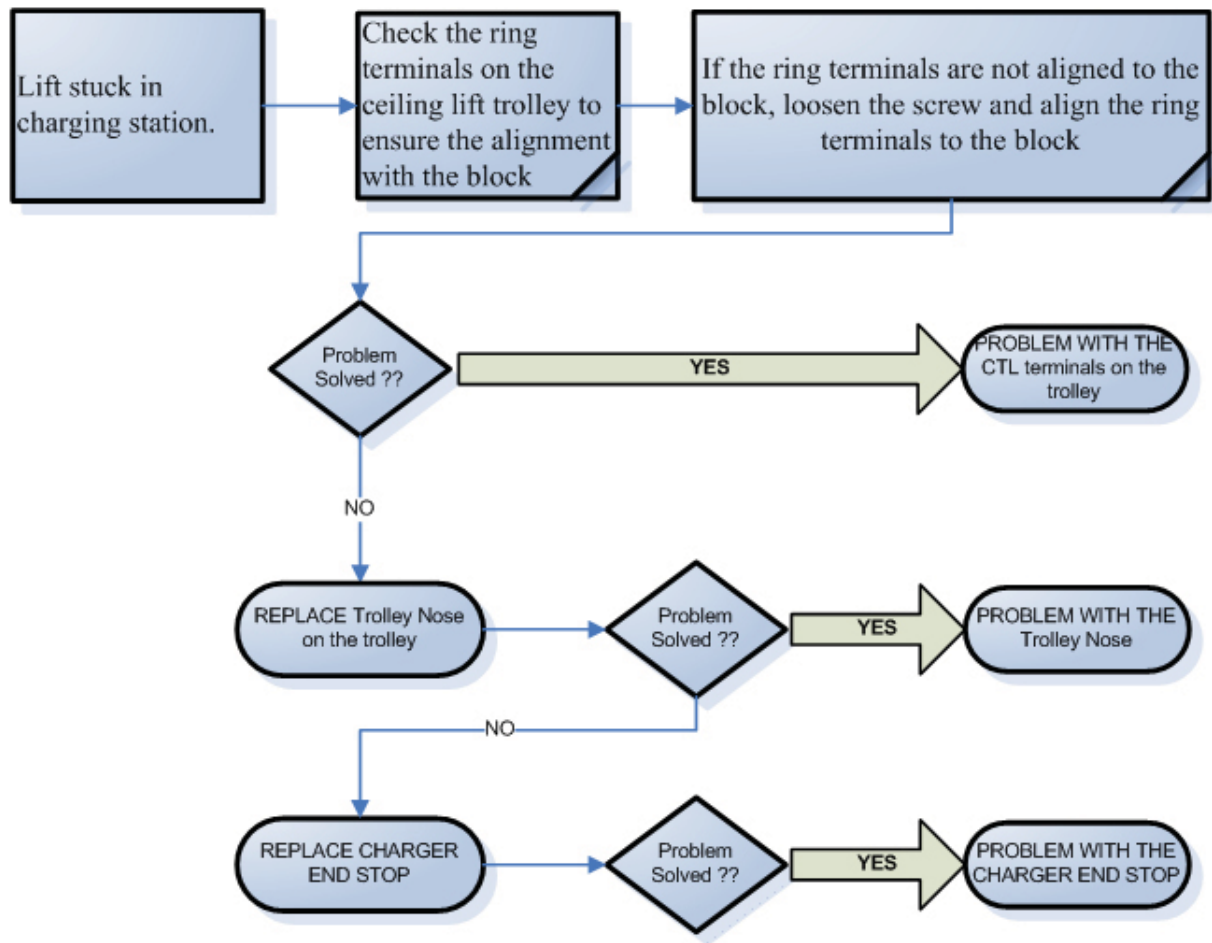


CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

LIFT DOES NOT STAYING IN CHARGING STATION (OT MODEL)

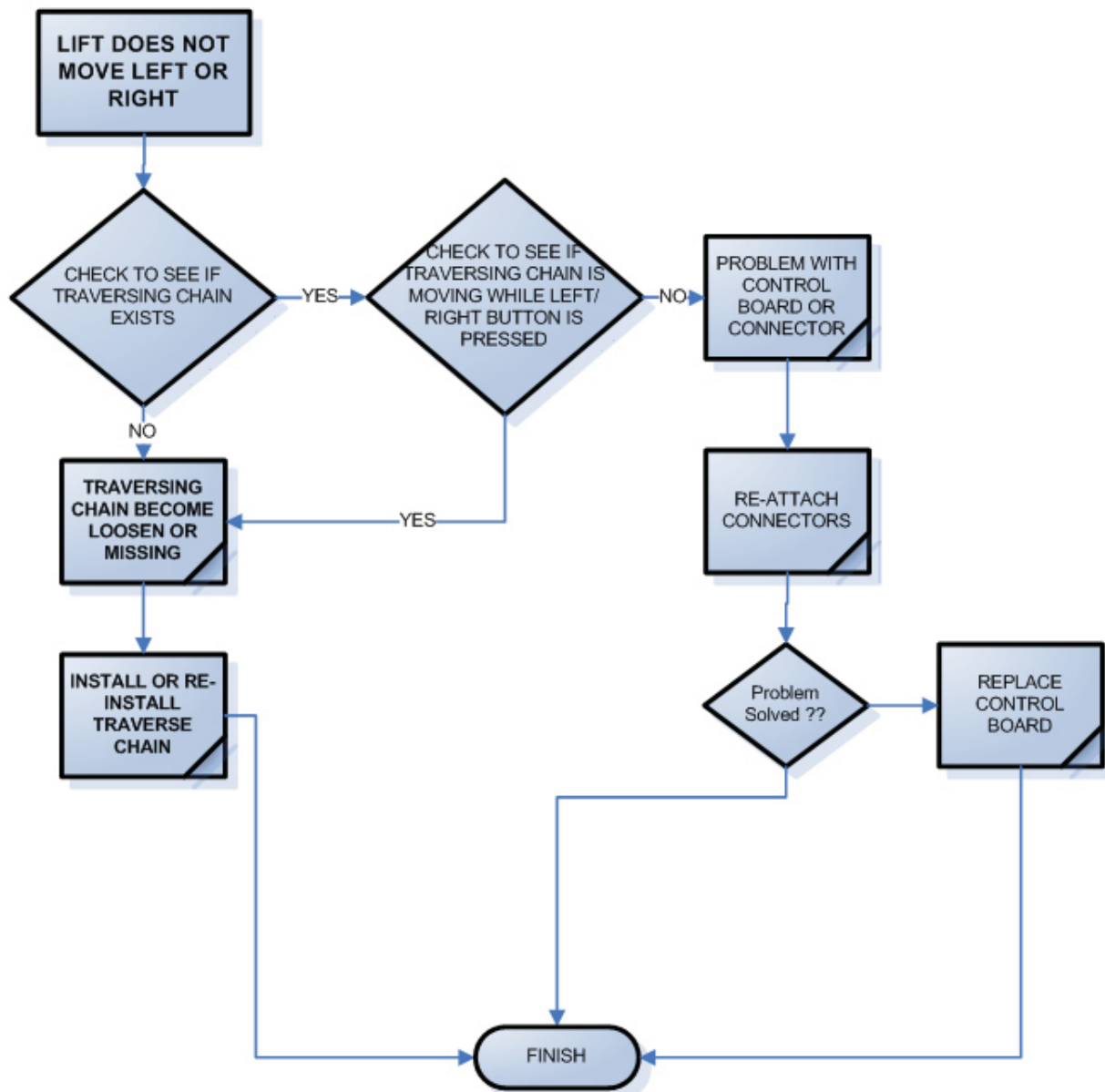


Lift stuck in charging station (Return to Charge Model)



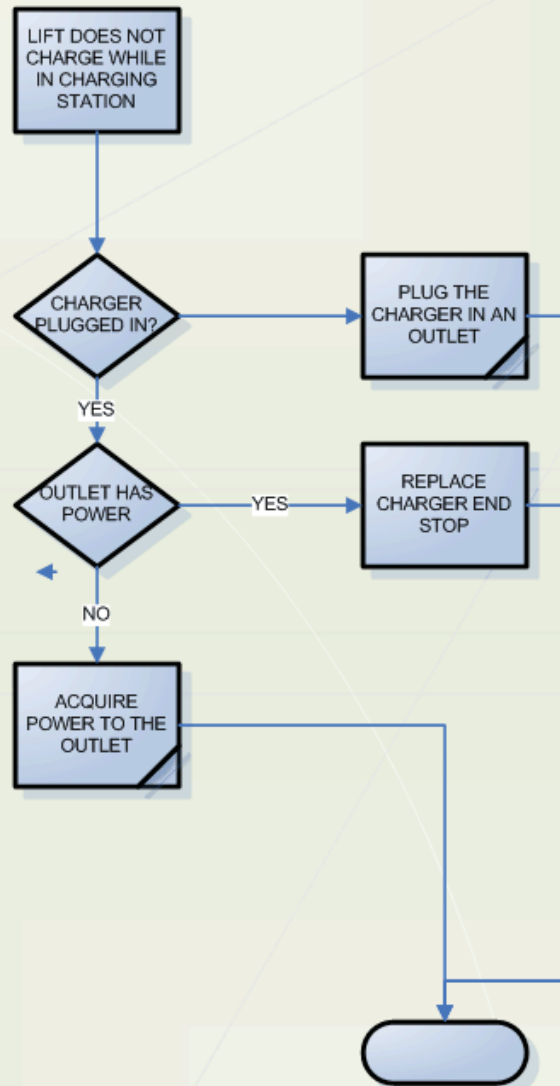
CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

CEILING LIFT DOES NOT MOVE LEFT OR RIGHT



CEILING TRACK LIFT TROUBLE SHOOTING GUIDE

CEILING LIFT DOES NOT CHARGING IN DOCKING STATION



APPENDIX C : PARTS LIST

Part Number	Description	QTY	Unit
101-543	COTTER PIN, [RING type]-(PKG.100)	1	ea
102-615	PULL CHAIN SWITCH - EMER.STOP.	1	ea
102-615	EMERGENCY STOP SWITCH	1	ea
102-621	Bearing MR 688, [650 lift] (4 per lift)	4	ea
102-648	CLIP [CABLE], 3/16x3/8"[screw #8], NYLON	1	ea
102-661	Dowel PIN, 1/8 x 1-1/2, alloy.	1	ea
102-676	SCREW, 10-32x1/2", Rnd.Hd. NYLON.(minimum order 25 pieces)	1	ea
102-785	Pull Cord Ass'y - Emergency (Red)	1	ea
400-026	#6x1/2" TRUSS HEAD TAPPING SCREW	1	ea
500-031	OVERSPEED CAM	1	ea
500-035	SWITCH PIN (3 pcs. per lift)	1	ea
500-042	SPROCKET	1	ea
500-052	SWITCH PIN (3 pcs. per lift)	3	ea
500-071	MEMBRANE SWITCHES (Set of 2)	1	ea
500-074	PCB - MAIN CTRL - OPERATOR TRAVERSE	1	ea
500-076	PCB - LED CTRL'R	1	ea
500-085	WASHER_Thrust [CL carrybar]	1	ea
500-148	SPRING-OVERSPEED TENSION	1	ea
500-199	O-RING Ø.739 x .070 (minimum order 25 pieces)	1	ea
500-226	BATTERY - 12v 4.0Ah	1	ea
500-268	CHAIN - ¼" PITCH	0.833	ft
500-269	CHAIN CONNECTOR LINK - ¼" PITCH	1	ea
500-320	WIRE HARNESS - POWER	1	ea
500-325	WIRE HARNESS - LOWER LIMIT SWITCH	1	ea
500-445	WIRE HARNESS - UPPER LIMIT SWITCH	1	ea
500-463	O-RING Ø.801 x .070 (minimum order 25 pieces)	1	ea
500-510	PCB - MAIN CTRL'R w/ RTC TRAVERSE	1	ea
500-542	650 GUIDE, alum. [Bearing Bar]	1	ea
500-543	650 Bearing Bar	1	ea
500-548	650 Roller [Lower Limit Switch]	1	ea
500-561	650 Strap ROLLER [steel]	1	ea
500-601	SECURING PLATE, CHARGER END STOP	1	ea
500-604	ENDSTOP KIT (PIN, RING, AND CAP SCREW	1	ea
500-605	CHARGER END STOP KIT	1	ea
500-613	Battery - 12V 5Ah AGM replacement battery	1	ea
550-003	STRAP - FIXED ASSY	1	ea
550-005	Wheel Sub-ASSY [4wh.trolley]	1	ea
550-015	CHARGER ENDSTOP SUB-ASSY	1	ea
550-020	Wheel [power] Sub-ASSY [4wh.trolley]	1	ea
500-024	TROLLEY NOSE - FIXED	1	ea
RT-120-10	Endstop - Standard	1	ea
RT-120-30	Endcap - Readytrack	1	ea
RT-120-30	Endcap - Readytrack	1	ea
RT-120-31	Endcap for double rack	1	ea
RT-120-32	Endcap - Readytrack Charger	1	ea
RT-120-32	Endcap - Readytrack Charger	1	ea
RT-120-33	Endcap - Readyspan Charger	1	ea
RT-400-10	4-BUTTON STD H'CTRL	1	ea
RT-410-10	6-BUTTON STD H'CTRL [PT]	1	ea
RT-415-10	6-BUTTON STD H'CTRL [RTC]	1	ea
CTL5000	Hardware kit (Miscellaneous screws, washers, Kit includes 25 each)	1	ea