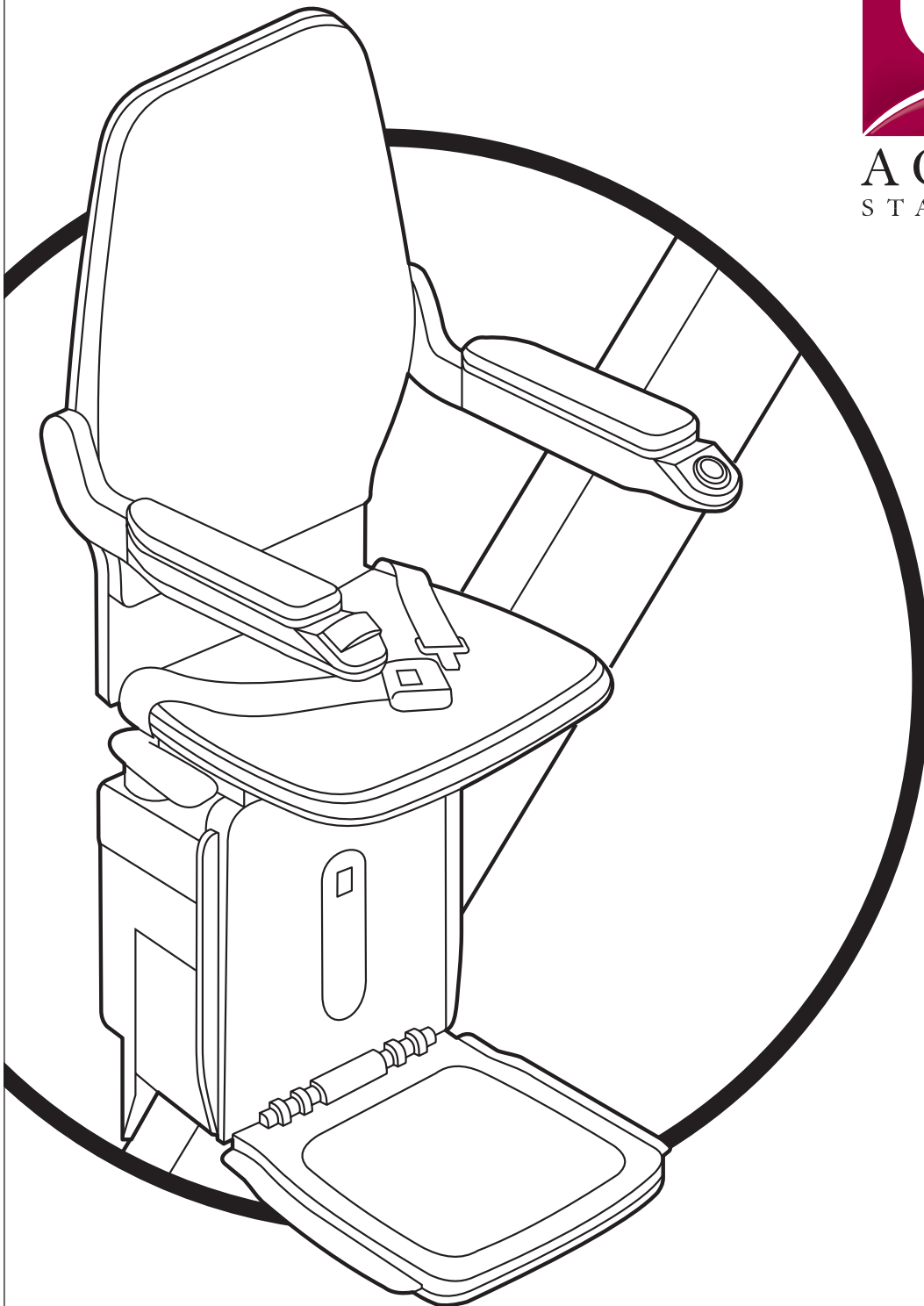


ACORN  
STAIRLIFTS



# Acorn 80

## Maintenance & Service Manual

<b>1 Introduction</b>	<b>4</b>
1.1 Conventions	5
1.2 Safety	5
1.3 Manufacturer	5
1.4 Copyright	5
1.5 Lift Identification & CE Marking	5
1.6 Designed Usage	6
1.7 Standard Acorn 80 Specification	6
1.7.1 Rail Options	6
1.7.2 Lift Options	7
1.7.3 Seat Options	7
<b>2 Description Of Operation</b>	<b>8</b>
2.1 General Arrangement	8
2.2 Carriage Operation	9
2.2.1 Vertical Bends	10
2.2.2 Horizontal Bends	10
2.3 Safety Features	11
<b>3 Operating Instructions</b>	<b>12</b>
3.1 Carriage Hand Winding	12
<b>4 Installation &amp; De-Installation</b>	<b>12</b>
<b>5 Servicing</b>	<b>13</b>
5.1 Training	13
5.2 Safety Procedures	13
5.3 Service Checklist	13
<b>6 Testing &amp; Setting</b>	<b>14</b>
6.1 Diagnostic Display	14
6.1.1 Normal Operation	14
6.1.2 Programming Modes	15
6.1.3 Fault Conditions	15
6.1.4 Information Labels	15
6.2 Levelling Potentionmeter	16
6.3 Programming	16
6.3.1 Programming Summary	16
6.3.2 Pre-power Up Checks	17
6.3.3 Power Up Sequence	17
6.3.4 Calibrating The Levelling	17
6.3.5 Programming The Top Terminal limit	17
6.3.6 Programming The Rail	18
6.3.7 Programming The Bottom Terminal limit	18
6.3.8 Setting Up	19
6.3.9 Setting Lift Speeds	20
6.3.10 Bottom Parking	21
6.3.11 Hinge Zone	21
6.3.12 Intermediate/Park Charge Point	22
6.3.13 Intermediate/Landing Charge Point	22
6.3.14 Checking The Program	22
6.3.15 Amending The Program	23
6.3.16 Programming The Hinge Zone	23
6.3.17 Programming Do's & Don'ts	23
6.4 Over-speed Governor (OSG)	24
6.4.1 Testing The OSG	24
6.4.2 Re-setting The OSG	24
6.5 Testing Batteries	27
<b>7 Dismantling Components</b>	<b>28</b>
7.1 Covers	28
7.1.1 Front Cover	28
7.1.2 Carriage Covers	28
7.2 Seat	29
7.2.1 Removal	29
7.2.2 Refitting A Seat	29
7.3 Footrest	30
7.3.1 Removal	30

7.3 Footrest	30
7.3.2 Replacement	30
7.3.3 Footrest PSE Board Replacement	30
7.4 Batteries	31
7.4.1 Removal & Fitting	31
7.5 Printed Circuit Board (PCB)	32
7.5.1 Removal & Fitting	32
7.5.2 Supercharger Systems	33
7.5.3 PCB Connections	35
7.6 Carriage	36
7.6.1 Transfer Rails	36
7.6.2 Carriage Removal	36
7.6.3 Carriage Dismantling	37
7.6.4 Removing Power & Levelling Bogies	38
7.6.5 Refitting Power & Levelling Bogies	38
7.6.6 Carriage PSE Switches	38
7.6.7 Refitting Carriage To Rail	39
7.7 Power Bogie	41
7.7.1 Main Components	41
7.7.2 Dismantling Rollers & Pinion	42
7.7.3 Reassembling Rollers & Pinion	42
7.7.4 Drive Motor Removal / Replacement	43
7.8 OSG Instructions	44
7.8.1 OSG Exploded Diagram	44
7.8.2 Checking The OSG	44
7.8.3 OSG Re-setting Procedure	45
7.8.4 OSG Removal & Refitting Procedure	47
7.8.5 Main Components	52
7.8.6 Levelling Drive Unit	54
7.8.7 Levelling Guide Rails	55
7.8.8 Rollers	55
<b>8 Spares</b>	<b>56</b>
<b>Appendices</b>	<b>57</b>
Appendix 1 - Service Checklist	57
Appendix 2 - Recommended Tool List	58
Appendix 3 - Recommended Torque Settings	59
Appendix 4 - Recommended Lubricants	60
Appendix 5 - Diagnostic Display	61
Appendix 6 - Remote Control Radio Channels	62
Appendix 7 - Levelling and Main Drive Encoder Testing	63
Appendix 8 - Charge System	66
Appendix 9 - Wiring Diagrams	67
Appendix 10 - Rationalisation Procedures	68
10.1 Changing Hand Of Seat	68
10.2 Replacing Seat Spacer On-site	70
10.3 Assembly Of Powered Swivel On-site	73
10.4 Connecting Supercharger Link	78
10.5 Replacing Seat Adapter Plate On-site	80
10.6 Replacing Carriage Front Cover / Arm Harness	84
10.7 Replacing On / Off Switch With Blanking Plate	88
10.8 Replacing Back Cover On / Off Switch With Blanking Plate	92
10.9 Technical Drawings	95
10.9.1 530 Powered Swivel Seat Spacer Complete	95
10.9.2 550 Powered Swivel Seat Spacer Complete	96
10.9.3 580 Powered Swivel Seat Spacer Complete	97
10.9.4 530 Powered Swivel R/H Seat Spacer Complete	98
10.9.5 550 Powered Swivel R/H Seat Spacer Complete	99
10.9.6 580 Powered Swivel R/H Seat Spacer Complete	100
10.9.7 Carriage Front Cover Assembly	101
10.10 Seat Adaptor Plate Assembly Instructions	102
10.11 Seat Adaptor Plate Retro-fit Kit	104
Appendix 11 - Notes	106

# SECTION 1

## *Introduction*

# INTRODUCTION



This manual contains instructions for servicing and maintenance of the Acorn 80 Stairlift.

**It should be used in conjunction with these documents:**

Acorn 80 Survey Manual  
Acorn 80 Installation Manual  
Acorn 80 User Manual  
Product Price Guide  
Parts Price Guide

# SECTION 1

## Introduction

### 1.1 Conventions

Throughout the manual comments may be inserted as follows:



**INFORMATION TO PREVENT A DANGER  
TO YOURSELF OR OTHER PEOPLE AND/OR DAMAGE TO EQUIPMENT.**

**Note** - Supplementary information.

### 1.2 Safety

Only Acorn trained engineers should carry out work on the Stairlift. All national rules and regulations concerning safety, electrical work or environmental protection should supplement, and may supersede, this document.

Only Acorn parts should be fitted to the Stairlift.

### 1.3 Manufacturer

#### **Acorn Mobility Services Limited**

Telecom House, Millennium Business Park, Station Road, Steeton, West Yorkshire, BD20 6RB.  
[www.acornstairlifts.co.uk](http://www.acornstairlifts.co.uk)

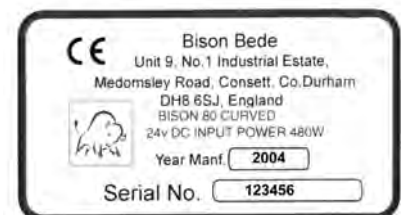
Contact Technical Support on **+44 (0)871 200 2448**

### 1.4 Copyright

Acorn Mobility Services Ltd has the copyright of this document. Nothing from this publication must be duplicated, stored in any automated database or published in any form or manner either electronically, mechanically, by photocopying, exposures, or any other method, without prior written consent of Acorn Mobility Services Ltd.

### 1.5 Lift Identification & CE Marking

An identification plate is attached to the Lift. The Lift has been given a CE mark, declaring its conformity with the fundamental health and safety requirements of the European Community, subject to it being correctly installed and tested as detailed in Acorn 80 Installation manual.



# SECTION 1

## Introduction

### 1.6 Designed Usage

The lift is designed to safely transport the client up and down stairs. It should not be used by more than one person or to transport other items. It has a maximum safe load of 120 kilograms (265 pounds or 19 stone). It is the responsibility of the person installing the lift to:

- Fully test it in accordance with the Acorn 80 Installation Manual and any local statutory requirements.

### 1.7 Standard Acorn 80 Specification



**LIFTS ARE DESIGNATED LEFT HAND OR RIGHT HAND AS VIEWED UP THE STAIRS. OTHER ITEMS AND FUNCTIONS ARE DESIGNATED LEFT HAND OR RIGHT HAND AS VIEWED WHEN SITTING IN THE LIFT.**

<b>Maximum load</b>	<b>120 Kilograms</b>	<b>265 pounds - 19 stone</b>
<b>Maximum Speed</b>	<b>120mm per second</b>	<b>4.8 inches per second</b>
<b>Weight of Carriage (without seat)</b>	<b>39 Kilograms</b>	<b>86 pounds</b>
<b>Weight of Carriage (with transfer rail)</b>	<b>43.4 Kilograms</b>	<b>96 pounds</b>
<b>Operating Voltage</b>	<b>24 Volt DC (from Nickel Cadmium batteries)</b>	
<b>Maximum Operational Noise level</b>	<b>Less than 70 decibels</b>	

#### 1.7.1 Rail Options

- Vertical Inside & Outside Bends
- Horizontal Inside & Outside Bends
- Helical Inside & Outside Bends
- Hinged Bottom Section
- Intermediate Charge Point

## 1.7.2 Lift Options

- Left Hand or Right Hand fitting
- Key switch
- Remote Controls
- No start up Delay
- Powered Footrest

## 1.7.3 Seat Options

- Non-padded Seat or Arms
- Powered Seat Swivel
- Space Saver Seat
- Quick Release Clasp Seatbelt
- Reel Seatbelt
- Double Reel Seatbelt
- Alternative seat heights (using seat spacers)
- Fixed seat
- Barrier arm
- Seat adapter plate

## SECTION 2

### Description Of Operation

## DESCRIPTION OF OPERATION

### 2.1 General Arrangement

The Acorn 80 Stairlift comprises a seat (1) and footrest (6), mounted on a motor driven carriage (9). All Stairlifts are provided with a Seatbelt (11). The Stairlift is operated with a Holding Switch (3) and a Direction Controller (12). Pressure Sensitive Edges (5 & 6) stop the Stairlift if they strike an obstruction.

Seat Swivel Release Paddles (10) allow the User to swivel the seat around when alighting and dismounting.

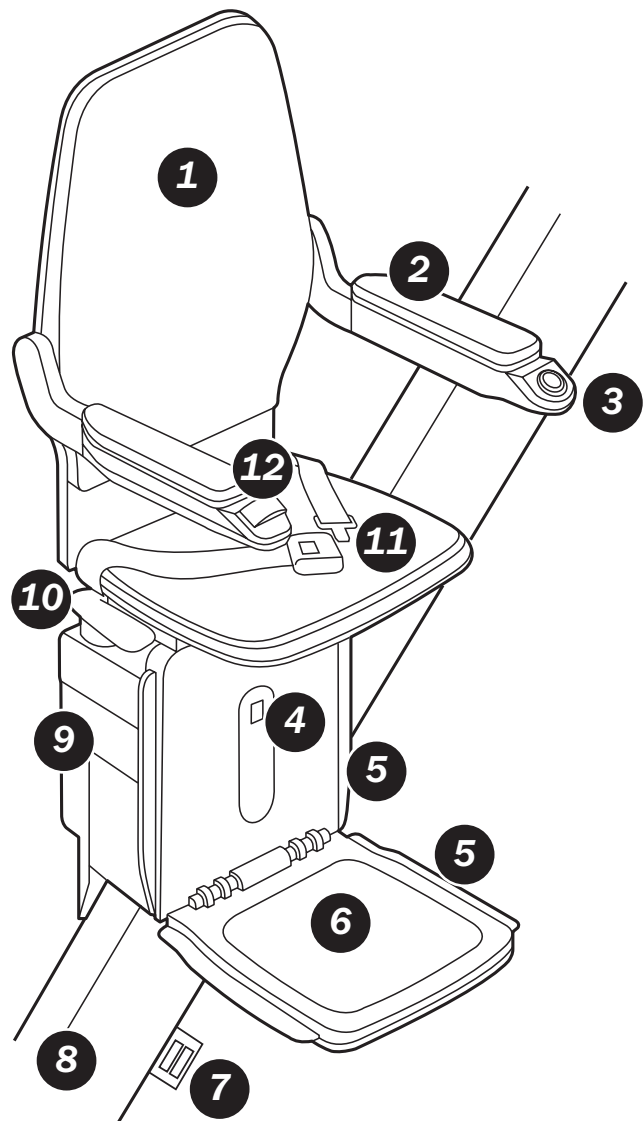
The arms (2), seat and footrest can be folded up when the lift is not in use to give access past the Stairlift.

The carriage runs on a support rail (8) fitted to one side of the staircase. Charging Plates (7) automatically re-charge the internal batteries when the Stairlift is parked.

Rechargeable batteries, located inside the carriage, power the 24 volt direct-current (DC) motors. Internal motors include the main drive motor, levelling mechanism motor and optional powered items.

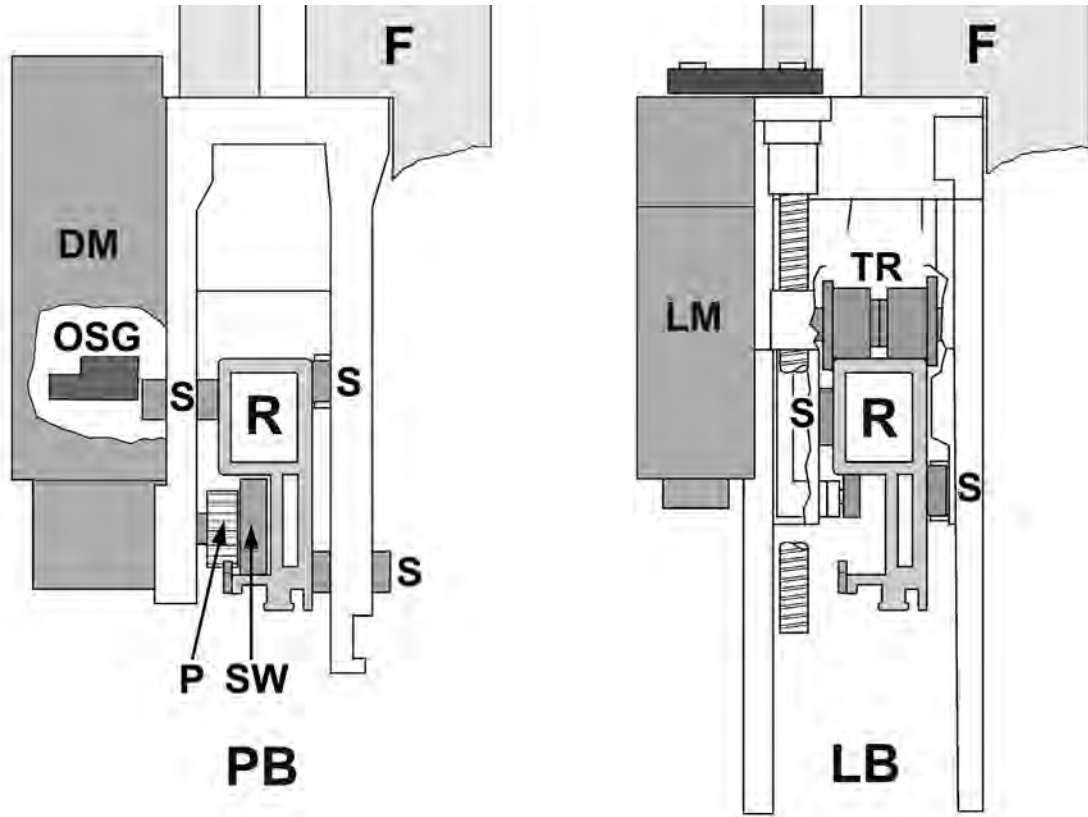
A hinged rail section may be fitted to allow access past the lift at the bottom of the stairs.

A Diagnostic Display (4) provides information during normal operation and programming, together with a comprehensive list of codes should a fault occur.





### 2.2 Carriage Operation



The carriage comprises a power bogie (**PB**) and a levelling bogie (**LB**) mounted on a common frame (**F**). The carriage is held square on the rail by side rollers (**S**) on both power and levelling bogies.

The downward weight of the power bogie is taken on the support wheel (**SW**) running on the bottom of rail (**R**). The support wheel may bear against underside of the rail when negotiating vertical bends.

The downward weight of the levelling bogie is taken on the top roller (**TR**) running on the rail (**R**).

The drive motor (**DM**) rotates a pinion (**P**) on a rack to drive the carriage along the rail.

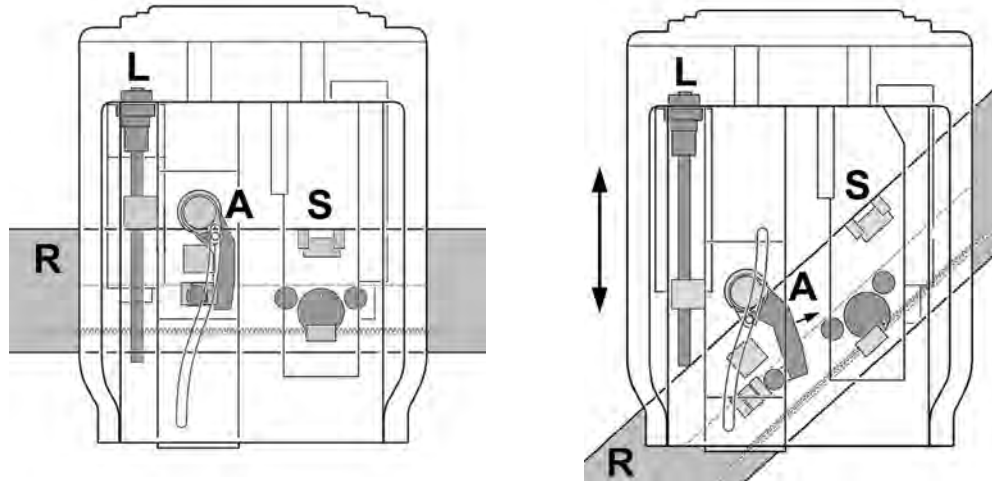
The levelling motor (**LM**) adjusts the frame to maintain the seat upright when moving over vertical bends.

An over-speed governor (**OSG**) will activate and stop the carriage in the case of an uncontrolled descent.

## SECTION 2

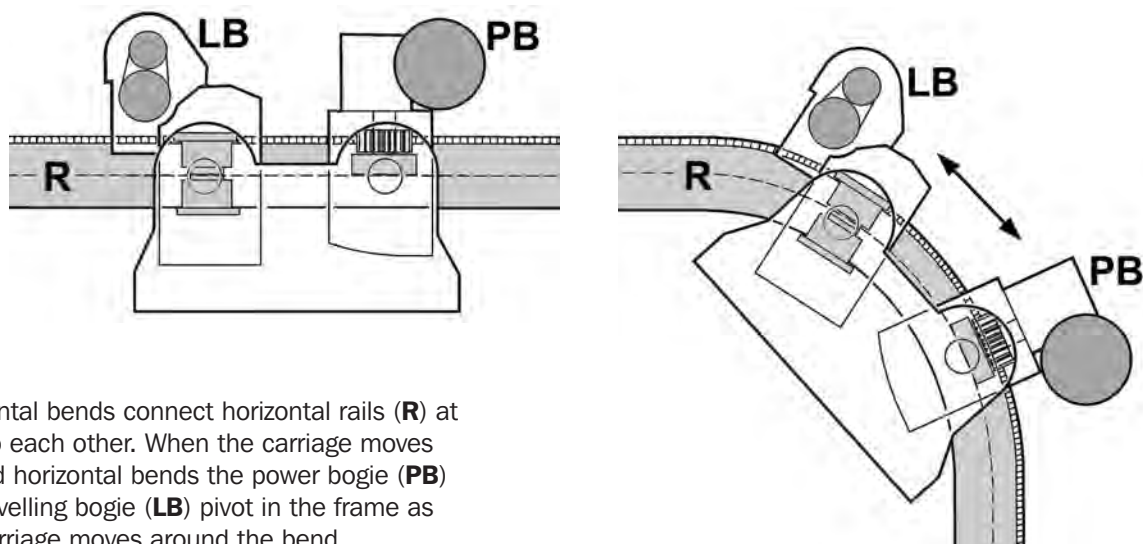
### Description Of Operation

#### 2.2.1 Vertical Bends



Vertical bends connect horizontal and sloping rails (**R**). When the carriage moves over vertical bends the levelling motor (**L**) adjusts the frame to maintain the seat in an upright position. All side rollers (**S**) on both bogies are mechanically adjusted to remain horizontal with the rail. An anti-tilt mechanism (**A**) prevents the carriage from tipping excessively in the event of a levelling failure.

#### 2.2.2 Horizontal Bends



Horizontal bends connect horizontal rails (**R**) at 90° to each other. When the carriage moves around horizontal bends the power bogie (**PB**) and levelling bogie (**LB**) pivot in the frame as the carriage moves around the bend.

When the carriage moves around helical bends, both levelling and pivoting operations occur at the same time. Carriage speed is decreased when traversing vertical bends, inside horizontal bends and helical bends. The speed sequence is programmed during installation. If battery power is lost the datum setting must be re-programmed. The carriage has a “soft” start and stop feature.

## 2.3 Safety Features

The Stairlift will not start unless there is sufficient power in the batteries to complete the journey. The Stairlift will be stopped by:

- Mechanical End Stops on the drive rack - if lift final limit switches fail.
- Drive Motor Brake applied - if the battery power supply is lost.
- Over-speed Governor (OSG) - if lift exceeds a pre-set speed.
- Anti-tilt mechanism to prevent the carriage from tipping excessively in the event of a levelling failure.
- Any one of the five pressure-sensitive edges (PSEs) striking an obstruction. There are two either side of the carriage (**A**), two either side of the footrest (**B**) and one under the footrest (**C**).



## SECTION 3

### Operating Instructions

# OPERATING INSTRUCTIONS

Specific Operating Instructions for the Stairlift User are described in the User Manual. The additional instructions in this manual are for Servicing and Maintenance Engineers.

## 3.1 Carriage Hand Winding

The carriage can be hand wound manually along the rail if the drive motor cannot be used.



**IF THE OSG HAS DEPLOYED (THIS SYMBOL WILL BE DISPLAYED ON THE DIAGNOSTIC DISPLAY\*) DO NOT USE THE HAND WINDER IN THE DOWNWARD DIRECTION. THIS COULD CAUSE DAMAGE TO THE DRIVE MECHANISM.**

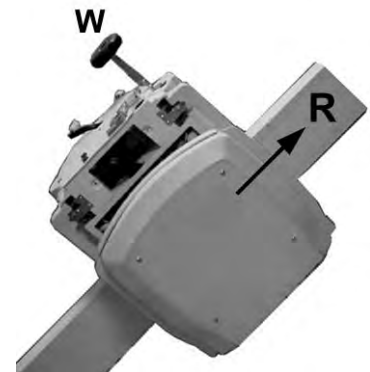
**\* ONLY WHEN A CALL HAS BEEN MADE.**



**ENSURE THAT POWER IS SWITCHED OFF ON THE ARM REST HOLDING SWITCH.\***

**\* DEPENDANT ON MODEL.**

Remove the Drive motor cover cap, insert the Hand Winding Wheel (**W**) and rotate to move the carriage along the rail (**R**).



**ON NO ACCOUNT MUST POWER TOOLS BE USED TO WIND THE CARRIAGE ON OR OFF THE RAIL.**

## SECTION 4

### Installation & De-Installation

Refer to the Installation Manual for detailed instructions.

## SERVICING

### 5.1 Training

**This Stairlift must only be serviced and maintained by trained personnel.**

Training can usually be arranged free of charge via your local area representative or through Acorn Technical Services Department. A Video Compact Disk (VCD), showing servicing and maintenance procedures, is also available as a training aid for trained personnel.

Contact Technical Support on **+44 (0)871 200 2448**

### 5.2 Safety Procedures



***BEFORE WORKING ON THE LIFT ENSURE THAT POWER IS SWITCHED OFF ON THE SEAT ARM HOLDING SWITCH (CERTAIN FAULT CONDITIONS MAY NOT MAKE THIS POSSIBLE – PROCEDURES FOR THESE WILL BE CONTAINED IN THE RELEVANT SECTIONS).***

### 5.3 Service Checklist


See Appendix 1

# SECTION 6

## Testing & Setting

# TESTING & SETTING

### OVERRIDE INSTRUCTION

The following instruction should assist the installer/engineer if a  fault is present.








- 1 Switch off lift at on/off switch.
- 2 Put call in using rocker switch in required direction.
- 3 Switch on lift with on/off switch whilst holding the call in on the rocker switch.
- 4 The lift will now drive.

## 6.1 Diagnostic Display

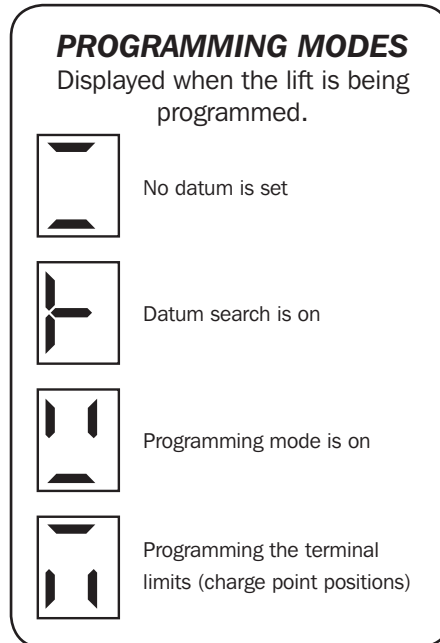
The LED (Light Emitting Diode) on the PCB (Printed Circuit Board) is visible through a window in the lift Front Cover.

### 6.1.1 Normal Operation & Programming Modes

**NORMAL OPERATION**  
Displayed when the lift is operating correctly.

	Lift is in Standby Condition and ready to use		Lift is at its correct stopped position
	Lift is in Standby Condition but holding switch is set to off		Batteries are fast charging (small light on)
	Lift is moving up the rail		Batteries are trickle charging (small light flashing)
	Lift is moving down the rail		

### 6.1.2 Programming Modes



### 6.1.3 Fault Conditions

For a full list of fault codes. **See Appendix 5.**

### 6.1.4 Information Labels

These Information labels must be fitted on the Stairlift.

#### **ON FRONT COVER**

Warning. The safe working load is one person only at a maximum weight of 120kg (265 pounds – 19 stone).

#### **ON HAND WINDING COVER**

Emergency Handwind. Please remove cover for access.

#### **INSIDE HAND WINDING COVER**

Ensure lift power is off. Ensure no obstructions! Insert Hand Winding Wheel and rotate to move carriage.

# SECTION 6

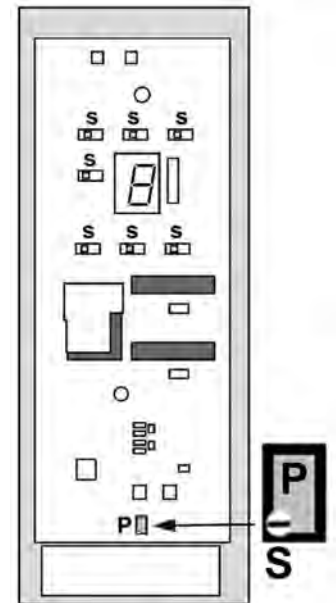
## Testing & Setting

### 6.2 Levelling Potentiometer

The front cover must be removed to access the PCB. The Stairlift is supplied with the electronic levelling correctly calibrated.

The potentiometer **MUST NOT BE TURNED** as this would affect the electronic out of level shut down.

**IF THE POTENTIOMETER NEEDS TO BE ADJUSTED REFER TO APPENDIX 7.**



### 6.3 Programming

#### 6.3.1 Programming Summary

This procedure describes how to completely program the Stairlift. If the batteries are disconnected at any time the program will be retained, except for the Datum Position and Top Terminal limit, which then must be re-programmed in.

- The lift orientation is set Left Hand or Right Hand for the program. Factory set.
- A datum position is set at the top of the rail as the lift leaves the top charge point.
- The top charge point position is set (Terminal Limit).
- Carriage speeds are programmed in as the lift moves down the rail.
- The bottom charge point position is set (Terminal Limit).
- Programming is then completed for both up and down travel.

Three carriage speeds are possible:

- **CREEP SPEED** (slow) is the default setting and is used just before stopping.
- **BEND SPEED** when moving around vertical, inside horizontal bends and helical bends. It is also used as an intermediate speed.
- **FULL SPEED** along straight rail sections.



### 6.3.2 Pre-power Up Checks

Remove the front cover and check that all programming switches are in the off position, to the left. Select **LEFT** or **RIGHT** hand install. Check that the correct hand has been selected, as these switches should not be changed at all from now.

### 6.3.3 Power Up Sequence

Check that the seat holding switch is switched off. Connect the positive leads from both batteries to the positive spade connectors on the board. The board will display the bottom right hand corner decimal point.



Switch on the seat holding switch. The selected hand of the lift will be displayed momentarily, then the no datum set symbol will be displayed. The lift cannot be moved with this displayed.

### 6.3.4 Calibrating The Levelling

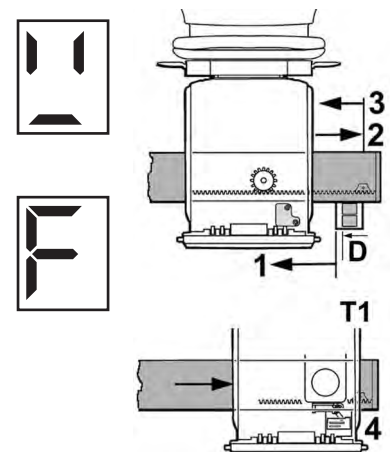
**ONLY TO BE DONE IF THE PCB HAS BEEN CHANGED.** Now switch the **PROGRAM MODE** to **ON**. Datum search will be displayed. Call the lift with either the rocker switch or the remote in either direction. Using a spirit level on the footrest, finely adjust the potentiometer until the lift is level. Once the level position is set, the potentiometer should not be altered after programming or the whole rail **MUST** be programmed again.



### 6.3.5 Programming The Top Terminal Limit

Call the lift down off the charge point. As the positive charge plunger leaves the charge point, the programming rail symbol will be displayed. This sets the "datum point".

This is a reference point for the memory during programming of the rail. Stop the lift and drive it back up onto the final limit striker will be displayed. Note that the top terminal limit will be approximately 10-15mm down from the final limit stop position. Adjust the striker to the required position. This position depends on the angle of the rail at this point. When the correct position is found, call the lift down the rail off the charge point, and then back up onto the final limit for a second time. The carriage is now ready for programming down the full length of the rail.

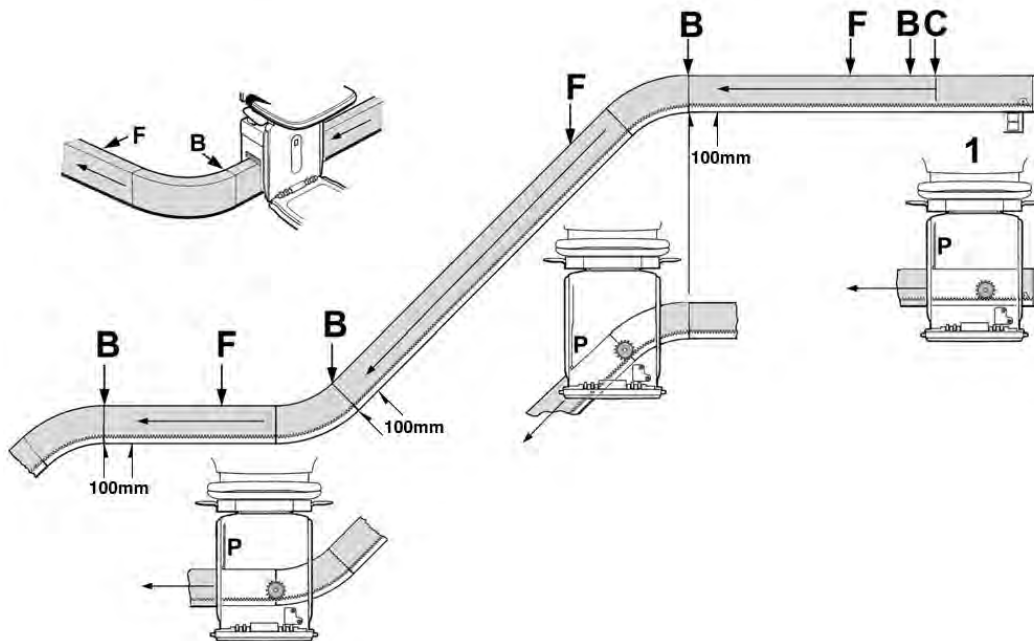


# SECTION 6

## Testing & Setting

### 6.3.6 Programming The Rail

Drive the carriage 50mm down the rail using the portcullis as a reference point. Then select **BEND SPEED** to **ON**. Continue programming in bend speed until the portcullis is a further 180mm. If required full speed can be selected. Full speed should be used on straight sections of rail and external horizontal bends. On all vertical, internal and helical bends switch **FULL SPEED** to **OFF** when the portcullis is 100mm from the upside joint of the bend. When the portcullis is 440mm past the downside joint of the bend switch **FULL SPEED** to **ON**. Repeat through all of the bends to the bottom of the rail.



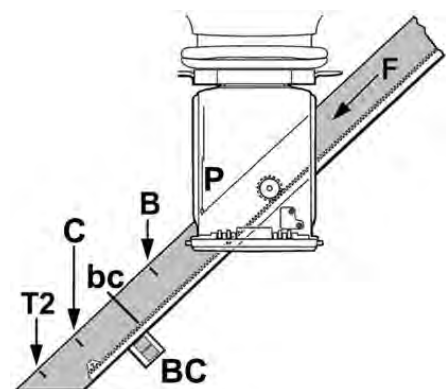
### 6.3.7 Programming The Bottom Terminal Limit

If approaching the bottom charge point in full speed, switch **FULL SPEED** to **OFF** when the portcullis is 180mm above the bottom charge point reference point.

Move the lift down the rail until the portcullis is 150mm past the bottom charge point reference point then switch **BEND SPEED** to **OFF**. This selects **CREEP SPEED** (default).

Drive the carriage onto the bottom final limit striker. This should be set so that the final limit stop is approximately 10-15mm further down than the required terminal limit stop position. While still in program mode drive the lift up so that both charge plungers are on the charge point.

Switch **PROGRAM MODE** to **OFF** (into run mode). The standby symbol will be displayed.

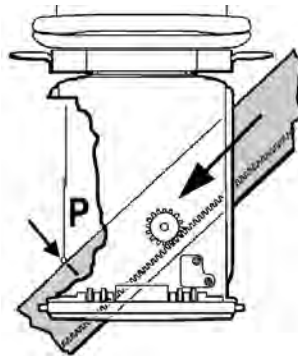


# SECTION 6

## Testing & Setting

The rail can be marked before programming to indicate where speed settings must be altered.

The portcullis flap (**P**) on the carriage is used as a reference point for marking the rail.



During programming the LED display will show:

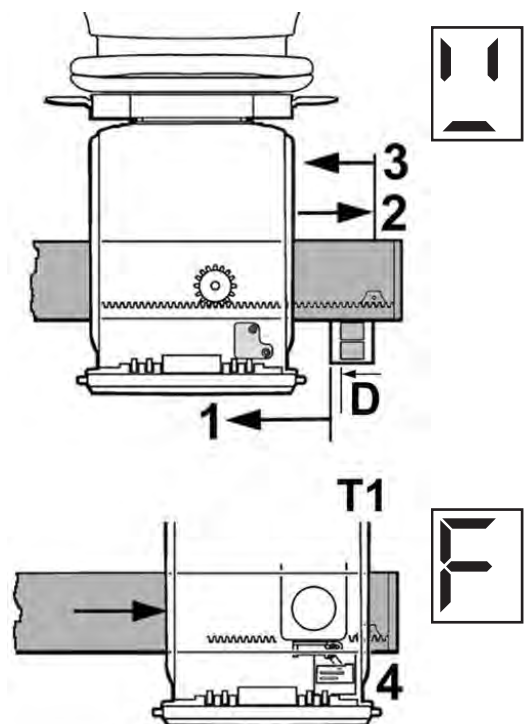
	No datum is set
	Datum search is on
	Programming mode is on
	Programming the terminal limits (charge point positions)

### 6.3.8 Setting Up

In program mode the lift is moved at slow speed using the direction controller on the arm rest. The illustration shows the lift on a horizontal top section of rail but the principles are the same for sloping rail sections.

- 1 Ensure that the lift is away from the top charge point.
- 2 Move the lift until it makes full contact with the top charge point.
- 3 Move the lift away from the charge point until the contact pins clear the charge point plates. This sets the datum (**D**)
- 4 Move the lift back past the top charge point until it stops itself on the top final limit switch. This sets the Top Terminal Limit (**T1**)

<b>BEND SPEED</b> 	<b>FULL SPEED</b> 	<b>HINGE ZONE</b> 
<b>START DELAY</b> 		
<b>LEFT HAND</b> 	<b>RIGHT HAND</b> 	<b>PROGRAM MODE</b> 



# SECTION 6

## Testing & Setting

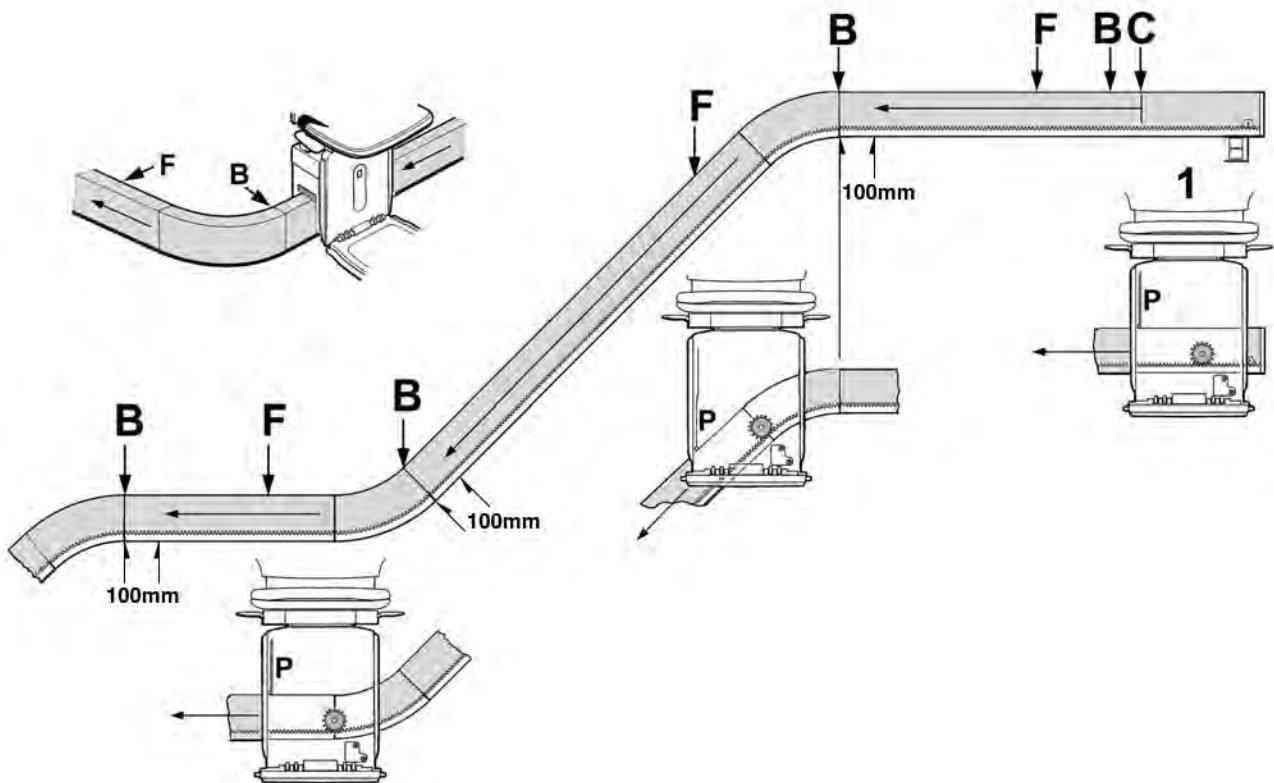
### 6.3.9 Setting Lift Speeds

- 1 Start with the lift parked at the top of the stairs and start in CREEP SPEED (C).
- 2 Move the lift 50mm in the down direction then switch BEND SPEED to ON (B).



**ON SOME SHORT SECTIONS OF RAIL IT MAY NOT BE PRACTICAL TO APPLY FULL SPEED BEFORE A BEND IS REACHED, IN THIS CASE LEAVE IN BEND SPEED AND MOVE LIFT IN DOWNWARD DIRECTION.**

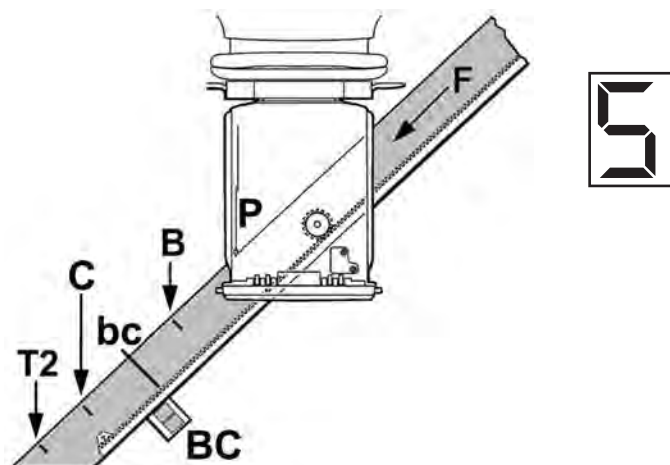
- 3 Move the lift in the down direction a further 180mm then switch FULL SPEED to ON (F) (if applicable).
- 4 On vertical bends when the portcullis is 440mm past the second joint line switch FULL SPEED to ON.
- 5 On all bends (except external horizontal bends) when the portcullis (P) is above the first bend joint line switch FULL SPEED to OFF - this reverts the lift to BEND SPEED (B) (if applicable).
- 6 Repeat this procedure for all vertical, inside horizontal and helical bends on the installation.



### 6.3.10 Bottom Parking

The illustration shows the lift moving down a sloping bottom section of rail at full speed (F). The principles are the same for horizontal rail sections.

- 1 Move the lift down until the portcullis (P) is 180 mm from the bottom charge point (BC) reference point (bc) then switch FULL SPEED to OFF. This reverts the lift to BEND SPEED (B).
- 2 Move the lift down until the portcullis is 150 mm past the bottom charge point then switch BEND SPEED to OFF. This puts the lift into CREEP SPEED (C).
- 3 Move the lift down until it stops itself on the bottom final limit switch. This sets the Bottom Terminal Limit (T2).
- 4 Move the lift back up until it is clear of the bottom final limit switch and at the bottom charge point (BC).
- 5 Unless instructed otherwise, switch START DELAY to ON – this will activate a timed delay before the lift starts to move.
- 6 Switch PROGRAM MODE to OFF



**PROGRAMMING IS NOW COMPLETE.**



**THE LIFT MUST NOW BE TESTED TO ENSURE THAT IT IS OPERATING CORRECTLY. THE ELECTRICAL AND MECHANICAL INSTALLATION MUST BE TESTED IN ACCORDANCE WITH LOCAL SPECIFICATIONS AND STANDARDS.**

### 6.3.11 Hinge Zone

Hinge instructions now available. **See Appendix 6.**

## SECTION 6

### Testing & Setting

#### 6.3.12 Intermediate/Park Charge Point

This charge point is used if the lift is required to be parked above the bottom of the rail or on a landing. This is also required on rail systems with hinges.

When the park button command is used on the remote control, the lift will travel up to the next charge point and stop on charge detect. This is repeatable if more than one intermediate charge point is required. The lift will only stop on an intermediate charge point with the park button on the remote control.

#### 6.3.13 Intermediate/Landing Charge Point

This charge point is used on internal systems where the lift is required to stop on a landing, which has corridor or room access.

During programming of the rail, program **CREEP SPEED** 100mm (If programming in full speed) before and after the charge point. Reduce this to 50mm before and after the charge point (If programming in bend speed). Deselecting both **FULL** and **BEND SPEED** selects creep speed (default).

With this option the lift will always stop on the charge point with charge detect in either direction, using either the rocker switch or the remotes. To move the lift on if not required to stop, release the call and reapply.

#### 6.3.14 Checking The Program

With the lift just above the bottom charge point drive it down and check that the terminal limit is in the correct position. Adjust and reprogram if necessary. Drive the lift up the rail checking that the speeds and levelling are satisfactory. Check that the speed on approach to the top terminal limit is okay, and that the lift stops where it should. (Charge plungers equally spaced on the charge points).



**RESET CONFIRMATION: TO CHECK THE RESET AT THE TOP CHARGE POINT; DRIVE THE LIFT DOWN FROM THE TOP TERMINAL LIMIT. AS THE POSITIVE PICKUP PLUNGER LEAVES THE CHARGE POINT THE TWO REMAINING UNLIT DISPLAY SEGMENTS FLASH MOMENTARILY. (THIS INDICATION IS VERY QUICK AND IS ONLY INTENDED FOR ENGINEER PURPOSES).**



**CREEP SPEED IS OVERRIDDEN AT THIS POINT AND THE LIFT RUNS IN BEND SPEED.**

Drive the lift down the rail checking the levelling and speeds are satisfactory and the approach to the bottom terminal limit is okay, and the lift stops where it should.

#### 6.3.15 Amending The Program

The carriage can be stopped at any time during programming, and if a mistake is made the program can be over written.



**IF ANY REPROGRAMMING IS REQUIRED WITHIN 150MM OF EITHER THE TOP OR BOTTOM LIMITS, THE FINAL LIMIT MUST BE REPROGRAMMED AS WELL.**

#### 6.3.16 Programming The Hinge Zone

The hinge zone is the section of rail from the bottom of the hinge to just above the point on the rail when the hinge is in the folded position. When this point is reached while programming the rail, switch HINGE ZONE to ON. Leave this switched on for the remaining program. The lift cannot travel in this section of rail if the hinge interlock signal is not received from the hinge control box.



**PROGRAM MODE DISABLES THIS SAFETY FEATURE.**

#### 6.3.17 Programming Do's & Don'ts

##### **DO**

- 1 Set the final limit striker in the correct position
- 2 Only program to the measurements stated in the manual
- 3 Only program in the down direction
- 4 Always program creep speed at both terminal stops
- 5 Ensure confirmation of reset indication on display
- 6 Do reprogram the final limit if you have reprogrammed within 150mm of the terminal limit
- 7 Do reprogram full rail system after adjusting potentiometer

##### **DO NOT**

- 1 Do not move the top charge point after datum has been set
- 2 Do not alter the level calibration potentiometer before or after programming
- 3 Do not alter the level calibration potentiometer without programming the full system



# SECTION 6

## Testing & Setting

### 6.4 Over-speed Governor (OSG)

#### 6.4.1 Testing the OSG



**THIS TEST MUST BE CARRIED OUT DURING INSTALLATION AND SUBSEQUENT SERVICING.**

- 1 Isolate the lift using the holding switch on the seat arm/back of the seat cover.



- 2 Remove screws from Power Bogie outer covers, and remove covers.



#### 6.4.2 Re-setting the OSG

- 1 Inspect OSG to see whether it has triggered/fired - regulator weight will be in an upright position as shown below with the regulator teeth engaged with the Cam gear tooth and the OSG wedges will be up against the rail.



**OSG NOT TRIGGERED**  
OSG Regulator weight in level position



**OSG TRIGGERED**  
OSG Regulator weight in upright position



- 2 Picture below shows plunger in it's fired position activating the switch.



- 3 To reset the OSG, Press and hold down on the Reset Lever (In a downstairs direction) and this will deactivate the switch by resetting the plunger back to its original position.



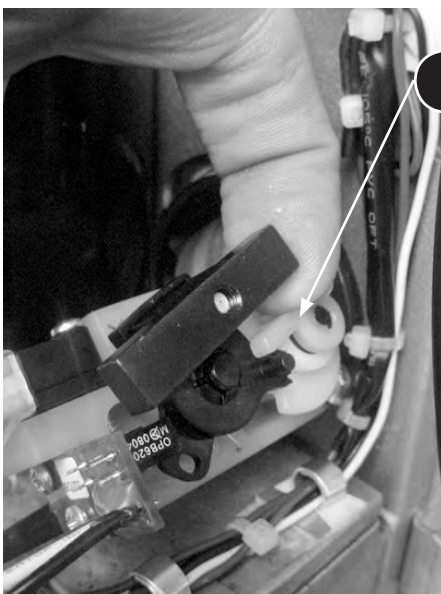
## SECTION 6

### Testing & Setting

- 4 Whilst keeping the reset lever held hand wind the stair lift in an upwards direction until OSG wedges release and the regulator weight is in a horizontal position (normal operating position) ensuring the teeth of the regulator are clear of the Cam gear. Once set, release the reset lever.



- 5 Press down on the White trigger into its normal operating position ensuring the teeth of the regulator stay clear of the gear.



**TRIGGER**  
White

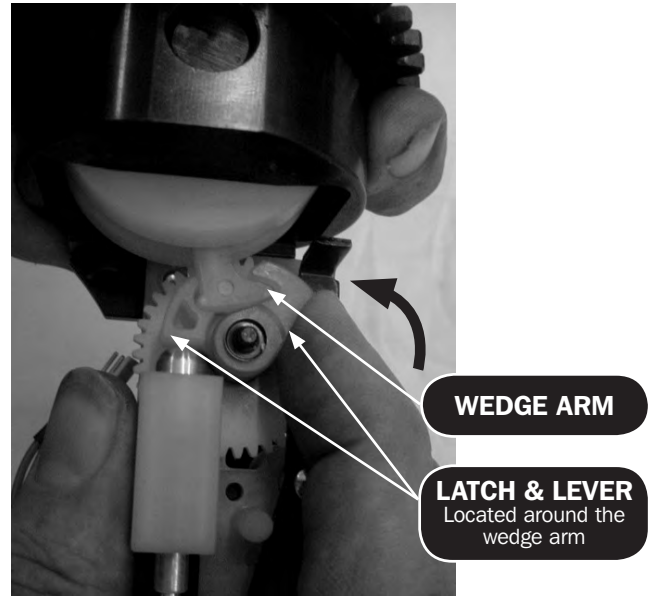


**CAM GEAR**  
Correct position of  
regulator and gearing

## SECTION 6

### Testing & Setting

- **6** At the same time as pressing down on the trigger make sure that the latch & lever is located around the wedge arm and that the gears are in mesh on the opposite side of the OSG. Please note the images below show the OSG removed from the carriage, to make it clearer.



- **7** Re-fit the Power Bogie outers back onto the carriage.
- **8** Switch on the lift using the holding switch located on the seat arm/ back of the seat cover.
- **9** Run the lift an upward direction using the direction controller.

### 6.5 Testing Batteries

The following readings are satisfactory:

- **Battery Voltage 26-30V**
- **D.C. Charge Voltage 30V**
- **D.C. Trickle Charge Current 400 milliamps**
- **D.C. Bulk Charge Current 800 milliamps**



**IF ANYTHING CHANGE FROM THE ABOVE READINGS CONTACT  
TECHNICAL SUPPORT +44 (0)871 200 2448**

## SECTION 7

### Dismantling Components

# DISMANTLING COMPONENTS

## 7.1 Covers

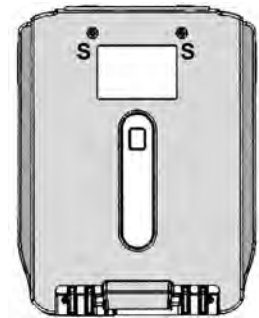
### 7.1.1 Front Cover



**TAKE CARE NOT TO TRAP PCB CONNECTION LEADS WHEN REFITTING THIS COVER.**

This must be removed to access the PCB and Batteries. To remove the front cover, undo the 2 screws (S).

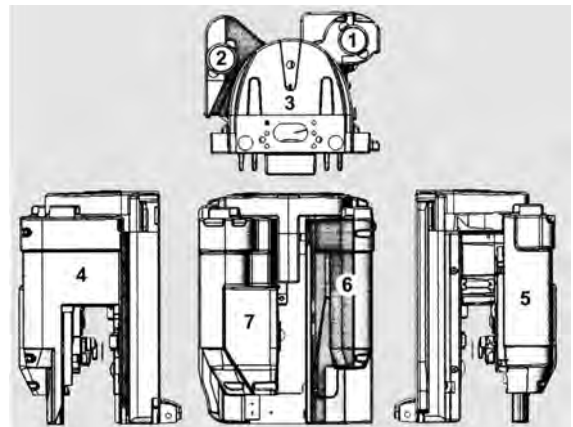
On completion refit the cover and secure with the two screws.



### 7.1.2 Carriage Covers

Some or all of these are removed to access the Over-speed Governor, Power Bogie and Levelling Bogie. All covers are fastened with screws except the two Winding Caps, which can be lifted off.

- 1 Drive Motor Hand Winding Cap
- 2 Levelling Motor Hand Winding Cap
- 3 Carriage Top Cover
- 4 Levelling Bogie Outer Cover
- 5 Power Bogie Outer Cover
- 6 Levelling Bogie Inner Cover
- 7 Power Bogie Inner Cover



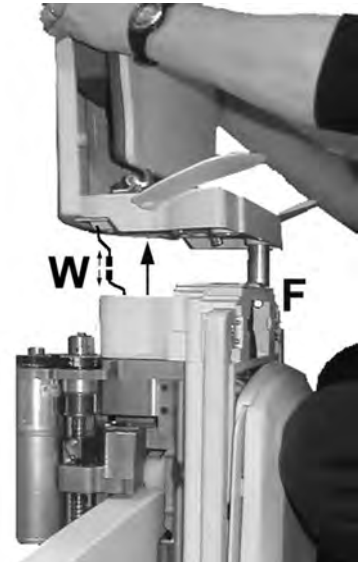
# SECTION 7

## Dismantling Components

### 7.2 Seat

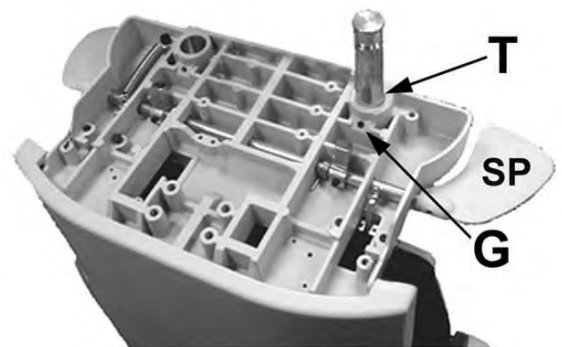
#### 7.2.1 Removal

- 1 Disconnect the seat wiring (**W**) to the PCB connector.
- 2 Pull the seat out of the frame (**F**).
- 3 Leave any seat spacers in position.



#### 7.2.2 Refitting A Seat

- 1 Apply the recommended grease to the swivel pin – *see Appendix 4*.
- 2 Place the thrust washer (**T**) over the swivel pin. (Only applies to power swivel).
- 3 Position the seat square with the main frame and locate the swivel pin into its bearing bush, ensuring the thrust washer is located, where applicable.
- 4 Hold paddle arms down and push the seat fully down into the frame (**F**).
- 5 Check the seat swivel locking mechanism operates correctly, using the swivel paddles (**SP**).
- 6 Connect the seat wiring (**W**) to the PCB connector.





# SECTION 7

## Dismantling Components

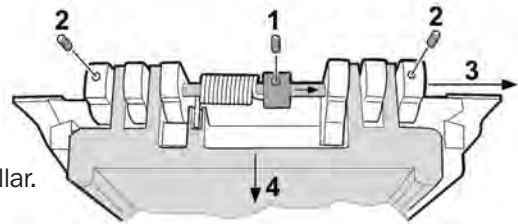
### 7.3 Footrest

#### 7.3.1 Removal



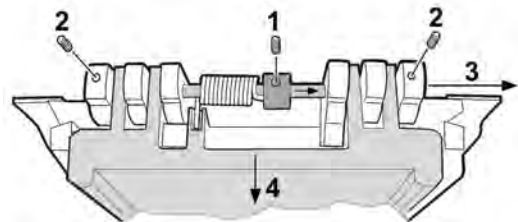
**TAKE CARE WHEN RELEASING THE SPRING RETAINING COLLAR, WHICH IS HELD UNDER TENSION.**

- 1 Remove the centre grub screw (1) from the spring retaining collar turn the collar to release the spring tension.
- 2 Loosen the two outer swivel pin grub screws (2).
- 3 Pull out the hinge pin and remove the spring and its retaining collar.
- 4 Remove the footrest.



#### 7.3.2 Replacement

- 1 Fit footrest into the hinge brackets. Insert the hinge pin through the hinge brackets with spring and spring retaining collar in position.
- 2 Tighten the two outer grub screws (2) on to the flat of the shaft to lock the hinge pin into position.
- 3 Engage the spring retaining collar onto the spring.
- 4 Turn the retaining collar to apply spring tension and screw the grub screw (1) on to the flat of the shaft to lock it into position.



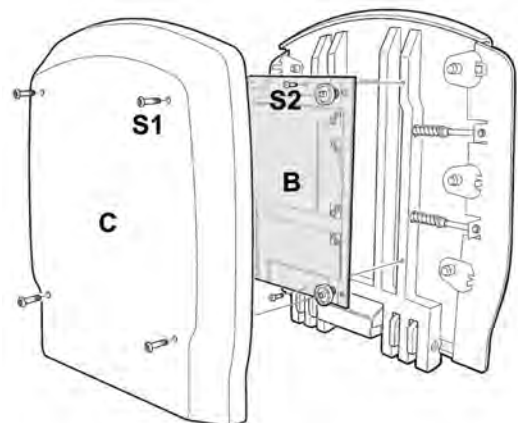
#### 7.3.3 Footrest PSE Board Replacement

- 1 Unscrew the four screws (S1) and remove the bottom cover (C).
- 2 Disconnect the footrest board (B) from the main PCB.
- 3 Unscrew top 2 screws, loosen the bottom 2 screws (S2) and remove the board.



**THE BOARD IS NOT REPAIRABLE ON SITE AND MUST BE RENEWED AS A COMPLETE UNIT.**

- 4 Fit a replacement board and secure with the four screws.
- 5 Reconnect the board to the main PCB connection marked FOOTREST.



### 7.4 Batteries

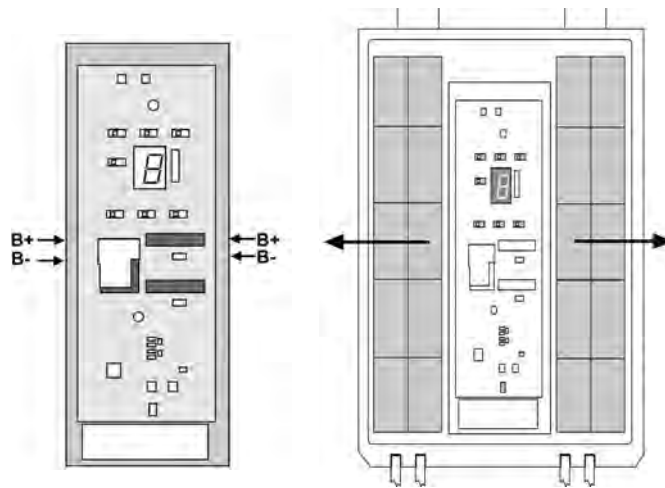
The battery packs comprise 10 Nickel Cadmium cells.

#### 7.4.1 Removal & Refitting



**ENSURE THAT BATTERY LEADS DO NOT TOUCH EACH OTHER TO PREVENT ANY DANGER OF ELECTRICAL CURRENT "ARCING" FROM ANY REMAINING CHARGE IN THE BATTERIES.**

If the batteries are disconnected at any time the Datum position will be lost and must be re-programmed.



- 1 Remove the front Cover.
- 2 Disconnect both battery packs.
- 3 Pull the battery packs off the velcro retaining strips. If being discarded, ensure that they are properly disposed of.
- 4 Fit battery packs into their velcro retaining clips.



**ENSURE THAT BATTERY CABLES ARE CONNECTED TO THE CORRECT POLARITY TERMINALS.**

- 5 Red cables connect to **BATTERY POSITIVE** terminals on the PCB (**B+**).
- 6 Black cables connect to **BATTERY NEGATIVE** terminals on the PCB (**B-**).
- 7 Refit white thermocouple wires.
- 8 Re-program the datum and final limit positions at the top of the rail – **see Programming/Datum Setting & Top Parking.**

# SECTION 7

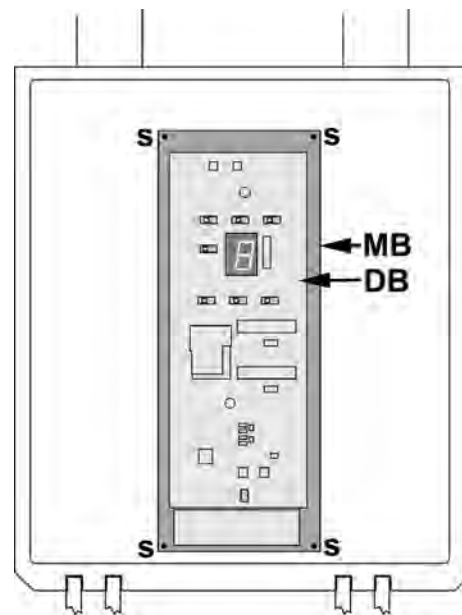
## Dismantling Components

### 7.5 Printed Circuit Board (PCB)

The main motherboard has a daughter board mounted onto it. The boards are not repairable onsite; they must be replaced as a unit if defective and the Stairlift reprogrammed.

#### 7.5.1 Removal & Refitting

- **1** Remove the batteries – see the previous section.
- **2** Disconnect all cables from the PCB.
- **3** Unscrew the 4 screws (**S**) and remove mother board (**MB**) and daughter board (**DB**) as one unit, including nylon spacers.
- **4** Refit the board with 4 nylon spacers.
- **5** Re-connect all cables to the PCB terminals (see section on **PCB Connections**).



**SWAP TRANSCEIVER FROM OLD BOARD (REMOVED) AND FIT TO NEW BOARD**



### 7.5.2 Supercharger Systems

For Acorn 80 rail systems with a total rail length greater than 10 metres a high power charging system is fitted to ensure the rapid recovery of the batteries during the re-charge cycle.

The high power charging system consists of a charger (part number 1021312) and a main pcb (part number 1231457).

The parts from the standard charging system, using either the standard power supply (part number 1020998) or the European power supply (part number 1020103) and the high power charging system are not interchangeable.

If the high power charger pcb is fitted to a Acorn 80 that has the standard power supply unit (1020998) or a European power supply unit (1020103) then there will be no regulation of the charge voltage to the batteries and the batteries will be damaged beyond repair.

If a standard pcb (part number 1231366) is fitted to a Acorn 80 that has a high power charger fitted then the pcb will attempt to regulate the charge to the batteries and so the benefit of the high power charger will be lost and this will lead to a reduction in battery performance.

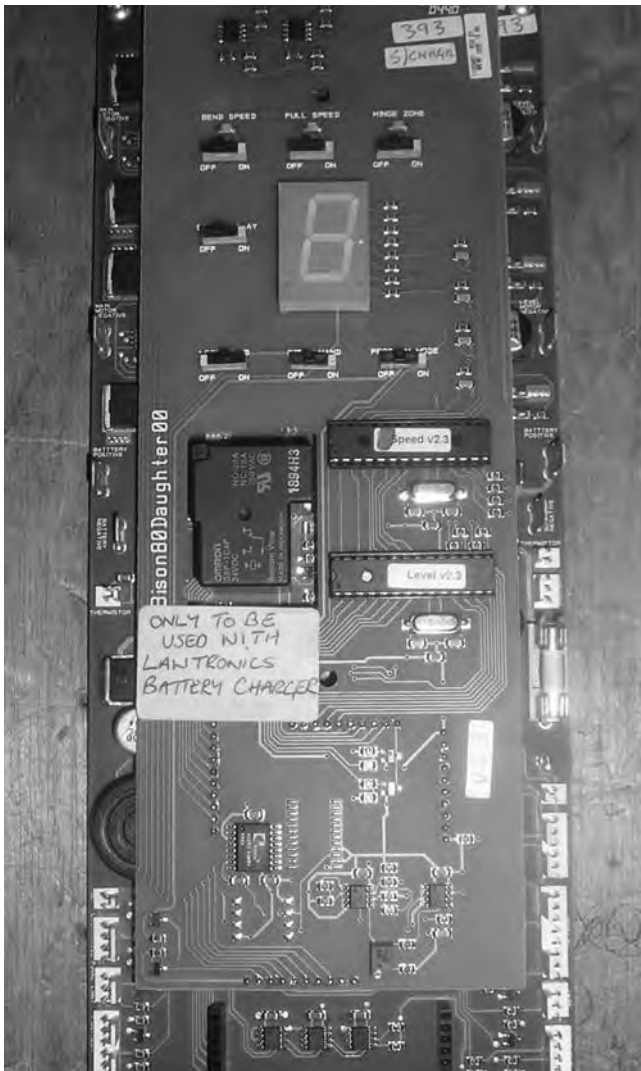


**IF AT ANY TIME THE PCB AND POWER SUPPLIES HAVE BEEN MIXED AS DESCRIBED ABOVE THEN THE PCB MUST BE REPLACED WITH THE CORRECT UNIT.**

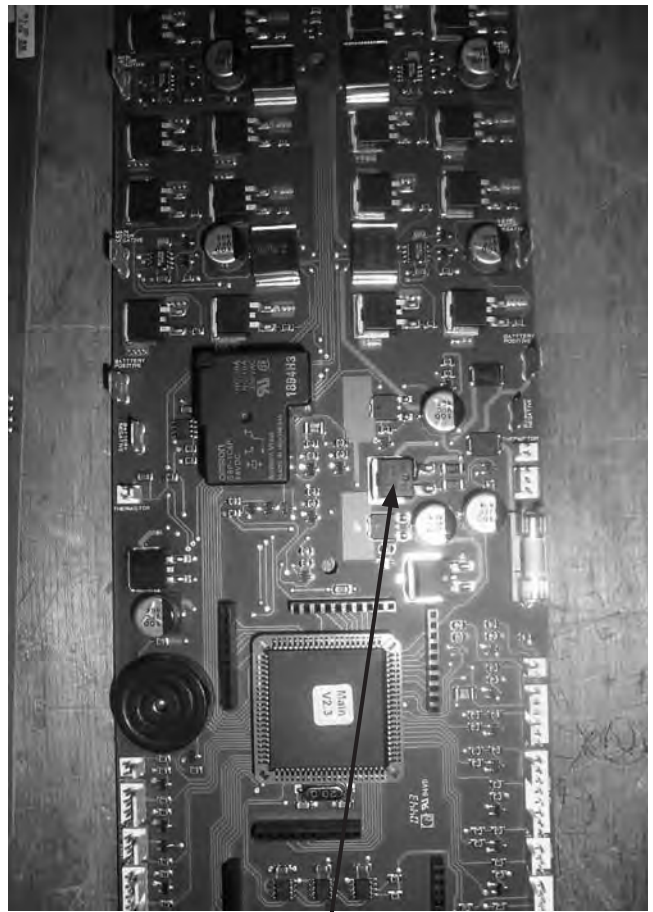
	<b>Standard Power Supply 1231366</b>	<b>High Power Charger 1021312</b>	<b>European power supply 1020999 or 1021416</b>
<b>Standard PCB 1231366</b>	OK	Reduction in battery performance	OK
<b>Supercharger PCB 1231457</b>	Batteries will be damaged beyond repair	OK	Batteries will be damaged beyond repair

# SECTION 7

## Dismantling Components



Supercharger PCB (Part number 1231457)



Modified component on the Mother board

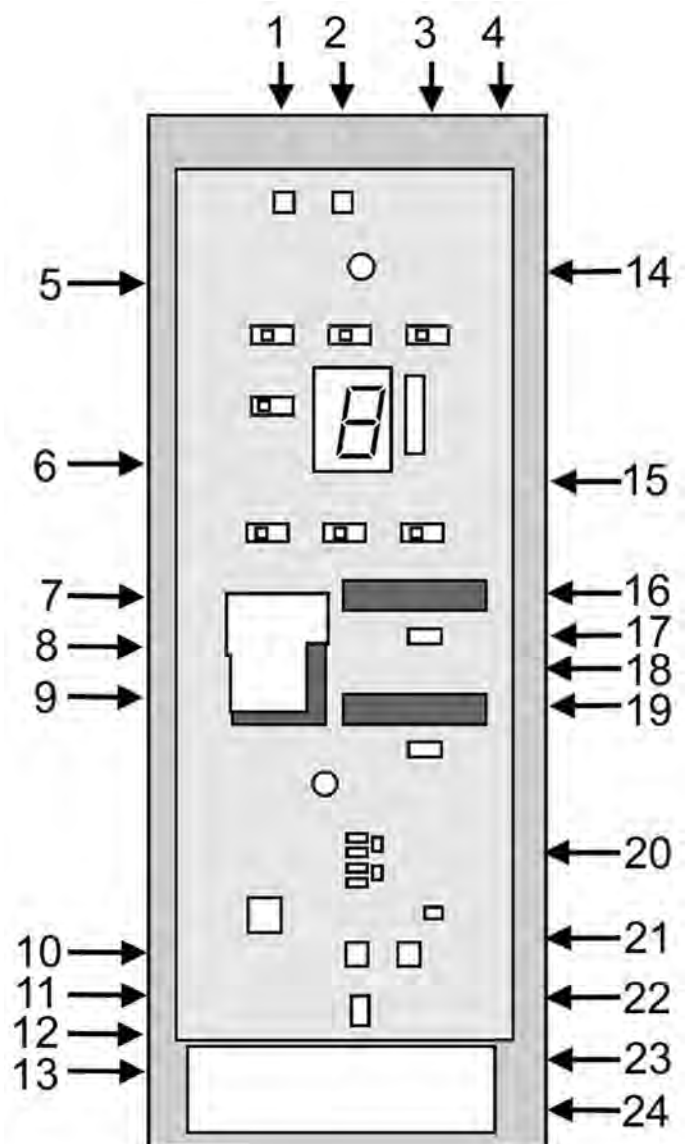
# SECTION 7

## Dismantling Components

### 7.5.3 PCB Connections

These are inscribed in English on the main board, and are provided here as a numbered list for translation purposes when necessary.

- **1** Level Motor Encoder
- **2** Ground
- **3** Drive Motor Encoder
- **4** Main Motor Brake
- **5** Level Motor Positive
- **6** Level Motor Negative
- **7** Battery Positive
- **8** Battery Negative
- **9** Thermistor
- **10** Right-hand PSE (Pressure Sensitive Edge)
- **11** Overtravel (Levelling)
- **12** Final Limit
- **13** Footrest
- **14** Main Motor Positive
- **15** Main Motor Negative
- **16** Battery Positive
- **17** Battery Negative
- **18** Thermistor
- **19** Charger
- **20** Left-hand PSE (Pressure Sensitive Edge)
- **21** Arm
- **22** Options
- **23** Seat
- **24** Overspeed



# SECTION 7

## Dismantling Components

### 7.6 Carriage

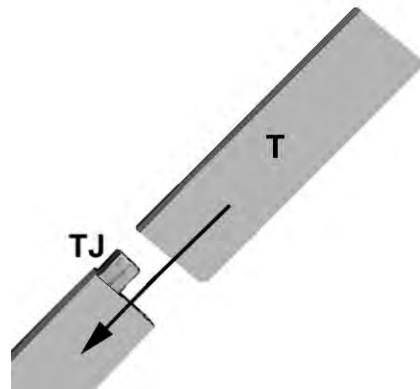
With the seat removed the carriage assembly weighs 39 Kilograms (86 pounds). When removing the carriage it is transferred onto the transfer rail, which will increase the total weight to 43.4 Kilograms (96 pounds). Servicing Engineers must use suitable safe lifting procedures to handle this weight.

#### 7.6.1 Transfer Rails

New Carriages are supplied mounted onto a transfer rail. These can be retained after installation and used for subsequent servicing. Ensure any sharp edges at the ends are chamfered off with a file.

#### 7.6.2 Carriage Removal

- 1 Remove the seat from the carriage – **see Seat Removal.**
- 2 Remove a section of rail, leaving the top joint box (TJ) into the rail section.
- 3 Fit the transfer rail (T) and cover the joint box. The carriage may be transferred onto a horizontal section of rail or a sloping section as shown here. Locate with one screw.

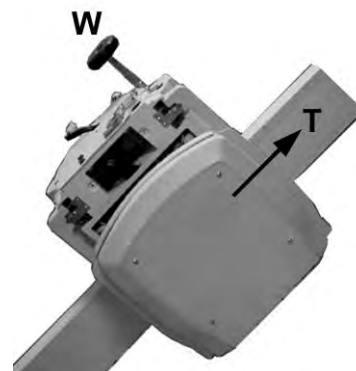


**IF THE RAIL IS CUT AT AN ANGLE YOU MAY HAVE TO TAKE OUT THAT SECTION TO ACHIEVE A STRAIGHT CUT, SO TRANSFER RAIL WILL MATE UP CORRECTLY.**



**PULL THE CARRIAGE OFF OF THE RAIL SLOWLY TO AVOID ACTIVATING THE OSG.**

- 4 Fit the winding handle (W) onto the top of the drive motor, and then wind the carriage onto the transfer rail.
- 5 The transfer rail has a rack fixed to it so the carriage can be run fully onto the rail.



# SECTION 7

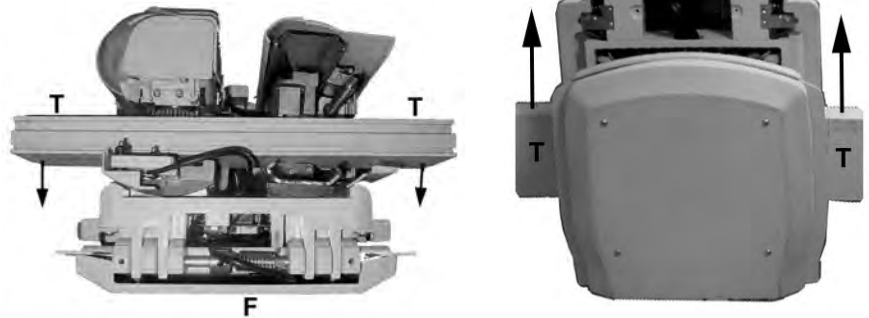
## Dismantling Components

- 6 Whenever possible hold the transfer rail (T) to pick up the carriage.



**WHEN THE TRANSFER RAIL AND CARRIAGE IS REMOVED ENSURE THAT THE POWER & LEVELLING BOGIES DO NOT PIVOT IN AND TRAP YOUR FINGERS.**

- 7 Place the carriage slowly down so that the footrest (F) is resting on a clean surface.
- 8 Remove the transfer rail (T).
- 9 Drive Pinions and rollers may now be inspected.



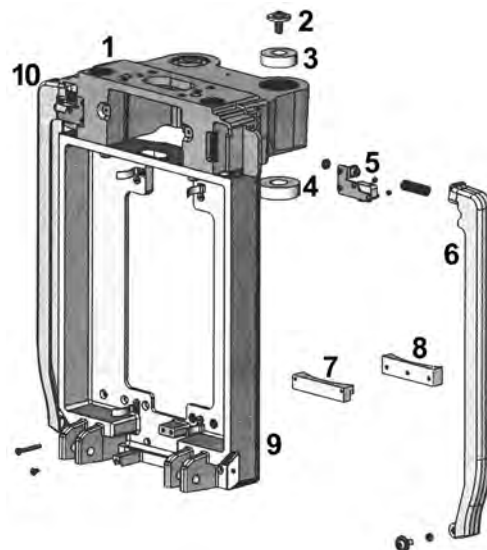
### 7.6.3 Carriage Dismantling



**THESE ITEMS ARE SHOWN AS PART OF THE ASSEMBLY AND ARE NOT NECESSARILY COMPLETE SPARE PARTS.**

#### MAIN FRAME ASSEMBLY

- 1 Top Casting
- 2 Button Head Bolt
- 3 Bearing
- 4 Bearing
- 5 PSE Switch
- 6 PSE
- 7 Bearing Shoe
- 8 Bottom Bearing
- 9 Mainframe Casting
- 10 Right hand switch (PSE) shown assembled

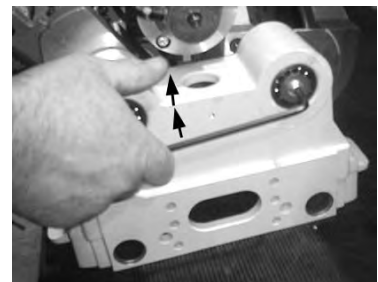
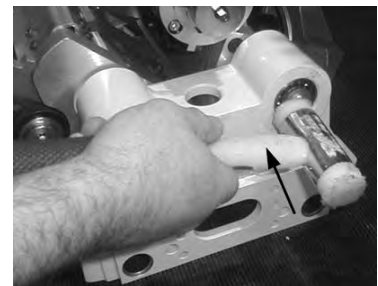
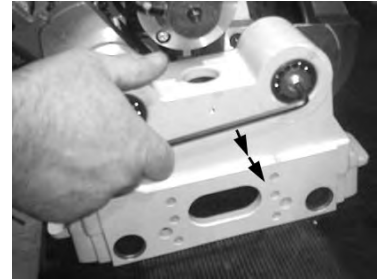
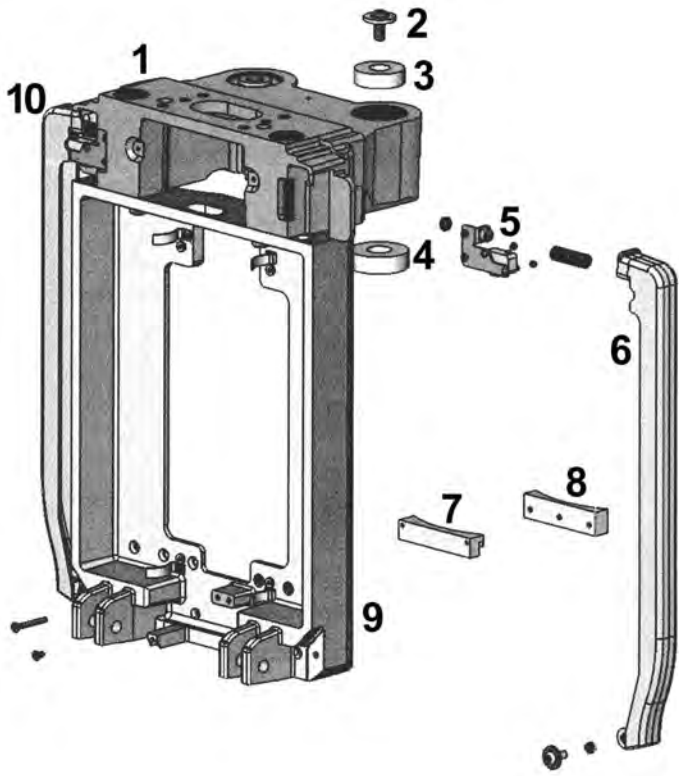


## SECTION 7

### Dismantling Components

#### 7.6.4 Removing Power & Levelling Bogies

- 1 Unscrew button head bolt (2) a few turns.
- 2 Tap the top of the button head bolt with a soft mallet to knock the spindle out of the bearings (3 & 4), progressively unscrewing the bolt.



#### 7.6.5 Refitting Power & Levelling Bogies

- 1 Push the Bogie spindle into the bearings and screw in the button head bolt.
- 2 Tighten the button head bolt to the required torque

#### 7.6.6 Carriage PSE Switches

Renew the PSE switches if required.

The left-hand switch (**5 - shown removed**) connects to the corresponding terminal marked PSE on the main PCB.

The right-hand switch (**10 - shown assembled**) connects to the corresponding terminal marked PSE on the main PCB.



### 7.6.7 Refitting Carriage To Rail



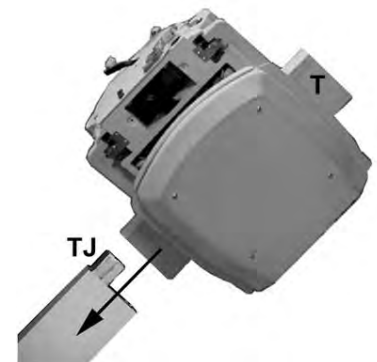
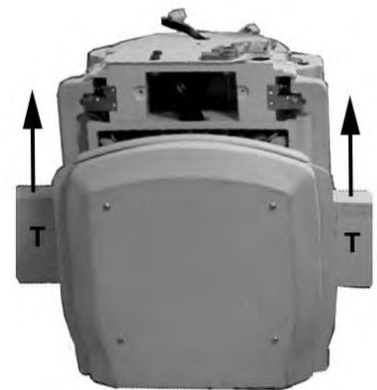
**THE CARRIAGE ASSEMBLY AND TRANSFER RAIL WEIGH 43.4 KILOGRAMS (96 POUNDS). THE SERVICE ENGINEER MUST USE SUITABLE SAFE LIFTING PROCEDURES TO HANDLE THIS WEIGHT.**



**ENSURE THAT OSG HAS NOT BEEN ACTIVATED DURING TRANSIT. RESET IF NECESSARY FOLLOWING PROCEDURES IN SECTION 8.**

Whenever possible hold the racked transfer rail (T) to pick up the carriage.

The carriage weight **MUST BE SUPPORTED** when transferring it onto the sloping section of rail.



- 1 Fit the transfer rail (T) and carriage over the joint box. The carriage may be transferred onto a horizontal section of rail or a sloping section as shown here. Fit one screw to pull plate.

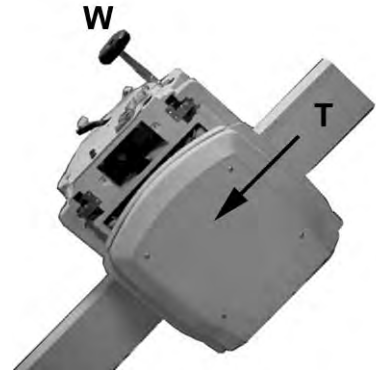


**ON NO ACCOUNT MUST POWER TOOLS BE USED TO WIND THE CARRIAGE ON OR OFF THE RAIL.**

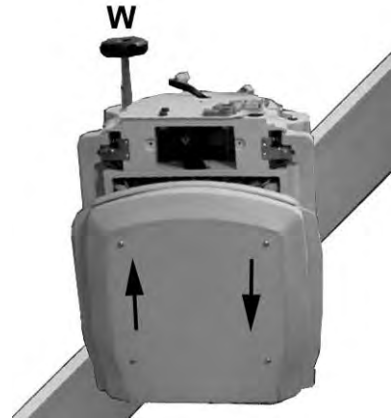
## SECTION 7

### Dismantling Components

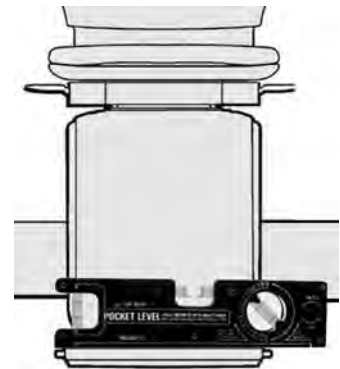
- 2 Fit the winding handle (**W**) onto the top of the drive motor. Handwind the carriage off the transfer rail (**T**) onto the fitted rail. Remove transfer rail. Where necessary, fit the last section of rail.



- 3 Level the carriage as required, using the winding handle (**W**) on the levelling motor.



- 4 Check the carriage is level with a spirit level on the footrest.





### 7.7 Power Bogie

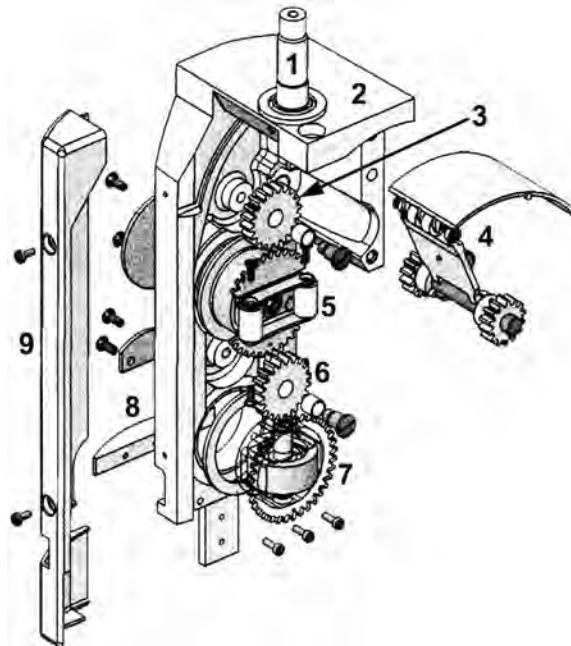
#### 7.7.1 Main Components



THESE ITEMS ARE SHOWN AS PART OF THE ASSEMBLY AND ARE NOT NECESSARILY COMPLETE SPARE PARTS.

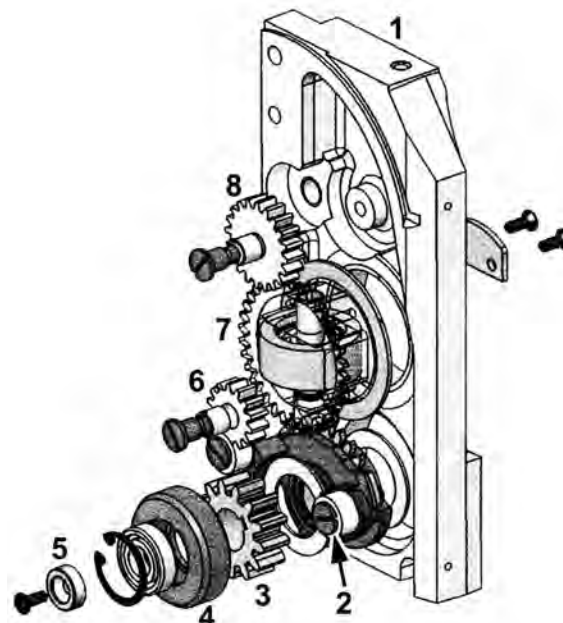
#### POWER BOGIE FRONT ASSEMBLY

- 1 Pivot Spindle
- 2 Front Casting
- 3 Gear
- 4 Shutter Assembly
- 5 Side Roller Assembly
- 6 Gear
- 7 Wheel Assembly
- 8 Tenon Block
- 9 Front Cover



#### POWER BOGIE REAR ASSEMBLY

- 1 Rear Frame
- 2 Rail Follower Assembly
- 3 Drive Motor Pinion
- 4 Support Wheel
- 5 Backstop
- 6 Gear
- 7 Rear Hub Assembly
- 8 Gear

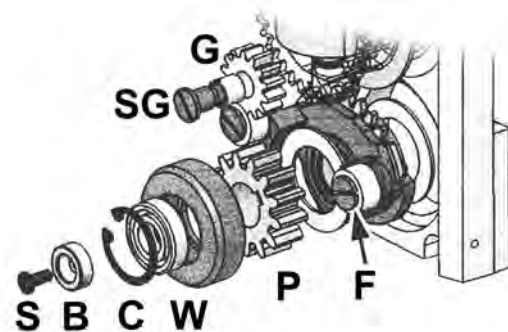
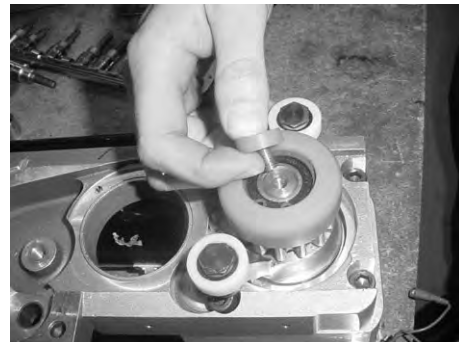
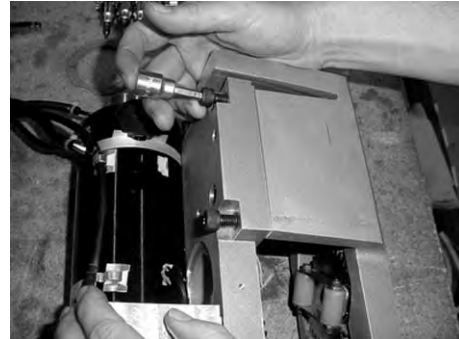


# SECTION 7

## Dismantling Components

### 7.7.2 Dismantling Rollers & Pinion

- **1** Unscrew the three cap head screws (two on the side and one on the top) to separate the front and rear assemblies.
- **2** Unscrew the countersunk screw (**S**) and remove the backstop (**B**).
- **3** Remove the circlip (**C**) and pull off the support wheel (**W**) and its bearing.
- **4** Remove the pinion (**P**) and rail follower (**F**) assembly.
- **5** Remove Screw (**SG**) and Gearwheel (**G**).
- **6** The motor and gearbox may now be removed if required.
- **7** Inspect the backstop, support wheel, bearing and pinion - renew if necessary.
- **8** Inspect the side rollers on the wheel and rear hub assemblies and on the bogie steering assembly - renew if necessary.



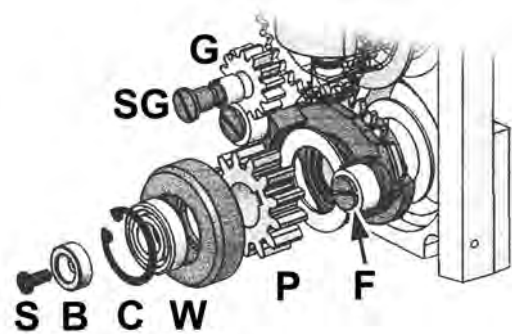
### 7.7.3 Reassembling Rollers & Pinion

- **1** Fit Gearwheel (**G**) and secure with Screw (**SG**).
- **2** Fit the rail follower (**F**).
- **3** Fit the pinion key into the shaft then fit the bearing and pinion (**P**).

## SECTION 7

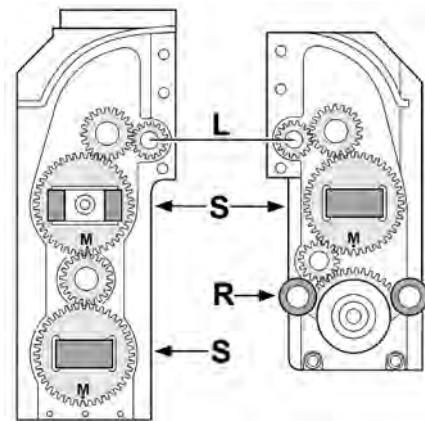
### Dismantling Components

- 4 Fit the support wheel (**W**) and its bearing and secure with the circlip (**C**).
- 5 Fit the backstop (**B**) and fasten with the countersunk screw (**S**).



**THE GEAR TRAINS OF BOTH BOGIE HALVES ARE CONNECTED BY A LAYSHAFT (L). IT IS IMPORTANT THAT THE GEARING IS ALIGNED SO THAT ALL SIDE ROLLERS (S) AND THE RAIL FOLLOWER ASSEMBLY (R) ARE HORIZONTAL AS SHOWN IN THE DIAGRAM. MARKS (M), STAMPED ONTO THE GEARS TO ASSIST WITH THIS, SHOULD BE POSITIONED AT BOTTOM DEAD CENTRE.**

- 6 Lightly spray the thrust washers of all gearing side rollers (**S**) and the rail follower assembly (**R**) with the recommended lubricant.
- 7 Fasten the front and rear assemblies together with the three cap head screws (two on the side and one on the top).



#### 7.7.4 Drive Motor Removal / Replacement



**THE DRIVE MOTOR, ENCODER, MOTOR BRAKE AND GEARBOX MUST BE REPLACED AS A COMPLETE ASSEMBLY. THEY CAN ONLY BE REMOVED AFTER THE POWER BOGIE HAS BEEN REMOVED FROM THE CARRIAGE AND THE DRIVE PINION REMOVED.**

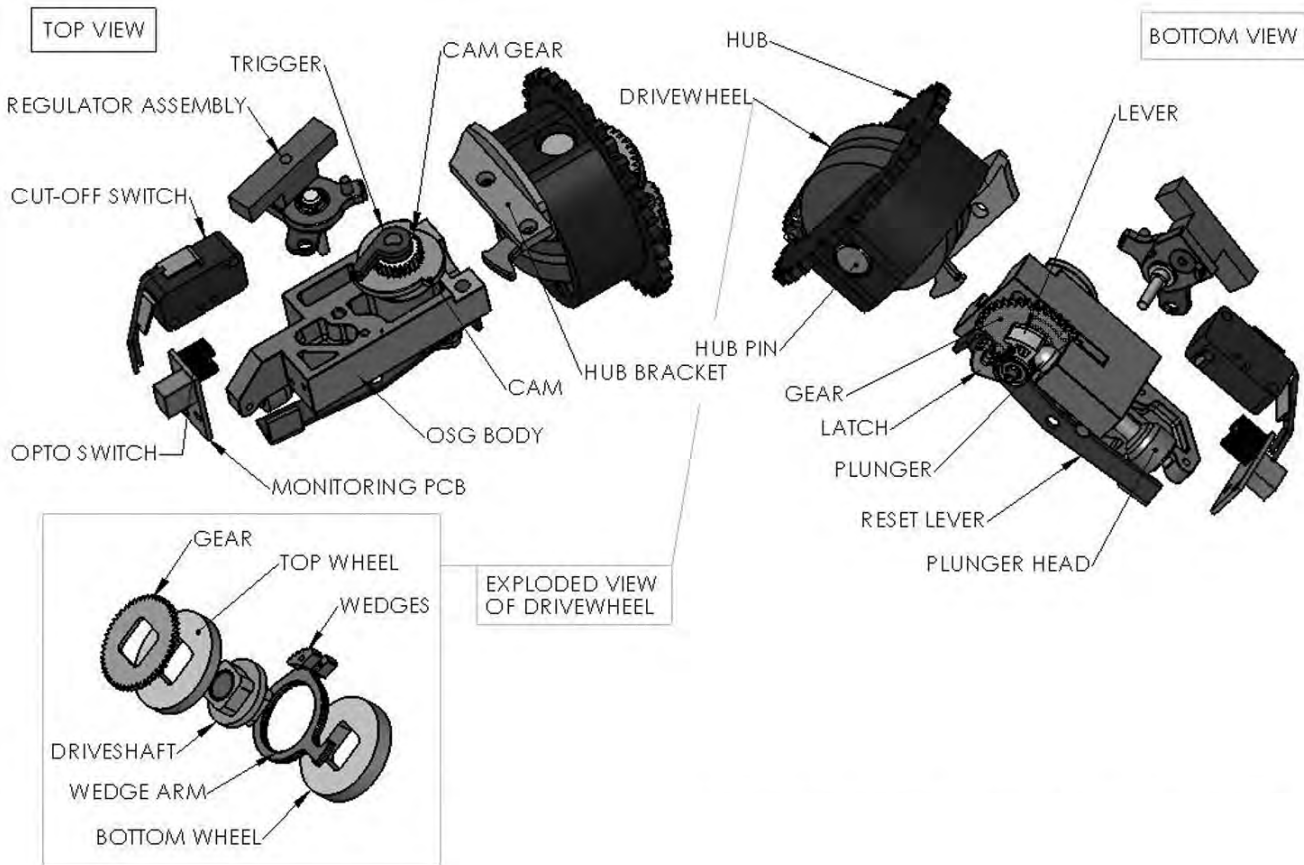
- 1 Disconnect the Motor and Motor Encoder from the main PCB.
- 2 Unscrew the four cap screws and remove the gearbox and motor from the rear frame.
- 3 Apply thread locking compound to the four cap screws and refit gearbox and motor to the rear frame.
- 4 Reconnect the MAIN MOTOR POSITIVE, MAIN MOTOR NEGATIVE, DRIVE MOTOR ENCODER and MAIN MOTOR BRAKE to the main PCB terminals.

# SECTION 7

## Dismantling Components

### 7.8 OSG Instructions

#### 7.8.1 OSG Exploded Diagram



#### 7.8.2 Checking The OSG

##### BEFORE RUNNING THE ACORN 80

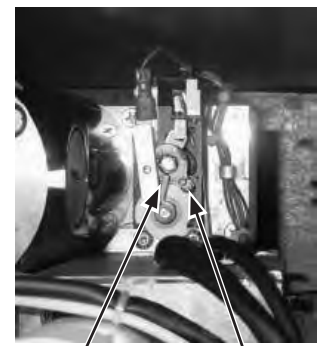
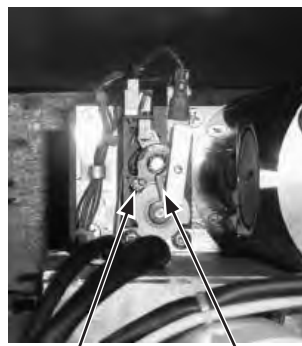
Ensure the Overspeed Governor is fully reset. Follow these simple instructions.

Remove the Power Bogie covers to view the OSG. Check that the Regulator and Trigger arm are in the position shown below.

**IF THE OSG DOES NOT LOOK LIKE THIS DO NOT ATTEMPT TO MOVE THE CARRIAGE** - refer to the OSG resetting instructions.

LEFT HAND UNIT

RIGHT HAND UNIT



Regulator Trigger Arm

Trigger Arm Regulator

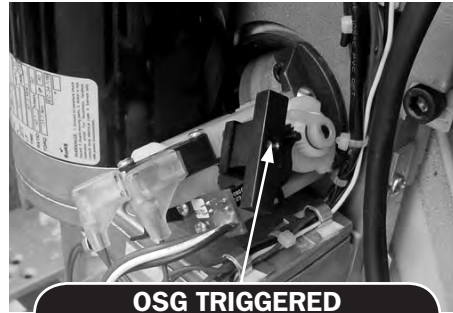


# SECTION 7

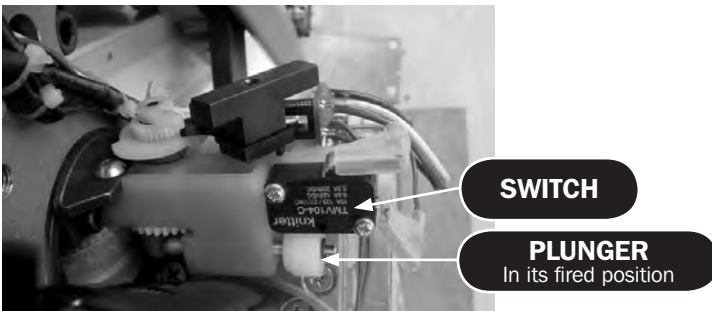
## Dismantling Components

### 7.8.3 OSG Re-setting Procedure

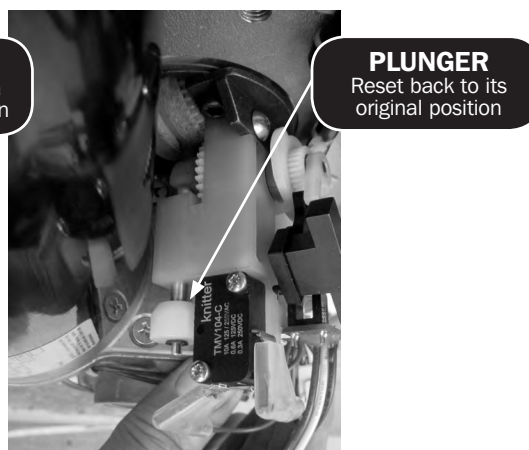
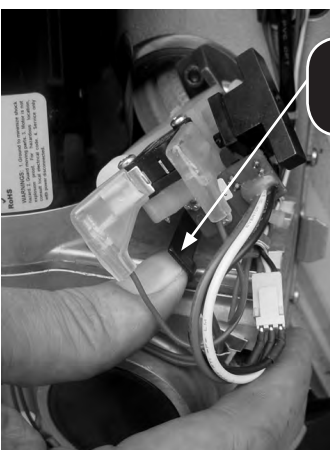
- 1 Inspect OSG to see whether it has triggered/fired - regulator weight will be in an upright position as shown below with the regulator teeth engaged with the Cam gear tooth and the OSG wedges will be up against the rail.



- 2 Picture below shows plunger in it's fired position activating the switch.



- 3 To reset the OSG, Press and hold down on the Reset Lever (In a downstairs direction) and this will deactivate the switch by resetting the plunger back to its original position.



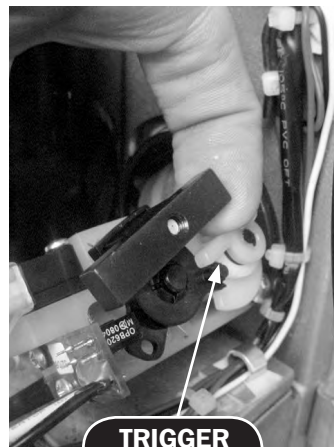
# SECTION 7

## Dismantling Components

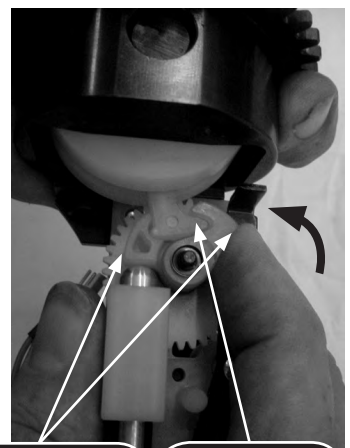
- 4 Whilst keeping the reset lever held hand wind the stair lift in an upwards direction until OSG wedges release and the regulator weight is in a horizontal position (normal operating position) ensuring the teeth of the regulator are clear of the Cam gear. Once set, release the reset lever.



- 5 Press down on the White trigger into its normal operating position ensuring the teeth of the regulator stay clear of the gear.



- 6 At the same time as pressing down on the trigger make sure that the latch & lever is located around the wedge arm and that the gears are in mesh on the opposite side of the OSG. Please note the images below show the OSG removed from the carriage, to make it clearer.

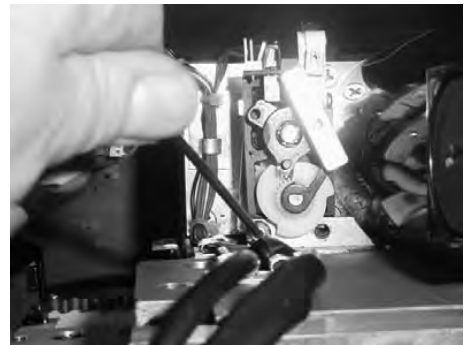
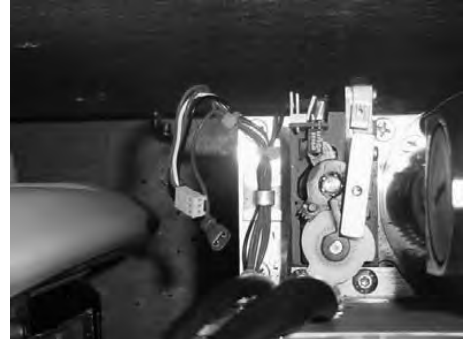


- 7 Re-fit the Power Bogie outers back onto the carriage.
- 8 Switch on the lift using the holding switch located on the seat arm/ back of the seat cover.
- 9 Run the lift an upward direction using the direction controller.

### 7.8.4 OSG Removal & Refitting Procedure

#### To Remove the OSG Body

- 1 Disconnect the wiring from the OSG switch and the rotation monitoring pcb.
- 2 Handwind the lift up the rail until the first OSG body fixing screw is accessible.
- 3 Remove the screw using a 3mm Allen key and long nosed pliers.
- 4 Handwind the lift up the rail until the second OSG body fixing screw is accessible and remove as described above.
- 5 Carefully remove the OSG body.
- 6 OSG body removed





# SECTION 7

## Dismantling Components

### To Remove the OSG Hub

- 1 Refer to the Acorn 80 Installation Manual and remove the carriage from the rail.
- 2 Remove the transfer rail from the carriage.
- 3 Remove the osg bracket. The hub can be rotated to give access to both the fixing bolts by placing a hand inside the power bogie and turning the drive wheel in the desired direction.
- 4 Remove the hub and thrust washer.



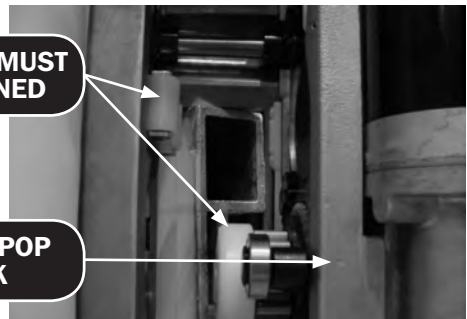
**RETAIN THE THRUST WASHER AND NOTE THE POSITION OF THE LOCATING PIN AND CUTOUTS IN RELATION TO THE POWER BOGIE GEAR TRAIN.**

### To Refit the Hub

- 1 Position rail follower level with the 'centre-pop' mark on the casting and ensure that the rollers on the opposite side of the power bogie are in alignment prior to re-fitting new hub.

**ROLLERS MUST BE ALIGNED**

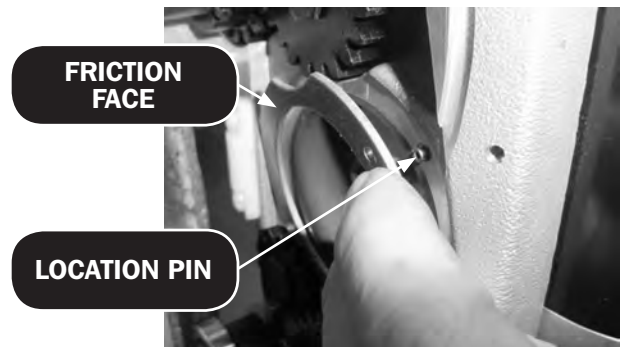
**CENTRE-POP MARK**



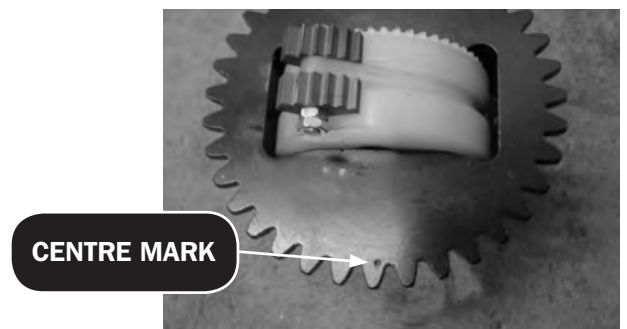
## SECTION 7

### Dismantling Components

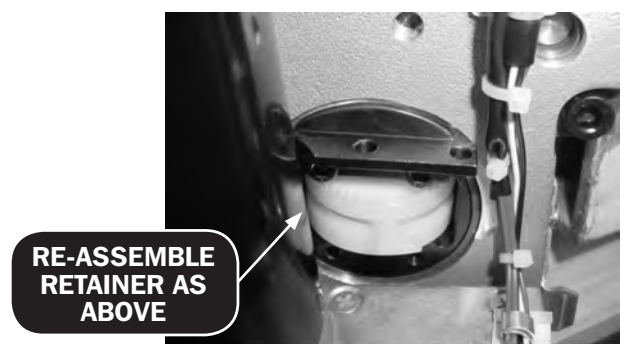
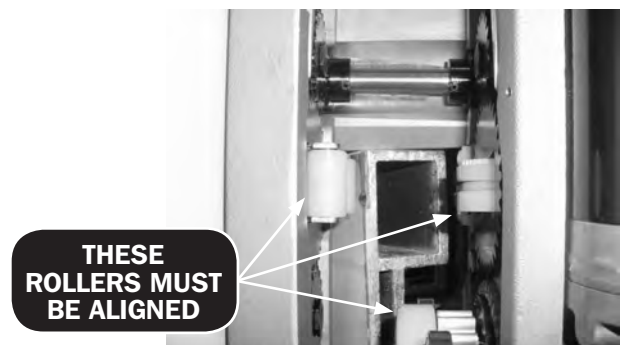
- 2 Assemble the thrust washer to the power bogie casting aligning with location pin. Ensure that the friction face is facing the rail.



- 3 Position the hub to the casting in alignment with the other rollers. Ensure the centre-pop mark on the hub is positioned to the bottom.



- 4 Secure the hub to the casting by re-assembling the retainer ensuring that the rollers are aligned



# SECTION 7

## Dismantling Components

### To Refit the Body

- 1 Hold the hub in place from inside the power bogie and refit the osg bracket to the rear of the hub.



- 2 Prepare the osg body with the regulator in position as shown on the top of the osg body.



The latches should be positioned as shown from underneath the osg body



- 3 Offer the osg body up to the rear of the hub and align the mounting holes with the bracket.



**TO CONFIRM THE CORRECT FITTING, CHECK FOR PRESSURE BY PRESSING THE OSG WEDGES AGAINST THE OSG HUB. RESISTANCE TO THE MOVEMENT OF THE WEDGES SHOULD BE FELT AS THEY PRESS AGAINST THE PLUNGER SPRING, AND THERE SHOULD BE VISIBLE MOVEMENT OF THE PLUNGER.**



**IF THE ENGINEER IS UNSURE AS TO WHETHER THE OSG IS CORRECTLY LOCATED REMOVE THE OSG BODY AND RESET THE LEVER POSITIONS AS DESCRIBED IN STEP 4.**

- 4 Rotate the drive wheel by hand to align the cam to give access to the mounting hole and fit the first screw as shown. Take care not to cross thread the mounting screw.
- 5 Rotate the drive wheel by hand and align the cam to give access to the remaining fixing hole and fit the second screw, taking care not to cross thread the screw.
- 6 Reset the osg, following the reset procedure and ensure that the arrestor wedges are fully retracted parallel to the hub.
- 7 Refit the carriage transfer rail into the carriage. Take care to ensure that all the rollers are correctly aligned and avoid tripping the osg.



**CHECK AT ALL TIMES WHEN REFITTING THE CARRIAGE THAT THE ARRESTOR WEDGES DO NOT COME INTO CONTACT WITH THE RAIL SURFACE.**



**USING A FLAT BLADED SCREW DRIVER WILL ASSIST IN PASSING THE RAIL OVER THE POWER BOGIE STEERING HUB ROLLER.**

- 8 Refit the carriage to the rail following the procedures laid out in the Acorn 80 Installation Manual. Re-fit all covers and the seat and test the operation of the lift.



# SECTION 7

## Dismantling Components

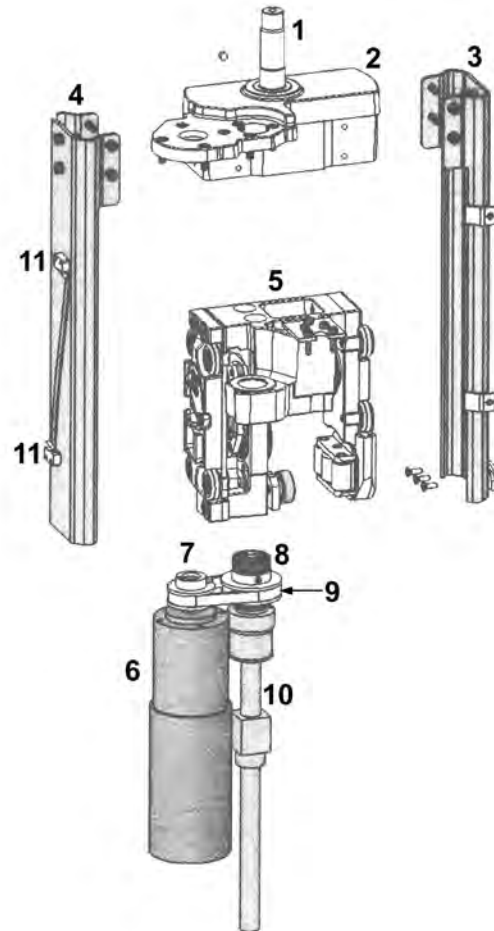
### 7.8.5 Main Components



THESE ITEMS ARE SHOWN AS PART OF THE ASSEMBLY AND ARE NOT NECESSARILY COMPLETE SPARE PARTS.

#### LEVELLING BOGIE FRONT GENERAL ASSEMBLY

- 1 Pivot Spindle
- 2 Centre Block
- 3 Front Guide Rail Assembly
- 4 Rear Guide Rail Assembly
- 5 Slide Assembly – see detailed view
- 6 Levelling Motor
- 7 Motor Pulley
- 8 Ball Screw Pulley
- 9 Timing belt
- 10 Ball Screw Assembly
- 11 Overtravel Limit Switches

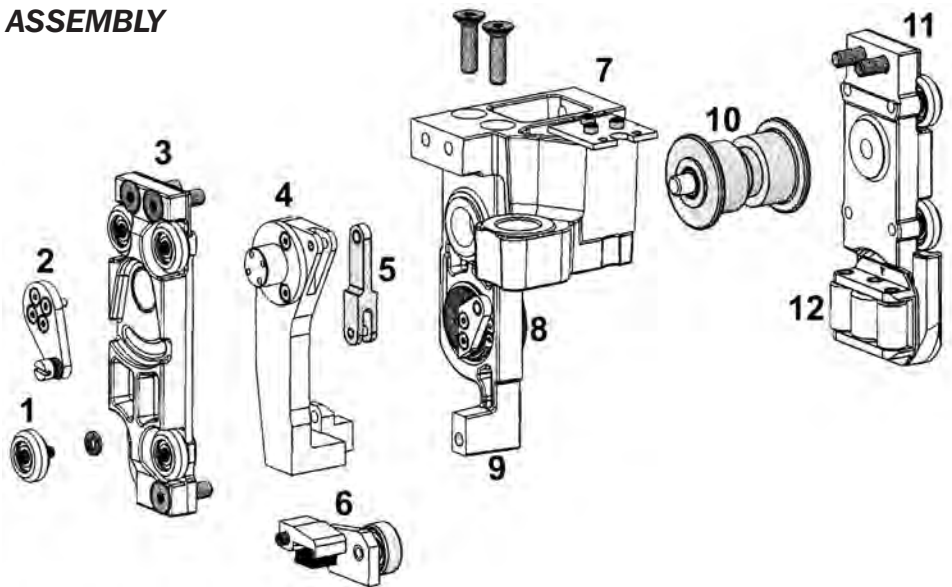




THESE ITEMS ARE SHOWN AS PART OF THE ASSEMBLY AND ARE NOT NECESSARILY COMPLETE SPARE PARTS.

### LEVELLING BOGIE SLIDE ASSEMBLY

- 1 Vee Wheel Assembly
- 2 Wheel Steering Plate
- 3 Rear Slider
- 4 Anti Tilt Hook
- 5 Anti Tilt Link
- 6 Anti Tilt Wheel Assembly
- 7 Slider Top
- 8 Side Wheel Assembly
- 9 Mid Slider
- 10 Top Roller
- 11 Front Slider
- 12 Side Wheel Assembly



# SECTION 7

## Dismantling Components

### 7.8.6 Levelling Drive Unit

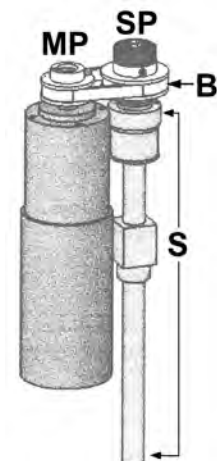


**THE LEVELLING MOTOR AND ENCODER AND GEARBOX MUST BE REPLACED AS A COMPLETE ASSEMBLY. THEY MAY BE REMOVED WITHOUT REMOVING THE LEVELLING BOGIE FROM THE CARRIAGE.**



**BEFORE CARRYING OUT THE FOLLOWING PROCEDURE, REFER TO INSTRUCTIONS IN APPENDIX 9.**

- **1** Disconnect the Motor and Motor Encoder from the main PCB.
- **2** Remove the motor pulley (**MP**) and ball-screw pulley (**SP**) together with the timing belt (**B**).
- **3** Unscrew the four cap screws and remove the motor from the centre block.
- **4** Inspect the timing belt and renew if necessary.
- **5** Inspect the levelling screw (**S**) and renew if necessary. Note that the Ball screw unit **MUST BE REPLACED AS A COMPLETE UNIT** – Do not attempt to remove the ball screw bearing from the levelling screw.
- **6** Apply thread-locking compound to the four cap screws and refit the motor to the centre block.
- **7** Refit the motor pulley and ball-screw pulley together with the timing belt.
- **8** Levelling Motor marked LEVEL MOTOR POSITIVE and LEVEL MOTOR NEGATIVE on the main PCB.
- **9** Reconnect the levelling Motor Encoder to terminal marked LEVEL MOTOR ENCODER on the main PCB.





## SECTION 7

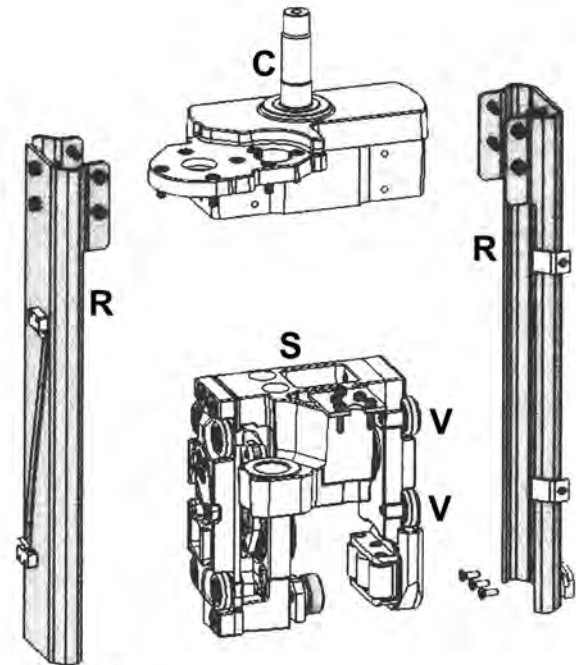
### Dismantling Components

#### 7.8.7 Levelling Guide Rails

If the vee wheels (**V**) on the slide assembly (**S**) require replacing, remove the guide rails (**R**) from the centre block (**C**).

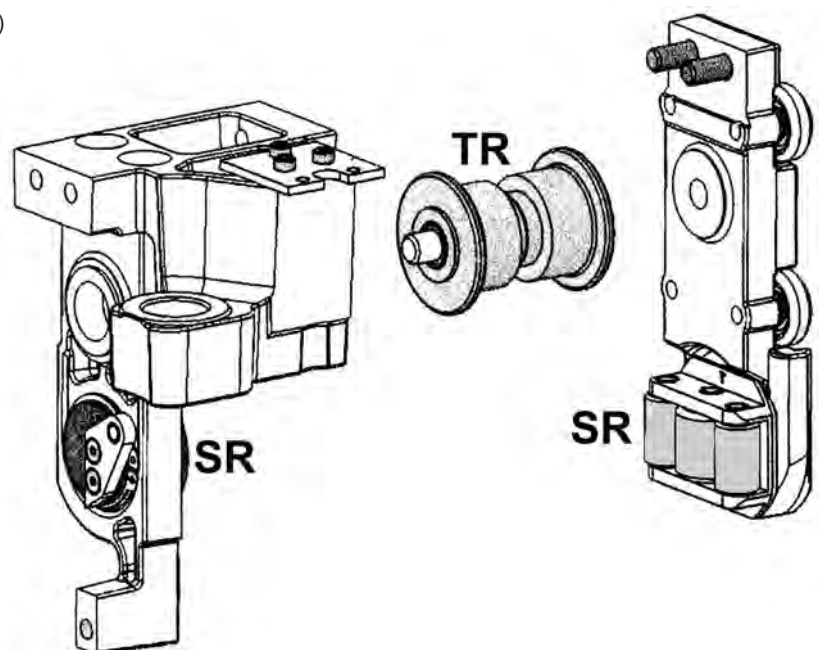
Lightly spray the vee wheel rails with the recommended lubricant.

When re-assembling, ensure that the steering rollers are correctly located in the slide rail assembly grooves because these align the side rollers when the unit is levelling.



#### 7.8.8 Rollers

Inspect top roller (**TR**) and side rollers (**SR**)  
– renew as necessary.



# SECTION 8

## Spares

# SPARES

Spares can be ordered from our **Service Department on +44(0)845 245 3600.**

When ordering spare parts Acorn require the following information to ensure that the correct parts are dispatched:

- **1** Lift Type and Serial Number - this information is on the machine identification plate.
- **2** The Part Number and Quantity of Parts required.

***Refer to Spares Price Guide.***

Tick the relevant boxes when the checks have been completed.

### RAIL

- Check all legs are correctly positioned.
- Check all leg - fixing screws are secure.
- Check charge points are secure and undamaged.

### SEAT

- Check swivel mechanism working correctly (where applicable).
- Remove seat and check that swivel pin securing screw is tight.
- Check arms remain in upright position when folded.

### CARRIAGE

- Check carriage is not loose on the rail.
- Check carriage runs freely without encountering obstructions.
- Manually test the operation of the over-speed governor.
- Test operation of all safety interlocks.
- Remove carriage from rail and check condition of rollers. Replace as required.
- Check all 5 P.S.E's are working correctly.
- Battery voltage satisfactory and record **V** =
- Check D.C. charge voltage satisfactory and record **V** =
- D.C. charge current satisfactory and record **mA** =

### GENERAL

- Check all warning and information labels are fitted where necessary.
- Check operation of arm control device.
- Check operation of call and sends.

Lift Serial Number

Other Work Required or Completed

## APPENDIX 2

### Recommended Tool List

<b>Recommended Tool List</b>	
<b>1</b>	Set of insulated Screwdrivers with Flat and Phillips heads
<b>2</b>	6 inch Side Cutters
<b>3</b>	Pliers
<b>4</b>	Radio Pliers
<b>5</b>	Set of metric Hexagonal keys (2.5mm – 10mm)
<b>6</b>	Pocket size spirit level
<b>7</b>	1/2 inch Drive ratchet
<b>8</b>	19mm x 1/2 inch drive socket
<b>9</b>	Digital Angle Finder
<b>10</b>	Digital Multi-meter
<b>11</b>	5m Steel Measuring Tape
<b>12</b>	1/2 inch drive Torque Wrench with suitable scale setting
<b>13</b>	Rack Meshing Tool
<b>14</b>	Crimping Tool

## Recommended Torque Settings

Component	Torque settings	
	Newton metres (Nm)	Foot Pounds
<i>M12 Leg clamp fixing bolt</i>	90	66.4
<i>M10 Top joint box grub screw</i>	26	19
<i>M8 Pull plate countersink fixing screws</i>	26	19
<i>M8 Bottom Joint fixing screws</i>	26	19

# APPENDIX 4

## Recommended Lubricants

<b>Recommended Lubricants</b>	
<b>Component</b>	<b>Lubricant</b>
<b>Seat swivel pin</b>	Interflon Fin Grease (Acorn part number 902231)
<b>Rail Rack</b>	
<b>Levelling Vee Wheel Rails</b>	
<b>Power Bogie Gear Wheel Thrust Washers</b>	
<b>Levelling Ball Screw</b>	Silicon Grease

### NORMAL OPERATION

Displayed when the lift is operating correctly.



Lift is in Standby Condition and ready to use



Lift is in Standby Condition but holding switch is set to off



Lift is moving up the rail



Lift is moving down the rail



Lift is at its correct stopped position



Batteries are fast charging (small light on)



Batteries are trickle charging (small light flashing)

### PROGRAMMING MODES

Displayed when the lift is being programmed.



No datum is set



Datum search is on



Programming mode is on



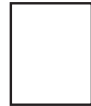
Programming the terminal limits (charge point positions)



**THESE CODES WILL ONLY BE DISPLAYED WHEN A CALL HAS BEEN MADE**

### FAULT CONDITIONS

Any of these codes may be displayed if the Stairlift has failed to operate.



Blank Display  
– No battery power



The Seat is swivelled out of its operating position



The Hinged Rail is not down in its operating position



The Seat or Footrest are not in their operating positions (certain applications only)



A Pressure Sensitive Edge (PSE) has been activated



Conflicting call signal between the lift armrest control and the remote control



There is insufficient charge in the batteries to allow the lift to complete a full journey.



Installation Error (Flashing Display) OR if displayed when the lift is being called, it indicates Motor Brake Failure



Feed Fault – No Power on main control circuit



The Stairlift has overrun the normal parking position and activated the Final Limit Switch.



Over-speed Governor has been activated



Over-speed Governor is not rotating



Levelling over travel limit switch protection



Printed Circuit Board power frame failure



Main Drive Motor Polarity is wrong



Levelling Motor Polarity is wrong



Encoder Failure (on Main Drive or Levelling Drive)



Accelerometer failure



Lift is out of level - electronic shut down



Lift is not being charged (Flashing Display and audible bleep alarm)



Main Drive Over Speed



Levelling Over Speed



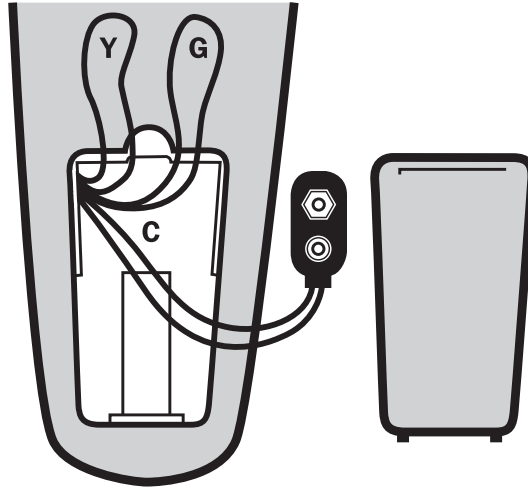
# APPENDIX 6

## Remote Control Radio Channels

For multi-stairlift installations it is necessary to select different channels for the remote controls for each stairlift. Four channels are available.

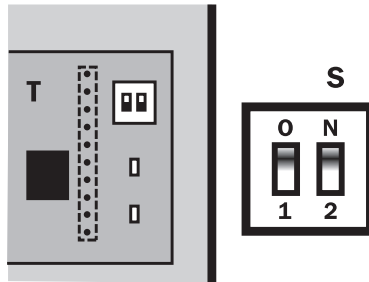
Green (**G**) and Yellow (**Y**) wire loops are located inside the battery compartment (**C**) of the remote handsets. The default channel **1** is with the loops intact.

- **1** Change the transmitter channels by cutting either or both the wire loops.



- **2** Dip switches (**S**) on the transceiver board (**T**) are set to **ON** or **OFF**.

Set the dip switches (**S**) to the positions indicated below.



Channel Selection				
Channel	Green Loop	Yellow Loop	Switch 1	Switch 2
1	Uncut	Uncut	On	On
2	Cut	Uncut	Off	On
3	Uncut	Cut	On	Off
4	Cut	Cut	Off	Off

**All voltages are measured with ref to ground. (0V)**

Check the encoder supply voltage on the red wire. This should be approximately 5V.

Make sure that there is continuity between the black, negative wire and ground.

Ensure that all the crimps are seated correctly and have not been flattened. This can happen when a meter probe is forced into the plug while testing. It can also make a connection and appear to be working correctly until the probe is removed!



# APPENDIX 7

## Levelling and Main Drive Encoder Testing

### Testing the channels of the encoder

The voltage should alternate between just under 5V and between 0.25V on both the yellow and green wires, while turning the levelling motor. The sequence between the two channels is:

YELLOW	GREEN
LOW 0	LOW 0
LOW 0	HIGH 1
HIGH 1	HIGH 1
HIGH 1	LOW 0

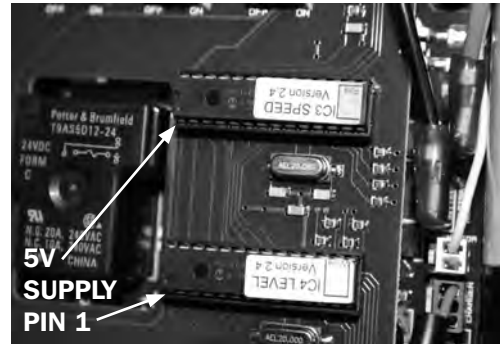
**Note:** This is reversed when turned in the opposite direction.

Hand-wind the levelling motor very slowly in either direction to change the state of the channel under test from 'high' to 'low'.

- The encoder signals can also be checked on.
- The speed chip pins.
- PINS 2,3 Main drive encoder.
- PINS 4,5 Levelling encoder.

The supply voltage to both speed and Levelling chips is 5V, and can be measured On Pin 1.

Repeat the same test for the main drive encoder. The channels are the **WHITE** and **GREEN** wires.



### Accelerometer Testing

All voltages are measured with ref to ground. (0V)

#### ■ Checking the output of the accelerometer

With the lift level, check the voltage at the point shown in the photo. This should be between **2.45-2.75V. Offset = 2.6V**

#### ■ Calibrating the accelerometer

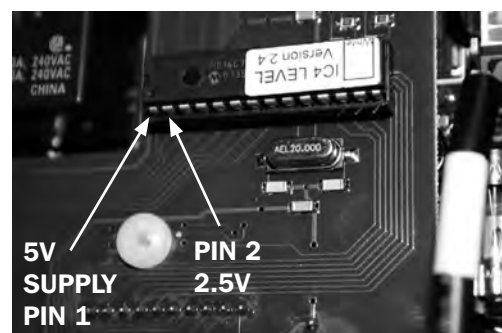
Check the voltage at the point shown. If required set the reading to 2.5V by adjusting the potentiometer.



**IF THE POTENTIOMETER NEEDS TO BE ADJUSTED AND THE LIFT HAS ALREADY BEEN PROGRAMMED, THE WHOLE RAIL MUST BE RE-PROGRAMMED.**

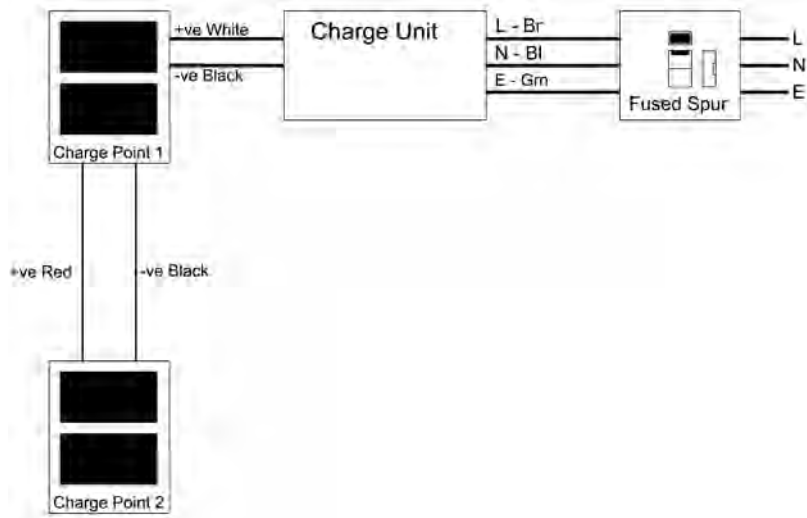
#### ■ Leveling chip voltages

The supply voltage for the levelling chip can be measured on **PIN1**. (Approximately 5V)  
The calibrated accelerometer voltage can now be checked on **PIN 2**.



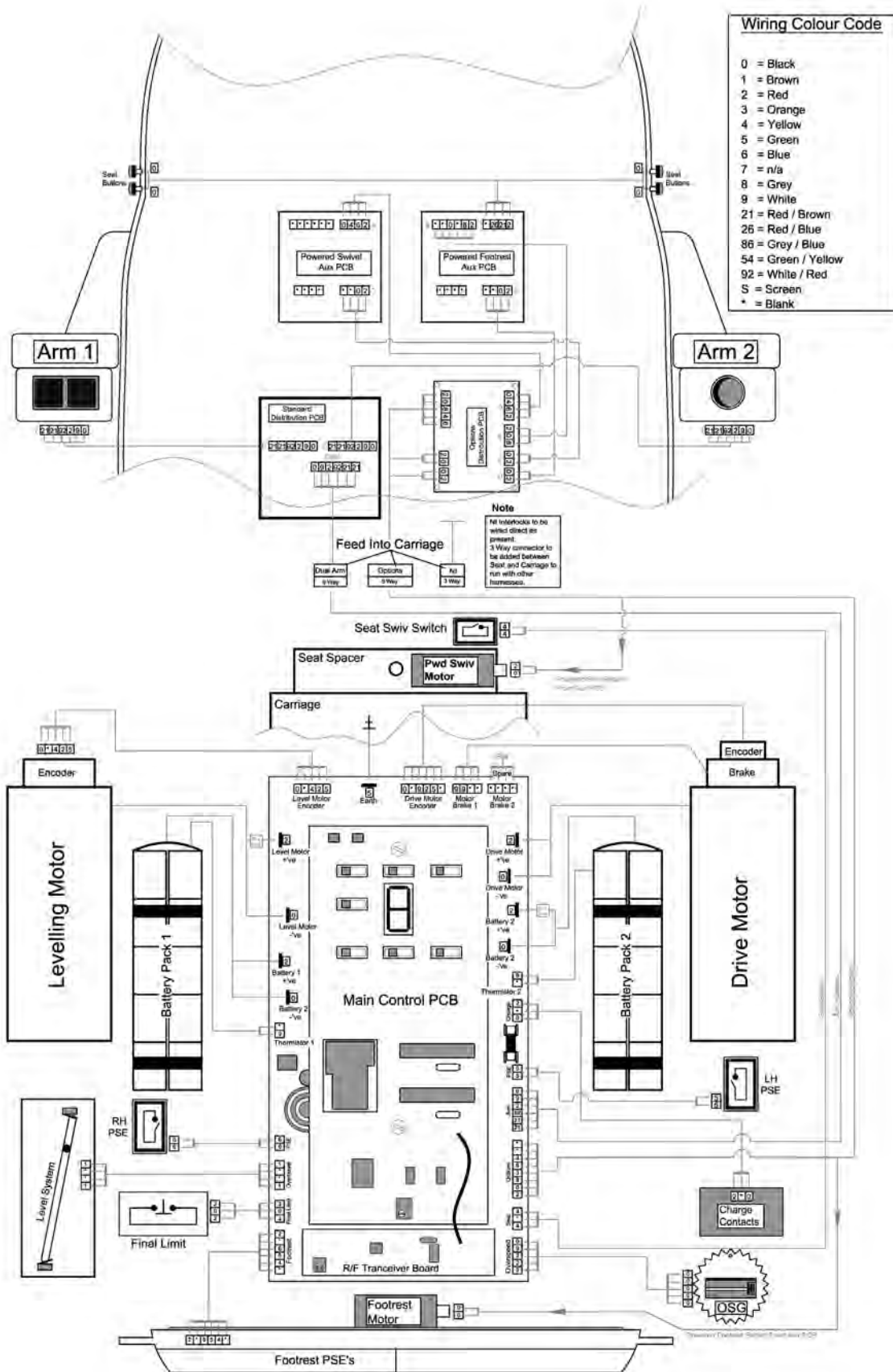
# APPENDIX 8

## Charge System



# APPENDIX 9

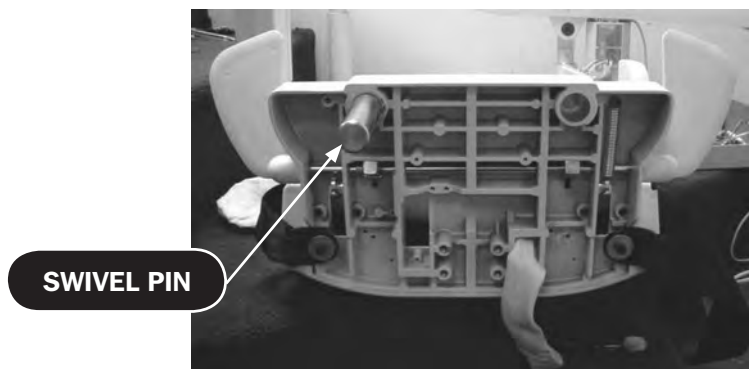
## Wiring Diagrams



## RATIONALISATION PROCEDURES

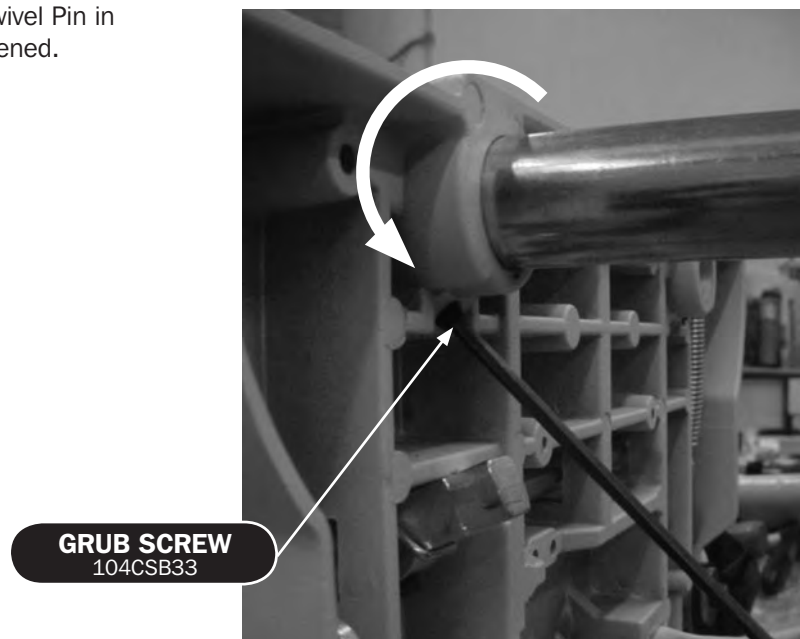
### 10.1 Changing Hand Of Seat

The below image shows a Right-handed Seat, this can be distinguished by position of the Swivel Pin being on the left, when viewing the seat from the base.



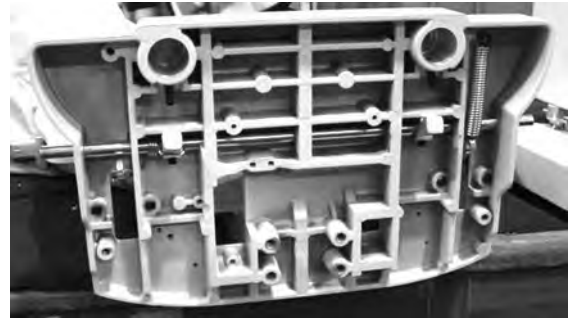
In order to change the hand of the seat the below changes must be implemented.

- 1 Remove the grub screw securing the Swivel Pin in position and remove the shaft one loosened.





- 2 The base of the seat should now look like this.

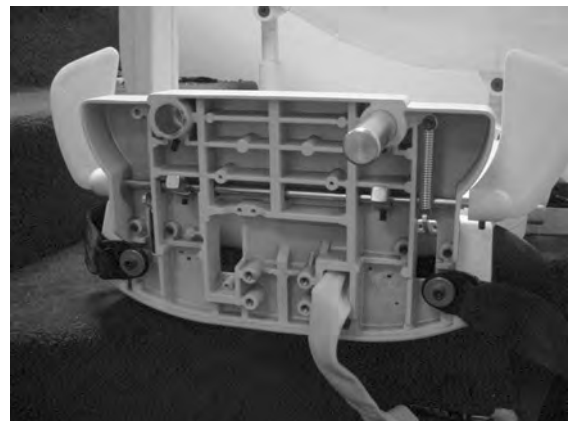


- 3 Position the swivel pin in the opposite side of the base casting and secure in with the pre-assembled **PATCHED** grub screw using, ensuring there is no movement in the pin.



**IF PATCHED BOLT IS NOT PRESENT, USE  
LOCTITE 243 AND SECURE IN POSITION**

- 4 The lift has now been changed to a Left Handed seat.
- 5 Place seat on carriage and check to see if the swivel release operates freely and locks correctly.



# APPENDIX 10

## Rationalisation Procedures

### 10.2 Replacing Seat Spacer On-site

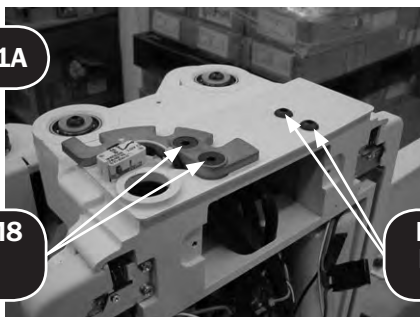
- 1 Disconnect the seat from the Arm Harness, and remove the seat from the carriage.
- 2 Remove Front cover from the carriage.



- 3 Remove Seat spacer cover from mainframe by either removing the 2 x M8 CSK screws (**901045**), 2 x Dome head screws (**1040250**) and 4 off M8 nuts (**900009**) as shown in Option 1A/1B, or by removing the 4 x M8 x 20 (**901200**) screws as shown in Option 2A/2B.

OPTION 1A

REMOVE 2 x M8  
CSK SCREW  
901045



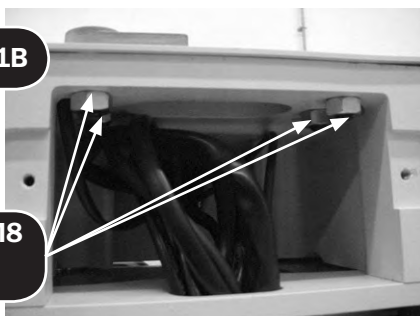
REMOVE DOME  
HEAD SCREWS  
1040250

OPTION 2A



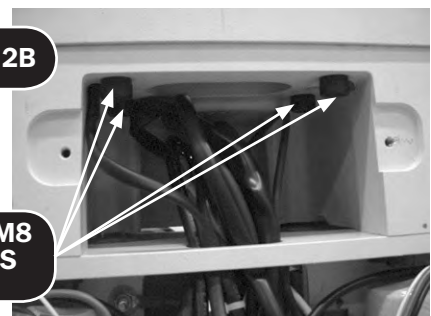
OPTION 1B

REMOVE 4 x M8  
NUTS  
900009



OPTION 2B

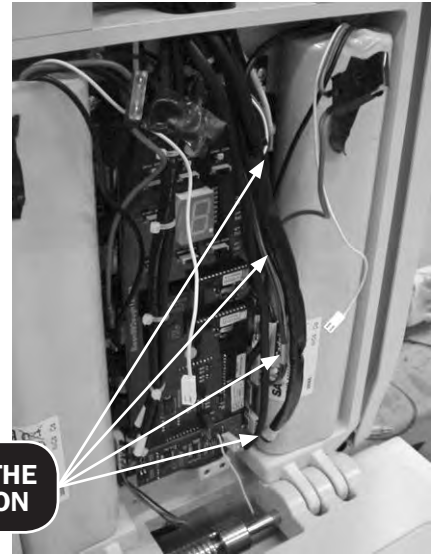
REMOVE 4 x M8  
x 20 SCREWS  
901200



- 4 Disconnect the Seat interlock harness from the main PCB and remove all the tie wraps that is securing the harness in position. Completely remove the seat spacer assembly.

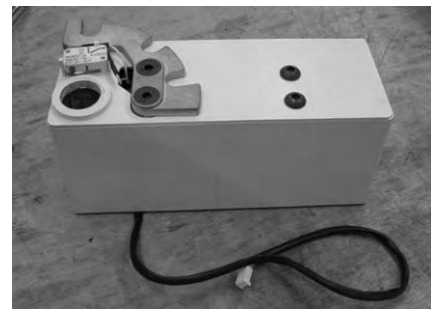


**REMOVE SEAT INTERLOCK HARNESS**

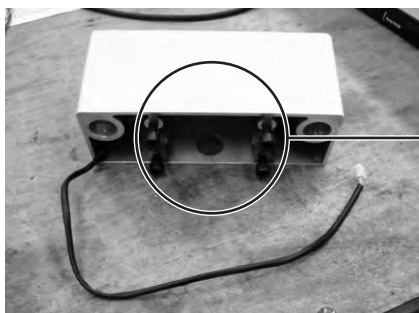


**REMOVE TIE-WRAPS SECURING THE INTERLOCK HARNESS IN POSITION**

- 1243000** – 530 Seat Spacer complete L/H
- 1243002** – 550 Seat Spacer complete L/H
- 1243004** – 580 Seat Spacer complete L/H
- 1243001** – 530 Seat Spacer complete R/H
- 1243003** – 550 Seat Spacer complete R/H
- 1243005** – 580 Seat Spacer complete R/H

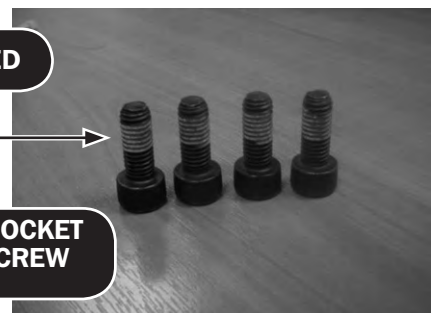


- 5 Take the required seat spacer assembly and remove the partly screwed 4 x M8 x 20mm Socket Cap Head screws **902100** from the bottom of the casting.



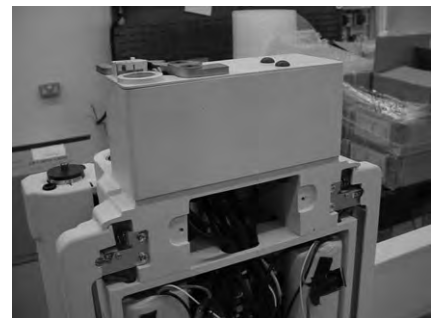
**PATCHED**

**4 x M8 x 20 SOCKET CAP HEAD SCREW 902100**



**BOLTS SHOULD HAVE LOCTITE PATCH ON THREAD. IF NOT PRESENT LOCTITE 270 SHOULD BE USED**

- 6 Position the new Seat spacer assembly onto the mainframe ensuring the hole for the Seat swivel pin is correctly aligned with the hole on the mainframe casting and that the Seat interlock harness is fed through the casting correctly.



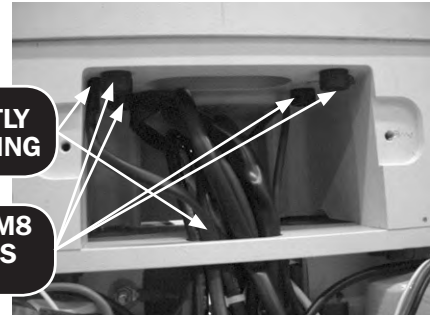
# APPENDIX 10

## Rationalisation Procedures

- 7 Secure the seat spacer assembly with the 4 x M8 x 20mm Socket Cap Head screws **902100** that were supplied with spacer.

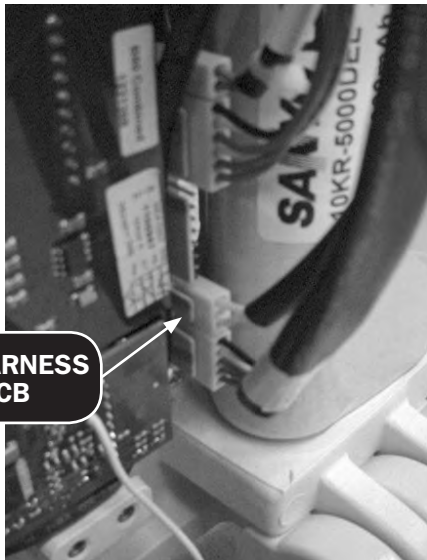
**HARNESS WIRING FED CORRECTLY THROUGH THE MAINFRAME CASTING**

**REMOVE 4 x M8 x 20 SCREWS**  
901200

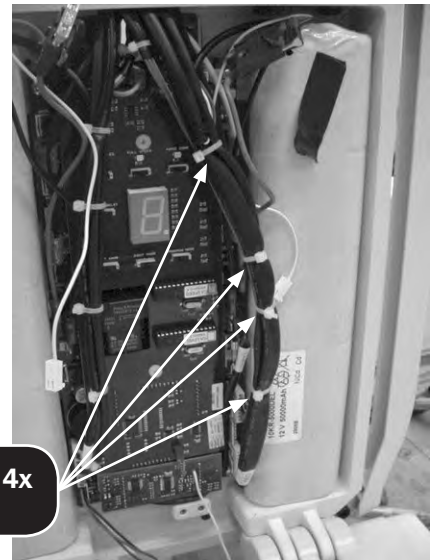


- 8 Reconnect the Seat interlock harness onto the board as shown and secure the harness in place with 4 x Tie wraps.

**RECONNECT HARNESS TO MAIN PCB**



**SECURE WITH 4x TIE WRAPS**



- 9 Secure front cover back onto the mainframe.
- 10 Reposition the seat onto the carriage, Reconnect carriage harness and secure Lower back cover and back pad back onto the seat.





### 10.3 Assembly Of Powered Swivel On-site

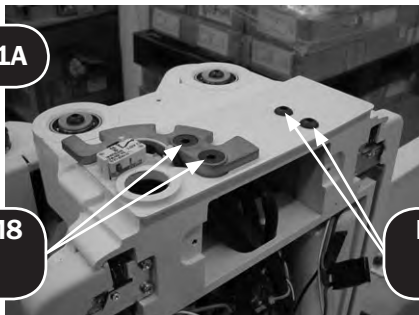
- 1 Disconnect the seat from the arm Harness and remove the seat.



**DISCONNECT FROM HERE  
AND REMOVE FROM SEAT**

- 2 Remove Seat spacer cover from mainframe by either removing the 2 x M8 CSK screws (**901045**), 2 x Dome head screws (**1040250**) and 4 off M8 nuts (**900009**) as shown in Option 1A/1B, or by removing the 4 x M8 x 20 (**901200**) screws as shown in Option 2A/2B.

**OPTION 1A**



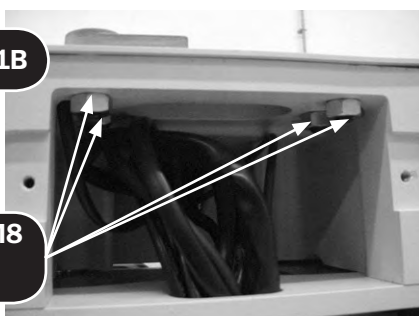
**REMOVE 2 x M8  
CSK SCREW  
901045**

**REMOVE DOME  
HEAD SCREWS  
1040250**

**OPTION 2A**

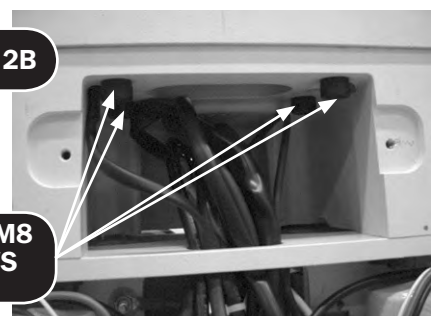


**OPTION 1B**



**REMOVE 4 x M8  
NUTS  
900009**

**OPTION 2B**



**REMOVE 4 x M8  
x 20 SCREWS  
901200**

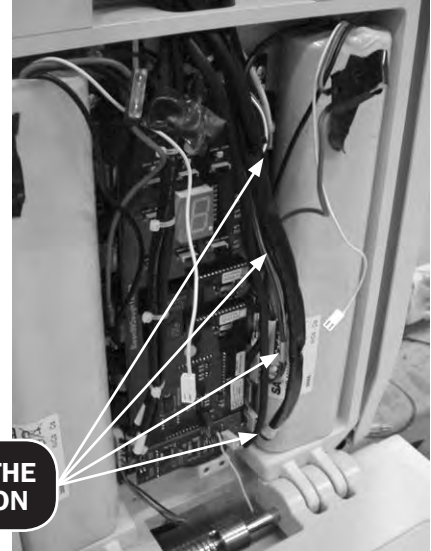
# APPENDIX 10

## Rationalisation Procedures

- 3 Disconnect the Seat interlock harness from the main PCB and remove all the tie wraps that is securing the harness in position. Completely remove the seat spacer assembly.



REMOVE SEAT INTERLOCK HARNESS



REMOVE TIE-WRAPs SECURING THE INTERLOCK HARNESS IN POSITION

- 4 Unpack pre-assembled Power Swivel Assembly

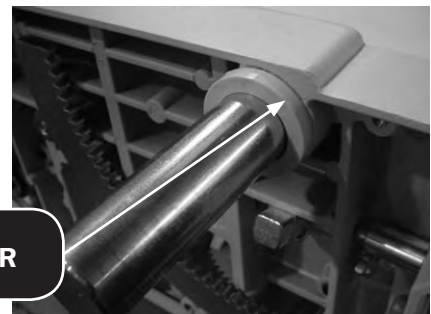
- 1243007 – 530 Powered Swivel Seat Spacer complete L/H
- 1243009 – 550 Powered Swivel Seat Spacer complete L/H
- 1243011 – 580 Powered Swivel Seat Spacer complete L/H
- 1243013 – 530 Powered Swivel Seat Spacer complete R/H
- 1243015 – 550 Powered Swivel Seat Spacer complete R/H
- 1243017 – 580 Powered Swivel Seat Spacer complete R/H



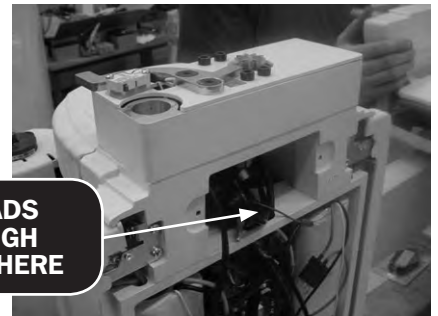
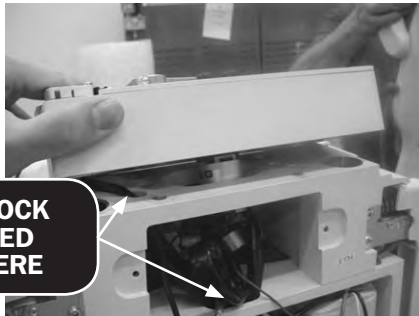
- 5 Remove Swivel pin thrust washer (**112CSB22**) from the Powered swivel spacer assembly and position onto the swivel pin on the bottom of the new powered swivel seat.



SWIVEL PIN THRUST WASHER  
112CSB22



- 6 Assemble powered swivel assembly onto the mainframe ensuring that the seat interlock harness is fed through the holes as indicated below and that the motor cables are free and neatly passed through the mainframe.



- 7 Assemble seat spacer assembly to the mainframe and secure in position with 4 x PATCHED M8 x 20mm Socket Cap Head screws (902100) and connect the seat interlock harness to the main PCB board as shown below.

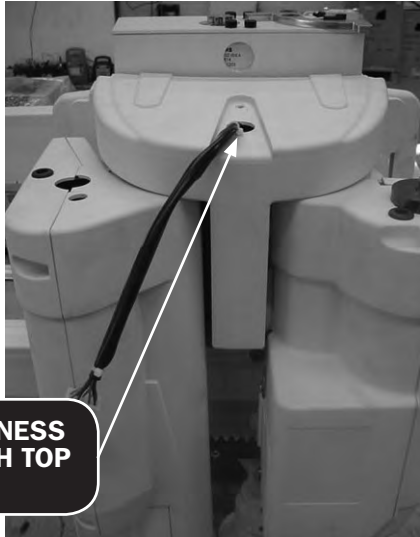




# APPENDIX 10

## Rationalisation Procedures

- 8 Assemble options harness to main PCB by firstly removing the top cover of the carriage and feeding the harness through the cut out and the back of the mainframe. Once cables are neatly held in position connect the options harness to the main PCB as shown below.



**OPTIONS HARNESS  
FEED THROUGH TOP  
COVER**



**OPTIONS HARNESS  
CONNECTED TO MAIN  
PCB AS SHOWN**

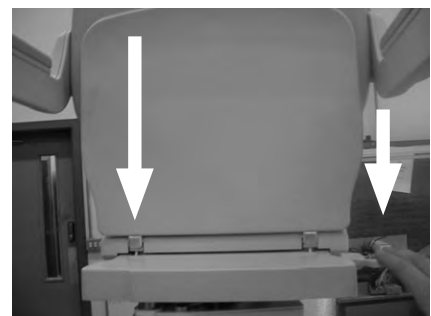
- 9 Connect the Options Harness marked (**swivel**) to the Powered swivel motor with the Black lead connected to black and red connected to red. The remaining Footrest connectors on the harness will need to be neatly positioned within the top mainframe.



**SWIVEL HARNESS  
MOTOR LEADS  
RED - RED  
BLACK - BLACK**



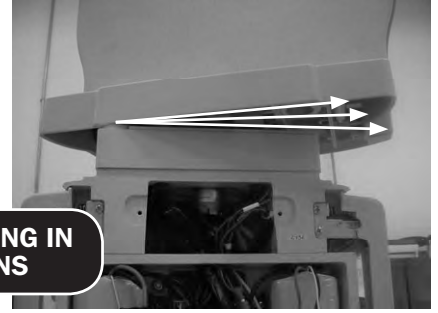
- 10 Ensure the swivel pin is greased and assemble the Powered swivel seat onto the carriage by holding a swivel paddle onto one side of the seat and pulling down to release the swivel lock. Once released pull down on the seat ensuring that the gear teeth are aligned to the motor quadrant positioned on the base of the seat.



- **11** Release the Swivel paddle and check to see that the motor gear teeth are in mesh with the motor quadrant on the base of the seat.



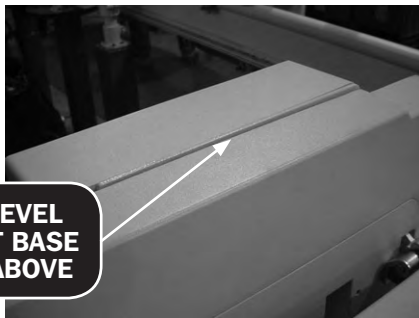
**ENSURE MOTOR GEAR IS IN MESH WITH MOTOR QUADRANT**



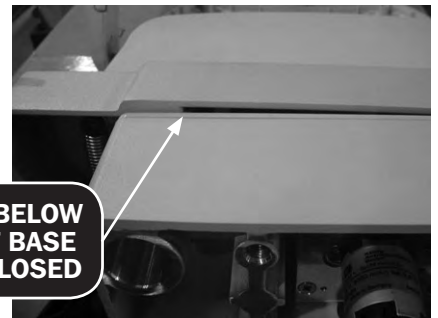
**CHECK MESHING IN 3 POSITIONS**

- **12** Check the positioning of the quadrant by checking the alignment of the seat spacer when the swivel is moved to its fully closed position. Adjust the quadrant (**118CSBM29** or **118CSBM28**) slightly until level with seat base.

- **13** Spray Gear quadrant with Fin grease (**902231**)

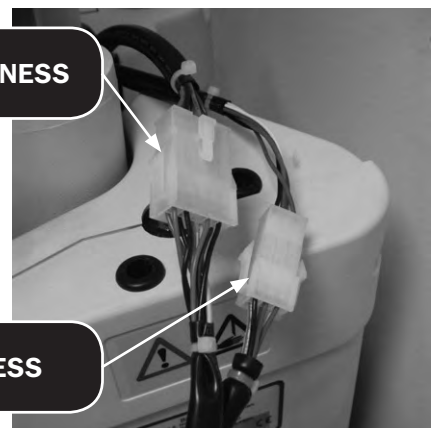


**SHOULD BE LEVEL WITH THE SEAT BASE OR SLIGHTLY ABOVE**



**MUST NOT BE BELOW EDGE OF SEAT BASE WHEN FULLY CLOSED**

- **14** Connect the options and seat harnesses from the seat to the harnesses from the carriage.



**OPTIONS HARNESS**

**ARM HARNESS**

# APPENDIX 10

## Rationalisation Procedures

- 15 Check the motor is correctly working on the carriage and that the seat fully clears the carriage at all points.

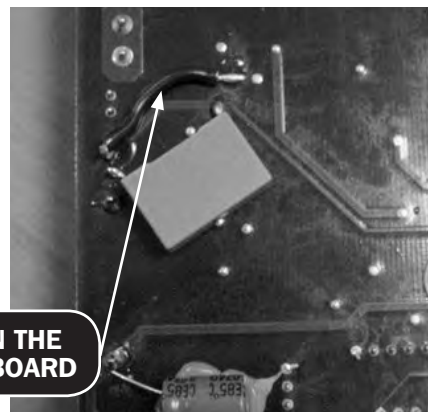


**RE-ASSEMBLE THE CARRIAGE FRONT COVER TO THE MAINFRAME, ENSURING THAT NO CABLES ARE TRAPPED IN THE COVERS**

### 10.4 Connecting Supercharger Link



**IN ORDER FOR THE SUPERCHARGER LINK WIRE TO WORK, THE MAIN PCB MUST ALSO HAVE A LINK WIRE ON THE BACK OF THE BOARD AS SHOWN BELOW**



**LINK WIRE ON THE BACK OF THE BOARD**

# APPENDIX 10

## Rationalisation Procedures

- 1 Remove front cover of carriage.
- 2 Disconnect the charger harness from the main PCB as shown.



**CHARGE HARNESS  
DISCONNECTED  
FROM THE PCB**

- 3 Connect the Supercharger link wire (**1021542**) onto the charger point on the PCB as shown.



**SUPERCHARGER  
LINK WIRE  
1021542**

- 4 Connect the charge harness to the supercharger link wire. Neatly secure cable with cable ties and re-assemble front cover to carriage.



**SUPERCHARGER  
LINK WIRE**

**CHARGE HARNESS**

# APPENDIX 10

## Rationalisation Procedures

### 10.5 Replacing Seat Adaptor Plate On-site

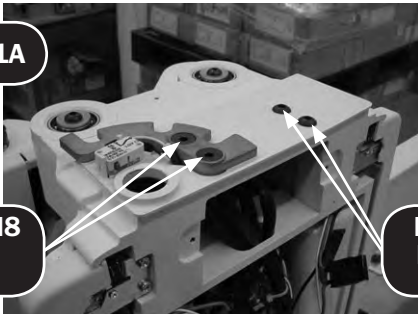
- 1 Disconnect the seat from the Arm Harness, and remove the seat from the carriage.
- 2 Remove Front cover from the carriage.



- 3 Remove Seat spacer cover from mainframe by either removing the 2 x M8 CSK screws (**901045**), 2 x Dome head screws (**1040250**) and 4 off M8 nuts (**900009**) as shown in Option 1A/1B, or by removing the 4 x M8 x 20 (**901200**) screws as shown in Option 2A/2B.

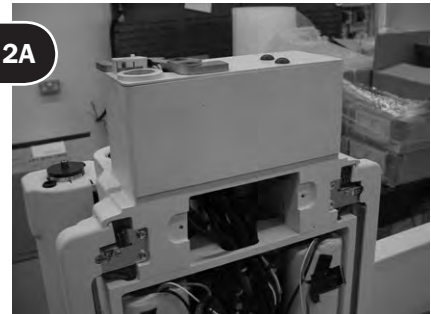
OPTION 1A

REMOVE 2 x M8  
CSK SCREW  
901045



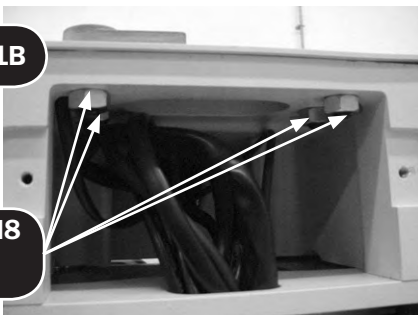
REMOVE DOME  
HEAD SCREWS  
1040250

OPTION 2A



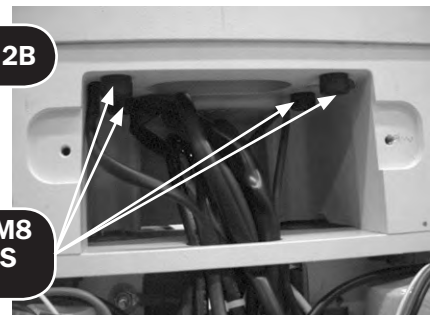
OPTION 1B

REMOVE 4 x M8  
NUTS  
900009



OPTION 2B

REMOVE 4 x M8  
x 20 SCREWS  
901200

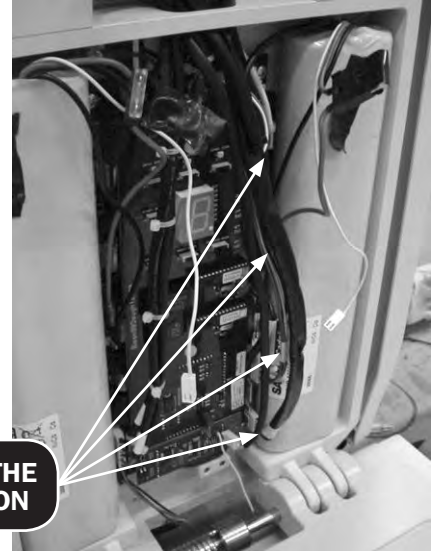




- 4 Disconnect the Seat interlock harness from the main PCB and remove all the tie wraps that is securing the harness in position. Completely remove the seat spacer assembly.



**REMOVE SEAT INTERLOCK HARNESS**

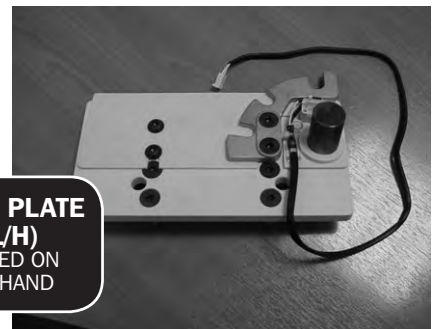


**REMOVE TIE-WRAPs SECURING THE INTERLOCK HARNESS IN POSITION**

- 5 Ensure seat posts are free from paint and that the correct handed adaptor plate is supplied.

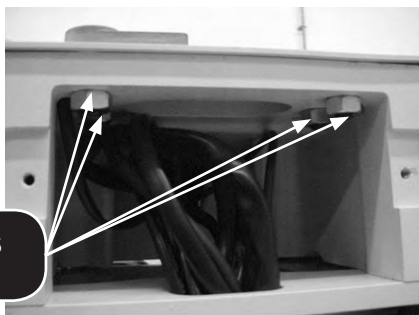


**SEAT ADAPTOR PLATE (1241672 R/H)**  
SEAT POST WELDED ON LEFT FOR RIGHT HAND

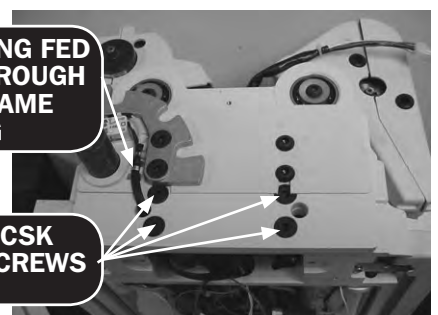


**SEAT ADAPTOR PLATE (1241671 L/H)**  
SEAT POST WELDED ON RIGHT FOR LEFT HAND

- 6 Secure the adaptor plate assembly to the carriage using the supplied 4 PATCHED M8 x 30MM CSK socket cap screws (901045) and 4 M8 nuts (900009).



**4 x M8 NUTS 900009**



**HARNESS WIRING FED CORRECTLY THROUGH THE MAINFRAME CASTING**

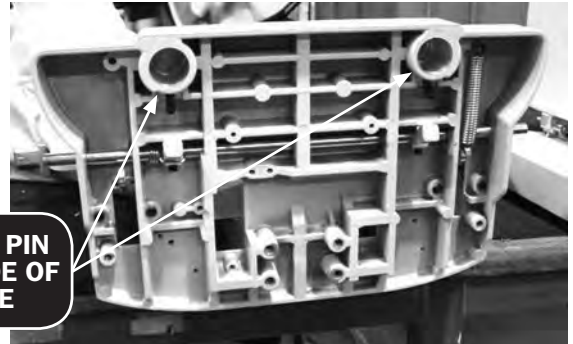
**M8 x 30mm CSK SOCKET CAP SCREWS 901045**

# APPENDIX 10

## Rationalisation Procedures

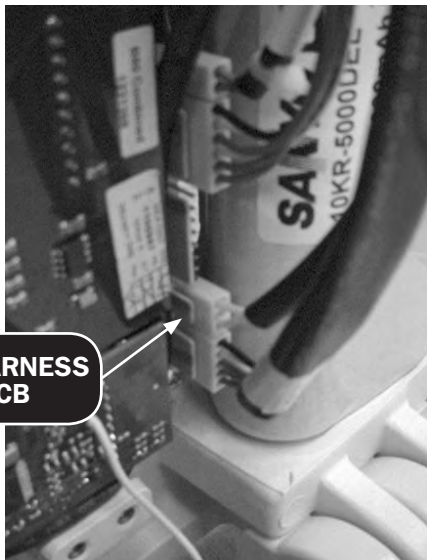
- 7 Remove Seat swivel pin from the base of the seat by unscrewing the grub screw.

REMOVE SWIVEL PIN FROM EITHER SIDE OF THE SEAT BASE

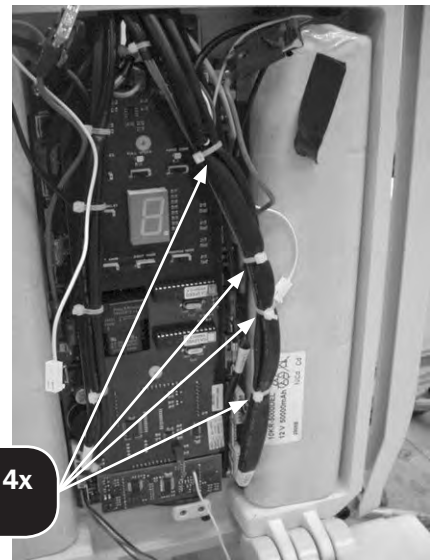


- 8 Reconnect the Seat interlock harness onto the board as shown and secure the harness in place with 4 x Tie wraps.

RECONNECT HARNESS TO MAIN PCB



SECURE WITH 4x TIE WRAPS





- **9** Test the operation of the seat swivel switch by:
- **Assembling the seat back onto the carriage**
  - **Power up the lift**
  - **Put a call in and the following should be visible on the display**



- **10** Rotate the seat base and the following should be seen on the display whilst the call is activated.



- **11** If this does not happen then loosen and adjust the plastic cover until the position of the switch is correct.
- **12** Secure Front cover to carriage.

# APPENDIX 10

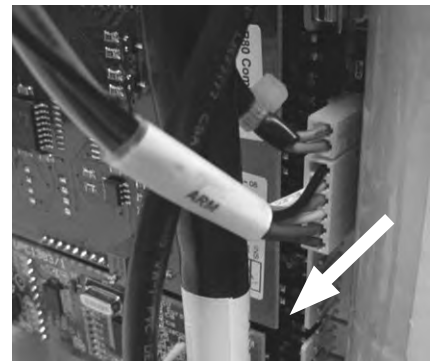
## Rationalisation Procedures

### 10.6 Replacing Carriage Front Cover / Arm Harness

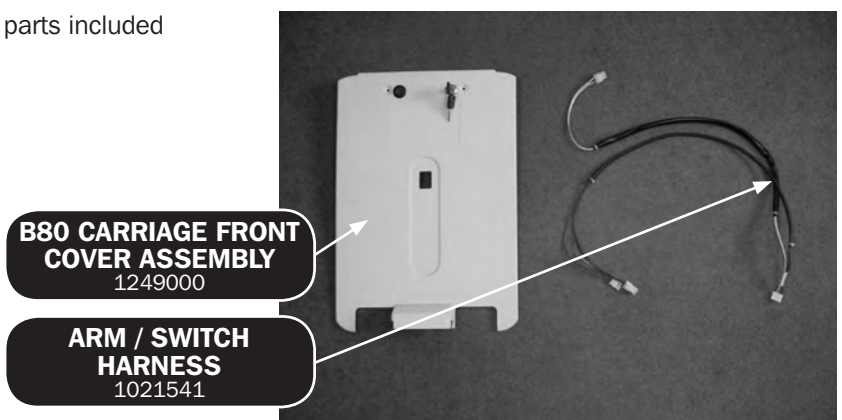
- 1 Disconnect the seat Arm harness connecting the seat to the carriage and remove the seat.
- 2 Remove Front cover from the carriage.



- 3 Disconnect Arm Harness from Main PCB and completely remove from carriage.



- 4 Unpack carriage cover assembly kit, parts included are as shown below.

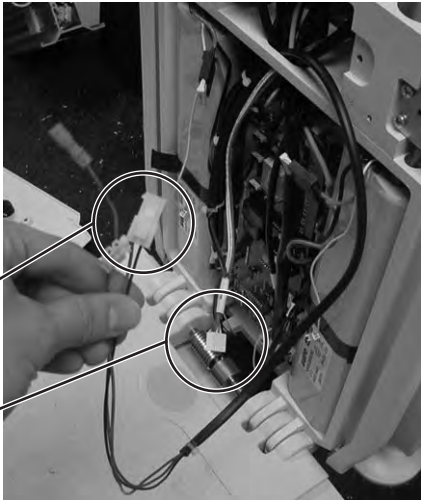


# APPENDIX 10

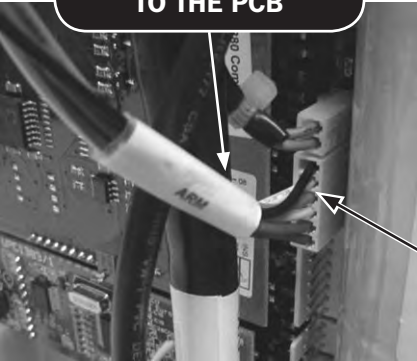
## Rationalisation Procedures

- 5 Feed Arm/Switch Harness (1021541) through the rear and centre of the mainframe as shown, and connect to the PCB as shown.

**HARNESS FED THROUGH THE REAR OF THE MAINFRAME CASTING**



**CONNECT ARM HARNESS TO THE PCB**



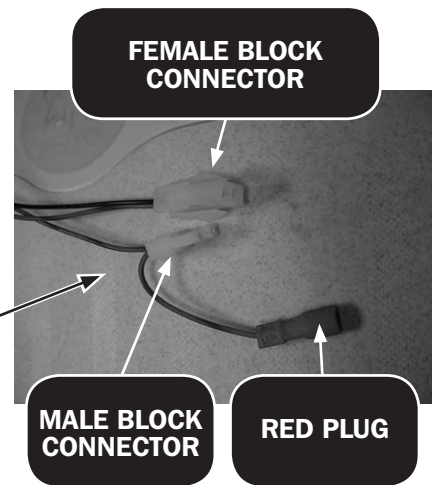
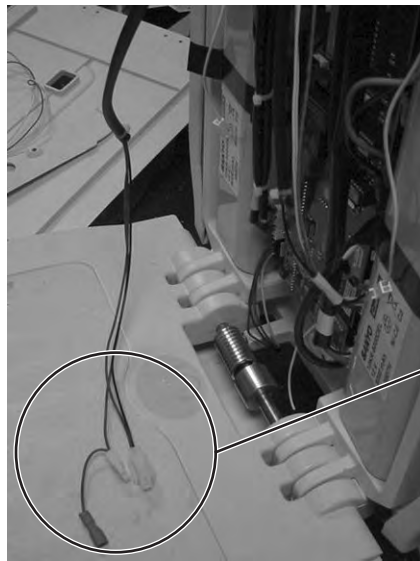
**FEED HARNESS THROUGH THE CENTRE OF THE MAINFRAME**



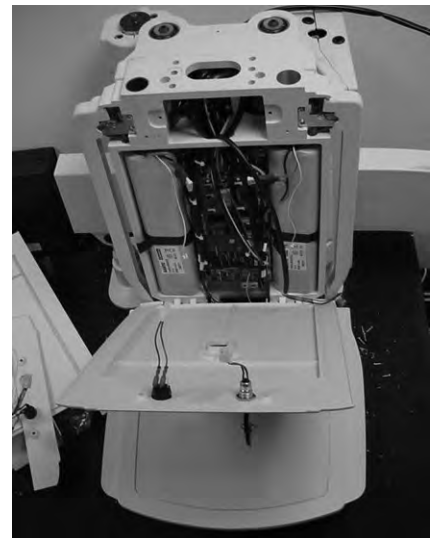
# APPENDIX 10

## Rationalisation Procedures

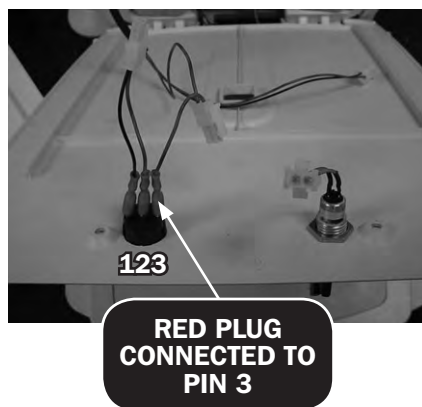
- 6 Ensure the 2 block connectors and Red plug have plenty of cable passed through to give free movement.



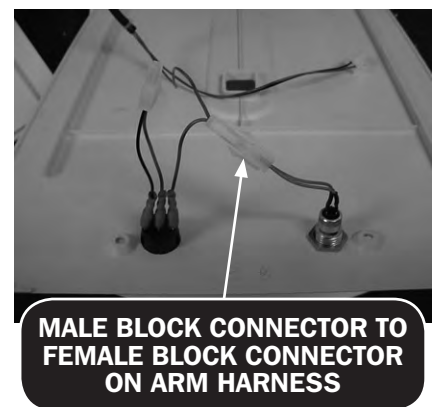
- 7 Assemble front cover (**1249000**) assembly as shown.



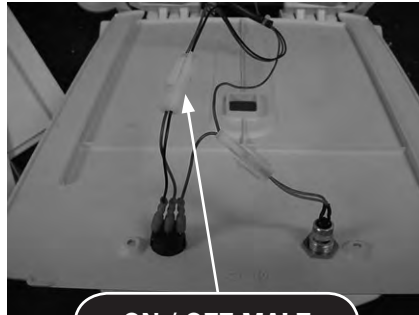
- 8 Connect the red plug of the Harness to the ON/OFF switch connector Pin 3 as shown.



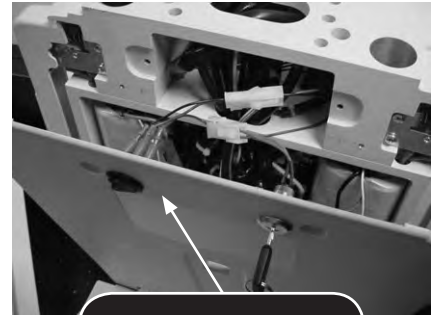
- 9 Connect Keyswitch Male block connector to Female block connector on Arm harness.



- **10** Connect the Male block connector of the ON/OFF switch to the Female block connector on the harness.
- **11** Position excess harness cable into the top of the mainframe as shown.



**ON / OFF MALE  
BLOCK CONNECTOR  
TO FEMALE**



**EXCESS WIRING IN  
TOP OF MAINFRAME**

- **12** Secure Front cover assembly to the carriage using 2 m4x10 Pozis screws (902101).
- **13** Place new seat onto carriage and connect the seat harness to the carriage harness as shown.



- **14** Complete Seat and carriage with upgrade.



# APPENDIX 10

## Rationalisation Procedures

### 10.7 Replacing On / Off Switch With Blanking Plate

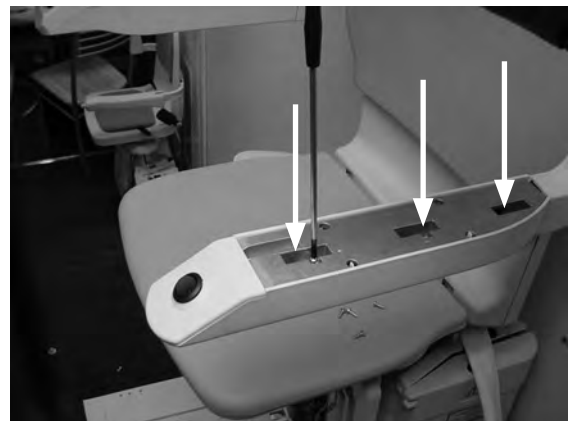


**THIS SPEC SHOWS HOW TO UPGRADE A SEAT TO THE NEW REVISION. BELOW SHOWS AN OLD REVISION SEAT WITH THE ON/OFF SWITCH LOCATED ON THE ARM, THIS WILL NOW BE LOCATED ON THE CARRIAGE AND A BLANKING PLATE WILL BE POSITIONED WHERE THE SWITCH PREVIOUSLY WAS.**

- 1 Push on the front of the seat arm pad to release, then slide and remove pad completely.



- 2 Unscrew and remove the 3 screws indicated in the image below.

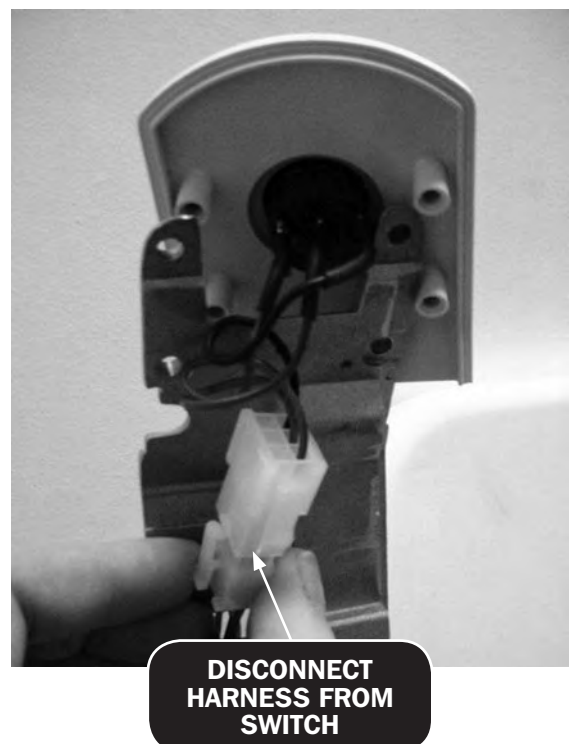




- 3 Pull on the arm cover to release from the casting. Remove the cover.



- 4 Disconnect Arm harness from the ON/OFF switch by disconnecting the block connectors as shown, and then remove the 4 screws securing the ON/OFF switch in position.





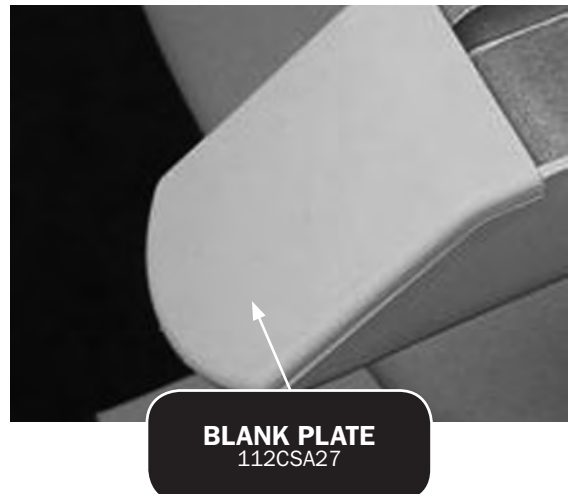
# APPENDIX 10

## Rationalisation Procedures

■ 5 Seat Arm should now look like this.



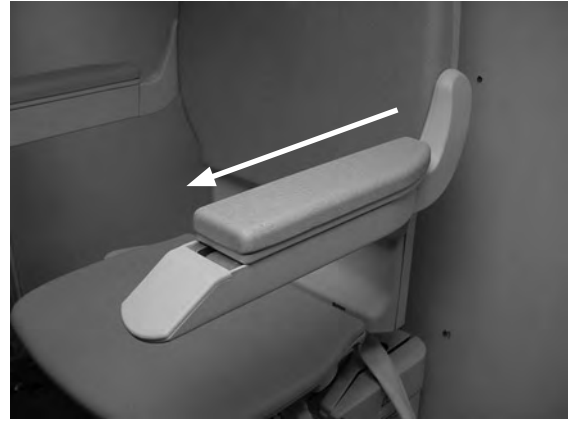
■ 6 Position and secure Blank Plate (112CSA27) with 4 No.8x1/2 Pozi pan screws (104CSA38).



■ 7 Reposition lower cover in place and secure with 3 M3x16 screws (104CSA46).



- 8 Line up grooves of arm pad with cut-outs of the arm casting and push the arm pad into position, ensuring that it is fully secured.



- 9 Complete seat to new revision.



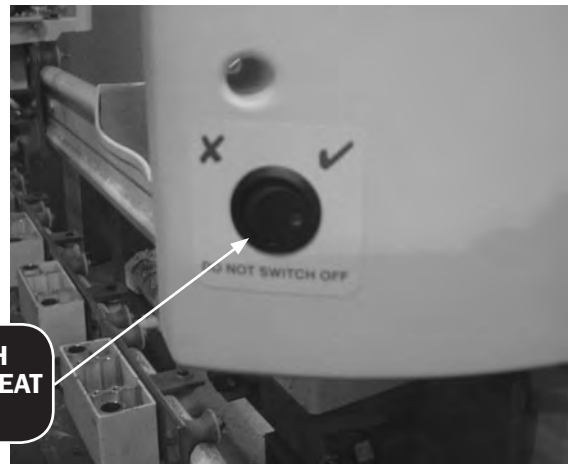
# APPENDIX 10

## Rationalisation Procedures

### 10.8 Replacing Back Cover On / Off Switch With Blanking Plate

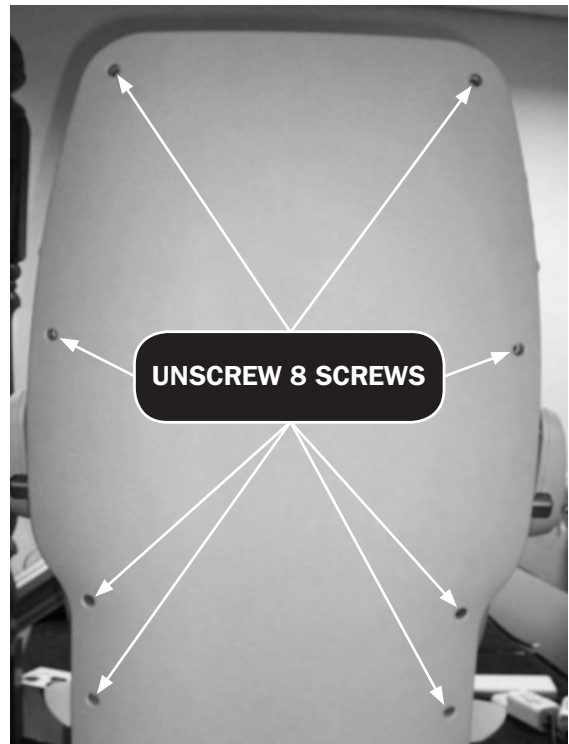


**THIS SPEC SHOWS HOW TO UPGRADE A SEAT TO THE NEW REVISION. BELOW SHOWS AN OLD REVISION SEAT WITH THE ON/OFF SWITCH LOCATED ON THE SEAT BACK COVER, IT WILL NOW BE LOCATED ON THE CARRIAGE AND A BLANKING PLUG WILL BE POSITIONED WHERE THE SWITCH PREVIOUSLY WAS.**



**ON / OFF SWITCH  
LOCATED ON THE SEAT  
BACK COVER**

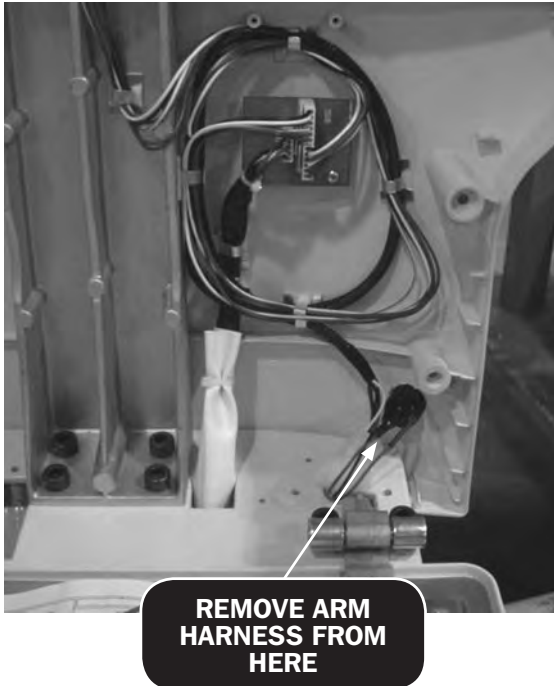
- 1 Remove padded seat insert, and lower back seat cover by unscrewing all 8 screws as indicated in the image below.



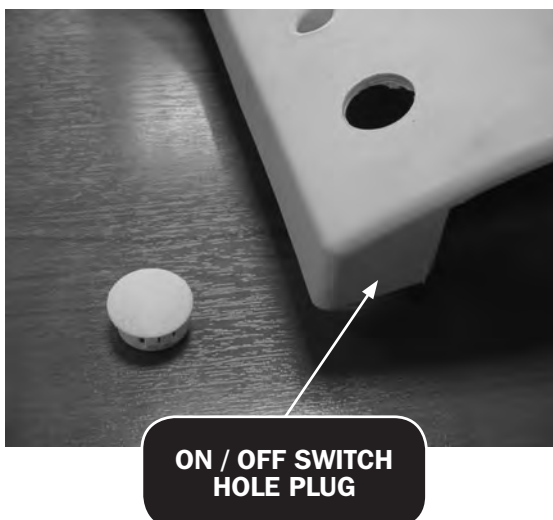
## APPENDIX 10

### Rationalisation Procedures

- 2 Within the seat back disconnect the Arm harness connecting the ON/OFF switch to the distribution PCB. Leave the arm harness connected to the PCB and secure the rest of the harness within a loop using self-adhesive cable clamps.
- 3 Remove the ON/OFF switch from the back cover by pushing on it.



- 4 Remove Yellow indication sticker (if present) from the back cover, and assemble hole plug by pressing in.



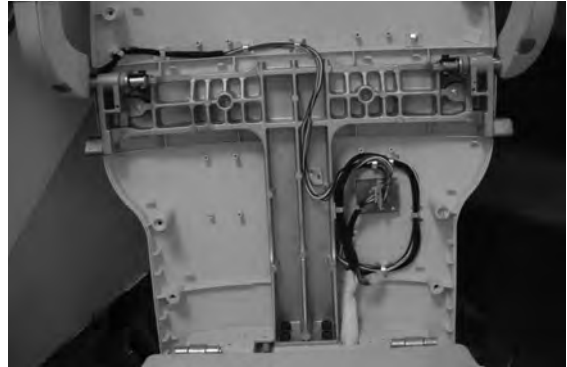
# APPENDIX 10

## Rationalisation Procedures

- 5 The inside of the seat should look like this, with 1 arm harness feeding one arm only, and the On/Off harness securely looped in position using self adhesive cable clamps.



**ARM HARNESS WILL ONLY SUPPLY ONE ARM (ROCKER SWITCH)**

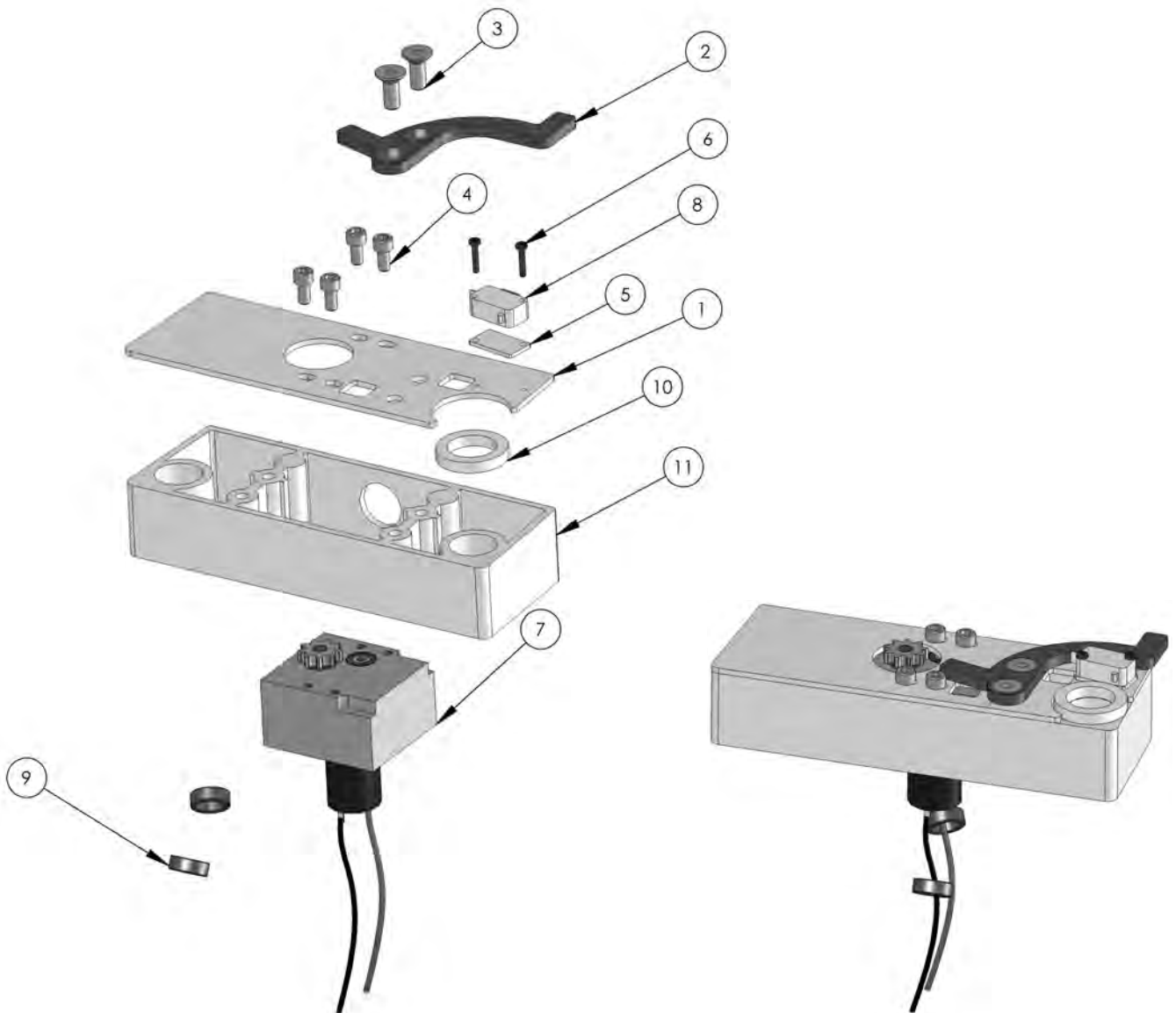


- 6 Re-assemble back cover insert and lower back cover by securing in position with the 8 screws removed previously.



### 10.9 Technical Drawings

#### 10.9.1 530 Powered Swivel L/H Seat Spacer Complete



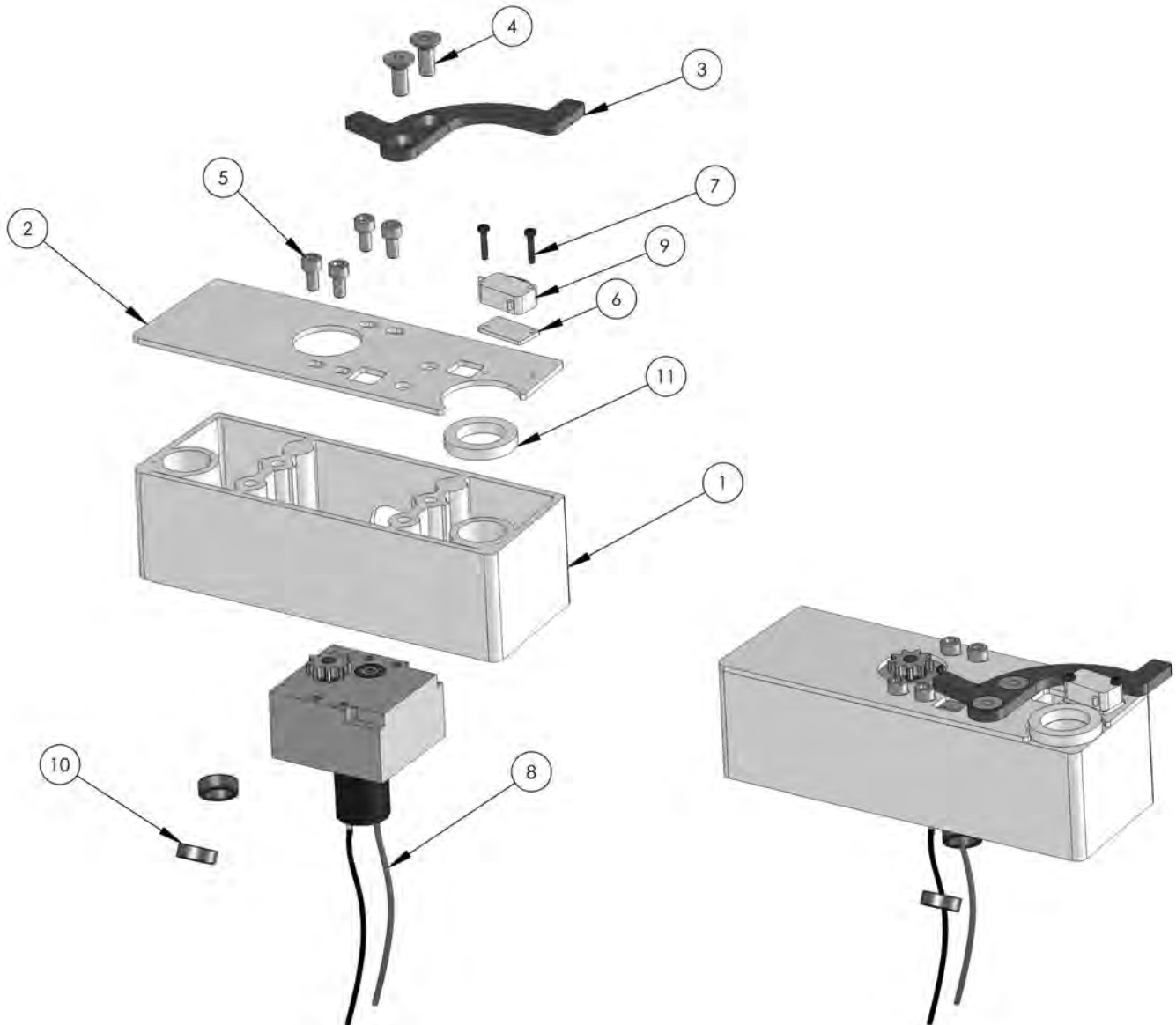
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	118CSBM31	COMPACT Seat spacer cover	1
2	118CSBM28	COMPACT Swivel quadrant LH	1
3	104CT24	m8x20 Soc Csink	2
4	916614	M6x12 Socket Cap Head Screw	4
5	112CSB40	COMPACT Switch Spacer	1
6	900095	M3 X 1.6 POSI PAN HD. SCREW B2P. FIN	2
7	1081203	Powered Swivel Motor 24V DC	1
8	101COSG22	V3 Switch	1
9	1020340	Ferrite Core	2
10	112CSB22	Swivel Thrust Washer	1
11	199SCOS420	40mm Seat Spacer	1



# APPENDIX 10

## Rationalisation Procedures

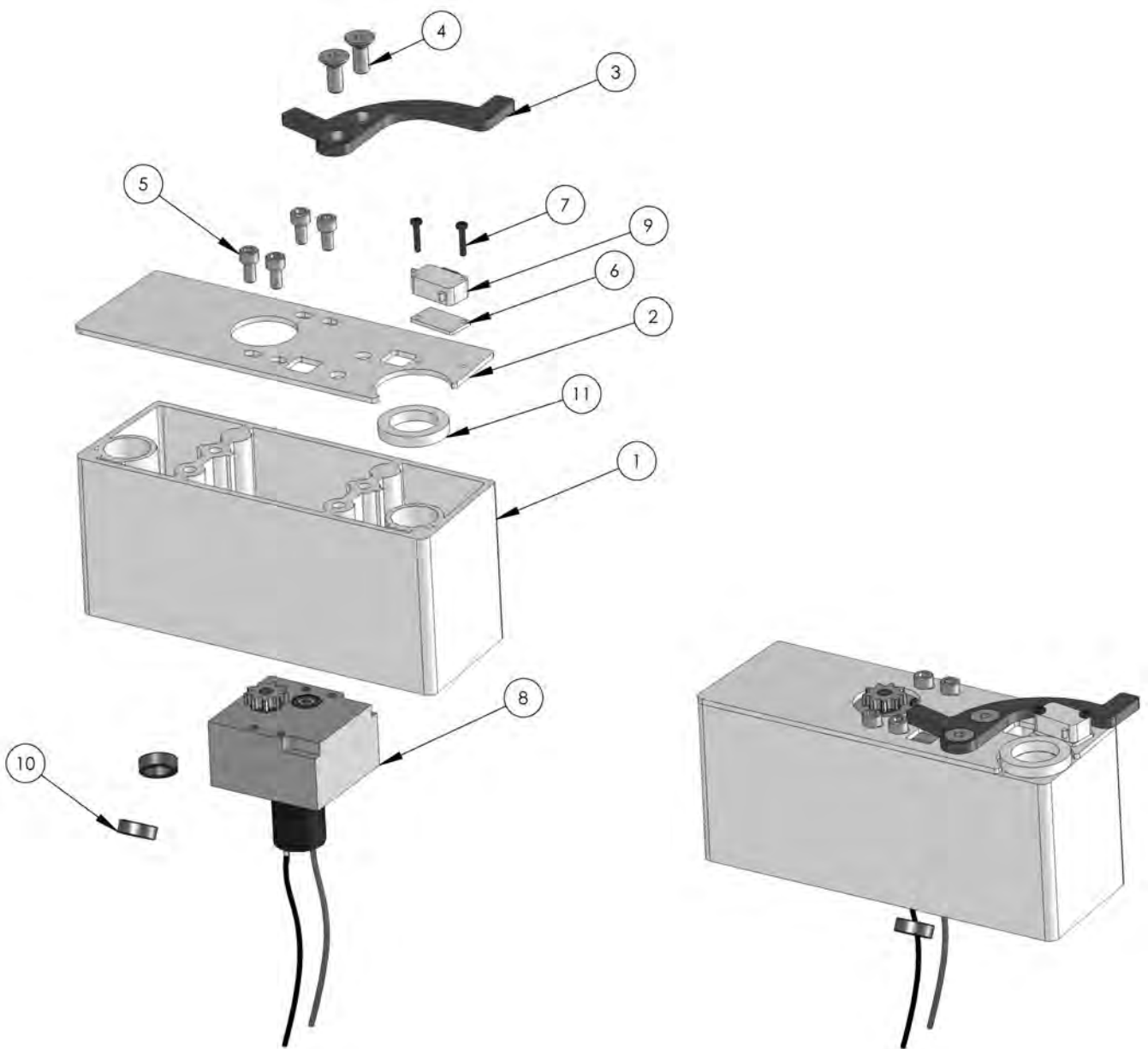
### 10.9.2 550 Powered Swivel L/H Seat Spacer Complete



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	199SCOS440	60mm Seat Spacer	1
2	118CSBM31	COMPACT Seat spacer cover	1
3	118CSBM28	COMPACT Swivel quadrant LH	1
4	104CT24	m8x20 Soc Csink	2
5	916614	M6x12 Socket Cap Head Screw	4
6	112CSB40	COMPACT Switch Spacer	1
7	900095	M3 X 16 POSI PAN HD. SCREW BZP. FIN	2
8	1081203	Powered Swivel Motor 24V DC	1
9	101COSG22	V3 Switch	1
10	1020340	Ferrite Core	2
11	112CSB22	Swivel Thrust Washer	1



### 10.9.3 580 Powered Swivel L/H Seat Spacer Complete

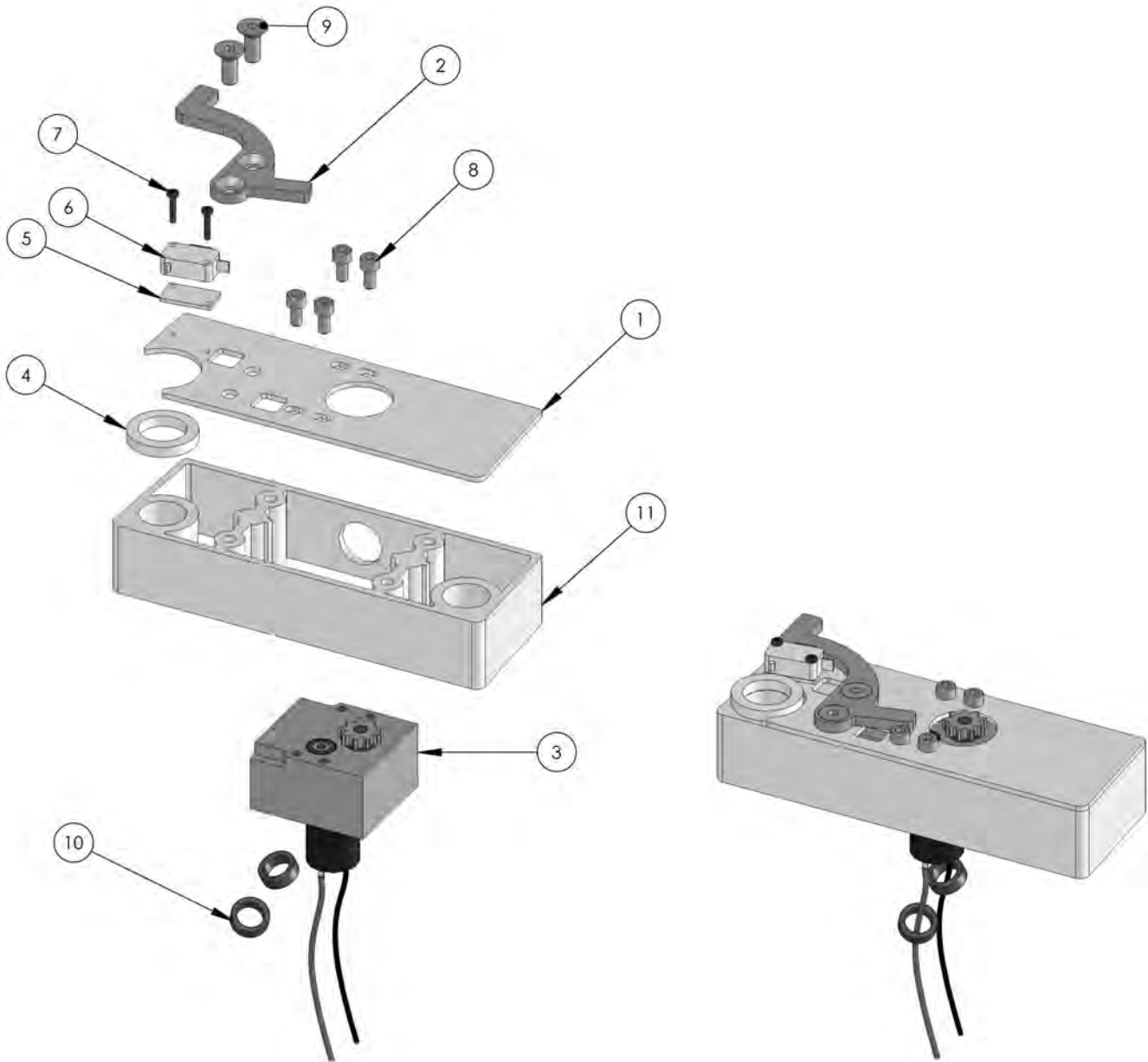


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	199SCOS470	90mm Seat Spacer	1
2	118CSBM31	COMPACT Seat spacer cover	1
3	118CSBM28	COMPACT Swivel quadrant LH	1
4	104CT24	m8x20 Soc Csink	2
5	916614	M6x12 Socket Cap Head Screw	4
6	112CSB40	COMPACT Switch Spacer	1
7	900095	M3 X 16 POSI PAN HD. SCREW BZP. FIN	2
8	1081203	Powered Swivel Motor 24V DC	1
9	101COSG22	V3 Switch	1
10	1020340	Ferrite Core	2
11	112CSB22	Swivel Thrust Washer	1

# APPENDIX 10

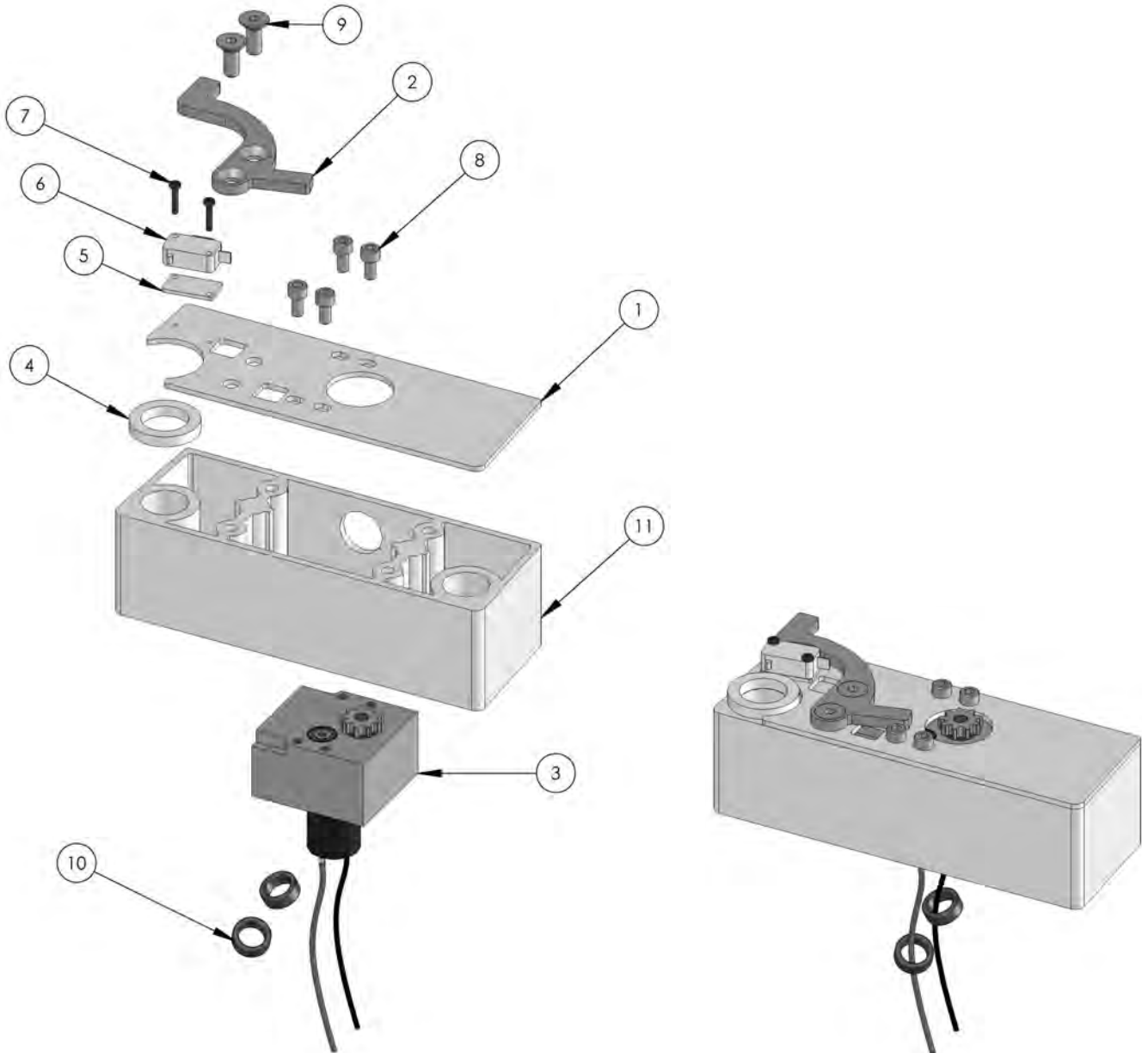
## Rationalisation Procedures

### 10.9.4 530 Powered Swivel R/H Seat Spacer Complete



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	118CSBM31	COMPACT Seat spacer cover	1
2	118CSBM29	COMPACT Swivel quadrant RH	1
3	1081203	Powered Swivel Motor 24V DC	1
4	112CSB22	Swivel Thrust Washer	1
5	112CSB40	COMPACT Switch Spacer	1
6	101COSG22	V3 Switch	1
7	900095	M3 X 16 POSI PAN HD. SCREW BZP, FIN	2
8	916614	M6x12 Socket Cap Head Screw	4
9	104CT24	m8x20 Soc Csink	2
10	1020340	Ferrite Core	2
11	199SCOS420	40mm Seat Spacer	1

### 10.9.5 550 Powered Swivel R/H Seat Spacer Complete

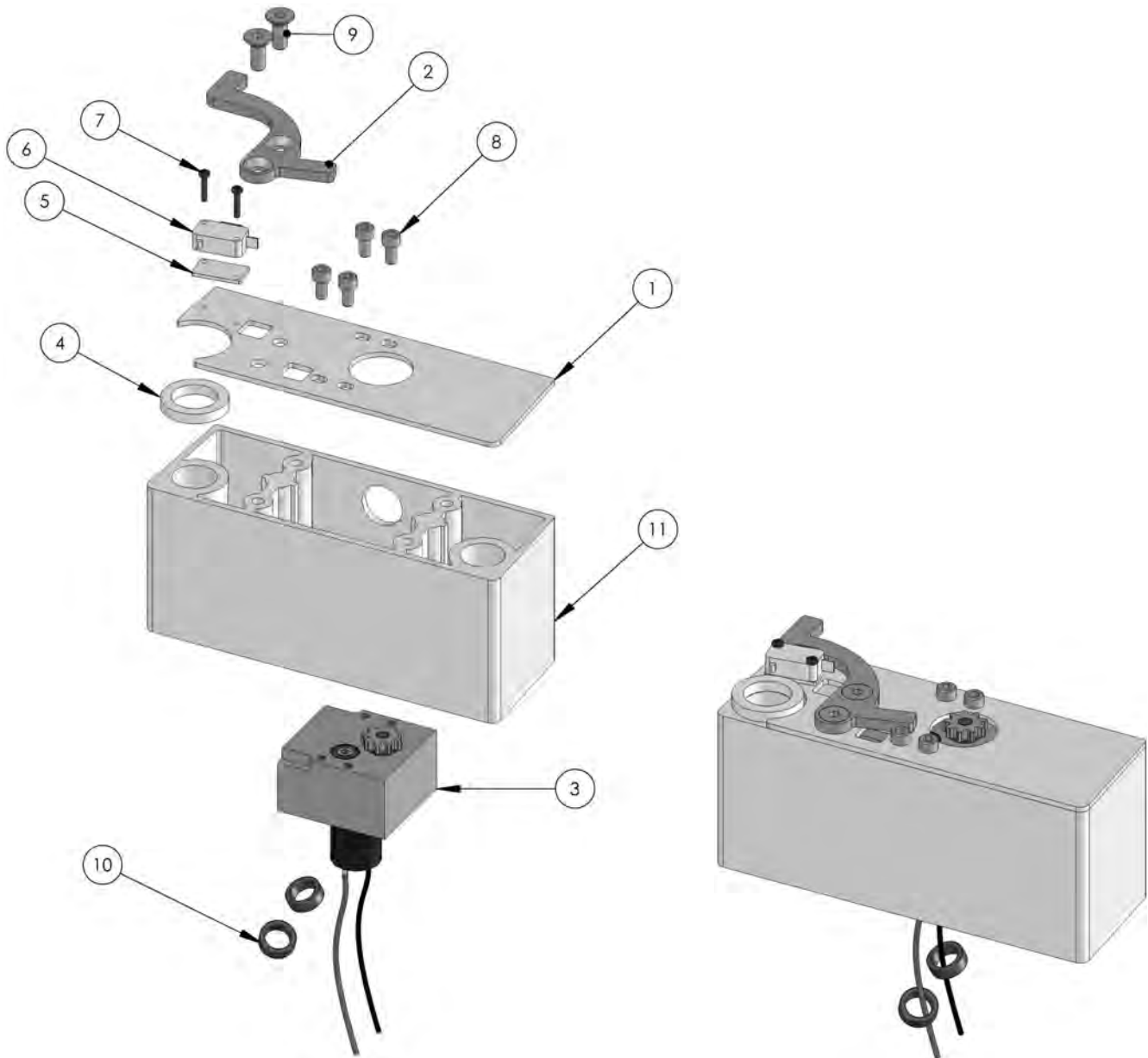


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	118CSBM31	COMPACT Seat spacer cover	1
2	118CSBM29	COMPACT Swivel quadrant RH	1
3	1081203	Powered Swivel Motor 24V DC	1
4	112CSB22	Swivel Thrust Washer	1
5	112CSB40	COMPACT Switch Spacer	1
6	101COSG22	V3 Switch	1
7	900095	M3 X 16 POSI PAN HD. SCREW BZP. FIN	2
8	916614	M6x12 Socket Cap Head Screw	4
9	104CT24	m8x20 Soc Csink	2
10	1020340	Ferrite Core	2
11	199SCOS440	60mm Seat Spacer	1

# APPENDIX 10

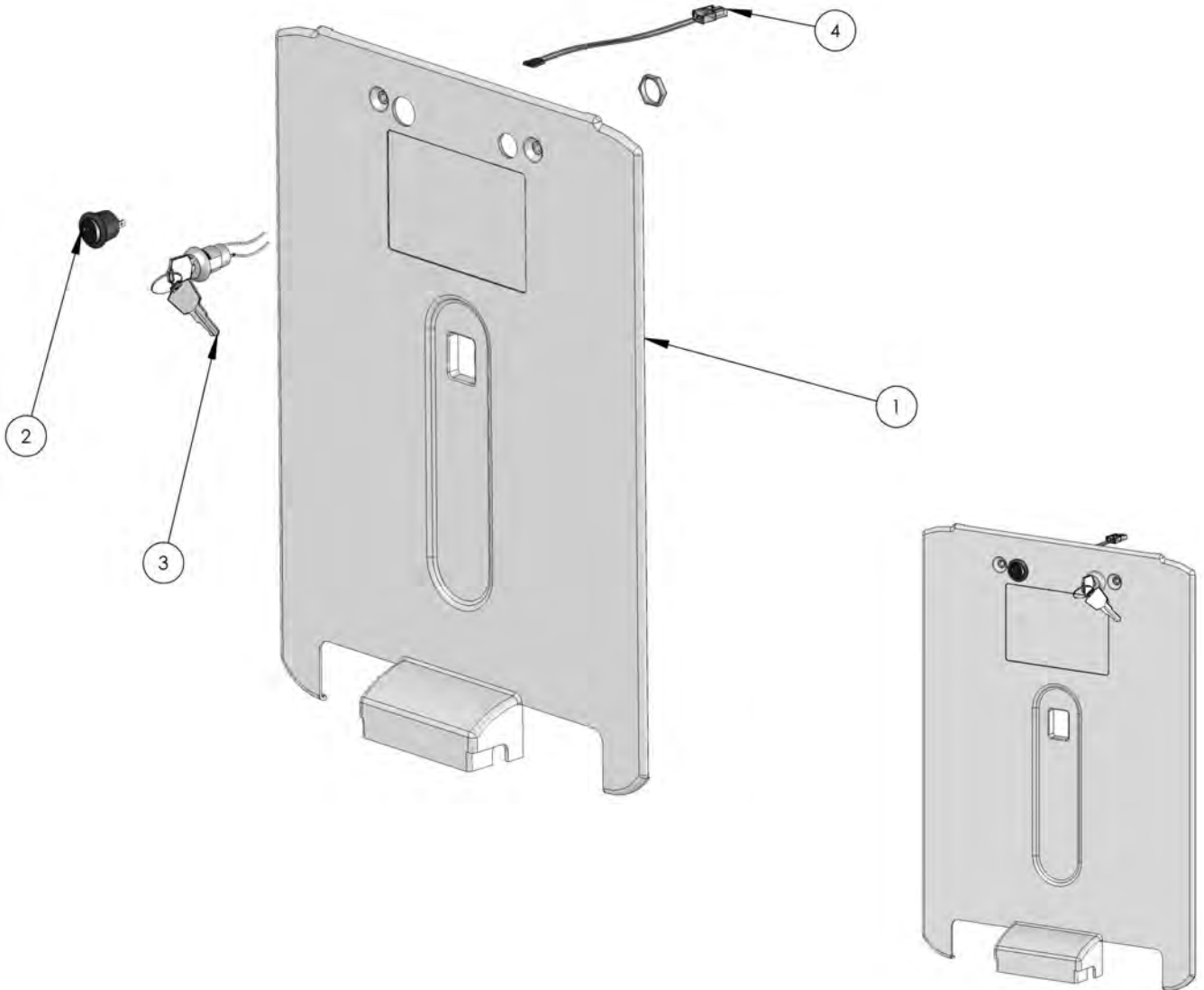
## Rationalisation Procedures

### 10.9.6 580 Powered Swivel R/H Seat Spacer Complete



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	118CSBM31	COMPACT Seat spacer cover	1
2	118CSBM29	COMPACT Swivel quadrant RH	1
3	1081203	Powered Swivel Motor 24V DC	1
4	112CSB22	Swivel Thrust Washer	1
5	112CSB40	COMPACT Switch Spacer	1
6	101COSG22	V3 Switch	1
7	900095	M3 X 16 POSI PAN HD. SCREW BZP. FIN	2
8	916614	M6x12 Socket Cap Head Screw	4
9	104CT24	m8x20 Soc Csink	2
10	1020340	Ferrite Core	2
11	199SCOS470	90mm Seat Spacer	1

### 10.9.1 Carriage Front Cover Assembly



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1030178	Front cover + Hole Details	1
2	101CSA17	COMPACT On Off Switch + HARNESS	1
3	1021539	Keyswitch Assembly	1
4	1021540	Switch Link wire	1

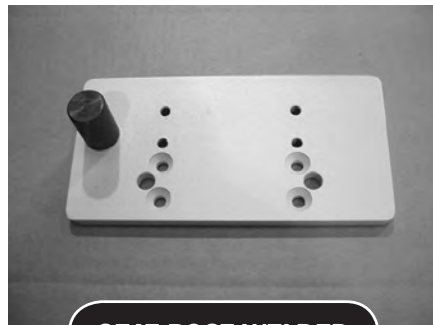


# APPENDIX 10

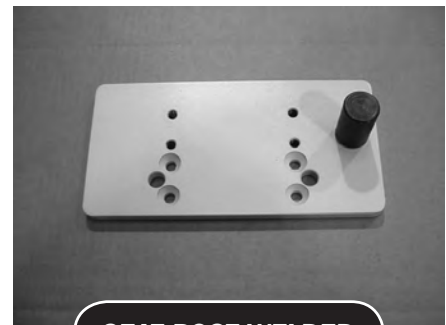
## Rationalisation Procedures

### 10.10 Seat Adaptor Plate Assembly Instructions

- 1 Ensure seat posts are free from paint.

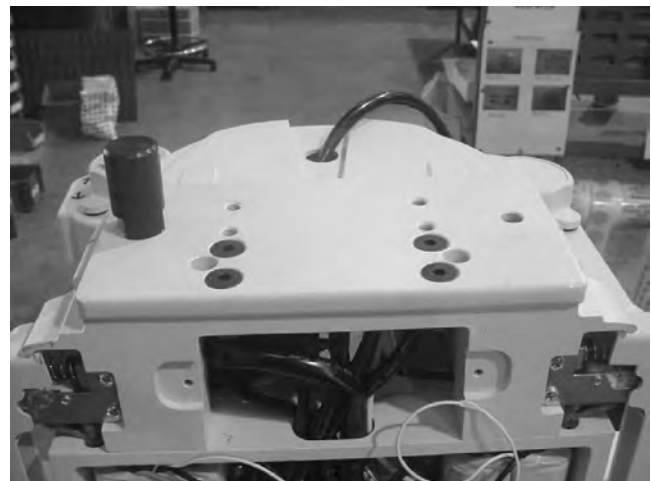


**SEAT POST WELDED ON FOR RIGHTHAND**

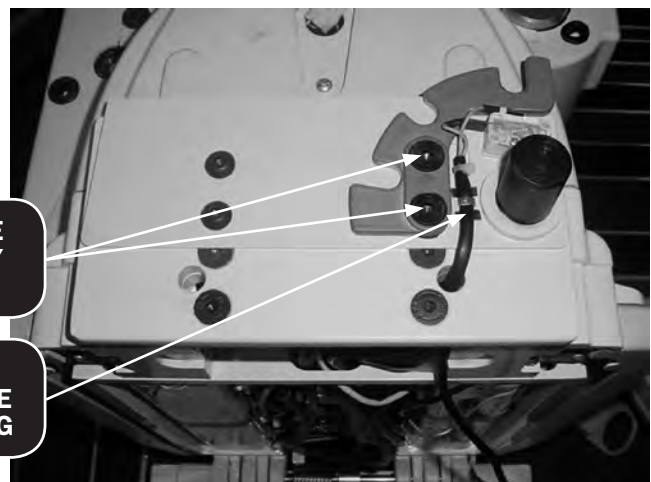


**SEAT POST WELDED ON FOR LEFTHAND**

- 2 Secure the adaptor plate to the carriage using 4 x 901045 CSK screws and 4 x M8 nuts 900009.



- 3 Assemble plastic cover (1121284 L/H, 1121285 R/H), quadrant 105CT 09 and swivel switch harness 1020794 and secure with 2 x 1040250 and 2 x 104CT24 torqued to 22Nm using Loctite 270.



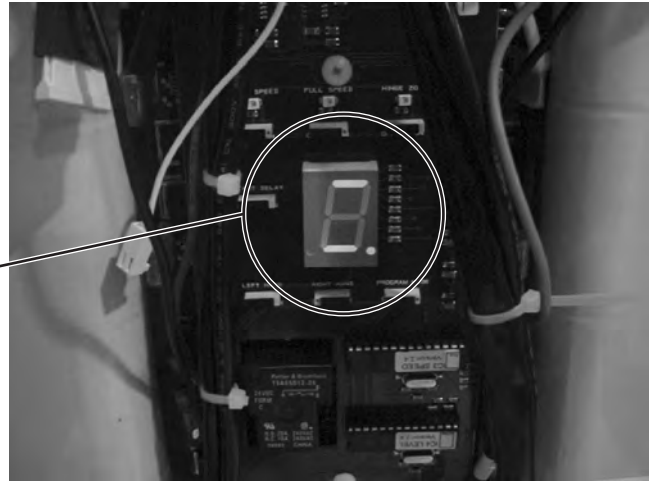
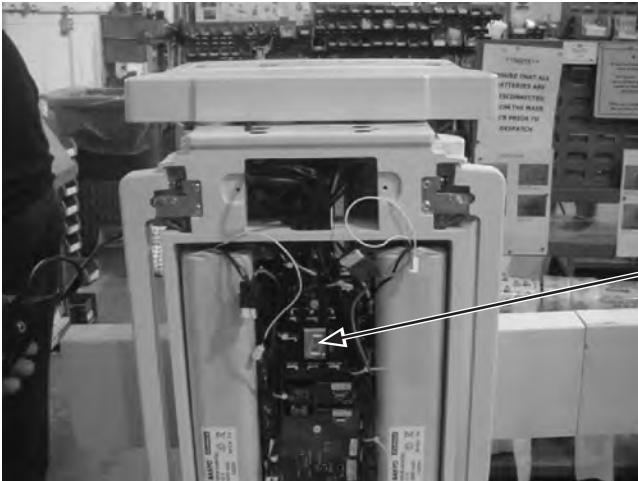
**104CT24 TORQUE 22Nm AND APPLY LOCTITE 270**

**NOTE USE CABLE CLAMP TO SECURE THE WIRE ROUTING**

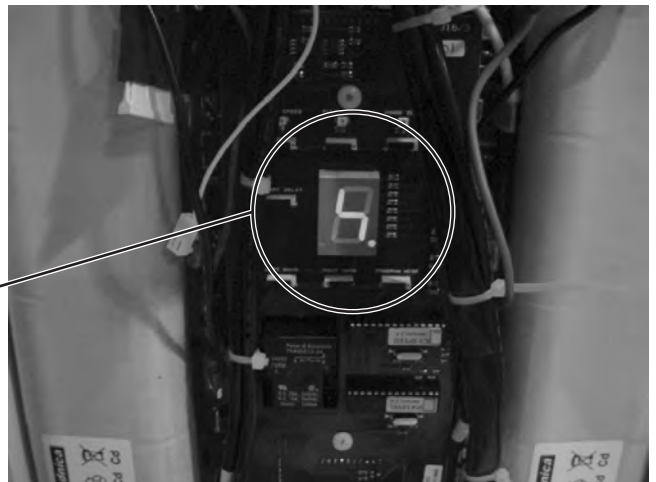


■ 4 Test the operation of the seat swivel switch by:

- Assembling a seat base
- Power up the lift
- Put a call in and the following should be visible on the display



■ 5 Rotate the seat base and the following should be seen on the display whilst the call is activated.



■ 6 If this does not happen then loosen and adjust the plastic cover until the position of the switch is correct.

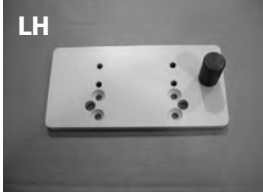




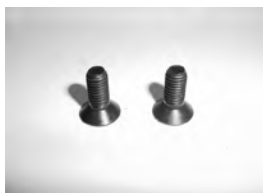





**IF IN DOUBT, PLEASE ASK FOR ASSISTANCE**

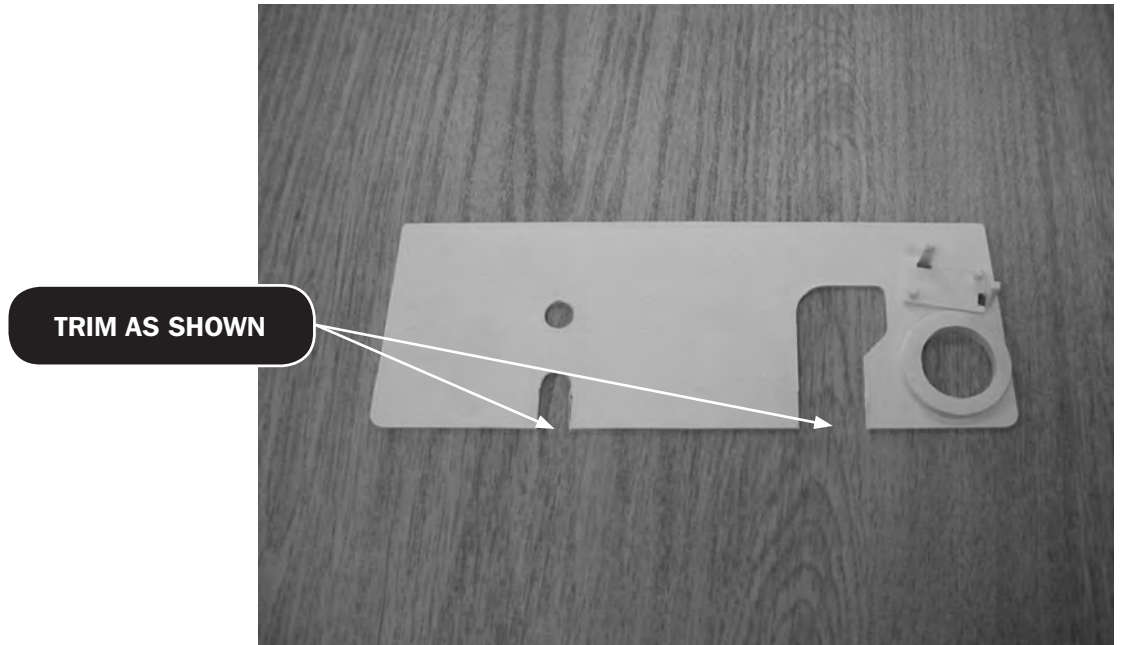
# APPENDIX 10

## Rationalisation Procedures

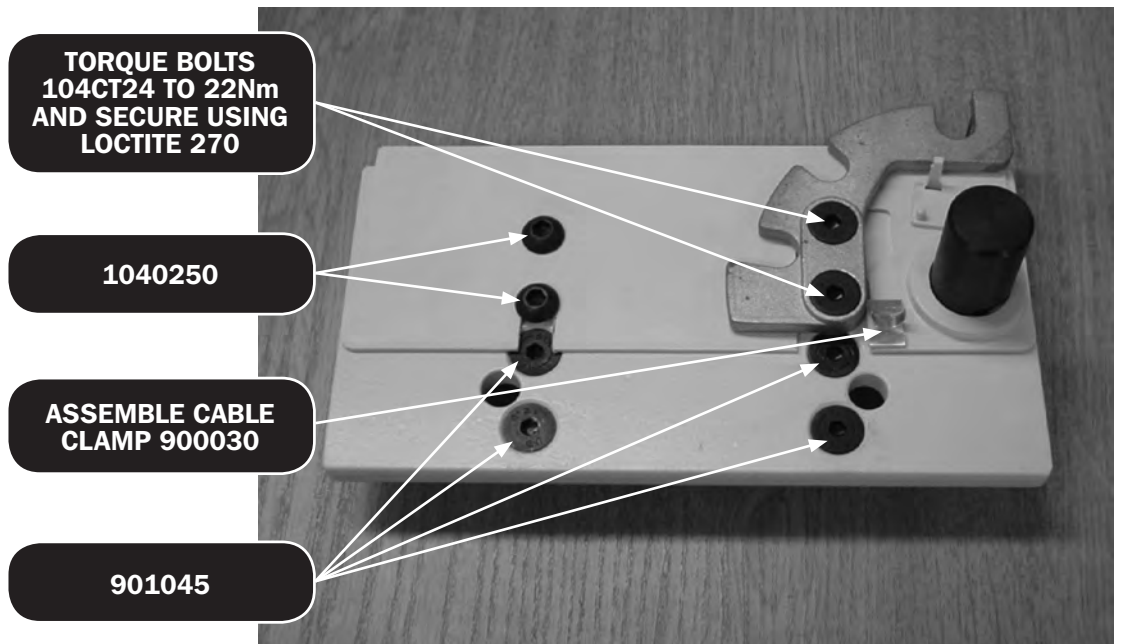
### 10.11 Seat Adaptor Plate Retro-fit Kit

<p>■ 1 off <b>LH Adaptor Plate</b> 1190080</p> <p><b>OR</b></p> <p>■ 1 off <b>RH Adaptor Plate</b> 1190081</p>	 <p>LH</p>	 <p>RH</p>
<p>■ 1 off <b>Locking Quadrant</b> 105CT09</p>		
<p>■ 1 off <b>Seat Spacer LH</b> 1121284</p> <p><b>OR</b></p> <p>■ 1 off <b>Seat Spacer RH</b> 1121285</p>	 <p>LH</p>	 <p>RH</p>
<p>■ 2 off <b>M8 x 20 Soc CSK</b> 104CT24</p>		
<p>■ 4 off <b>M8 x 30 Soc CSK</b> 901045</p>		
<p>■ 2 off <b>M8 x 10 Soc Butt Hd</b> 1040250</p>		
<p>■ 1 off <b>Self Adhesive Cable Clamp</b> 900030</p>		

- **1** Trim cover as shown - note this is for retro-fit kit only and not for normal production.



- **2** Assemble complete as shown - note swivel harness should already be present on-site.









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You can rest assured that your stairlift will provide many years of reliable service and allow you to enjoy the full use of your home.

Your stairlift is covered by a manufacturer's warranty for 12 months that covers the cost of replacement parts.

*However, problems arising as a result of misuse of the equipment are not covered by the warranty.*

Your stairlift is expertly designed and manufactured to the very highest standards. Regular maintenance is required to ensure safe and trouble-free service.