

Minivator 1000 series

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Installation Manual

Minivator 1000 series Installation Manual

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First check that all the required components are available:

- 1 Lengths of track. Please note before assembly ensure the track is the correct length.
If it requires cutting you must use the appropriate grade of saw.
- 2 Feet. You will require 1 foot per 1.5m of track plus 1.
- 2A Feet assembly plates and nuts/washers 1 assembly per foot.
- 3 Track Joining plates. You will require 2 per joint.
- 4 Power unit.
- 5 Seat chassis and seat.
- 6 Upholstery:-
 - Backrest.
 - Seat cushion (2).
 - Armrest Cushion (2).
- 7 Fitting Kit.

Special Installation Tools

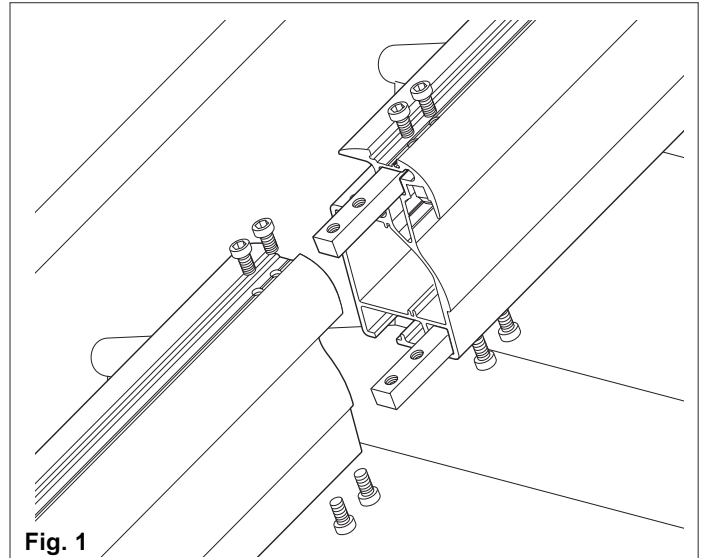
- 1 Feeder track (Power pack to track).
- 2 Driving seat toggle loom.
- 3 300mm screwdriver extension.

Note:

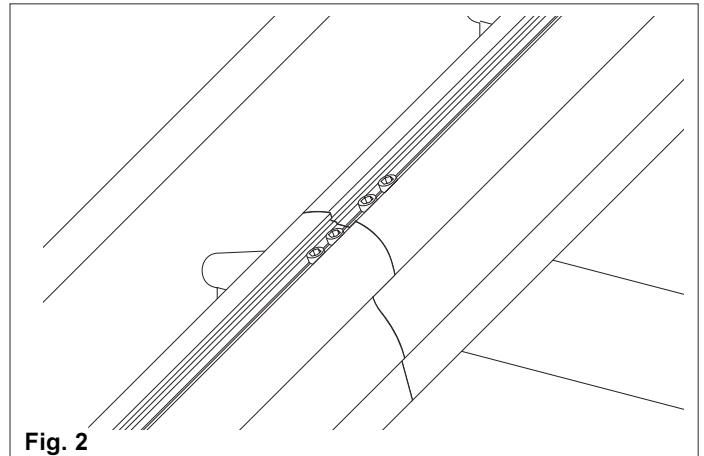
The installation engineer must check with Minivator for the latest Installation Manual issue No.

To assemble the track

- 1 Bolt in the track joining plates to one section of track extrusion (Fig. 1).
Note: There are 2 holes in the top rebated section of the extrusion to accept the track joining bolts.
On the underside there are also two holes, as shown in Fig. 1.
Torque setting 8-9Nm.



- 2 Offer up the adjacent track section, and bolt both together (Fig. 2).
Ensure the bolts are secure (Torque setting 8-9Nm).
- 3 Continue the process until the required length is reached.



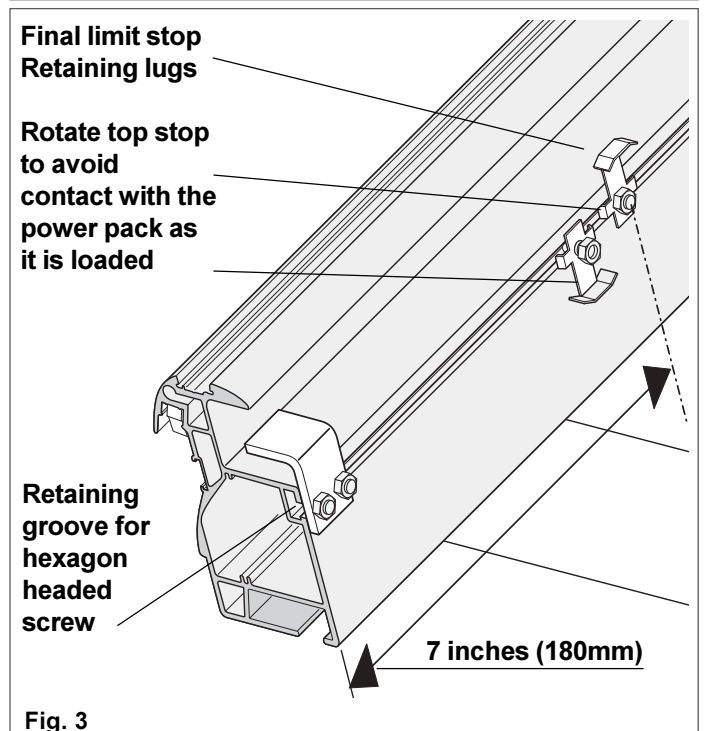
- 4 The top and bottom final limit stops are factory fitted to the rear face of the track extrusion. Slacken and rotate the upper final limit stop, so that it does not contact the power pack as it is loaded on to the track.

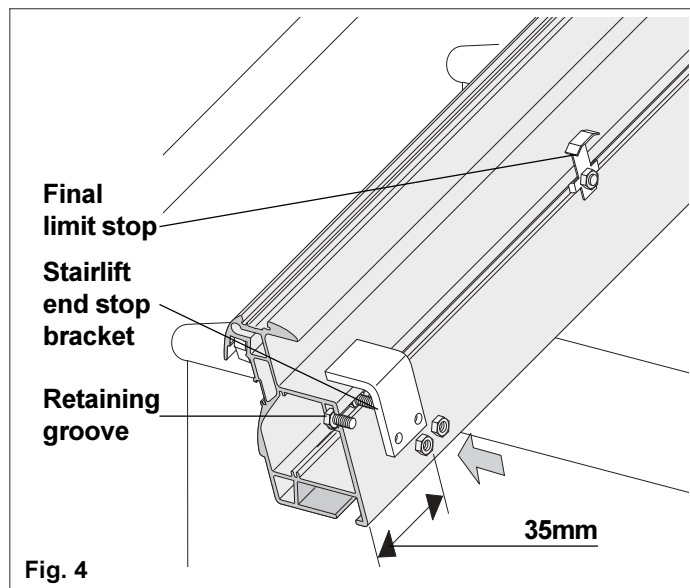
Note: Ensure the positioning lugs are not damaged when the stop is rotated.

Note: Ensure the positioning lugs are correctly located in the groove when the stop is secured.

Re assemble as shown in (Fig. 3).

Tighten securely. (Torque setting 8 - 9Nm).





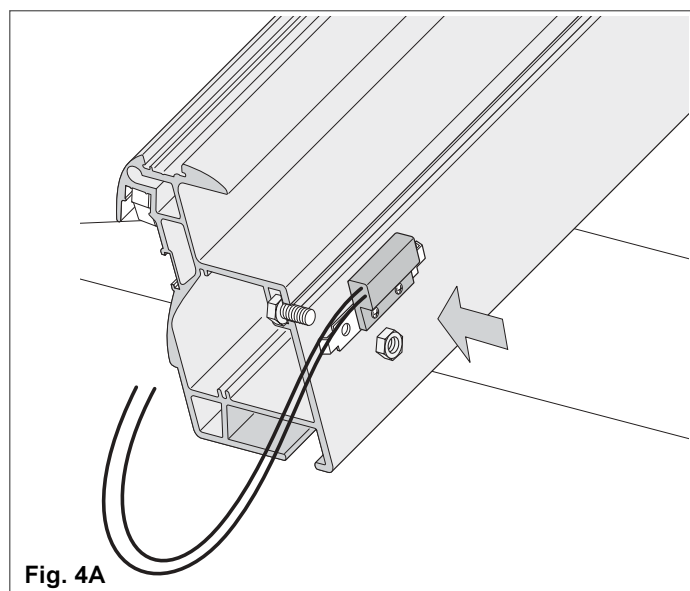
- 5 The stairlift end stop brackets are factory fitted.

The upper end stop must be removed to load the power pack.

To re fit the end stop slide the retaining hexagon headed screws into the track extrusion, as shown in Fig. 4.

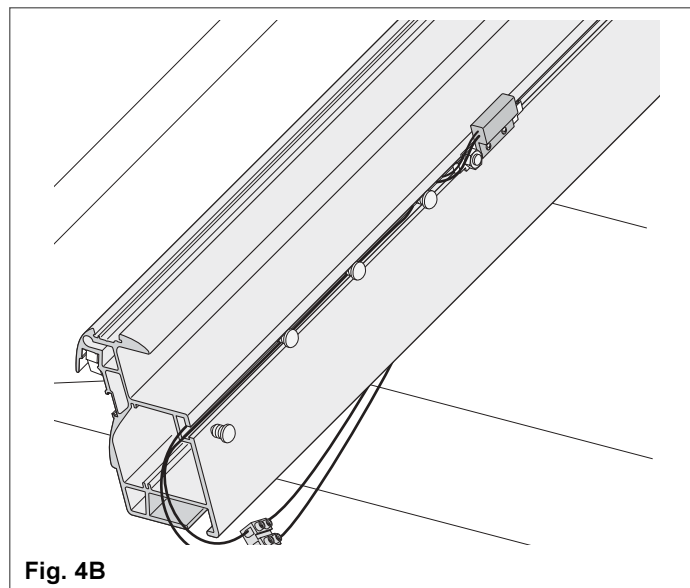
Screw up the nuts loosely, to allow the brackets to slide to their required positions.

Tighten securely. (Torque setting 8-9Nm).



- 6 Hinge track only. Fit the hinge track latch switch on to the track extrusion, as shown in figure 4A.

Note: This must be fitted prior to fitting the override stops and end stops.

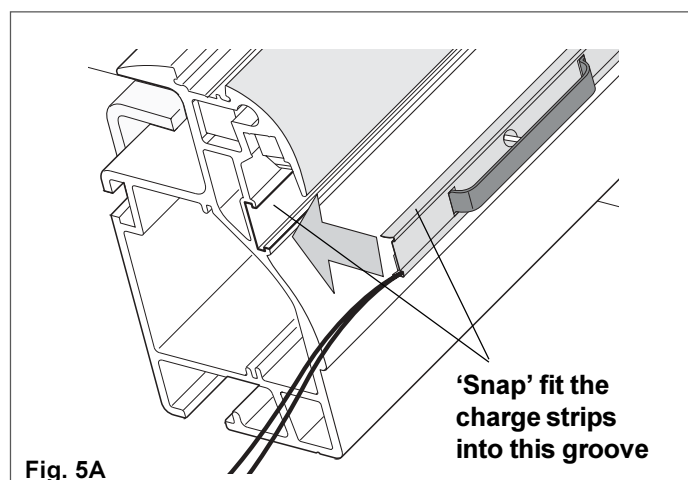
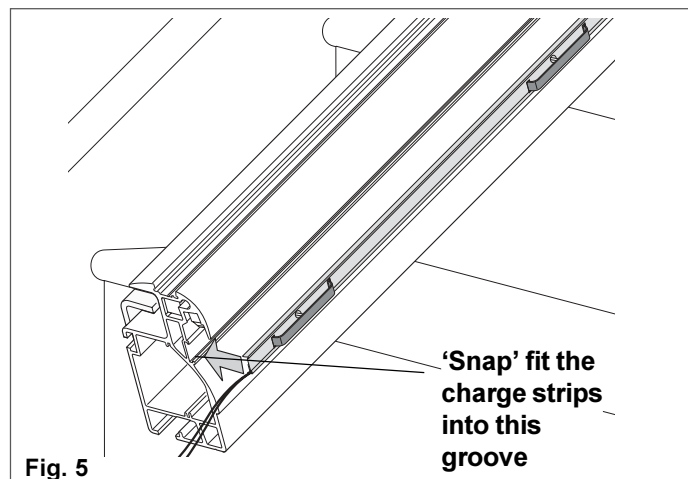


- 7 Tuck the harness into the groove as shown in figure 4B, and hold the harness in place with the plastic studs as shown in figure 4B, and connect to the hinge track loom.

Charge strip assemblies

- 1 The charge strips are factory fitted. They are pre assembled and snap into the retaining groove in the track extrusion as shown in Fig. 5 and 5A.
- 2 When the track sections are assembled the gap between the top and bottom charge strip assemblies must be filled with the supplied filler strip.

Measure the gap between the charge strips, cut the filler strip to length and snap fit it into the groove. (It is an identical section to the charge strips).



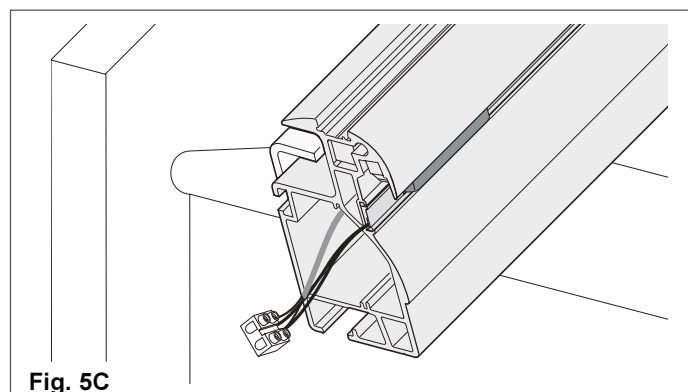
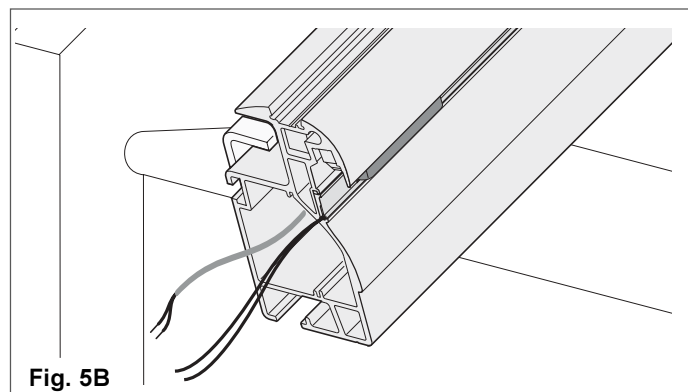
- 2 Feed the two core grey cable through the track as shown in figure 5B
- 3 Using the two way connecting blocks wire up the charging point cables to the two way feed cable (Fig. 5C).

One of the wires on the grey two way cable is has a black line moulded in for continuity identification purposes.

- 5 Choose the most appropriate position for the power supply.

Note: If this is at the top of the staircase the bottom nut plate and end cap can be fitted to the track.

Where the power supply is located at the bottom, fit only the nut plate, to enable the charging circuitry to be connected to the tpower supply at the final stage of fitting.



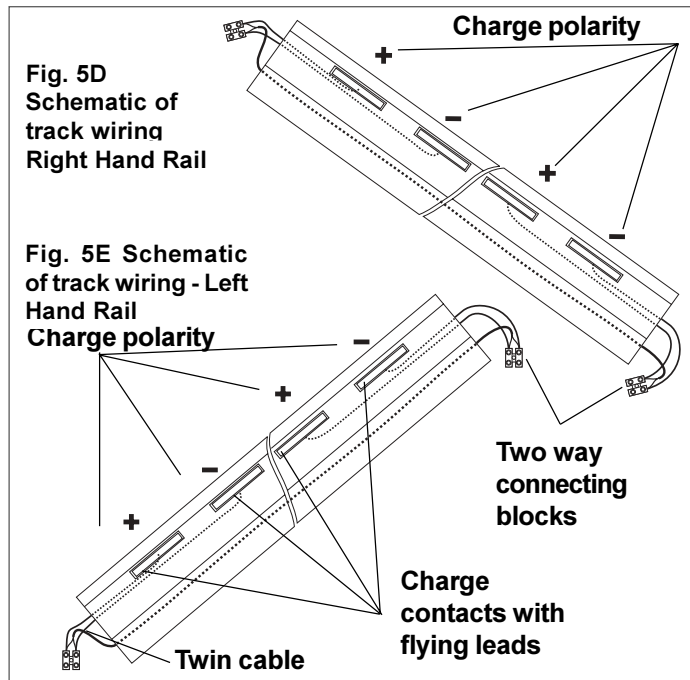
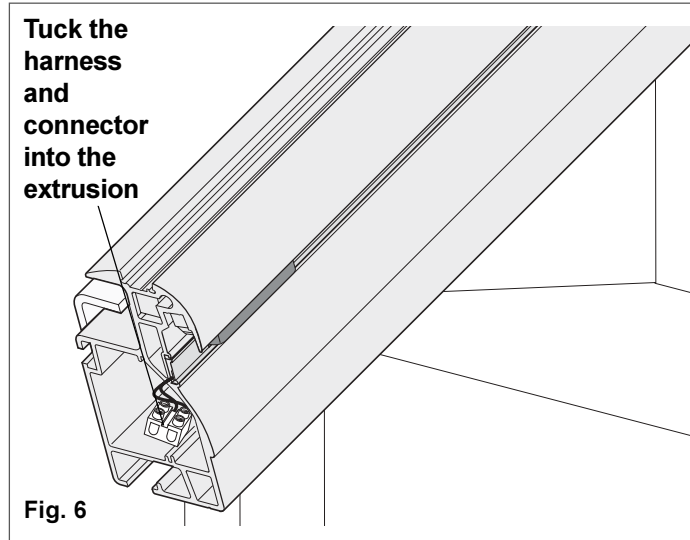
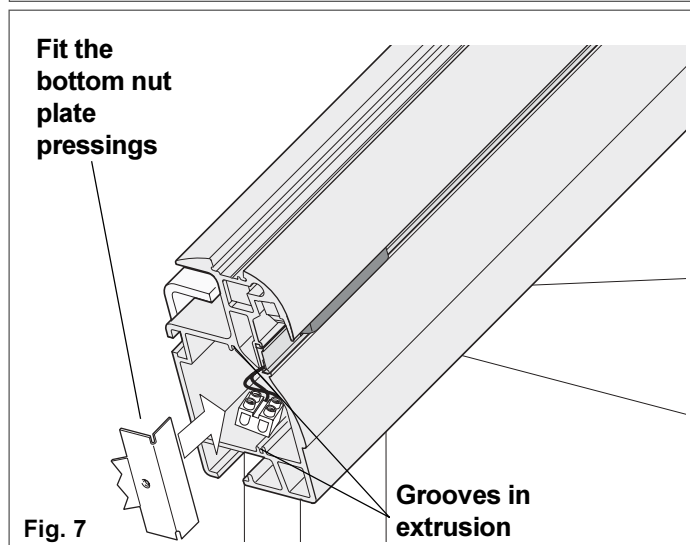


Figure 5D and 5E are schematics of the charging wiring within the track



To fit the end caps

- 1 Carefully tuck the connector and harness into the track extrusion (Fig. 6)..



- 2 Slide in the nut plate pressing (Fig. 6 - this is retained by barbed sprung sections which lock against the inside of the track extrusion).

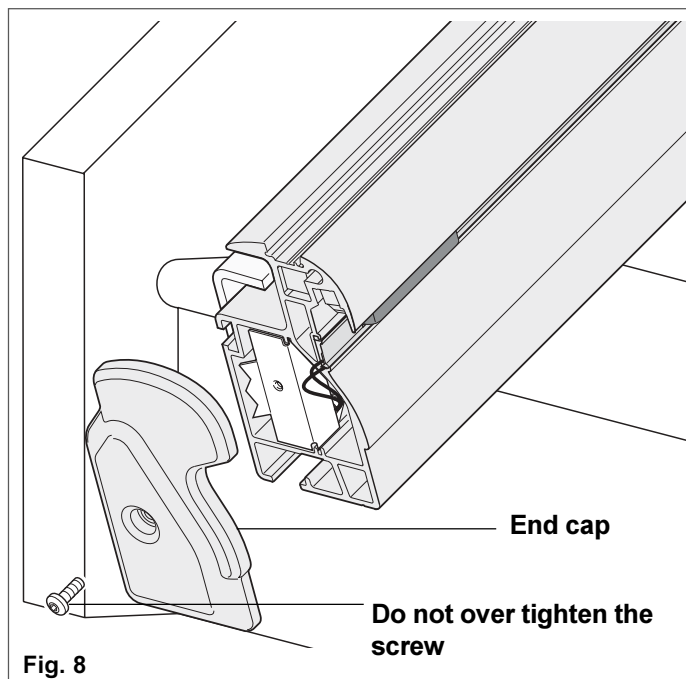
Note:

Take care not to damage the charging wiring as the pressing is being fitted

- 3 Fit the end cap (Fig. 8), taking care that the end cap moulding retaining screw is not over tightened, and that it avoids the wiring.

Hint: Pre-assemble the end cap, nut plate pressing and retaining screw,

This assembly can then be feed into the extrusion and secured as shown.

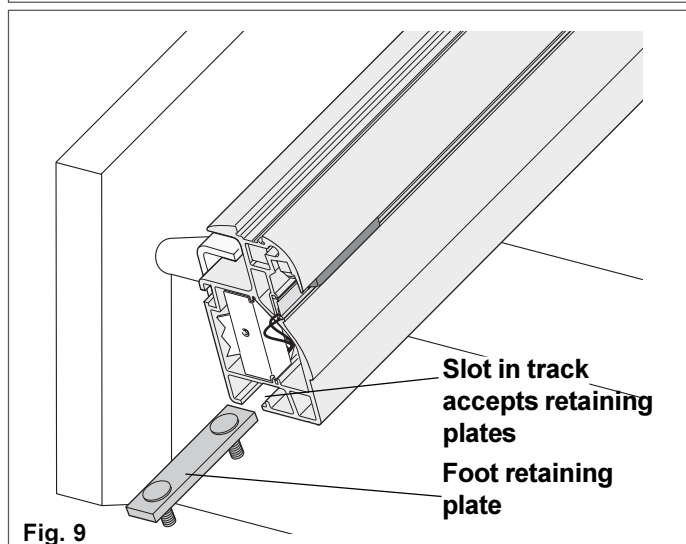


To assemble the track to the feet

Ensure the track is the correct length before you commence assembly.

- 1 Slide the foot assemblies into the track. The foot retaining plate locates into the extrusion, as shown in Fig. 9. Fig 10 & 11 show the individual components of the foot assembly

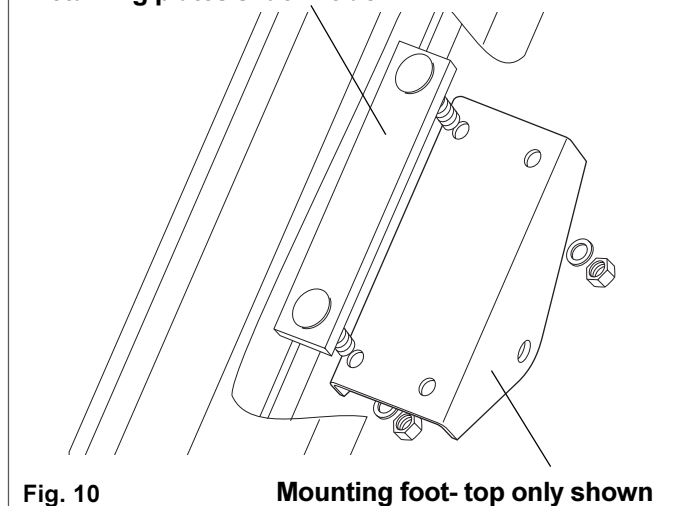
Note: The pressings can be assembled from the top or bottom of the track.

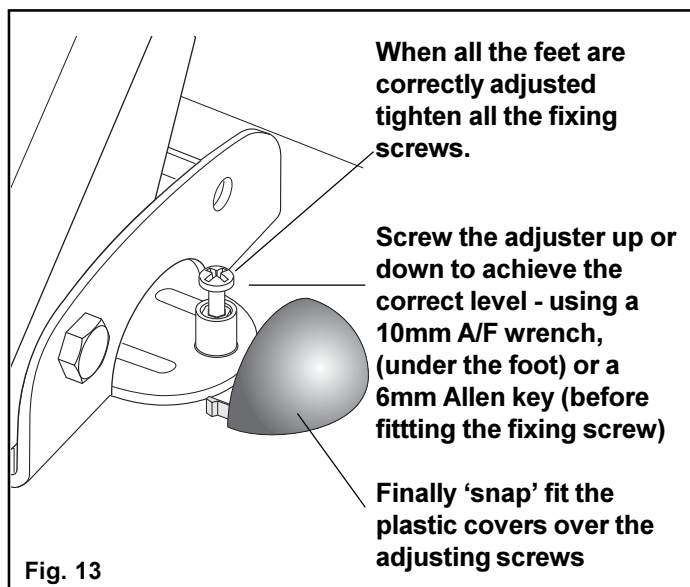
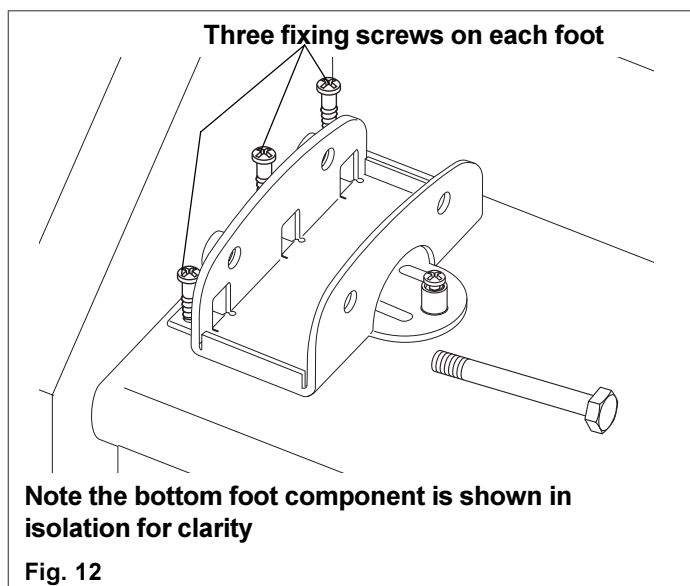
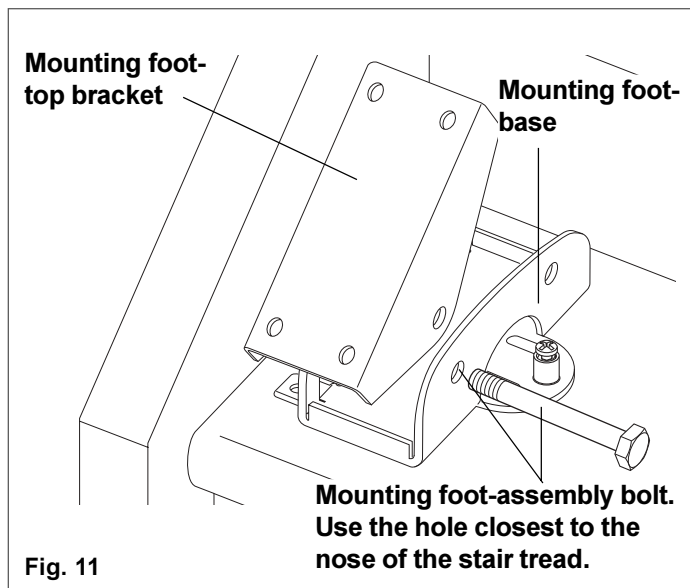


- 2 Only finger tighten the nuts at this stage, to allow the foot to be adjusted in position on the stair tread.

Note: The foot must be fitted with the straight edge (three hole side) against the wall.

Retaining plates slide in track





To assemble the track to the staircase

- 3 Stand the feet on to the stairs, with one foot on the top tread, and one foot on the first tread, with the spacing even in between.

If possible fit one foot over the splice, or as close as possible to it.

- 4 Offer the track assembly to the stairs, and fix the feet to the stair treads, see Fig. 14 for fitting dimension.

With the screws supplied locate the feet using three rear screws per foot.

- 5 Vertically align the track along its whole length, using a spanner on the single front adjuster on each foot (Fig. 13).

Do not tighten the screws until the track angle is correct for vertical alignment along its whole length.



Failure to align the track and feet correctly prior to tightening the screws will twist the feet and lead to permanent damage.

- 6 Tighten all feet to the track, and the feet pivot bolts.
- 7 'Snap' fit the protective plastic covers over the adjuster assemblies.

Fully tighten the foot to stairtread screws. (Fig. 14).
Recheck the vertical alignment of the track, fit locking nut and tighten the front screw.

Note:

This can be done when the power unit has been loaded on to the track.

Note: A long shaft Pozidrive screwdriver will be required for this operation.

Fig. 14 shows typical view 'on site'.

The rear finishing extrusion groove should be approximately 100mm from the wall.

(Dependant on the wall condition, and so that any obstacle will clear the back of the seat).

(NOT THE STAIRCASE STRINGER).

Note this should ensure a seat clearance from the wall of 25mm.

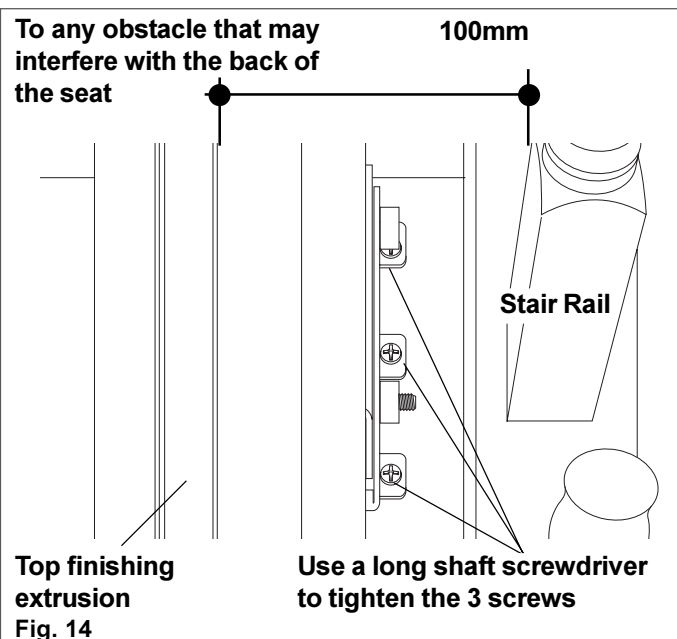
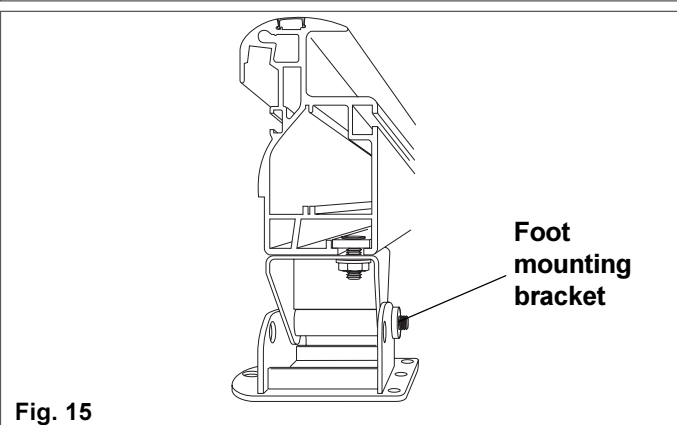


Figure 15 showing an end view of the track with the top finishing extrusion in place and a foot assembled to the track.



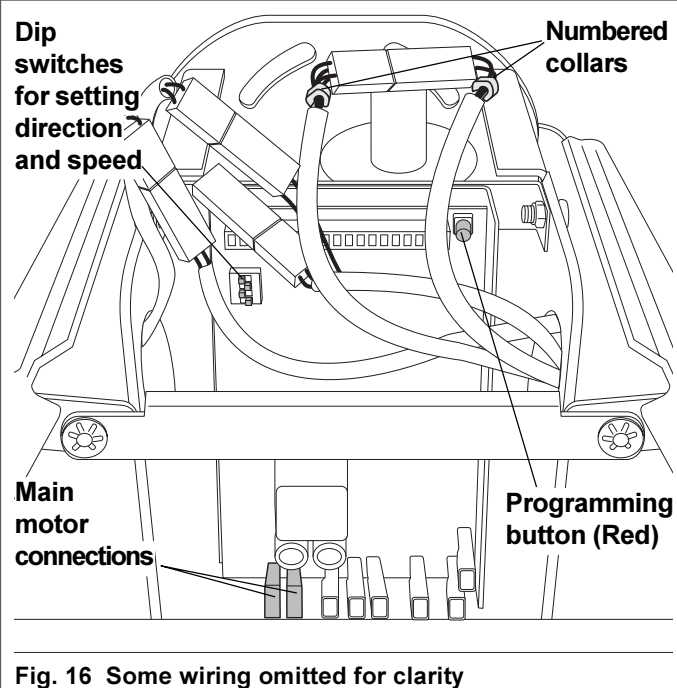
To change the power unit hand-Electrics

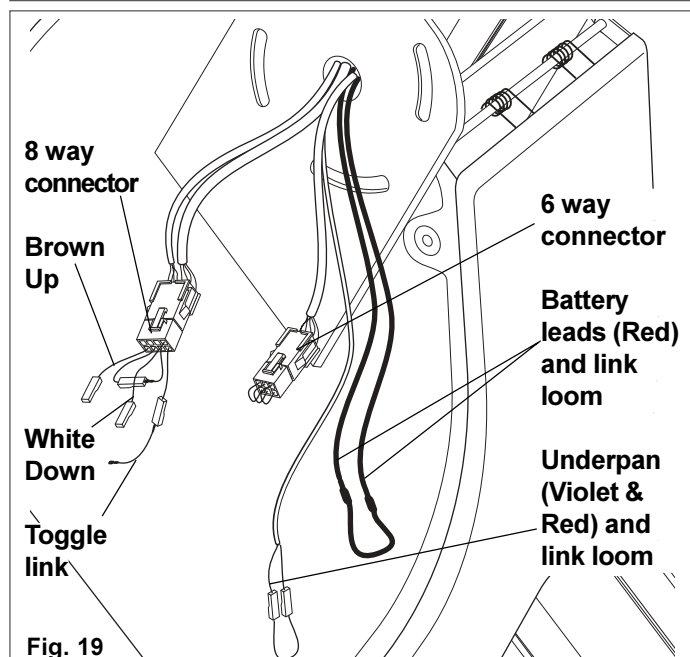
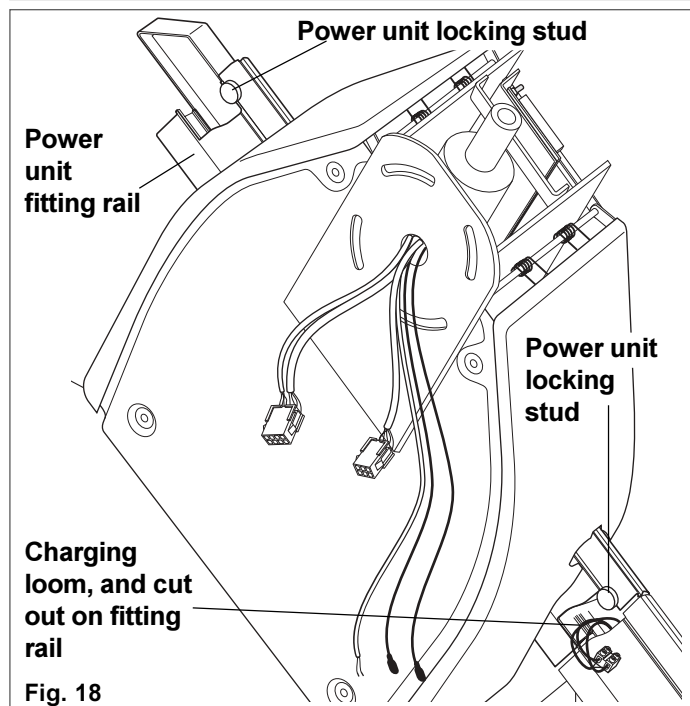
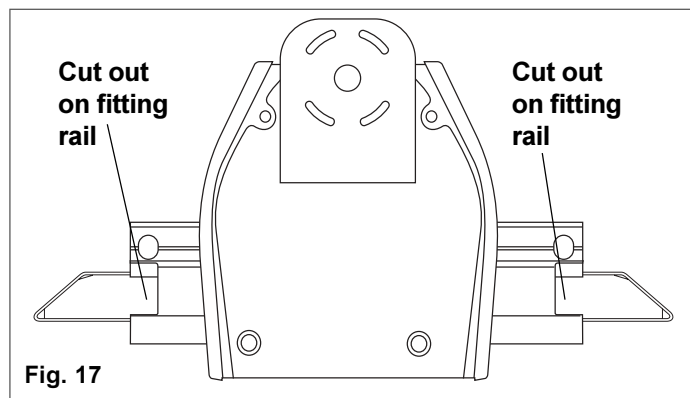
Note: Should the power unit require changing hand, this must be done prior to fitting to the track.

Then follow the sequence given in the Appendix 3 and/or 4 to change the electrics.

- 1 Lay the power unit with its front face down.
- 2 Take off the top and rear covers from the power unit to reveal the main PCB and wiring connectors (Fig. 16).
- 3 Follow the sequence stated in the schematic electrical diagrams, Appendix 1

Note: All wires have numbered collars for identification purposes.





Fit the power unit to the track

- 1 Take off the top cover from the power unit
- 2 Lay the power unit with its rear face down.
- 3 Slide the power unit fitting rail into the power unit, and lock the power unit into place, using the plastic locking studs (Fig. 17).
- 5 Carefully locate the power unit/fitting rail on to the track (Fig. 18).

Note: Ensure the charging loom is not damaged.

When the fitting rail is securely attached, tuck the charging loom into the cut out in the fitting rail and check that it does not protrude.

This ensures the power unit override will not be activated when the unit is being driven on to the track.

Remove the power unit lock and carefully allow it to roll on to the track, until it starts to engage with the rack.

- 6 Connect the dummy seat toggle looms:-
6 way to 6 way (Can only be fitted one way).
8 way to 8 way (Can only be fitted one way).
2.5mm² battery link across the flying battery leads.
0.5mm² underpan link across the underpan loom (Violet to Red).
8 Way connections as follows:
Plug Green to Orange.
Plug the 0.5mm² toggle link into the common (Blue) connection on the 8 way connector, and to drive the lift connect to (Brown - Up), or (White - Down).
Note: These will change when hand of stairlift changes (White - Up), or (Brown - Down)
Drive the power on to the track (Fig. 19).
Warning: Do not hand wind the power unit on to the track, as this could trip the Over Speed Governor (OSG).
- 7 When the power unit is fully and correctly engaged with the rack remove the fitting rail from the track, and the dummy seat toggle looms

Fitting the Seat Chassis to the power unit

- 1 Remove the front cover from the seat chassis, to gain access to the mounting slots.

Note: There are two pairs of straight slots to give height adjustment to the footplate/ seat dimension

Note: they also allow the footplate/seat to be adjusted towards or away from the stair tread nose (Fig. 20).

Note: The power unit has arced slots on the seat chassis interface, to set the angle of the seat and footplate (see Fig. 17 - 19).

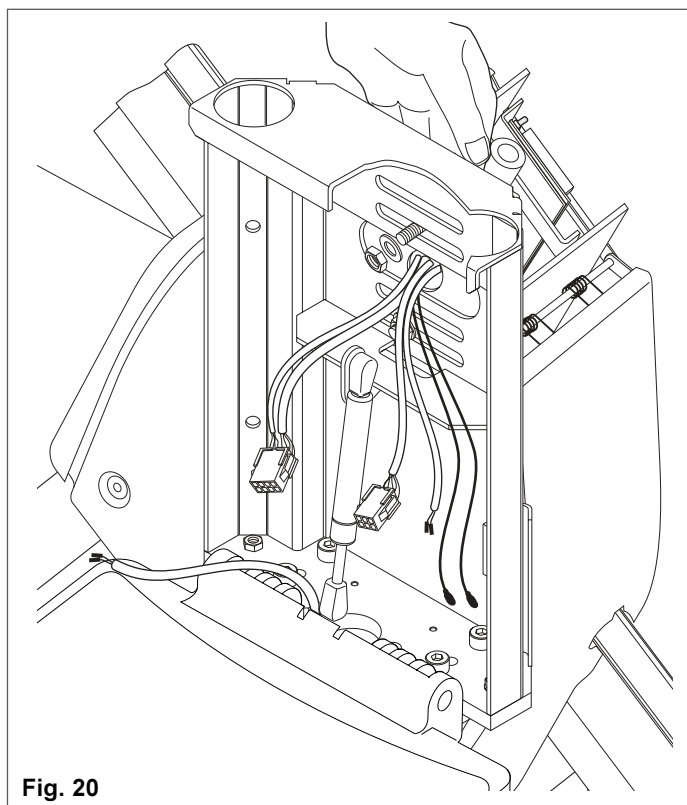


Fig. 20

- 2 Offer the seat chassis to the power unit (Fig. 20), and using the nuts, bolts and washers supplied secure the seat chassis to the power unit, ensuring that the chassis is in the correct vertical alignment.

Fit the flanged bolt in the radial slot and assemble the eccentric washer by rotating to locate it within the large slot and secure with the M8 flange nut.

Note: Do not fully tighten the assembly at this stage, as you will need to adjust the footrest for vertical alignment.

Note: Do not pinch any harnesses whilst assembling the chassis.

Tighten the retaining bolts to torque setting 33Nm. (Fig. 21).

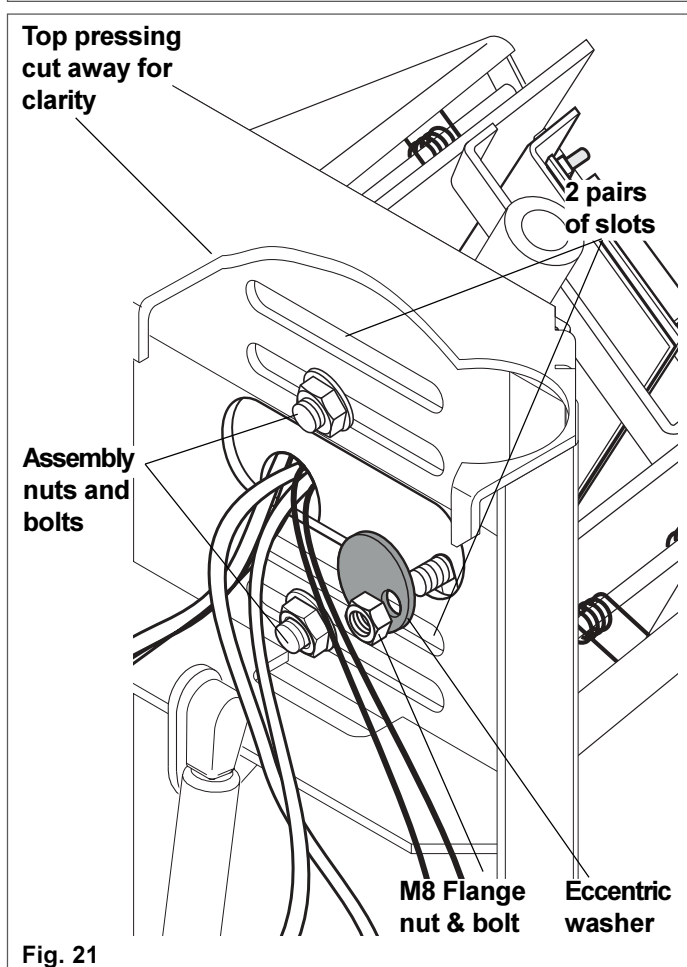
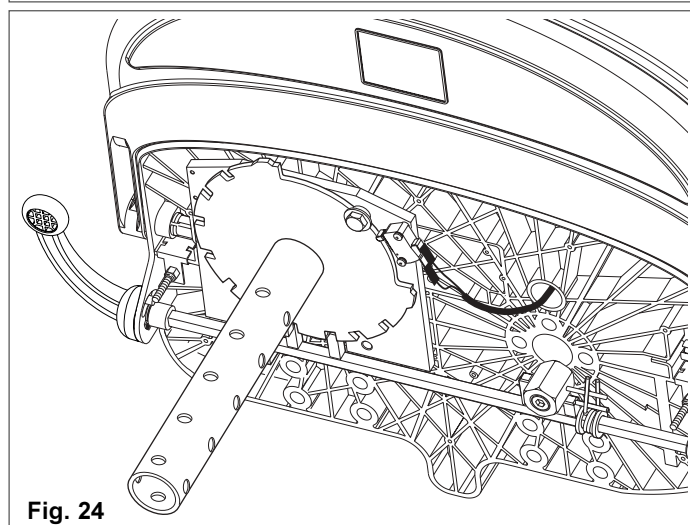
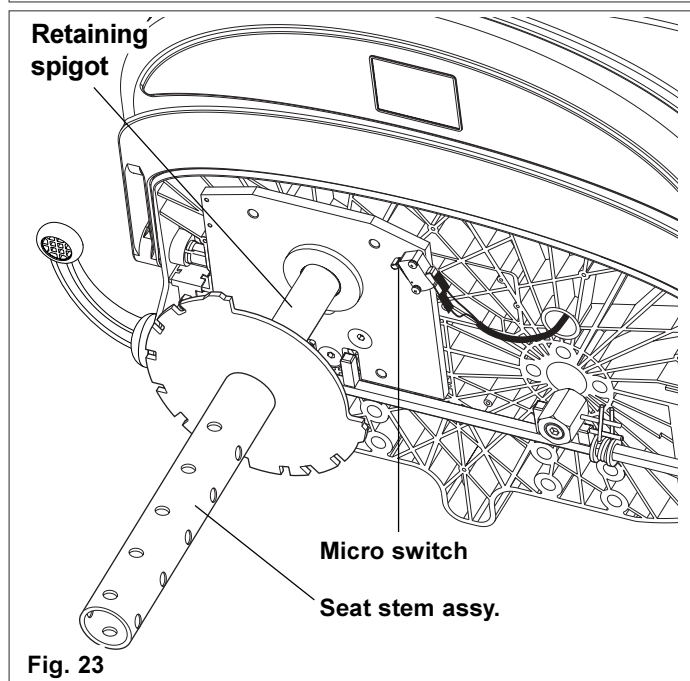
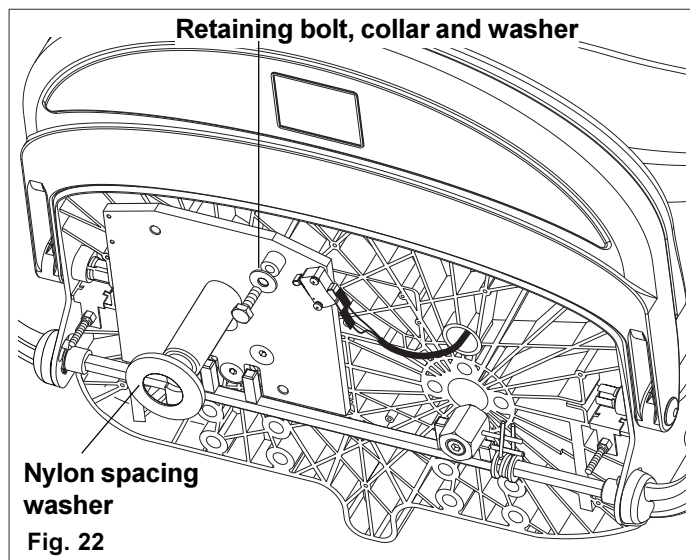


Fig. 21

! The eccentric washer must be fitted to ensure the correct location of the seat assembly



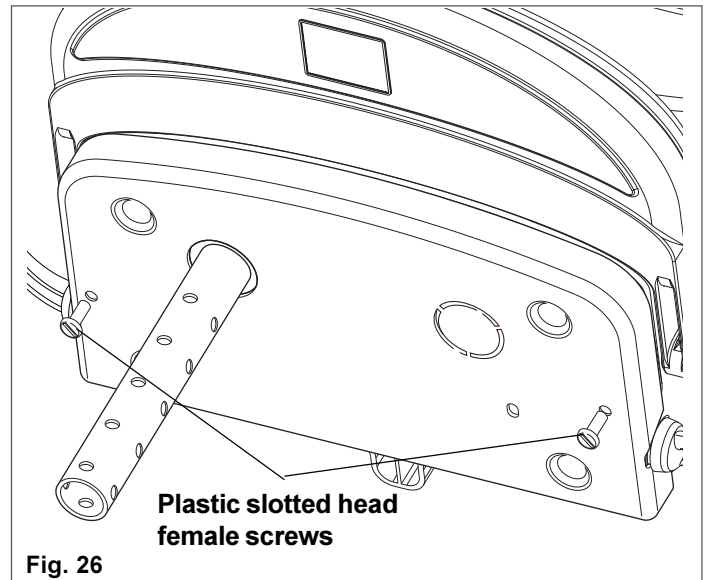
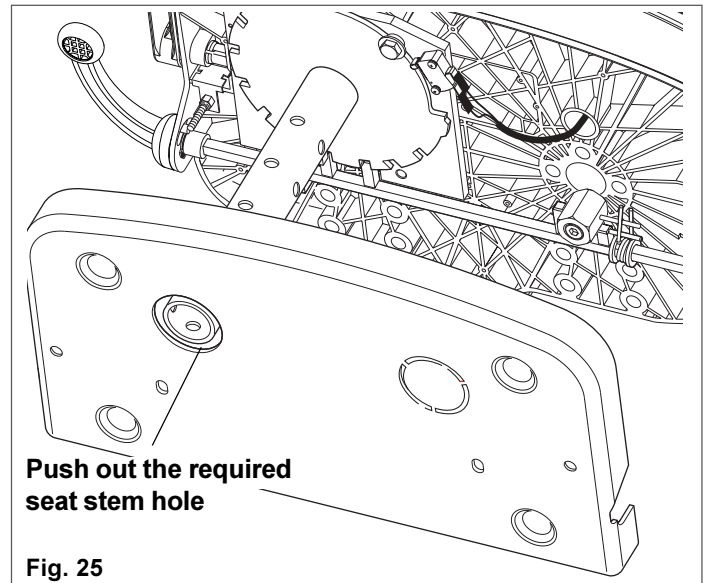
Assembling the seat

- 1 Lay the seat rear face down on a suitable non scratch surface.
- 2 Remove the seat stem retaining bolt ,collar and washer (Fig. 22).
- 3 Fit the nylon spacer washer with its bevelled inner diameter against the weld (Fig 22).
- 4 Slide the seat stem assembly over the retaining spigot on the seat (Fig. 23), taking care not to damage the micro switch.
- 5 Ensure the seat stem assembly can rotate into its lockable positions and that the micro switch is undamaged. Replace the retaining collar, washer and bolt and tighten (Fig. 24).

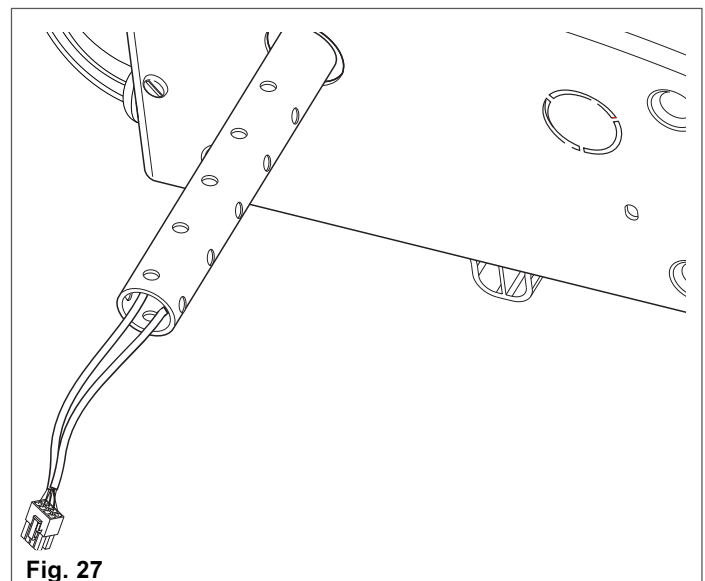
Note:

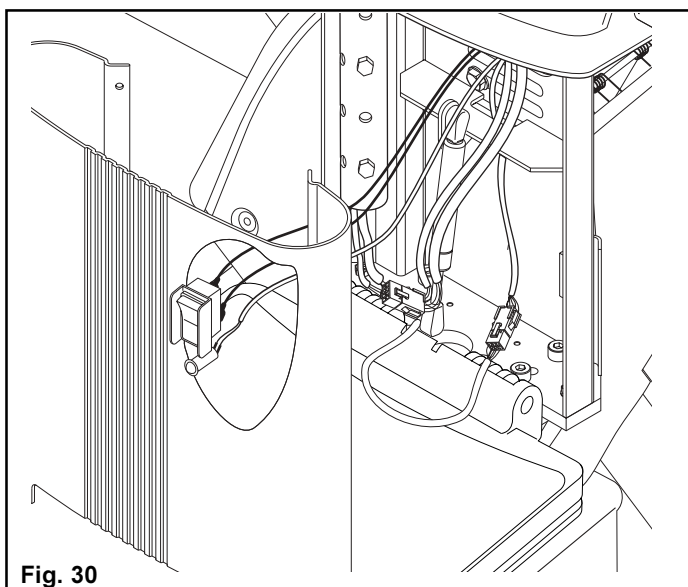
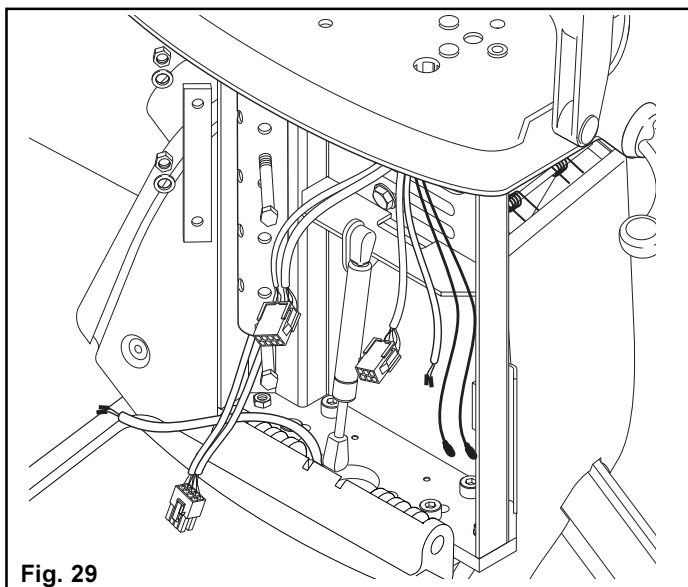
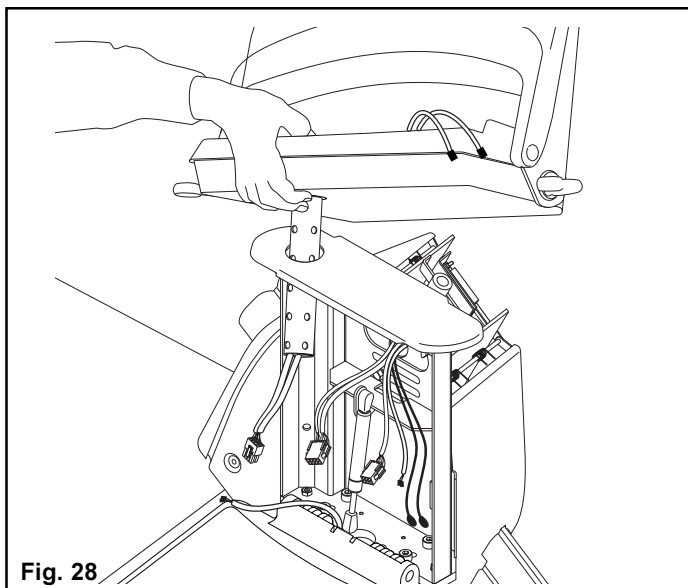
It may be advisable to remove the micro switch to avoid damage and to replace it after the seat stem assembly is fully fitted.

- 6 Push out the required seat stem hole in the base moulding. (These are held with three moulded stems for ease of removing). Slide the moulding over the seat stem (Fig. 25) and fit using the plastic slotted head female screws provided (Fig. 26).



- 7 Slide the 'V' shaped loom down the seat stem, with the single 8 way connector at the bottom (Fig. 27).

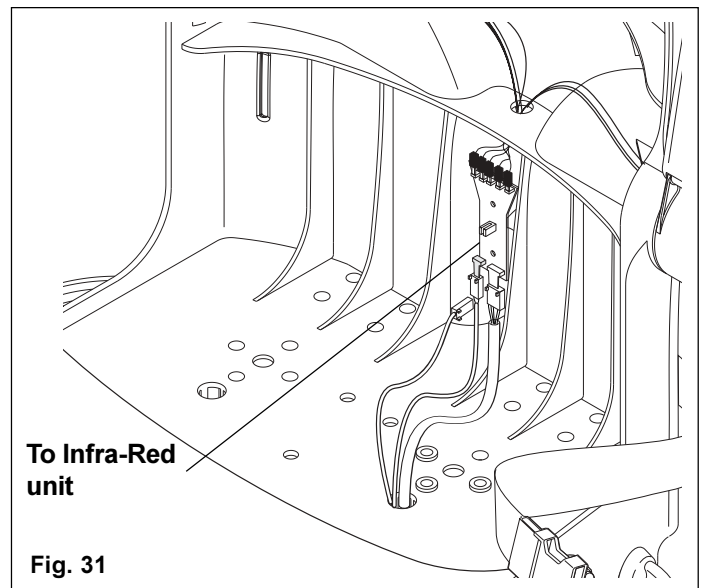




To fit the seat to the chassis

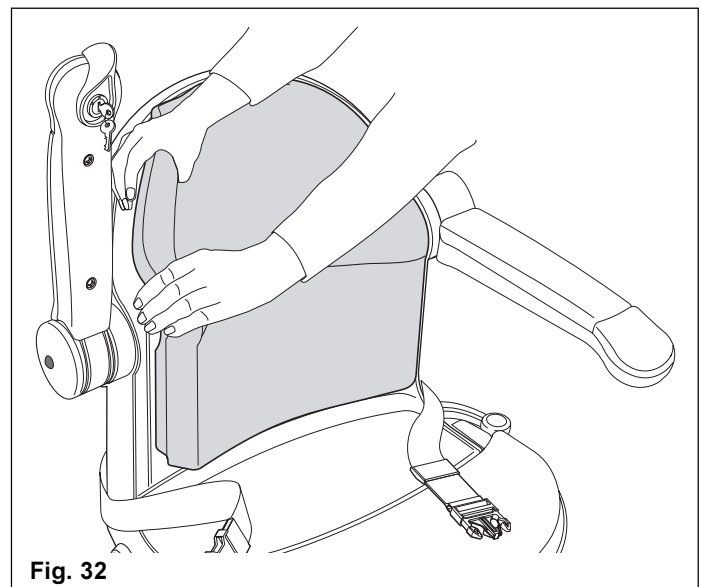
- 1 Place the seat chassis top moulding on the chassis, and feed the harness and seat stem (and seat assembly) through the holes in the moulding and chassis (Fig. 28).
- 2 Feed the two seat retaining bolts through the required holes in the seat stem and footrest chassis. Fit the strengthening plate, and the two retaining nuts and tighten to 25Nm. torque (Fig. 29).
NOTE: TAKE CARE WHEN FEEDING THE RETAINING BOLTS NOT TO DAMAGE THE SEAT WIRING HARNESS.
- 3 When fitted check for correct action of the latching mechanism on the seat swivel assembly. Check for any chafing on the wiring harness. Connect the seat chassis harness to the power unit.
- 4 When all the checks are satisfactory fit the seat chassis front cover, plug in the wiring harness to the cover mounted switch and neon (Fig. 30).

- 5 Connect the 2 top plugs into their respective sockets on the seat PCB and infra red unit (Fig. 31).



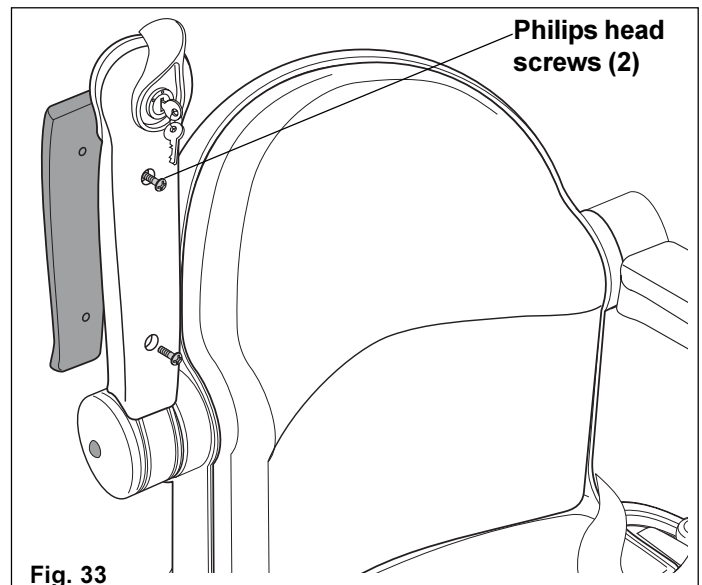
Fit upholstery to the seat

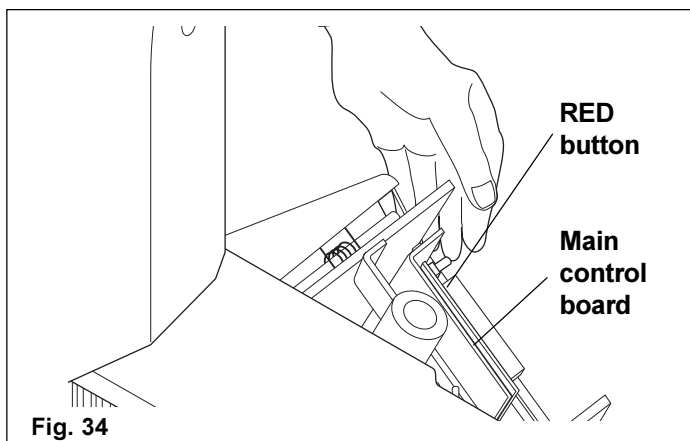
The seat backrest and cushions are held in place with Velcro pads (Fig. 32).



To remove and replace armrest upholstery

Remove both armrest pads by rotating the armrests vertically and unscrewing the Philips head screws to release the armrests (Fig. 33).

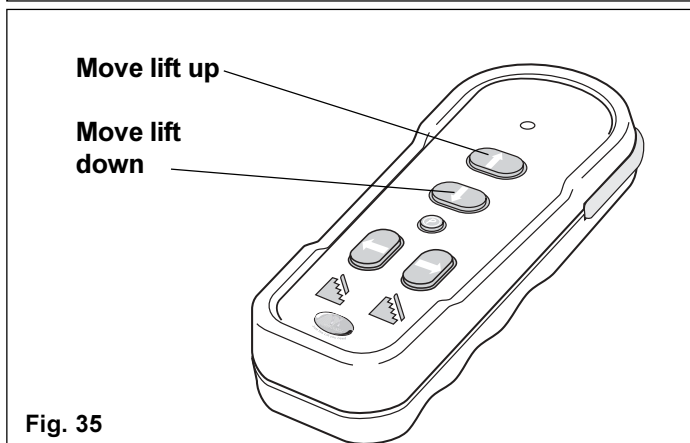




Program the stairlift and handset

- 1 Rotate the seat through 90° to gain access to the main control board as shown in Fig. 34.
- 2 Press the red button on the main control board (adjacent to the green connectors) and keep it held down (Fig. 34).

Note: Wiring has been omitted for clarity.

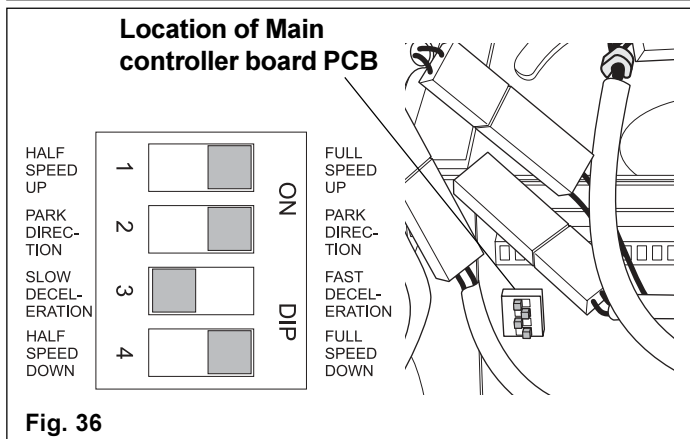


3A If the lift is at the top of the stairs press the DOWN button on the remote control (Fig. 35).

3B If the lift is at the bottom of the stairs press the UP button on the remote control (Fig. 35).

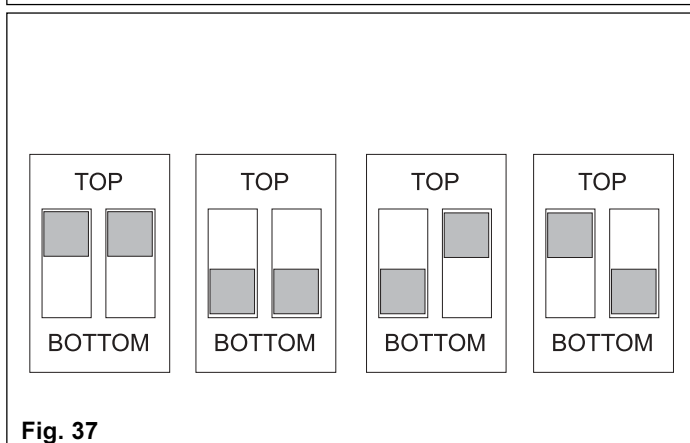
- 4 Release the red button.

The lift and remote control are now programmed for normal operation.



Should the lift require any additional programming, first determine if the program is standard, by pressing 'park' on the hand set. The lift should head upwards in 'standard' mode. Then move the dip switches on the main controller board to the required settings (Fig. 36).

Finally fit the power unit top cover.



Should there be more than one lift operating in the same vicinity the handsets will require programming.

- 1 Remove the 4 screws from the rear covers and remove the covers to gain access to the dip switches, which can be set in 4 different positions as shown in Fig. 37.
- 2 Set the switches as required and replace the rear covers.

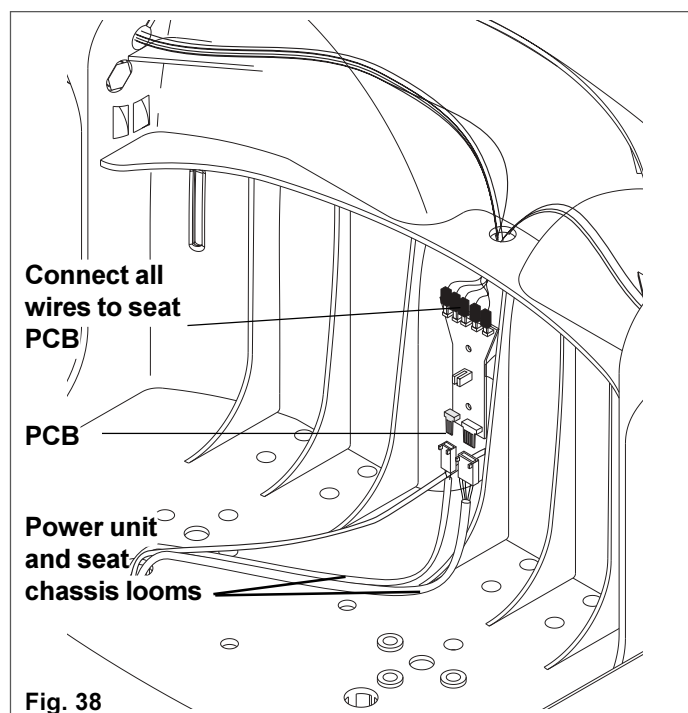
Note: Ensure each set of handsets have the same dip switch settings.

To change the hand required for control

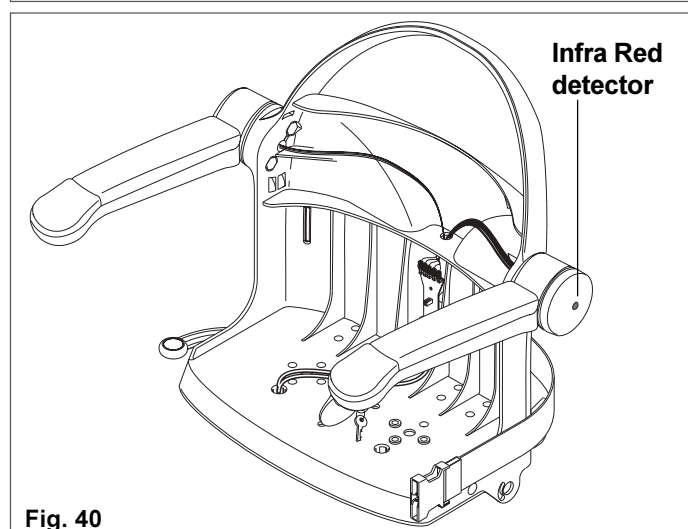
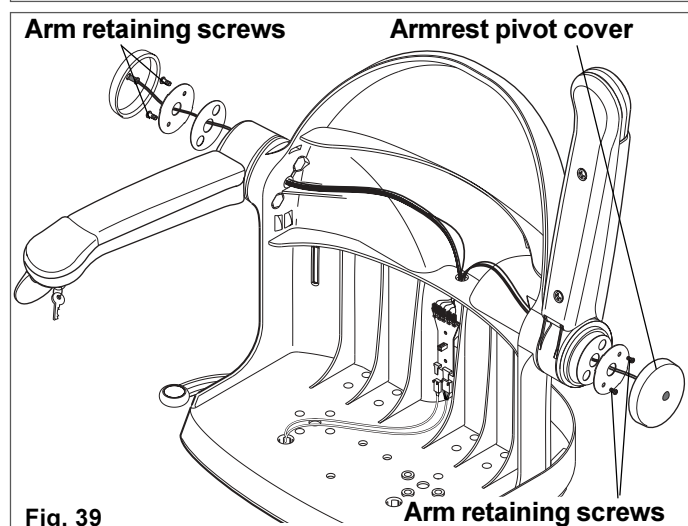
The chair is factory supplied for the user to use their right hand for controlling the chair.

To change the control position:

- 1 Carefully unplug all armrest wire sockets from the printed controller board (PCB) located in the rear centre seat backrest (Fig. 38), taking care to note the sockets correct positions on the PCB.
- 2 Unclip the wires from their mountings on the seat.

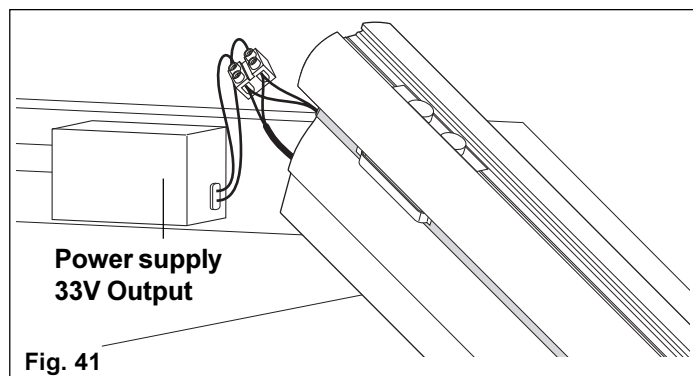


- 3 Remove the both armrest pivot covers, by turning approximately 45% and lifting clear (Fig. 39).
- 4 Unfasten the retaining screws on the controller arm and carefully withdraw the arm and control wires through the arm mounting (Fig. 38, 39).
- 5 Unfasten the opposite arm and thread the safety shut off wires through the arm mounting.
- 6 Fit the control arm on to its required mounting, carefully threading the control wires through the arm mounting moulding. Tighten the mounting screws securely and refit the cover moulding.
- 7 Fit the opposite arm following the sequence outlined in 7 (Fig. 40 shows completed sequence).
- 8 Refit the sockets on to their respective plugs on the control PCB (refer to Fig. 38), and ensure the infra red detector is correctly positioned in its transparent dome in the rear of the backrest.



Note: If the detector is not correctly positioned the hand control will not operate the stairlift.

Minivator 1000 series Installation Manual



Connect the track loom to the Power Supply and test at final installation

Note: The Minivator 1000 series stairlift is battery operated from the 33V output power supply, and can therefore be safely connected to the household mains supply via the normal ring main.

- 1 Locate the power supply in an appropriate position, and connect to the mains at a fused spur or with a fused plug on to the normal household ring main.

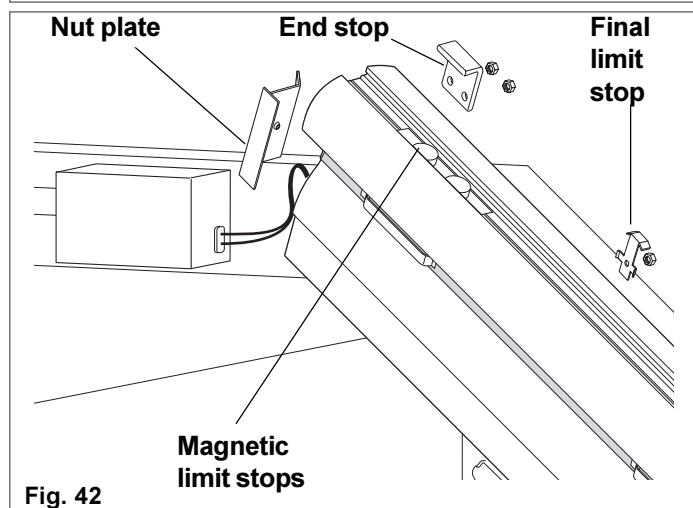
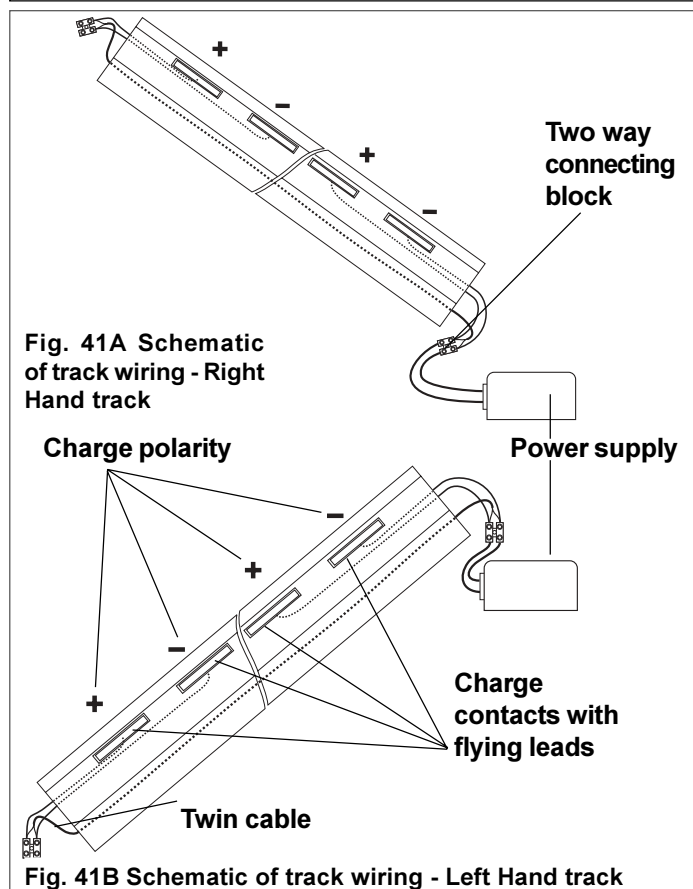
Note: All mains wiring must comply with the standards in force at the time of installation.

- 2 Connect the charging point wiring to the transformer (Fig. 41, 41A, 41B).
- 3 Slide in the nut plate (this is retained by springed sections which lock against the inside of the track extrusion), as shown in Fig. 42

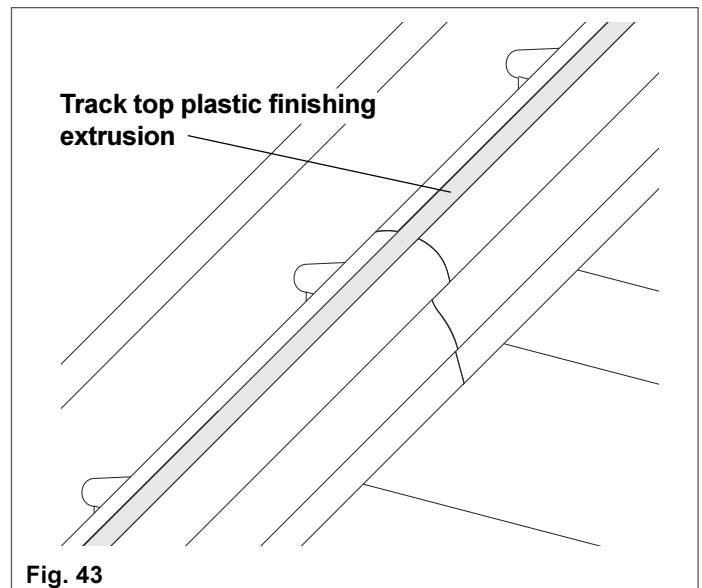
(See also page 5 and 6).

- 4 Fit the final limit stop (Fig. 42).
- 5 Earth bond the track at base of the 'L' shaped end stop through the M5 clearance hole specifically for cable connection.
- 6 Fit the top end stop to the stringer side of the track (Fig. 42).
- 7 The magnetic limit stops can be adjusted at this stage, to position the stairlift's static position relative to the end of the track.

Note: They are held in place on a Velcro backing strip. The whole strip must be moved to give final adjustment.



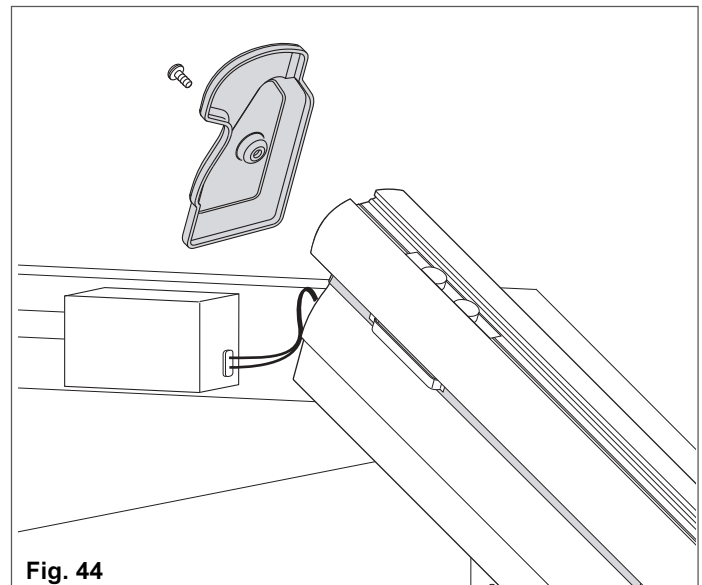
- 6 Fit the track top plastic finishing extrusion, sliding under the power unit, and snapping it into place, (Fig. 43).



- 7 Tuck the 2 way connecting block and wiring into the track.

Fit the track end cap, ensuring that no wires are trapped (Fig. 44).

- 8 Test the final installation.

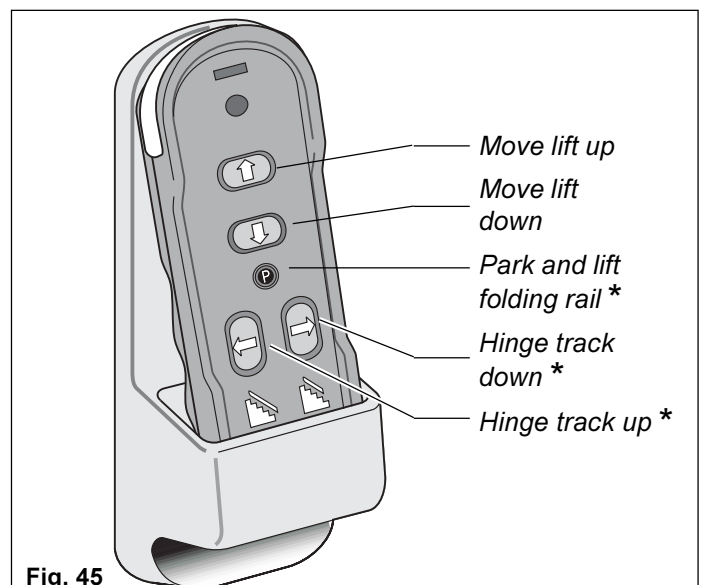


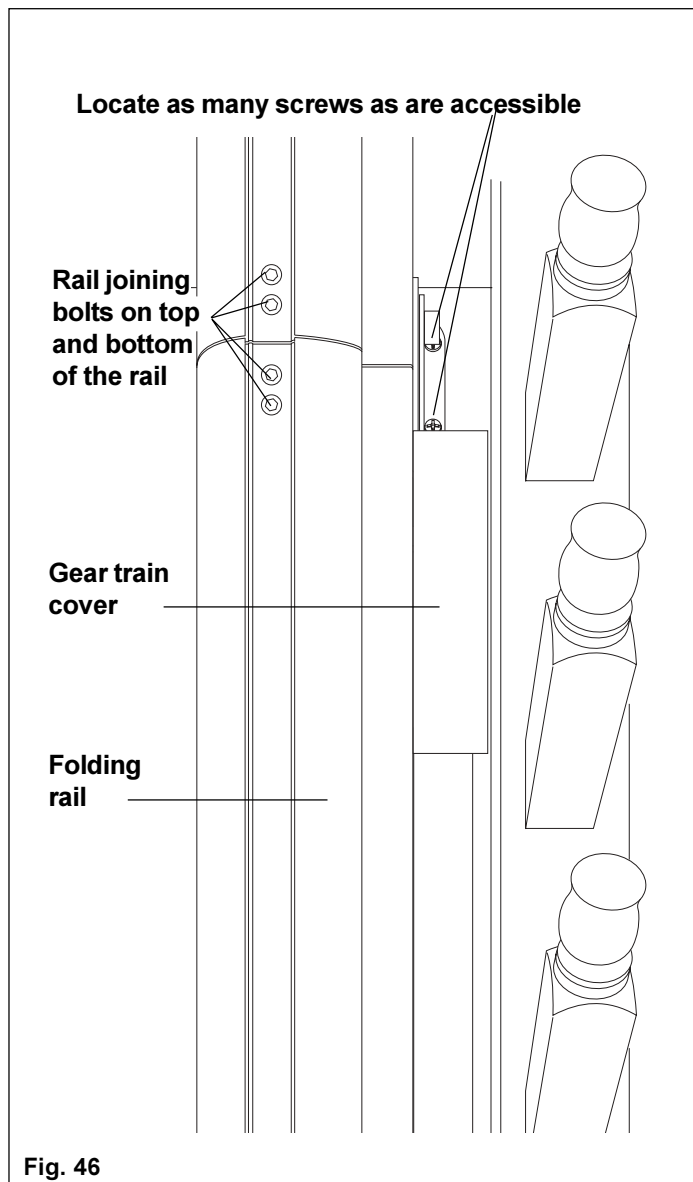
Fit the hand control holder

Fit the hand control holder to the wall in the required position using the fixings supplied (Fig. 45).

When the stairlift assembly is complete and tested satisfactorily demonstrate all the features on the hand control.

Note; the hand controller can be fixed into the holder by locking it with the supplied plastic moulding.



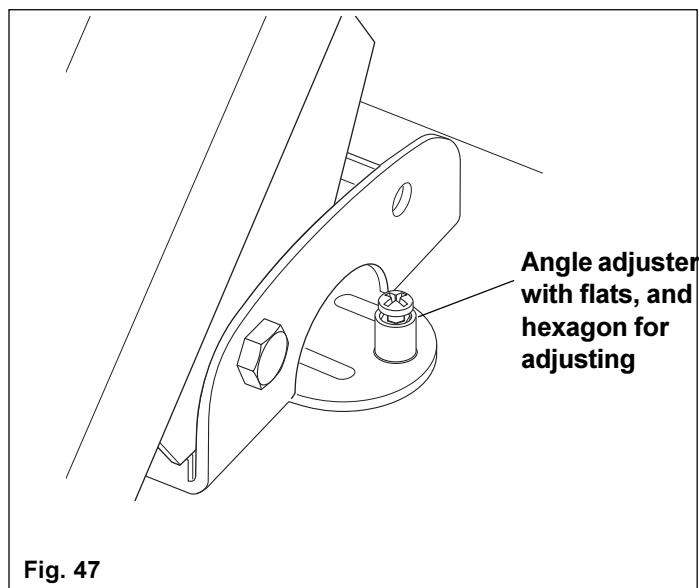


Fit the powered folding rail

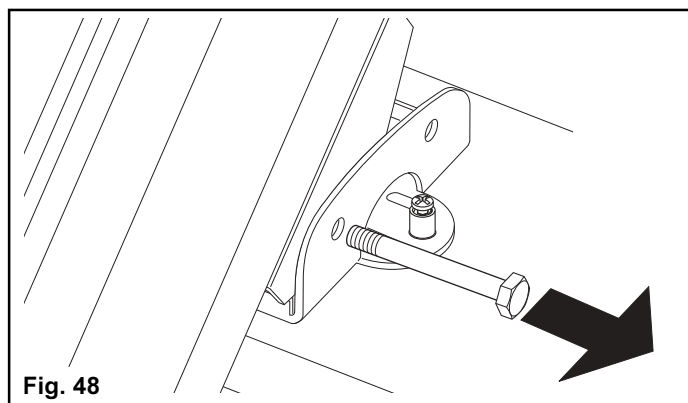
- 1 Splice the hinge rail section to the main track as per the track assembly instructions, and fit the required number of feet, and then proceed as follows:-
- 2 Offer up the folding rail to the adjacent track section, and bolt loosely together at this stage (Fig. 46).
- 3 Fasten the foot/rail assembly to the stair tread:-

Due to the overhang of the operating gear train and the possible position of the foot you may only be able to locate 1 or 2 fixing screws in the foot. If this is the case use the following procedure.

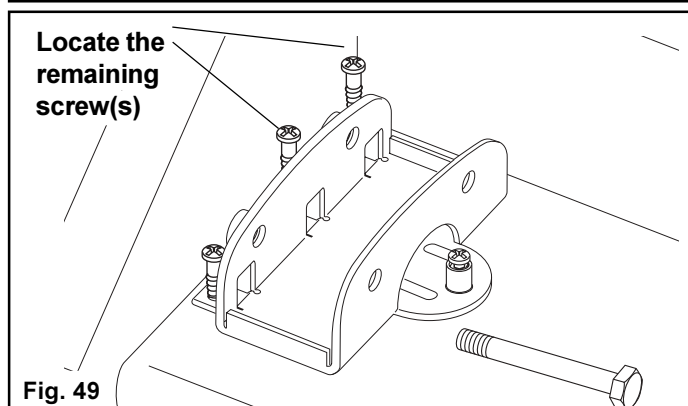
- 4
 - a Fit the screws
 - b Adjust the rail angle to ensure the stairlift is vertical using the adjuster screw as shown in Fig. 47. (Bottom plate only shown - for clarity).



- c Withdraw the foot top bracket/bottom bracket bolt (Fig. 48).
- d Unscrew the rail joining bolts and withdraw the folding rail assembly (Fig. 46).

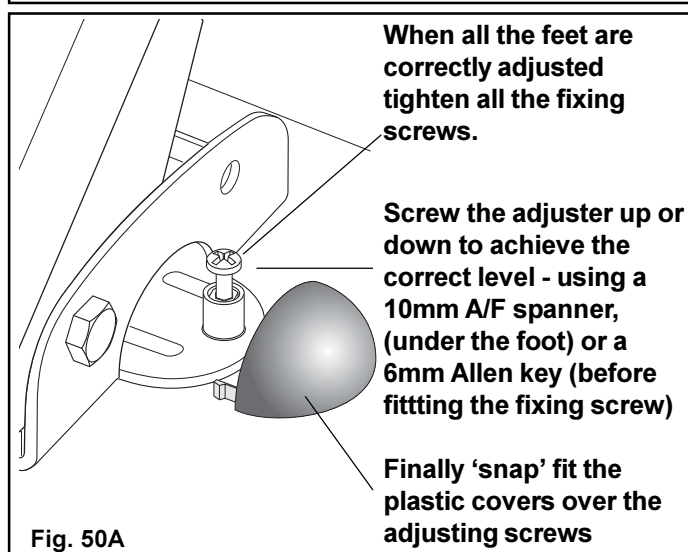
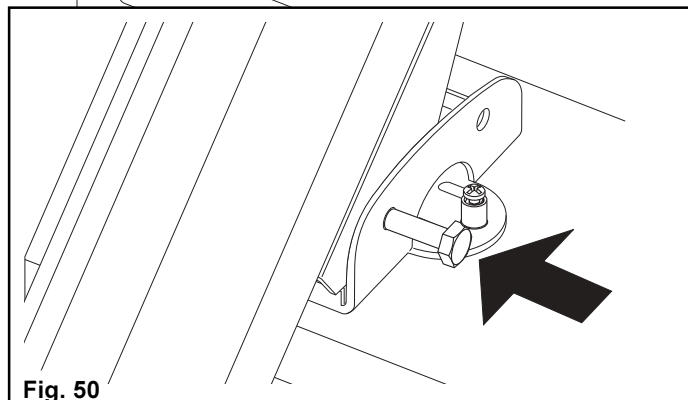


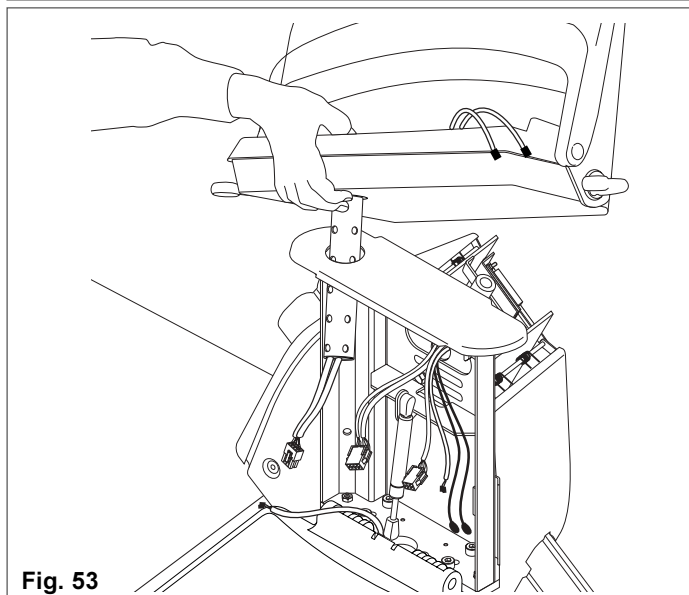
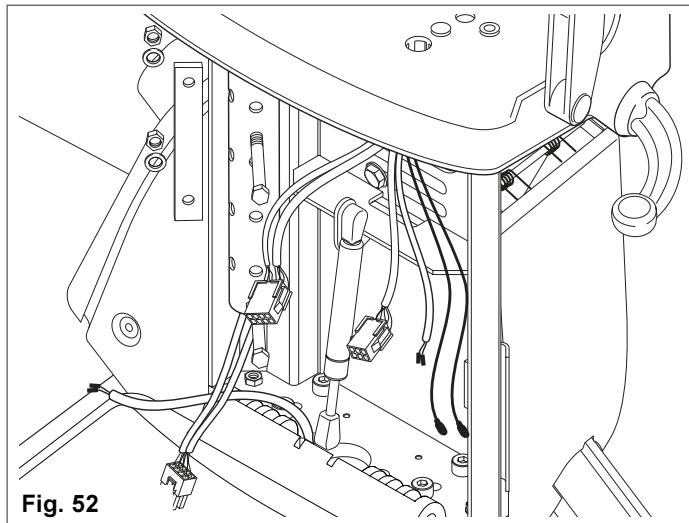
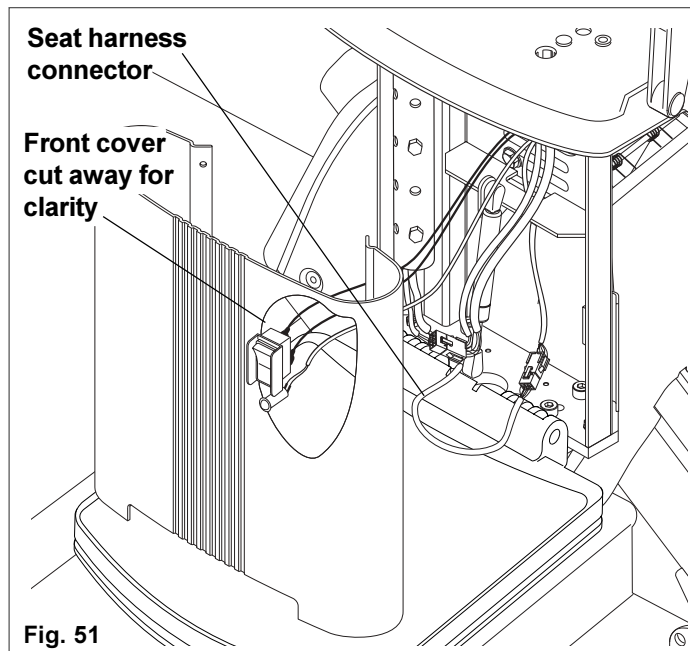
- e Locate the remaining screws (Fig. 49).
- f Reassemble the folding rail to the fixed rail, (see Fig. 43).
Torque setting 8-9Nm.



- g Relocate and secure the top bracket/ bottom bracket bolt (Fig. 50).
- h Finally 'snap' fit the protective plastic covers over the adjuster assemblies.

- 6 Fit the track top finishing extrusion on all rails.





Changing the seat position

The seat can be mounted at the left or right side of the seat chassis.

Refer to Figures 51, 52, 53

Note:

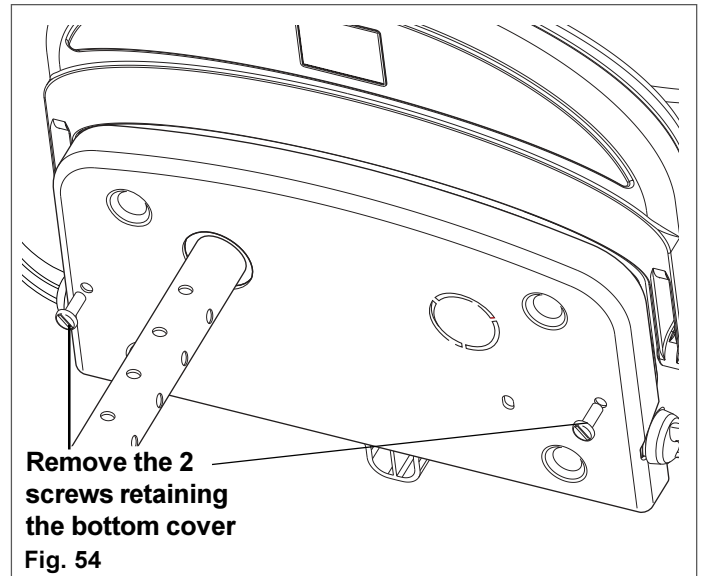
The seat stem should be fitted to the upper side of the unit.

On the left for right hand stairs.

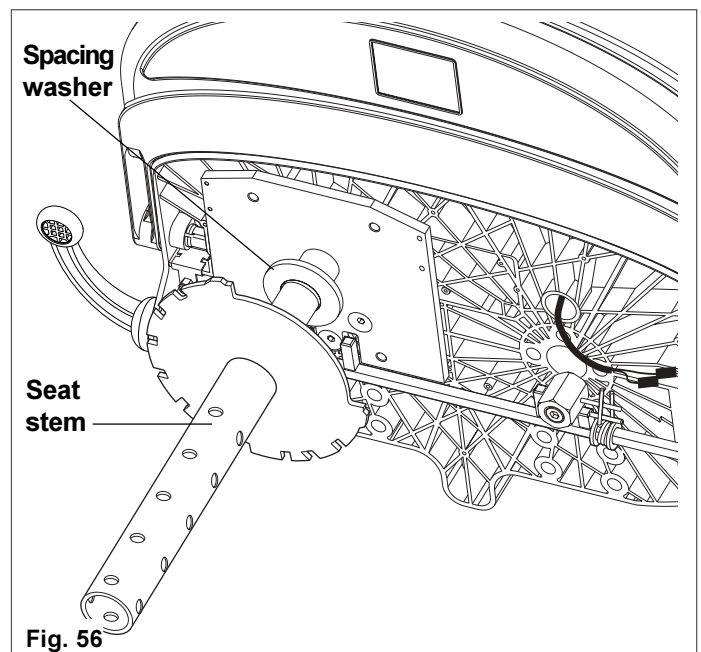
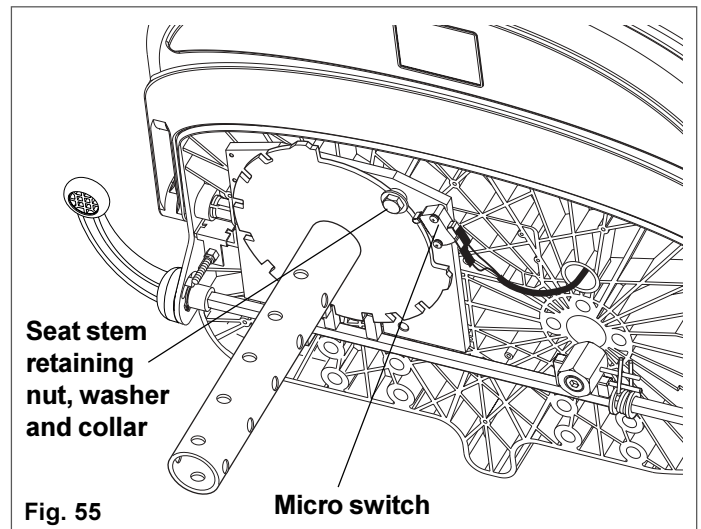
On the right for left hand stairs.

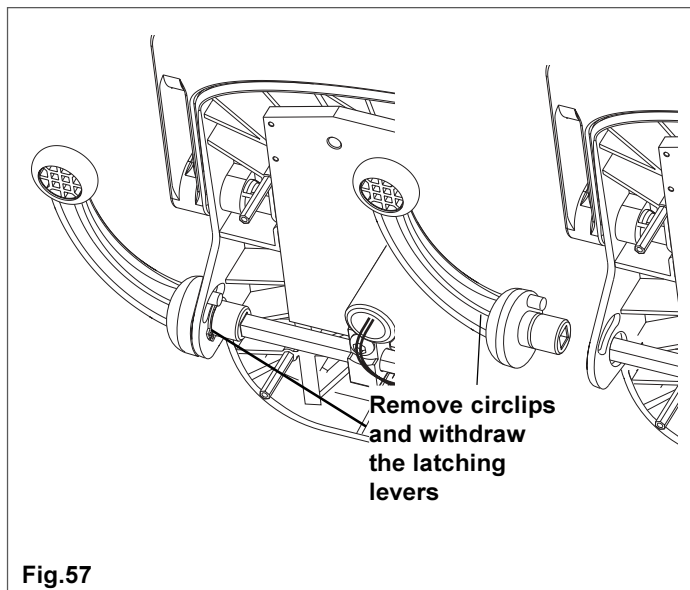
- 1 Unclip the front cover, and remove the female terminals from the switch and neon on the front cover, and unclip the 8 way seat harness connector (Fig. 51).
- 2 Remove the seat cushions and backrest upholstery to gain access to the wiring, and unclip the plugs on the seat PCB and on the infra red unit.
- 3 Remove the two tube retaining bolts (Fig. 52), nuts, and flat plate, and carefully withdraw the seat assembly from the chassis (Fig. 53).

- 4 Lay the seat on its back, with foam rubber to stop any movement, and to avoid damage.
- 5 Remove the screws locating the bottom cover moulding and remove the moulding (Fig. 54).

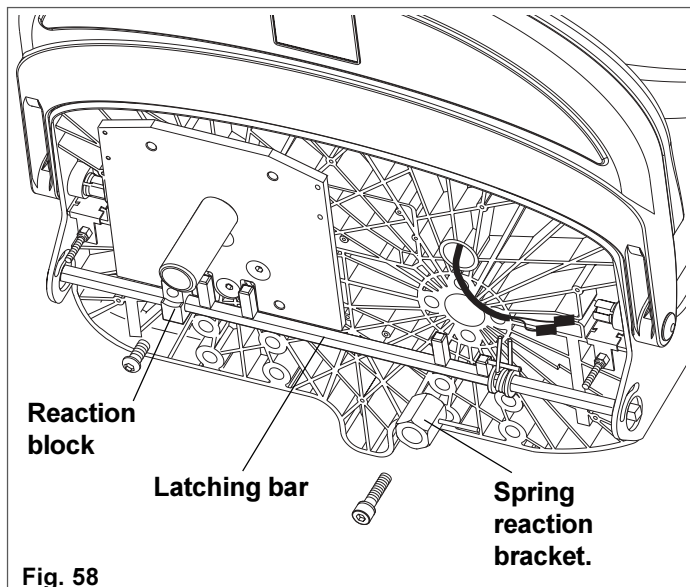


- 6 Remove the micro switch.
- 7 Remove the seat stem retaining nut, washer and collar seat stem retaining nut, washer and collar (Fig. 55), and withdraw the seat stem and spacing washer (Fig. 56).

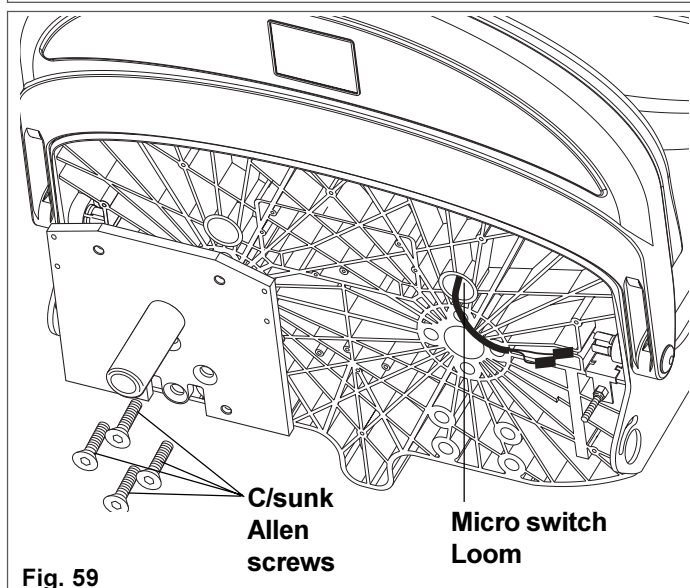




- 8 Remove the circlips from the latching levers (Fig. 57), and remove the levers.



- 6 Unbolt the reaction block (Fig. 58).
- 7 Unbolt the spring reaction bracket (Fig. 58).
- 8 Slide the latching bar out.



- 9 Remove the 4 countersunk Allen screws retaining the seat mounting plate (Fig. 59), and remove the plate.
- 10 Remove the micro switch loom from its present inlet hole (Fig. 59).

- 10 Replace the plate in the required position, and tighten the Allen screws to 20Nm. (Fig. 60).

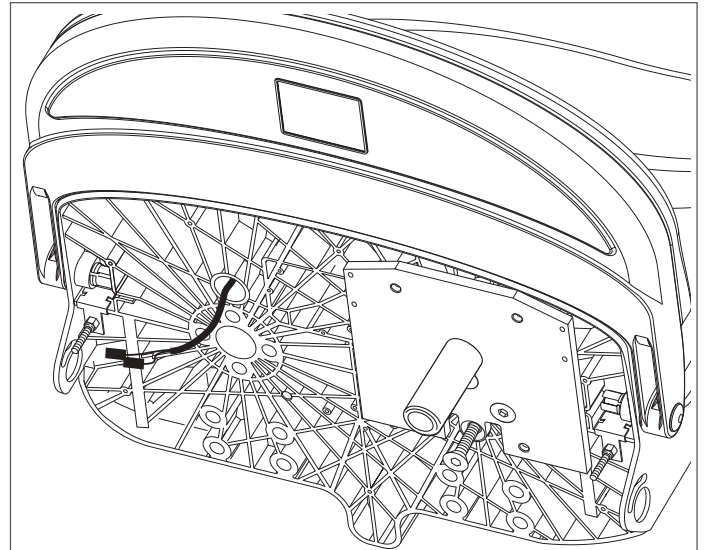


Fig. 60

- 11 Replace the micro switch in the position indicated in Figure 61, and feed the loom through the moulded hole as shown in (Fig. 60 and 61) and reconnect the spade terminals.

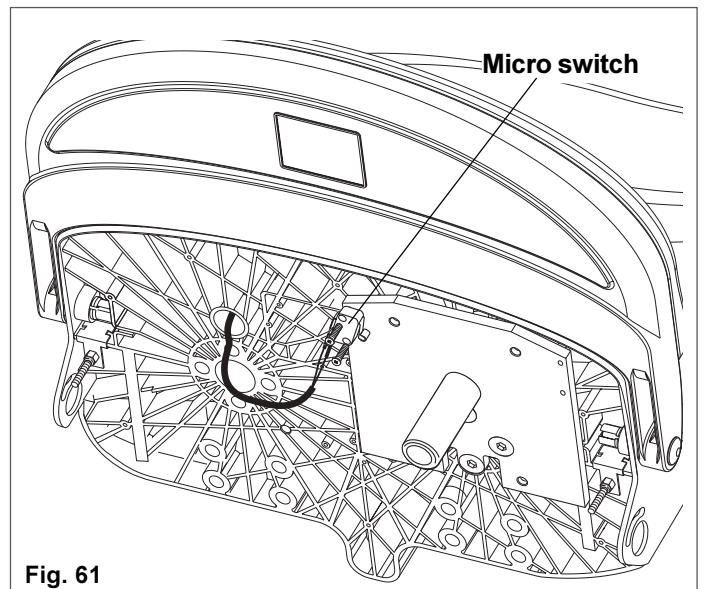


Fig. 61

- 12 Feed the latching bar, and reaction bracket into the seat,

Note: The positions of the reaction bracket and spring must be a mirror image of the original assembly, so that the latching yoke lines up with the latching plate (Fig. 62).

- 13 Fit the spring reaction bracket and tighten to 20Nm. (Fig. 62).

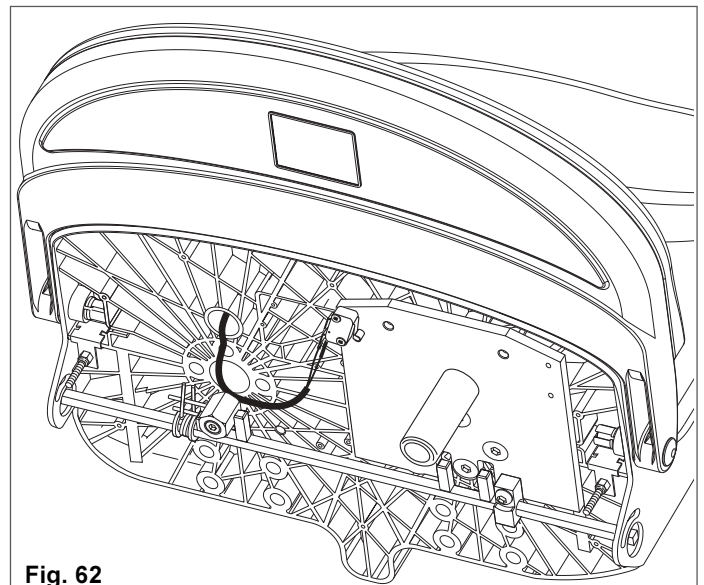
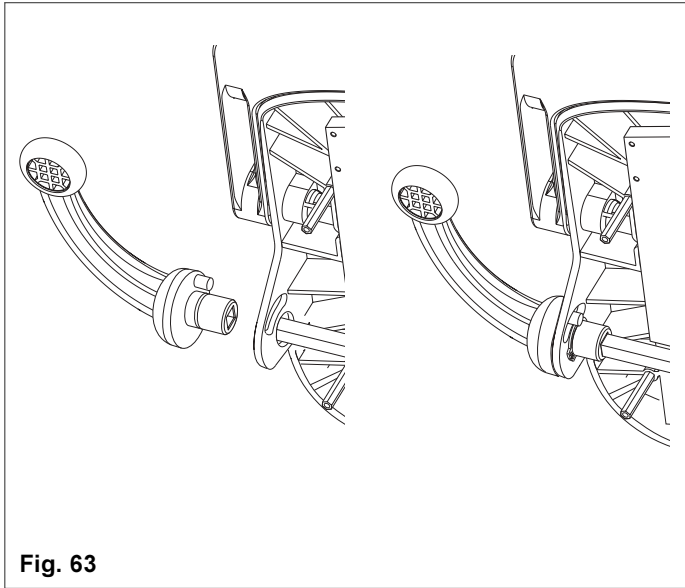
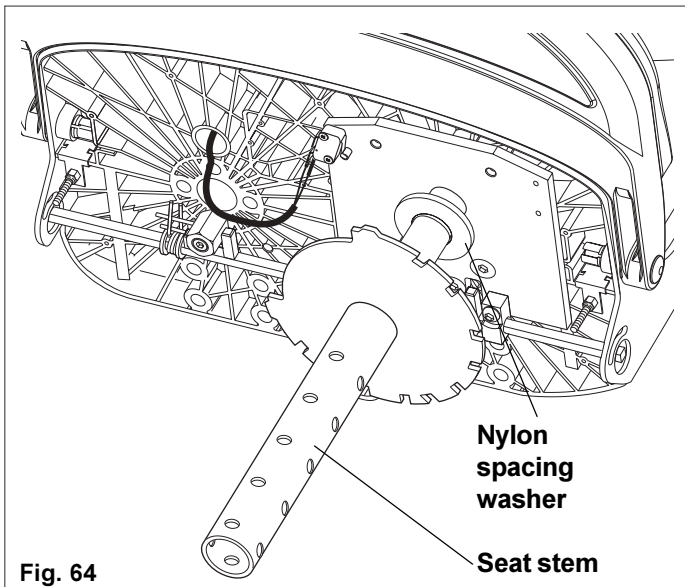


Fig. 62



- 14 Fit the latching levers into their bearings and over the latching bar and replace the circlips (Fig 63).

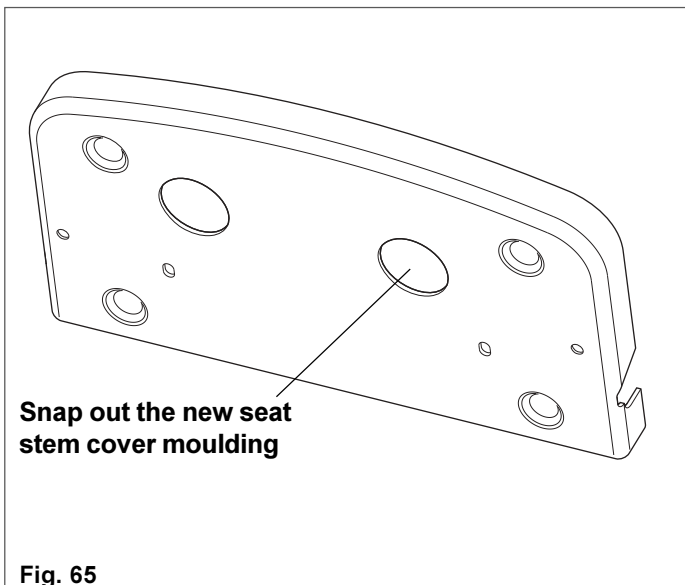
Ensure the latching mechanism operates freely.



- 15 Fit the nylon spacing washer with the inner bevelled portion against the weld on the plate and the seat stem in the position shown, with the large notch rotated 90° anti-clockwise (Fig. 64).

Note: Take care not to damage the micro switch when assembling the seat stem.

Fit the seat stem retaining nut, washer and collar (Fig. 61), and ensure the mechanism operates smoothly prior to fitting the cover.



- 16 Snap out the plastic covering the new position required for the seat stem (Fig. 65), and replace the cover (Fig. 66).

- 17 Fit the cover moulding using the two plastic nuts (Fig. 66).

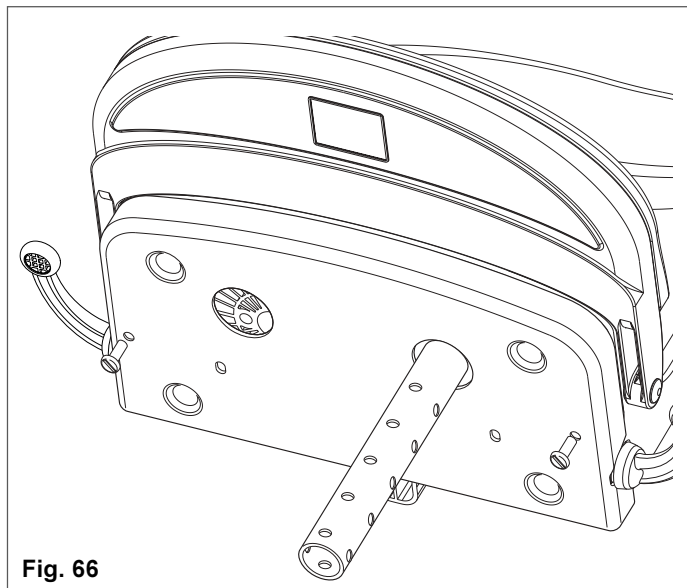


Fig. 66

- 18 Replace the seat in the required position (Fig. 66), refer to page 11 and 12 (Fitting the seat), for details of the sequence.
- 19 Replace the seat upholstery as detailed on page 12.

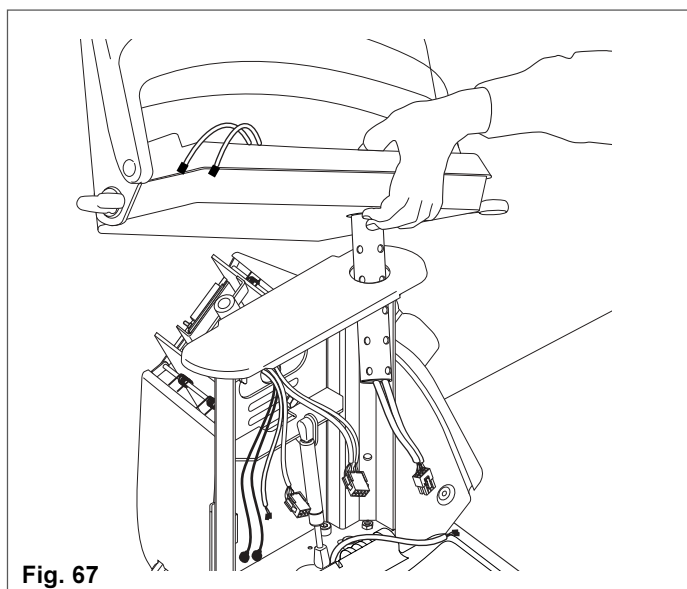


Fig. 67

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Appendix 1 electrical diagram - right hand

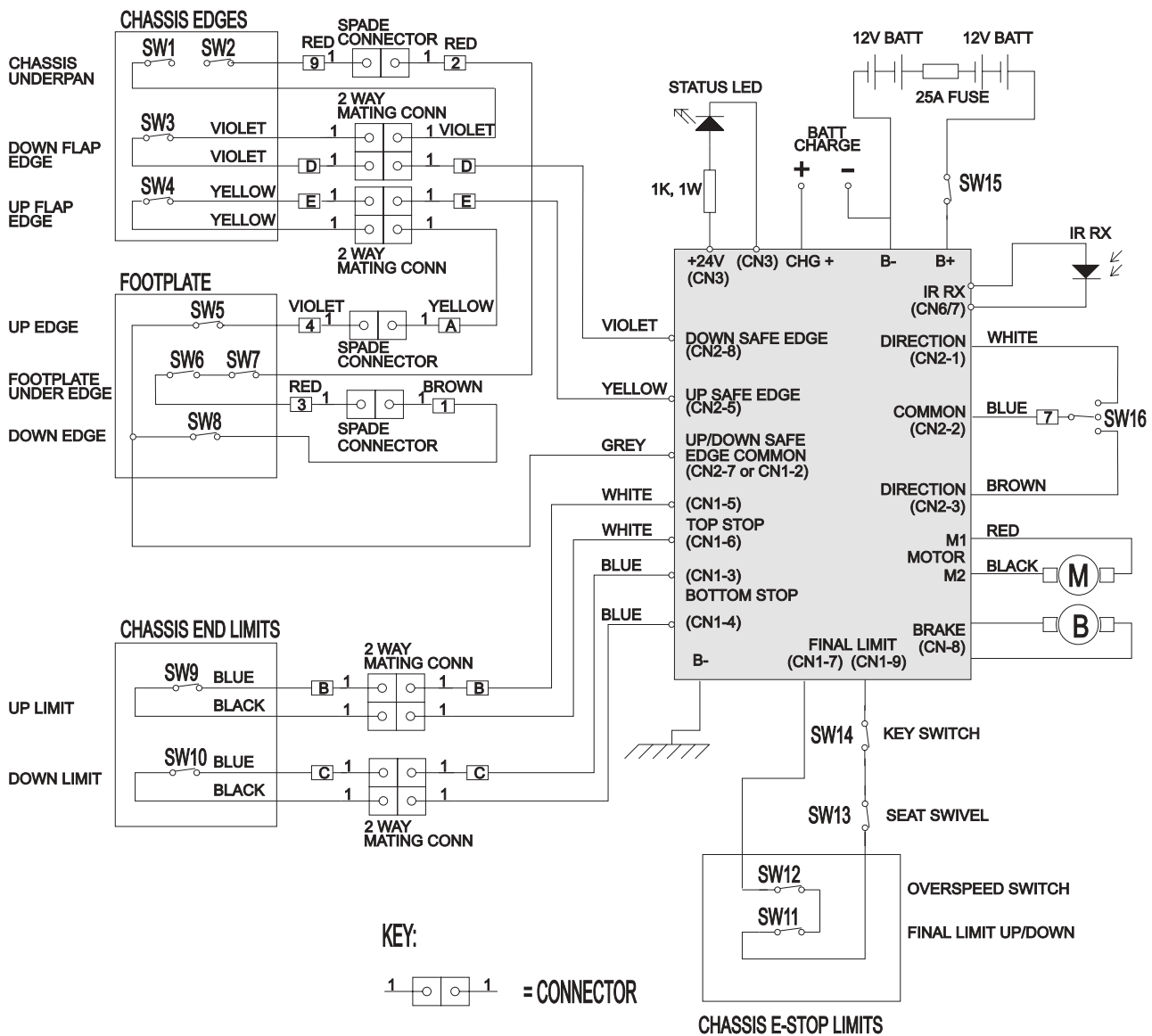


Fig. 68 Appendix 1

Appendix 2 electrical diagram - Left Hand

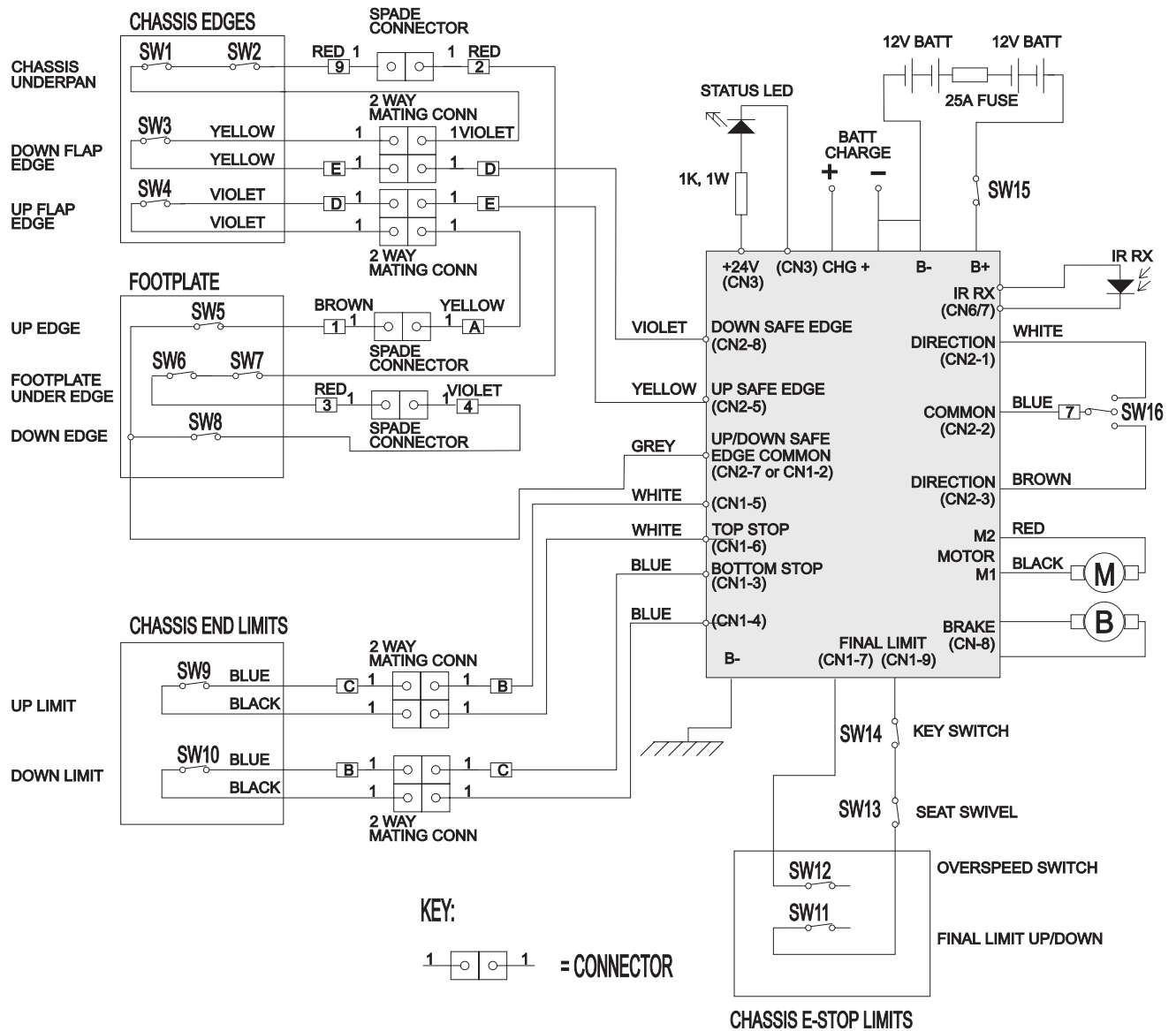


Fig. 69 Appendix 2

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Appendix 3 electrical diagram - options. To build a standard left hand unit

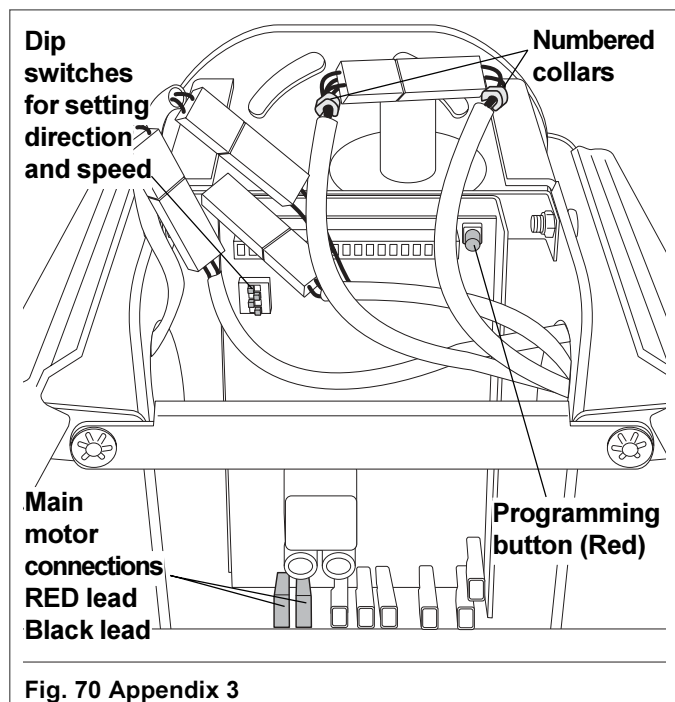


Fig. 70 Appendix 3

Appendix 4 To change the power unit hand - Electrics

Note: Should the power unit require changing hand, this must be done prior to fitting to the track.

Then follow the sequence given in schematically in Fig. 71 Appendix 3 and/ or Fig. 73 Appendix 4 to change the electrics.

- 1 Lay the power unit with its front face down.
- 2 Take off the top and rear covers from the power unit to reveal the main PCB and wiring connectors (Fig. 16).
- 3 Follow the sequence stated in the schematic electrical diagrams, Appendix 1

Note: All wires have numbered collars for identification purposes.

A pair of pointed nose pliers will be required to change the main motor leads over; care must be taken to avoid damaging the cover insulators when performing the operation.

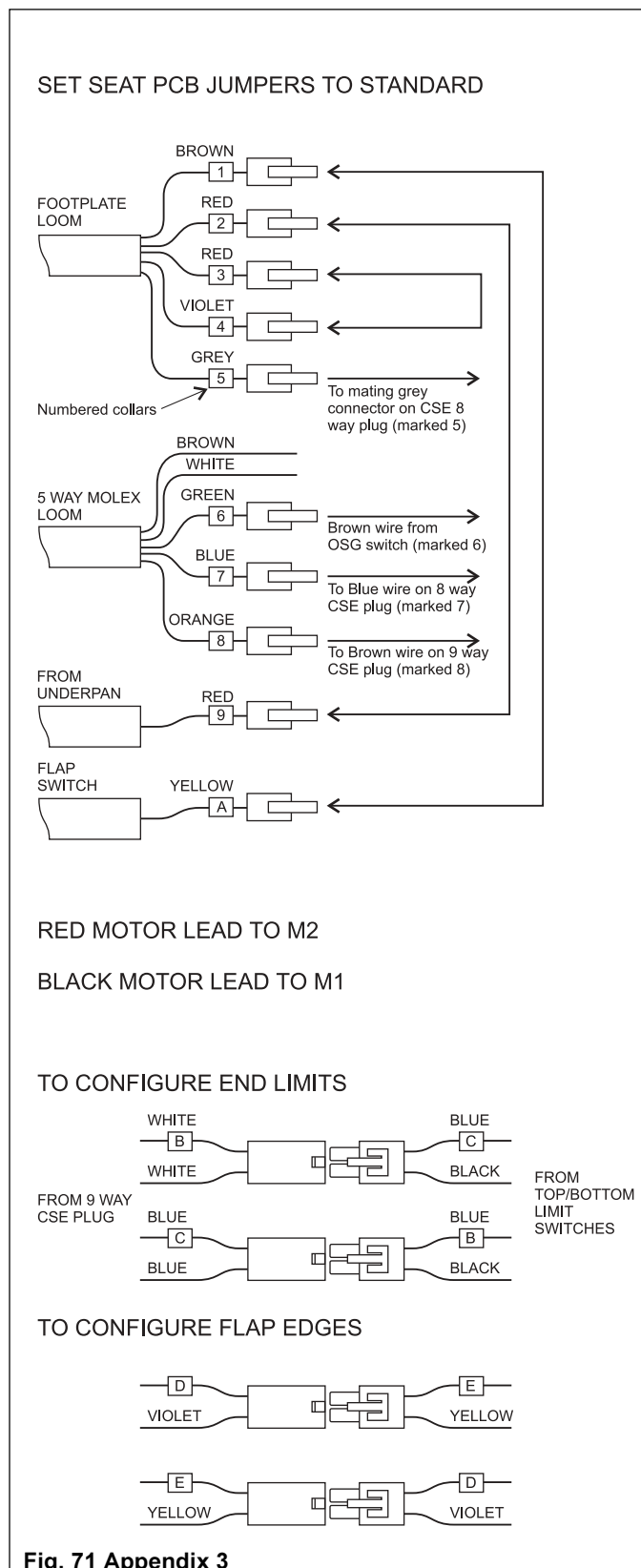
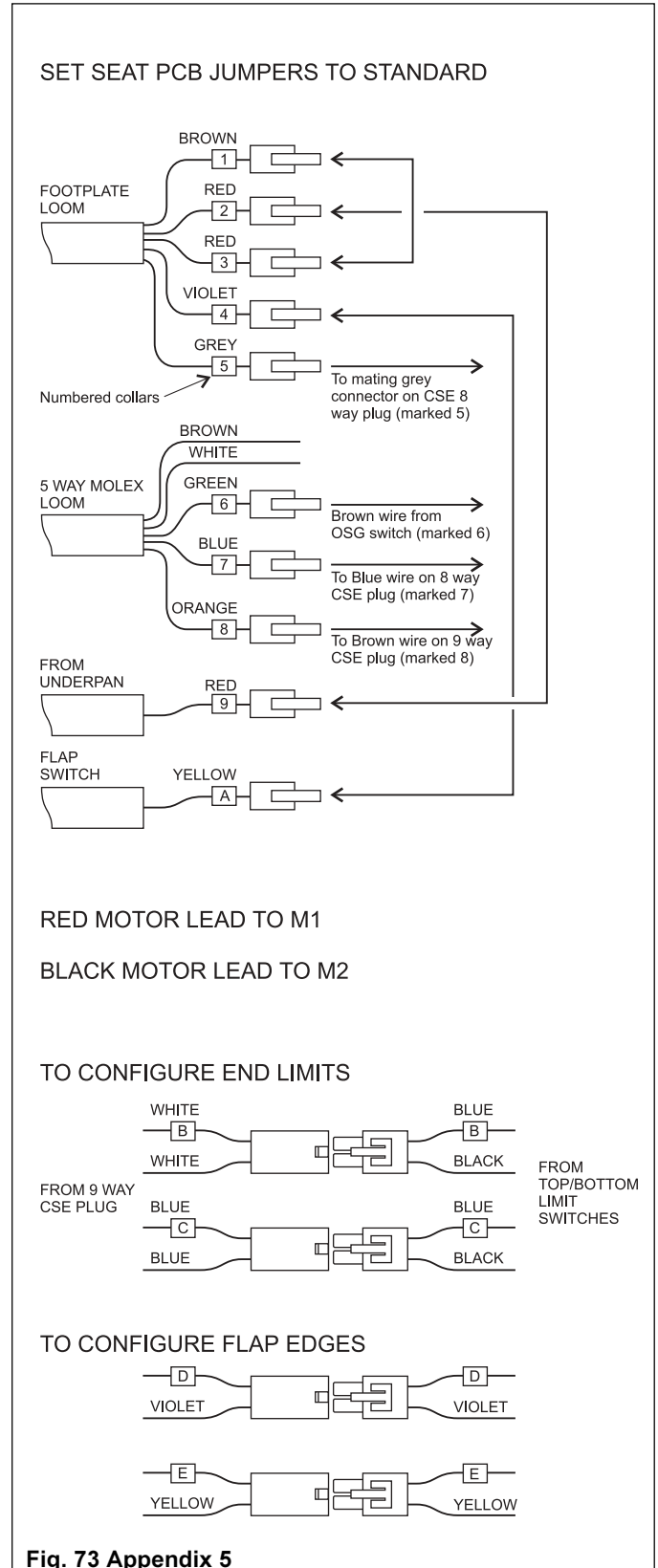
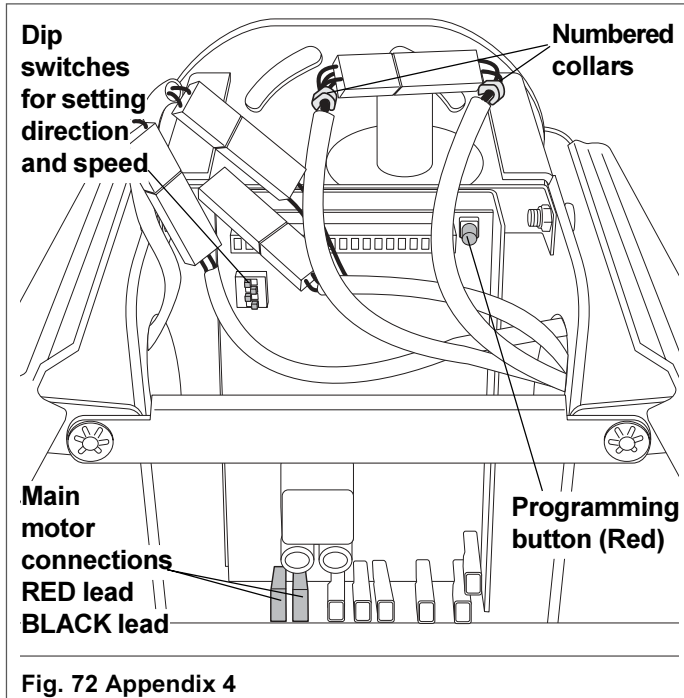


Fig. 71 Appendix 3

Appendix 5 electrical diagram - options. To build a standard right hand unit



Minivator 1000 series Installation Manual

Fault Analysis

	INDICATES	FAULT	POSSIBLE REMEDIES
Green LED (On lift front panel)	Power 'ON' Permanently illuminated Flashing with buzzer LED extinguished when direction selected	Battery charger connected Battery charger not connected Brake not connected	Check battery charger circuits Check brake circuits
Red LED	Holding switch (Key) OR Final limit OR OSG	Off Lift has over-run it's limit OSG tripped	Turn key ON Wind lift off the cam on track Reset OSG
Red LED flashing	Battery charger not connected plus one or more of above		
Yellow LED	Battery condition	Battery volts less than 21V when first connected Battery volts fallen below 16.5V when running	Allow batteries to charge
Flashing yellow LED	Brake not connected Relay fault	Check brake circuit Tap large black relay, if LED still flashing replace control board	
Buzzer	Short bleep on starting Continuous beeping for 20 seconds with flashing green LED (front panel) Extended bleep on start	Normal Battery charger not connected Battery has reached 30% of usable power	Possibly due to heavy usage if charger OK

Fault Analysis-other possible problems and tests

Lift dead No green LED indication	Check key switch is ON before removing covers. Has lift overrun onto final limits? LED will extinguish when final limit is actuated.
Lift dead No LED indication	With voltmeter, check battery volts across B+ & B- on control board. If more than 23V, pull out both green connector blocks. After approximately 5 seconds there will be a bleep and the red LED will glow. This means there is a short circuit on the wiring. If no bleep or LED replace board.
Lift running at half speed	Very low battery volts, final stage before lift stops. Check dip-switch settings. Lift will run at half speed when immediately after power-up, the handset is used to move the lift UP or DOWN.
Battery charger information	Connect voltmeter across B+ & B- on the control board. Momentarily press up or down button on remote control, lift will bleep and the volts will dip down, then increase back to original voltage. If this happens the charger is OK Also look for the Green LED on front panel to be permanently illuminated. If it's flashing, lift not receiving charge. Check charge contacts on track with voltmeter. (Should read approximately 40V DC). Check polarity of charge contacts on rail. Lower contact should be '+', upper contact should be '-' on a left-hand track. Vice versa on right-hand track i.e. lower '-', upper '+'. Check continuity from lift charge contact butterfly to connection into controller for BOTH positive & negative looms. Are the butterfly contacts on the lift making contact with charge contacts on track?



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