

Minivator 2000 Series

000137.5411 issue 01 - 07 2003

Minivator 2000 Series Installation Manual

Contents

Special installation tools required	3
Electrical power supply	3
Recommended lubricant	3
Round the corner stairlift infra red handset installation	4
Deluxe seat	4
To install the power supply and handsets	5
To install multiple (3+) handsets	6
Button combinations	8
Fitting the track to wooden stairs	9
Wiring the charge contacts	11
Earth bonding - Track	12
Heavy duty requirements	12
To fit the track to concrete steps	12
Installing inside rails	13
Wire the hinge enable switches	16
Fitting the powered hinge track top handset and PCB	16
Fitting a hinged track	16
Schematic wiring - hinge track PCB	17
Hinge track DIP switch setting - LH	17
Hinge track DIP switch setting - RH	17
DIP switch access	17
Ping operation for hinge track	17
Fitting the stairlift chassis	18
DIP switch setting - outside rail RH	22
DIP switch setting - outside rail LH	22
To change the hand required for control deluxe seat	23
Fit upholstery to the seat	24
Appendix 1 Block electrical diagram - classic seat - Infra red system	25
Appendix 2 Block electrical diagram - deluxe seat - Infra red system	26
Appendix 3 Main PCB - Infra red system	27
Appendix 4 Charging circuit	27
Appendix 5 Handset wiring schematic - Infra red system, non hinged track	28
Appendix 6 Handset wiring details - Infra red system, hinged track	28
Appendix 7 DIP switch settings main controller PCB	29
Appendix 8 Hinge control box battery connections	29
Appendix 9 Hinge controller connections	30
Appendix 10 Hinge enable switch connections	30
Appendix 11 Hinge track controller connections	31
Appendix 12 Hinge track block diagram	31
Appendix 13 Hinge status L.E.D. connections	32
Appendix 14 Interface PCB - jumper settings - Inductive loop systems	32
Appendix 15 Overall electrical installation circuit - Inductive loop - UK	33
Appendix 16 Inductive loop installation	34
Appendix 17 Inductive loop override jumper settings	34
Appendix 18 Electrical diagram - overall electrical installation circuit - CANADA	35
Appendix 19 Typical installation sheet (1)	36
Appendix 19B Typical installation sheet (2)	37
Appendix 20 Fault Finding	38
Appendix 21 Minivator RTC 2000 Test Certificate - How to test	39



Minivator 2000 Series Installation Manual

Note:

The information given in the main text is for the assembly of the Infra Red operated stairlift.

Information for assembling the Inductive Loop system is given in Appendix Nos. 15-17

Check that all the components are available against the supplied installation plan:

- 1 Track
- 2 Feet
- 3 Stanchions

Please note: Before assembly ensure the track is the correct length, all curves are correct, and all feet and stanchions are available and are correctly cross referenced to the supplied drawings.

(Refer to the installation drawings supplied with the lift, Appendix 19A and 19B illustrate typical drawings.)

- 4 Power unit
- 5 Seat

- 6 Handset fitting kit:-

Infra red handsets (Required number assessed by the survey)

Handset decals

Handset holders

4 Core cable, 30m length

Charge negative to track loom

5 Volt power supply with battery back up

Lift installation drawing, Installation Manual, User Manual and Test Certificate.

Wiring diagrams supplied:-

Handset wiring detail

Charge negative to track connection

Main stairlift controller DIP switch settings

With an inside curve track the following will also be included:-

Magnets

Reed switch connections to main stairlift controller

Special installation tools required

- 1 Feeder tracks (Power pack to track).
- 2 Driving seat toggle loom.
- 3 Spirit Level.
- 4 Battery powered screwdriver/percussion drill.
- 5 T bar / 6mm Allen key.
- 6 Multimeter.
- 7 Current Clampmeter.
- 8 5.5mm Masonry Drill - extra long.

Electrical power supply

In order to meet the requirements of BS 5776:1996, the electrical supply for mains powered Stairlifts must be single phase with an effective earth connection conforming to BS 7671:1992 (IEC 16th edition), dedicated solely to the Stairlift, originating at the household consumer unit and terminating at a double pole fused spur conforming to BS 7671:1992 (IEC 16th edition).

If the Stairlift is battery operated and charged from the mains supply, then the supply must be single phase with an effective earth connection conforming to BS 7671:1992 (IEC 16th edition), but the supply to the lift may be dedicated from a switched spur unit on a ring main circuit.

Recommended lubricant

Copaslip or Gleitmo 350

Note:

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

Minivator 2000 Series Installation Manual

Round The Corner Stairlift infra red handset installation

The Minivator 2000 operates using infra red signals transmitted from the handsets. The seat houses sensors in the armrests to detect these signals which control the operation of the stairlift. The stairlift can be run onto the track without any need of jumper setting etc.

The power to the handsets is supplied by a 5 Volt power supply/battery backup pack. In the event of a power failure, the battery will provide power to the handsets until mains power is restored. Up to 6 handsets can be connected together (if necessary) to cover any 'blind spots' in a staircase.

If there is a situation where only 2 handsets are necessary and there is a clear line of sight between both handsets in their user positions and the infra red sensors on the seat (i.e. when the seat is at the top of the stairs and you are calling it from the bottom of the stairs - and vice versa), there is no need to hardwire the handsets using the 4 core cable. Simply use 2 stand-alone handsets with 3 AAA cells in each handset.

Where there is no clear line of sight 2 handsets must be hard wired.

For details of the Inductive Loop system refer to Appendices 15 - 17.

Deluxe seat



Unless otherwise specified text and illustrations throughout this manual refer to the deluxe seat, but the stairlift can be supplied with the classic seat.

Figure 1 shows the deluxe seat

To install the power supply and handsets

Assess the most appropriate position for the power supply(ies), and the handset battery back up box, where it (they) will cause the least inconvenience for a pedestrian user of the staircase, **and agree the siting with the client.** (This is typically in a corner of the staircase, where it (they) will be protected by the track curvature).

Note: Ensure that all components are checked off against the supplied assembly drawings before commencing the installation.

Handsets are pre-programmed at Minivator as stand alone units. If only 2 are to be used they do not require hard wiring, simply fit the 3 batteries into each unit. (Show the client how to change the batteries).

Note: Where multiple handsets are to be installed (more than 2) a separate handset power supply has to be installed.

Typical schematic drawings are shown in Appendix 5 and 6.

Note: It is recommended that a fused mains spur should be used as a power supply.

If one is not available a connection will have to be made via an appropriate wall socket, using a fused plug.

- 1 Where multiple handsets are used fit all cables in the most unobtrusive position, using 4 core cable, and daisy-chain the wiring. (Refer to Appendix 5 and 6).

Note: Minivator recommend the use of 16mm self adhesive cable trunking for a neater and more secure fitting.

- 2 Where trunking is being used, notch or drill cable entrances/exits as close as possible to handsets, power supplies, etc, for the neatest installation (Fig. 2,3).
- 3 Mark the positions required for the stairlift power supply, and if required the handset power supply. Use the mounting plate and/or bracket to act as a template (Fig. 4).

Note: If the handset power supply has mounting lugs, use the lugs as your template.

Notch out trunking for cable installation to power supplies

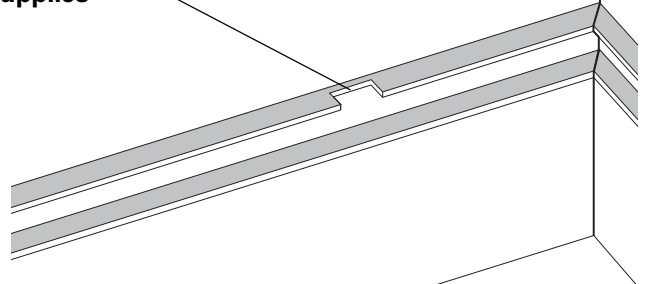


Fig. 2

Notch out trunking for cable installation to charge points and handsets.
ONLY CLIP COVERS IN PLACE WHEN CABLING IS SATISFACTORY

4 core handset cable

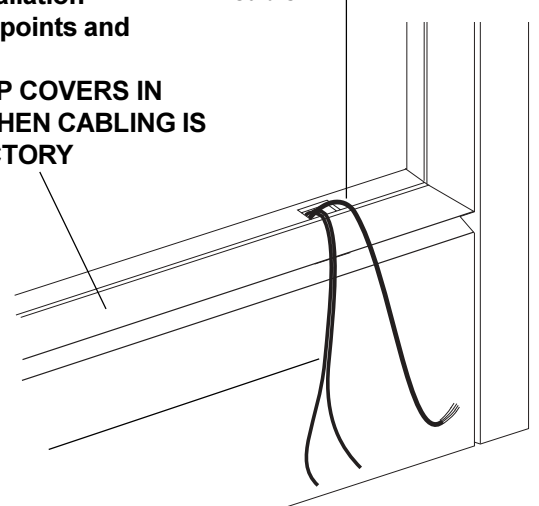


Fig. 3

Stairlift power supply bracket

Handset power supply (With lugs)

Fused spur

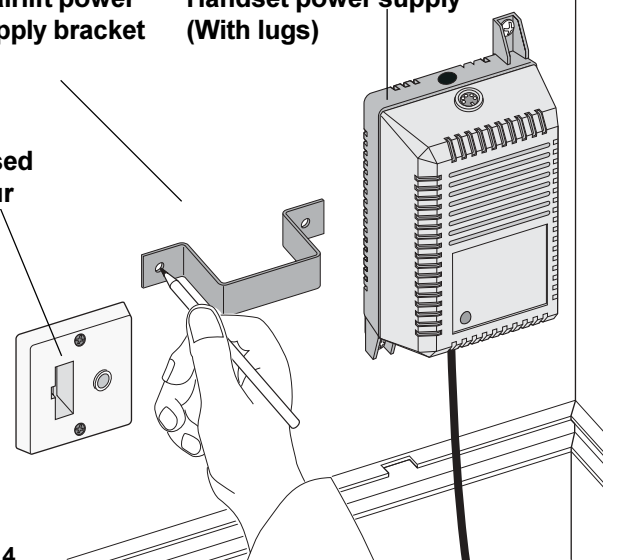
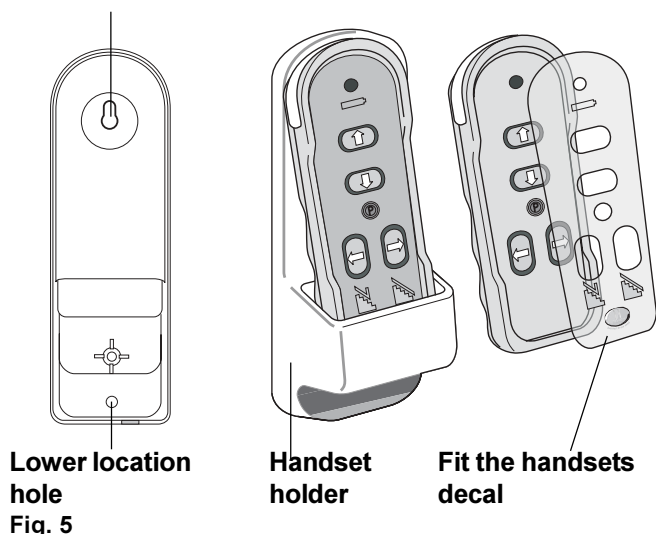


Fig. 4

Minivator 2000 Series Installation Manual

Handset rear view showing keyhole slot



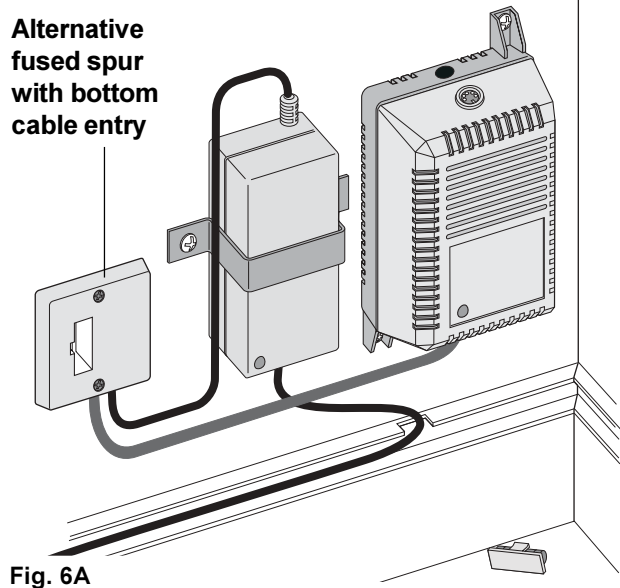
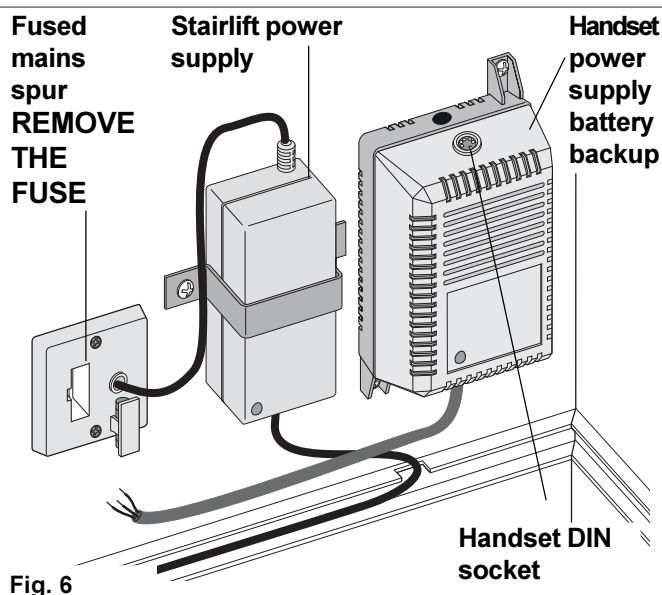
- Where only two handsets are used they can be placed on a suitable table, or wall holders can be positioned to the client's choice.
- Fit the supplied decals on to the handsets. (Fig. 5)
- Fit the handset receptacles, by using the keyhole slot on the rear face to fit over suitable rawplugged screws, (Fig. 5) and lock into place using the lower location holes with an additional screw. (See Fig. 6 and Fig. 7 page 7 for details of locking handsets into their holders.)

Note: Locate the power supplies, and handsets cables in the least obtrusive position and secure to the surface, with the clips supplied, or use snap fit trunking.
Note: Refer to the wiring diagrams in Appendices 1 - 18, pages 25 - 35, for all circuit information.

- Fit the power supply(ies) (Fig. 6) using the fastenings supplied (Rawplugs and screws to a masonry wall).
- Connect the power supply(ies) to the fused spur. (Fig. 6A shows a bottom cable entry).



IT IS ADVISABLE TO ISOLATE THE SYSTEM FROM THE MAINS DURING THE WIRING PROCESS, AND TO RECONNECT ONLY WHEN THE WIRING IS COMPLETE.



To install multiple (3+) handsets

- Prepare the locations for the multiple handsets at the most appropriate positions and height. i.e. accessible to all users of the stairlift, and so that the infra red sensors in the armrests can detect the signals from the handsets.
- Using the pre wired DIN plug/4 core cable, plug into the power supply and run to the first handset. Remove the 4 screws and remove the rear cover of the handset.

- 3 Cut a small notch in the rear of the handset holder and feed the 4 core cable through, as shown in Fig. 7.
- 4 Connect the cable as shown in Fig. 8. Run another length of 4 core cable from the first handset to the next handset. Carry on linking handsets until all handsets are hardwired, and replace the rear covers. Up to 6 handsets can be linked.
- 5 Connect the handset power supply wiring to the the mains.
6. Locate the handsets in their respective holders.
The handsets can be made removable or locked into place.
To enable the handsets to be removed screw the locating screw fully home (Fig. 7 shows the screw).
To lock the handsets into place partially drive the screw into its boss so that the screw head is proud of the rear face of the holder.

When you are ready to program the handsets replace the fuse in the spur (Fig. 9).

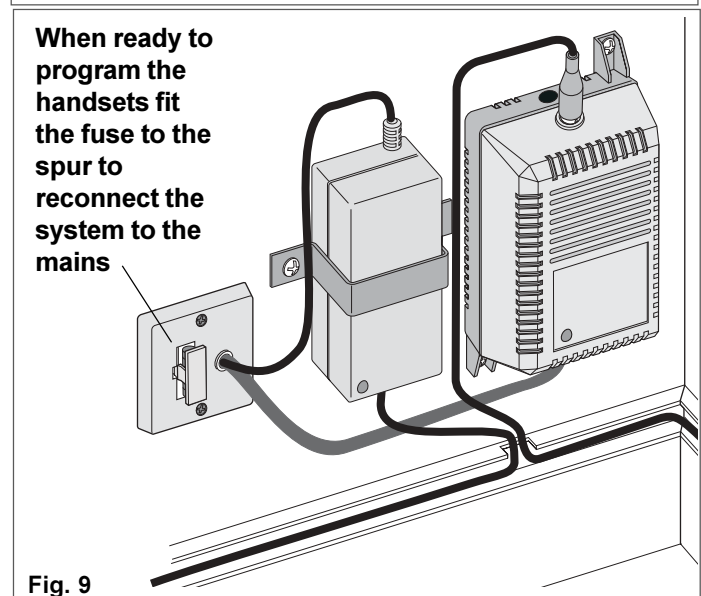
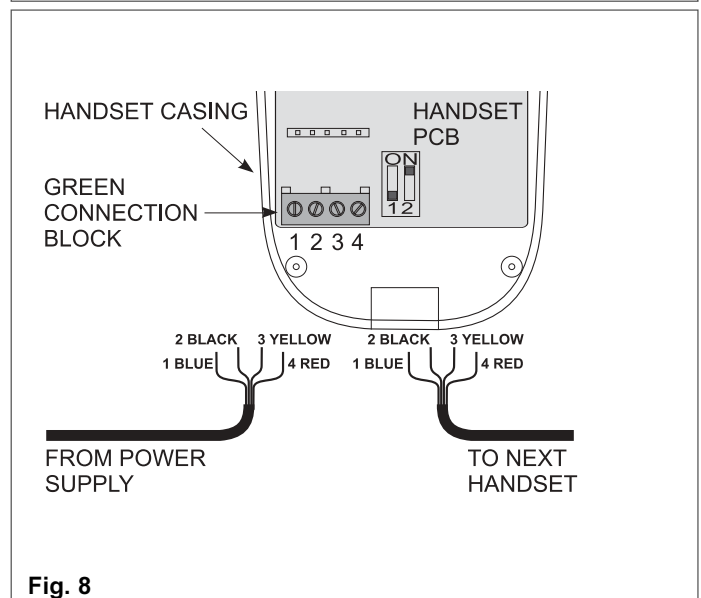
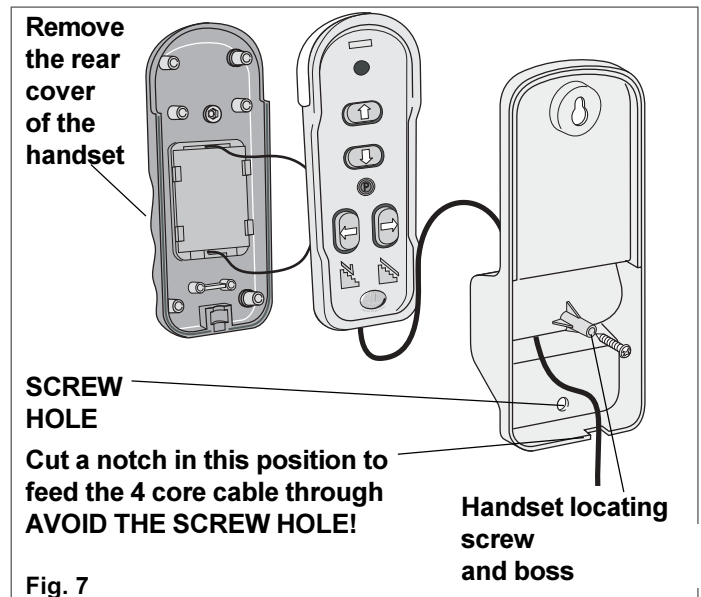
Note:

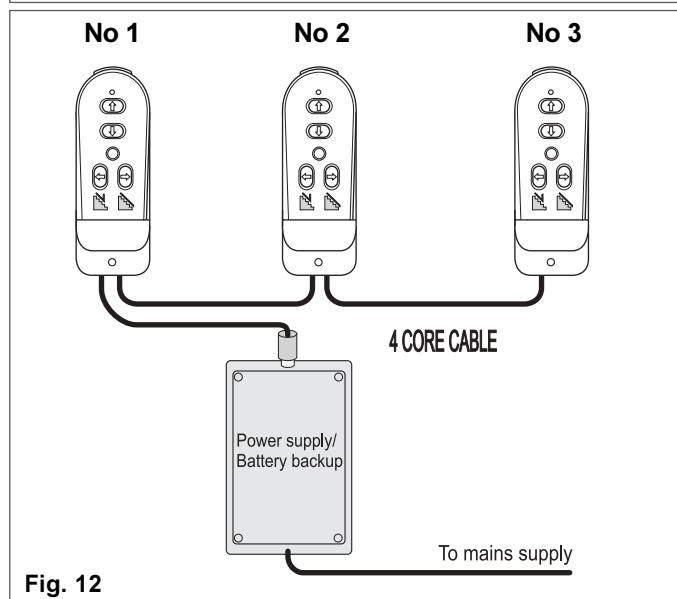
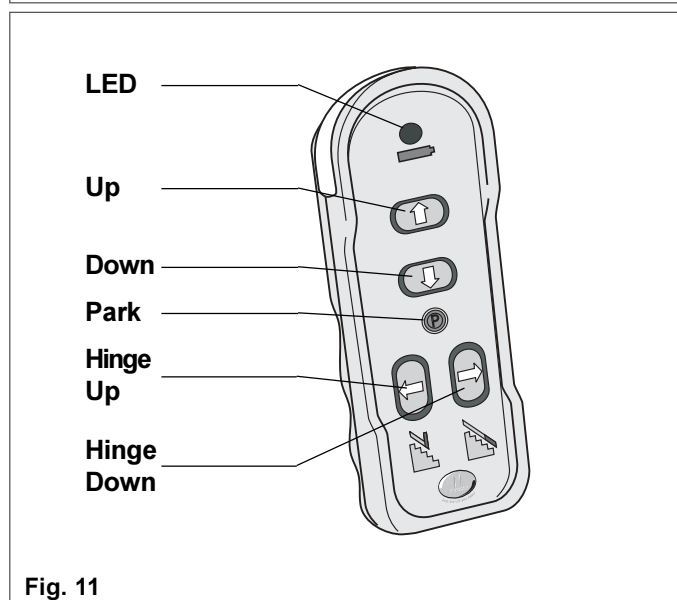
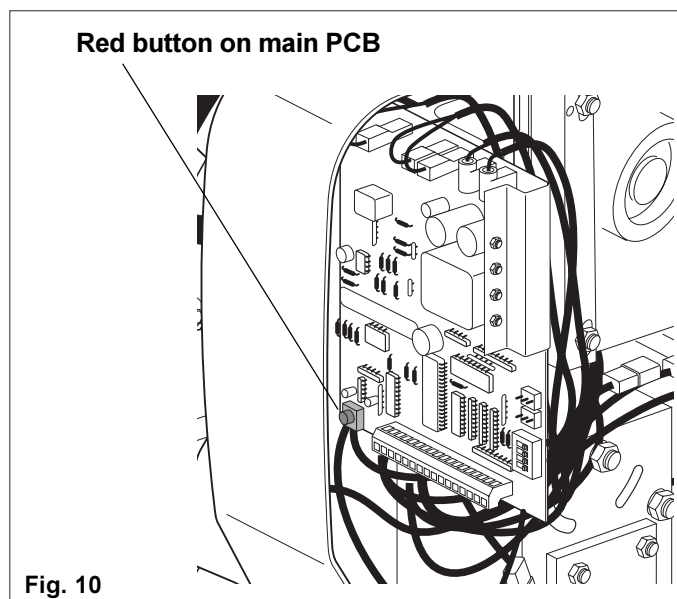
YOU HAVE 4 MINUTES TO PROGRAM ALL THE HANDSETS FROM THE MOMENT YOU CONNECT THE 5 VOLT POWER SUPPLY TO POWER UP THE HANDSETS.

After this time period no programming will be possible to prevent accidental programming by the user. If re-programming is necessary, disconnect the 5 pin DIN plug from the power supply, wait approximately 5 seconds and reconnect.

Disconnecting from the mains will NOT work , since the power supply has a battery back up. You now have a further 4 minutes to re-program the handsets.

- 1 Power on the system, programming mode is only available for 4 minutes after the power is turned on. After 4 minutes all handsets must be powered off and then on to enable program mode again.
- 2 Press and hold both the Up and Park buttons for approximately 2 seconds until the LED (Fig. 11) comes on. All the handsets should illuminate their LED's.





- 3 If any handset fails to illuminate it's LED press and hold both the Up and Park buttons on the handset until the LED lights, if the handset fails to illuminate it's LED power off the system for 5 seconds and start again.
- 4 Each handset must now be individually programmed. Fig. 11 shows the button layout.
- 5 The button combinations must be held down for approximately one second until the LED is extinguished. One handset must be allocated as Handset Number 1.
- 6 Program the stairlift and handset by pressing the red button on the main control board (adjacent to the green connectors at the bottom of the board) and keep it held down (Fig. 10).
- 7 If the lift is at the top of the stairs press the DOWN button on the remote control (Fig. 11).
- 8 If the lift is at the bottom of the stairs press the UP button on the remote control (Fig. 11).
- 9 Release the red button.

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

Button Combinations

Buttons	Handset No.	Mode
Up	1	RTC
Down	2	RTC
Park	3	RTC
Hinge Up	4	RTC
Hinge Down	5	RTC
Up and Down	6	RTC
Hinge Up and Hinge Down	N/A	Straight

Note: The handsets are pre-programmed at Minivator in the 'Straight' mode.

Example: 3 handsets are installed and need to be programmed. After the 5 Volt power supply and battery backup pack are connected PRESS AND HOLD both the UP and PARK buttons for approximately 2 seconds until the LEDs on the handsets come on (Fig 11, 12).

Press UP on the handset at the bottom - No 1 (LED should extinguish only on this handset)
 Press DOWN on the handset in the middle - No 2 (LED should extinguish only on this handset)
 Press PARK on the handset at the top - No 3 (LED should extinguish only on this handset)
 The handsets are now programmed.

Fitting the track to wooden stairs

Note: It is advisable initially to assemble the track without tightly bolting together the components to assess the fit of all the components 'in situ' (Fig. 13).

This also assists with final wiring of the charge points.

When you are satisfied with the fit of the track on the staircase:

- 1 Remove the upper and lower track end stops, and end caps (Fig. 14).

- 2 Carefully clean off the paint from the end of the bottom stanchion horizontal leg which will be used to connect the charge ring terminal to. Also ensure the rear screw hole in the bottom track will provide a good contact by carefully removing paint from the area immediately around the hole, (approximately 1mm around the hole.)

Fit the charge ring terminal between the stanchion leg and the track.

Shown as a broken line in Fig. 14.

- 3 Bolt the components together - ensuring that all joints are secure (Fig. 15).

Do not fit the end caps and stops at this stage.

Note: It may be advisable at this stage to fit the power unit to the track and very carefully run it down and up the stairs, with the footrest in the down position, to check for any interference between the footrest and stairtreads.

Ensure that the lift assembly does not tip over, and remove the power supply once the sequence is complete.

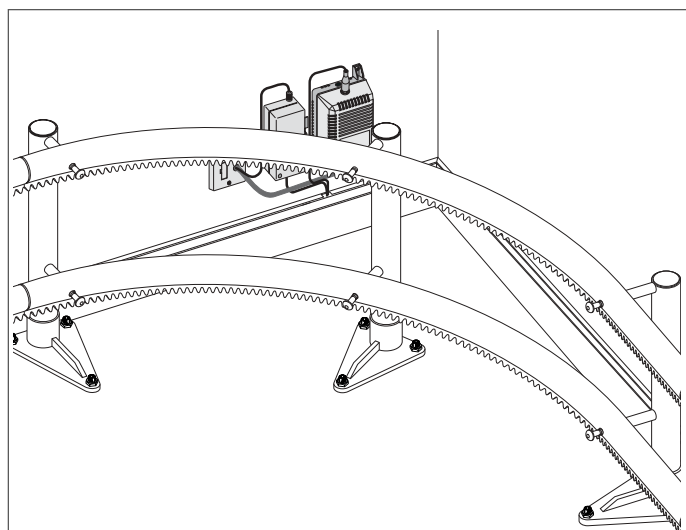


Fig. 13

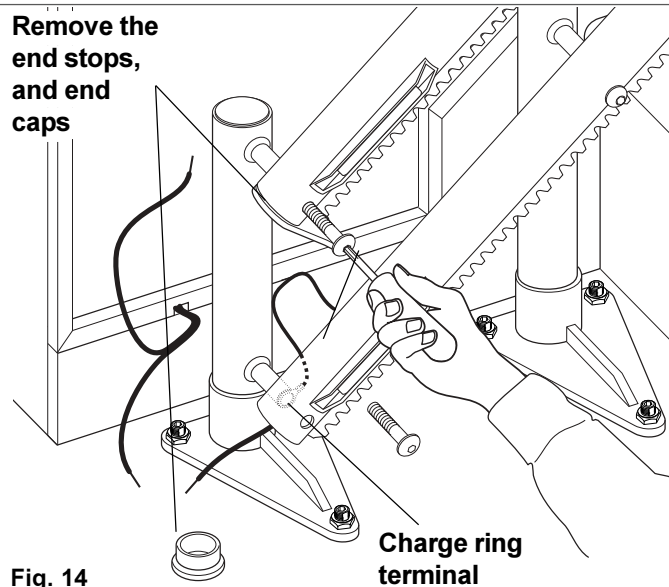


Fig. 14

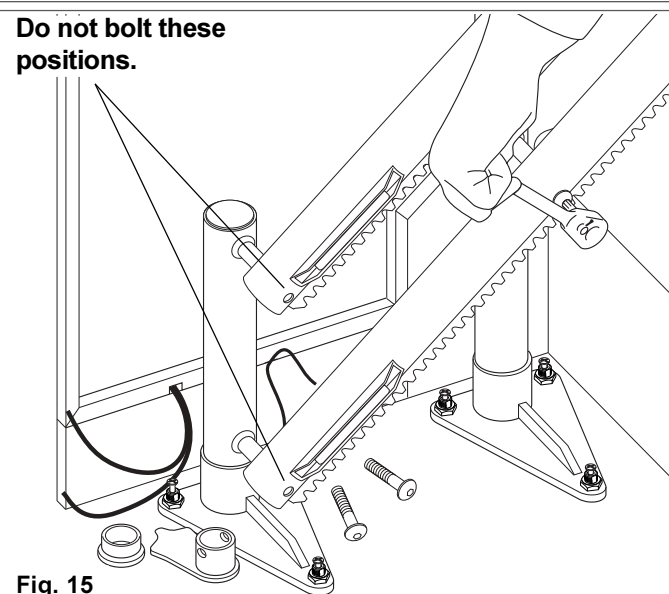
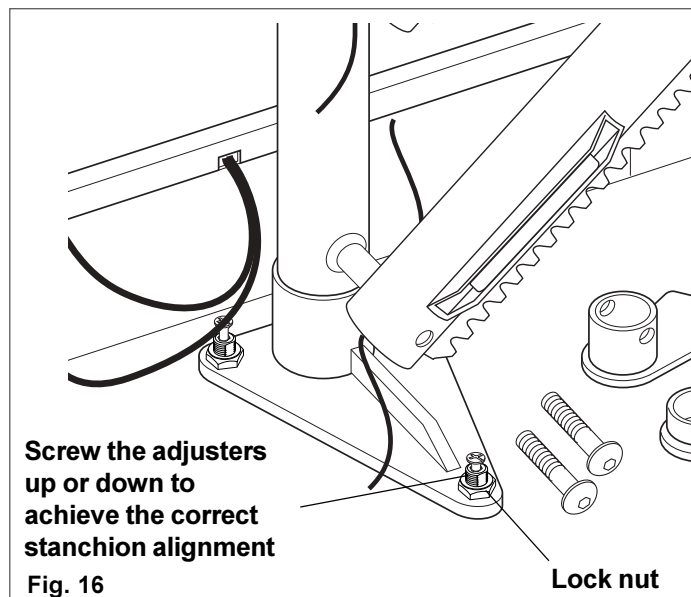
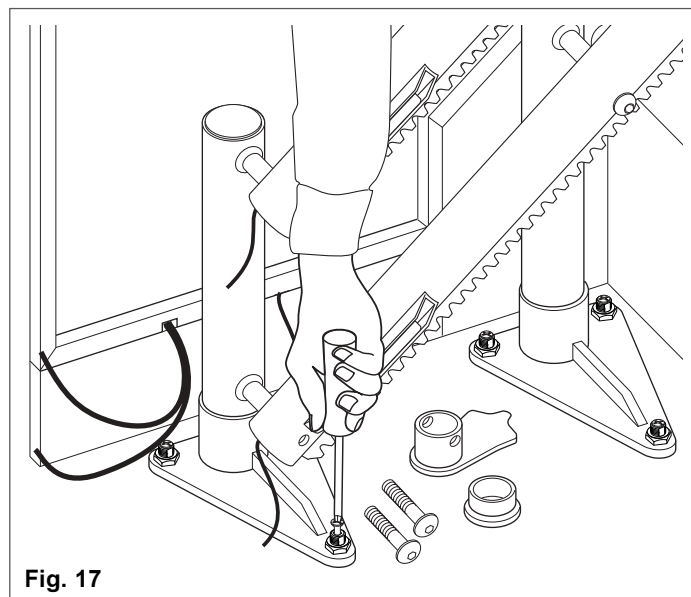


Fig. 15

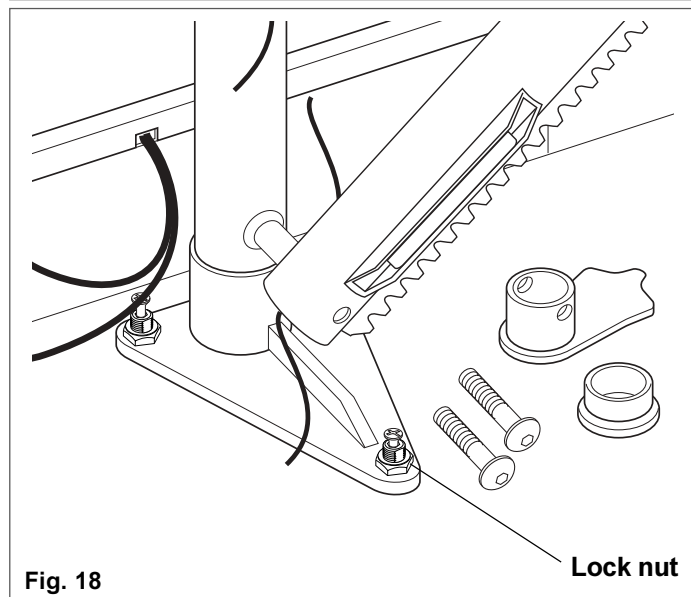


- 4 Screw the stanchion feet to the floor and stairtreads (Fig. 16), but do not tighten the screws until the track stanchions are aligned vertically.

Note: Take care not to damage adjustment screws when marking foot positions.



- 5 Align the stanchions, by screwing the three adjusters on each foot up or down (Fig. 17) as required.



- 6 When the stanchion(s) are aligned lock the adjuster with the lock nut, and tighten the screw(s) to fasten the foot to the floor or stairtread (Fig. 18).

Wiring the charge contacts

Note: Charge contacts are factory fitted.

Note: The bottom pair of charge contacts are shown. Follow the same procedure for the top pair of contacts, except for the ring terminal, which is only fitted to one charge contact.

- 1 Pull the charge contact wiring out of the rails.
- 2 Feed the charge contact loom wiring through the holes in the rear of the rails, as shown in Fig. 19.
- 3 Connect both charge contact wires to the charge contact loom with the terminal blocks supplied (5A Nylon screw type).
- 4 Ensure the ring connector is fitted between the rear of the bottom rail and the horizontal leg of the stanchion (Fig. 19). (Shown loose in the illustration for clarity).
- 5 Feed the ring terminal wire into the bottom rail, and connect it to the negative charge terminal block.
- 6 Fit the track end stop. Fit the top rail screw, taking care not to damage the charge contact loom (Fig. 20) during this process.
- 7 Carefully feed the bottom charge loom into the rail, and replace the end cap (Fig. 21) at the bottom end of the track.

Note: Do not replace the end cap and end stop at the top end of the track, as you will need to insert the chassis feed tracks during the next phase.

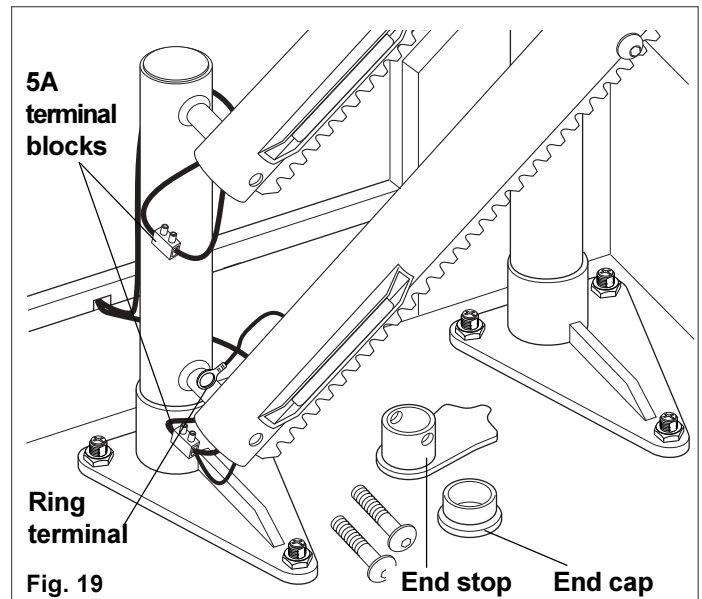


Fig. 19

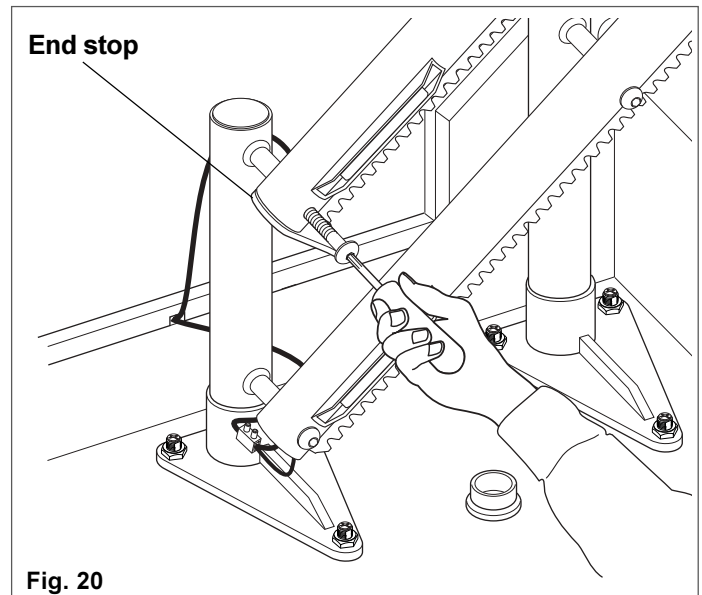


Fig. 20

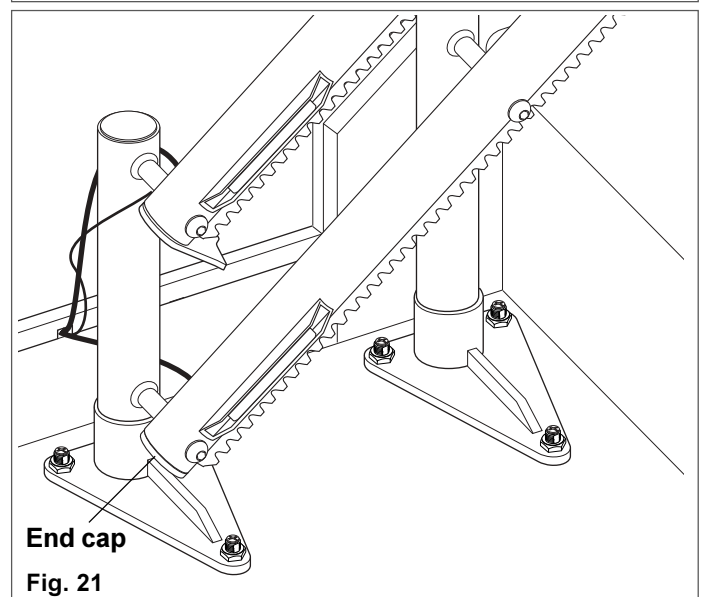


Fig. 21

Typical earth bond.
Remove paint from shaded area to ensure a good bond.
Use a ring terminal.

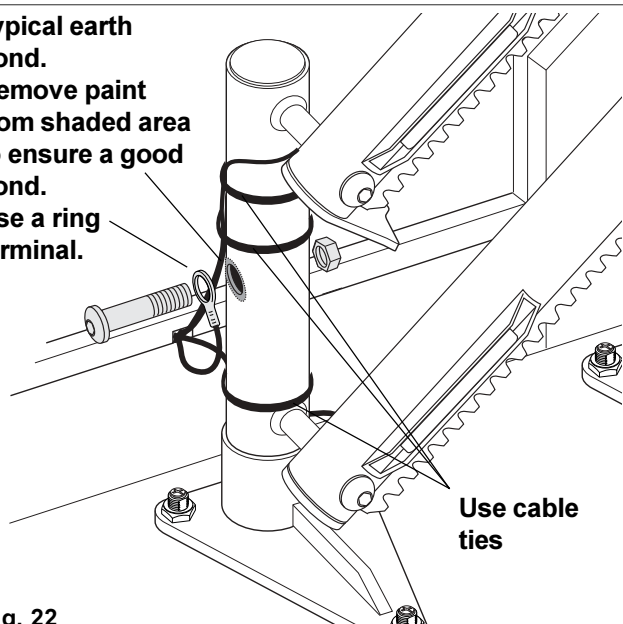


Fig. 22

- 8 Fit the charge looms to the stanchion closest to their exit points from the top rail, and secure to the stanchion with cable ties to ensure no contact can be made with the stairlift (Fig. 22).



EARTH BONDING - TRACK.

(Refer to Fig. 22).

Use the holes on one stanchion which are at the mid point, between, and at right angles to the track mounting lugs. Use a ring terminal bolted to this hole. Ensure paint is carefully removed from the stanchion to give a good bond.

Heavy Duty Requirements

In the event of a Customer's weight exceeding 115kg and being under 137kg it is advised that Heavy Duty Fixings are included when fitting the track.



In the case of floor boards being weak or broken it is advisable to fit the landing spreader plate (fig. 30a)

It is advised that the stanchion spreader plate (Fig. 30B) is fitted beneath the stanchion feet supporting the two top and bottom stanchions on the track. The remaining two plates should be evenly spaced under the remaining stanchions.

Wall brackets (Fig.30C) must be fitted to the centre bolt on the top and bottom two stanchions the remainder spaced evenly between remaining stanchions and fixed securely to the wall.

To fit the track to concrete steps

Follow the procedure for fitting to wooden steps, but mark all drilling points with a suitable tool, remove the stanchions/feet, drill the holes with a 5.5mm masonry drill and insert suitable Rawplugs.

Landing Spreader Plate

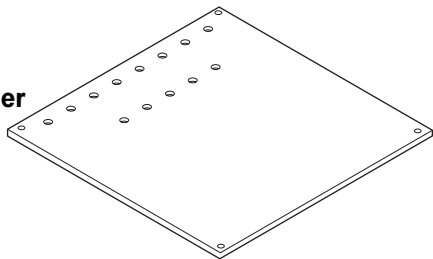


Fig. 30A

Stanchion Spreader Plate

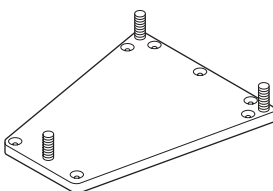


Fig. 30B

Stanchion Wall Clamp



Fig. 30C

Installing inside rails

The procedure for fitting inside rail tracks is similar to the procedure for outside rail tracks, but with the following modifications.

This is the fitting of the small pot magnets, which control the deceleration of the stairlift as it approaches a curve, and the acceleration of the stairlift when it leaves a curve, and changes to the main DIP switch settings.

(The pot magnets are part of the fitting kit)

Figs. 23 and 24 show the siting of the magnets. The flat of the hexagon nut on to which the magnets are placed must be aligned parallel to the track.



THE MAGNETS MUST BE PLACED IN THE CORRECT POSITIONS TO ENSURE THE SAFE TRAVEL OF THE STAIRLIFT.

To set up the magnets, the lift should be downstairs and the following procedure followed:

Reed switch on top Trunion = Speed control going UP

Reed switch on bottom Trunion = Speed control going DOWN

First check position of DIP switches on the main control board on the power unit. They should be set as shown for a RH inside curve track (Fig. 25), and as shown in Fig. 26 for a LH track. The lift must be run at full speed in the upward and downward direction before the magnets are placed on the track. If the lift is not running at full speed follow the procedure on page 14 to set the lift to run at full speed.

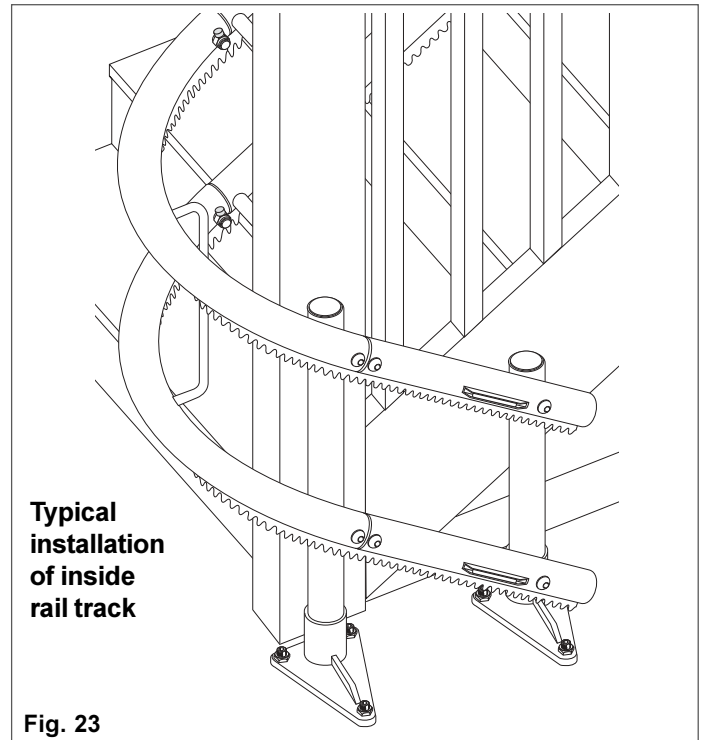


Fig. 23

The pot magnets must be placed in to the correct positions on the entrance/exit of curves

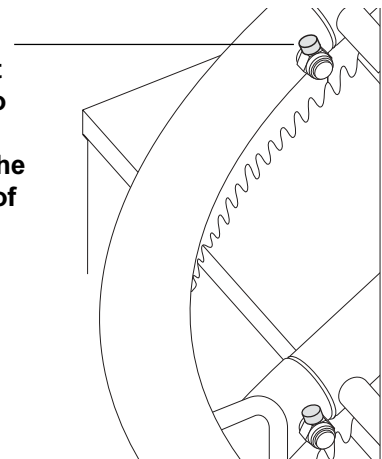


Fig. 24

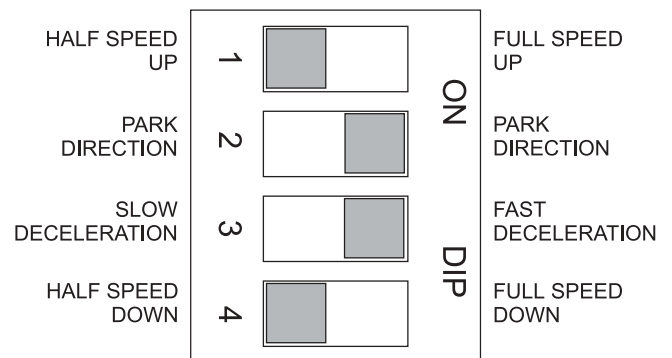
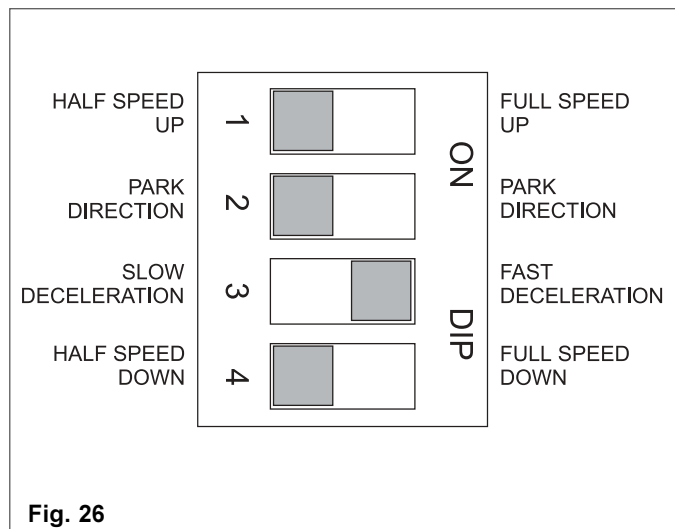


Fig. 25



Installing inside rails

If the magnets and reed switches are set correctly, the lift will slow down before entering a bend, stay slow inside the bend and speed back up as it exits the bend.

See Fig. 27 for reed switch connections.

The lift must be run at full speed in the upward and downward direction before the magnets are placed on the track. If the lift is not running at full speed follow the procedure below to set the lift to run at full speed.

The lift has to be moving UP using the seat toggle while the procedure below is carried out. Drive the lift upwards. If the lift is running slowly, run a magnet under the top reed switch in the direction as shown in the diagram (Fig. 28, page 15).

If lift changes speed momentarily when the magnet passes below reed switch, turn the face of the magnet over to reverse field polarity and try again.

Carry out procedure on bottom reed switch if necessary by driving the lift DOWN and setting the reed switch on the BOTTOM trunion.

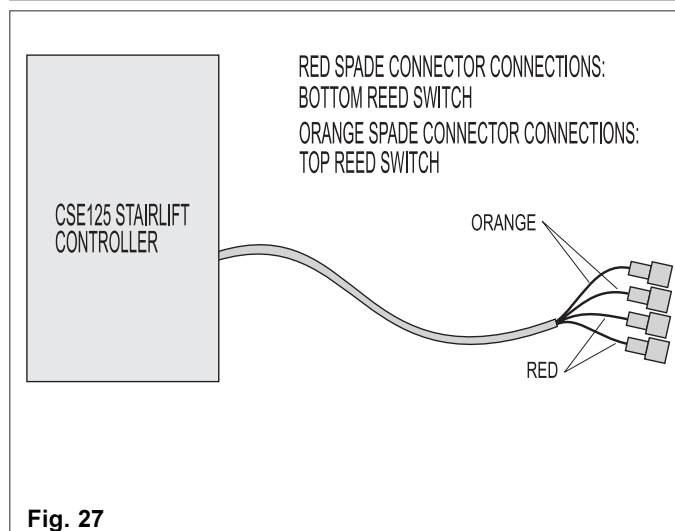
Run the lift back downstairs before proceeding with the following:

Place a magnet on the top rail nut BEFORE THE FIRST APPROACHING BEND going from downstairs to upstairs. Run the lift, going from bottom to top. The lift should slow down when passing over the magnet. If it doesn't:

- 1) Remove the magnet placed on the top rail nut, remembering which face of the magnet is facing up.

Note: If the magnet is not pulled off, the reed switch will set in a different state resulting in the lift speed changing. This will require the reed switch to be set so the lift runs at full speed again.

- 2) Drive the lift back downstairs, run lift back before bend and change over face of magnet to reverse field polarity. Run lift over magnet again which should slow the lift down over the bend.



If the lift slows down and stays slow after passing the magnet, run lift back over the magnet before the bend.

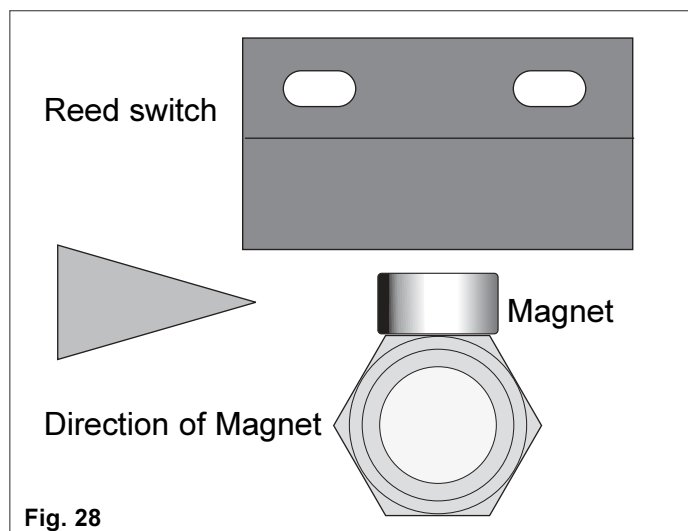
Place a magnet (with the same polarity as top magnet) on the bottom rail nut. If a test magnet is brought close to both magnets on the rail nuts, it should either attract or repel both magnets.

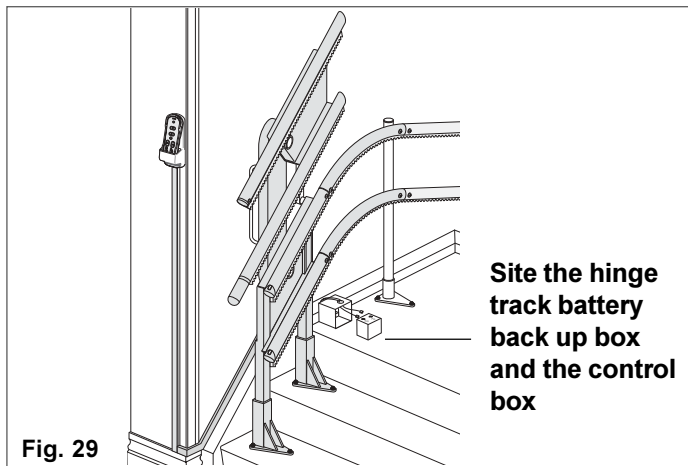
On the nuts after the exit of the bend, place a magnet on each rail. Using a test magnet, test the polarity of the two magnets placed at the bend exit top and bottom rails. They SHOULD be set to opposite polarity to the magnets on the entry to the bend i.e.

The magnets are placed in sequence using the test magnet i.e.

Repel Attract Repel Attract etc

Note; magnets do not necessarily sit in the above sequence.





Fitting a hinged track

When fitting a hinged track it is essential to assess the soundness of the staircase on to which the hinge track is to be fixed.

If there are problems spreader plates must be fitted. Follow the procedure for fitting standard track, but if a powered hinge is fitted, a suitable position has to be found for the siting of the hinge track battery box (Fig. 29, 30), and the hinge control box (Fig.31).

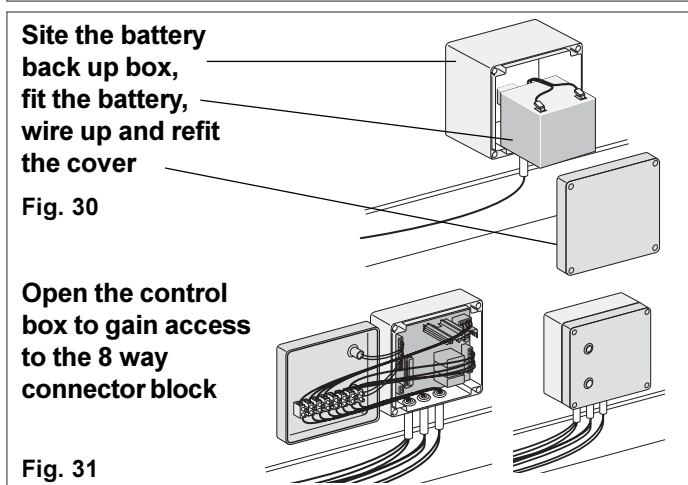
Note: The position should be agreed with the client.

When the mechanical installation is complete, open the control box and complete the electrical connections to the hinge and control box.

Fig. 33 is a schematic of the connections.

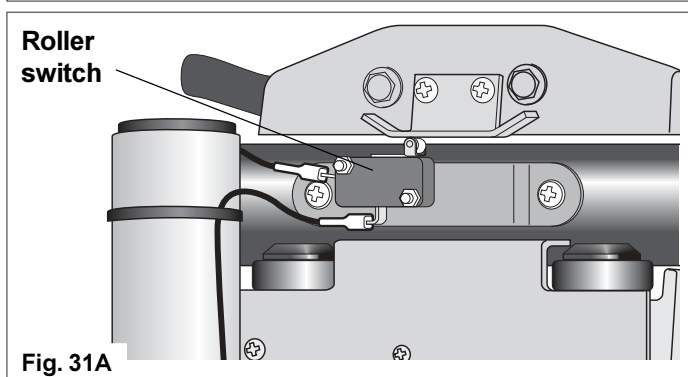
Note: The wiring inside the box is connected to the nylon connector block, and the PCB to Connector block is pre-wired.

The DIP switches on the power unit main PCB will require setting, Fig. 34, 34A, show the settings.



Wire the hinge enable switches

Connect the hinge enable switches in a series circuit, (refer to Appendix 10 fig.64). Connect one end of the loom to the top roller switch (Fig. 31A). Run it all the way down to the hinge controller box to ensure enough length and cut off excess. DO NOT THROW AWAY THE EXCESS. Connect the other end of the loom with the spade connectors to the bottom roller switch and run it into the hinge controller box. Connect the wires in series by joining one wire from each switch and terminating the remaining two wires into the 'Hinge Enable' connections (refer to Appendix 9 fig.63).

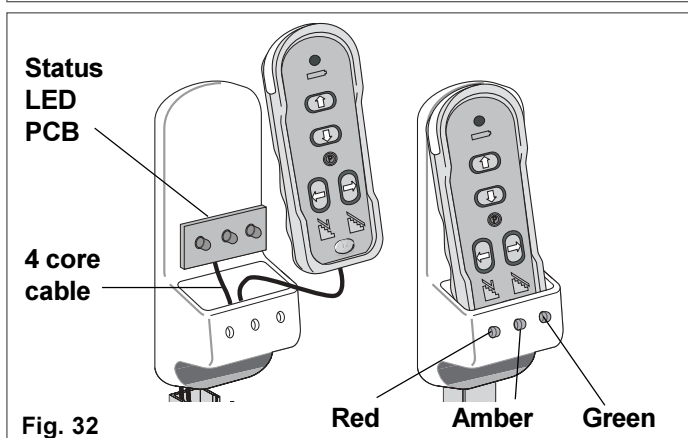


Fitting the powered hinge track top handset and PCB

When the hinge track is powered the top handset holder is equipped with 3 status LEDs.

Feed the loom through the holder, ensuring that it is correctly located in the notch on the rear face, and feed the loom, via cable trunking to the 4 way connector on the hinge.

Locate the PCB into the handset receptacle so that the LEDs protrude through the holes in the holder. The handset can be pushed into the holder to hold the PCB in place. See appendix No. 6.



Schematic wiring - hinge track PCB

Only the handsets are wired directly to the hinge PCB (See schematic Fig. 33).

Refer to Appendices No.8 - 13 for further details of wiring circuitry.

All other connections from the hinge track switches are made into the 8 way connector block. Test the track and demonstrate to the client.

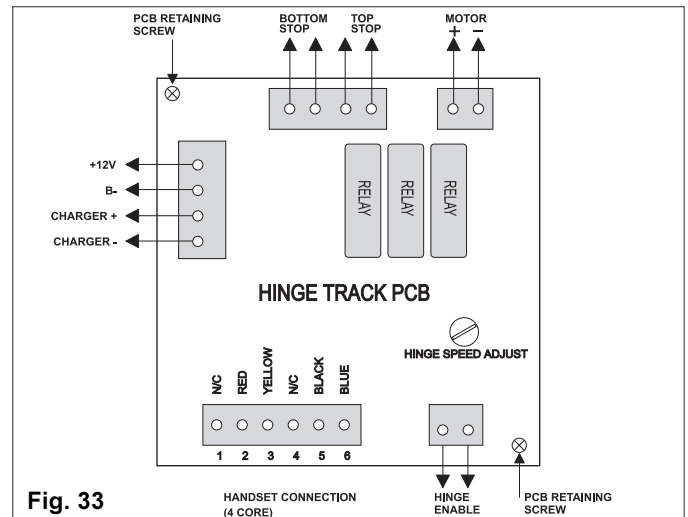


Fig. 33

Hinge track DIP switch setting - LH

The illustration (Fig. 34) shows the main power unit PCB DIP switch settings for a left hand outside track.

The front cover of the power unit must be removed to gain access to the PCB.

See Fig. 36.

Hinge track DIP switch setting - RH

The illustration (Fig. 34A) shows the main power unit PCB DIP switch settings for a right hand outside track.

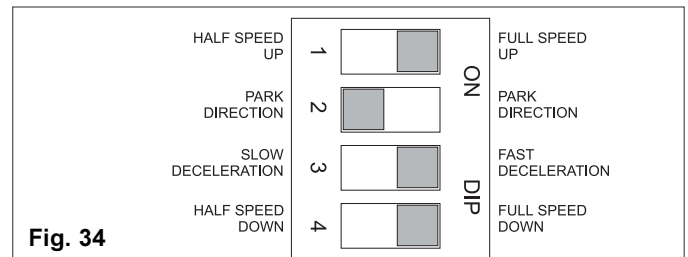


Fig. 34

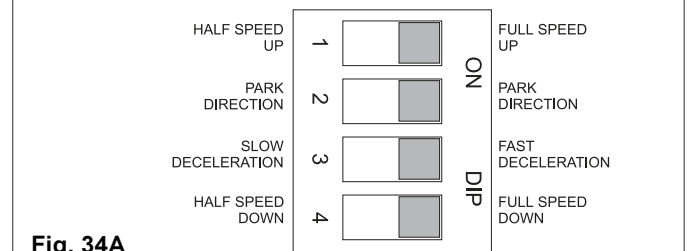


Fig. 34A

DIP switch access

To gain access to the main control PCB remove the front cover of the power unit.

Fig. 35 shows the front cover removed, and indicates the position of the DIP switches.

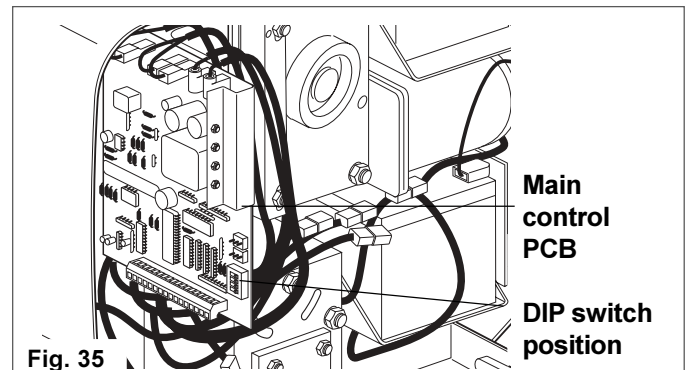


Fig. 35

Ping operation for hinge track

When the link is moved across 'ping detect' is enabled (Fig. 36).

Note: By moving across the jumper enable SW 2, the lift is interlocked with the hinge track. This will prevent the lift driving down while the hinge is raised.

Note: In this mode the transmitter has to be permanently powered.

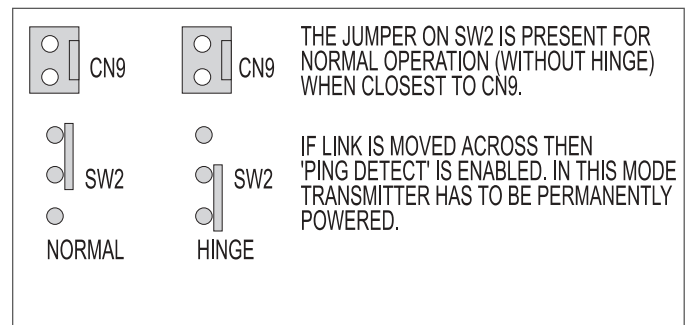
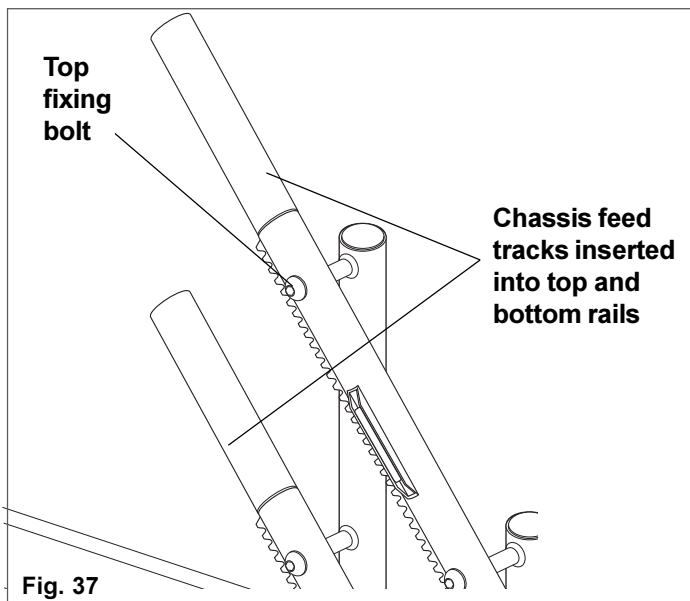


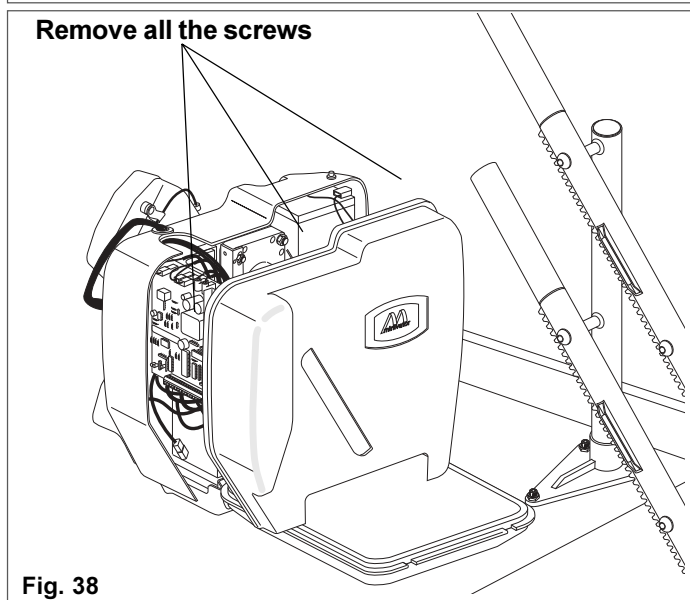
Fig. 36



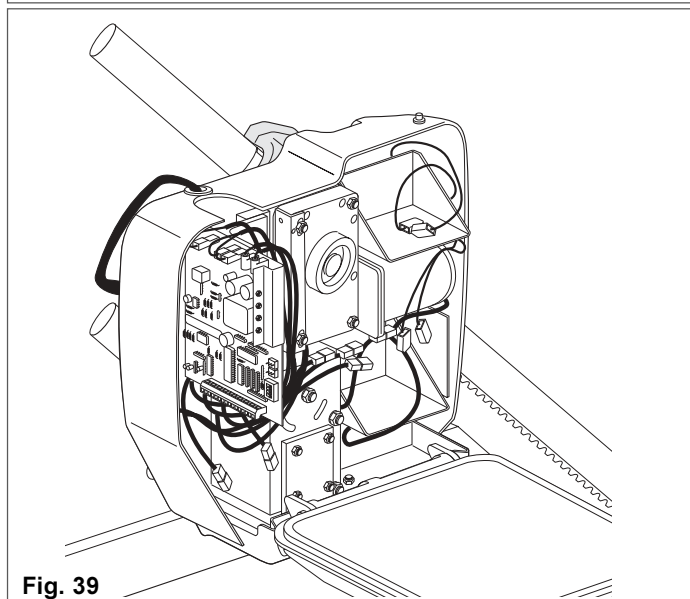
Fitting the stairlift chasis

The stairlift is fitted at the top of the track.

- 1 Insert the chasis feed tracks into the top and bottom rails (Fig. 37), and temporarily replace the top fixing bolt, to ensure track stability.



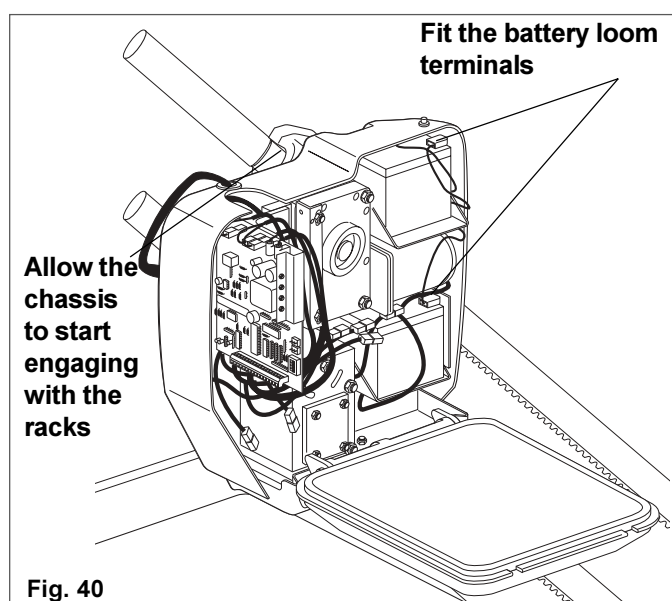
- 2 Remove the front cover moulding from the chassis, taking care with all removed screws (Fig 38).



- 3 Remove the batteries (to reduce the weight of the chassis.)

Feed the chassis on to the feed tracks, to the point where it is just engaging with the rack (Fig. 39 and 40).

- 4 Re - fit the batteries, and connect the battery loom terminals to their respective terminal posts. (Fig. 40).



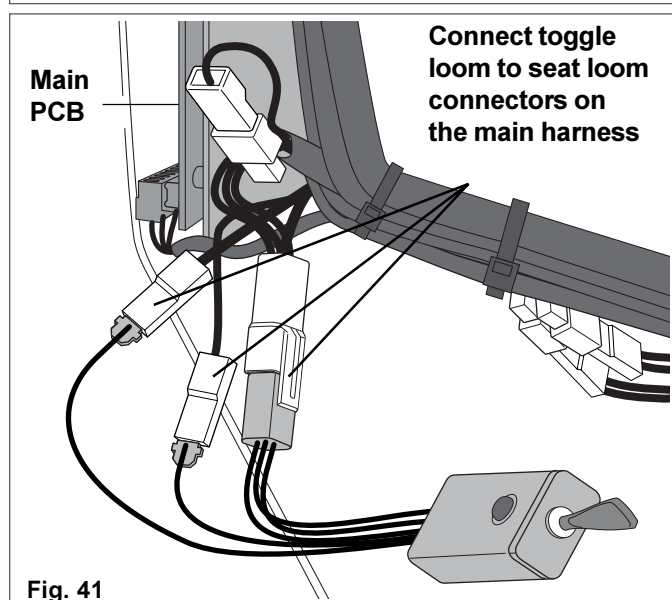
- 5 Connect the toggle loom to the seat loom connectors on the main harness.

The connectors are located behind the main PCB, as shown in illustration No 41.

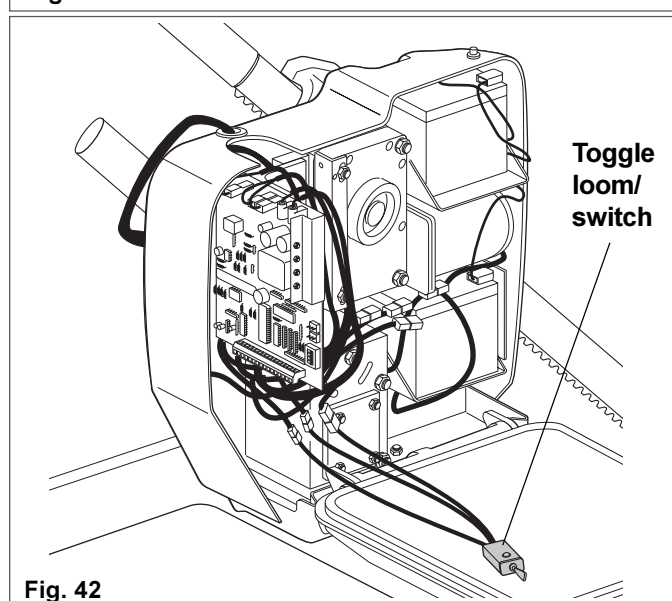
Note:

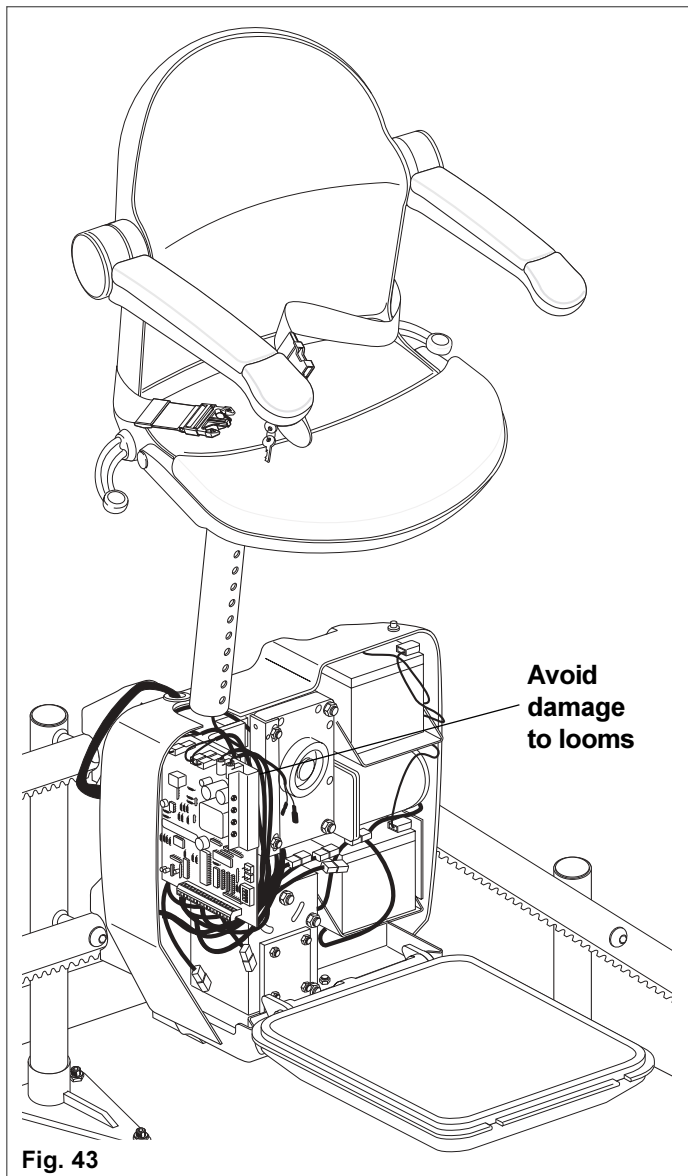
The 2 single spade terminals on the toggle loom can be connected to either of the terminals on the power unit loom.

The multi way connector can only be fitted one way.



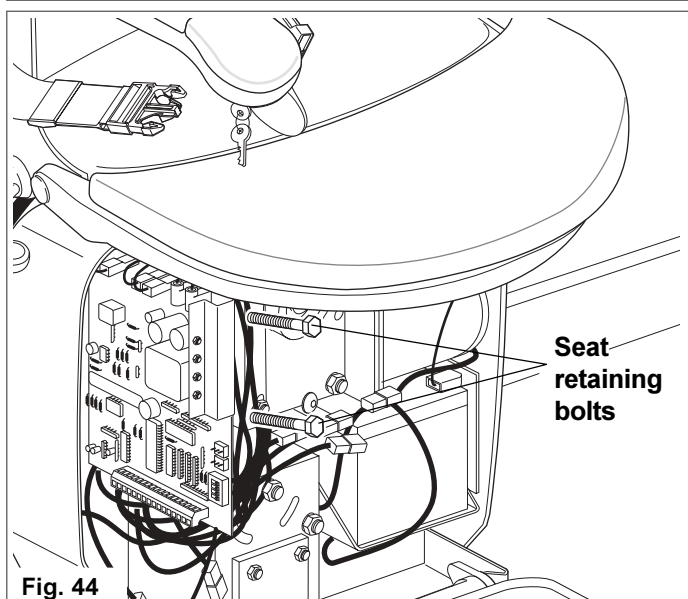
- 6 Using the toggle loom, carefully 'drive' the chassis on to the track (Fig. 42), and remove the chassis feed tracks.





- 7 Remove the toggle loom, and fit the seat (Fig. 43), taking care not to damage any looms as the stem is fed onto its receiver bracket on the chassis.

Note: The illustrations show the Deluxe seat, but the fitting instructions also refer to the standard seat.



- 8 Fit the seat retaining bolts (Fig. 44)

Note: The seat height can only be adjusted when the front cover is removed.

It is advisable to check the required height with the client, prior to fitting the seat.



CHECK THAT THE BOLTS ARE CORRECTLY TIGHTENED.

- 9 Connect the seat loom to the main loom, and the main controller PCB (Fig. 45 and 45A).

See wiring diagram for details on pages 25 and 26 Appendix 1 and 2.

- 10 Set the DIP switches on the main controller PCB.

See Fig. 47 - 48, for positions of DIP switches for outside rails.

See also appendix 7 (For all main controller PCB DIP switch settings).

Fig. 46 shows the layout of the main controller PCB.

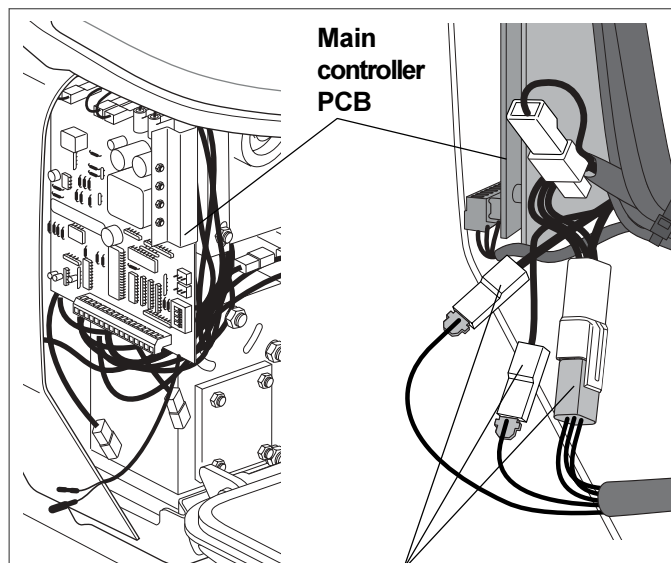


Fig. 45 Connect the seat loom to the main loom

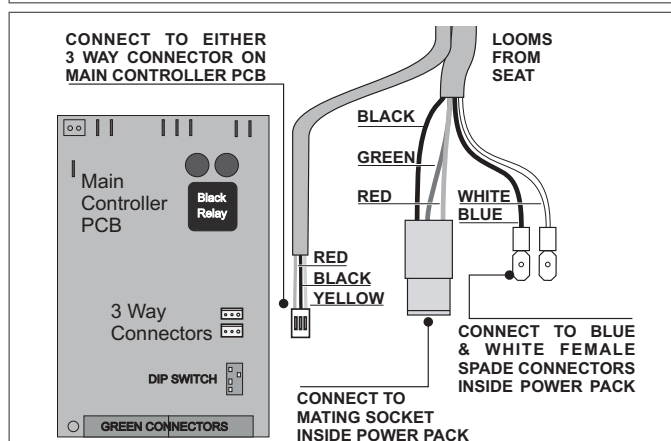


Fig. 45A

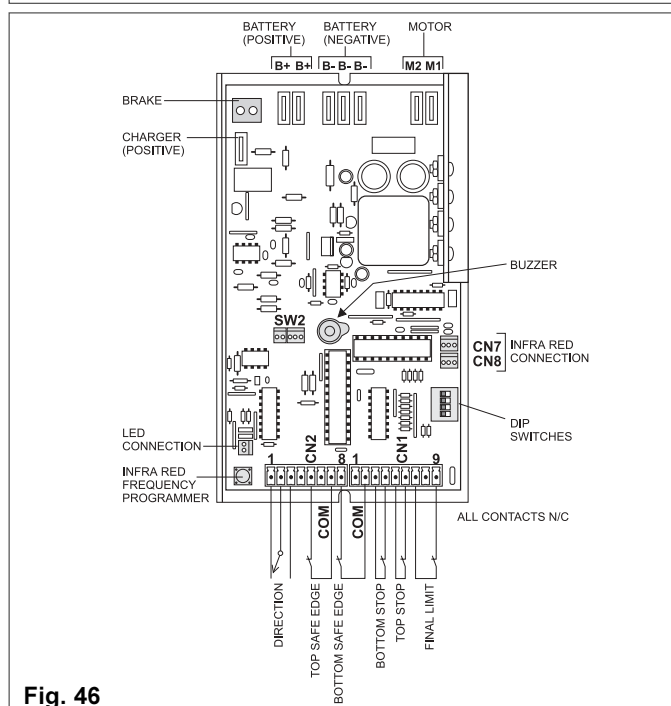
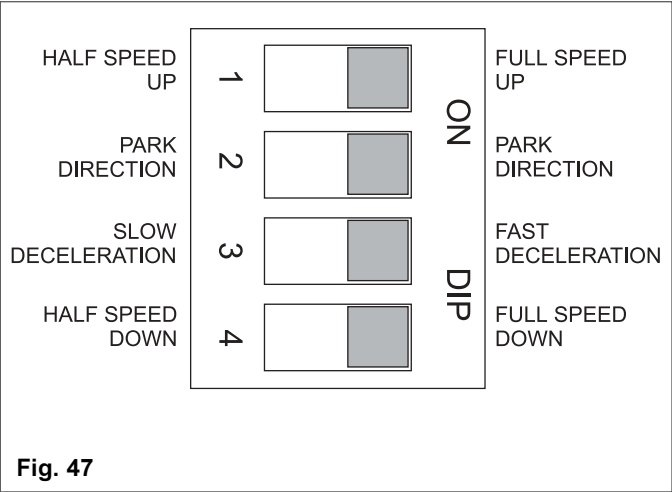
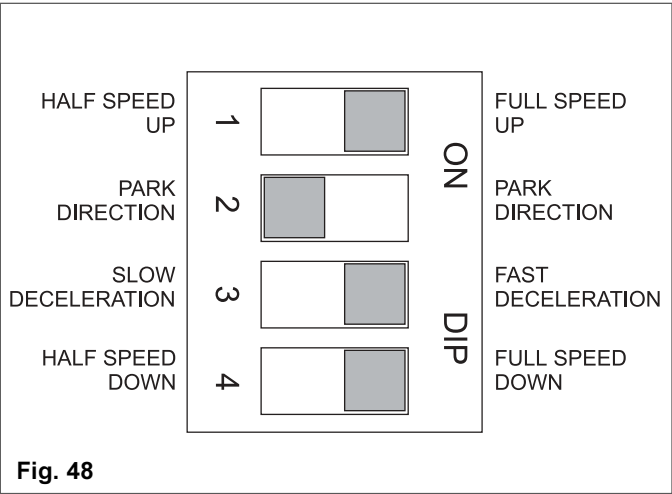


Fig. 46



DIP switch setting - outside rail RH

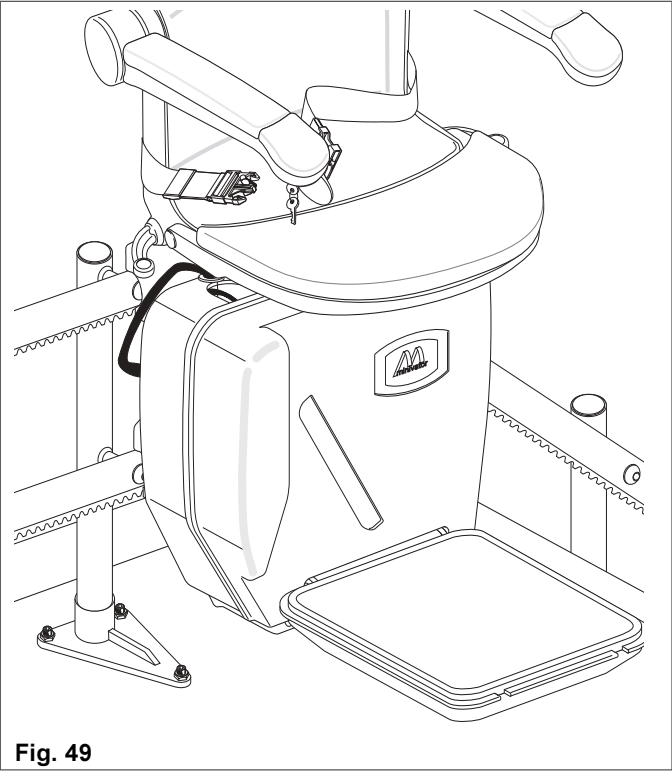
The illustration (Fig. 47) shows the main power unit PCB DIP switch settings for a right hand outside track.



DIP switch setting - outside rail LH

The illustration (Fig. 48) shows the main power unit PCB DIP switch settings for a left hand outside track.

If you require any information regarding DIP switch settings please refer to Minivator technical department.
Telephone No 01384 408700.



- 11 When the stairlift is programmed fit the front cover (Fig. 49). Ensuring that all retaining screws are securely tightened.
- 12 Give the stairlift a trial run.
- 13 Give a demonstration to the client.

Fig. 49

To change the hand required for control deluxe seat

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

To change the control position:

- 1 Remove the backrest and seat cushion upholstery (Fig. 50) by carefully separating the Velcro pads.

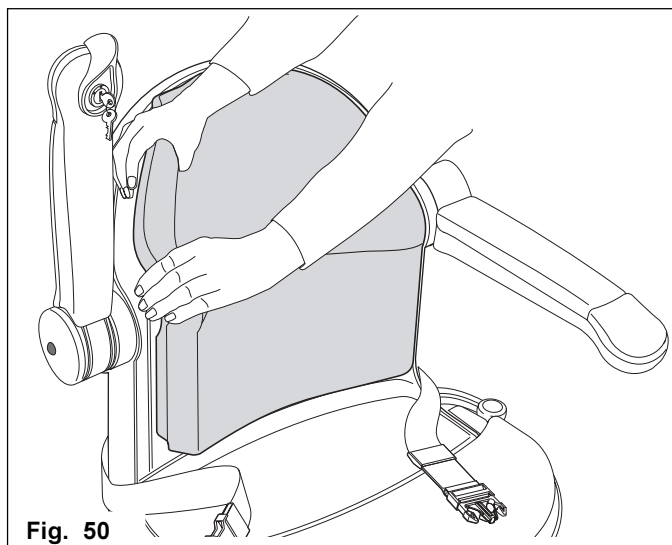


Fig. 50

- 2 Remove both armrest pads by pushing backwards as shown in the illustration until the keyhole slots disengage (Fig. 51)

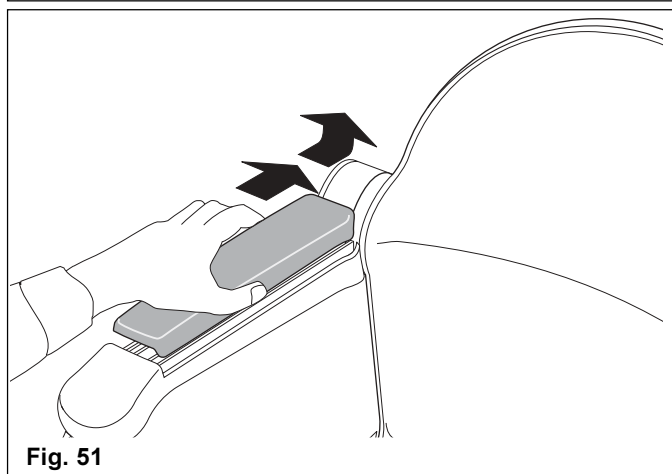


Fig. 51

- 3 Carefully unplug all armrest wire sockets from the printed controller board (PCB) located in the rear centre seat backrest (Fig. 52), taking care to note the sockets correct positions on the PCB.
- 4 Unclip the wires from their mountings on the seat.

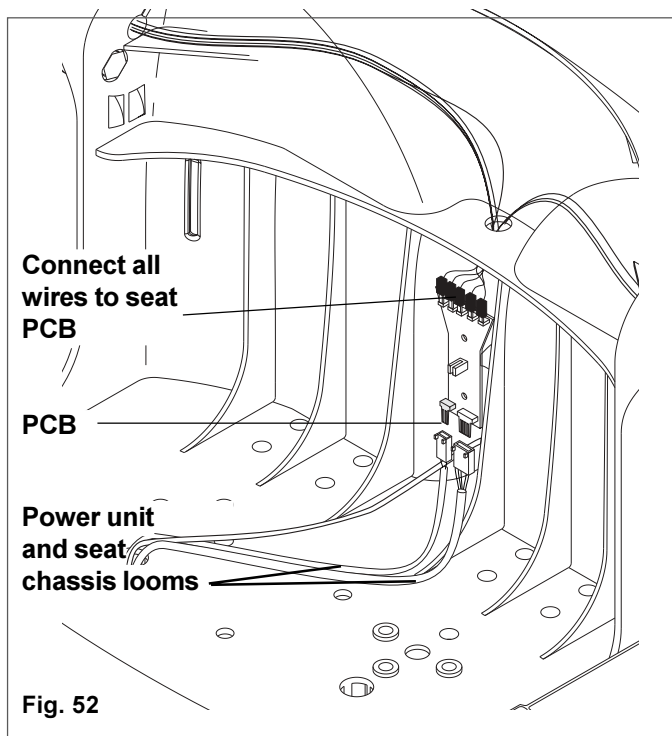
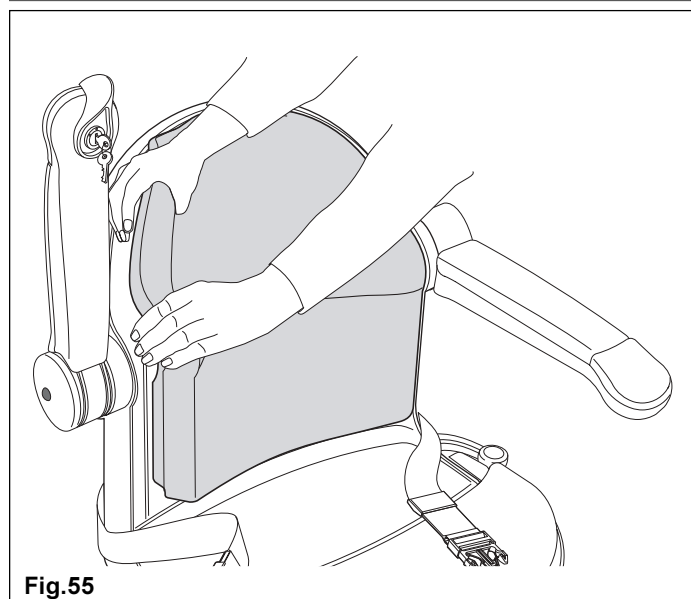
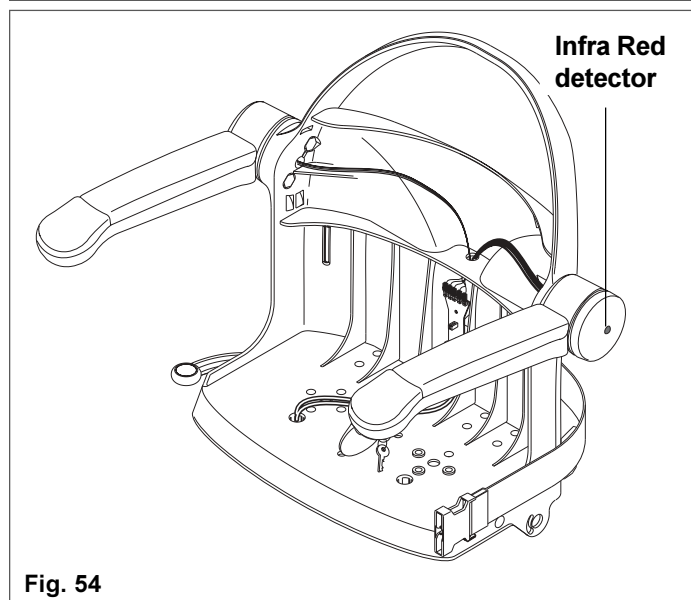
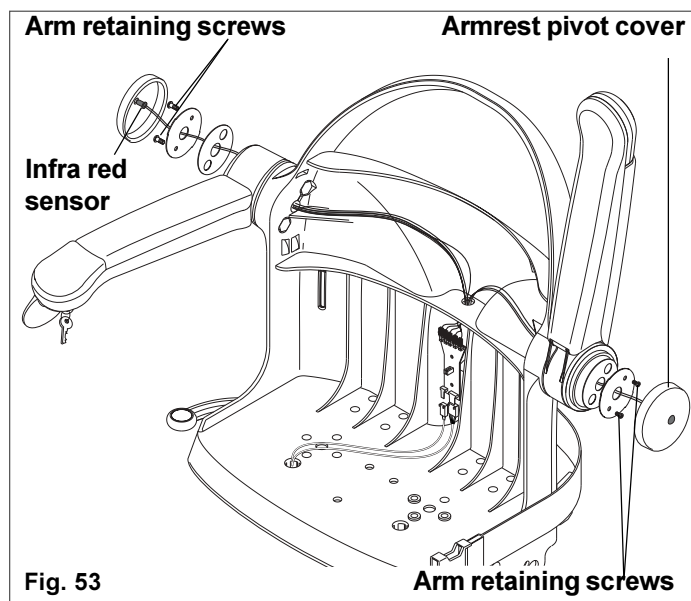


Fig. 52



5 Remove both armrest pivot covers by turning them approximately 45% and lifting clear (Fig. 53) taking care not to damage the infra red sensors.

6 Unfasten the retaining screws on the controller arm and carefully withdraw the arm and control wires through the arm mounting (Fig. 53, 54).

7 Unfasten the opposite arm and thread the safety shut off wires through the arm mounting.

8 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.

9 Fit the opposite arm following the sequence outlined in 8 (Fig. 54 shows completed sequence).

10 Refit the sockets on to their respective plugs on the control PCB (refer to Fig. 50), and ensure the infra red sensors are correctly positioned.

Note: If the sensors are not correctly positioned the hand control will not operate the stairlift.

11 Refit the seat backrest and cushion upholstery ensuring that the Velcro pads are attached, and refit the armrest pads by reversing the procedure outlined in point 1 (Fig. 50).

Fit upholstery to the seat

The seat backrest and cushions are held in place with Velcro pads (Fig. 55).

Appendix 1 Block electrical diagram - classic seat - Infra red system

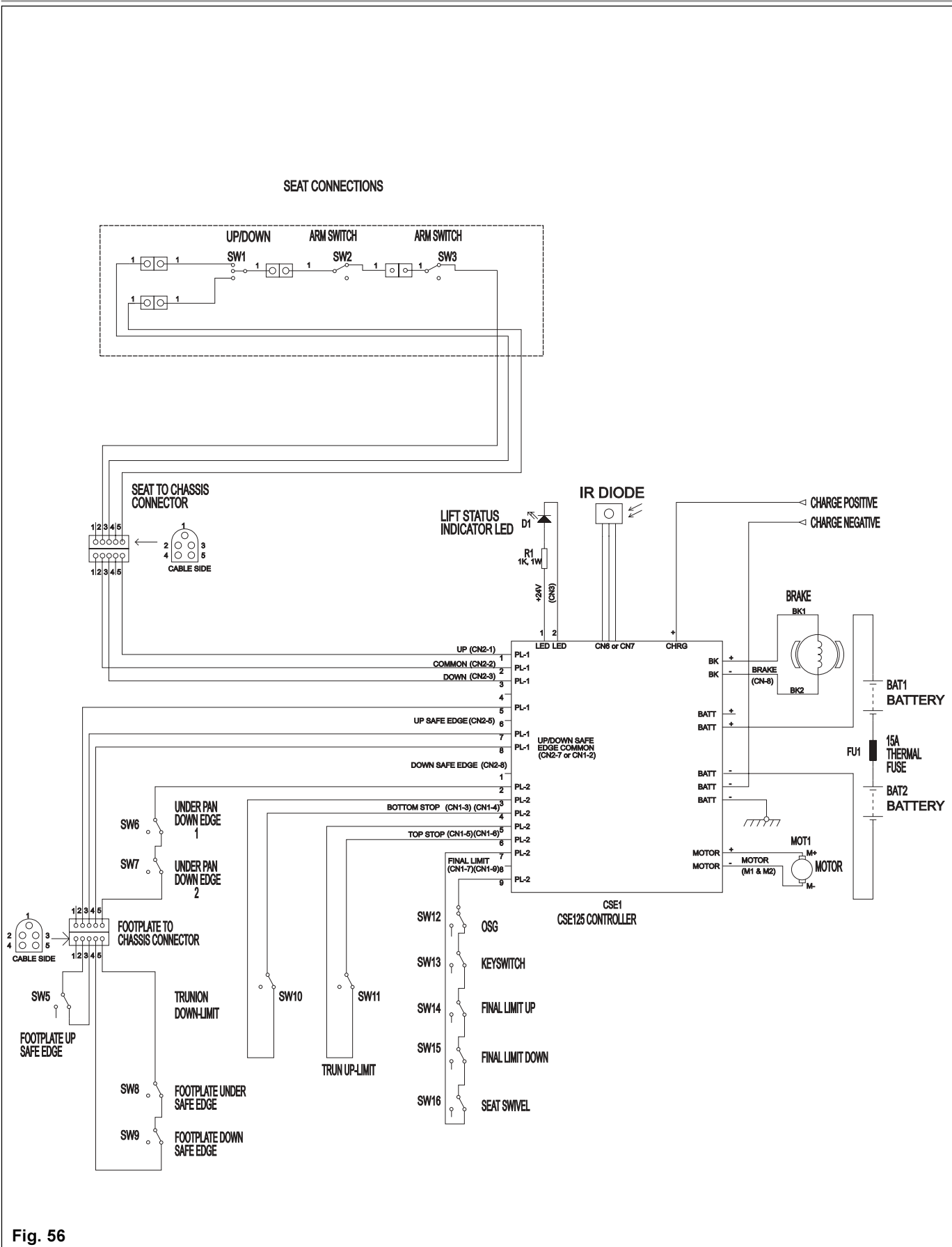


Fig. 56

Minivator 2000 Series Installation Manual

Appendix 2 Block electrical diagram - deluxe seat - Infra red system

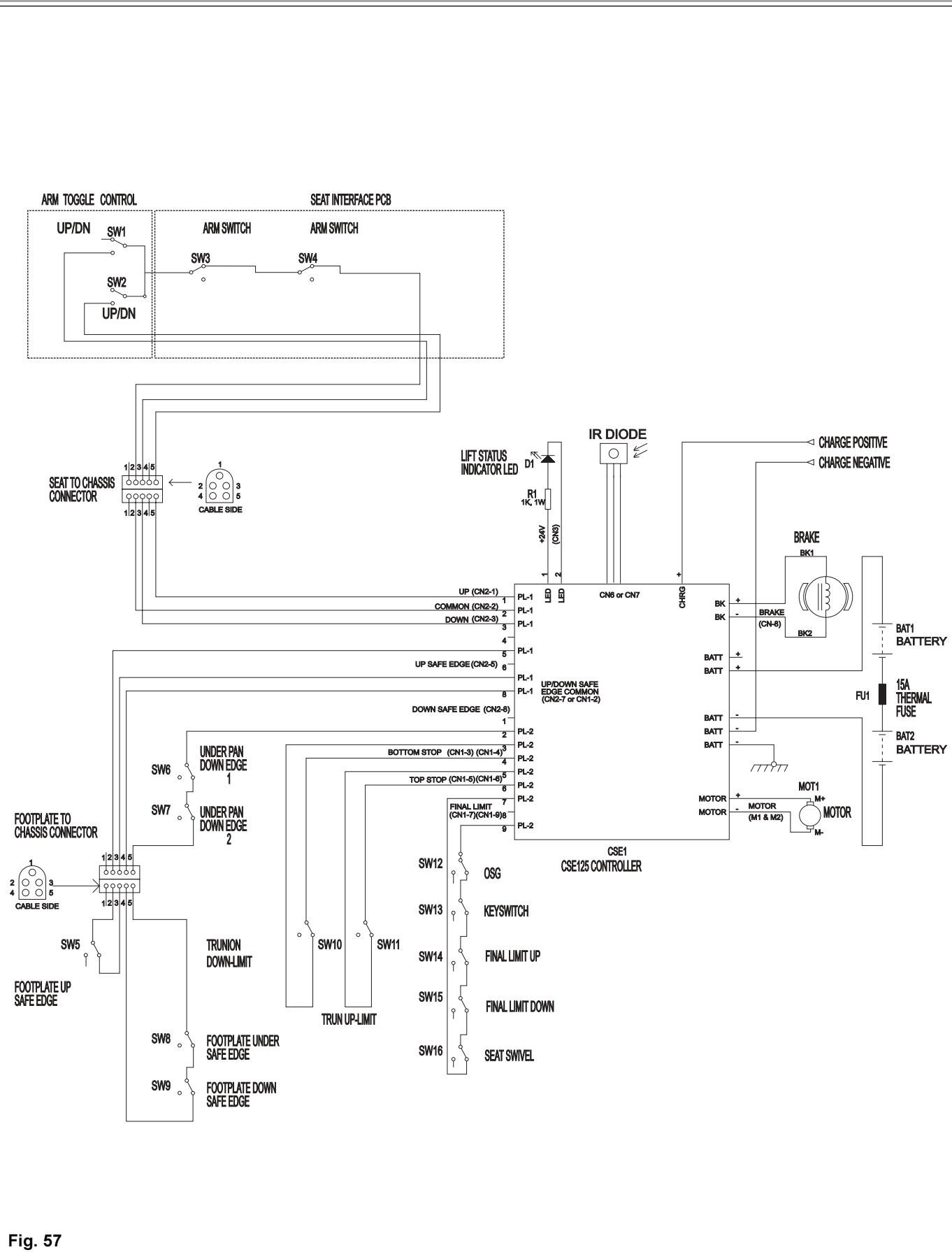


Fig. 57

Minivator 2000 Series Installation Manual

Appendix 3 Main PCB - Infra red system

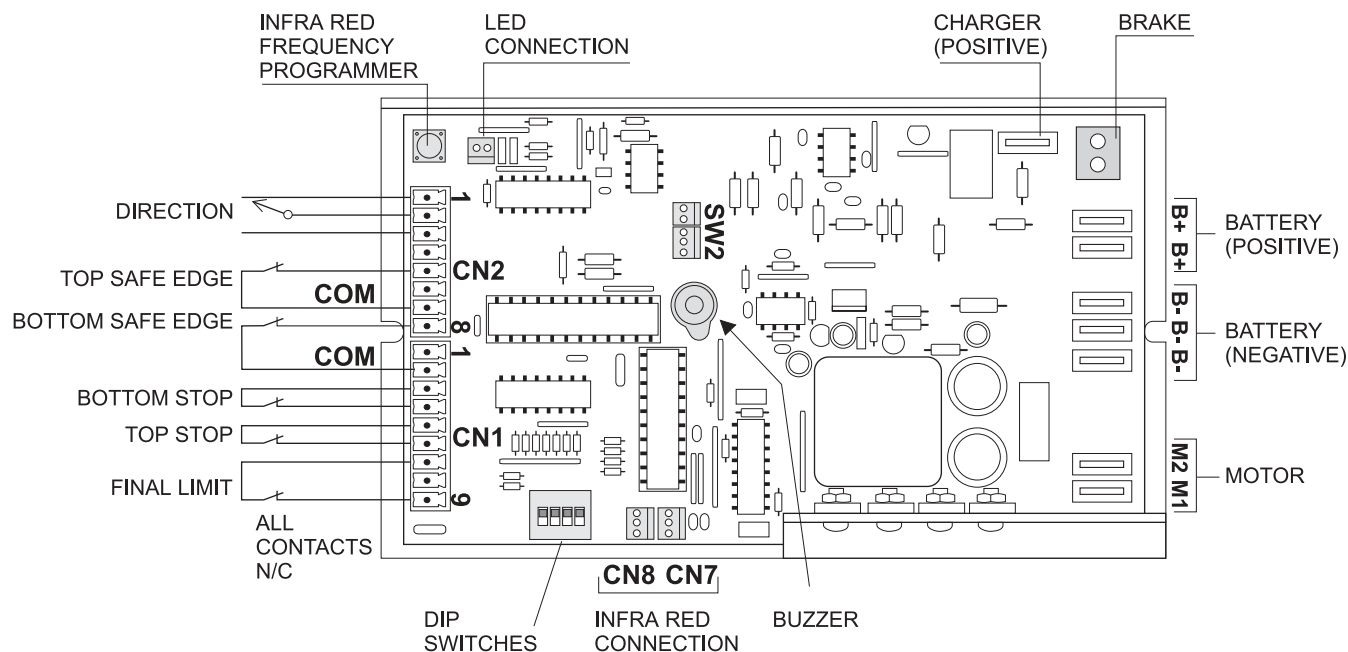


Fig. 58

Appendix 4 Charging circuit.

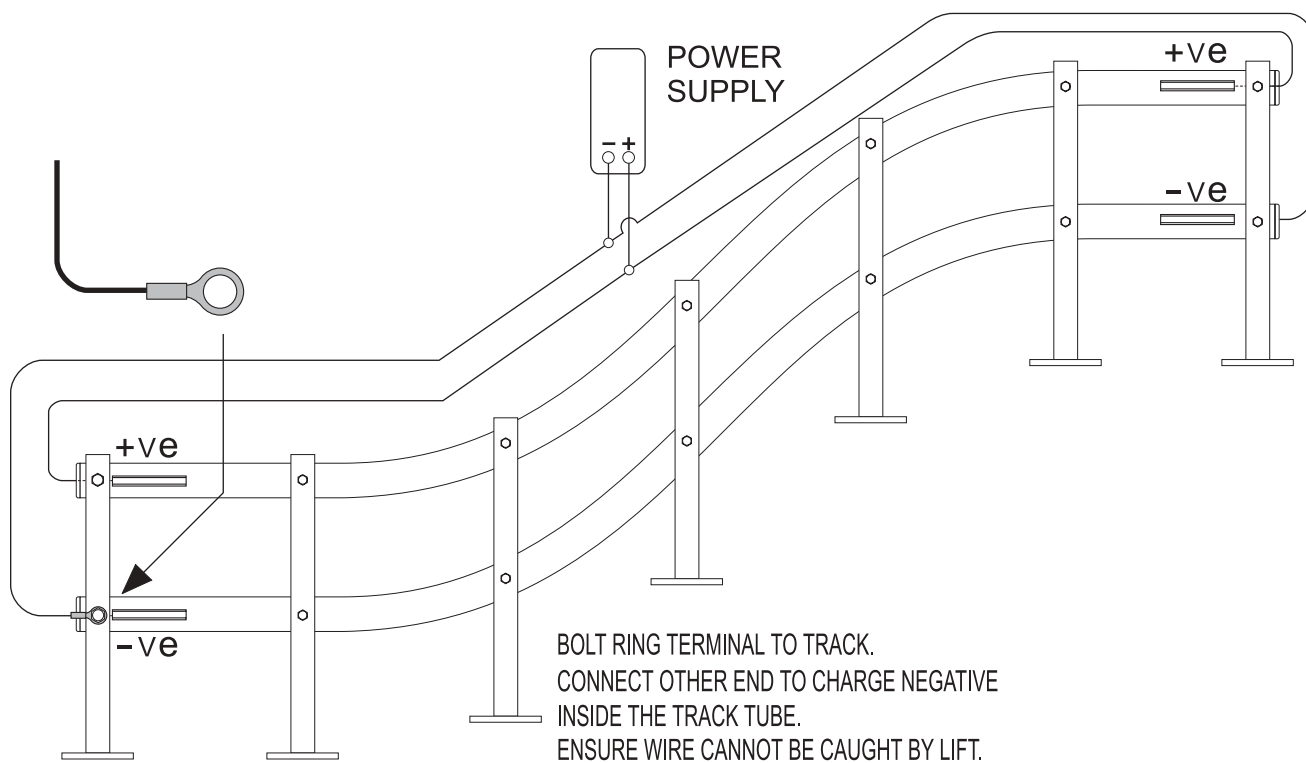


Fig. 59

Minivator 2000 Series Installation Manual

Appendix 5 Handset wiring schematic - Infra red system, non hinged track

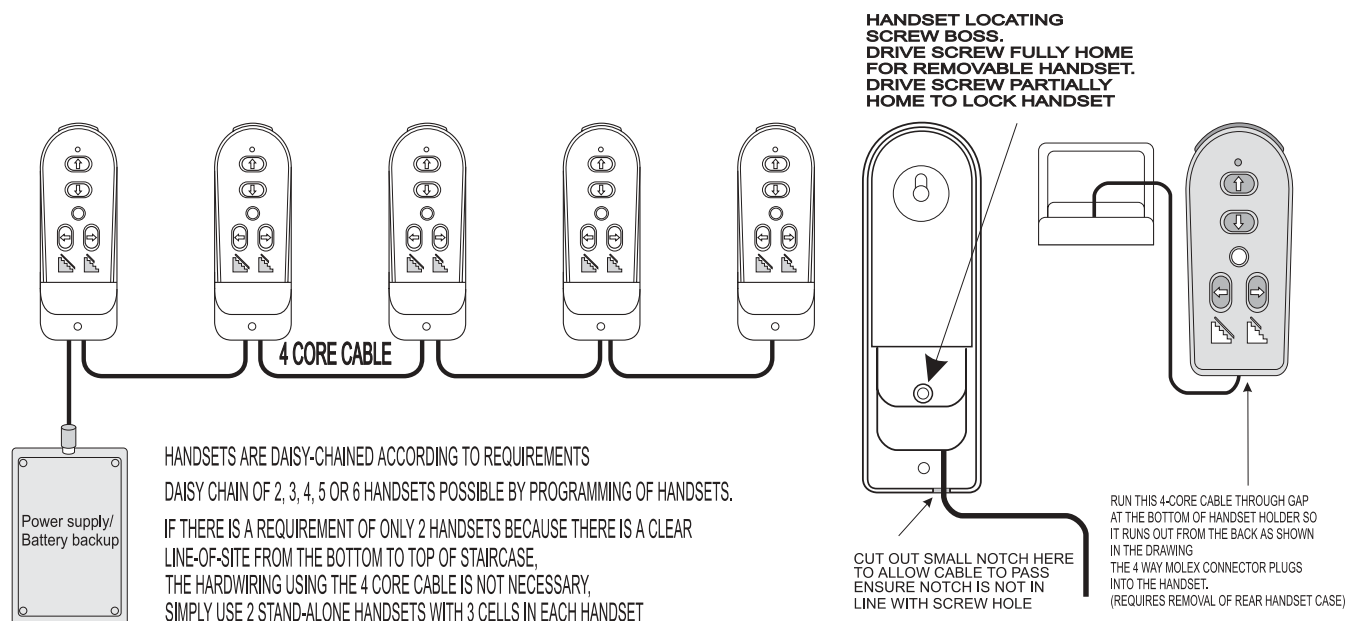


Fig. 59

Appendix 6 Handset wiring details - Infra red system, hinged track

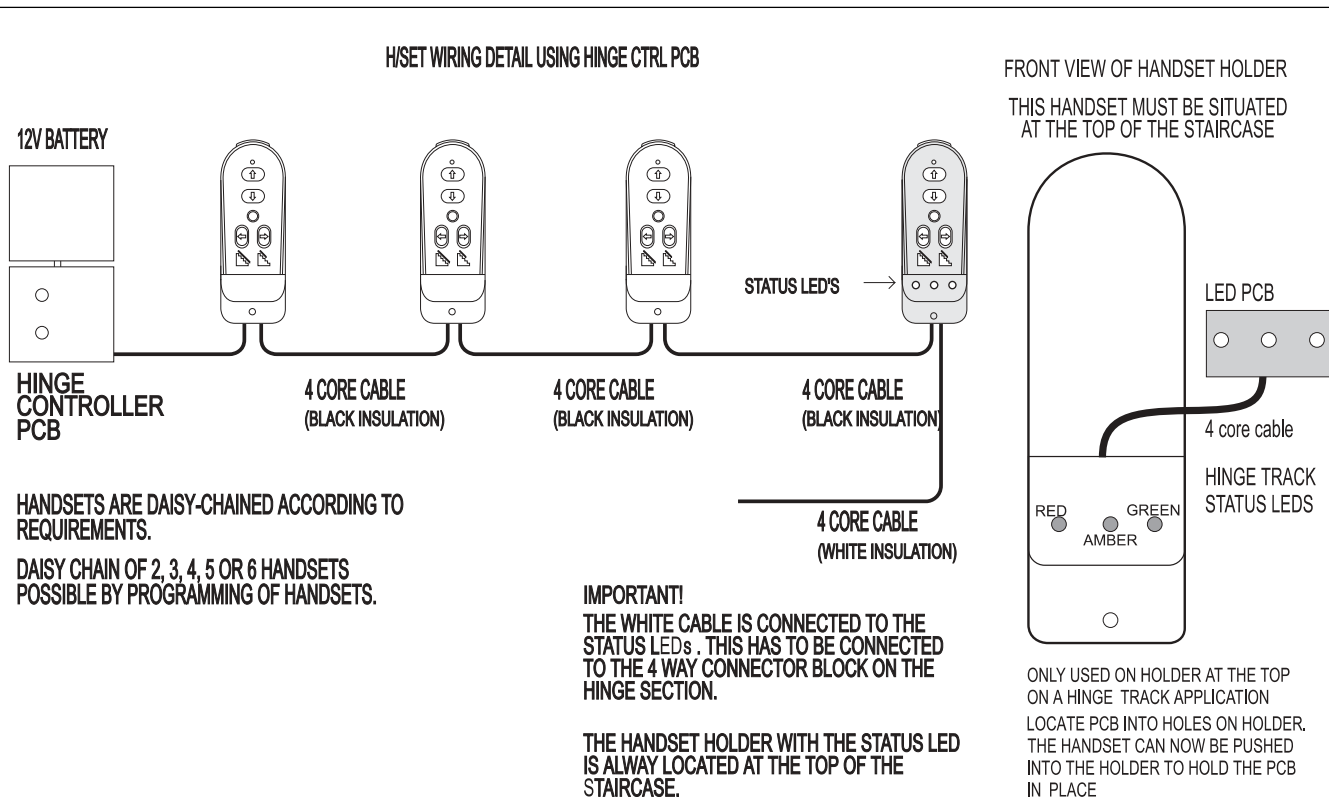
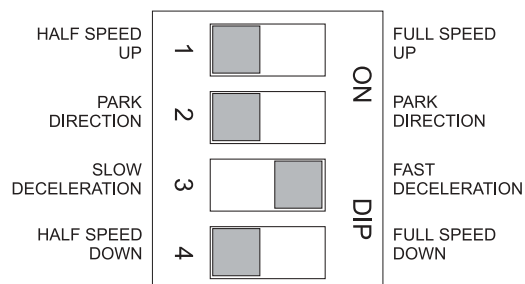


Fig. 60

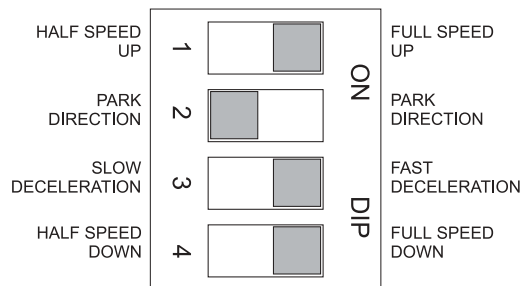
Minivator 2000 Series Installation Manual

Appendix 7 DIP switch settings main controller PCB

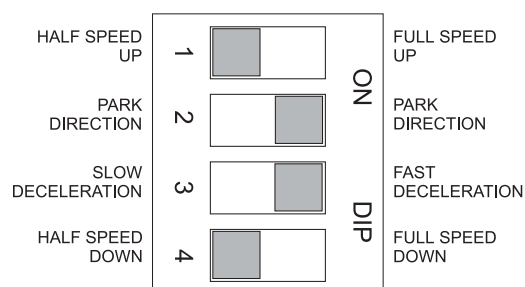
LH INSIDE CURVE TRACK



LH OUTSIDE CURVE TRACK



RH INSIDE CURVE TRACK



RH OUTSIDE CURVE TRACK

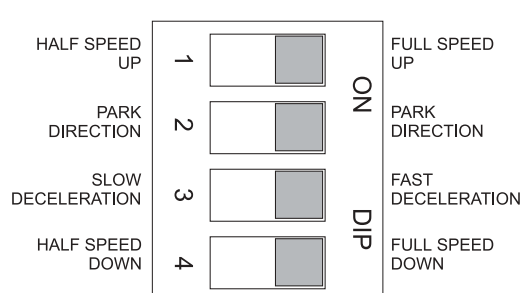


Fig. 61

Appendix 8 Hinge control box battery connections

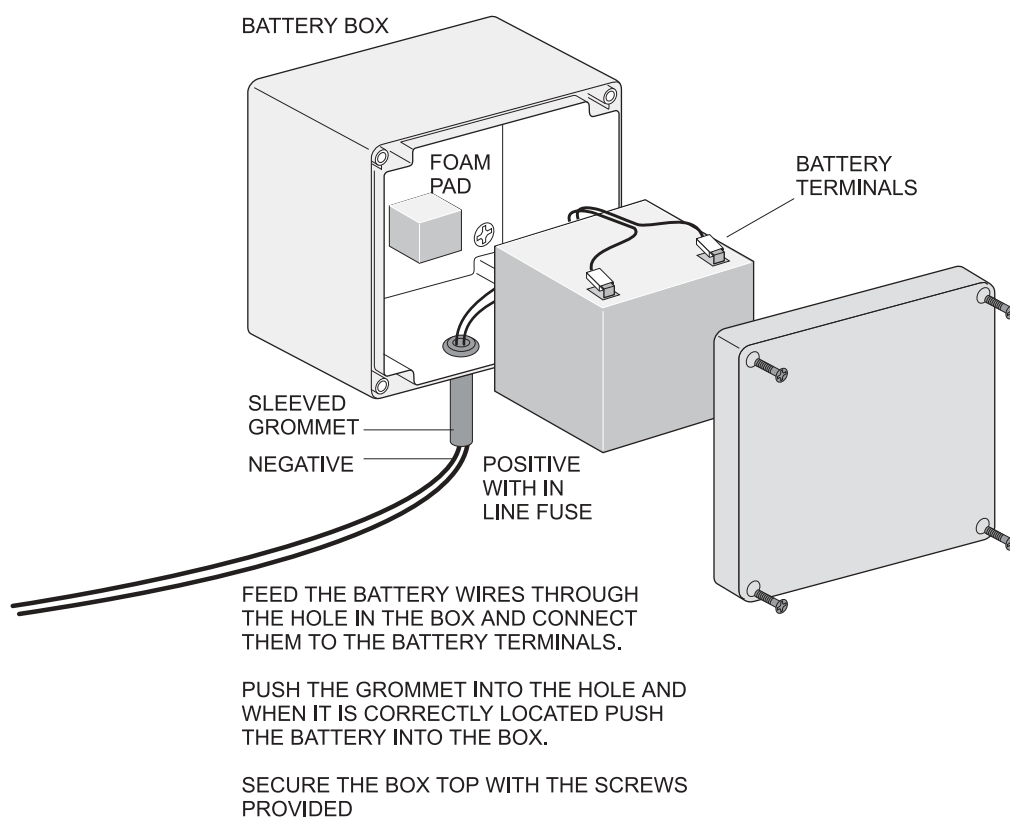


Fig. 62

Minivator 2000 Series Installation Manual

Appendix 9 Hinge controller connections

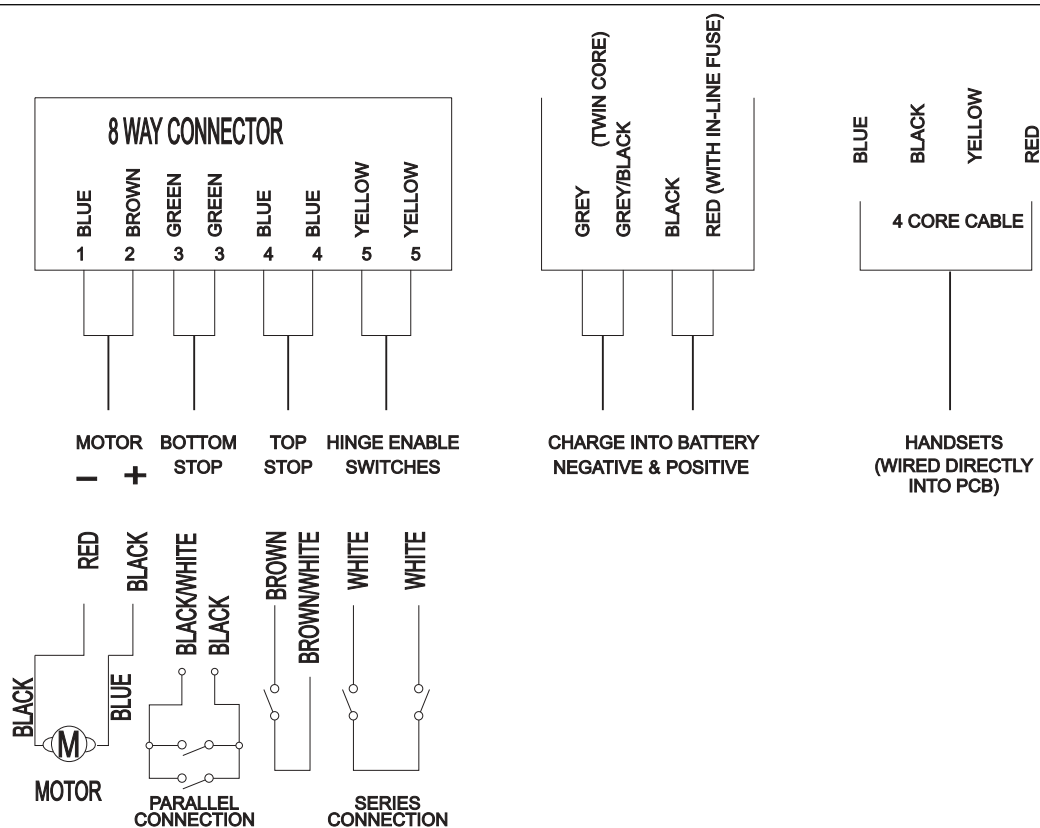


Fig. 63

Appendix 10 Hinge enable switch connections

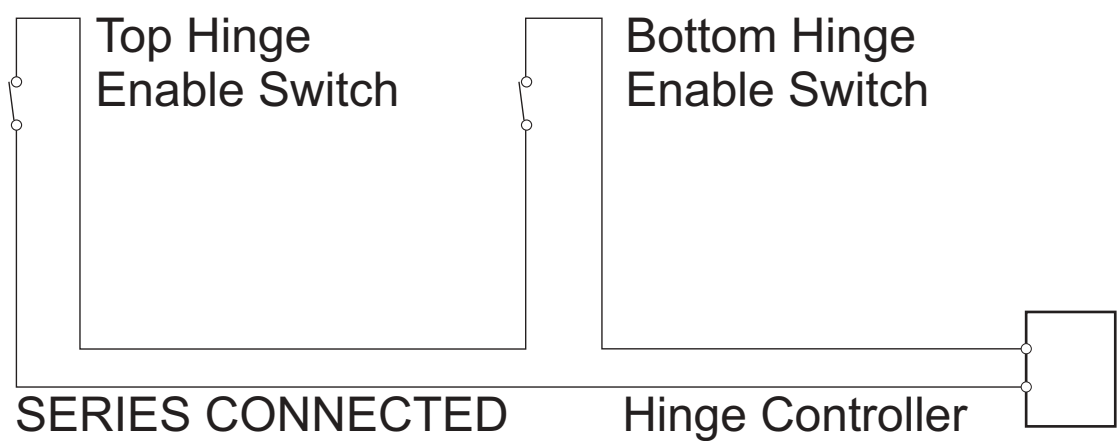
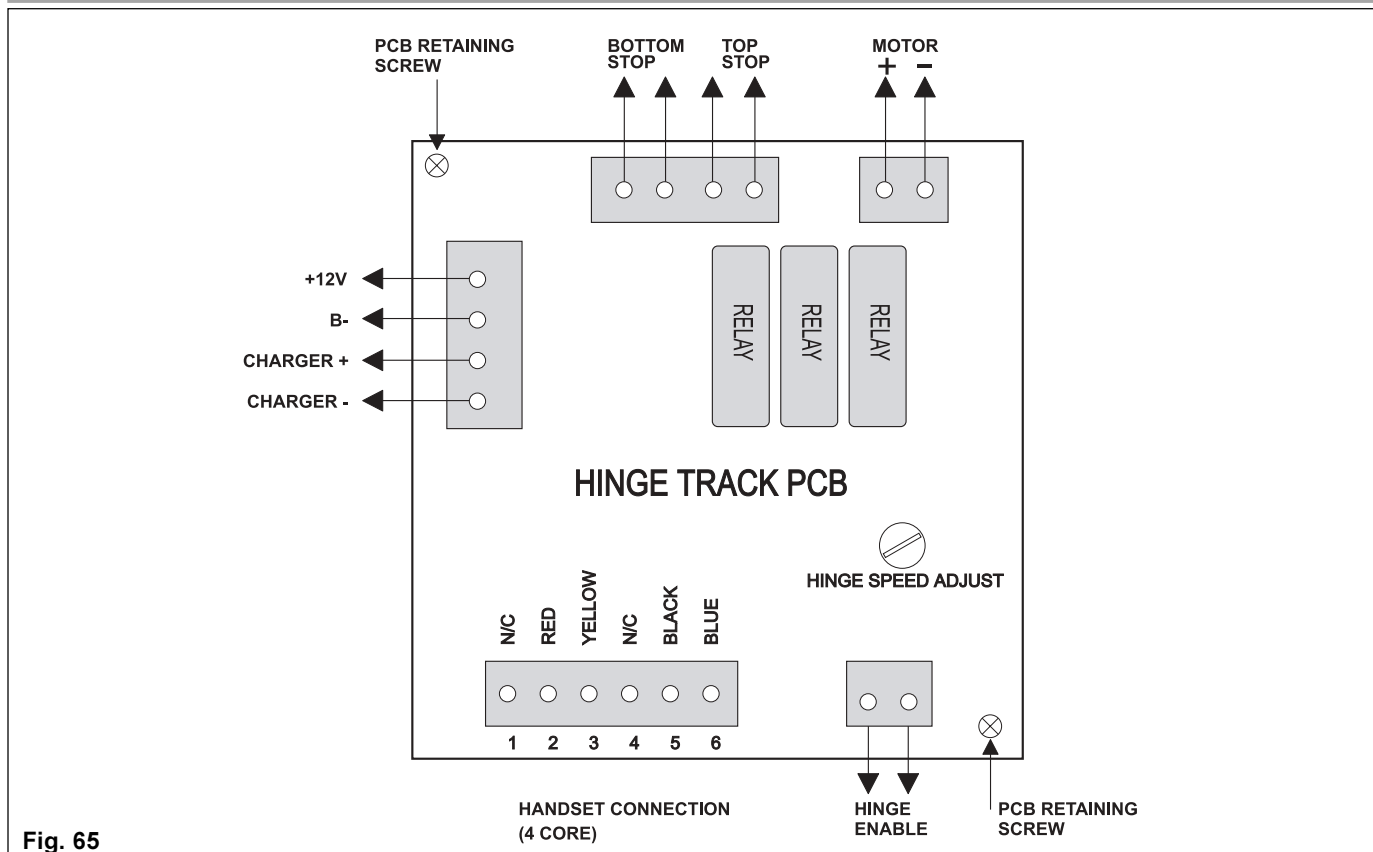
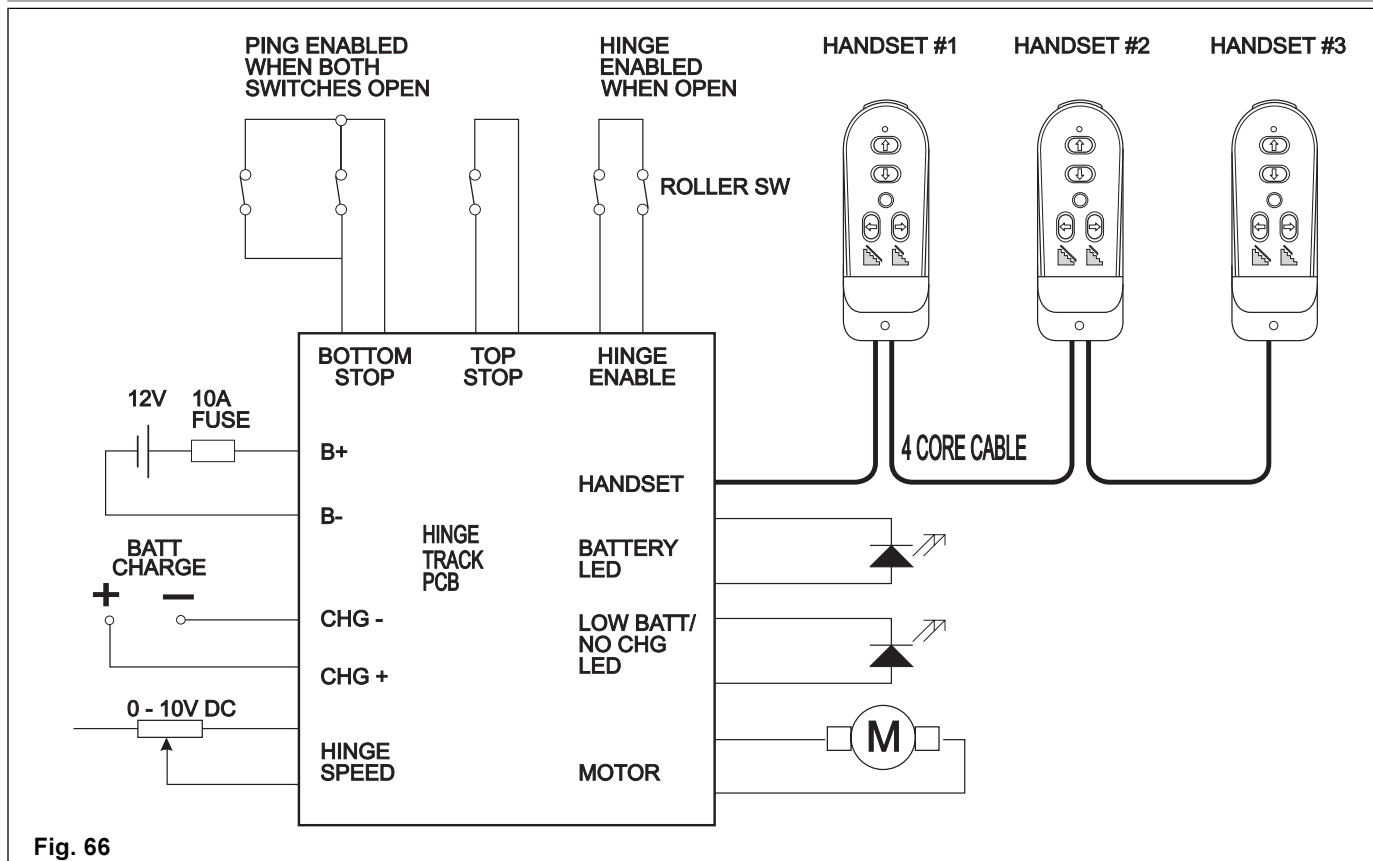


Fig. 64

Appendix 11 Hinge track controller connections



Appendix 12 Hinge track block diagram



Appendix 13 Hinge status L.E.D. connections

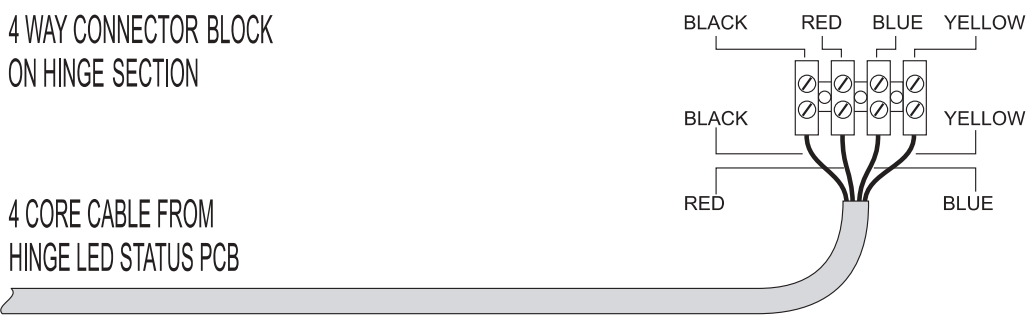


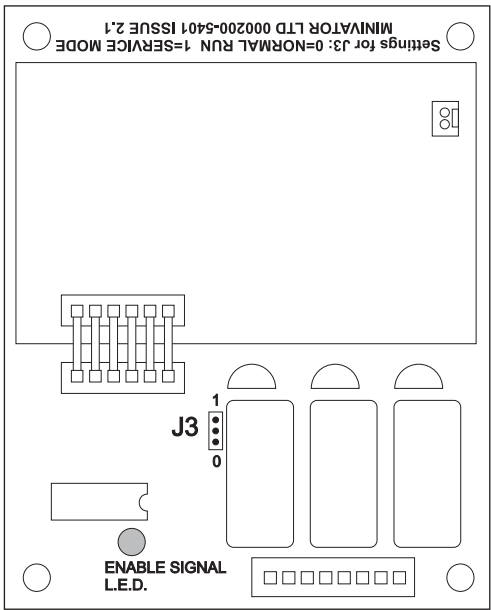
Fig. 67

Appendix 14 Interface PCB - jumper settings - Inductive loop systems

THE SETTINGS OF THIS JUMPER WILL ENABLE THE INSTALLATION ENGINEER TO RUN THE MINIVATOR 2000 RTC ON TO THE RAILS WITHOUT HAVING THE INDUCTIVE LOOP SYSTEM OPERATIONAL

NOTE: SET THE JUMPER BACK TO POSITION 0 TO ENABLE NORMAL OPERATION

APPLIES TO PCB Iss 2.1 AND ABOVE ONLY PREVIOUS PCBs REQUIRE A LINK LOOM



- 1 POSITION 0 (NORMAL RUN)
- OPERATION OF STAIRLIFT ONLY WITH INDUCTIVE LOOP SYSTEM PRESENT
- 0 J3
- 1 POSITION 1 (SERVICE MODE)
- OPERATION OF STAIRLIFT WITHOUT INDUCTIVE LOOP SYSTEM PRESENT
- 0 J3

Fig. 68

Appendix 15 Overall electrical installation circuit - Inductive loop - UK

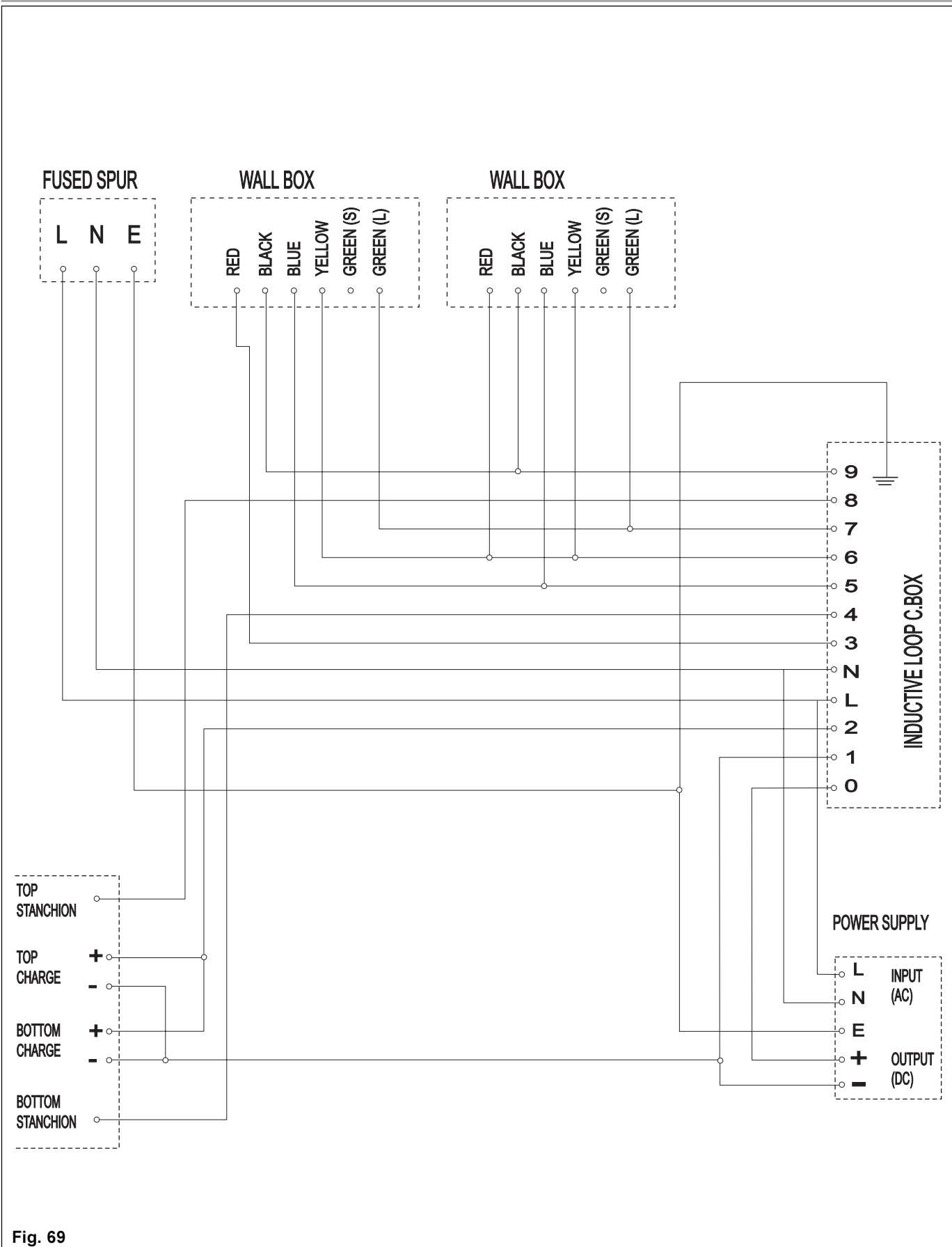
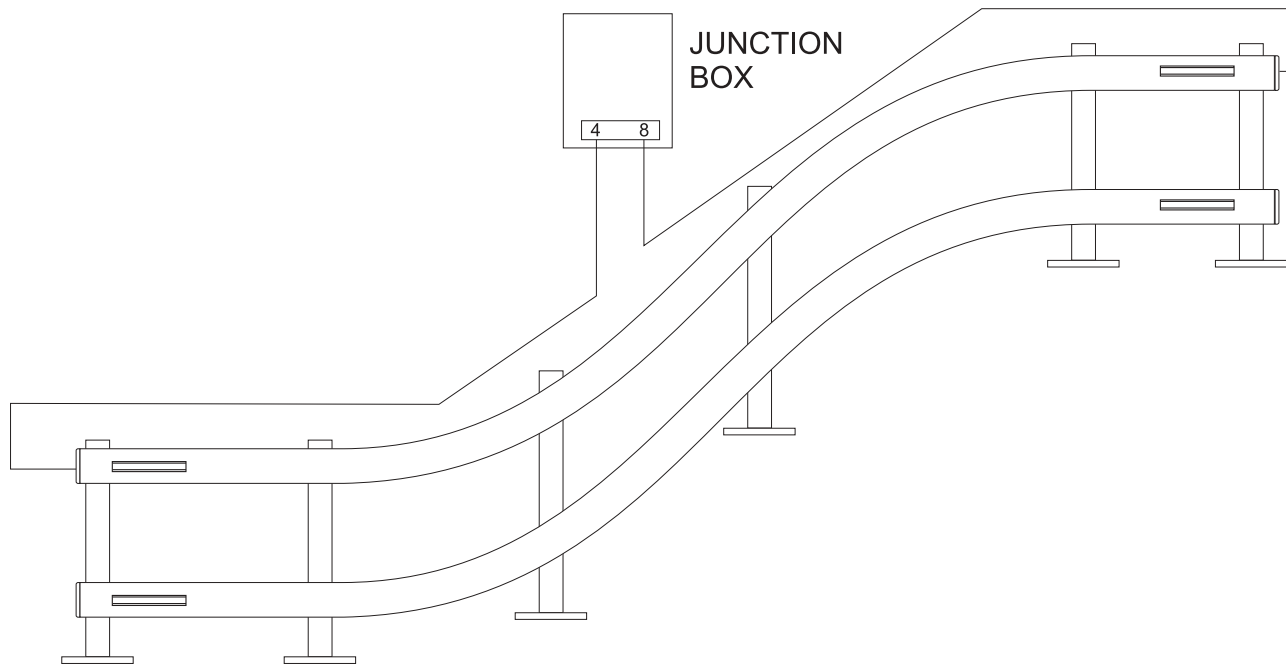


Fig. 69

Minivator 2000 Series Installation Manual

Appendix 16 Inductive loop installation



CONNECTIONS BOLTED TO TRACK/STANCHION TOP JOINT
PAINT TO BE REMOVED FROM THIS JOINT TO ENSURE GOOD CONTINUITY
SIGNAL CAN BE TESTED WITH AN INDUCTIVE LOOP TESTER

Fig. 70

Appendix 17 Inductive loop override jumper settings

The jumpers on the inductive loop antenna PCB may be changed, to enable the RTC motor unit to be run on to the rails without the inductive loop being operational.

The antenna PCB is located to the right hand side of the batteries.

Note: This setting is only recommended for initial installation, and once the unit is correctly installed on the rails the jumper settings must be returned to 0 for normal operation.

Note: This setting only applies to PCBs Iss. 2.1 and above. All previous PCBs require a link loom.

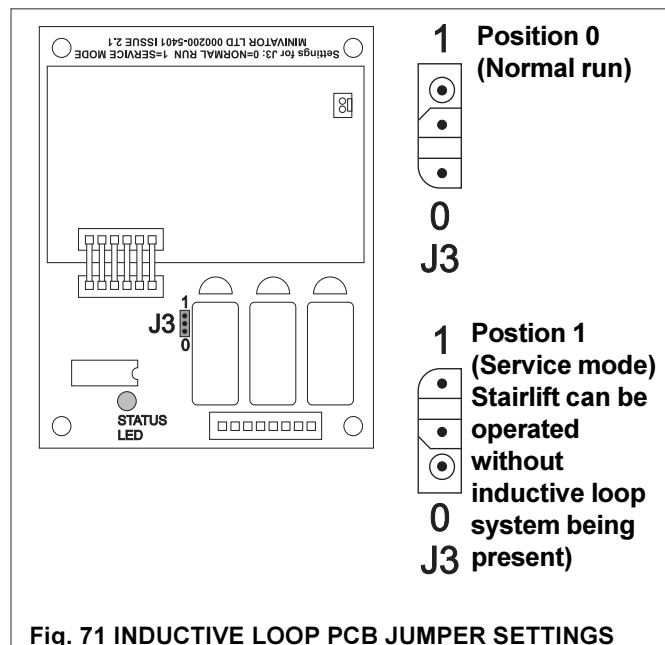


Fig. 71 INDUCTIVE LOOP PCB JUMPER SETTINGS

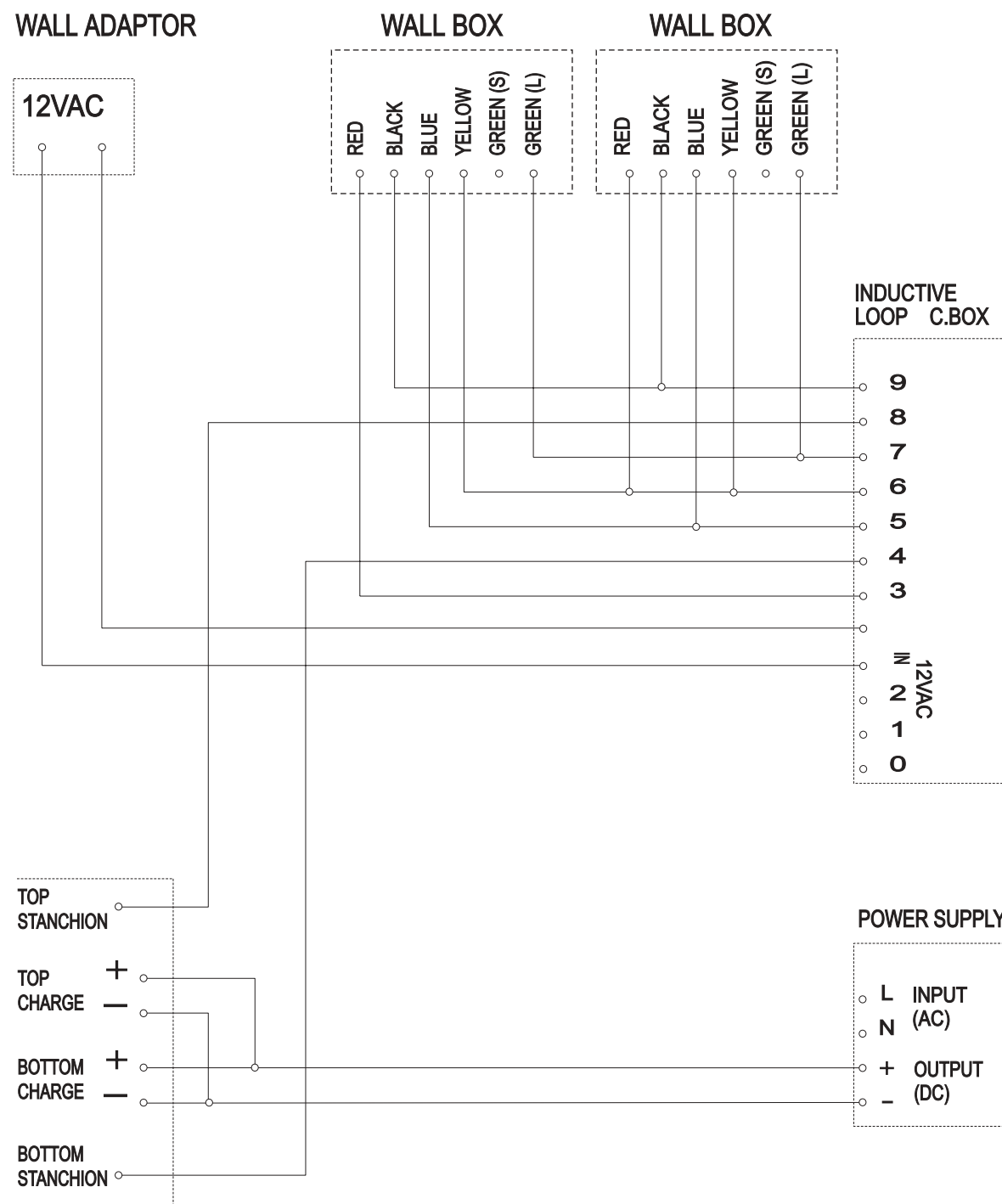
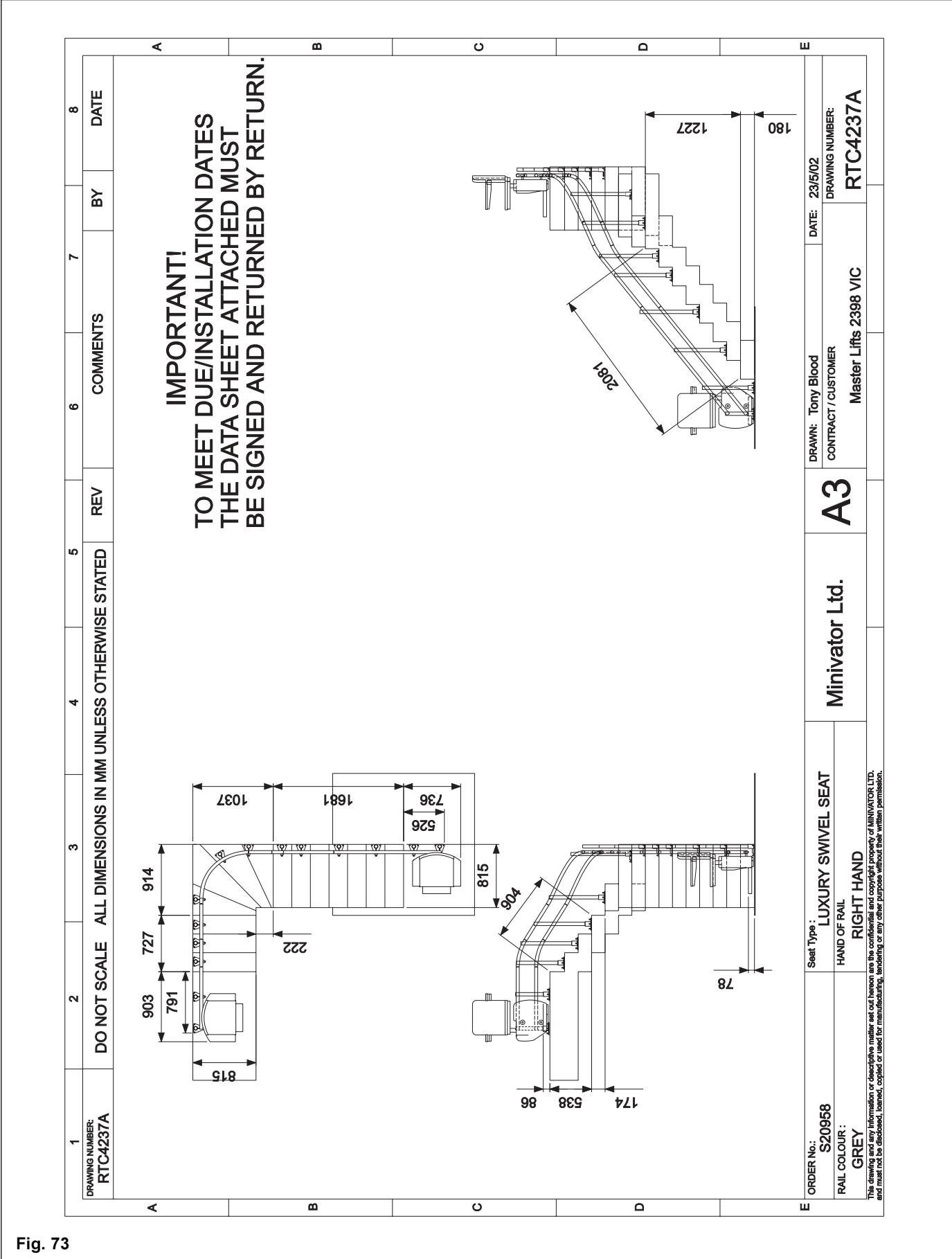


Fig. 72

Minivator 2000 Series Installation Manual

Appendix 19 Typical installation sheet (1)



Minivator 2000 Series Installation Manual

Appendix 19B Typical installation sheet (2)

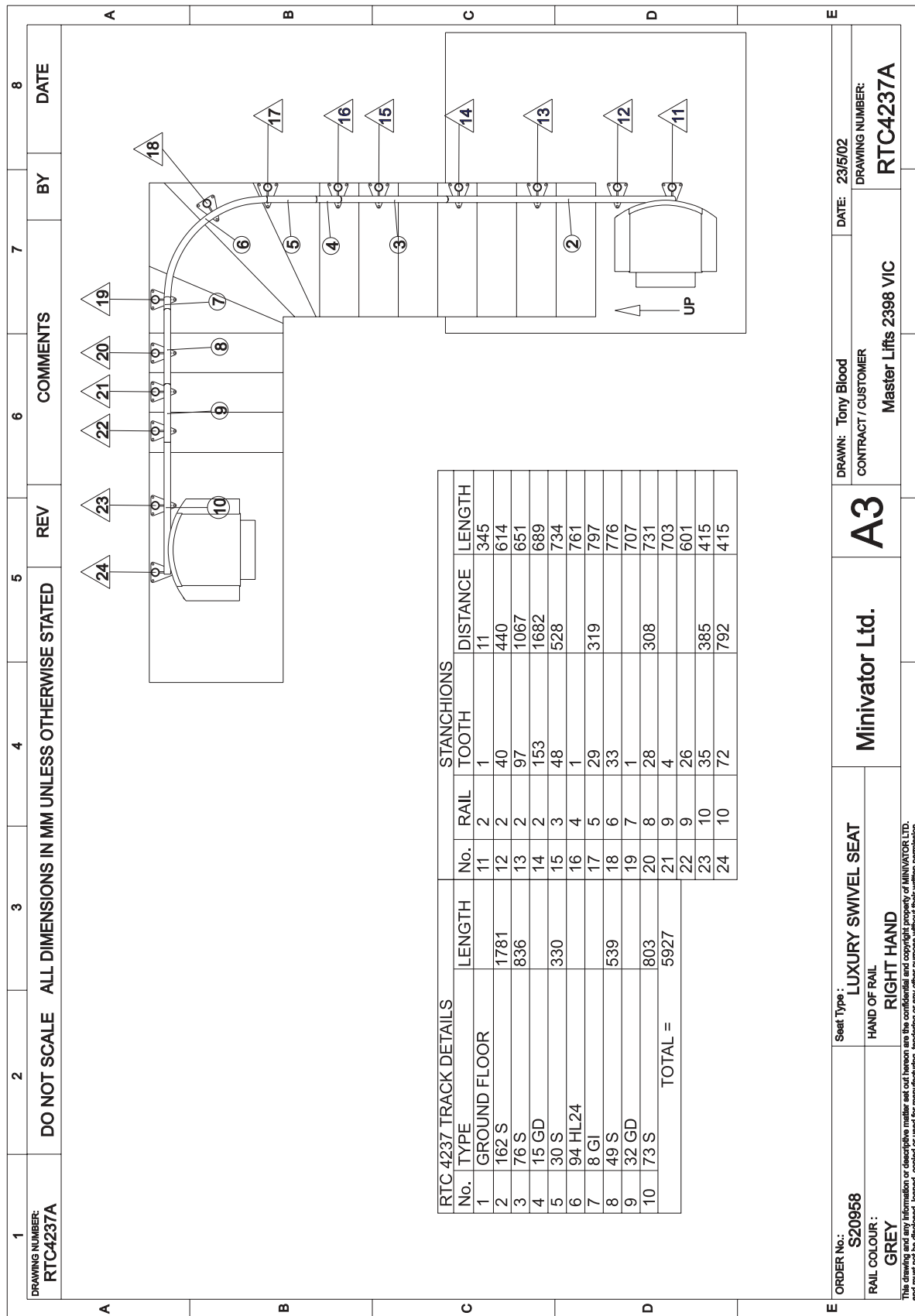


Fig. 74

Minivator 2000 Series Installation Manual

Appendix 20 Fault Finding

Symptom:	No call from infra red handsets but working from seat toggle.
Check:	Are there any batteries in the handsets? Correct polarity observed with batteries? Voltage of batteries?
Check:	Have the handsets been programmed?
Check:	The handsets contain a 2 way DIP switch. Are the DIP switches in all the handsets on the same setting?
Check:	Are the sensors in the seat connected? The sensors are situated in the shoulders of the seat. Twisting the caps off will give access to the sensor. The sensors also connect to the Seat Loom at the back of the foam cushions.

Symptom:	Lift does not slow down when turning round bends.
Note:	When using the handsets, the lift will NOT slow down round the corners. The magnets are only sensed when the toggle is used. When setting up the magnets, use the toggle for driving the lift up or down.
Check:	Are the reed switches connected correctly? See drawing showing connections.
Check:	Are the reed switches set correctly? See instructions on setting up reed switches by changing state with magnets.
Check:	Have the magnets been set up with the correct polarity? The reed switch looks for the correct pole on the magnet therefore, the wrong magnetic pole will have an adverse effect on the reed switch.

Minivator 2000 Series Installation Manual

Appendix 21 Minivator RTC 2000 Test certificate - how to test

To check the stall current	
1	Remove the front cover
2	Use the clamp meter
3	Place clamp around the motor leads
4	Engage the safety gear (situated below the safety gear switch) by pushing the arm upwards at the same time as driving the lift down by using the toggle switch. This will lock the unit
5	Disconnect the batteries
6	Remove both leads on the safety gear switch and link the two together, reconnect the batteries
8	Using the 'down' button operate in down direction. Use a timer/watch to monitor the stall time the thermal trip takes to operate at the same time noting the maximum current
9	Reset the thermal trip
10	Run the lift upwards to release the safety gear
11	Remove the bridging link and reconnect the leads to the over speed governor switch
12	Reconnect the batteries
<p>NOTE: The stall current readings should be between 30 – 35 AMPS Tripping time should be between 4 - 5 SECONDS</p>	
Running Current	
<p>This is normally checked in house prior to despatch, however, if you need to check the current follow this procedure:-</p>	
1	Remove the stairlift front cover
2	Clamp the meter on a battery lead
3	Run the lift in the desired direction and register the readings.
<p>Running current readings should be between 10 AMPS - Max 17 AMPS (UP) Running current readings should be between <5 AMPS (DOWN)</p>	

Note: The Test Certificates are supplied separately by Minivator.



*Minivator Ltd. 82, First Avenue, Pensnett Estate, Kingswinford,
West Midlands. DY6 7FJ. England.*

Tel. 44(0)1384 408700. Fax. 44(0)1384 408719 'E' mail. sales@minivator.co.uk
