STAND-ON AND WHEELCHAIR LIFTS

Models PS5 & PW5

INSTALLATION

AND

SERVICE HANDBOOK

(TO BE RETAINED BY THE DISTRIBUTOR)

Unwin Safety Systems
Willow House, Artillery Road, Yeovil, Somerset. BA22 8RP
Tel: +44 (0)1935 410920 Fax: +44 (0)1935 410921
Email: sales@unwin-safety.co.uk
www.unwin-safety.com

QB15 1288 (09/01)

Chapter	INDEX		Page
1	Introduction	Products and contact names	3
2	Specifications	Stand-on lift	4
		Wheelchair lift	6
3	Stand-on lift	Description	8
		Introduction to fitting, tools required	9
		Site survey, preparation & fitting	10
		Setting up and commissioning	11
4	Wheelchair lift	Lift arm assembly on unpacking	13
		Description	14
		Introduction to fitting, tools required	15
		Site survey, preparation & fitting	16
		Setting up and commissioning	17
5	All lifts	Electrical system and wiring	18
6	Service	Maintenance and safety checks	19
7	Fitting	Typical installations,	21
		Wall fixing brackets	22
		Tie rod, Floor fixings & feet	23
8	Caravan fitting	Stand-on lift	24
		Wheelchair lift	25
		Wiring	26
		Fitting /removal in use	27
9	Labelling	Positions of nameplates and warnings	28
10	Emergency	Hand raising and lowering operation	29
11	Problems	Troubleshooting guide	30
12	Service / repair	General layout drawing	31
		Adjustments and removing internal controls	32
		Limit switch assembly drawing	33
		Removing actuator, moving parts and wiring	34
		Wiring layout and column drawings	35

UNWIN SAFETY SYSTEMS

Introduction

Unwin Safety Systems manufacture low rise lifts for the disabled to overcome one or more steps up to a maximum height of 600 mm (24”). In addition they are recognised market leaders in the design and manufacture of wheelchair passenger safety equipment, seat belts, harnesses and seat fixtures.

The two models comprise Powerstep stand-on and wheelchair lifts both based on the same operating principles. These lifts are intended for light duty domestic / caravan use and are not recommended for unsupervised public use.

Typical applications already undertaken include: access at domestic doorsteps, elevation at internal split levels, mobile home / park home access and caravan and motorhome access.

The stand-on lift can raise and lower 125 Kg (20 Stones) to maxima of either 450 mm (18”) or 600 mm (24”). It is sufficiently portable to be used in several locations but must be attached to an adjacent structure (wall / caravan) for stability when in use. The weight is taken by the floor or ground.

The wheelchair lift has similar requirements for attachment and can lift 160 Kg (25 Stones) to the same heights.

Both lift platforms can be hinged up to the operating mechanism to reduce obstruction where space is a problem and the wheelchair platform can be removed. The lift frames can be hinged to the supporting wall or removed easily if hinging brackets are fitted.

Power requirements for the electric screw actuator on each lift is a 12 Volt d.c. supply provided by a separate mains transformer unit or a vehicle battery.

For further details see the specification section for each lift in this handbook.

If anything is unclear contact Unwin Safety Systems at the address below.

Contacts

Office address:
Unwin Safety Systems, Willow House, Artillery Road, Yeovil, Somerset BA22 8RP
T: +44 (0)1935 410920, F: +44 (0)1935 410921, E: sales@unwin-safety.co.uk

We also have a website which includes the complete Unwin range of products and services.

www.unwin-safety.com

STEP LIFT FOR DOMESTIC USE MANUFACTURED BY UNWIN SAFETY SYSTEMS

SPECIFICATION

GENERAL

The **Unwin Powerstep Step Lift** operates over an elevation of 450mm / 18" or 600mm / 24" from a minimum platform height of 27mm / 1.1". Lift capacity is 127Kg / 20 stone . For convenience, the platform can be stopped at any height for use as an intermediate step and will remain at the selected level until it is operated again - it cannot sink.

CONSTRUCTION

Structural frames and platform are manufactured of precision formed aluminium with some of the higher stressed parts of steel. External members are colour anodised or plastic coated, giving excellent corrosion resistance.

All fasteners are stainless steel. Rollers are fitted with sealed ball bearings.

The folding platform is provided with a slip-resistant top surface.

All external electrical components are weatherproofed.

Apart from routine cleaning the unit is maintenance free.

INSTALLATION

This depends on the individual application, but typically the unit is bolted to a wall with a fixed or hinged bracket to provide rigid support. When hinged the unit can be folded back against a wall to reduce the obstruction when not in use, or released and removed for security.

OPERATION

Two pushbutton switches are situated by the steadying handles to control movement.
Optionally an additional hand held control box can be provided on an extending lead.

Limit switches are installed as part of the electrical circuit in order to prevent overtravel. The upper switch is adjustable in order to operate when the lift platform is exactly at the upper level, this adjustment being set at the time of installation.

A manual lift and lower facility is provided for emergency operation in the event of power failure.

POWER

A 12 Volt supply powers the lift and this is provided by a 240 volt to 12 volt transformer unit, which is protected by an input fuse and circuit breaker on the output, or by a vehicle battery with an in line fuse.

DIMENSIONS

Overall height, platform lowered	1170mm	46"
Overall width	350mm	13¾"
Overall depth	620mm	24½"
Usable step area	350mm. x 500mm.	13¾" x 19¾"
(Optionally	350mm. x 350mm.	13¾" x 13¾")

LIFTING CAPACITY

Rated working load	127 Kg	20 stone

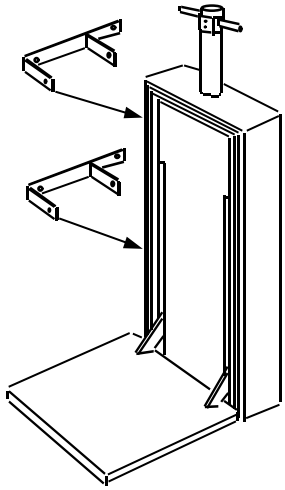
GUARANTEE

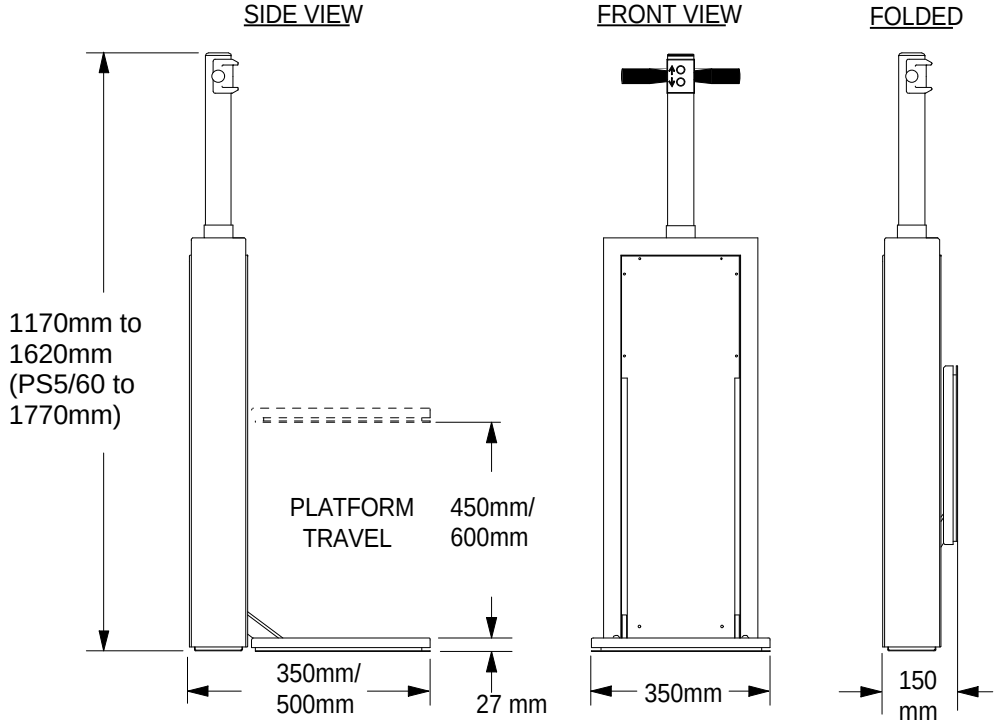
One year warranty

DESIGN

In the interest of product improvement changes to design, specification or materials may be undertaken without notice.

LAYOUT





WHEELCHAIR LIFT FOR DOMESTIC USE MANUFACTURED BY UNWIN SAFETY SYSTEMS

Model: PW5/45 and PW5/60
SPECIFICATION

GENERAL

The **Unwin Powerstep Step Lift** operates over an elevation of 450mm / 18" or 600mm / 24" from a minimum platform height of 33mm / 1.7". Lift capacity is 150Kg / 25 stone . For convenience, the platform can be stopped at any height for use as an intermediate step and will remain at the selected level until it is operated again - it cannot sink.

CONSTRUCTION

Structural frames and platform are manufactured of precision formed aluminium with some of the higher stressed parts of steel. External members are colour anodised or epoxy powder coated, giving excellent corrosion resistance.

All fasteners are stainless steel. Sealed ball bearing rollers are fitted.

The folding or removable platform is provided with a slip-resistant top surface.

All external electrical components are weatherproofed.

Apart from routine cleaning the unit is maintenance free.

INSTALLATION

This depends on the individual application, but typically the unit is bolted to a wall with a hinged or releasable bracket to provide rigid support. When hinged the unit can be folded back against a wall to reduce the obstruction when not in use, or released and removed for security.

OPERATION

Two pushbutton switches are situated by the steadying handles to control movement.
Optionally an additional hand held control box can be provided on an extending lead.

Limit switches are installed as part of the electrical circuit in order to prevent overtravel. The upper switch is adjustable in order to operate when the lift platform is exactly at the upper level, this adjustment being set at the time of installation.

The platform ramp automatically hinges to form an anti roll-off barrier.

A manual lift and lower facility is provided for emergency operation in the event of power failure.

POWER

A 12 Volt supply powers the lift provided by a 240 Volt to 12 Volt transformer unit, which is protected by an input fuse and a circuit breaker on the output.

LIFTING CAPACITY

Rated working load 160 Kg 25 stone

GUARANTEE

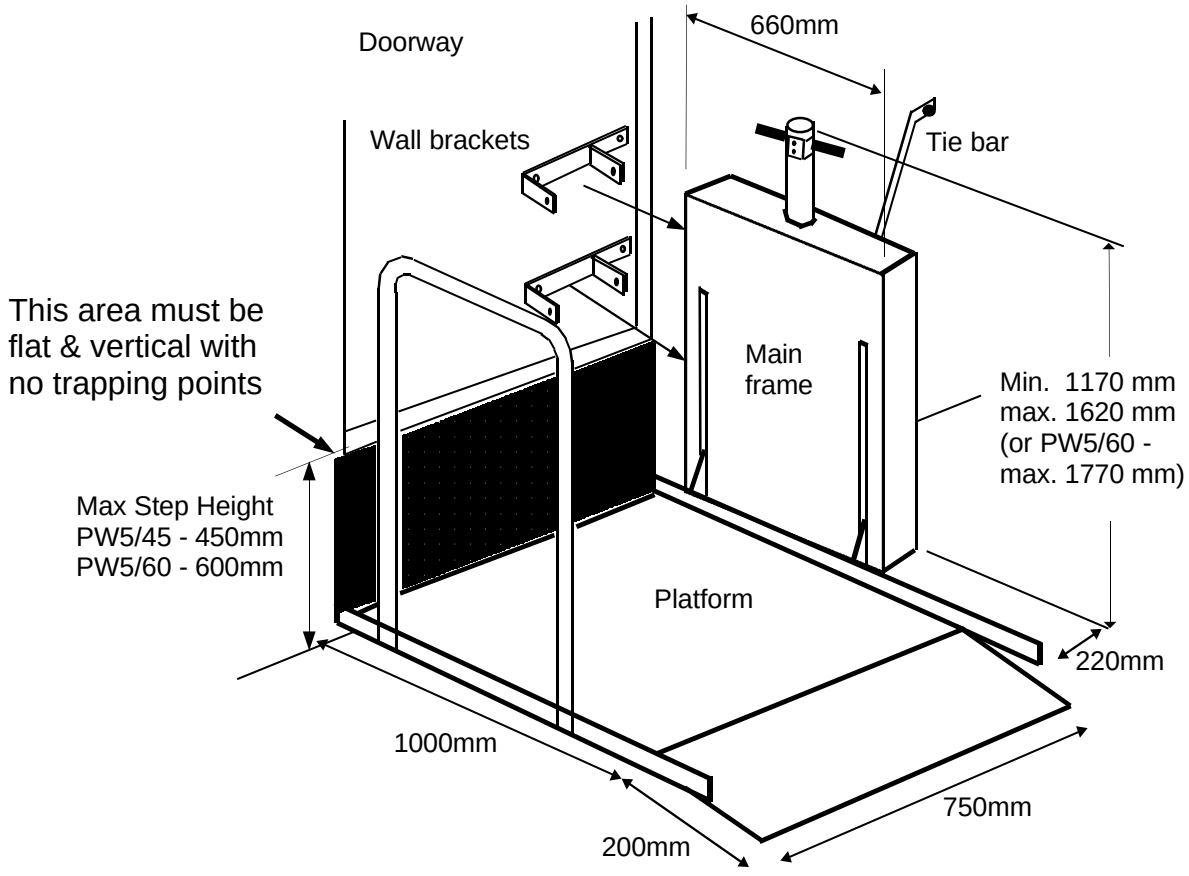
One year warranty

DESIGN

In the interest of product improvement changes to design, specification or materials may be undertaken without notice.

LAYOUTS & DIMENSIONS

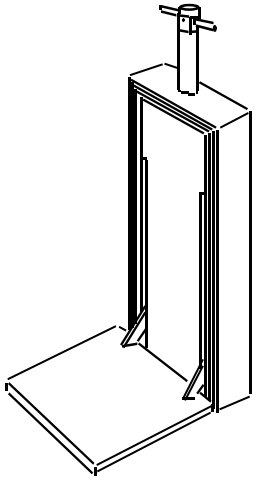
The main frame can be fitted either to the left or right of the doorway. Optional hinged wall brackets are available allowing the lift to be folded away, with the platform hinged up against the lift body the assembly can the be pivoted to lie against the wall. Max distance from wall when folded 270mm.(10½")



UNWIN SAFETY SYSTEMS

PS5 STAND-ON LIFT

INSTALLATION INSTRUCTIONS



NOTE: These lifts are for light duty only and should not be used for public use. The maximum platform load is 125 Kg (280 lb / 20 stones) i.e. One person standing.

Description of PW5 lift

1.1. The lift consists of one main assemblies which is the Main Frame and Folding Platform.

1.2. The construction of the Main Frame is of aluminium extruded sections which are anodised where they are visible, except for the front and rear covers which have a grained finish plastic laminated to them.

1.3. The main frame also provides the rails on which the load of the platform is taken. Pre-lubricated ball bearing rollers are used and these should give many years of service without the need for oiling.

1.4. The Main Frame encloses the operating mechanism and provides support for the Platform. Lifting is done by a proprietary electrically driven screw actuator which is a sealed unit and requires no maintenance.

The actuator is rated to lift at a 10% duty cycle (i.e. no more than 6 minutes in one hour). It operates on a 12 Volt d.c. supply and is controlled by push buttons on the handle unit which operate two relays close to the motor. Sensitive edges are provided on the platform which will prevent the motor from lowering it if there is an obstruction below the free edges of the platform.

1.5. There are two limit switches inside the housing which are preset at the travel limits of the platform on assembly. The top switch operating point must be reset during fitting to the required height except for trailer and motor caravans where it is left at maximum(see instructions for this).

1.6. A manual winding system is built into the lift. This is operated by removing the plastic cap at the top of the handle tube and pulling out the winding spanner. This is refitted with the swivelling handle outside the tube and turned anti-clockwise to raise the platform, clockwise to lower.
WARNING The spanner must be replaced with the swivelling handle engaged in its storage hole to lock the mechanism before using the lift under power. A diagram for operation is inside the top cap.

1.7. The Platform consists of a powder coated steel frame supporting an aluminium treadplate.

1.8. The main frame is supplied in two height of lift versions, the PS5/45 which will reach a platform height of 450 mm (18”) and the PS5/60 which will reach 600 mm (24”). Two platforms are available which have lengths of 350mm or 500mm. The smaller is mainly used on trailer and motor caravans as the door width is usually only 500mm (20”). The larger is always fitted to domestic lifts unless requested otherwise.

1.9. A mains transformer is supplied for domestic use which must be fitted indoors (and supplied directly by a dedicated mains fuse). When operated by a 12 Volt battery on a caravan, motor home etc. the lift is supplied directly via a 25 Amp fuse. An optional switch box with an extendable cable is available, as is an isolating switch. Caravans are usually fitted with a sensing switch bar below the door to prevent feet becoming trapped as the lift rises.

UNWIN SAFETY SYSTEMS

INSTRUCTIONS FOR FITTING POWERSTEP STAND-ON LIFTS

Introduction

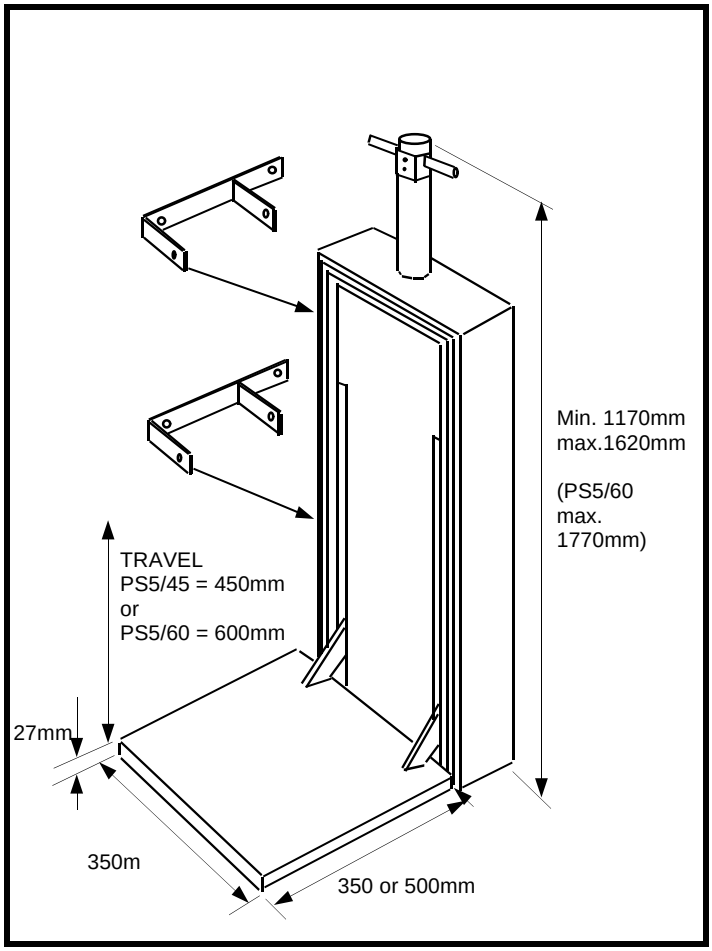
2.1 It is important to fit the lift rigidly with regard to the place of use and other restrictions. **The ideal arrangement is to support the main frame with two brackets at one side by attaching it to a substantial surface with suitable fixings.** Caravan fixings are detailed on a separate sheet.

2.2 The sides of the frame surrounding the mechanism have slots on front and rear faces to enable M8 threaded slot nuts to be slid in from the bottom and used to secure the fixing brackets. The lift has a pivoted glass fibre foot which must rest on a solid surface. One or two additional feet can be fitted to the bottom of the slots to provide extra stability by screwing to the floor / ground if required.

2.3 The suggested method of fitting a PS5 lift is shown below. If this is not possible consult Unwin Safety Systems for further advice or alternative fittings.Optional adjustable wall brackets and hinged brackets are available, see details in this handbook. When used with a caravan on unsurfaced ground a piece of sealed plywood should be used to prevent sinking.

2.4 The lift can be fitted with the mechanism at either side of the platform.

2.5 Tools and fixings required:-
13mm open end spanner, 5mm allen key, No 2 Pozidriv screwdriver, 4 Rawlbolts or sleeve anchors M8 X approx 100mm for wall brackets, 4 M5 X 40 (No 10 X 1½") woodscrews and wallplugs to suit for feet, 4 No 6 X 1" screws and plugs for power supply unit. An electric hammer drill and masonry bits to suit above fixings.



Site survey, preparation and fixing

3.1 Powerstep lifts are not available at present with bridging steps and it may be neccessary to remove any existing steps or provide a platform at the higher level.

3.2 The lower ground surface should be flat and level, either a concrete or wooden floor or pathway. Secure concrete paving slabs are also acceptable though often difficult to drill for plugged screw fixings.

3.3 The wall to which the lift main frame is fixed should be of solid construction, preferably brick or concrete. However a substantial wooden framed wall could be suitable following expert advice.

3.4 The face below the upper floor level against which the lift will rise must be smooth and vertical without any ledge at the top so that feet or other parts cannot become trapped as the the platform rises.

3.5 Position the lift where it will be used and check that it will not catch on anything when the platform rises. It can be raised and lowered using the manual wind lever under the top cap or by connecting it to a 12 Volt dc power source, such as a car battery or its own transformer unit if supplied.

3.6 When satisfied with the position, mark the fixing hole positions and using either M8 bolts, M8 wall fixings (i.e. Rawlbolts, sleeve anchors or chemical fixings) or equivalent strength fixings, fix the wall bracket/s as far apart as possible (min 400mm) or use one bracket near the top and fix both feet to the ground.

3.7 Fit the wall brackets to the lift using the screws supplied and the sliding nuts in the slots of the main frame surround. These nuts are retained by small springs which can easily dissappear if the nuts are removed. For fixed installations this does not matter but catch them if you can!

3.8 The plastic or metal ground fixing plates, if used, should be screwed to the ground with 5mm woodscrews and plastic wall plugs (i.e. Rawlplugs).

3.9 Make sure that all the fixings are rigid when weight is on the lift and will remain secure through the life of the lift. If there is any doubt it is possible to drill the mounting brackets for additional wall fixings. Old walls may cause problems and may need extra long anchors or reinforcement. If there is any doubt about the safety of the installation take expert advice.

3.10 See the test requirements to verify the stability of the installed lift.

Setting up

4.3 To adjust the top limit switching point remove the front cover screws and the panel. Locate the vertical switch rod (the right hand white rod) and slacken the screw of the upper clamp. Slide to the required position, tighten it and test the operation before replacing the front cover.

WARNING Beware of trapping fingers etc when the cover is removed.

4.4 The lower switch should not require adjustment. If necessary the switch can be adjusted in the same way as the top one.

4.5 **WARNING** As mentioned in the operating instructions the manual winding handle locks its shaft when not in use. When it is being used the electric lift buttons should not be operated as it is possible that the handle could rotate quickly and cause injury.

Commissioning

4.6 Unwin Safety Systems carries out a test on the lift before dispatch when mounted on their test fixture. This allows them to issue a Declaration of Incorporation in order to comply with the Machinery Directive.
After final fixing at the user's site the lift must be inspected and tested and a Certificate of Installation completed. When this is done a Declaration of Conformity must be issued to the purchaser that the lift complies with the Essential Requirements for safety.
A blank certificate form and the Declaration of Conformity form are included for completion by the installer.
The lift must be tested in situ with a static load of 1.25 times the rated load, to prove the integrity of the fixings to the building or caravan.

WHEELCHAIR LIFT
Assembly of lift platform arms after unpacking

The platform arms and feet are normally removed for transport and require to be refitted before the lift can be mounted on its wall brackets or other fixings.

1. Remove the front cover by unscrewing the 12 M4 screws retaining it. (Use Pozidriv No 2)

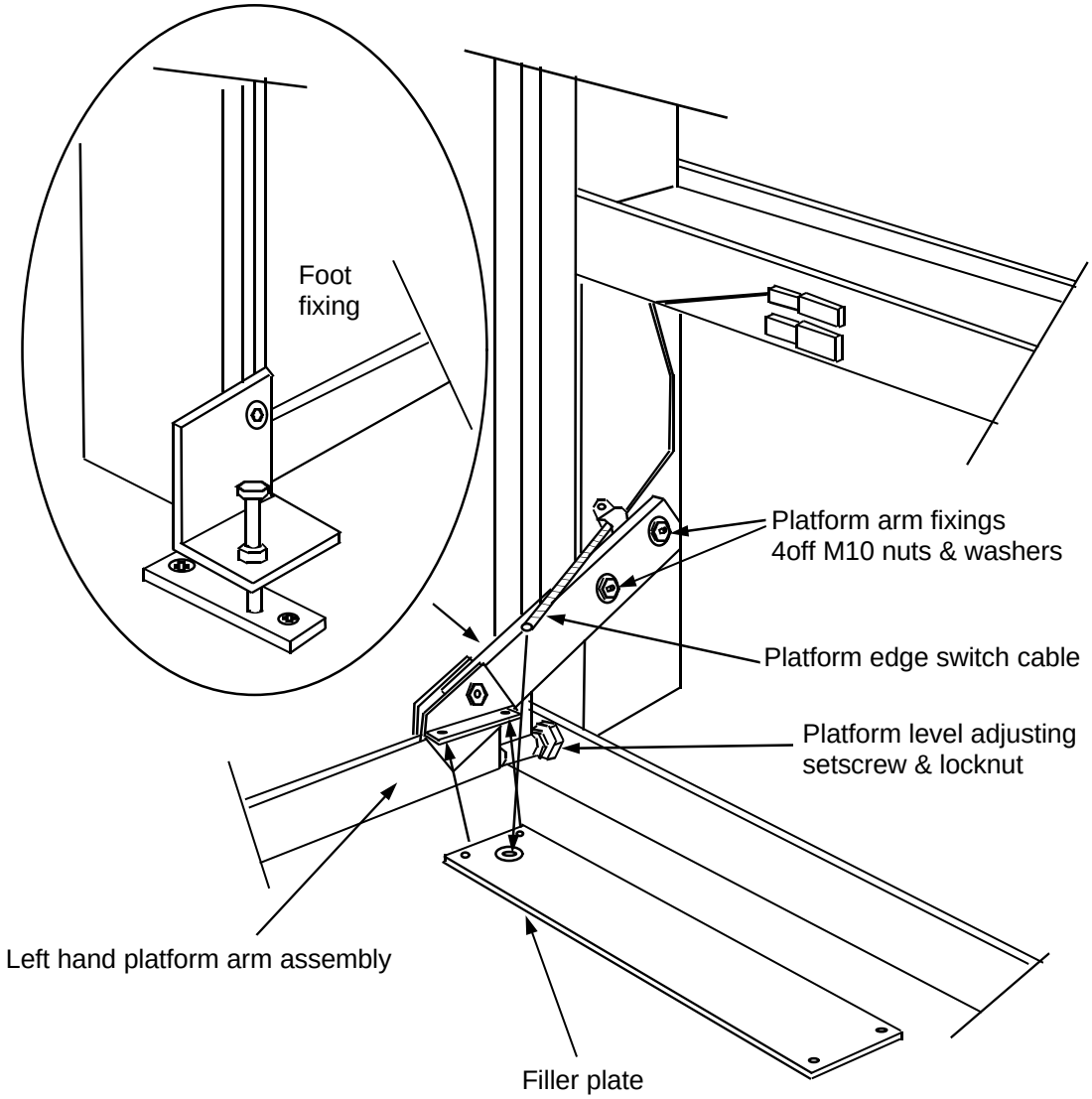
2. Locate the two hinged platform arms as shown below (left hand shown). Fit the arm assembly over the captive bolts and fix with the M10 nuts and plain washers. Tighten using a 17mm spanner to a torque of 22Nm (16 lb ft).

3. Fix the filler plate above the platform arm brackets using the M5 screws, nuts and washers provided.

4. Feed the platform edge switch cable through the grommet in the filler plate and secure with the cable clip next to the grommet. (The clip at the centre of the plate is only required to retain the cable when being moved about, not when the platform is fitted.)

5. Slide any of the slot nuts required for wall fixing into the front slots and then the foot assembly into the bottom of the front slots. Tighten the two screws (M5 Allen key) with the lower edge of the foot bracket about 5mm from the bottom of the side member.

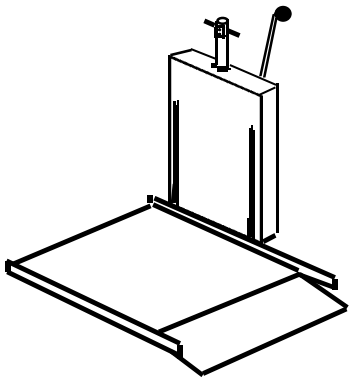
6. The front cover may be refitted, or left until the the limit switch adjustments have been set when the lift has been installed (do not lose the screws if this is done).



UNWIN SAFETY SYSTEMS

PW5 WHEELCHAIR LIFT

INSTALLATION INSTRUCTIONS



NOTE: These lifts are for light duty only and should not be used for public use. The maximum platform load is 160 Kg (350 lb / 25 stones) i.e. One person with manual wheelchair *or* one person standing.

Description of PW5 lift

1.1. The lift consists of two main assemblies which are the Main Frame and Platform. These parts are separable for transport.

1.2. The construction of the Main Frame is of aluminium extruded sections which are anodised where they are visible, except for the front and rear covers which have a grained finish plastic laminated to them.

1.3. The main frame also provides the rails on which the load of the platform is taken. Pre-lubricated ball bearing rollers are used and these should give many years of service without the need for oiling.

1.4. The Main Frame encloses the operating mechanism and provides support for the Platform. Lifting is done by a proprietary electrically driven screw actuator which is a sealed unit and requires no maintenance.

The actuator is rated to lift at a 10% duty cycle (i.e. no more than 6 minutes in one hour). It operates on a 12 Volt d.c. supply and is controlled by push buttons on the handle unit which operate two relays close to the motor. Sensitive edges are provided on the platform which will prevent the motor from lowering it if there is an obstruction below the free edges of the platform.

1.5. There are two limit switches inside the housing which are preset at the travel limits of the platform on assembly. The top switch operating point must be reset during fitting to the required height (see instructions for this).

1.6. A manual winding system is built into the lift. This is operated by removing the plastic cap at the top of the handle tube and pulling out the winding spanner. This is refitted with the swivelling handle outside the tube and turned anti-clockwise to raise the platform, clockwise to lower.
WARNING The spanner must be replaced with the swivelling handle engaged in its storage hole to lock the mechanism before using the lift under power. A diagram for operation is inside the top cap.

1.7. The Platform consists of a powder coated steel frame supporting an aluminium treadplate. There is a tipping ramp at one end which reduces the possibility of a wheelchair rolling off when the platform is raised. The arms on which the platform fits are adjustable to enable it to be levelled after installation.

1.8. The main frame is supplied in two height of lift versions, the PW5/45 which will reach a platform height of 450 mm (18”) and the PW5/60 which will reach 600 mm (24”). The platforms for each are identical. We recommend that the platform is fitted with at least one handrail, especially when it travels higher than 300 mm (12”) or the user is standing.

1.9. A mains transformer is supplied for domestic use which must be fitted indoors (and supplied directly by a dedicated mains fuse). When operated by a 12 Volt battery on a caravan, motor home etc. the lift is supplied directly via a 25 Amp fuse. An optional switch box with an extendable cable is available, as is an isolating switch.

UNWIN SAFETY SYSTEMS

INSTRUCTIONS FOR FITTING POWERSTEP WHEELCHAIR LIFTS

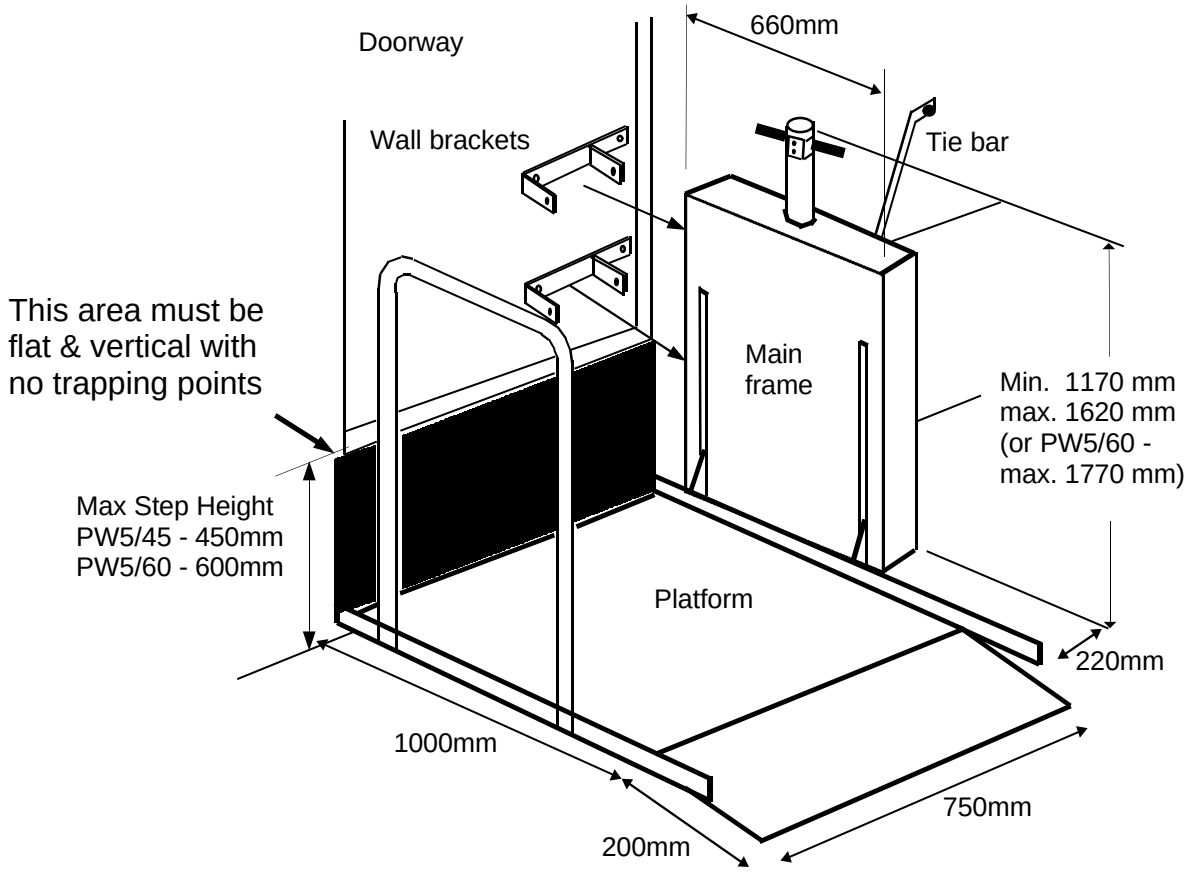
Introduction

2.1 It is important to fit the lift rigidly with regard to the place of use and other restrictions. **The ideal arrangement is to support the main frame at its four corners by attaching it to substantial surfaces with suitable brackets and fixings.**

2.2 The sides of the frame surrounding the mechanism have slots on front and rear faces to enable M8 single threaded slot nuts to be slid in from the bottom and used to secure the fixing brackets and tie rod. The feet are also fitted in the bottom of the slots with similar double threaded nuts.

2.3 The suggested method of fitting a PW5 lift is shown below. If this is not possible consult Unwin Safety Systems for further advice or alternative fittings. The lift is supplied with two feet that can be screwed to the floor or concrete pathway. When used with a caravan on unsurfaced ground a thin piece of sealed plywood should be used to prevent sinking.

2.4 The lift mechanism can be fitted at either side of the platform.



Site survey, preparation and fixing

3.1 Powerstep wheelchair lifts are not available at present with bridging steps and it may be neccessary to remove any existing steps or provide a platform at the higher level.

3.2 The lower ground surface should be flat and level, either a concrete or wooden floor or pathway. Secure concrete paving slabs are also acceptable though often difficult to drill for plugged screw fixings.

3.3 The wall to which the lift main frame and the tie rod are fixed should be of solid construction, preferably brick or concrete. However a substantial wooden framed wall could be suitable following expert advice.

3.4 The face below the upper floor level against which the lift will rise must be smooth and vertical without any ledge at the top so that feet or other parts cannot become trapped as the the platform rises.

3.5 To assemble the lift, position the main frame at the side of the doorway where it will be used. The platform can be fitted either way round, but it may be neccessary to alter the position of the sensitive switch bar from under one side to the other,so that it is on the side opposite the main frame. To do this unplug the switch wire and then squeeze the aluminium bar so that one end can be slipped off its pivot peg. Replace the bar on the pegs at the other side and plug into the socket at that side. Check that the sensing switch still works (it can be heard clicking).

3.6 Fit the platform frame tubes over the main frame arms so that it is fully engaged (this is easier if the arms are pointing upwards at about 20° to vertical). Plug the safety switch wire from the main frame into the free socket on the platform frame.

3.7 Position the lift where it will be used and check that it will not catch on anything when the platform rises. It can be raised and lowered using the manual wind lever under the top cap or by connecting it to a 12 Volt dc power source, such as a car battery or its own transformer unit if supplied.

3.8 When satisfied with the position, mark the fixing hole positions and using either M8 bolts, M8 wall fixings (i.e. Rawlbolts, sleeve anchors or chemical fixings) or equivalent strength fixings, fix the wall bracket/s as far apart as possible (min 400mm) or use one bracket near the top and fix both feet to the ground.

3.9 The tie bar must be fixed at least 600mm from the back of the lift body using a similar rigid fixture to the wall. The bar length is adjustable in 50mm increments by a bolt through it and finely adjusted by the screwed end fitting.

3.10 The wall brackets and tie bar are fixed to the lift using the screws supplied and the sliding nuts in the slots of the main frame surround. These nuts are retained by small springs which can easily dissappear if the nuts are removed. For fixed installations this does not matter but catch them if you can!

3.11 The plastic or metal ground fixing plates, if used, should be screwed to the ground with 5mm woodscrews and plastic wall plugs (i.e. Rawlplugs).

3.12 Make sure that all the fixings are rigid when weight is on the lift and will remain secure through the life of the lift. If there is any doubt it is possible to drill the mounting brackets for additional wall fixings. Old walls may cause problems and may need extra long anchors or reinforcement. If there is any doubt about the safety of the installation take expert advice.

3.13 See the test requirements to verify the stability of the installed lift.

Setting up

4.3 To adjust the top limit switching point remove the front cover screws and the panel. Locate the vertical switch rod (the right hand white rod) and slacken the screw of the upper clamp. Slide to the required position, tighten it and test the operation before replacing the front cover.

WARNING Beware of trapping fingers etc when the cover is removed.

4.4 The lower switch should not require adjustment, as the feet can be adjusted to alter the ground clearance of the platform when fully lowered. If necessary the switch can be adjusted in the same way as the top one.

4.5 **WARNING** As mentioned in the Handbook the manual winding handle locks its shaft when not in use. When it is being used the electric lift buttons should not be operated as it is possible that the handle could rotate quickly and cause injury.

4.6 The platform may require levelling using the two adjusting bolts below the piviting arms on which it fits. When this has been done tighten the lock nuts to retain the adjusting bolts.

Commissioning

4.6 Unwin Safety Systems carries out a test on the lift before dispatch when mounted on their test fixture. This allows them to issue a Declaration of Incorporation in order to comply with the Machinery Directive.
After final fixing at the user's site the lift must be inspected and tested and a Certificate of Installation completed. When this is done a Declaration of Conformity must be issued to the purchaser that the lift complies with the Essential Requirements for safety.
A blank certificate form and the Declaration of Conformity form are included for completion by the installer.
The lift must be tested in situ with a static load of 1.25 times the rated load, to prove the integrity of the fixings to the building or caravan.

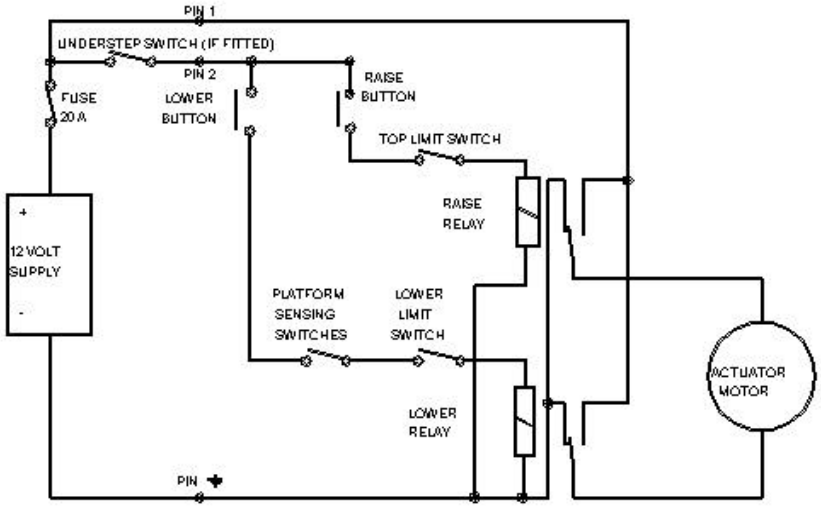
Electrical supply, Stand-on and Wheelchair lifts

4.1 When the mains transformer is used, site this unit indoors close to the lift and wire direct to a dedicated fuse at the supply. The cable from the lift is routed to the transformer and plugged into it. A fuse of 5 Amp rating should be fitted in the fuse box.
The transformer unit has a 3.15A slow blow fuse in the mains input and a thermal circuit breaker in the 12Volt output. The neon lamp on the transformer will glow when mains power is on.

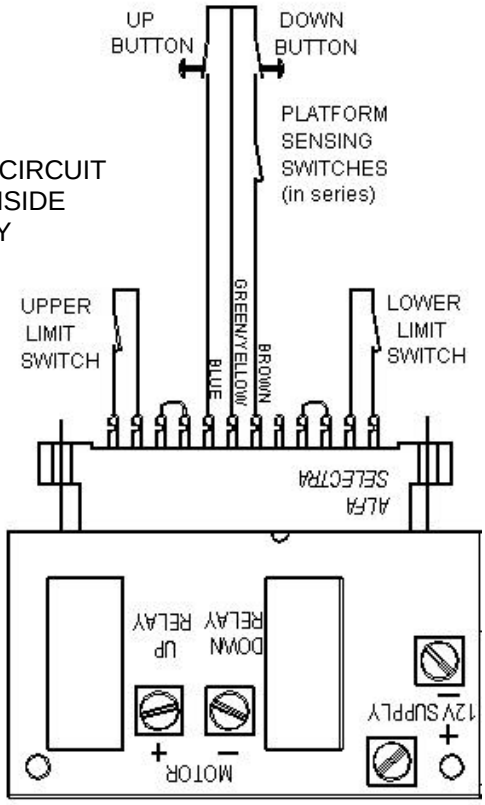
4.2 Where a 12 Volt supply is already available such as in caravans the lift can be powered from that via a 25Amp automotive fuse and an isolating switch (which must be capabale of carrying 20 Amps.

CIRCUIT DIAGRAM AND LAYOUT

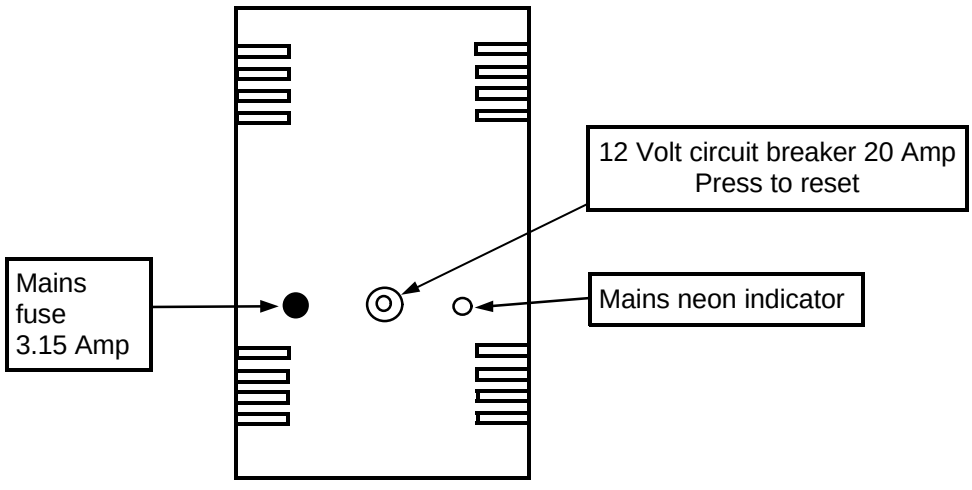
CONTROL WIRING CONVENTIONS:
COMMON: GREEN/YELLOW
BLACK + YELLOW
RAISE: BLUE
LOWER: BROWN
RED



PRINTED CIRCUIT BOARD INSIDE LIFT BODY



MAINS TRANSFORMER UNIT



MAINTENANCE

5.1 The lift requires little maintenance as the lifting actuator is a proprietary sealed and pre lubricated unit. The rollers incorporate shielded ball bearings which are pre lubricated and there are some Nylon rubbing buttons which are lubricated with a PTFE based oil on assembly to prevent squeaking.

5.2 The electrical circuit uses sealed relays, platform microswitches and push buttons. External connectors are either sealed or filled with silicone grease to reduce corrosion of terminals and exposed solder joints are sprayed with a protecting lacquer or covered by heat shrunk sleeving.

5.3 The external surfaces of the lift should be cleaned with a non abrasive household cleaner and debris should be removed from around the lift.

5.4 The Machinery Directive which applies to this lift and the recognised British Standards for lifts recommend that the lift must be inspected every 6 months for safety, stability and correct operation by a technically competent person. A record must be kept of these inspections and any work undertaken or needed. A form for this is included in the owners handbook.

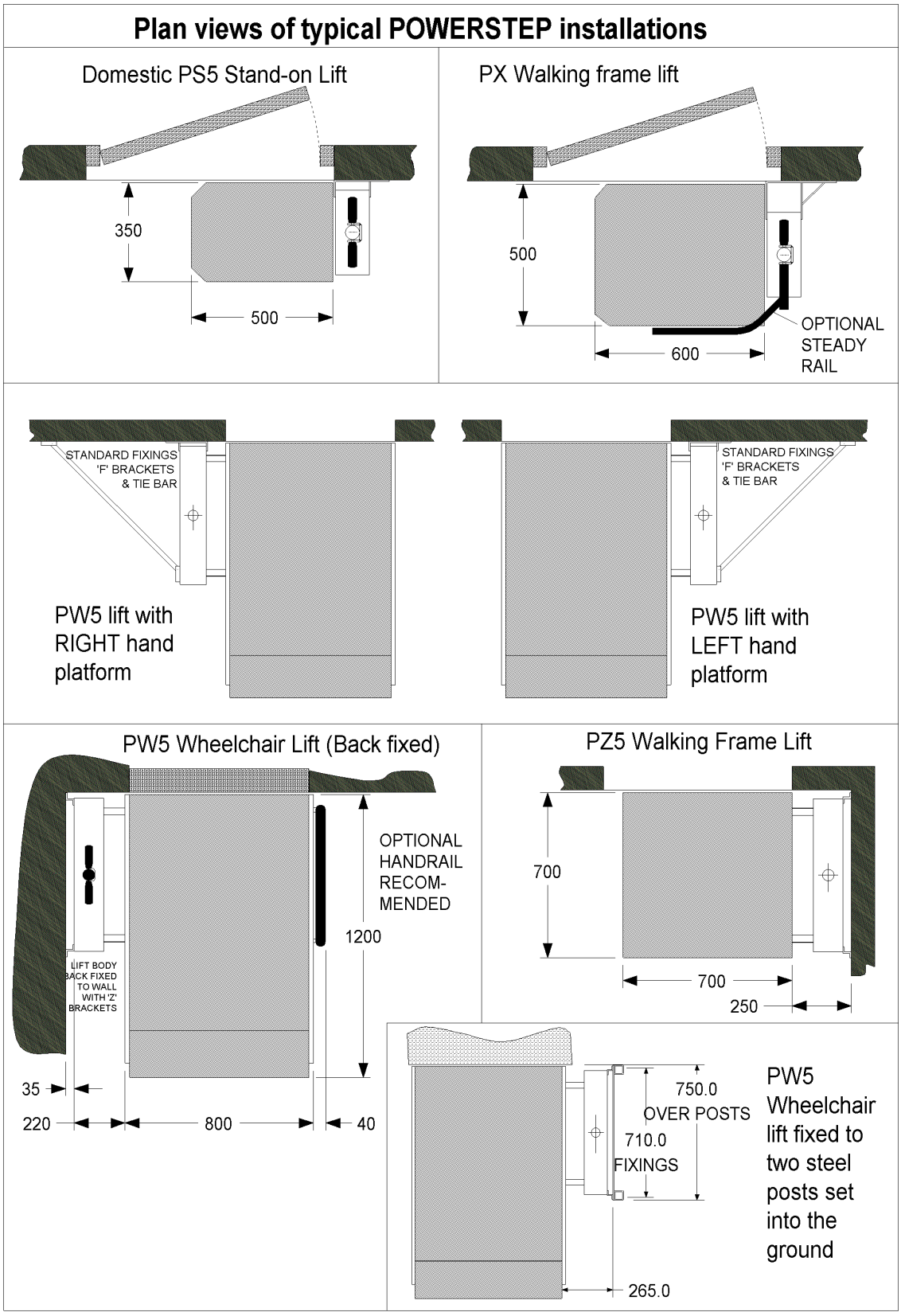
5.5 The main items to check are:-

1. Security of the fixing of the main frame to the wall and floor
2. The mounting surfaces are not cracked or subject to subsidence.
3. Operation of the upper and lower limit switches
4. Operation of the sensitive edge and its switches.
5. Ensure that all hazard, warning and information displays are intact and legible.
6. Check that the wiring and controls are in good working order.
7. The mains transformer unit (when fitted) should be checked for safety and adequate ventilation.
8. All covers and other fixings are secure.
9. The manual raising and lowering mechanism is complete and serviceable.
10. The lift surroundings are clear of obstructions that could prevent its safe operation.
11. The anti-roll-off mechanism works properly.
12. The lift operates when loaded through its full range without restriction, noise or vibration.

TYPICAL POWERSTEP ARRANGEMEMTS AND FIXINGS

The various models of Powerstep can be used in a variety of domestic situations depending on the building and access requirements.

Some typical installations are shown in plan view below, but if these are not suitable for a particular situation contact Unwin Safety Systems who may be able to suggest alternatives or provide modified components to suit.



STANDARD AND OPTIONAL WALL FIXING

Stand-on lifts require fixing by two brackets widely spaced ‘F’,’U’ or’S’ brackets on one side rail or by 2 or 4 ‘Z’ fixed to the rear of both rails.

Wheelchair and PZ5 lifts require fixing as near as possible to the four corners of the enclosure. Normally two brackets are fixed to an adjacent wall and two feet are resting or fixed to the ground.

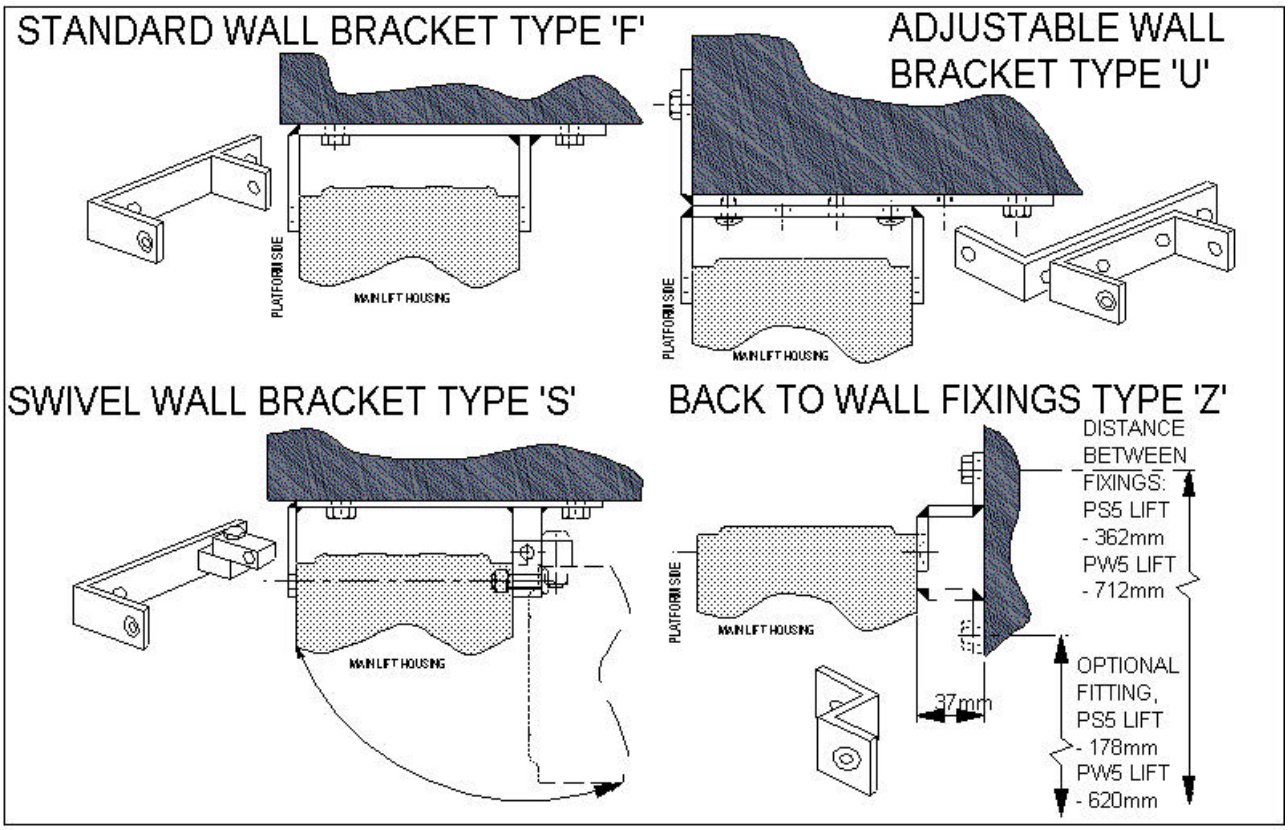
There are four types of bracket available for fixed or hinging lifts, as well as the caravan type of fixings. Wheelchair lifts usually require a telescopically adjustable tie bar between the outer top corner and the wall, and this is supplied as standard if no other brackets are specified. See also the following pages for tie bars and feet.

Type ‘F’ is the standard wall bracket. A pair of these and a tie bar are supplied if no other arrangement is specified.

Type ‘U’ an adjustable set of parts allowing a variety of fixing positions to be used. When fixing close to the edge of a wall this type of bracket provides for a wall bolt that is ‘round the corner’.

Type ‘S’ is a bracket that allows the lift main frame to be swung through 90° so that the main frame is parallel to the wall to which it is fixed, when folded.

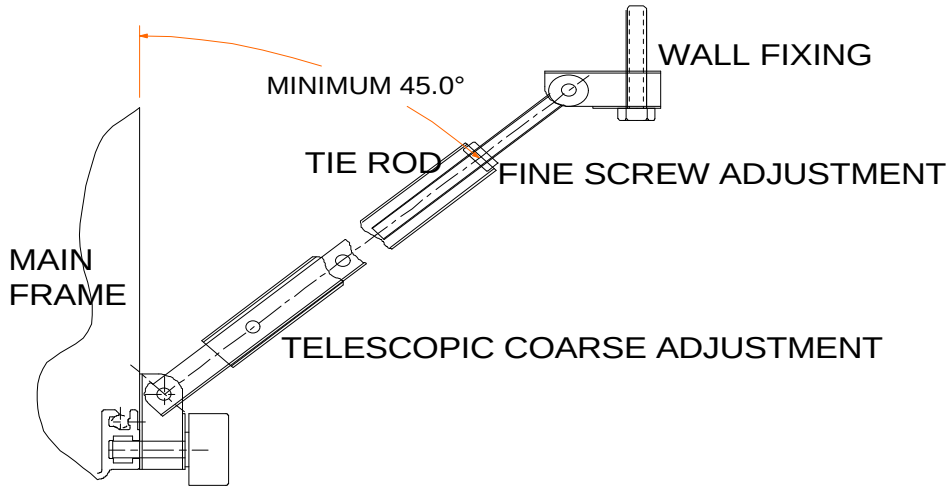
Type ‘Z’ Is a bracket that allows the main frame to be mounted with its back face parallel to a wall, or directly to steel posts set in the ground.



TIE BARS

The wheelchair lift requires fixing at the 4 corners of the main frame to a rigid structure.

In most installations where the lift body is not bolted directly with its back to a wall, a tie rod is supplied and must be used to attach the top corner that is not fixed in any other way. This tie bar is telescopic and screw adjustable for length, so that it can be accurately adjusted to maintain the lift body without twisting.
The angle of the tie rod relative to the lift body should be no less than 45 degrees.



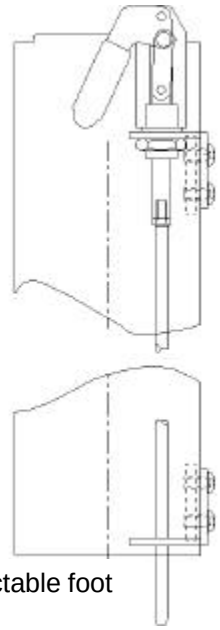
FEET

Wheelchair lifts are fitted as standard with two swivelling height adjustable plastic feet. Optional plates for fixing to the floor / ground (shown on the right) are available.

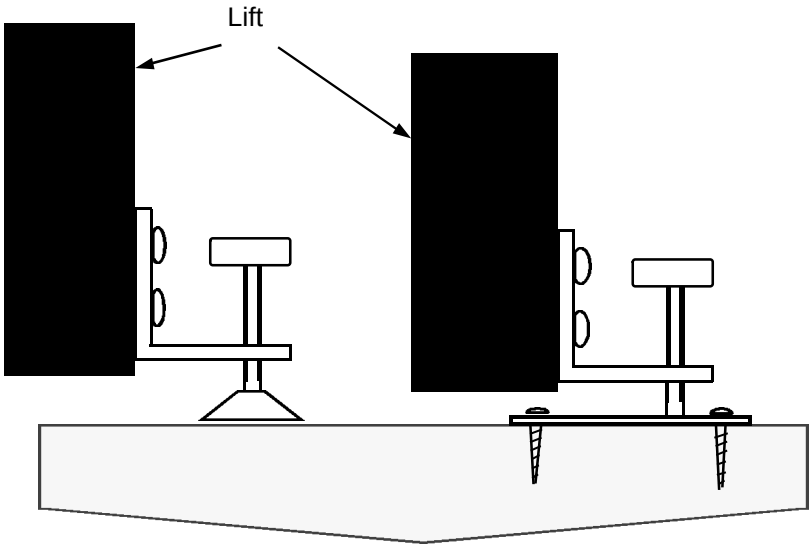
The same feet can be used for stand-on lifts if the normal wall brackets are not sufficient on their own. In emergencies it is possible to drill the plastic feet and screw through them, or remove the plastic foot and seat the ball end exposed in a suitable drilled plate or hole.

Two height adjustments are available on each foot. The screw on which the foot is mounted can be set, and by slackening the two capscrews clamping the foot bracket to the main frame it can be slid up or down relative to the main frame. Make sure the two capscrews are tight before use.

A special retractable outer foot, shown on the left, is fitted when type ‘S’ wall brackets are specified, to allow the lift to be pivoted back to the wall.



Retractable foot



Installation of POWERSTEP PS5/45 and PS5/60 stand-on lifts for caravans.

Light duty only, not reccommended for use in public places. Maximum platform load is 125 Kg (280 lb).

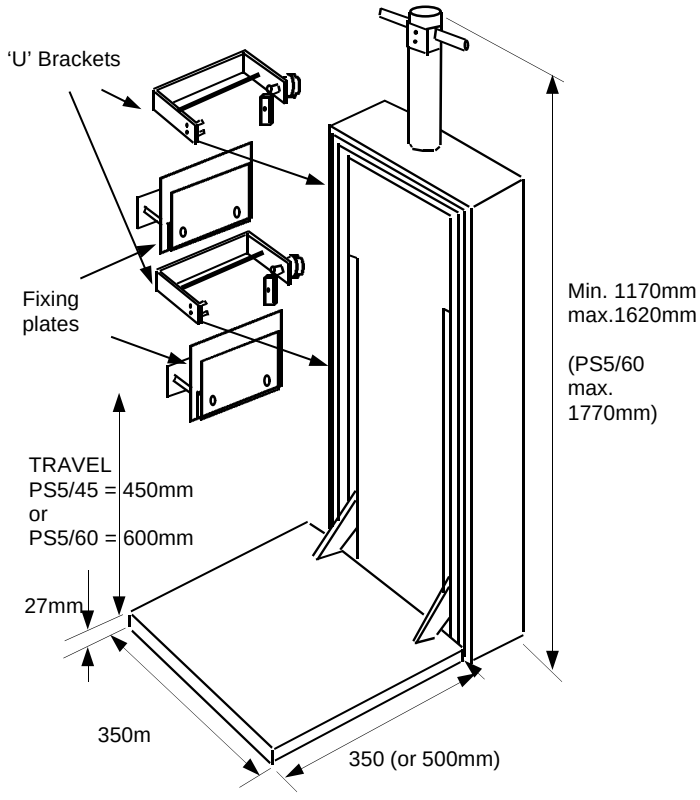
General

The lift is attached to the side of the caravan or motorhome for stability, however the weight of the lift and user is taken on the ground.
The caravan attachments usually supplied are two compact plates that are fitted one above the other close to the caravan door, on the latch side. See the sketch below.
Position the lift where it is to be used ensuring that the platform will not touch anything at any position of its travel. The platform can be raised manually as shown in the instruction book. CHECK CLEARANCES AND FIT BEFORE DRILLING ANY HOLES.

Fitting

Fit the U shaped brackets onto the lift body slots on the side nearest the 'van with the twin pegs in the slot nearest the platform. There are two nuts supplied that fit into the rear slots to which the locking screws are fixed. If these nuts are fitted in the wrong slots they can be changed over by sliding them down to the bottom . There are small friction springs in these nuts which may shoot out when they are removed. They are not vital to the operation if they cannot be refitted.
On trailer caravans, most coachbuilt motorhomes and some van conversion motorhomes the fixing plates are attached by two bolts each, through the walls of the vehicle. If it is certain that there is wood reinforcement in the fixing area it may be possible to use large woodscrews, but any fixings must be secure. The load on the caravan walls is mostly along their length and therefore will not normally cause any problems due to movement.
The fixing plates must be fitted as far apart as possible to spread the load, but must allow the U brackets to be slid over them when fitting the lift.
When suitable positions have been found mark the caravan side and drill M8 holes through (check what is behind first). It may be possible to hide the interior nuts behind cupboards or bed bases.
Secure the plates having smeared them with sealing compound, using the bolts, nuts and spreader plates or large washers provided.
The excess thread of the bolts can be cut off flush with the nuts if they are visible.

A seperate safety switch assembly is supplied for fitting below the door. This is fitted so that the users feet are not trapped if they are over the edge of the platform when the lift is raised. This part must be screwed to the lower edge of the valance in line with the platform. It may be neccessary to fit some wood or brackets on some vans to mount this part.



Installation of POWERSTEP PW5/45 and PW5/60 wheelchair lifts for caravans.

Light duty only, not reccommended for use in public places.
Maximum platform load is 160 Kg (350 lb).

General

The lift is attached to the side of the caravan or motorhome for stability, however the weight of the lift and user is taken on the ground.

The caravan attachments usually supplied are two compact plates that are fitted one above the other close to the caravan door, on the latch side. See the sketch below.

Position the lift where it is to be used ensuring that the platform will not touch anything at any position of its travel, espessially the bottom of the open door. The platform can be raised manually as shown in the instruction book. CHECK CLEARANCES AND FIT BEFORE DRILLING ANY HOLES.

Fitting

Fit the U shaped brackets onto the lift body slots on the side nearest the 'van with the twin pegs in the slot nearest the platform. There are two nuts supplied that fit into the rear slots to which the locking screws are fixed. If these nuts are fitted in the wrong slots they can be changed over by sliding them down to the bottom . There are small friction springs in these nuts which may shoot out when they are removed. They are not vital to the operation if they cannot be refitted.

On trailer caravans, most coachbuilt motorhomes and some van conversion motorhomes the fixing plates are attached by two bolts each, through the walls of the vehicle. If it is certain that there is wood reinforcement in the fixing area it may be possible to use large woodscrews, but any fixings must be secure. The load on the caravan walls is mostly along their length and therefore will not normally cause any problems due to movement.

The fixing plates must be fitted as far apart as possible to spread the load, but must allow the U brackets to be slid over them when fitting the lift.

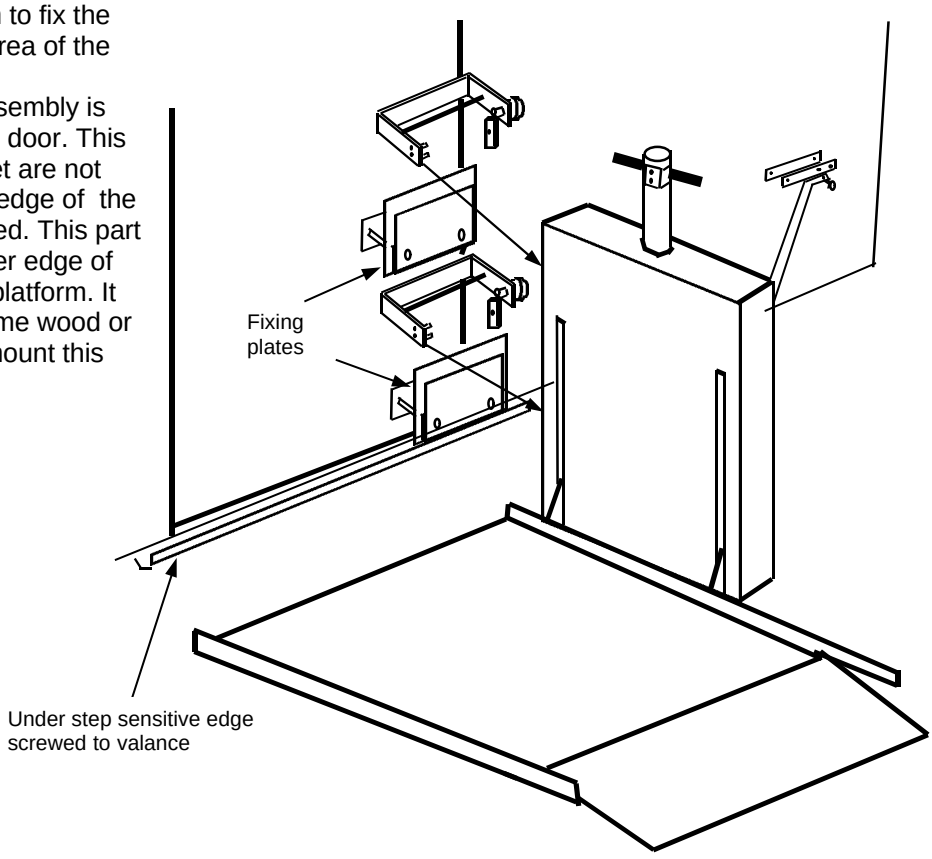
When suitable positions have been found mark the caravan side and drill M8 holes through (check what is behind first). It may be possible to hide the interior nuts behind cupboards or bed bases.

Secure the plates having smeared them with sealing compound, using the bolts, nuts and spreader plates or large washers provided.

The excess thread of the bolts can be cut off flush with the nuts if they are visible.

A suitable position for the tie rod fixing at the same height as the upper main fixing plate must be found atleast 600 mm from it. Aim to fix the plate close to a reinforced area of the body.

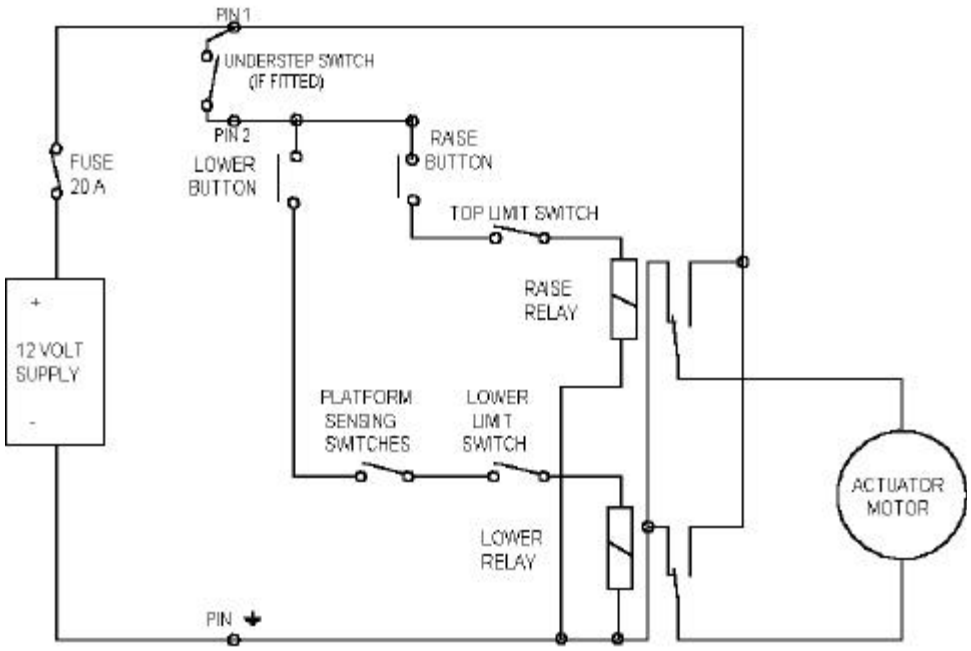
A separate safety switch assembly is supplied for fitting below the door. This is fitted so that the users feet are not trapped if they are over the edge of the platform when the lift is raised. This part must be screwed to the lower edge of the valance in line with the platform. It may be neccessary to fit some wood or brackets on some vans to mount this part.

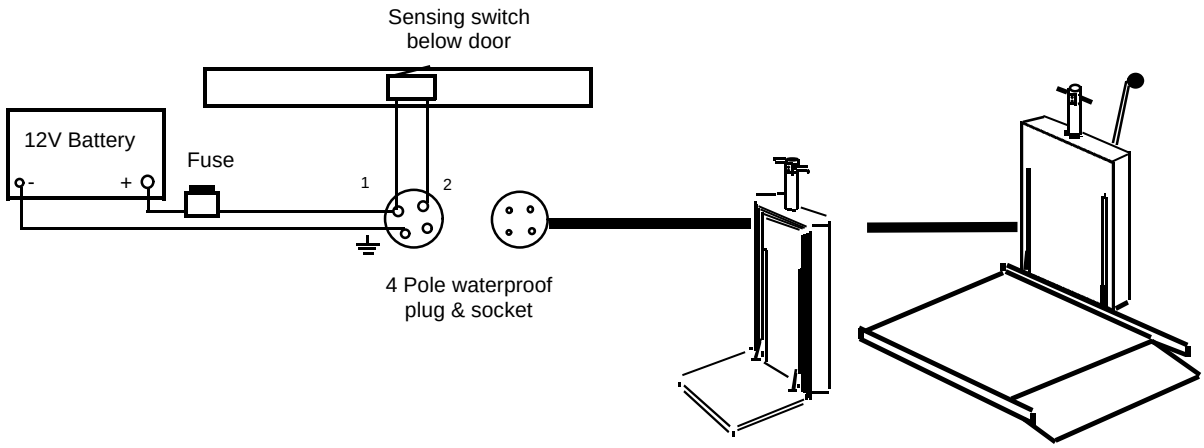


Wiring

The lift is supplied wired to a waterproof plug (when capped or plugged in). A socket wired to the sensing switch below the door and to a length of two core cable is also supplied for fitting to the caravan. The end of this cable must be routed to the caravan battery compartment and connected directly to the battery via a fuse supplied. Do not connect into the caravan wiring for convenience as it may overheat the wires or blow caravan fuses. The wire supplied is 2.5mm² and thinner wire must not be used between the battery and lift as slow lift operation may result.

A schematic and wiring diagram are shown below to aid assembly.





Route the wiring below the caravan or through the cupboards / bed bases to the battery and secure it with nail on clips or plastic ties. There may be room to use existing cable harness clips or tie to the existing cables. Keep away from the fuel and brake pipes on motorhomes and protect it when passing through chassis holes or near to the exhaust system.

On motorhomes either the starting battery or the interior lighting / auxiliary battery can be used. The current consumption on average use is about 12 Amps for 15 - 30 seconds during raising so normal batteries will last for a long time if only the lift is being used.

Fix the waterproof socket close to the lift at the valance with the bracket provided, or through a suitable hole in the body if preferred. The cable has been sealed to the socket to resist water so if any rewiring is done on it seal it again.

Crimp on connectors are provided for the fuse and the battery terminals, use the correct tool to fix these and check that they will not pull off.

CARAVAN OR VEHICLE, FITTING AND REMOVING LIFTS

The two lift types have similar caravan fittings, except that the wheelchair lift has an additional tie bar.

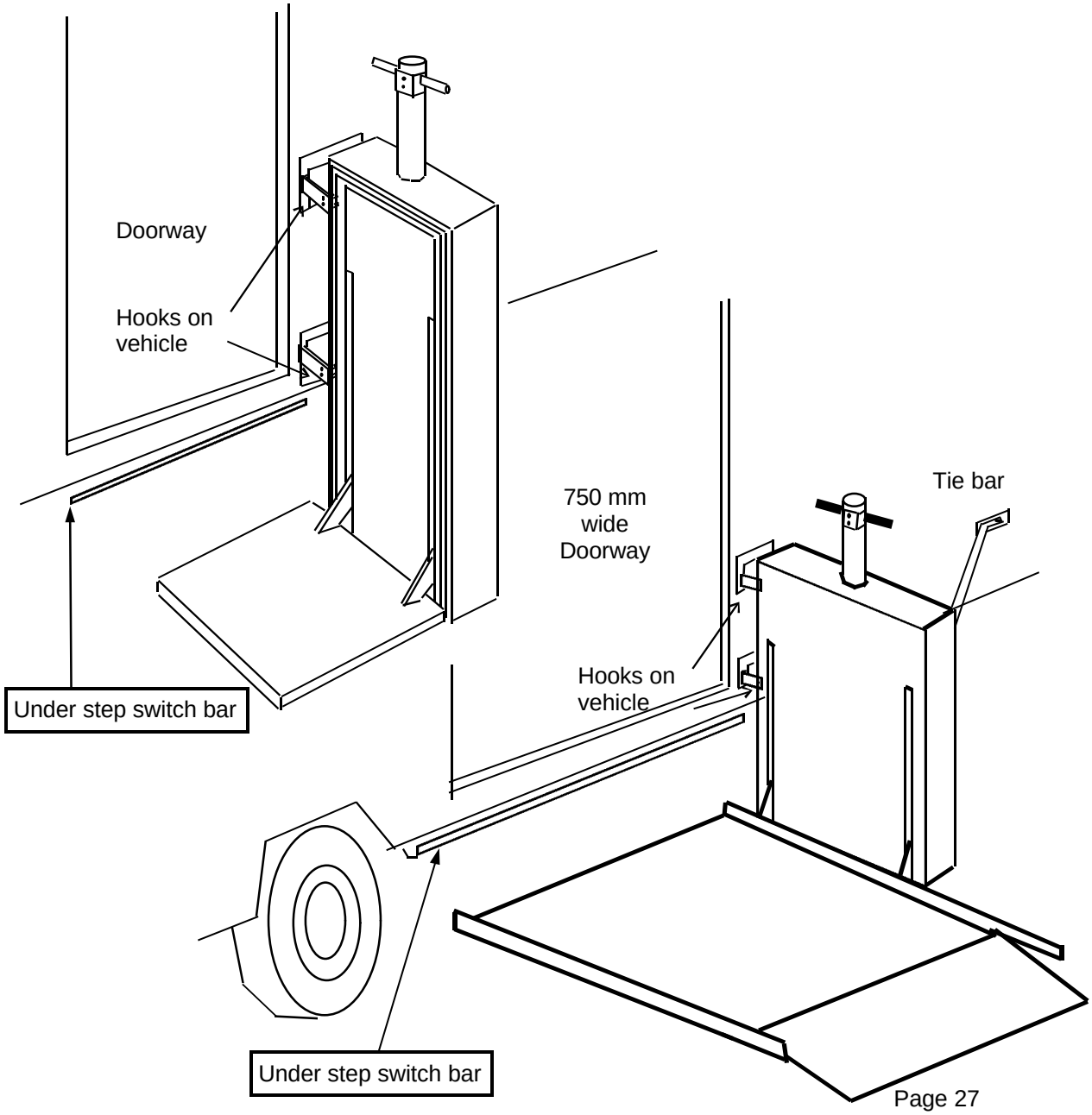
The wheelchair lift also has two main parts, the main frame which contains the lifting mechanism and the platform.

Both lifts:
To assemble the main frame is positioned against the side of the vehicle such that the two U shaped brackets on the lift body are slid down behind the tongues on the side of the vehicle and are locked using the knobs on them.

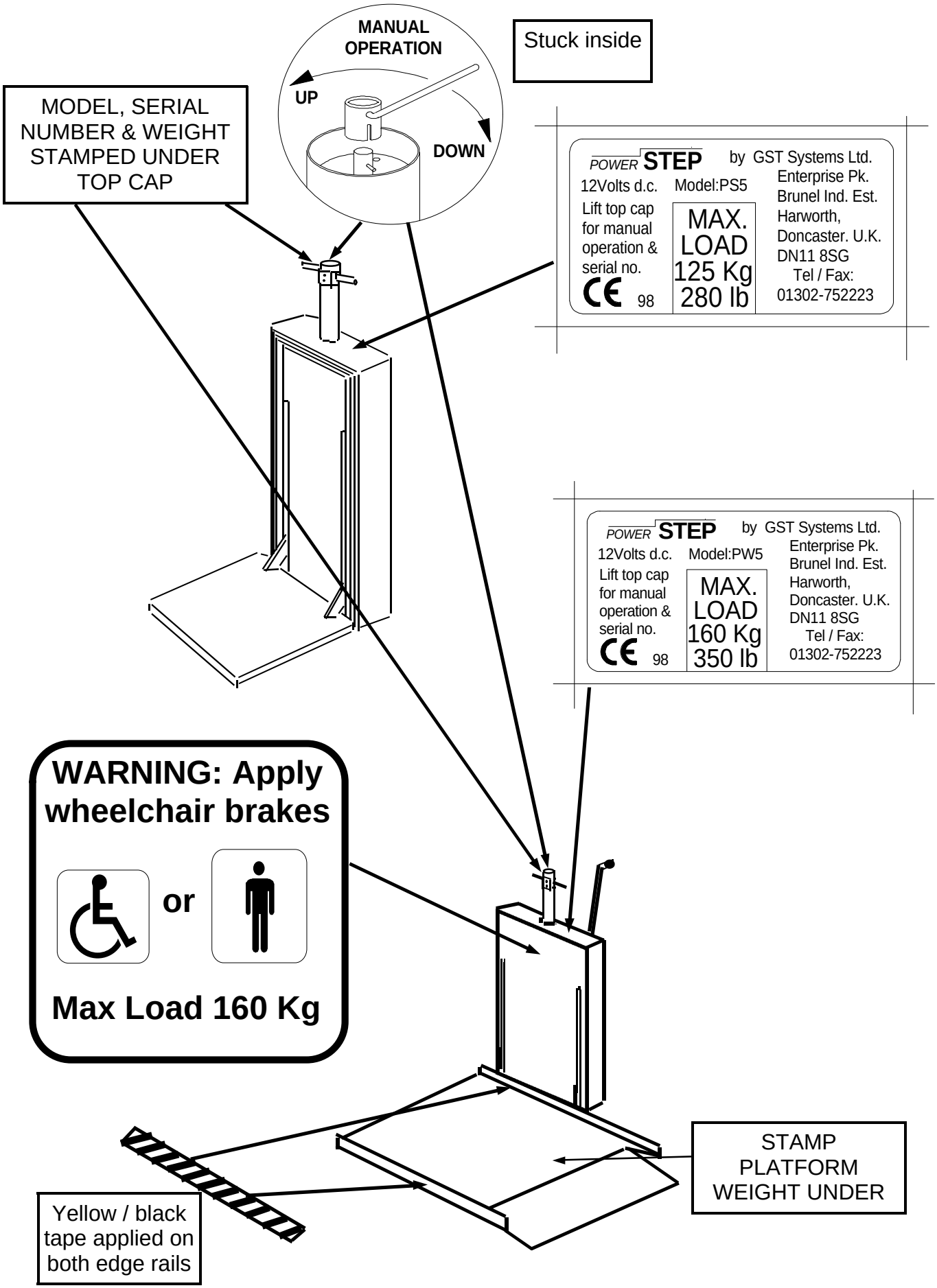
For the wheelchair lift only:
An adjustable tie bar must then be attached between the vehicle side and the outer end of the main frame. Adjust if neccessary the length of the tie bar to make the main frame perpendicular to the vehicle and then adjust the feet on the main frame to share the load evenly.

Attach the platform by sliding the tubes under it over the two arms protruding from the main frame. Connect the edge switch plug between the platform and main frame, then the supply plug to the vehicle.

Removal is the opposite of fitting. Take care not to lose any of the parts required to fit the lift.



POSITIONS FOR FIXING NAMEPLATES AND WARNINGS



MANUAL WINDING MECHANISM

In the event of the lift failing to raise or lower due to an electrical failure, the platform can be raised or lowered manually. Refer to the diagram below.

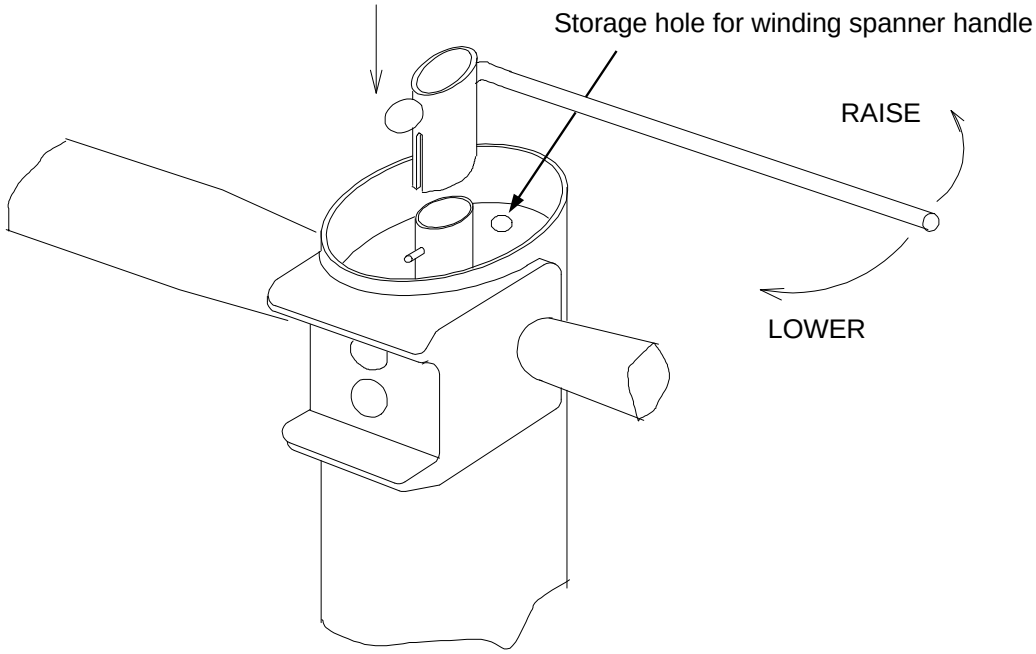
First remove the circular plastic cap above the top handles. Then lift out the special spanner within the top of the handle tube.Refit this spanner onto the inner rod with the handle horizontal. Rotate the spanner anti-clockwise to raise and clockwise to lower.

DO NOT operate the electrical lift and lower buttons when the spanner is fitted for manual operation as it could rotate quickly and cause injury.

Replace the spanner after use with its handle engaged in the hole inside the tube and the operating pin in its slot to prevent the inner rod from turning when the lift is used electrically. Replace the top cap.

If the platform does not rise when electrically powered, espessially when loaded, check that the spanner is fitted correctly as it prevents the internal nut of the jack screw from rotating.

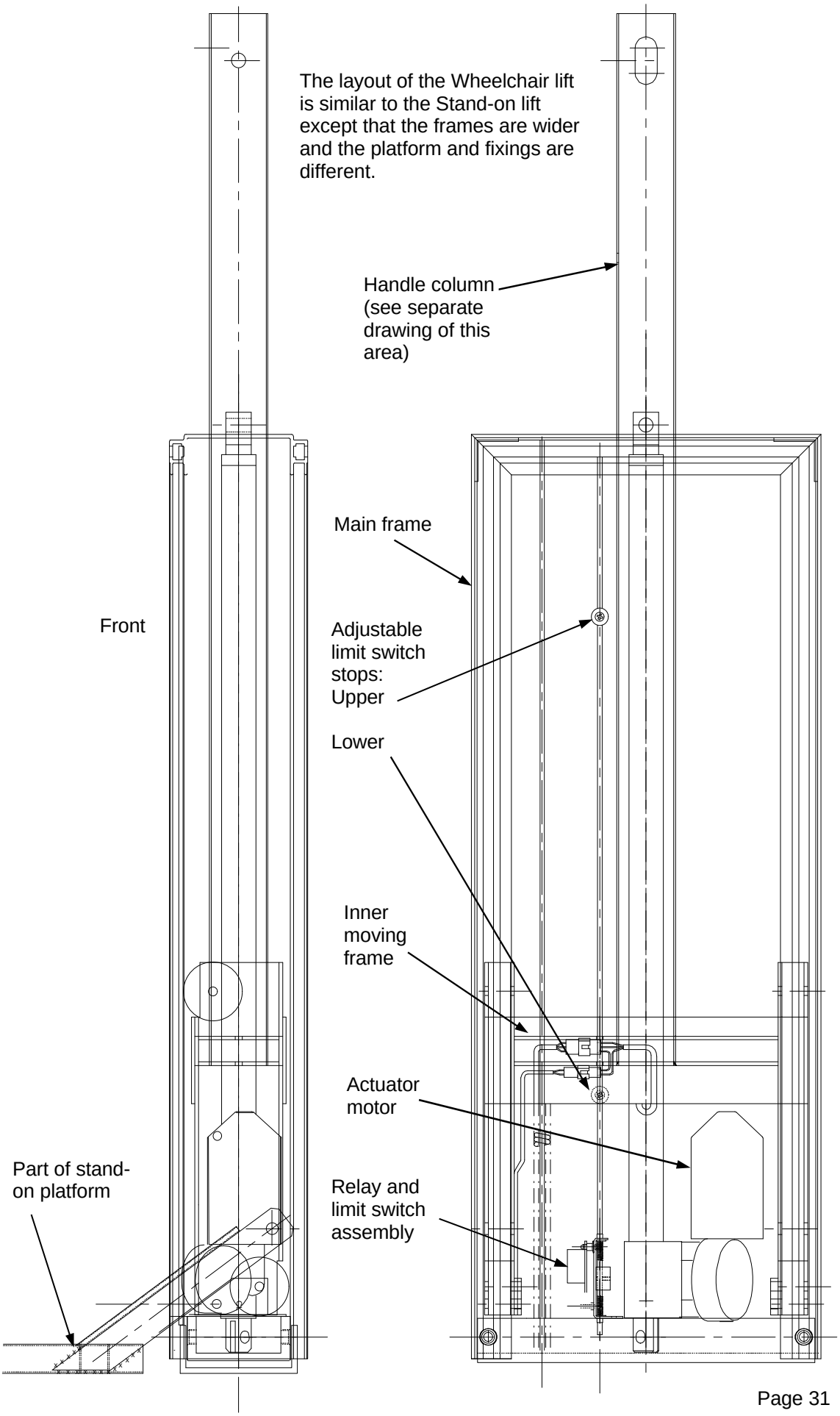
Refitting manual operation spanner to inner rod



TROUBLESHOOTING GUIDE See installation or service pages for relevant information

FAULT	CHECKS	REMEDY
ELECTRICAL PROBLEMS	**MAINS POWERED LIFTS**	
Platform fails to raise or lower	Mains transformer light off	Replace mains fuse/s
Platform fails to raise or lower	Mains OK, 12V cutout tripped	Press to reset
Platform fails to raise or lower	No power unit output	Repair or replace PSU
	BATTERY POWERED LIFTS	
Platform fails to raise or lower	Low battery voltage	Recharge or replace battery
Platform fails to raise or lower	Bad wiring / connections	Clean / repair connectors
Platform fails to raise or lower	Blown supply fuse	Replace fuse
	ALL LIFTS	
Platform fails to raise or lower	Damaged supply - lift wiring	Repair or replace
Platform fails to raise or lower	Internal fault	Check printed circuit connect'n
Platform fails to raise or lower	Damaged PCB	Repair / exchange
Platform fails to raise or lower	Output OK from PCB	Actuator. Repair / exchange
Platform will not lower only	Wiring to platform edge switches	Repair / replace
Platform will not lower only	Edge switches not releasing	Adjust switch / bar clearances
Edge will not stop descent	Switch adjustment	Adjust switch / bar clearances
Platform raises unloaded only	Correct fitting of manual winder	Refit correctly
Motor runs at end of stroke	Limit switch operation	Adjust limit stops
Lift moves short distance only	Limit switch rod sticking	Lubricate sparingly
Intermittent operation	Loose connections	Check all wiring
Slow operation	Low supply voltage	Check PSU or Battery O/P
Slow operation	Is platform overloaded?	Reduce load
MECHANICAL		
Noisy operation or vibration	Investigate source	Remedy if possible
Squeaky	Rubbing pads dry	Lubricate with PTFE oil
Tilted wheelchair platform	Adjustment near pivots	Adjust set screws
Lift body movement	Loose wall mountings	Check / tighten
None of the above	Note problems	Contact Unwin Safety Systems

GENERAL ARRANGEMENT OF STAND-ON LIFT



SERVICE AND REPAIR

Refer to drawings and sketches in this manual

1. ADJUSTMENTS

a) **Limit switches.**

Remove the 8 or 12 screws (No 2 Pozidriv) retaining the front cover and take it off. The limit switches are operated by two Nylon clamps on the 4mm dia. fibreglass rod nearest to the central column. The upper clamp operates the top limit switch and the lower clamp the bottom switch. To adjust either stop slacken the clamping screw one turn and slide the clamp up or down as required. Both stops must be set to prevent the actuator screw from 'bottoming' at either end of its stroke.

b) **Platform sensitive edge switches.**

Three sealed normally closed microswitches are used below the platforms to prevent toes etc. from being trapped under the edges. These switches are adjusted by bending the operating leaf slightly with a small pliers so that they just depress the switch before the edge bars contact the platform. The switch can be heard to click when it operates. Check the operation of all the edge bars by lowering the lift. The switches are connected into the lowering circuit only (see the wiring diagrams).

c) **Caravan understep switch**

This normally closed switch is connected such that if operated it will stop movement in either direction. Adjustment is similar to the edge switches.

d) **Wheelchair platform tilt adjustment**

The relative angle of the wheelchair platform to the main frame can be adjusted using two setscrews below the platform support arm pivots. Using a 17mm spanner release the locknuts and turn the screw heads till the platform is level with its usual operating load on it. Lock the nuts when the final position is found. Due to the springiness in the supports the platform will be slightly raised at its outer edge when unloaded.

DISMANTLING AND ASSEMBLY

a) **Removal of printed circuit board (PCB)**

The PCB contains two relays which switch the motor current (up to 16 Amps). The various control and limit switches and wiring only carry 60 mA.

Disconnect supply to the lift. Remove the front cover. To remove the PCB release the clips holding the two heavy cables close to the board and disengage ithe PCB from its two stand-off pillars by squeezing the retaining tangs and move the board away from the supporting plate and upwards at the same time. The four screw terminals can now be released using a No. 1 Pozidriv screwdriver. Refitting is the opposite of removal.

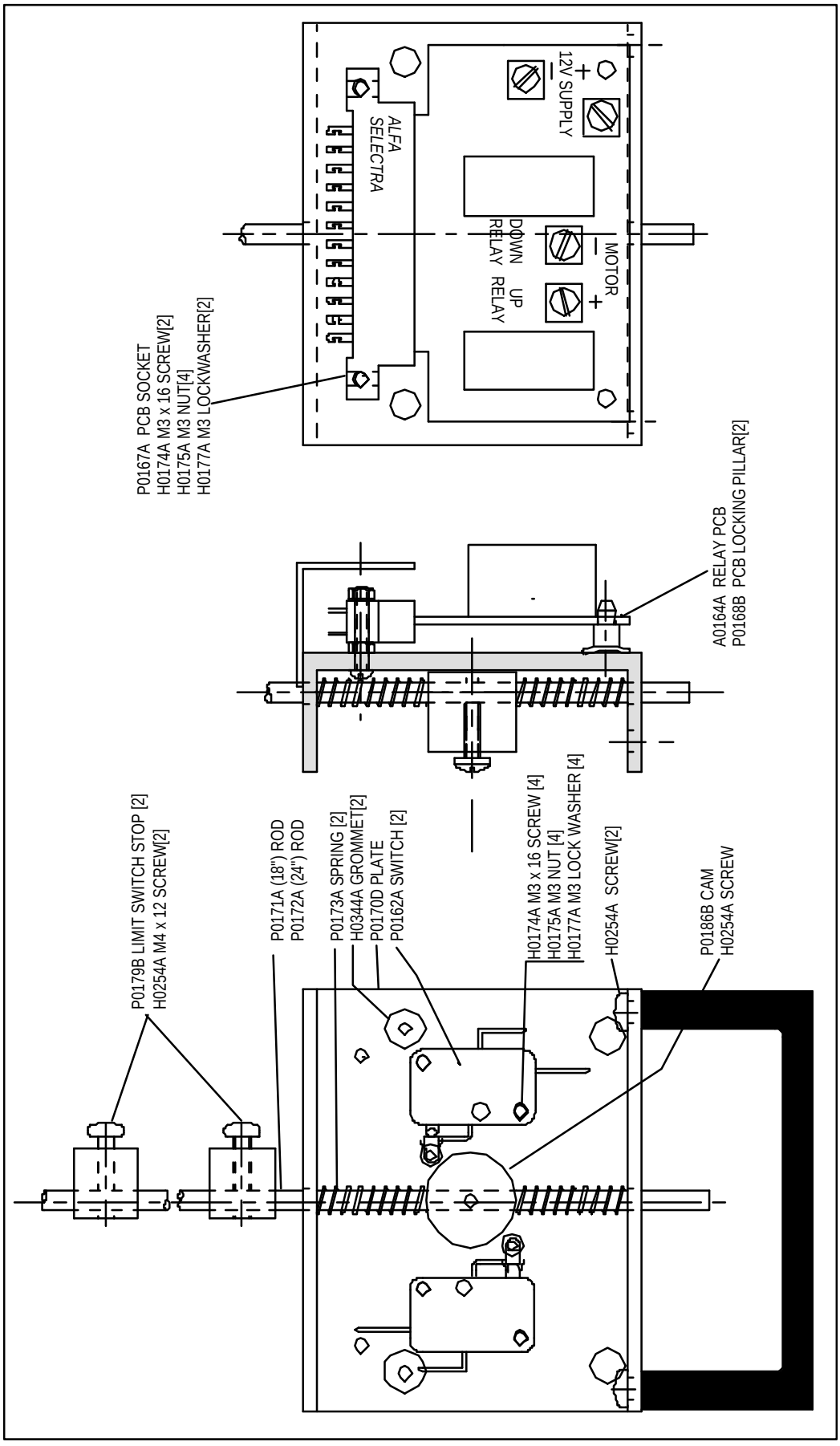
b) **Removing the limit switch assembly**

The limit swich assembly consists of a plate which supports two limit switches and their actuating mechanism, as well as the relay PCB. The actuating mechanism is a Nylon cam on a fiberglass rod with two centralising compression springs.

Remove the front cover. The complete assembly can be removed for repair or exchange. Wind or drive the lift mechanism to about 100mm (4") from the top of its travel. Switch off and disconnect the supply to the lift. Disconnect the motor supply wire at either end and the incoming supply wire to the PCB (on stand-on lifts remove the PCB first, as above). Disconnect the curly cable plug at the internal frame crossmember and undo the two 'P' clip screws at both ends of it.

Slacken the upper limit switch stop at the top of the fibreglass rod and remove the two screws holding the assembly to the bottom frame channel. Unwind the curly cable from its guide rod. By careful bending of the fibreglass rod it is possible to remove the complete assembly. If in doubt it is possible to remove the lower crossmember as detailed in the actuator removal section.

LIMIT SWITCH AND RELAY PCB ASSEMBLY



c) **Removing actuator**

For this operation the lift body must be removed from the wall and laid flat.

Remove the front cover. Drive or wind the lift to about 50mm (2") from the lowered position. Switch off or disconnect the supply.

The Linak actuator consists of a 12 Volt permanent magnet automotive motor driving a screw thread through a worm gearbox and bevel gears. A nut on the screw thread is connected to one end of the extending push rod.

The actuator is supported at its lower end by a pivot pin attached to the lower cross member, and at the top end by an extension rod supported in guide bearing/s inside the handle column.

To remove the actuator (together with the limit switch assembly) do all of the following:

1. Disconnect the 'curly cable' plug and 'P' clip at the internal moving frame crossmember.
2. Disconnect the supply cable to the PCB as detailed previously.
3. Remove the two or four M4 screws and Nylon spacers retaining the back cover to the bottom crossmember.
4. Remove the top plastic cap from the central column. Uncsrew the two handles and extract their spacer bushes.
5. Lift the push button plinth away from the column and disconnect the plug behind it.
6. Push the internal frame about 40mm (1½") towards the lower position thus exposing the top of the actuator extension rod beyond the central column.
7. With a suitable drift drive out the 3 mm spring pin through the extension rod. Remove the plastic collar and the top bearing assembly. Retain washer, bearing sleeve etc. See the relevant drawing.
8. Using a 5mm Allen key remove the 4 countersunk setscrews retaining the bottom crossmember. It may be neccessary to release and slide up or remove the lift feet first.
9. Slacken the upper limit switch stop screw.
10. Carefully pull the lower cross member and actuator out of the main frame. Retain the 4 spacer plates for its fixings.
11. If neccessary the actuator can be removed from the crossmember by pulling off its Lucar connectors and removing the split pin and clevis pin.

Replacement is the opposite of the above, taking care to refit all washers spacers and cables as they came off.

d) **Removing the internal frame**

Follow all the steps for removing the actuator above, then carefully slide out the internal frame. Make sure that the top end of the column cable is inside the column slot before pulling it through the top of the main frame. Replacement is the reverse.

e) **Bearing removal**

Having removed the internal frame as above the 4 bearings can be extracted. 13mm spanners required.

f) **Stand-on lift platform removal**

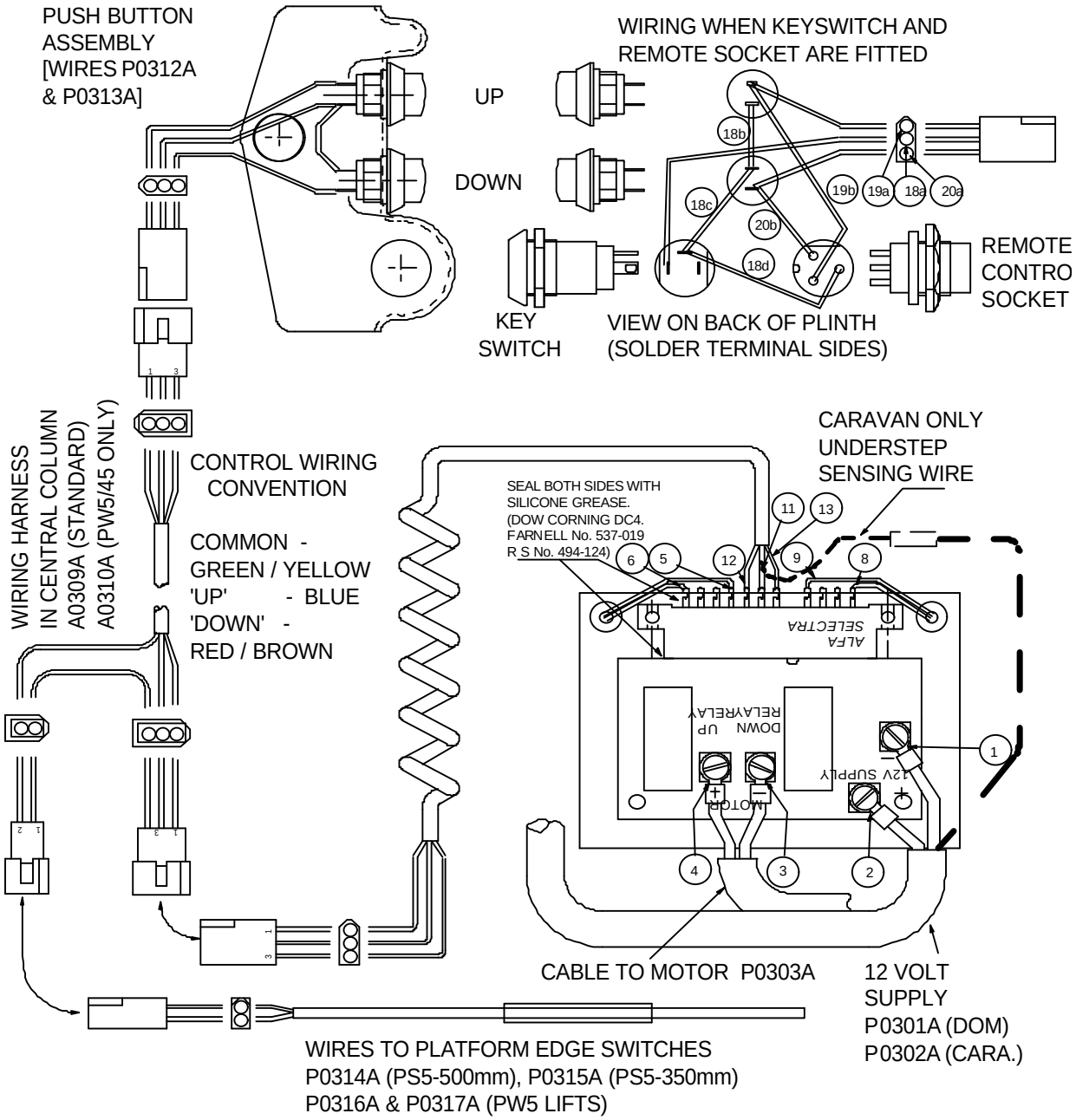
The platform of the stand-on lift is hinged on two bolts attached to the internal moving frame. Raise the lift about 150 mm (6"), disconnect the supply and remove the front cover.To remove the platform assembly disconnect the plug of the platform edge switch circuit on the internal crossmember an unclip the cable. Using a 17mm spanner undo the two pivot bolts (the captive nuts are fixed to the frame). Retain the bolts, washers and the tubular spacers.

g) **Wiring removal / replacement**

There are 4 or 5 main wiring parts, some of which can be replaced just by unplugging, the rest require some soldering. The diagram shows the arrangement of the internal wiring. Spare sections can be ordered if required. See the list of spares at the end of this manual.

To replace the cable inside the column remove the actuator. The new section needs to be taped at the ends to a round rod (brush handle or plastic pipe) with 4 self-adhesive clips on it and inserted into the column. Remove the tape and use the rod to press the clips to the inside of the column.

INTERNAL LIFT WIRING



SECTION THROUGH TOP OF COLUMN AND ACTUATOR