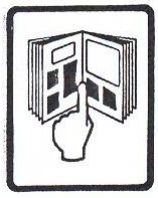
PALFINGER

PALFINGER TAIL LIFTS

FITTING INSTRUCTIONS

“V” SERIES – QUICKFIT MODEL

	Please ensure that you fully read and understand this manual before you operate the lift

In order to comply with CE Marking Regulations, it is mandatory that the post-installation test procedure described in the Load Testing section is carried out and the test certificate is completed to validate the CE Mark. This test certificate must then be returned to PALFINGER in order to allow the Company to create an EC Declaration of Conformance for the lift.

CE Marking Regulations are UK Criminal Law.

“ORIGINAL INSTRUCTIONS”

TABLE OF CONTENTS

Heavy Duty Springs

The products covered by this handbook include one or more heavy duty springs which from time to time during the operation of the lift store considerable levels of energy.

Such springs include:

- Torsion bars
- Torsion springs
- Helical springs
- Gas springs

Heavy duty springs are typically used in counter-balanced platforms and platform extensions, and in conjunction with single-acting hydraulic cylinders.

Special care must be taken when:

- Fitting
- Servicing
- Repairing
- Dismantling

Lifts incorporating these springs or the springs themselves.

Before carrying out work on the lift, precautions should be taken to:

1. Read the Fitting and Service manuals as appropriate.
2. Ensure that the work is supervised by a competent engineer.
3. Ensure bystanders are not exposed to risk.
4. Use adequate protective clothing.
5. Secure movable parts, e.g. platform and runners.
6. Carefully relax spring elements before attempting their removal or adjustment.
7. Use special tools if necessary - for example, to pre-compress gas springs before installation.

If any doubt exists regarding the safe working practices involved with heavy duty springs, consult the Customer Service Department of Plafinger Tail Lifts Ltd before proceeding with the work.

Warning: Spring elements store energy and are potentially dangerous. Incorrect installation, use, adjustment or removal may result in serious injury.

Introduction

General

This publication contains the information required to fit or install the Quickfit “V” Series Models to a suitable vehicle.

If any doubt exists as to the vehicle's suitability for having this type of lift fitted, the installer should contact the nearest PALFINGER Tail Lifts Ltd factory who will advise the installer on the suitability of his application.

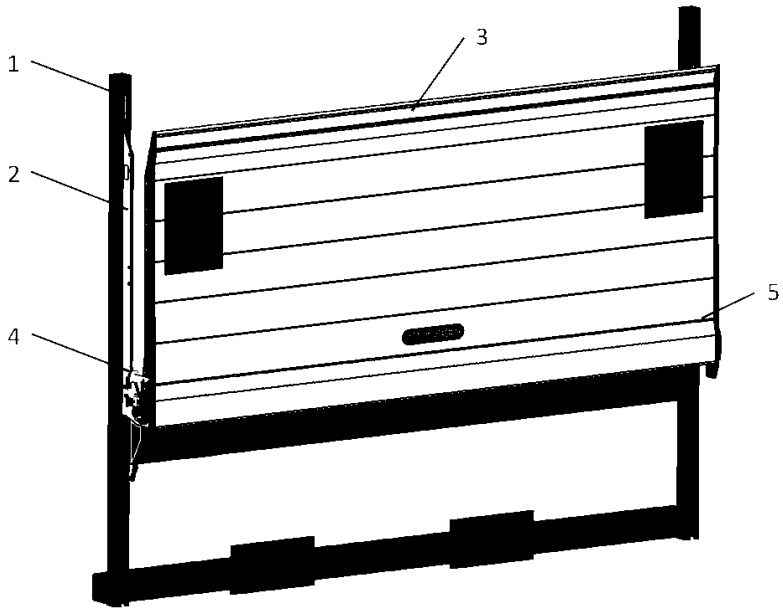
Modifications

If it is desired to make a modification to the lift, or to the manner of its fitting, PALFINGER Tail Lifts Ltd. are prepared to consider advising on the suitability of such modification provided that such request is made in writing to the Engineering Department before the modification or departure from fitting instructions is carried out.

If PALFINGER Tail Lifts Ltd. approves such modification or departure from fitting instructions they will give their written authorisation which shall be retained by the person in receipt of such written approval.

All liability under the provision of the Consumer Protection Act 1987 shall be that of a person, firm or company responsible for any unauthorised modification or departure of fitting instructions and such liability shall include a complete indemnity to PALFINGER Tail Lifts Ltd. against any claim being made by or on behalf of the person suffering such loss or damage.

Location Diagram



View of Lift

1. Column
2. Runner
3. Platform
4. Platform Catch
5. Stowlock
6. Top Flap (RQR518 only)

Fitting

General

The instructions assume that the rear frame is constructed of steel.

If it is of aluminium or other, steel strips should be bolted to the rear frame so that the lift can be welded to these.

If there is any doubt concerning the strength of the rear frame to support the lift, suitable reinforcing must be fitted.

Where the lift is to be fitted to a dropside body specific fitting kits are available from Palfinger Tail Lifts UK or where these are not available bracing for the top and bottom of the columns will be required as well as a the construction of a suitable mounting frame.

Unpack Equipment

Unpack the lift and check for possible damage in transit.

Check that the kit contents are as stated on the packing list.

Work Light

A work light is available from PALFINGER Tail Lifts Ltd for installation if requested.

Checks before Fitting

All the requirements specified in the relevant chassis manufacturer's Body Builders Handbook are complied with for this vehicle/tail lift combination.

The vehicle has a box body with a flat back. (Packing may be used to overcome minor projections such as rivets or bolt heads.)

The rear closure is roller shutter or special door hinges. (Palfinger Tail Lift do not recomented to use doors for the rear closure with this lift.)

The rear frame has adequate strength.

The rear frame is steel of adequate strength.

There are no projections from the vehicle rear below floor level.

Some projections are allowable, refer to Appendix 1.

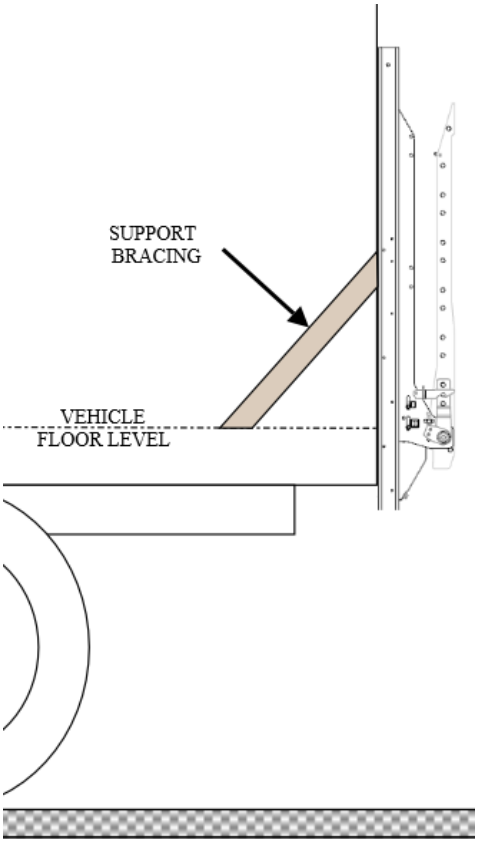
Chassis is clear for mounting drop arms. (If fitted)

Does the spare wheel need re-sitting.

After fitting, vehicle rear lights will conform to Road Traffic Regulations.

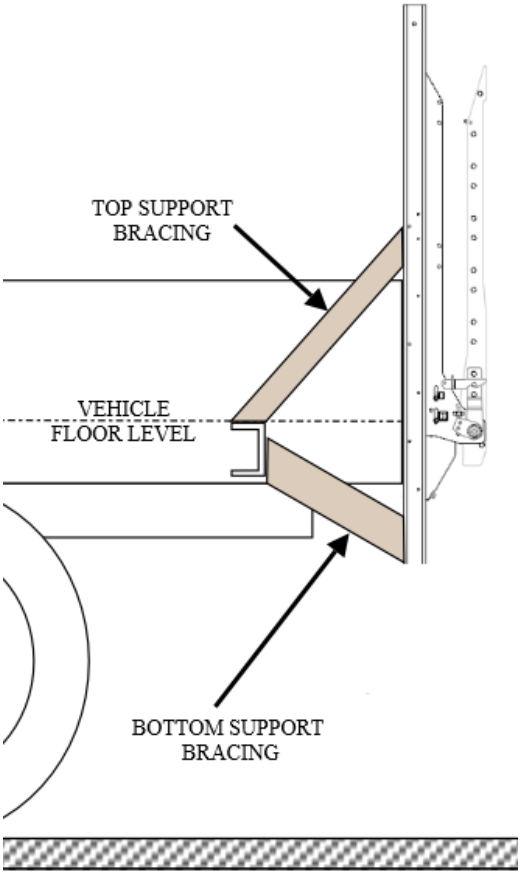
BOX BODY

500kg lifts fitted to a standard 3.5 ton vehicle would not normally require body work bracing but lifts of 750kg and 1000kg will require diagonal braces from the vehicle chassis/ body.



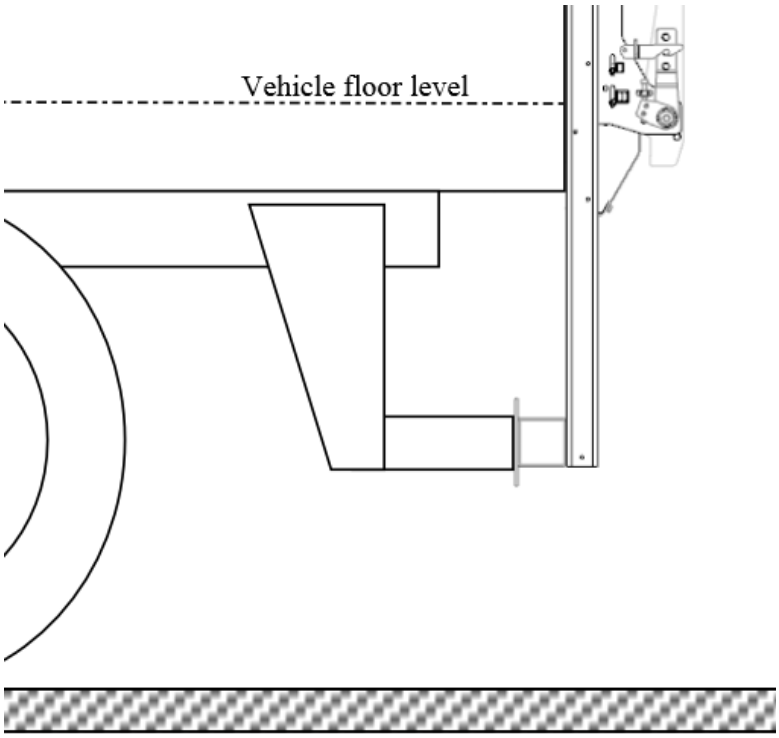
DROPSIDE BODY

Where the lift is to be fitted to a dropside body specific fitting kits are available from Palfinger Tail Lifts UK or where these are not available bracing for the top and bottom of the columns will be required as well as a the construction of a suitable mounting frame, example shown below.



UNDERUN BAR

Vehicles over 3.5 ton that require a underrun bar (Refer Underun section of this manual)



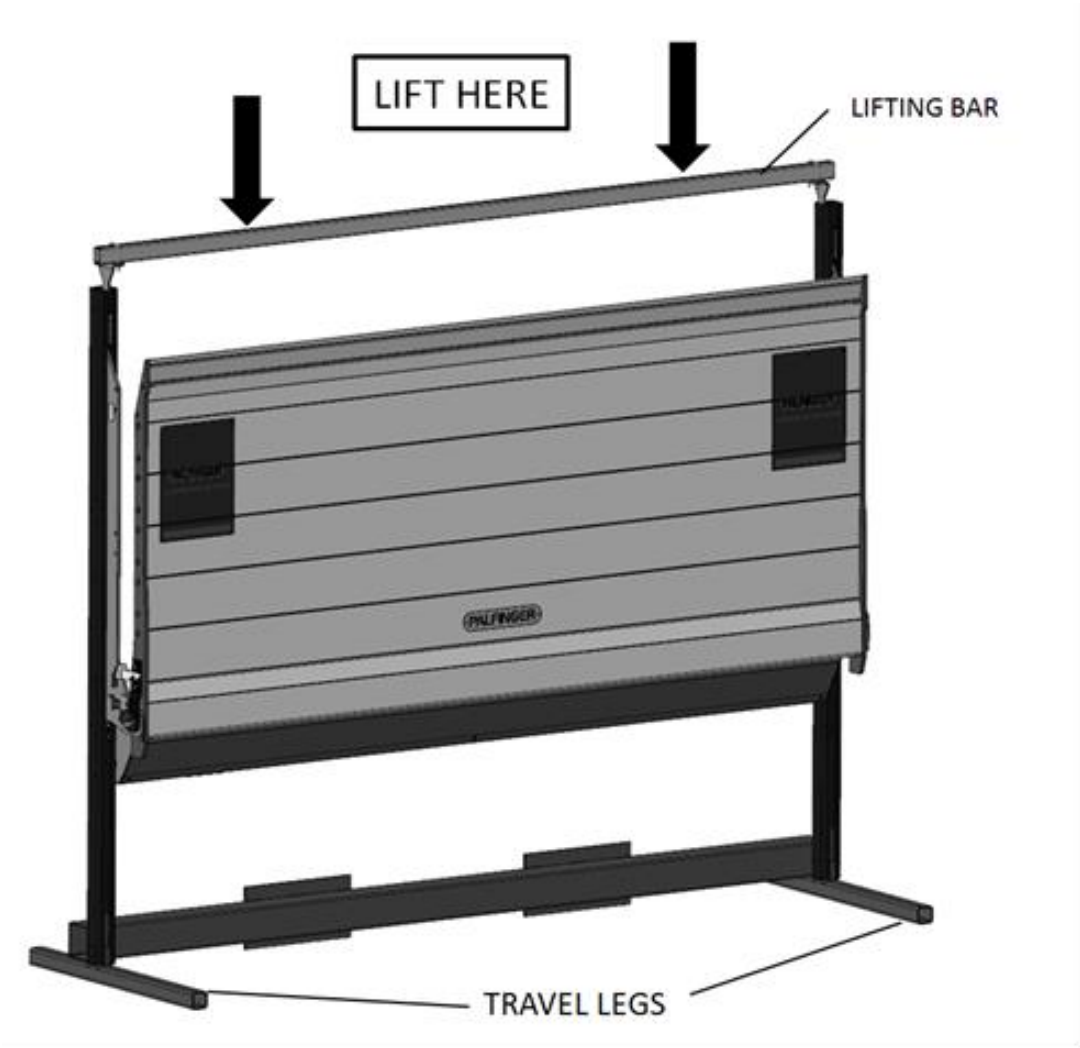
LITTING

Raise Lift to Floor Level

Position the lift so that it is central to vehicle body.

Position suitable slings, chains or forks of a forklift on the transit strut at the points shown.

Raise the lift so that top of beam is level with the vehicle floor using a crane, hoist or forklift.



Position the lift so that it is central to vehicle body.

Position suitable slings, chains or forks of a forklift on the transit strut at the points shown.

Raise the lift so that top of beam is level with the vehicle floor using a crane, hoist or forklift.

ADJUST POSITION OF LIFT

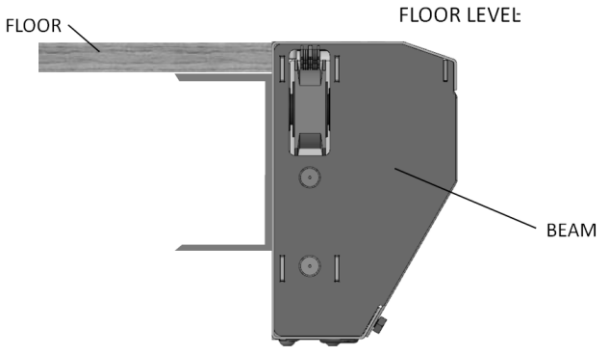
Adjust the height of the lift until the beam is level with floor.

Column ground clearance for when under-run bar is to be installed should be approximately 430mm (maximum 550mm).

If necessary, cut bottom of columns, ensuring all burrs are removed from inside faces of column.

Adjust the lift so that it is central to body.

Clamp the lift to the rear frame.



V series attachment (welded)

To avoid damage to the plastic runner slide pads, do not weld in area 'A' (800mm from the bottom of the runner).

WELDING

To avoid the danger of fire, heat and electronic damage when welding, disconnect the vehicle battery.

Always connect earthing lead directly to component being welded. Do not earth through hydraulic hoses or pipework.

Protect the power pack, hoses, bearings and wiring from heat and weld splatter.

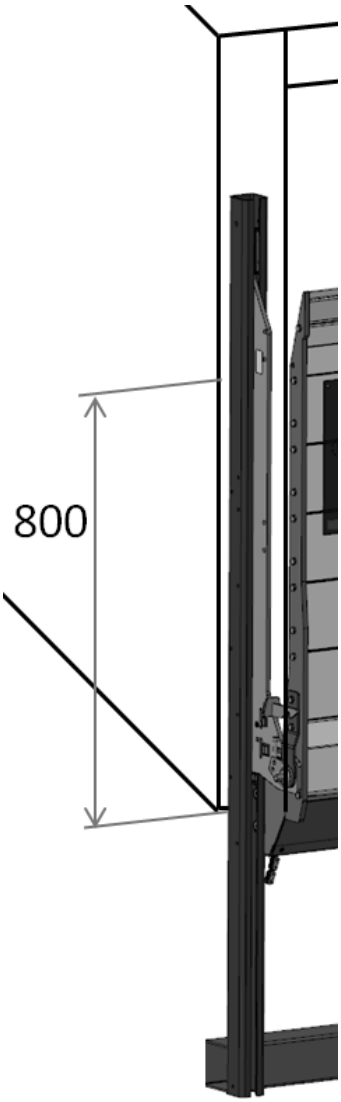
WELDING FRAME

Tack welds the lift to the vehicle rear frame.

The tack welds must be of adequate strength to support the full weight of the lift.

Do not fully weld the columns prior to lowering the runners to the ground or damage to the rear wear pads will result

If the lift is galvanised or fully painted, then clamp to rear frame. Do not weld. Ensure clamps are adequate to support the full weight of the lift.

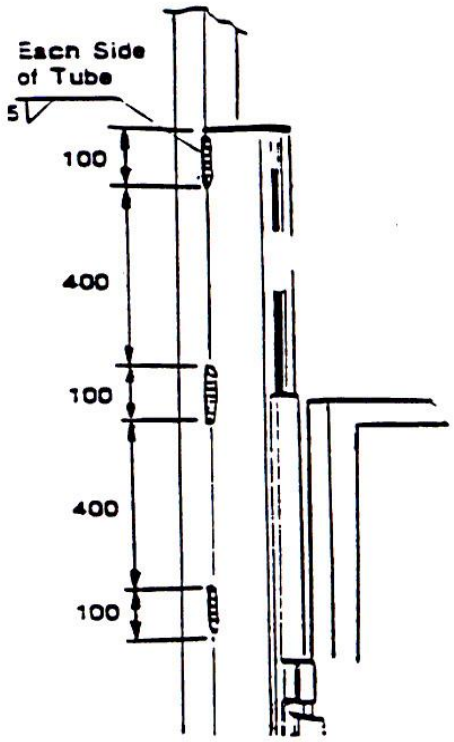


FULLY WELD COLUMNS TO VEHICLE

(For unpainted steel)

Using 5mm fillet welds of 100mm in length, weld columns to vehicle rear frame. Welds to be on both sides of each column.

Allow the welds to cool, lower platform to ground and complete welds.



To avoid damage to the plastic runner slide pads do not weld temporarily in area 'A'.

BOLTED FRAME

THE LIFT CAN BE BOLTED TO LIFT INSTEAD OF WELDED IF REQUIRED.

This is normally done where the lift frame is galvanised, the vehicles rear frame is stainless steel or the customer specifies.

C/sunk head screws are supplied for this purpose.

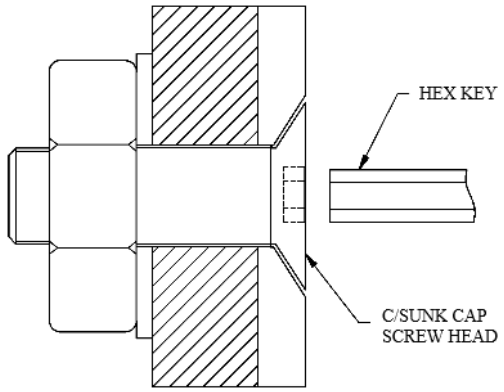
ONLY USE BOLTS SUPPLIED WITH LIFT
STANDARD HEAD BOLTS WILL DAMAGE THE WEAR PADS.

With the lift in position, put suitable rags into the column above the runners to prevent swarf dropping down into the LSD mechanism.

Mark the centres of the exposed mounting holes at the top of the columns on to the rear frame.

Drill Ø8.5 holes through the rear frame.

Fit the screws, washers and nylon nuts supplied.



Use a hex key to stop the screw from turning.

Tighten nut with spanner to a torque – see table below.

C/sunk Socket Screw DIN7991 Grade 10.9				
Size	M6	M8	M10	M12
TORQUE [Nm]	9.2	22.0	44.0	77.0

Remove rags and swarf.

Complete installation of power pack and wiring. Then lower lift platform to expose remaining mounting holes.

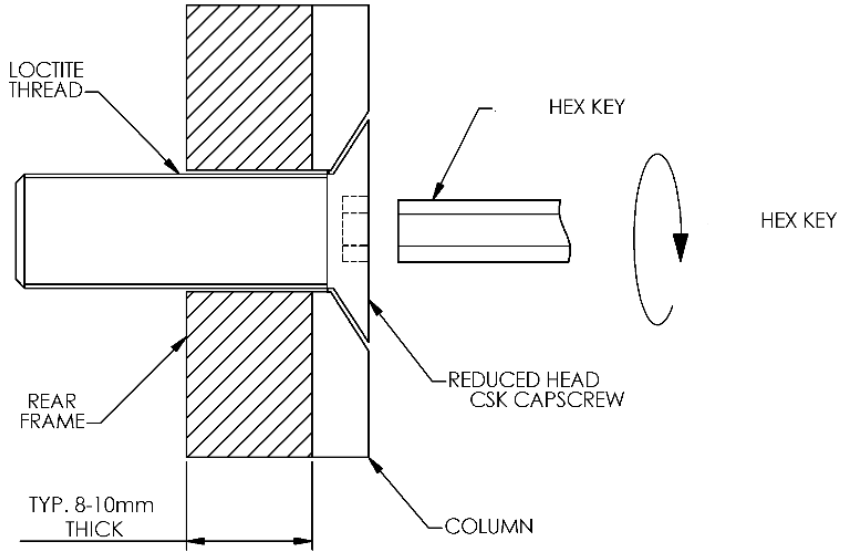
WARNING: DO NOT PUT ANY LOAD ON THE LIFT UNTIL ALL THE MOUNTING BOLTS ARE IN PLACE.

Put clean rags into the columns above the runners as before.

Drill and fit fixings as before.

If the screws are used without nuts, the rear frame should be drilled tapping size - Ø6.8 and the holes tapped M8 x 1.25 pitch.

Ensure that the rear frame thickness and material type are adequate.



Ensure threads are clean before using Loctite.

Ensure thread does not bottom out before the screw head is fully home.

Remove rags and swarf upon completion.

NOTE: Where the columns are bolted to timber pillars, fit washer plates under self l locking nuts. Fit long washer plates where pillars are of aluminium to prevent being localised in bolt positions.

UNDER-RUN BAR AND LIGHTS

It is the installer's responsibility to ensure the under-run bar complies with the under-run bar regulations.

It is the installer's responsibility to ensure that the vehicle lights comply with the lighting regulations with the tail lift fitted.

UNDER-RUN BAR

1.1. If the lift is supplied without an under-run bar fitted:-

a. Check the vehicle is exempt from the under-run bar regulations, less than 3.5 tonnes G.V.W.

b. Fit the under-run bar, supplied loose, to the lift.

c. Ensure that the vehicle under-run bar (supplied by the manufacturer or bodybuilder) is compatible with the lift mounting, especially the support of the column ends.

1.2. If supplied loose, attach the under-run bar to the columns using tack welds, clamps or bolts as required.

1.3. Ensure the under-run bar is parallel to the vehicle floor.

1.4. Whatever under-run bar is fitted, ensure the height of the underside is 550mm minimum above ground level, with the vehicle unladen.

1.5. If the height is below 550mm, reposition the under-run bar.

1.6. Attach the under-run bar to the chassis with brackets or drop arms strong enough to take the weight of the loaded lift and the horizontal forces specified in the under-run bar regulations.

1.7. Drop arms can be made from RHS including the 60 x 60 x 5mm material from the transport trolleys and the mounting plates supplied in the fitting kit, welded together.

Alternatively, suitable brackets or drop arms can be made by the installer/bodybuilder or supplied to order by PALFINGER Ltd.

Short drop arms or brackets may not require stays.

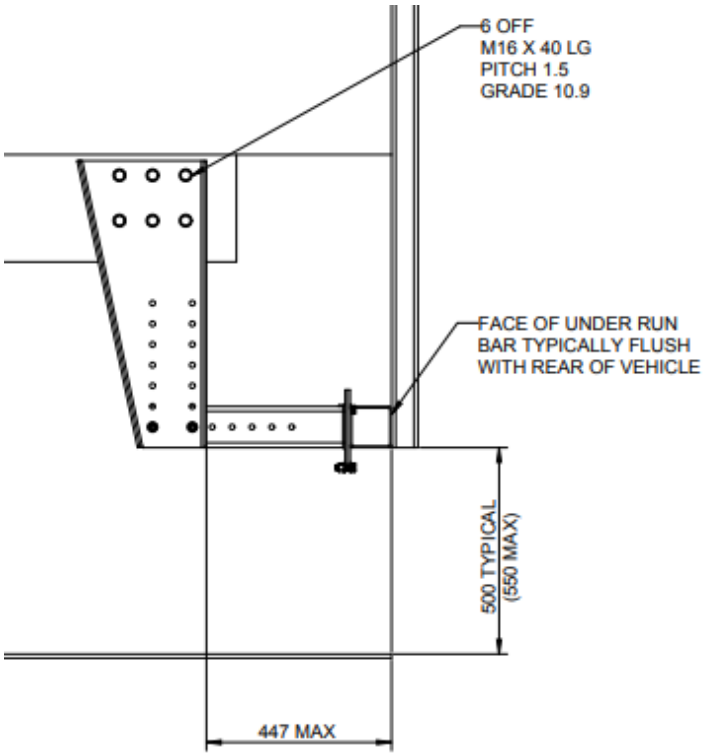
Drop arms or brackets should be attached to the chassis using nuts and bolts.

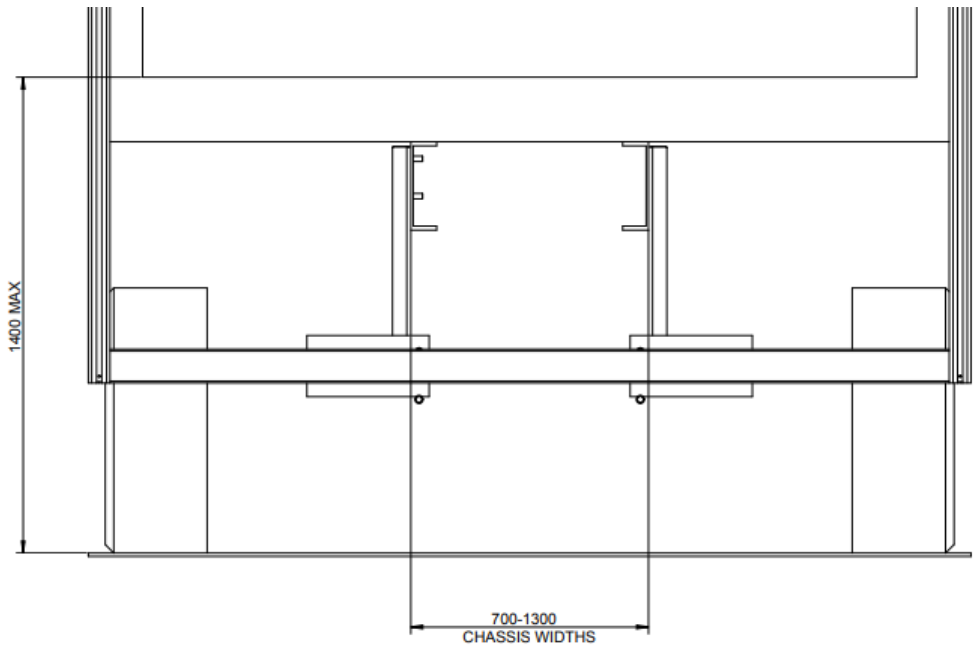
Do not drill holes through chassis webs within 30mm of a flange.

Do not drill holes through flanges.

Observe chassis manufacturer’s technical requirements

1.8. Stays from the ends of the under-run bar to either the raves or the chassis can be fitted. Use the brackets supplied in the fitting kit with suitable lengths of 50 x 50 x 3 RHS. (The transport cross tube on Quickfits can be used or material supplied to order with the lift.





FITTING DROPPERS

- Position the droppers on either side of the chassis ensuring that they are vertical. Ensure that the flanges of the dropper are up against the plates which come welded to the under run bar (See Figure 1) The droppers are designed for a range of vehicle floor heights. If desired they can be shortened by removing material from the bottom of the dropper. When satisfied that the droppers are positioned correctly mark the chassis using the pre-drilled holes in the dropper and drill the chassis. Assemble the droppers to the chassis using the 12 off - M16 x 40 bolts provided. With droppers in position drill through the under run bar plates and dropper flanges and secure with 4 off - M12 bolts provided.

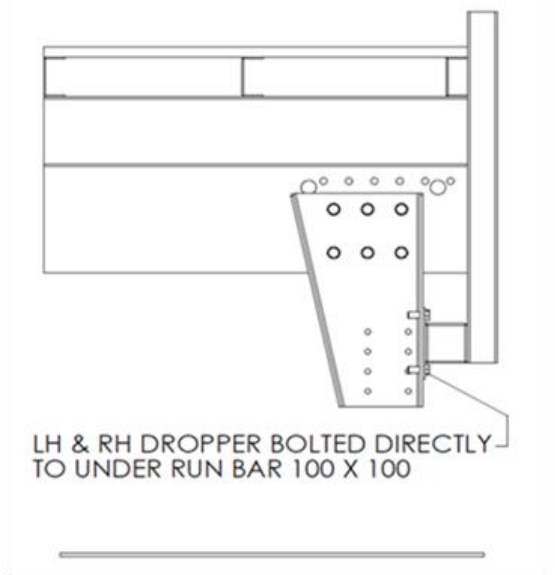


Figure 1

Torque settings for:

M16 x 40 = 315 Nm

M12 x 40 = 85 Nm

- Select the appropriate position for the horizontal braces. Bolt to the droppers with the 4 off - M12 bolts supplied. To fit the dropper to the chassis follow the sequence detailed in the section 'Fitting Drop arms When attaching the brace to the under run bar drill through the under run bar plates and brace end plate and secure with 4 off - M12 bolts provided (See Figure 3) You must ensure the bolt is positioned centrally through the brace end plate. (See Figure 2)

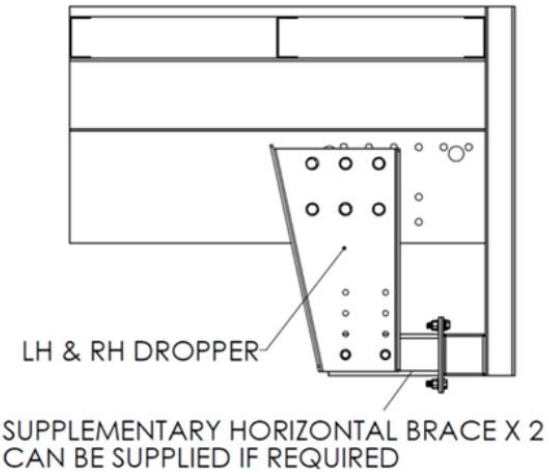


Figure 2

Using Stays with your PALFINGER TAIL LIFTS ltd. under run device

It is not a requirement to fit stays to the under run bar device for it to comply with the latest regulations but stays can be fitted if desired.

- Fitting universal stays - Position the U-shaped brackets at the desired position on the forward face of the under run bar. Drill through the under run bar and attach with the bolts provided. Assemble the telescopic stay and attach to the U-shaped bracket. Fit other U-shaped brackets to the opposite end of the stays and position on the chassis. Adjust the length of the stay to achieve the correct alignment of bracket and stay. Mark the chassis using the bracket as a template, drill and bolt bracket and stay into position. Finally drill through the two stays and secure with a nut and bolt.

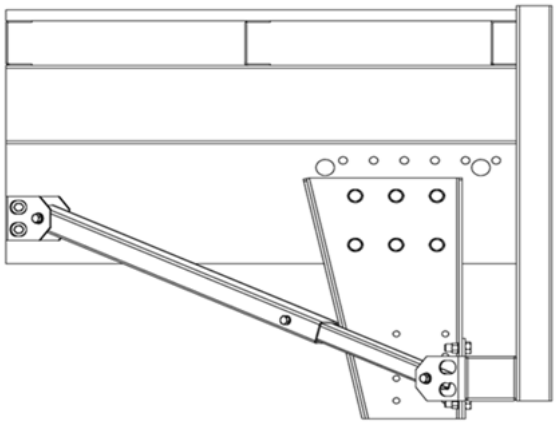


Figure 3

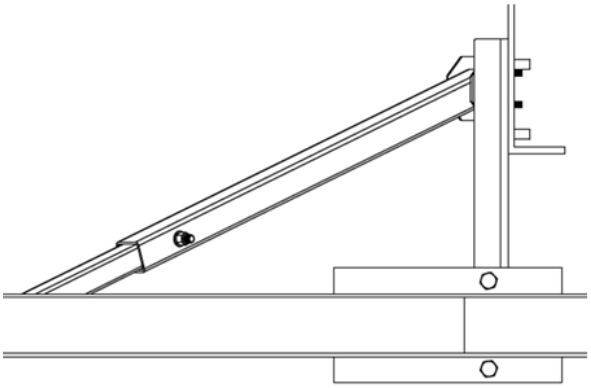


Figure 4

LOCATION OF LIGHTS

- The vehicle rear lights should be positioned to meet the lighting regulations. The lights can be mounted from the under-run bar if required.

- If lights are to be mounted to the top of the under run bar – Special light “toe-guard” brackets can be supplied by PALFINGER TAIL LIFTS ltd. as an option to prevent foot trapping (See Figure 5)

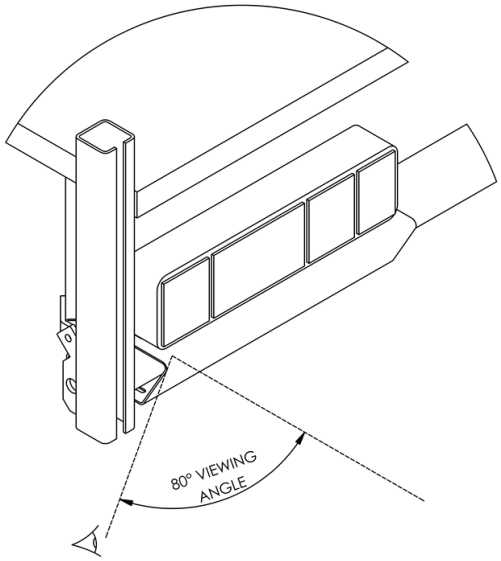


Figure 5

- The vehicle rear lights should be positioned to meet the lighting regulations.
- The lights can be mounted from the under-run bar if required.
- Fit the short “toeguards” supplied to the under-run bar below the lights to prevent foot trapping.

You must ensure each bolt is positioned centrally through the dropper flange (See Fig 4.)

Remove Transit Strut

Remove transit strut from between column tops.

Columns

If columns need to be cut down at the bottom. To compensate for a lower vehicle floor height you must ensure that the chain links are shortened to prevent the runner wear pads potentially dropping out of the bottom of the column.

ELECTRICAL INSTALLATION

EXTEND HEAVY DUTY CABLE (Single Pole Application)

Note: If power pack is to be wired Earth Return (Single Pole) check the specification of lead extending from battery to chassis/body earth.

Always use battery cable and terminals supplied with the lift, current and capacity of the leads are designed to match the power packs supplied.

Minimum Cable Spec.:

Model	Power pack	Voltage	Cable size
V500/V750	800W	12/24V	16mm^2
V750/V1000	1600W	12V	35mm^2
V750/V1000	2200W	24V	25mm^2

Note: Use the existing clamp bolt as the connection (this is the positive terminal for negative earth return). Do not connect battery until last operation.

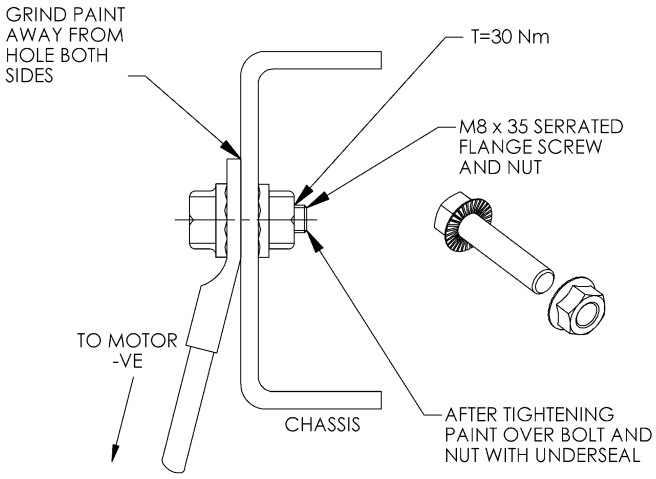
1. Extend cable to the power pack starter solenoid terminal; choose a run where cable will not be damaged. Ideal sites are inside the chassis main members or along the chassis runner. Follow existing wiring looms where possible.

Note: At no point should this cable be within 25mm of any brake line or hydraulic line. Clip the cable to the chassis or body at a nominal pitch of 300mm. Care should be taken to prevent chafing of any wiring against sharp edges and grommets must be used where wiring passes through any frame members.

WIRING MUST NOT BE ATTACHED TO BRAKE OR HYDRAULIC LINES FOR SUPPORT.

2. When wiring earth return (**SINGLE POLE**), check specification of lead from battery to chassis/body earth.

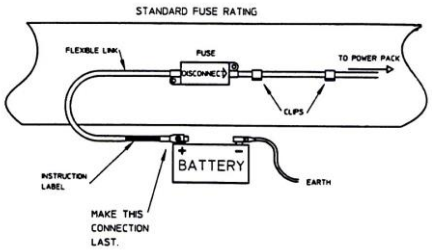
If lead capacity is less than shown below, fit lead of 2 x 25mm^2 300 amp capacity instead of, or as well as the existing one.



FITTING MAIN FUSE ASSEMBLY

Make an allowance for looping the wire next to the fuse assembly, run the battery cable from the power pack.

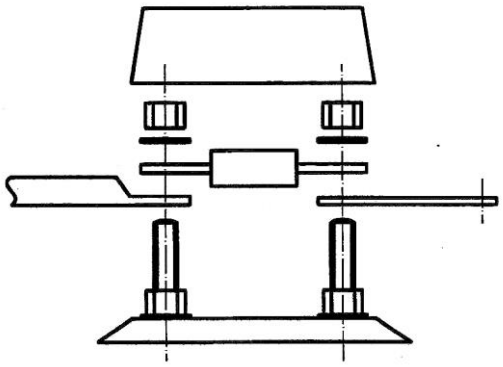
Using clips and cable ties as required, do not attach to brake or fuel pipes, route the cable, also avoiding fuel tanks, exhaust systems and vehicle suspension parts.



Protect the fuse from road spray to stop terminal corrosion.

Warning: The link to the battery should only be connected when the installation of the wiring is complete.

The fuse holder should have the green disconnect label pointing to the battery terminal.



Warning: The main fuse assembly order should be as shown.

CAB SWITCH

Select a suitable place for the lift isolation switch on the vehicle dash.

Drill ∅10 hole through the dash ensuring that the drill will not damage wiring etc. behind.

Mount the isolation switch.

Wire the switch to the power pack with two-core cable.

Earth the switch to a suitable point locally (single pole) or to the power pack motor

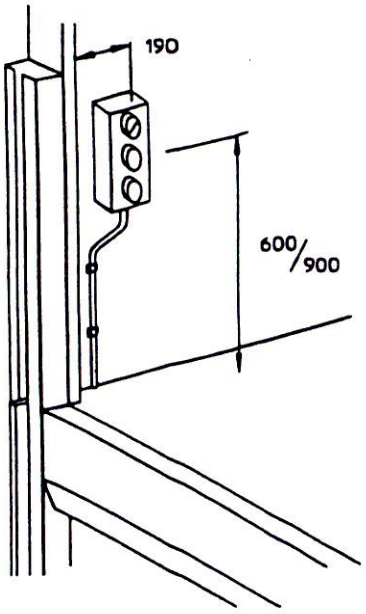
(-)ve terminal (double pole).

Fix the isolation switch label to the dash adjacent to the switch.

INTERNAL SWITCH (OPTIONAL)

Mount the internal switch in the nearside rear corner of the body. Ensure that:-

1. The switch is protected from accidental operation.
2. The switch will not interfere with the passage of goods.
3. The selector switch is mounted at the top.



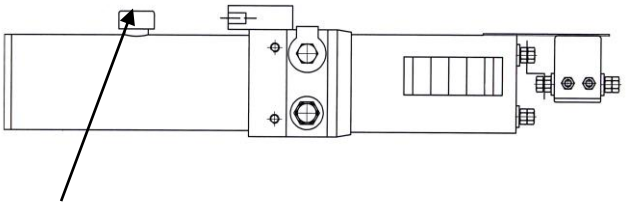
POWER PACK WIRING

The external (2-button) switch, the internal (3-button) switch and the isolation switch is wired directly to the terminal strip on the power pack. (See wiring diagram page.)

FILL SYSTEM WITH HYDRAULIC OIL

With the platform at ground level, remove the filler cap from the power pack.

Pour in the oil from the container supplied, or use squeezable plastic bottle and pipe, until the level is up to the level line on the dipstick or up to the bottom of the fill hole on end fill tanks. Refit the filler/breather.



Filler Cap/ Dipstick
(End Filler Cap has no Dipstick)

Test Operating Cycle

Do not load the platform in any way during these tests, as at this stage the lift is only tacked /clamped on.

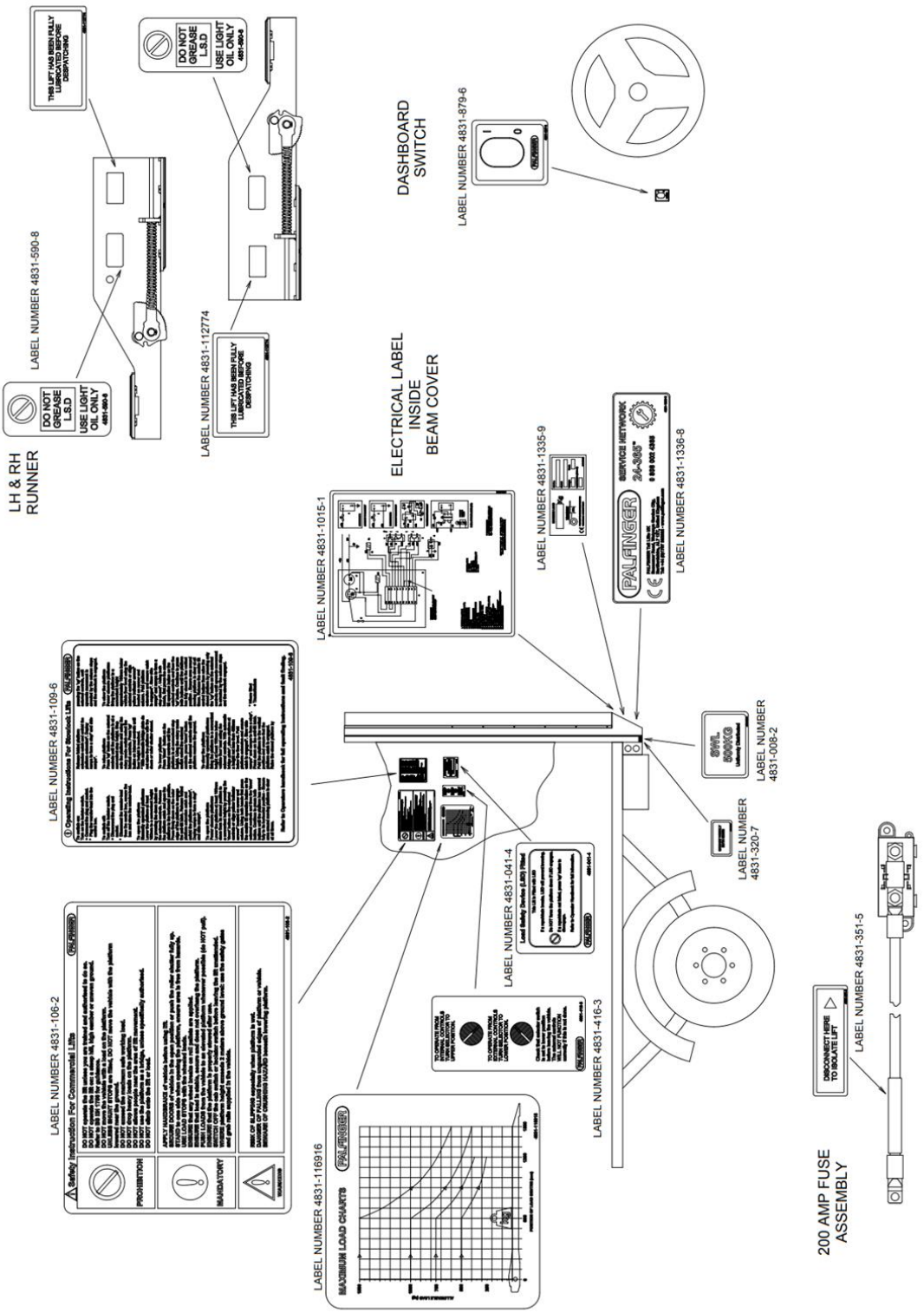
Lower open platform to ground then raise it to floor level, checking that lift operates freely and reaches both ground and floor level.

Close the platform at a convenient height and then stow against stops.

LUBRICATE CHAINS

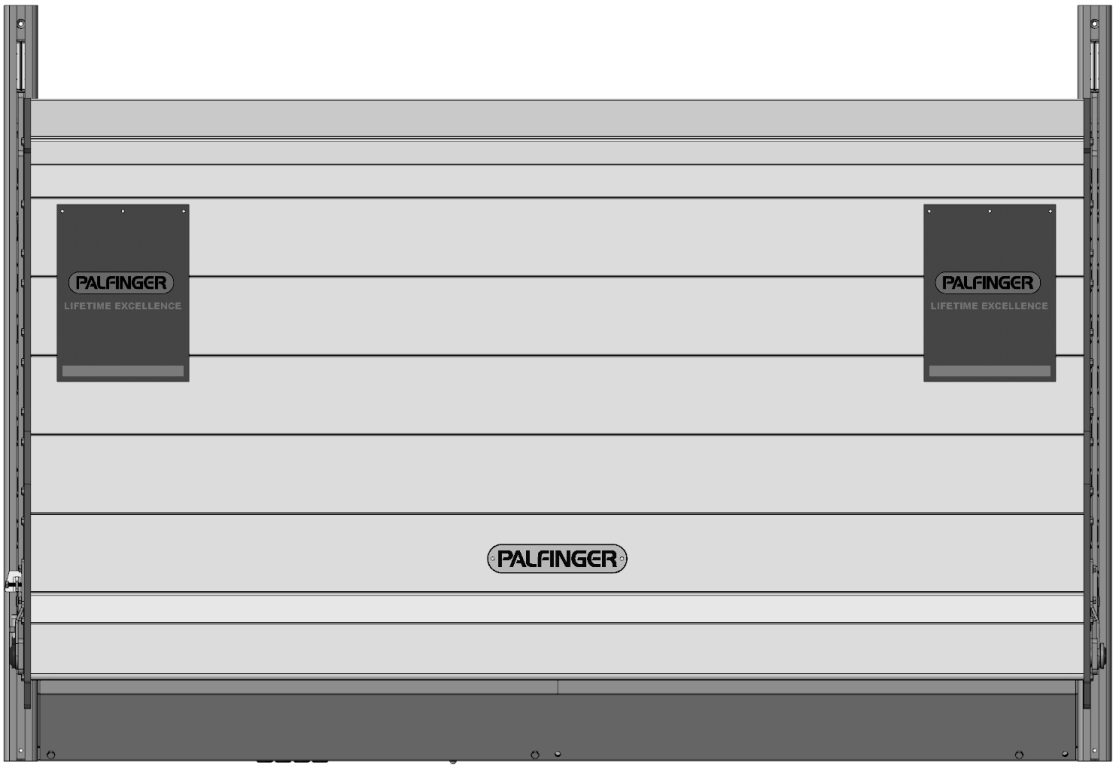
Thoroughly lubricate chains over full length. It is important that this is done **AFTER** finish painting.

LABELS LAYOUT



DEMARKATION

Ensure all reflective flag(s) and/or strips are applied as necessary.

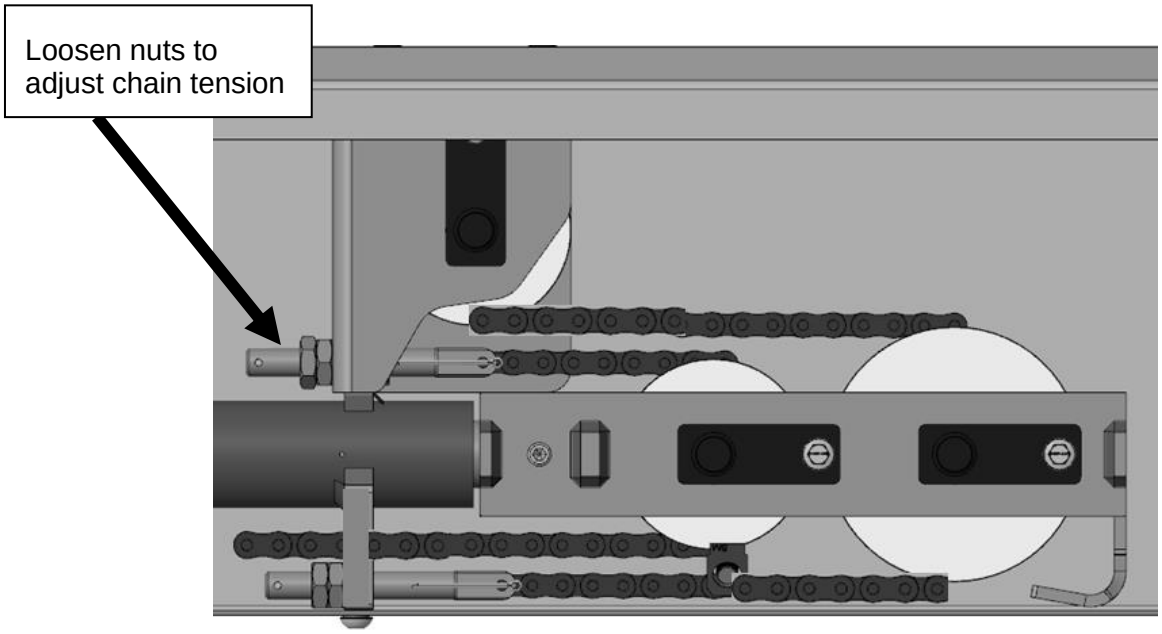


FLOOR HEIGHT

The lift is adjusted to the required floor height prior to delivery.

CHAIN ADJUSTMENT

The chain tension on the left hand side can be adjusted if it becomes slack, by loosening off two nuts, pulling the chain to suit and then re-tightening the nuts.



ALLOWABLE PROJECTIONS

Packing may be used to overcome minor projections i.e. bolt or rivet heads.

Horizontal projections below the beam i.e. lights, chassis etc. are permissible, provided that they do not project more than 20mm beyond the flat surface onto which the tail lift is to be mounted. This is to conform to the minimum toe gap requirement of 75m (See BS6109 Appendix C).

REMOVAL

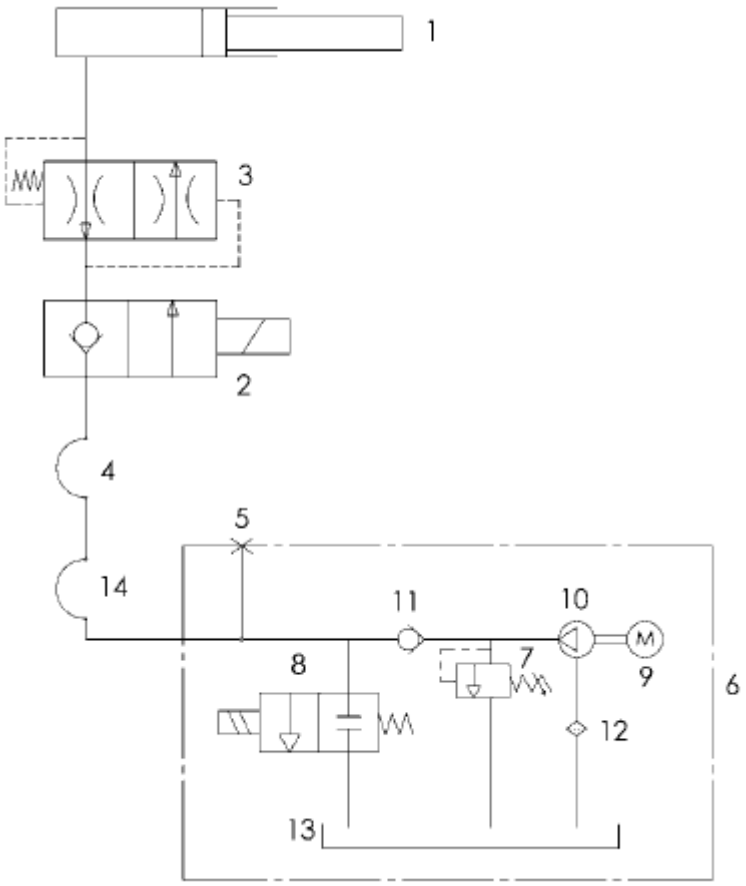
The lift assembly may be removed using normal safe Engineering Practice.

Attention must be made regarding the HEAVY DUTY SPRINGS warning at the front of this handbook.

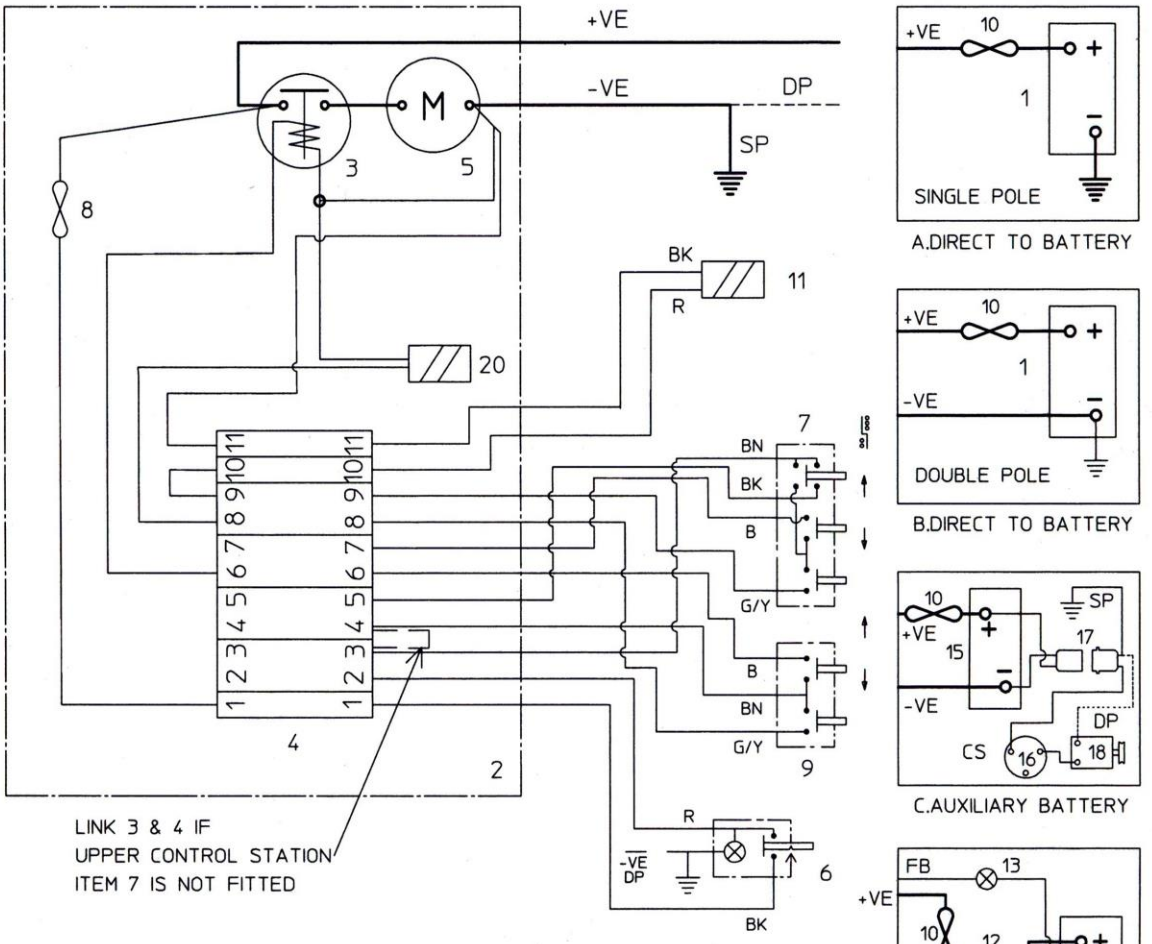
Also refer to the Service Safety Handbook supplied with the lift assembly.

SCHEMATIC HYDRAULIC CIRCUIT

1. RAM
2. RAM VALVE
3. FLOW REGULATOR CARTRIDGE
4. HOSE
5. PRESSURE GAUGE PORT
6. POWER PACK (INCLUDES 7-14)
7. PRESSURE RELIEF VALVE
8. RELEASE VALVE (12V OR 24V)
9. MOTOR (12V OR 24V)
10. PUMP
11. NON-RETURN VALVE
12. STRAINER
13. RESEVOIR
14. HOSE



ELECTRICAL CIRCUIT DIAGRAM



1. VEHICLE BATTERY
2. POWER PACK (12 OR 24V)
3. STARTER SOLENOID
4. CONNECTOR BLOCK
5. MOTOR
6. ISOLATION SWITCH
7. UPPER CONTROL STATION *
8. FUSE 7.5A (10A)**
9. LOWER CONTROL STATION
10. MAIN FUSE 200A (150A)**
11. RAM VALVE *
12. PLUG AND SOCKET *
13. WARNING LAMP * (IN TRACTOR)
14. CABLEFORM LINK *
15. AUXILARY BATTERY *
16. BLOCKING DIODE *
17. CLANG PLUG AND SOCKET *
18. ALTERNATOR (BATTERY SENSITIVE) *
20. LOWERING SOLENOID

COLOUR CODE
B = BLUE
BK= BLACK
BN= BROWN
G/Y= GREEN/YELLOW
R = RED

* WHERE FITTED
FB= FEED FROM VEH. FUSEBOX
CS= VEH. CHARGING SYSTEM
** THE USE OF ALTERNATIVE FUSES IS POSSIBLE SUBJECT TO PALFINGER ENGINEERING APPROVAL

REVISIONS

DATE	ECN NO.	ISSUE NO.	DESCRIPTION
09/2018	26082	_	New document
06/2020	A23591	A	New English address on last page

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