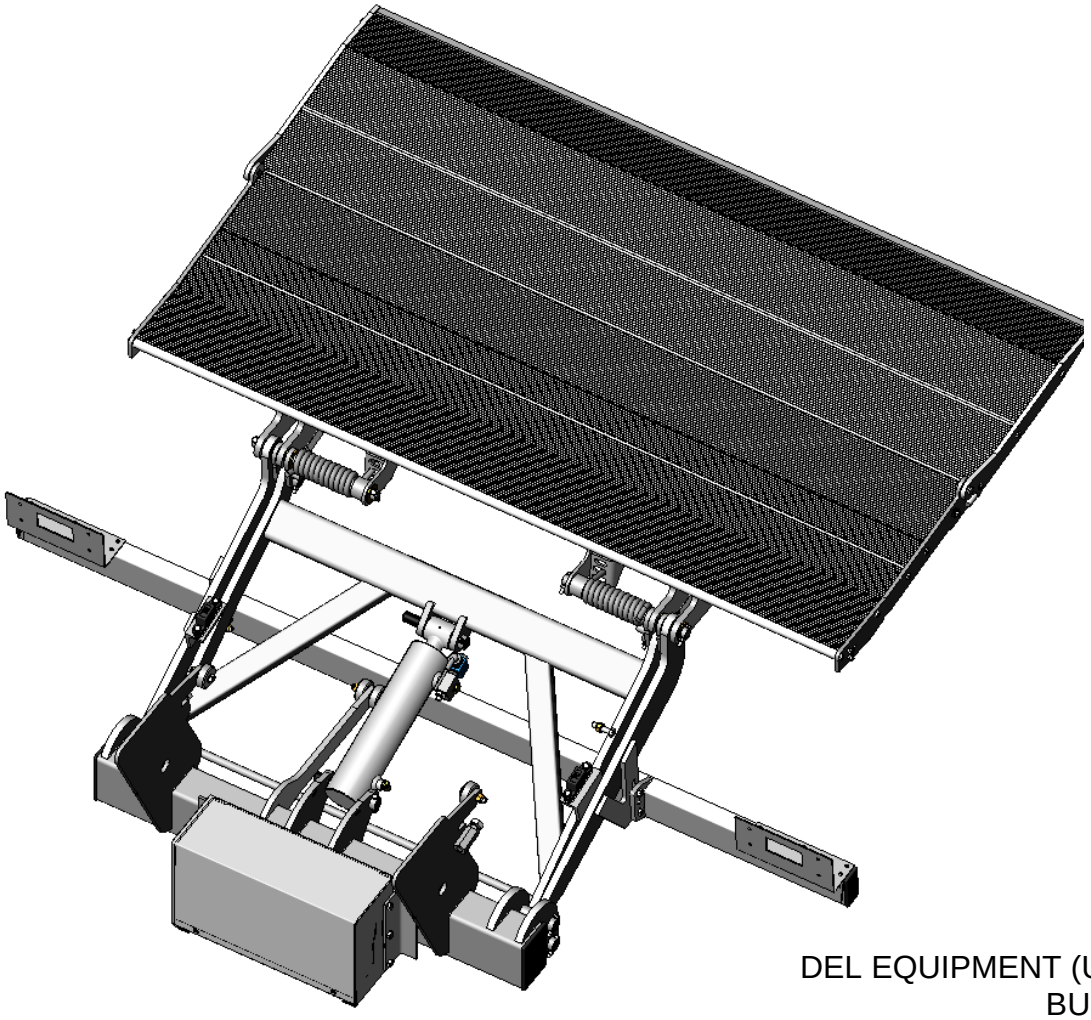
DEL

DEL IS A CARGOTEC BRAND

OPERATORS MANUAL
TUCKUNDER TAILIFTS



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INTRODUCTION

This manual covers the operation and maintenance of the Tuckunder tailift range. The procedures detailed in this manual must be understood before the tailift is used. The manual should be kept with the vehicle and records of regular maintenance must be entered in the spaces provided to form a service record for the lift.

CONTENTS

1. WARRANTY

The lift you have purchased is one of the DEL Equipment range of Tailifts. We are pleased you have chosen DEL and would like to ensure that you have the best service throughout the life of the lift.
Our lifts are covered by a 12-month warranty against faulty parts or assembly, subject to our conditions below and our normal conditions of sale. To obtain details of your nearest service centre plus updated information of the DEL range please complete and return the enclosed registration form.

Product Warranty Terms and Conditions

Date of Issue: January 1st, 2010

Scope: This document replaces all previous documents issued and is effective from the date of issue. Unless otherwise agreed in writing the following terms and conditions will apply.

DEL Equipment (UK) Ltd (herein referred to as DEL) withhold the right to revise these terms and conditions without prior notice at any time in the future.

1. General Terms and Conditions

1.1 DEL warrants its Customer and/or End User of its products, provided it has received payment in full for the goods, that it will repair/replace, either in its factory or through one of its approved Service Agents, without charge, any original part of any DEL product found to be faulty within twelve months of installation or within fifteen months after the date of dispatch from its factory, whichever is the shortest, which is proven to the satisfaction of DEL to be defective.

1.2 Warranty covers failure of DEL products and does not include installation (unless fitted by DEL) of the product or any part of the product associated with the installation. This is solely at DEL's discretion.

1.3 To substantiate the claim DEL will want clear product identification (the serial number), may require proof of purchase, may want to inspect the product on its Customer's premises and may insist that the defective product be returned to DEL (at DEL's cost).

1.4 In the event repairs are required to a DEL product "in the field", DEL will authorise its own engineers or instruct (with a relevant authorisation number) one of its approved Service Agents to carry out the necessary work and will pay the Service Agent direct. In the event that the Customer or End User is willing and capable of carrying out the repair work themselves, costs must be

agreed in advance and a pre authorisation number must be obtained from DEL.

1.5 If during the warranty period, the DEL product is rejected by the bodybuilder/DEL product fitter, as being not fit for purpose due to poor workmanship, sub-standard performance or other quality defects, DEL will replace or repair the DEL product either on site or in its own factory. Costs covered by DEL would include any removal and re-fitting of the DEL product to the vehicle, additional transportation and labour plus materials to replace/repair.

1.6 In the event the DEL product is not accepted by the Customer because the wrong specification was ordered or because the End User changed his mind after DEL product build, DEL will endeavor to take the DEL product back into stock but reserve the right to apply a handling charge and to recover all of its transportation costs. In addition a product devaluation charge will be applicable, the value of which will be dependent on the condition and age of the DEL product and upon whether the DEL product is a “special” or a standard DEL product.

1.7 The warranty will be invalid if any of the following (but not limited to) is shown to have happened: accidental damage, product overload, operator error/abuse, product not installed properly, product not serviced (and greased) regularly.

1.8 The warranty will be invalid if the cause of the breakdown (or other problem) is found to be the result of a defect with another part of the vehicle e.g. a PTO problem or a vehicle electrical fault.

1.9 The warranty will be invalid if it is established that DEL has not received payment in full for the DEL product, e.g. if the goods have been stolen or if DEL’s customer has been unable or unwilling to pay for the goods.

1.10 The warranty will be invalid if it is shown that the problem/failure has been caused (or contributed to) by non-DEL parts, which were fitted during an earlier service.

1.11 The warranty will be invalid if the failure is shown to have been caused by any unauthorised modifications to the DEL product. DEL approved modifications must always be in writing.

1.12 On no account will DEL accept consequential losses of any description. These include but are not limited to: handling charges, replacement vehicle hire, delivery penalty clause, loss of business opportunity.

1.13 Because DEL’s service network covers all of the UK, the warranty applies only to DEL products which have been purchased in the UK and which remain on the mainland.

1.14 If during the warranty period, DEL replacement parts have been fitted; these replacement parts will have a further 12 months warranty for both parts and labour.

1.15 Warranty consideration will only be given providing the customer and Service Agent follow the correct warranty procedure. The customer must contact DEL prior to carrying out any work for authorisation or contact DEL or a DEL approved Service Agent if they require breakdown assistance. DEL Service Agents must adhere to the Service Level Agreement they have signed with DEL (Service Agents see Service Agent SLA).

1.16 Any breakdown at any location found not to be covered by DEL warranty, regardless of fault, will be chargeable to the company that called the job in to DEL. Calling a breakdown in to DEL or a DEL Service Agent will be taken as acceptance of this condition.

1.17 No warranty will be given for any failure due to chemical corrosion and physical erosion

1.18 No warranty will be given for any failure caused by Fire, Theft, Freezing, Riot or Explosion

1.19 No warranty will be given for failure caused by Lightning, Earthquake, Windstorm, Hail, Water, or Flood.

1.20 No warranty will be given for any part of a Wanderlead Control Assembly.

1.21 Although DEL will always endeavor to repair/replace parts putting the product back to its original condition, this does not include repainting any part of the product that has been painted after leaving DEL's premises. Galvanised/Plated parts will be replaced where ever possible, but DEL reserves the right to replace parts using non galvanised/plated parts on occasion, but with a minimum of a primer finish.

2. Customer Responsibility

2.1 The customer is responsible for the maintenance of the product as specified in the Operation and Maintenance Handbook issued with the product at point of sale. It is the customers responsibility to ensure that all operators have read, understood and adhere to the details given in this booklet. If this booklet is not available, a copy is available from DEL's website to download free of charge (visit: www.del-uk.com).

2.2 In addition to regularly greasing the product (see point 2.1); it is the customer's responsibility to replace grease/lubricant that has been removed from the product due to washing/cleaning the vehicle and/or product. This includes products that are on contract maintenance.

2.3 The customer must retain all service documentation, including weight tests and Statutory Thorough Examinations (STE), which must be available upon request to validate any warranty claim. Failure to maintain the product may invalidate the warranty. This is solely at DEL's discretion.

2.4 The customer is responsible for ensuring the product is being used for its intended purpose only, and has been operated in accordance with the issued instructions.

2.5 In the event of failure, the customer must:

- Use all reasonable means to protect the product from further damage
- Notify DEL Service Department as soon as possible
- Present where requested, proof of warranty coverage and Tailift service history.
- Use only genuine DEL Parts

3. Additional Specific Standard Warranty Exclusions

In addition to the above terms and conditions the following warranty exclusions will apply. Please note that some of these exclusions are product specific and therefore may not be relevant to all products.

3.1 First Year Exclusions:

- Minor adjustments such as (but not limited to) chain adjustment, pressure adjustment, flow adjustment.
- Any form of maintenance such as (but not limited to) lubrication, oil replacement.
- Pressure Filters – Filters are required to be replaced on all bin lifts, where applicable, after the first 3000 cycles (approximately 1 month of use for a typical user) and then every 6 months thereafter.
- The following parts are excluded after 12 weeks from the start of the warrantable period (see point 1.1): bulbs, fuses, electrical connections

4. Additional Specific Extended Warranty Exclusions

In addition to the above terms and conditions the following warranty exclusions will apply to products purchased with extended warranty and/or put on Contract Maintenance with extended warranty. Please note that some of these exclusions are product specific and therefore may not be relevant to all products.

4.1 Second Year exclusions:

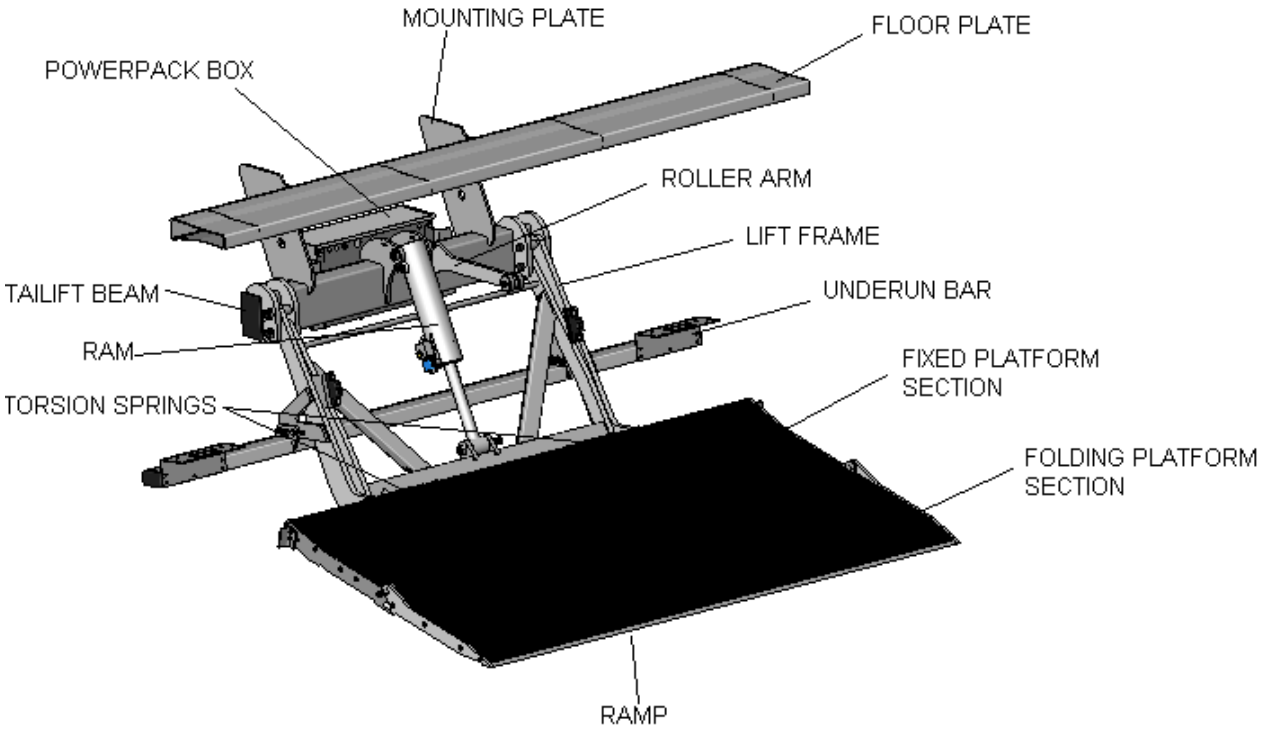
- Hydraulic hoses
- All hydraulic fittings, including loose fittings
- All electrical wiring, including loose connections
- All maintenance replacement parts such as (but not limited to) bushes, bearings, rollers, pins
- Wear and tear on any part
- All non standard electrical lift options such as (but not limited to) flashing lights, warning buzzers

4.2 Third Year exclusions:

- Chain stretch/wear
- Torsion Bar failure or loss of torsion

2. OPERATING SYSTEMS

The tailift is powered from the vehicle battery. A wire is taken from the battery positive to the powerpack starter switch and the hand control, these circuits are protected by in-line fuses. The up button on the hand control provides power to the starter switch, which operates the powerpack motor. This pumps high-pressure hydraulic fluid to retract the ram. On release of the up button the fluid is held in the ram due to a non return valve which locks the ram in position therefore holding the platform stationary. Pushing the down button powers the lowering solenoid, which allows the hydraulic fluid back from the ram to the power pack reservoir. When not in use the platform is folded in upon itself and 'tucks away' under the rear of the vehicle. A lock valve is used to hold the ram in position and keep the platform securely stowed under the vehicle against its stop.



3. SAFETY FEATURES

Before operating the tailift be sure you understand the safety devices fitted, and ensure that they are in good working order by following the regular maintenance program.

CIRCUIT BREAKERS

Fuses protect the electrical circuits. In the case of any electrical fault they will protect the tailift from any damage to its electrical systems. It is possible to disconnect the electrical supply by removing the fuse.

LIFTING LOADS – RELIEF VALVE

The power pack is equipped with a pressure relief valve, which ensures that a gross overload of the lift, which may damage critical parts cannot be lifted. This valve is factory set.

LOWERING LOADS – FLOW REGULATOR

The returning oil from the ram passes through a flow regulator valve, ensuring the platform lowers at a controlled speed irrespective of the load.
Note – The platform must not be overloaded on lowering as this will cause permanent damage to the lift operation.

CART STOP

Platforms may be equipped with Cart Stops which can be deployed to ensure that loads cannot roll/fall from the loading edge of the platform whilst lifting or lowering.

CONTROL BOXES

The buttons are designed so they are just large enough to be operated by one finger. This prevents accidental operation by other objects hitting the control box. The control boxes themselves are mounted in a steel protective cover.

PLATFORM

The platform has a rough, anti-skid surface, which ensures that the platform is not slippery in most weather conditions.

LOCK VALVE

When the platform is stationary, the rams are locked in position with a solenoid lock valve. Should any hydraulic failure occur, the platform will remain in its stationary position.

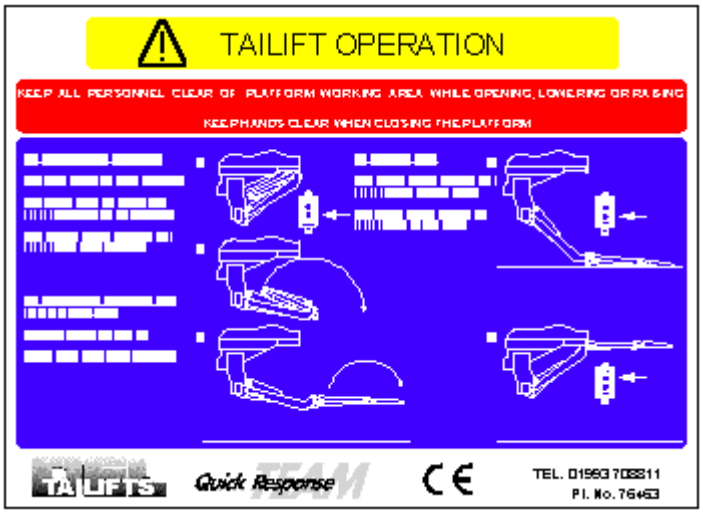
4. WARNING DECALS

Be sure you understand the warning decals, and check they are present and legible in regular inspections. If any are missing contact DEL service to obtain replacements.

TAILIFT OPERATION

LOCATION
Above control box at eye level

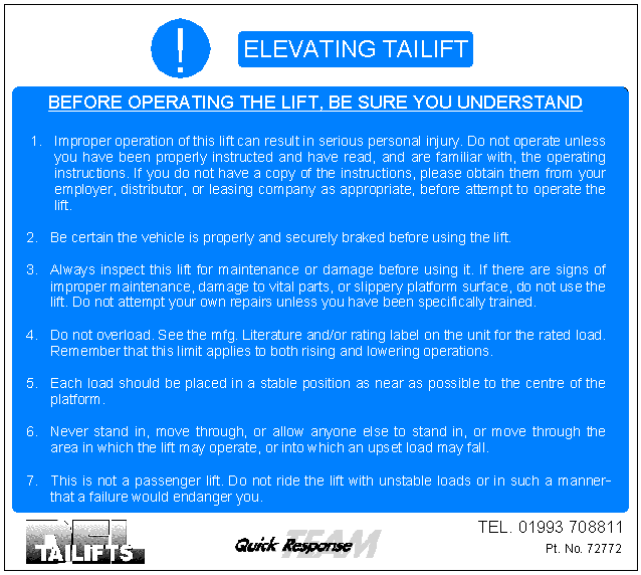
- Ensure you understand the operating instructions.
- Keep all personnel away from the lift during operation.
- Be aware of the area around the lift and stop operating if anyone enters it.
- Ensure the area is clear of obstructions before use



ELEVATING TAILIFT

LOCATION
Located next to the control box

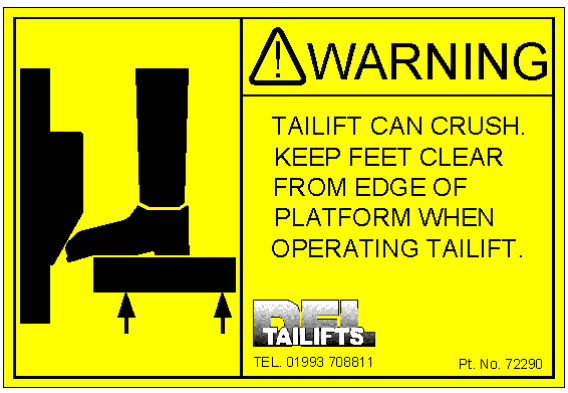
- Be sure you understand before using the lift



WARNING

LOCATION
Located on the rear of the body, where it can be seen whilst using the lift

- Tailift can crush. Keep feet away from the edge of the platform during lifting



WARNING

LOCATION
Next to the control box

- Do not exceed the safe working load of the lift. Overloading may cause serious injury.
- Ensure the loads are evenly distributed across the platform centred at 0.5m from the edge of the platform

FLAG

LOCATION
Located on the underside of the platform at both ends.

- Increases the visibility of the platform when in its operating position

KEEP FEET CLEAR

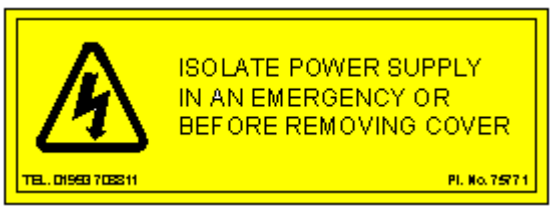
LOCATION
The edge of both sides of the platform

- Platform can crush. Keep feet clear of the edge of the platform

ISOLATE POWER SUPPLY

LOCATION
Located on the power pack box lid

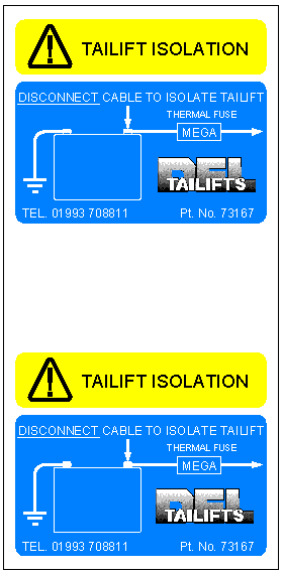
- Be sure to isolate the power supply before removing the cover



TAILIFT ISOLATION

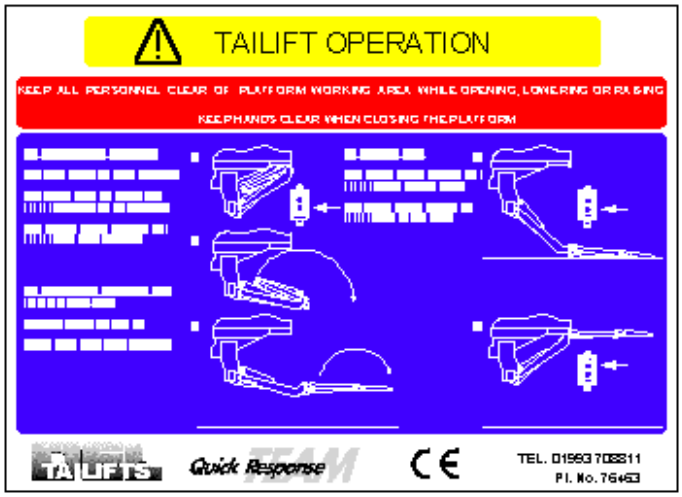
LOCATION
Located around the live cable from the battery

- Be sure to isolate the power supply before removing cover



TAILIFT OPERATION

LOCATION
Located next to the control box



IMPORTANT
Before use, the lift should be inspected to check that all warning decals are present and legible, if not contact DEL Service for replacements.

√ INTENDED USES

The DA range of lift is intended for: -

- Lifting of loads vertically from the ground to vehicle bed height and vice-versa.
- Lifting of the load and the operator only, where the operator has been trained to use the lift following all safety procedures.
- Lifting of loads no heavier than the safe working load of the lift fitted.

X UNSAFE USES

The following are unsafe practices which may damage the lift and cause risk of personnel injury: -

- Driving a forklift onto the platform.
- Using the lift as a jack.
- Using the platform as a step to the truck bed.
- Lifting unstable/wheeled loads without special precautions
- Use as a passenger lift
- Driving the vehicle with the platform open.
- Using the platform as a link bridge or for loading onto a dock.

6. SAFETY PROCEDURE

Before operating the lift be sure to understand the following instructions: -

1. Read and be familiar with the safety instructions and warning decals before operating the lift.

2. Be sure the vehicle is securely braked and there is adequate lighting in the working area.

3. Inspect the lift for lack of maintenance or damage. If there are any signs of damage do not use the lift or attempt repairs unless you have been specifically trained.

4. Clear the working area of any obstructions.

5. Do not overload the lift. Note that the safe working load of the lift applies to both lifting and lowering operations.

6. Make sure the centre of the load is placed as near to the centre of the platform as possible. Note that the platform is not a level ride and if wheeled loads are lifted ensure these are securely braked and that available safety devices are used (ie. cart stops).

7. Make sure that, whenever you intend to ride the platform, you leave enough room to stand without risk of falling.

8. Do not ‘jerk’ the lift by pressing the up/down buttons too quickly as this might result in the load becoming unstable.

9. Make sure the platform is securely stowed before driving the vehicle

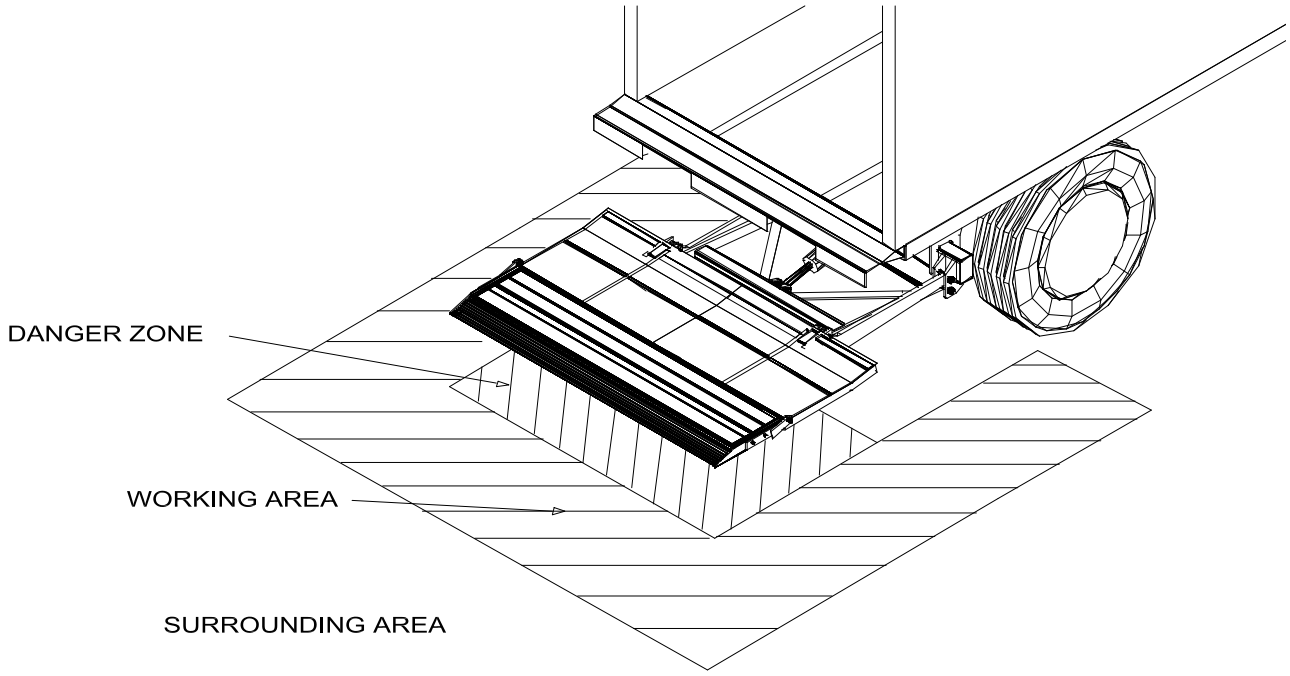
7. WORKING AREA

The push button controls are located is such a position to give: -

- A good view of the working and surrounding areas.
- A secure position away from passing traffic

The position of the controls should not be changed.

NOTE
The danger zone is the area in which the platform travels, and under no circumstances should this be entered while the platform is in its operating position.
The working area is the area around the platform in which the operator can stand while the platform is in its operating position. If anyone other than the operator enters this area while the lift is in use, any lifting or lowering operation which is being performed must be stopped.
Surrounding area is the area around the working area. The operator should be aware of the surrounding area and look for and potential hazards.

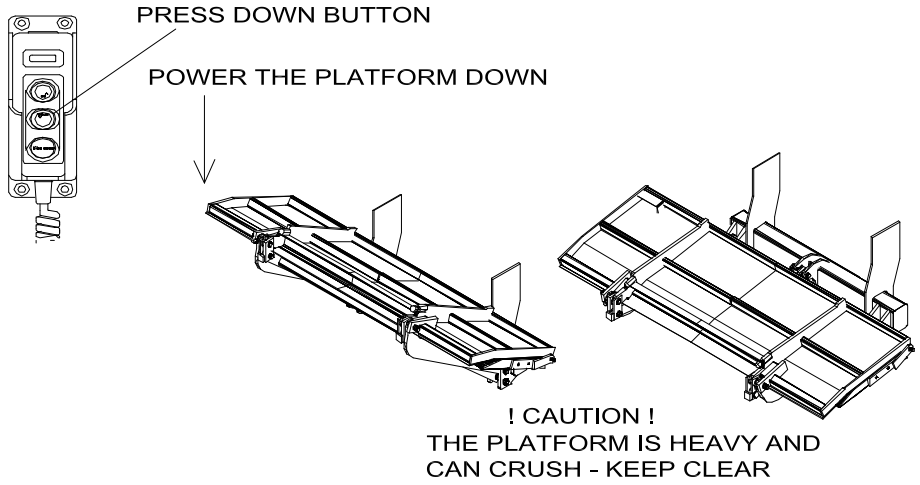


8. OPENING PROCEDURE

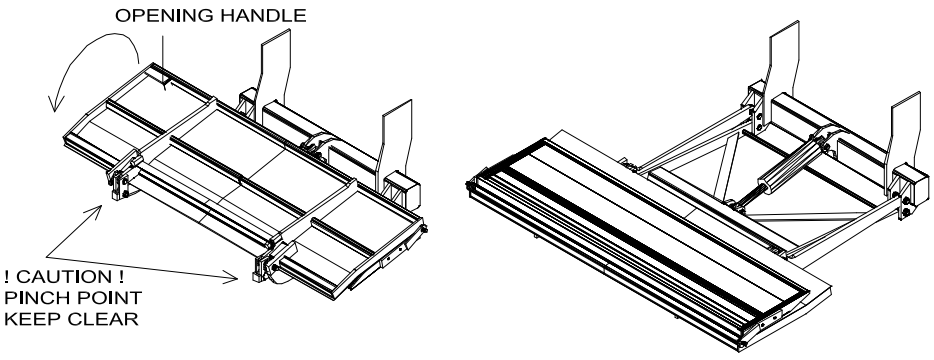
1. Ensure that the working area is clear from any obstructions.

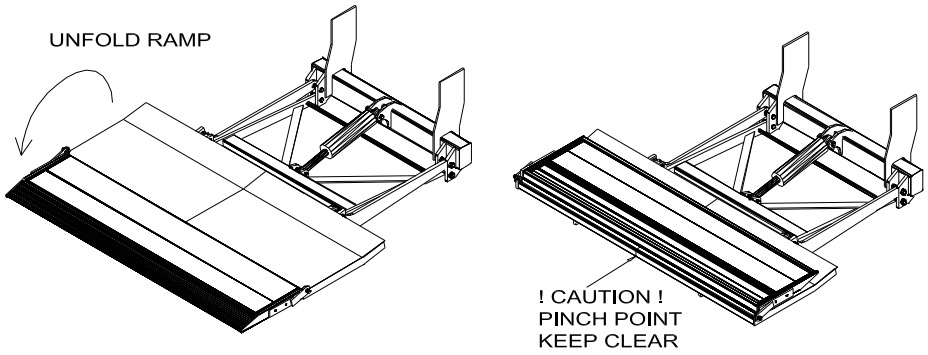
2. Plug in the wanderlead control or open the control box to gain access to the control.

3. Standing clear of the platform, on the kerb side of the vehicle, press the down button on the control, until the platform comes to the ground.



4. Using the platform handle or strap, which is located on the nearside of the platform, pull open the main section of the platform until it reaches the horizontal position. The opening of this section is spring assisted.





5. Press the up button to raise the platform to a comfortable level before unfolding the ramp section to give the complete platform area.

6. The platform is now fully open and should be used following the operation procedure.

CLOSING PROCEDURE

1. Lower the platform to a comfortable height before folding the ramp section onto the main section of the platform.

2. Lower the platform fully until it reaches the ground.

3. Fold the main platform section until it reaches the roller arm.

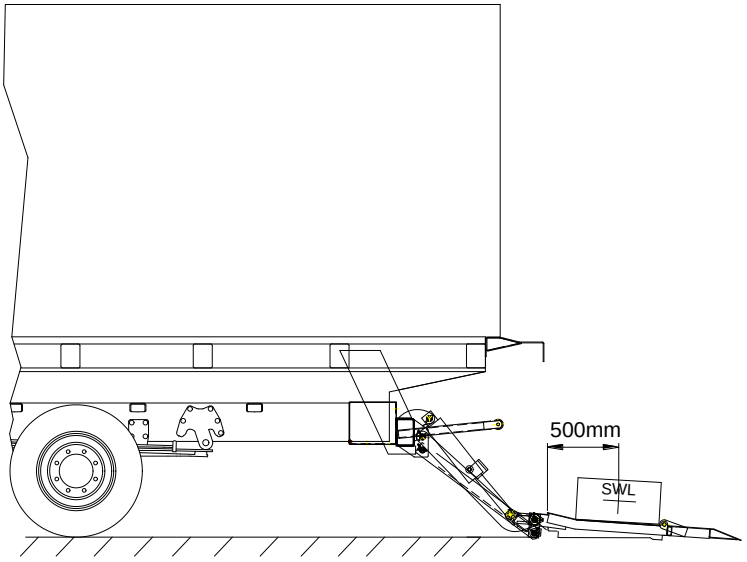
4. Press the up button on the control until the platform reaches its stop.

5. Un-plug the wanderlead control or lock the control box.

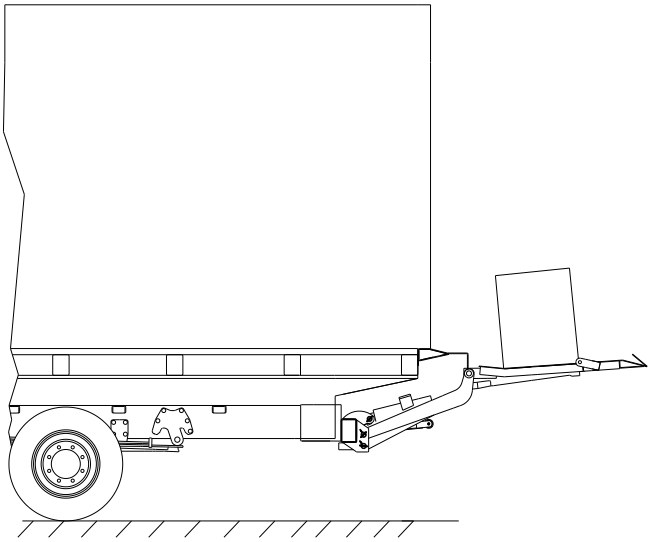
6. Ensure that the platform is securely in its stowed position before driving the vehicle.

9. OPERATING PROCEDURE

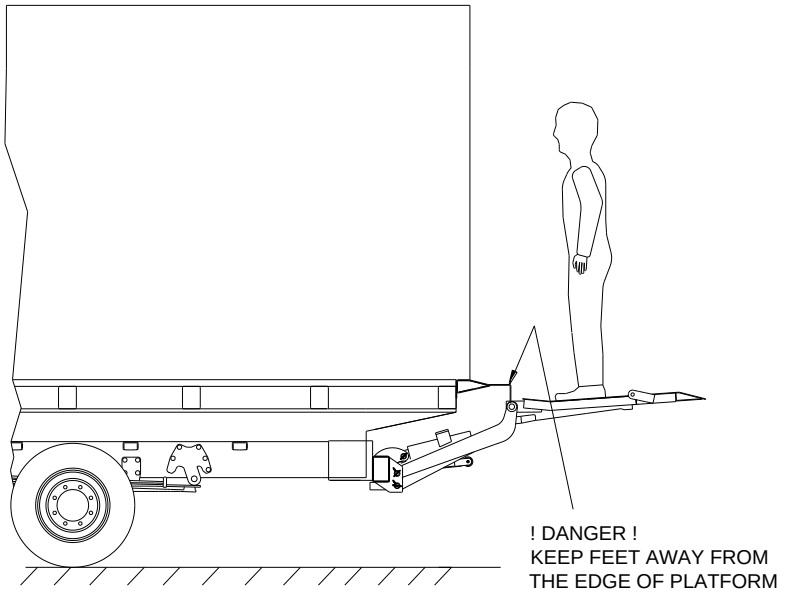
1. Open the platform using the method detailed above.
2. Evenly distribute the load on the platform as close to the centre as possible.



3. The platform is not a level ride so make sure to leave enough room for the operator to stand when they intend to ride the platform and that wheeled loads are securely braked. Ensure that all safety devices are used e.g. the cart stops are in the open position.

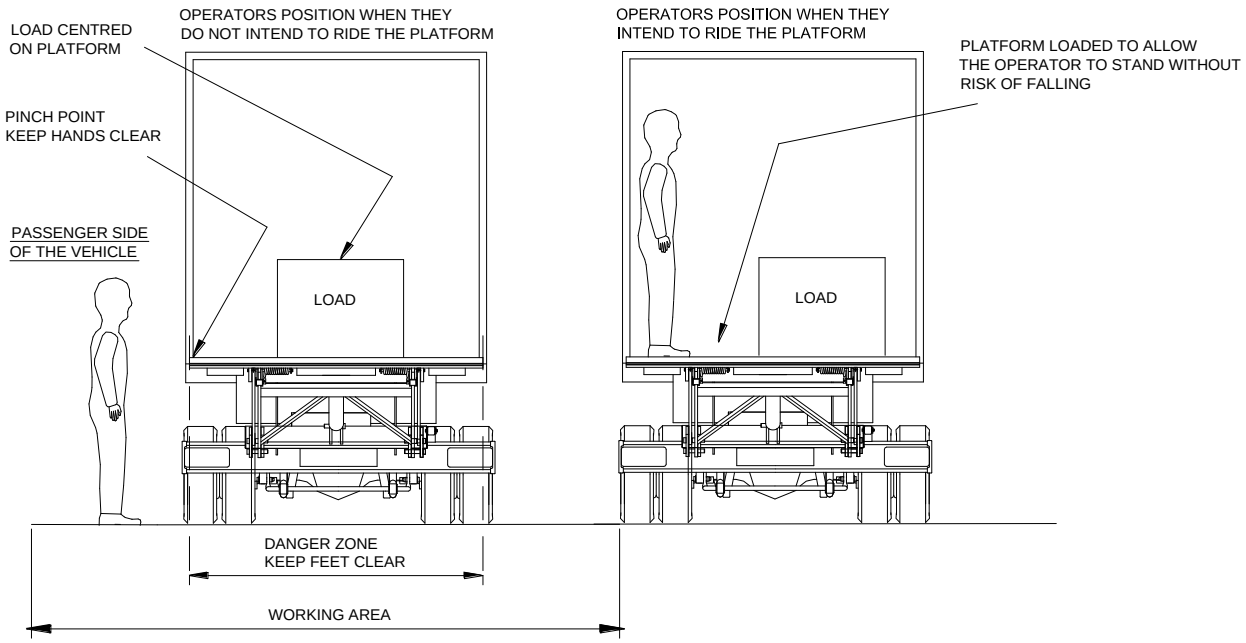


4. Power the lift up keeping feet away from the edge of the platform.



5. When the platform reaches bed height release the control button. Holding the control button on when the platform has reached its stop can damage the lift.
6. When loading from the vehicle onto the platform ensure that the safe working load of the lift is not exceeded as the overload may damage the unsupported platform.
7. When closing the platform ensure that it is securely stowed following the closing procedure.

OPERATORS POSITION



DEL IS A CARGOTEC BRAND

MAINTENANCE MANUAL

INTRODUCTION

Low maintenance requirements are an important benefit of the DEL tailift. There is a minimum of moving parts and no cables to fray. However, low maintenance does not mean NO MAINTENANCE – Attention to the simple monthly, seasonal and yearly program should ensure years of safe, trouble free work from your DEL tailift.

IMPORTANT

The “duty holder” (owner/user /operator) of the tailift has a legal responsibility to ensure that the lift is safe to use at all times. These duties and responsibilities are documented in some detail in the LOLER 1998 and PUWER 1998 Regulations. Del has produced a document to provide advice to “duty holders” (tailift owners and users) to assist them to comply with Government Health & Safety Regulations. It also provides useful information for service engineers. This document (procedure No. 4002.1) is available on request.

10. SAFETY INFORMATION

SPRINGS

There are springs located at each side of the platform where it meets the lift frame. These assist the operator to close the platform into its stowed position. There is a significant force on these springs when the platform is in its open position, and care must be taken to ensure they are in a relaxed state before any maintenance is carried out on them or parts they are connected to.

HYDRAULIC SYSTEM

The hydraulic system uses high operating pressures and as such should be treated with caution. Never work on the lift while the system is under pressure, always lower the platform onto the ground before any maintenance of the system.

WARNING – High-pressure ejection of hydraulic fluid can cause serious injury. A ram in operation/under pressure has a large amount of stored energy.

11. MAINTENANCE PROCEDURE

1. On a daily basis perform the checks as described below.
2. Before carrying out the service the tailift should be cleaned and inspected. We also recommend that it receive a Thorough Examination, just prior to the service. If the service engineer is shown a copy of a very recent *Thorough Examination* Report (within the last 7 days), and if he accepts that the *Thorough Examination* has been completed by a “competent person”, he may decide not to repeat some or all of the checks in the service.
3. The service schedule gives details of regular service procedures. All of the procedures should be carried out at each service except the hydraulic oil change which only needs to be done every 24 months. The appropriate part of the service record should be completed after each service.
4. Where major repairs are needed (see below); the additional service sheets should be completed. The post installation tests which refer to the replaced part need to be repeated i.e. if the power pack is replaced, the overload, drift and operating speed tests need to be repeated.

USAGE

The maintenance schedule for Tuckunder lifts is given below. The time scale for the schedule is given below

Light use - An average of about 20 cycles per day at loads well below the safe working load of the lift - Service twice per year.

Normal use – An average of about 30 cycles per day at loads mostly below the safe working load – Service 3 times per year

Heavy use – An average of about 40 cycles or more per day at loads on or close to the safe working load – Service 4 times per year

The times given for the schedule are taken from the date of installation.

The need for regular, preventative maintenance is essential to the working life of the lift.

ACCIDENT OR BREAKDOWN

In the event of an accident or breakdown, if the tail lift cannot be repaired immediately it must be put out of operation and secured against unauthorised use. Contact DEL Service for assistance.

MAJOR ALTERATIONS/REPAIRS

In the case of a major repair the service report (see page 24) should be completed. After such repair the tests after installation should be carried out to ensure the lift is set up and operating correctly and safely after the repair. A major repair is classed as one which involves the replacement of parts due to failure or malfunction.

REPLACEMENT PARTS

A complete list of service replacement parts can be obtained by contacting DEL Service.

DAILY INSPECTIONS

At the beginning of each shift or working day that the equipment is in use the following routine inspections should be carried out, by the trained and authorised person who will use the equipment (usually the truck driver). There is no need to keep any records of the inspection but if any faults or defects are found they must be communicated to the business manager/owner. This routine inspection, done at the depot, should normally take no more than a few minutes and could eliminate a lot of time and effort later in the day. If in any doubt the equipment should not be used until any serious defect has been dealt with. This may mean involving a “competent person” to inspect the lift.

- With tailift in the stowed position, visually inspect for physical damage, loose fittings and oil leaks.
- Press the DOWN BUTTON to lower the platform to a suitable height. Fully open the platform and ensure the effort required is OK.
- Check that the two warning flags are in place on the platform, if not ask for them to be ordered immediately.
- Check that all the warning decals are in the correct place.
- Check that the DEL plate is visible indicating the SWL.
- Visually check the surface of the platform, ensure it is undamaged and not slippy.
- Check that the Cart Stops (if fitted) are operational and undamaged.
- Lower the opened platform fully to the ground and then raise it fully to ensure it comes up to bed height. The movement should be smooth and without “unusual” noise.
- Lower the platform to a suitable height, fold back the front section and then fully close the platform. Ensure the effort required is OK.
- Push the UP BUTTON to bring the folded tailift to the park position.

The user should inform his business manager/owner of any problems. The business manager is responsible for ensuring proper action is taken.
It is not essential to log the outcome of these inspections but it is sensible to note any faults found and later comment when the fault has been put right.

TAILIFT SERVICE RECORD

Vehicle reg No…….. Tailift Model…….
Lift Serial No…….. Date of Manufacture……..

Service 1 (4 Months)
Date……
Company……
Address……..
Signed…….
Pint Name……...
Comments……..
……..
……..

Service 2 (8 Months)
Date……
Company……
Address……..
Signed…….
Pint
Name……
Comments……..
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Service 3 (12 Months)
Date……
Company……
Address……..
Signed…….
Pint
Name……
Comments……..
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Service 4 (16 Months)
Date……
Company……
Address……..
Signed…….
Pint
Name……
Comments……..
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Service 5 (20 Months)
Date……
Company……
Address……..
Signed…….

Pint
Name……
Comments……..
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Service 6 (24 Months)
Date……
Power pack hydraulic oil changed?.....Y/N
Company……
Address……..
Signed……
Pint Name……
Comments……..
……..
……..

Service 7 (28 Months)
Date……
Company……
Address……..
Signed……
Pint
Name……
Comments……..
……..
……..

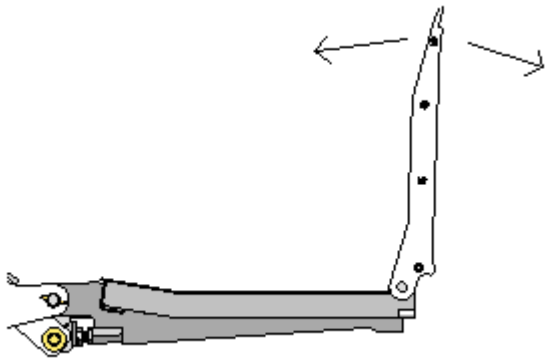
Service 8 (32 Months)
Date……
Company……
Address……..
Signed……
Pint
Name……
Comments……..
……..
……..

Service 9 (36 Months)
Date……
Company……
Address……..
Signed……
Pint
Name……
Comments……..
……..
……..

TAILIFT SERVICE SCHEDULE

The following service points must be carried out at each service, with the exception of the hydraulic oil change which must be done every 24months.

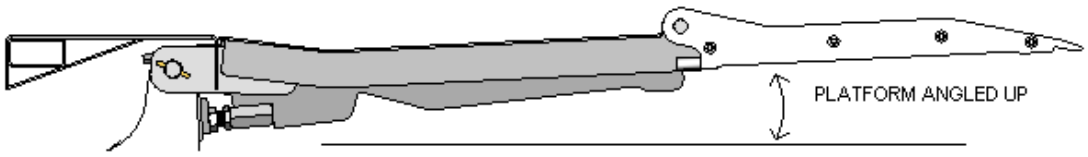
1. Check that all decals and warning flags are in place. (see installation or operators manual for decal locations)
2. Check that the vehicle chassis is sound and that the mounting plates are securely bolted to the chassis and welded to the tailift beam (see bolt torque settings in installation manual)
3. Check the condition of all switch controls. Are all buttons intact, the casing, control box (if fitted) and battery cables undamaged. Check that there are no loose wires.
4. Carefully lower the tailift to a suitable height. Pull open the platform and unfold the front section. Check that the effort required is OK.



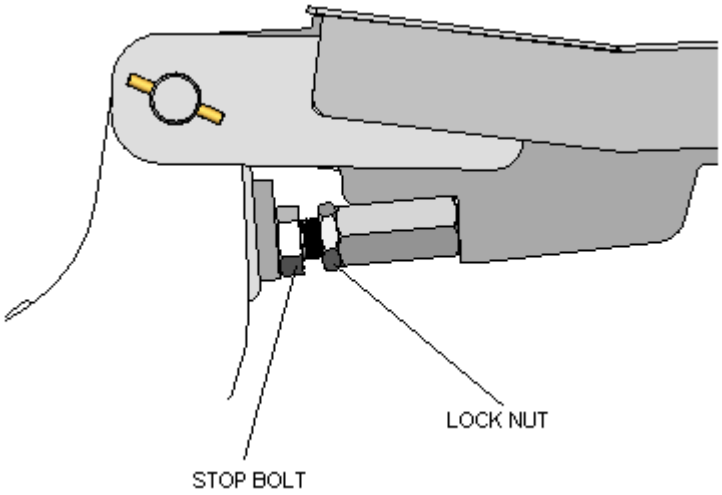
5. Check that the platform is not damaged and that its surface is non-slip. Also check the action and condition of any Cart Stops which may be fitted

6. Lower the platform to the ground then immediately raise it back to bed level. Release finger from button and check movement stops immediately (both up and down). Check if the movement is smooth with no grinding noises or unusual motor or pump noises

7. Check that the tailift comes up to bed height and that the platform is slightly inclined towards the truck (to prevent goods rolling off the platform)



If needed adjust the platform stop bolts ensuring that the lock nuts are fully tightened.

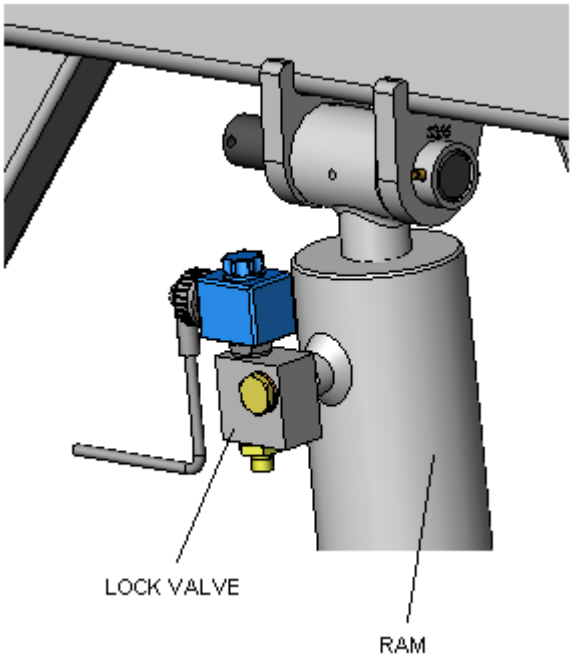


8. Measure the gap between the edge of the platform and the “Floor plate” (Rear Bearer). If more than 10 mm the bushes may be worn. Replace all worn bushes. Ensure that the platform and lift frame are securely supported before removing any pivot pins, and ensure that the tension pins which hold the pivot pins in place are replaced.

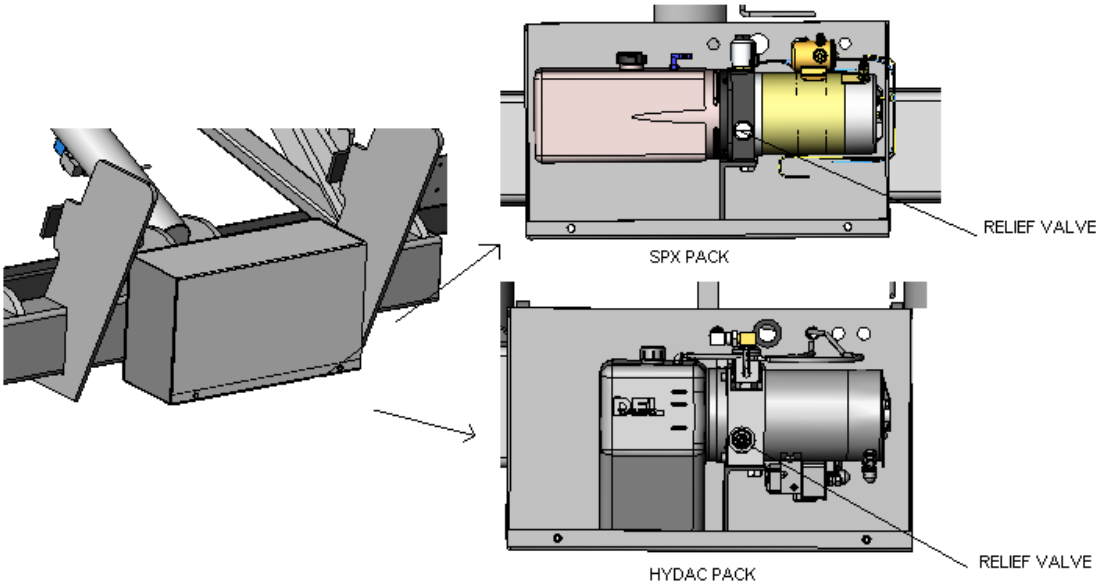
9. Fully lower the platform from bed height to ground and record the time taken in seconds. The movement should be smooth. The lowering speed should not be greater than 150mm per second and the time taken should not be less than 7 seconds

10. With the platform on the ground, check that all hydraulic hoses and fittings are tight and that there is no evidence of oil leaks. If necessary tighten or replace any loose fittings or hoses.

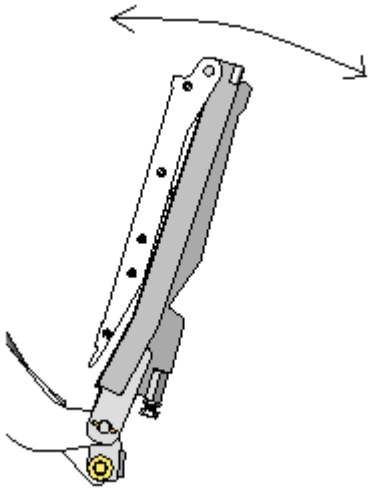
11. Check all hose connections to the RAM. Check that the Lock/Check Valve is secure.



12. With the platform on the ground, take the cover off the pump box, and check the oil level in the tank. If the oil level is below the max mark, top up using Automatic transition fluid or Shell T22 or equivalent. Check that the tamper proof cap is still intact on the Pressure Relief Valve or that the valve may only be adjusted with a special tool. If there is any doubt about the pressure setting, a full load test should be planned at which the pressure should be set to the correct level and the tamperproof “device” re-fitted. Check that all the electrical connections are sound before refitting the box cover.



13. Check that the effort required to close the fixed part of the platform is ok. Inspect the torsion springs and spray with WD40.



14. Inspect all welds for cracks.

15. Change the hydraulic fluid (every 24 months). With the platform on the ground, remove the power pack box cover. Disconnect the hoses where they connect on to the ram lock valve and place in a container to catch the hydraulic fluid. Press the up button to drain the tank, note that short sharp pushes will help empty the tank. It may not be possible to

completely drain the oil from the tank as a small amount of oil will be below the suction pipe in the tank. Reconnect the hose onto the lock valve before filling the tank with new oil (Automatic transmition fluid or Shell T22 is recommended). Prime the pump by pressing the raise and lower buttons simultaneously. Raise and lower the platform a couple of times and check for any oil leaks. With the platform on the ground check that the oil level is up to the max mark before refitting the powerpack box cover.

12. RECORD OF MAJOR REPAIRS

DATE……

FAULT……

……

……

……

CLAIMED UNDER WARRANTY YES/NO?

PARTS PURCHASED……

……

……

TESTS COMPLETED ON PARTS FITTED……...

……

REPAIRED BY……

COMPANY NAME & ADDRESS……...

……

……

DATE……

FAULT……

……

……

……

CLAIMED UNDER WARRANTY YES/NO?

PARTS PURCHASED……

……

……

TESTS COMPLETED ON PARTS FITTED……...

……

REPAIRED BY……

COMPANY NAME & ADDRESS……...

……

……

13. HYDRAULIC/ELECTRICAL/MECHANICAL FAULT FINDING CHART

FAULT	REASON	
Will not Lift	Motor not running	- Fuse blown - Check power to motor - Check starter switch - Check wiring to starter switch - Faulty earth - Faulty push button - Seized pump
	Motor runs fast	- Pump scored and slipping - Solenoid valve contaminated - Relief valve contaminated or not set high enough - Ram seal or rod scored - Coupling between pump and motor broken - No oil/low oil level
	Motor runs slowly	- Bad electrical connection to battery or earth - Battery flat - Motor bushes worn - Hydraulic line blocked, hose collapsed, flow control closed or incorrectly fitted - Wrong size of pump fitted - Mechanical damage to tailift - Suction filter blocked
Lift will not lift load or part load		- Relief valve setting too low or contaminated - Pump scored - Oil too thin - Low oil level - Solenoid valve contaminated
Lift will not lower		- Solenoid wire or coil failure - Electrical push button failure in switch or wiring - Mechanical damage
Lift lowers slowly		- Oil too thick - Collapsed hose or blocked hydraulics line - Solenoid valve jamming or incorrectly set by manufacturer

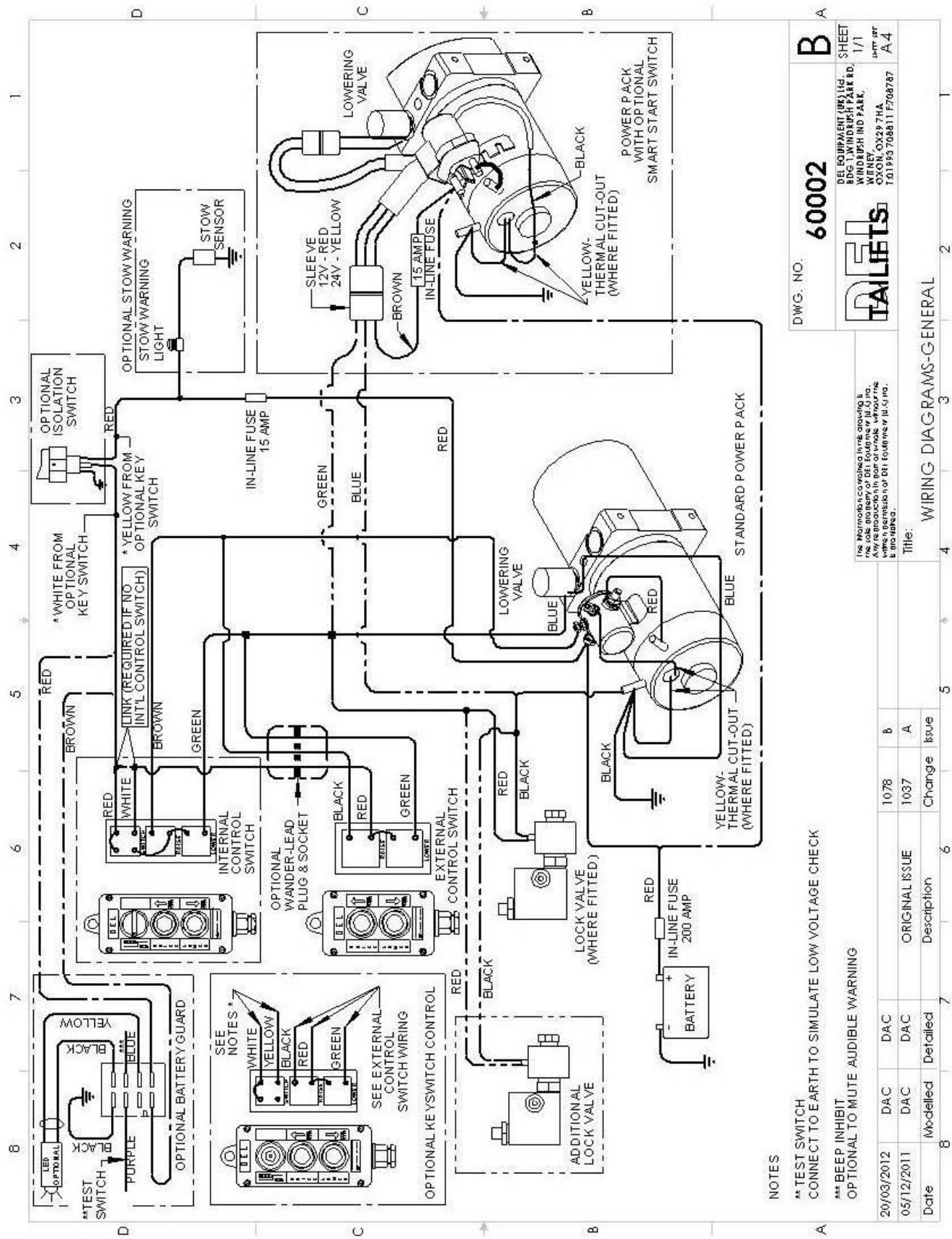
	- Flow control blocked or incorrectly set or fitted.
Lift creeps down	- Solenoid valve leaking - Check valve leaking - Oil leak - Pipe leaking - Ram seal leaking - Pump casting porous
Lift only raising partially	- Not enough oil - Suction filter blocked - Tank filter breather blocked or shipping plug fitted - Mechanical damage - Relief valve set too low
Pump unit noisy	- Oil too thick - Not enough oil - Suction filter blocked - Relief valve not set high enough - Motor bearing or bushes worn

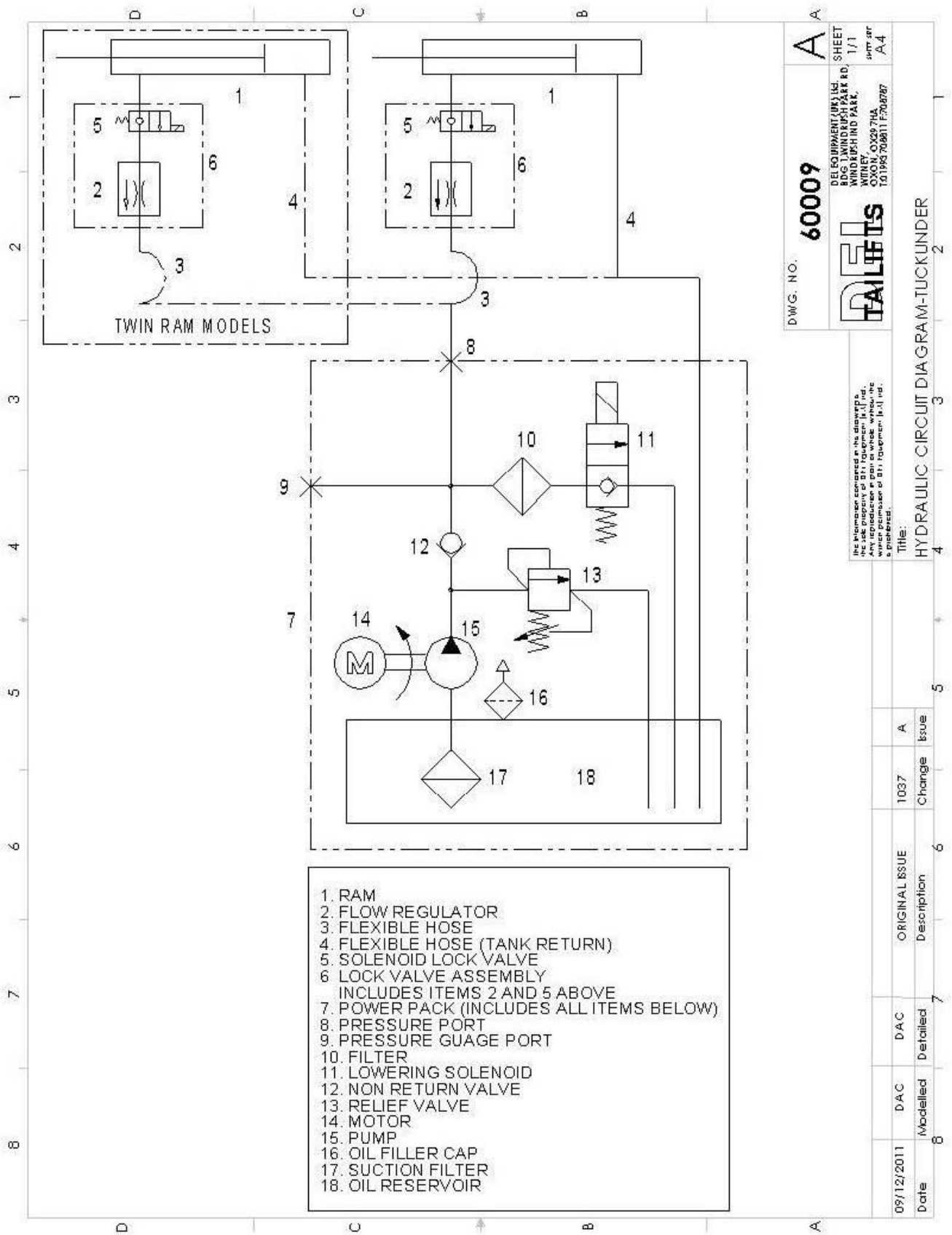
CHECK PROCEDURES

Tools
- Pressure gauge
- Avo meter
- Earth strap

(1) Ensure a good electrical supply is reaching the motor and control switches, good earth is essential.

(2) Check hydraulic pressure when lifting an empty load, full load and at relief valve setting. Relief pressure should be approximately 10% higher than maximum pressure when lifting Safe Working Load (SWL).


WIRING DIAGRAMS-GENERAL
DWG. NO. 60002
B
SHEET 1/1
A4
DEL EQUIPMENT (UK) Ltd.
BDG 1,WINDRUSH PARK RD.
WINDRUSH IND PARK,
WITNEY,
OXON, OX29 7HA
T:01993 708811 F:708787
POWER PACK WITH OPTIONAL SMART START SWITCH
LOWERING VALVE
SLEEVE 12V - RED 24V - YELLOW
BROWN
15 AMP IN-LINE FUSE
BLACK
YELLOW-THERMAL CUT-OUT (WHERE FITTED)
OPTIONAL STOW WARNING
STOW WARNING LIGHT
STOW SENSOR
OPTIONAL ISOLATION SWITCH
RED
* YELLOW FROM OPTIONAL KEY SWITCH
* WHITE FROM OPTIONAL KEY SWITCH
IN-LINE FUSE 15 AMP
GREEN
BLUE
RED
STANDARD POWER PACK
LOWERING VALVE
BLUE
RED
BLUE
LINK (REQUIRED IF NO INTL CONTROL SWITCH)
BROWN
GREEN
WHITE
INTERNAL CONTROL SWITCH
OPTIONAL WANDER-LEAD PLUG & SOCKET
BLACK
RED
GREEN
EXTERNAL CONTROL SWITCH
RED
BLACK
BLACK
YELLOW-THERMAL CUT-OUT (WHERE FITTED)
LOCK VALVE (WHERE FITTED)
RED
IN-LINE FUSE 200 AMP
BATTERY
OPTIONAL BATTERY GUARD
YELLOW
BLACK
BLUE
PURPLE
BLACK
LED OPTIONAL
**TEST SWITCH
SEE NOTES *
WHITE
YELLOW
BLACK
RED
GREEN
SEE EXTERNAL CONTROL SWITCH WIRING
OPTIONAL KEYSWITCH CONTROL
RED
BLACK
ADDITIONAL LOCK VALVE
NOTES
** TEST SWITCH
CONNECT TO EARTH TO SIMULATE LOW VOLTAGE CHECK
*** BEEP INHIBIT
OPTIONAL TO MUTE AUDIBLE WARNING
20/03/2012 DAC DAC 1078 B
05/12/2011 DAC DAC ORIGINAL ISSUE 1037 A
Date Modelled Detailed Description Change Issue


TWIN RAM MODELS
1. RAM
2. FLOW REGULATOR
3. FLEXIBLE HOSE
4. FLEXIBLE HOSE (TANK RETURN)
5. SOLENOID LOCK VALVE
6. LOCK VALVE ASSEMBLY
INCLUDES ITEMS 2 AND 5 ABOVE
7. POWER PACK (INCLUDES ALL ITEMS BELOW)
8. PRESSURE PORT
9. PRESSURE GUAGE PORT
10. FILTER
11. LOWERING SOLENOID
12. NON RETURN VALVE
13. RELIEF VALVE
14. MOTOR
15. PUMP
16. OIL FILLER CAP
17. SUCTION FILTER
18. OIL RESERVOIR
DWG. NO. 60009
HYDRAULIC CIRCUIT DIAGRAM-TUCKUNDER
DEL EQUIPMENT (UK) Ltd
ORIGINAL ISSUE
09/12/2011

DEL Equipment (UK) Ltd
Building 1
Windrush Industrial Estate
Windrush Park Road
Witney
OX29 7HA
TEL: 01993 708811
FAX: 01993 708787
EMAIL: sales@del-uk.com

DEL WARRANTY REGISTRATION FORM

REGISTER YOUR DEL TAILIFT AND OBTAIN UPDATED
INFORMATION ON THE DEL RANGE

PLEASE PRINT CLEARLY.

1. Purchasers name:
2. Address:
   Town:
   County:
   Postcode: Tel No:
3. Form completed by: Position:
4. Type of business:
5. Model purchased: Serial No:
6. Truck make/model/reg.
7. Date purchased:
8. Purchased from:
9. Lift installed by:
10. Were you satisfied with the installation of this unit?
11. Were all warning decals affixed to the tailift?
12. Number of tailifts you now operate?
    Of these, how many are DEL units?
    What other makes of tailift do you own?
13. Was this purchase a replacement?
14. Why did you select a DEL tailift?
    - Owned a DEL unit previously
    - Dealer recommended it
    - Colleague recommended it
    - Advertisement (Name of magazine)
    - Received literature in post
    - Price
    - Other (Please specify)
15. Are you planning to buy additional lifts within the next six months?

Thank you for completing this registration form. Once completed please return the form to DEL Equipment (U.K.) Ltd at the address above.