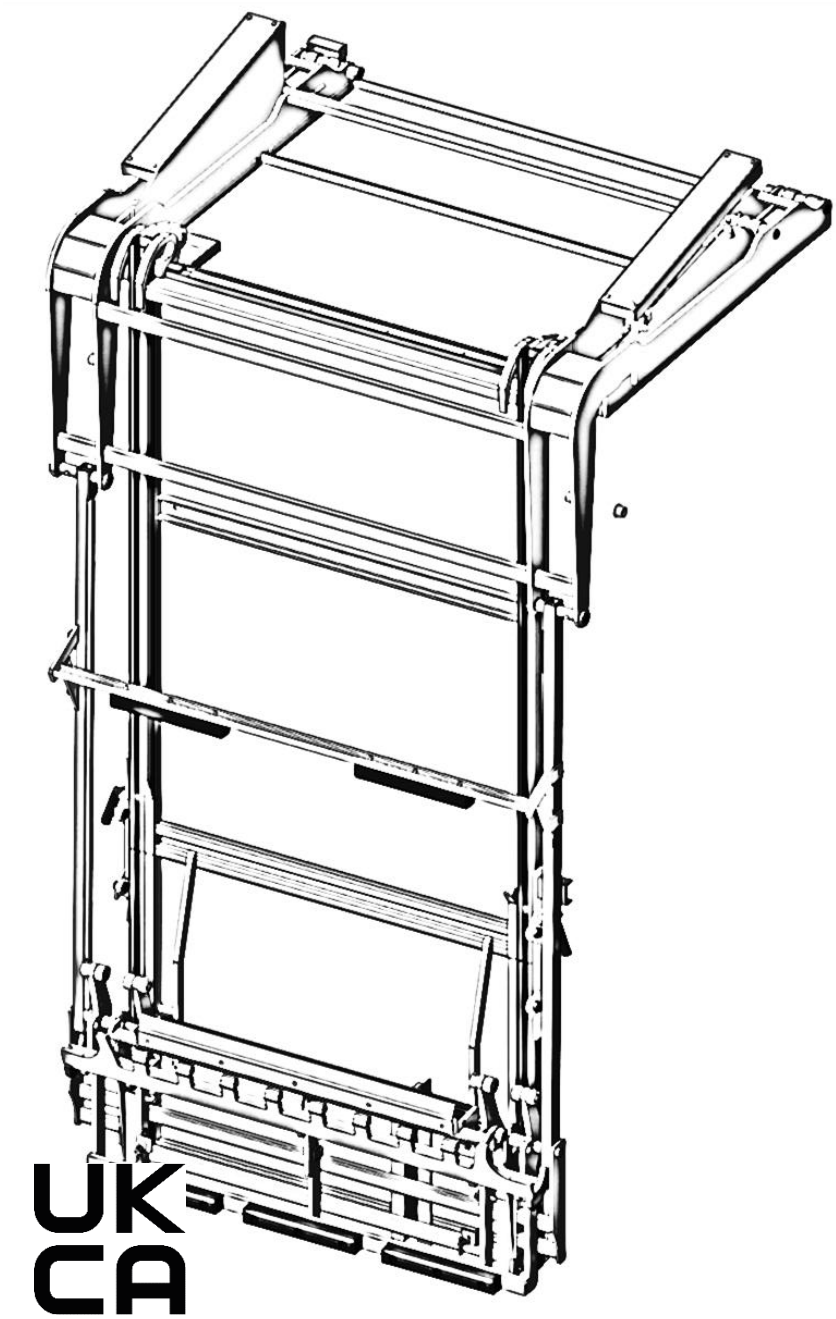
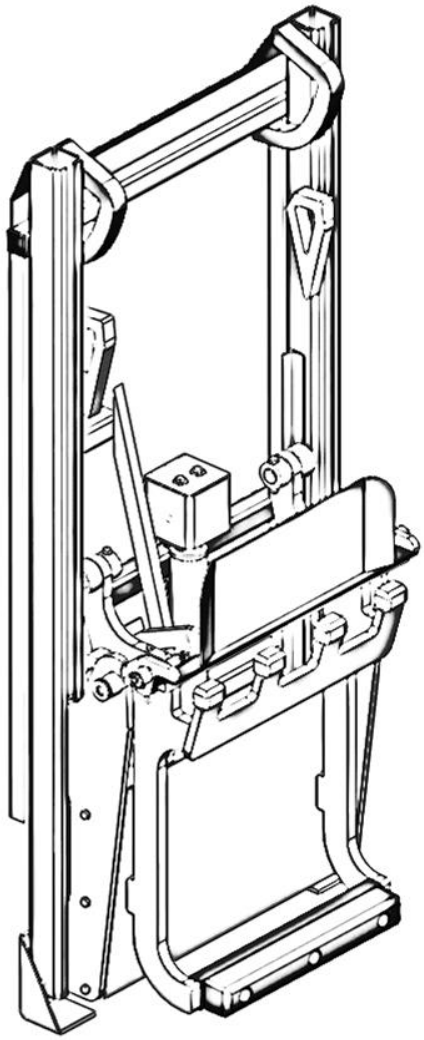
OPERATORS MANUAL

BIN LIFTS





P/No. 52313 Issue G

INTRODUCTION

This manual covers the operation and maintenance of the bin lift range. The procedures detailed in this manual must be understood before the lift 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

WARRANTY

The lift you have purchased is one of the DEL Equipment range of bin lifts. 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 despatch 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 endeavour 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 endeavour 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 Bin lift 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

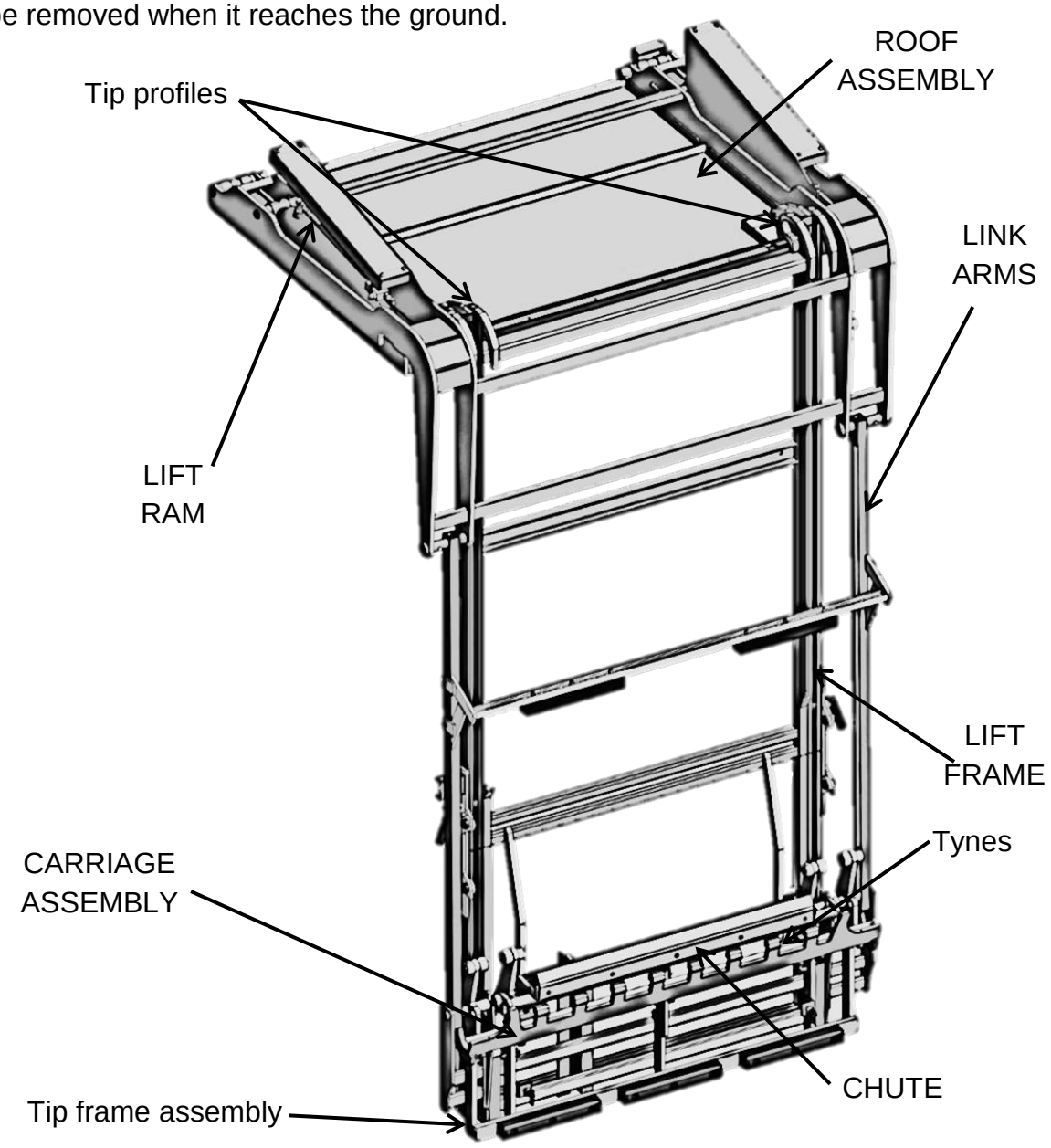
4.2 Third Year exclusions:

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

OPERATING SYSTEMS

SIDEWINDER RANGE (SW150 & SW450)

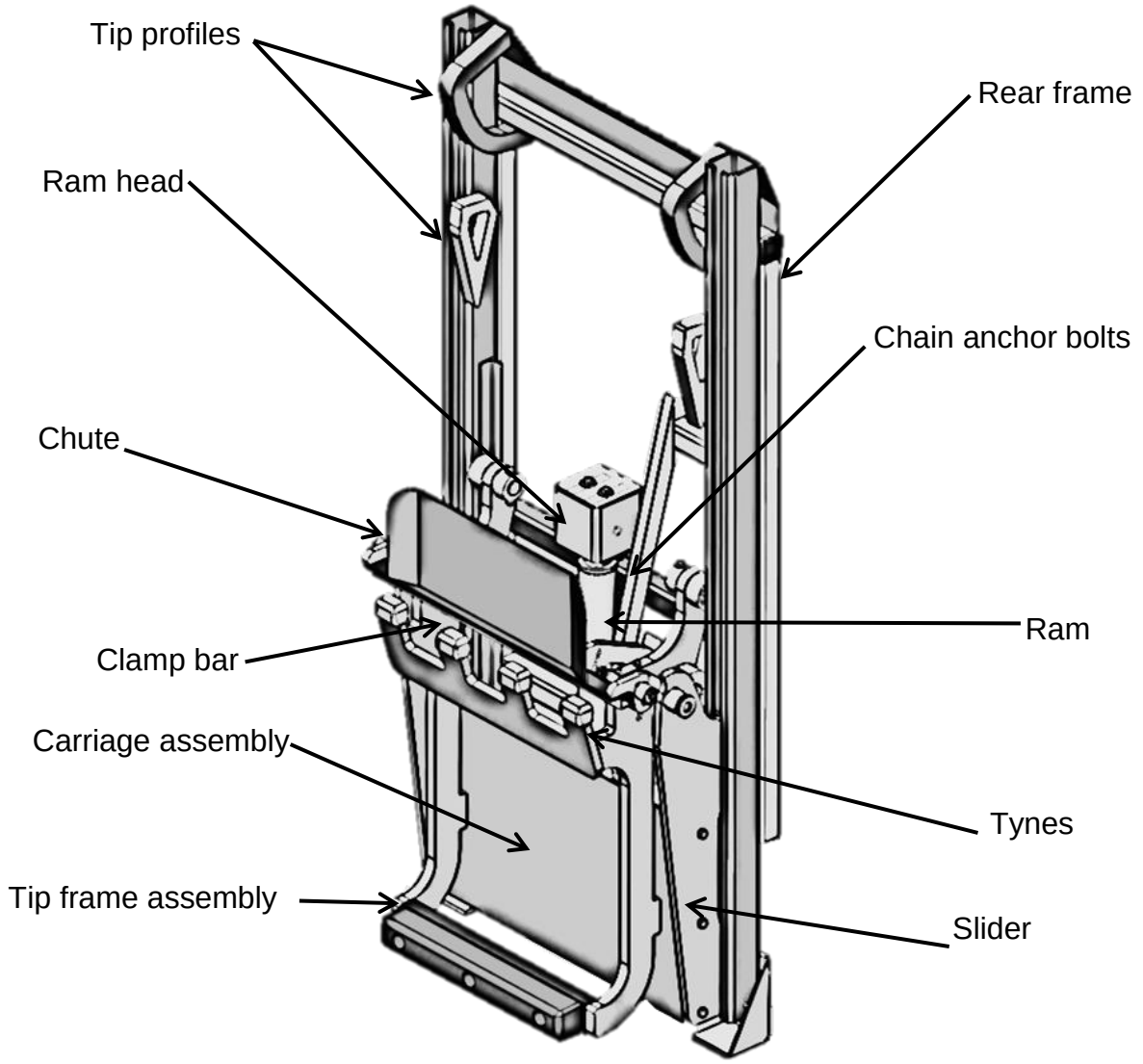
The Sidewinder bin lifts are powered from the vehicle P.T.O. A hose is taken from the PTO to the valve box. The valve box contains a diverter, flow and pressure regulator and directional valves. Power is taken from the battery positive to the valve box and the hand control; these circuits are protected by in-line fuses. The up button on the hand control provides power to the directional valves in the valve box. This pumps high-pressure hydraulic fluid to extend the rams in the roof assembly. The lift rams open the roof door and raise the lift carriage. As the carriage raises the bin is automatically mechanically clamped and slowly tips before reaching its final tipped position at the top of the lift frame. On release of the up button the fluid is held in the ram due to a non-return over centre valve which locks the ram in position therefore holding the carriage stationary. Pushing the down button diverts hydraulic fluid to the annulus side of the ram and powers the roof closed while lowering the lift carriage. As the bin nears the ground, the bin clamp automatically opens, enabling the bin to be removed when it reaches the ground.



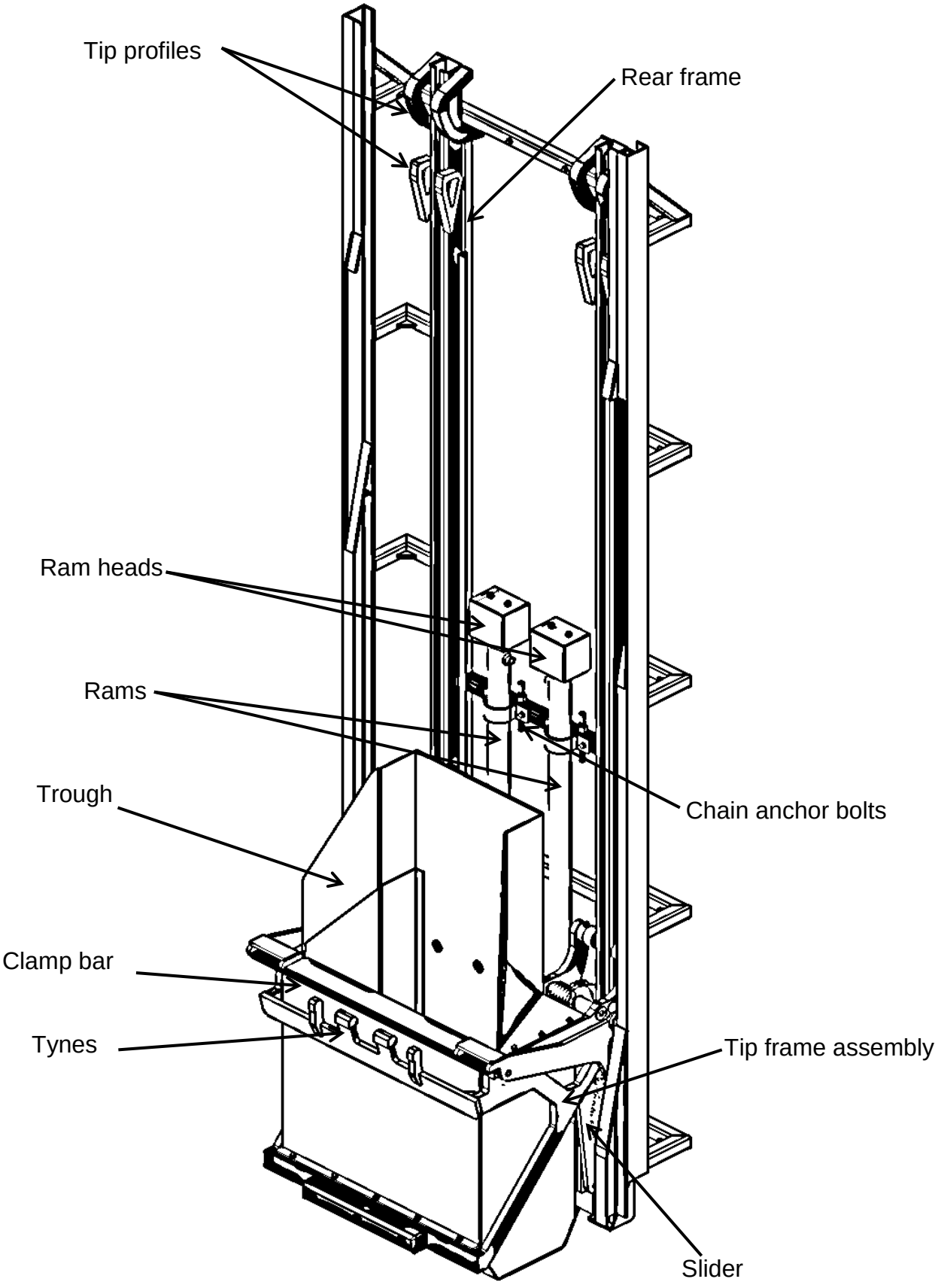
BIN LIFT RANGE WB

The bin lift can be powered from the vehicle battery or a P.T.O. If the lift 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 extend the lift ram in the centre of the rear frame. The ram is connected to the lift carriage by two chains for the WB150's (four chains for the WB300's) which run over two sprockets in the ram head. As the lift ram extends, it pulls the chains which in turn lifts the carriage assembly. As the carriage raises the bin is automatically mechanically clamped, before being tipped at the top of the rear frame by the lever arms and tip profiles. 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 carriage stationary. Pushing the down button allows hydraulic fluid to return from the ram to the power pack reservoir, as the ram retracts the lift carriage is lowered to the ground. As the bin nears the ground, the clamp automatically opens, enabling the bin to be removed when it reaches the ground.

WB150



WB300


Tip profiles
Rear frame
Ram heads
Rams
Trough
Chain anchor bolts
Clamp bar
Tynes
Tip frame assembly
Slider

SAFETY FEATURES

Before operating the lift, 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 lift 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 set on installation to 10% above the safe working load.

LOWERING LOADS – FLOW REGULATOR

The returning oil from the ram passes through a flow regulator valve, ensuring the lift carriage lowers at a controlled speed irrespective of the load.

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.

EMERGENCY STOP

The hand control is fitted with a large emergency stop button. In the event of an emergency, pressing this button will stop any lifting or lowering operation that is taking place and the lift will remain in this position until the button is reset.

OVER CENTRE VALVE (SIDEWINDER RANGE ONLY)

When the carriage is stationary, the rams are locked in position by over centre valves. In the unlikely event of a hose burst the rams will be locked in their position at the time of the failure.

STOW WARNING LIGHT (PTO DRIVEN LIFTS ONLY)

A warning light is provided which warns the driver when the lift is not in its stowed position.

LOAD SENSOR (SW450 ONLY)

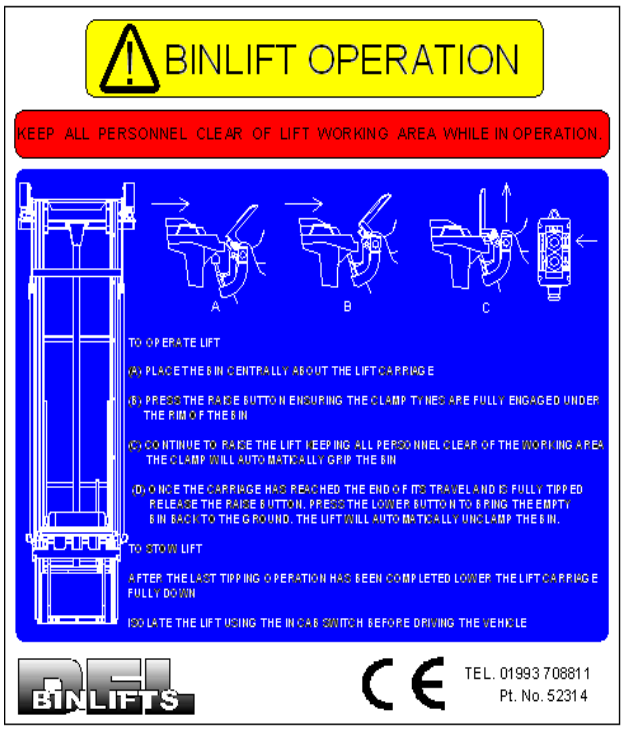
The SW450 is equipped with a load sensor which prevents a load above the safe working load being lifted more than 1 metre off the ground

WARNING DECALS

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

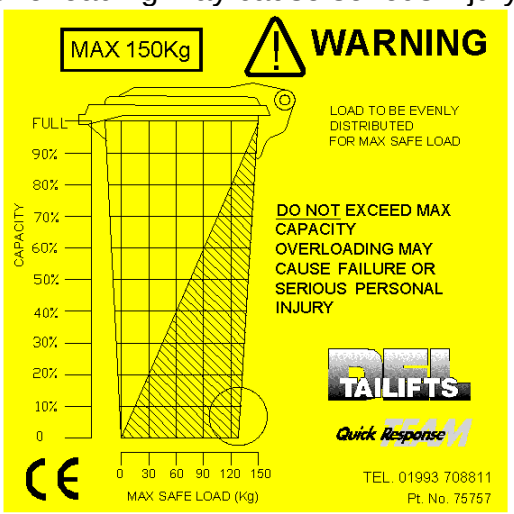
1. BIN LIFT OPERATION

Located at eye level next to the hand control
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 from obstructions before use.



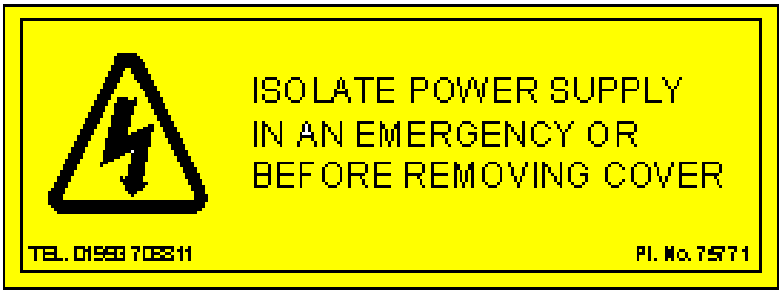
2. MAXIMUM LOAD

Located at eye level next to the hand control
Do not exceed the safe working load of the lift (150kg or 450kg)
Overloading may cause serious injury



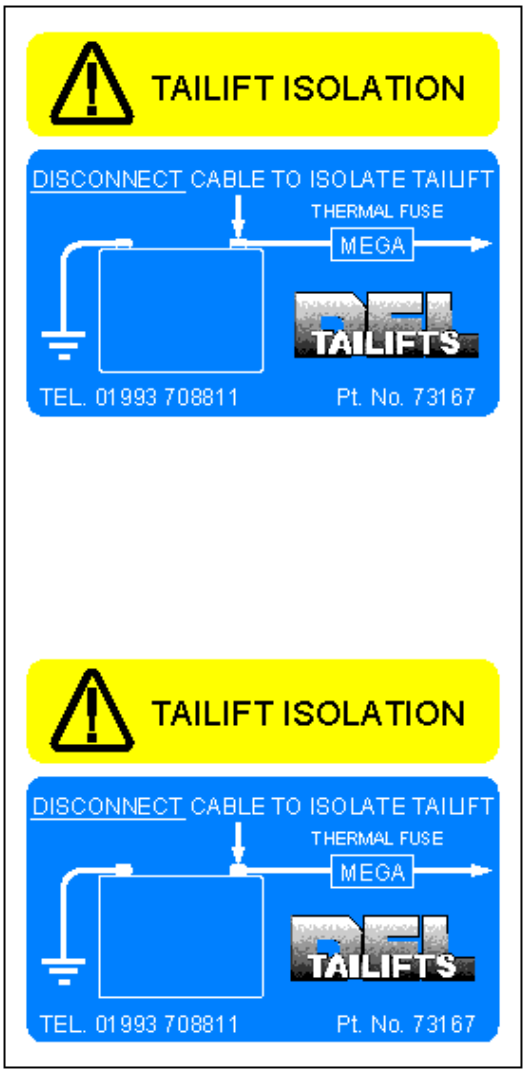
3. ISOLATE POWER SUPPLY

Located on the power pack box
Be sure to isolate the power supply before removing the cover



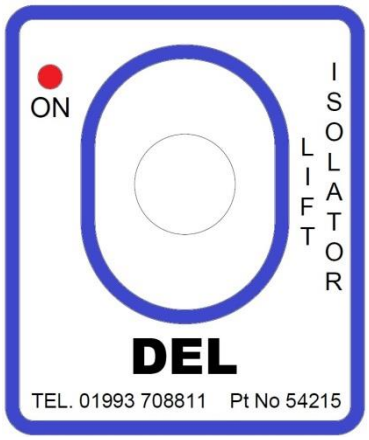
4. LIFT ISOLATION

Located around the positive wire to the powerpack
Be sure to isolate power supply before removing power pack box cover.
None PTO driven lifts only



5. LIFT ISOLATOR ROCKER SWITCH DECAL

Located in the drivers cab.
Always isolate the bin lift after use
Not on the PTO driven lifts



6. SIDE MARKER

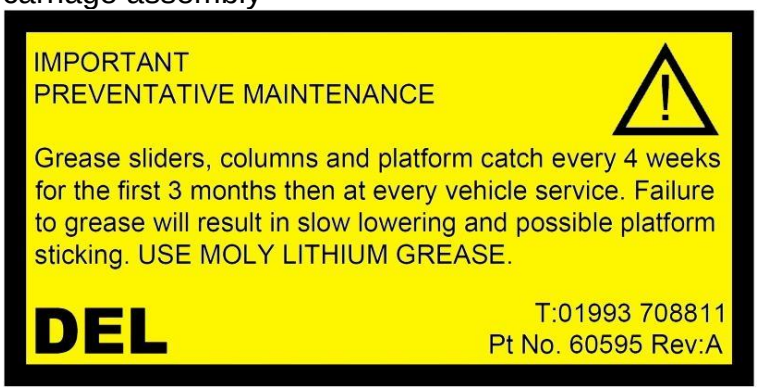
Located on carriage tip arms

7. LEGEND PLATE

Attached to the carriage assembly

8. LEGEND PLATE

Attached to the carriage assembly



9. OPERATING BIN LIFT

Located next to the hand control
Be sure you understand before using the lift

10. STOW INDICATOR (PTO DRIVEN LIFTS ONLY)

Located next to the stow warning light
Ensure that the light is off before driving the vehicle

11. DO NOT REACH INTO MOVING PARTS

Located near the lift
Instructing the operative of the dangerous zone

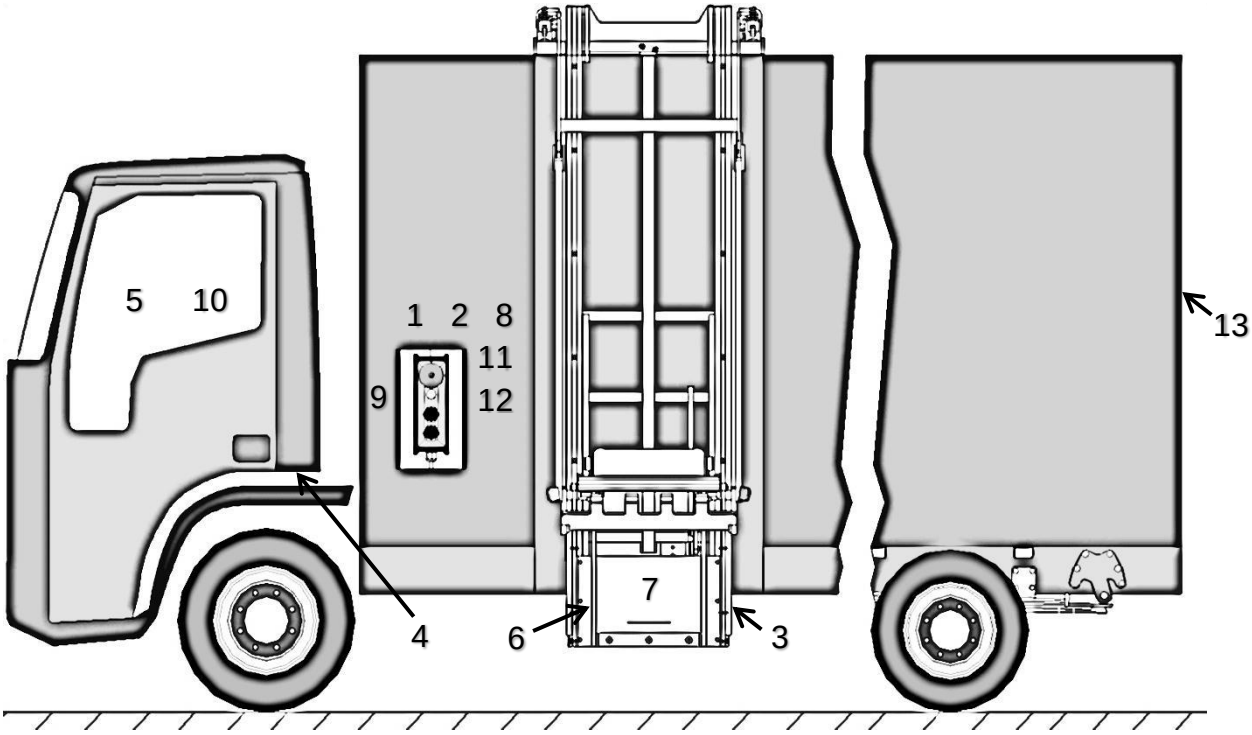
12. DO NOT STAND UNDER ANY MOVING PART

Located near the lift
Instructing the operative of the dangerous zone

13. FALLING CONTAINER OR OBJECT

Located at the rear of the vehicle
Instructing the road user(s) that part(s) of the lifting device protrude beyond the lateral dimensions when operating.

POSITIONING THE WARNING DECALS



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

INTENDED USES

The bin range of lift is intended for: -

- Lifting and tipping bins of capacities 120L, 240L, 340L and 1100L (SW450 only) with flat lids only.
- Lifting of loads no heavier than the safe working load of the lift fitted.

UNSAFE USES

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

- Using the lift as a jack.
- Using the lift as a step.
- Driving the vehicle with the lift in a raised or tipped position.
- Driving the vehicle with a bin clamped to the lift.

- Repeatedly pressing the raise and lower control quickly to dislodge refuse in the bottom of the bin.

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 that 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.

6. Make sure the centre of the bin is placed as near to the centre of the lift carriage as possible, and that all safety features e.g. side guards are used (where fitted).

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

8. Make sure the lift is securely stowed before driving the vehicle and that the lift has been isolated after use. On sidewinder models check that the stow warning light has gone out.

WORKING AREA

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

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

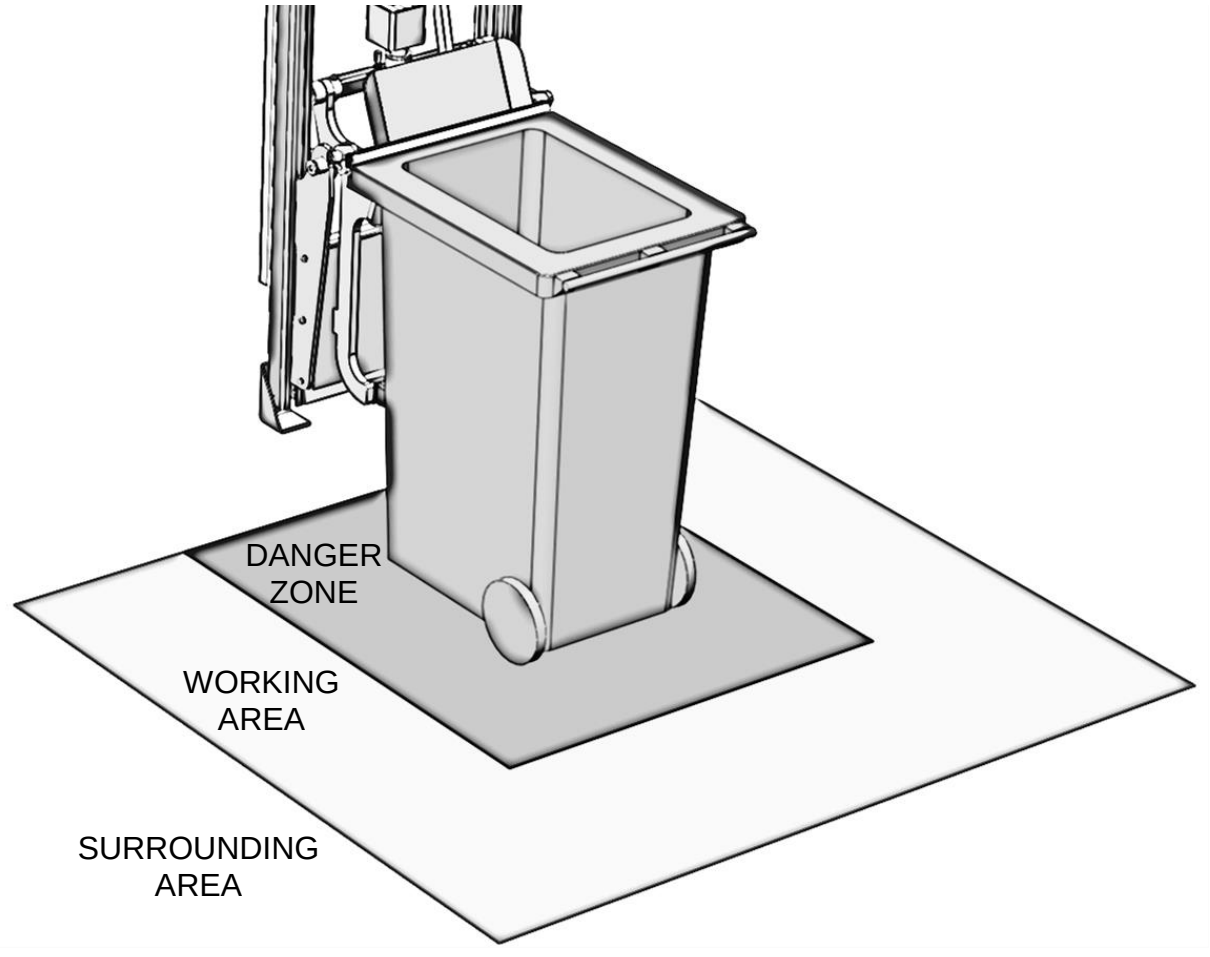
The position of the controls should not be changed.

NOTE

The danger zone is the area in which the lift carriage travels, and under no circumstances should this be entered while the lift is operating.

The working area is the area around the lift in which the operator can stand while the lift is operating. 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.

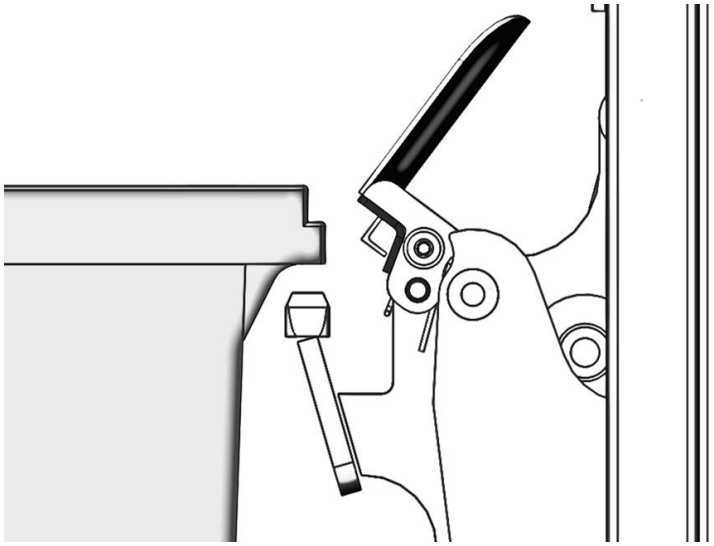
Surrounding area is the area around the working area. The operator should be aware of the surrounding area and look for any potential hazards.



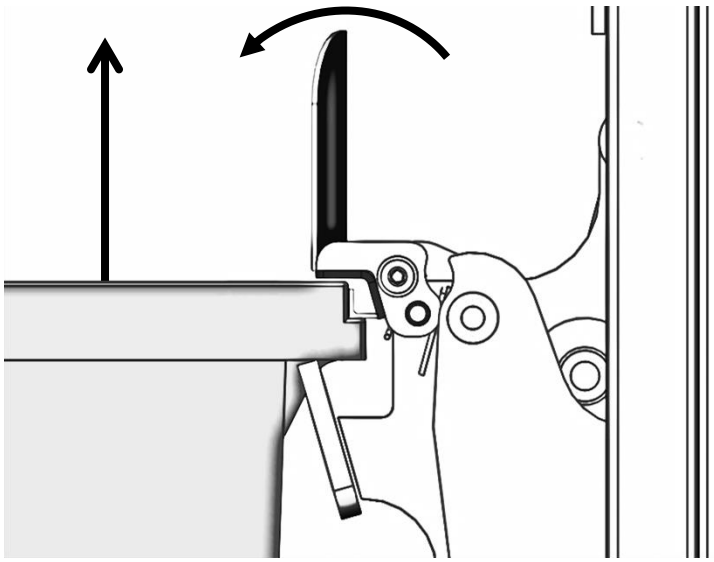
OPERATING PROCEDURE

The diagrams below show a SW150 lift, but the same procedure applies to the entire bin lift range.

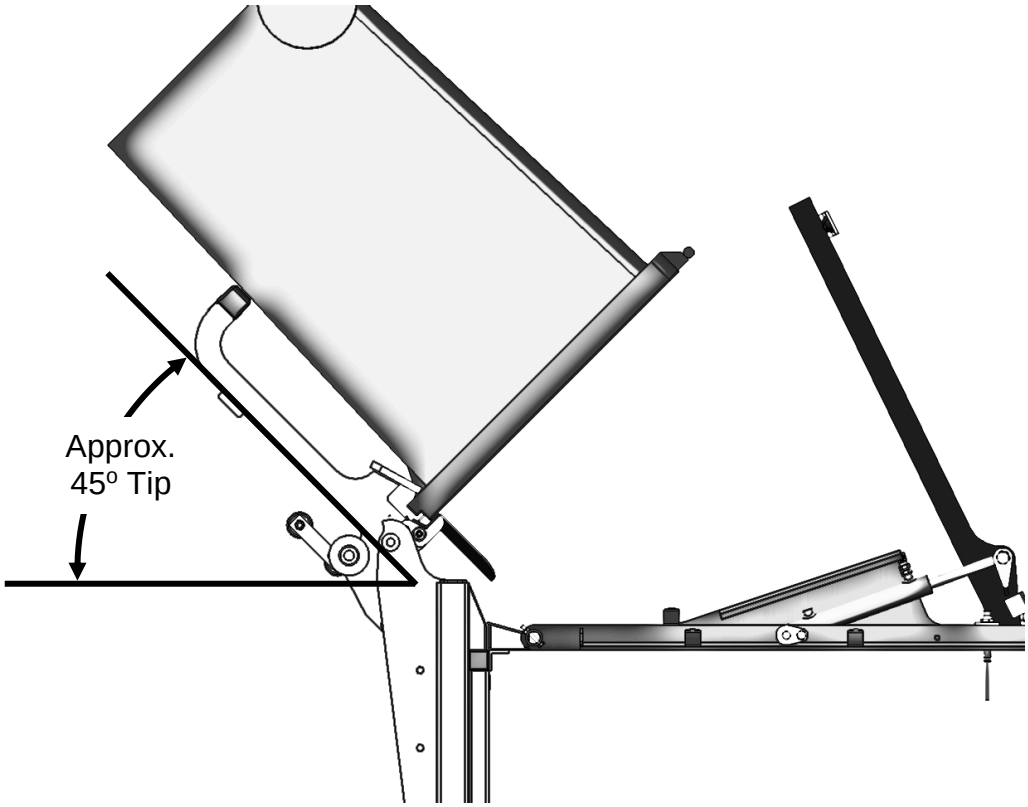
1. Engage the PTO (if the lift is PTO operated)
2. Switch on the isolator switch in the drivers cab (Not on the PTO driven lifts)
3. Wheel the bin up to the lift and place centrally about the lift carriage with the lip of the bin over the lift tynes. Note that it may be necessary to raise the lift carriage slightly until the tynes are at the correct height.



4. Standing clear of the bin lift, press the up button ensuring that the bin is clamped within the first few feet of movement.



5. Once the lift carriage has reached the top of the rear frame and is fully tipped, release the up button.



6. Press the down button to lower the bin back to the ground, the clamp will open automatically.

7. After the last lifting operation has been completed, fully lower the lift carriage and turn off the isolator switch in the drivers cab. Disengage the PTO if required. On SW150 and SW450 models check that the stow warning light in the drivers cab has gone out.

SW450 LIFT LOAD SENSOR

The SW450 lifts have a load sensor. If a load is lifted weighing more that 450kgs, the lift will suddenly stop during its raise operation at approximately 3 ft from the ground. If this occurs, the only operation which will be allowed will be to lower the bin to the ground. This will re-set the system. Weight should be removed from the bin before another lifting operation is attempted

DEL

DEL IS A CARGOTEC BRAND

MAINTENANCE HANDBOOK

INTRODUCTION

Low maintenance requirements are an important benefit of the DEL range of bin lifts. 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 bin lift.

IMPORTANT

The “duty holder” (owner/user /operator) of the bin lift 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.

SAFETY INFORMATION

SPRINGS

There are springs located on each side of the clamp bar on all WB150 and SW150 lifts. There is significant force on these springs when the clamp is open 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 lift carriage fully 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.

MAINTENANCE PROCEDURE

1. On a daily basis perform the checks as described below.

2. Before carrying out the service the bin lift 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 and operating speed tests need to be repeated.

IMPORTANT PREVENTATIVE MAINTENANCE

Grease sliders, columns and platform catch every 4 weeks for the first 3 months then at every vehicle service. Failure to grease will result in slow lowering and possible platform sticking. USE MOLY LITHIUM GREASE.

USAGE

The maintenance schedule for bin 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 40 cycles per day at loads mostly below the safe working load – Service 3 times per year
- Heavy use – An average of about 60 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 22) 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 the lift in the stowed position, visually inspect for physical damage, loose fittings and oil leaks.
- Run the lift through one complete cycle, check that the lift operates smoothly through its full range of movements with no unusual noises
- Check that the clamp mechanism operates smoothly.
- Check that the emergency stop button operates correctly.
- Check that all the warning decals are in the correct place.
- Check that the DEL plate is visible indicating the SWL.

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.

BIN LIFT SERVICE RECORD

Note: this is for medium user

Vehicle reg No:	Bin lift Model:
Lift Serial No:	Date of Manufacture:

Service 1	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

Service 2	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

Service 3	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

Service 4	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

Service 5	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

Service 6	Service Agent:	
Date:	Address:	
Print Name:		
Signed:		
Power pack hydraulic oil replaced?	Yes	No
Pins and bushes replaced?	Yes	No
Comments		

Service7	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

Service 8	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

Service 9	Service Agent:
Date:	Address:
Print Name:	
Signed:	
Comments:	

BIN LIFT 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 are in place. (see installation or operators manual for decal locations)

2. Check that the mounting of the lift to the vehicle body is secure (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. Check that the emergency stop button operates correctly.

4. Raise the lift to the fully tipped position then lower. Check that the movement stops immediately (both up and down) when the control buttons are released. Check if the movement is smooth with no grinding noises or unusual motor or pump noises

5. Check that the lift fully raises and tips to approximately a 45 deg angle.

6. Check all joints for wear and if there is excessive movement replace the bearings.

7. Check for excessive movement of the lift sliders in the columns. If there is excessive movement (more than approx. 5mm in any direction) replace the wear pads.

8. Fully lower the lift from its tipped position to the ground and record the time taken in seconds. The movement should be smooth. The lowering speed should not be greater than 2500mm per second.

9. With the carriage fully lowered, 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.

10. Check all pipe connections to the rams. On Sidewinder models check that the over centre valves on the rams in the roof assembly are secure.

11. On powerpack operated models, with the carriage fully lowered, 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.

12. Check that the clamp operates smoothly, apply WD40 to the torsion springs each side of the clamp bar.

13. Inspect all welds for cracks.

14. On power pack operated models, change the hydraulic fluid (every 24 months). With the carriage in its fully lowered position, remove the power pack box cover. Disconnect the hoses where they connect onto bulkhead fittings to pass through the powerpack box 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 hoses onto the bulkhead fittings before filling the tank with new oil (Automatic transmission fluid or Shell T22 is recommended). Prime the pump by pressing the raise and lower buttons simultaneously. Raise and lower the carriage a couple of times and check for any oil leaks. With the carriage fully lowered check that the oil level is up to the max mark before refitting the powerpack box cover.

15. On PTO operated models only, remove the valve box cover and check that there are no leaks from any of the joints. Check that the cover for the electrical box is tight. Also check that the lock nuts on the pressure relief valve and the flow regulator are tight. Ensure that there are no oil leaks from the oil filter (located in the back to tank line, close to the oil tank). Change the filter every 24 months.

RECORD OF MAJOR REPAIRS

Date:			Fault:
Claimed Under Warranty	Yes	No	
Service Agent:			
Address:			Parts Purchased:
Print Name:			Tests Completed On Parts Fitted:
Signed:			

Date:			Fault:
Claimed Under Warranty	Yes	No	
Service Agent:			
Address:			Parts Purchased:
Print Name:			Tests Completed On Parts Fitted:
Signed:			

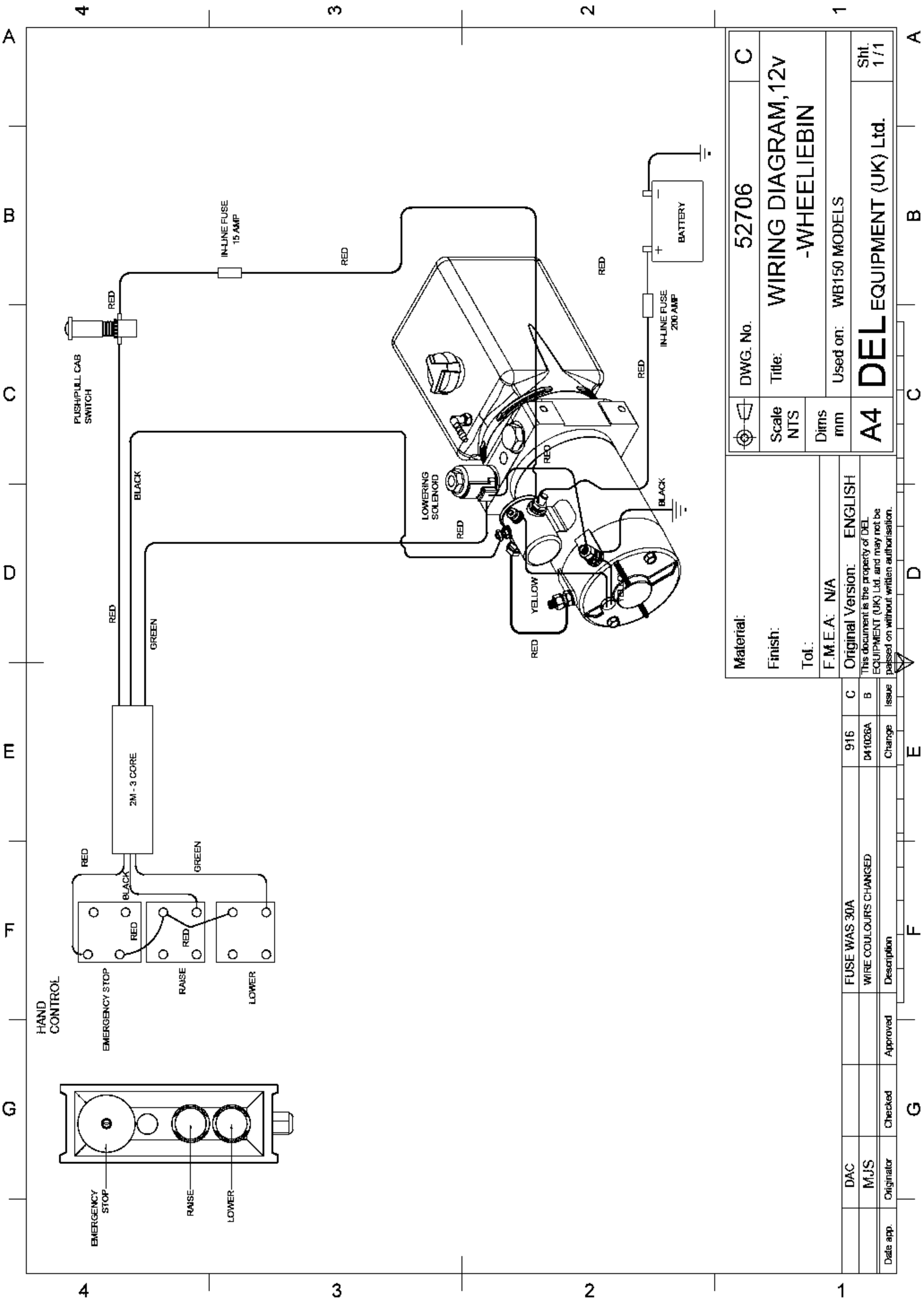
HYDRAULIC/ELECTRICAL/MECHANICAL FAULT FINDING CHART

FAULT	REASON
WILL NOT LIFT AND THE MOTOR IS NOT RUNNING	Fuse blown
	Check power to motor
	Check starter switch
	Check wiring to starter switch
	Faulty earth
	Faulty push button
	Seized pump
WILL NOT LIFT AND THE MOTOR IS 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
WILL NOT LIFT AND THE MOTOR IS RUNS FAST	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 lift
	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
	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

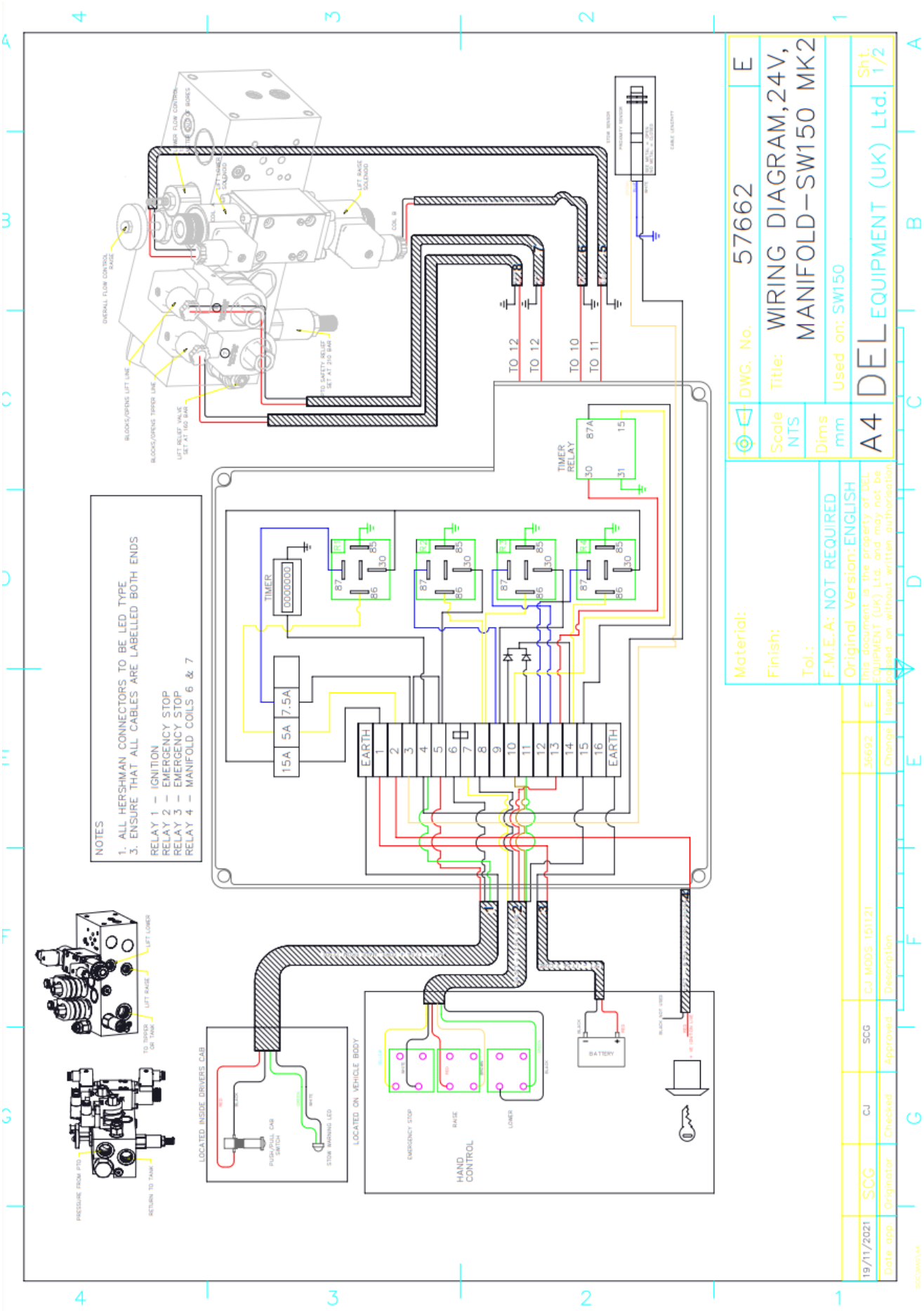
LIFT CREEPS DOWN	Solenoid valve leaking
	Check valve leaking
	Oil leak
	Pipe leaking
	Ram seal leaking
	Pump casting porous
LIFT ONLY RAISING PARTIALLY	Not enough oil
	Suction filter blocked
	Tank filter breather blocked or shipping plug fitted
	Mechanical damage
	Relief valve set too low
PUMP UNIT NOISY	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.

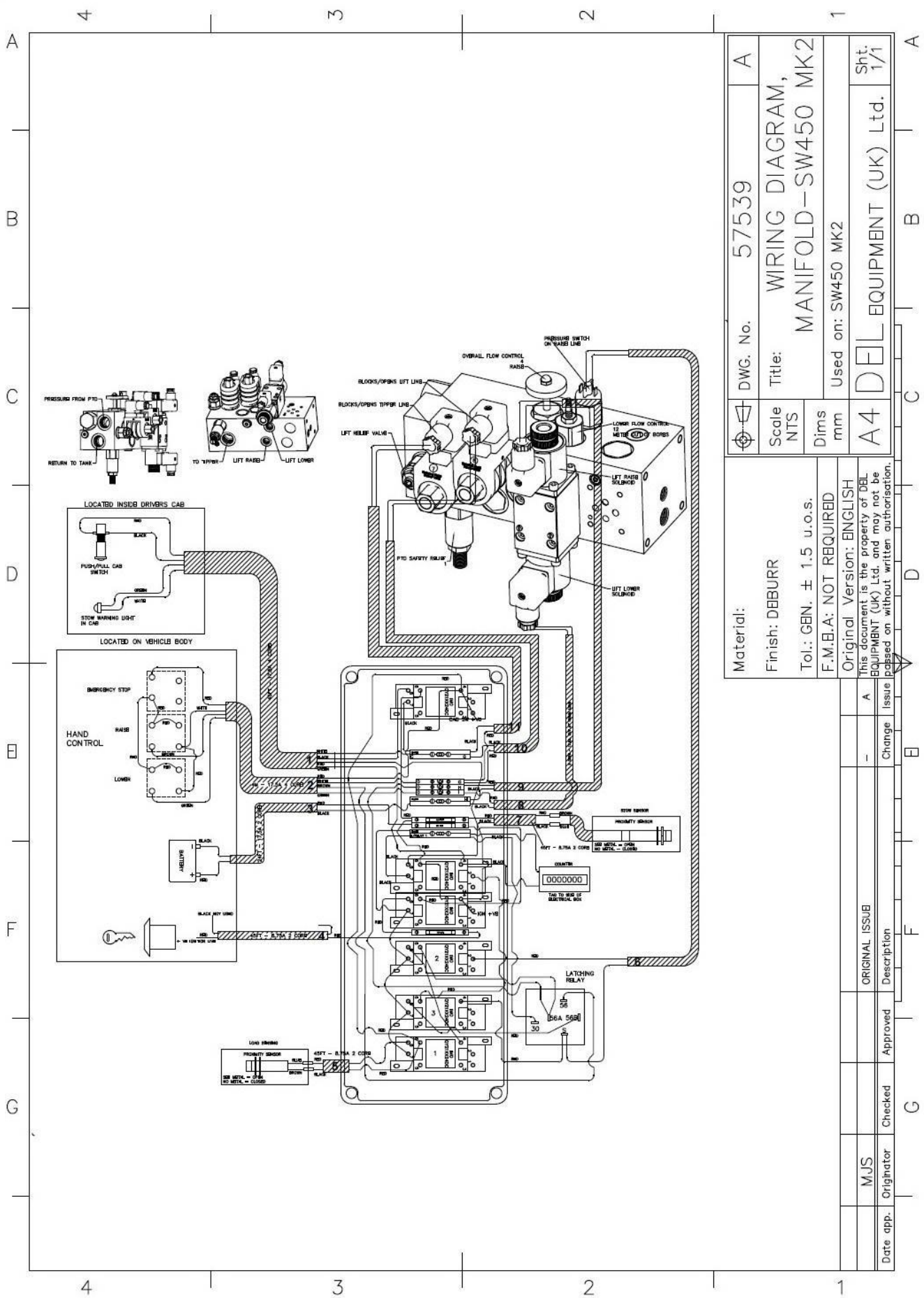
(2) Check hydraulic pressure when lifting an empty load, full load and at relief valve setting. Relief pressure should be approximately 10% higher than maximum pressure when lifting Safe Working Load (SWL).

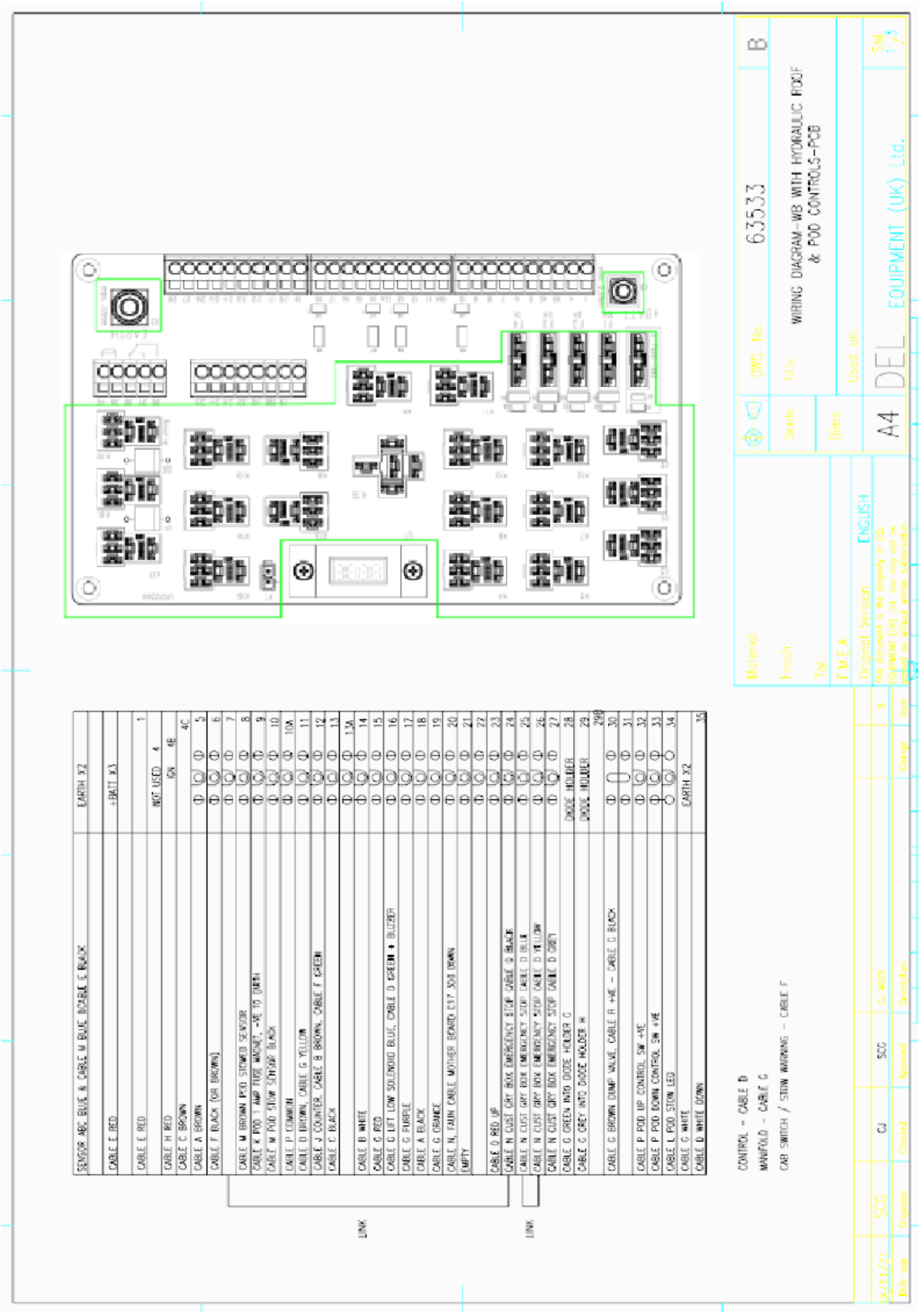


DWG. No. 52706
C
Title: WIRING DIAGRAM,12v -WHEELIEBIN
Used on: WB150 MODELS
DEL EQUIPMENT (UK) Ltd.
Scale NTS
Dims mm
A4
Sht. 1/1
Material:
Finish:
Tol.:
F.M.E.A: N/A
Original Version: ENGLISH
This document is the property of DEL EQUIPMENT (UK) Ltd. and may not be passed on without written authorisation.
FUSE WAS 30A
WIRE COULOURS CHANGED
916
041026A
DAC
MJS
Date app.
Originator
Checked
Approved
Description
Change
Issue
BATTERY
IN-LINE FUSE 200 AMP
IN-LINE FUSE 15 AMP
PUSH/PULL CAB SWITCH
LOWERING SOLENOID
RED
BLACK
GREEN
YELLOW
2M - 3 CORE
HAND CONTROL
EMERGENCY STOP
RAISE
LOWER

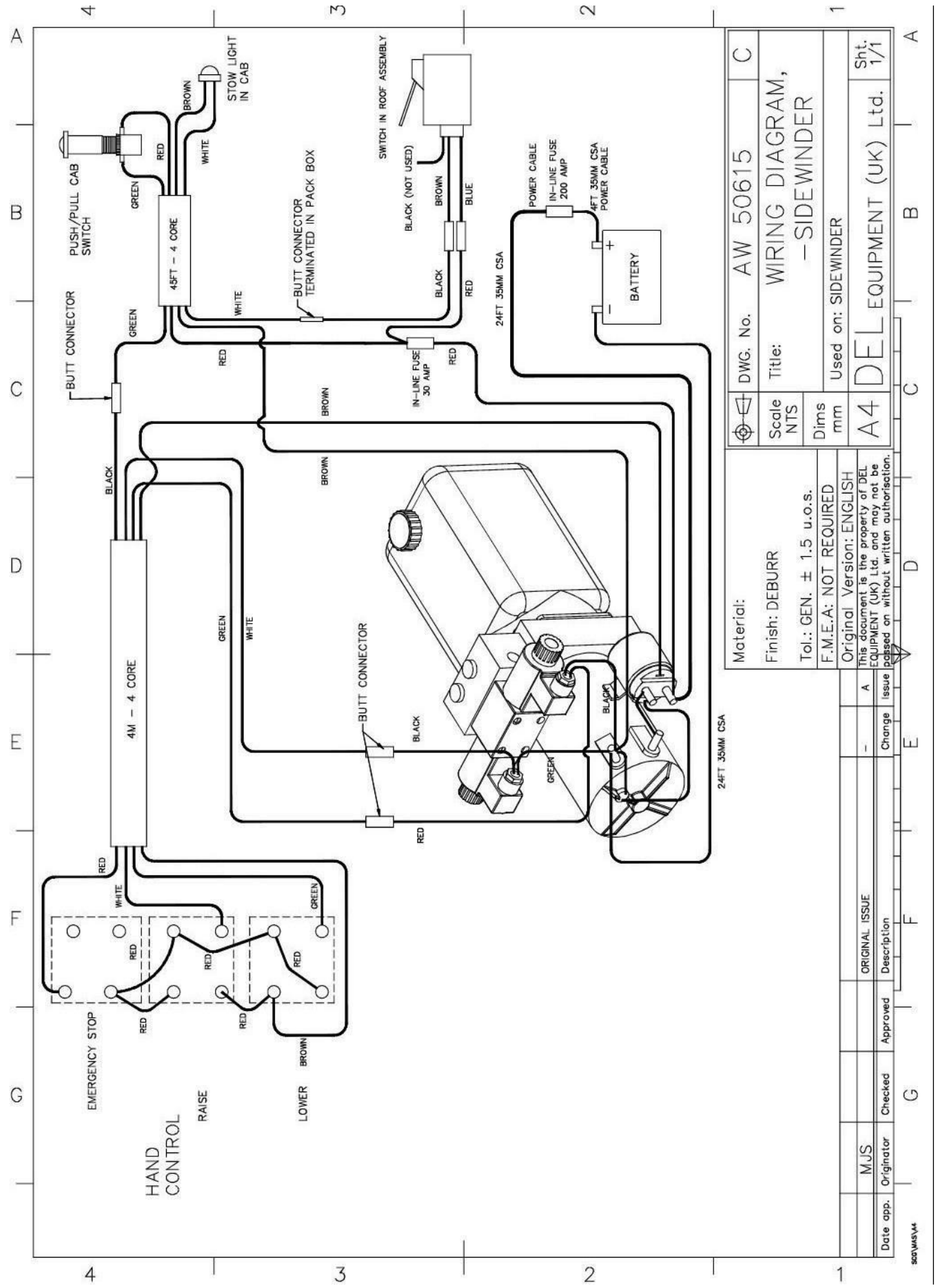


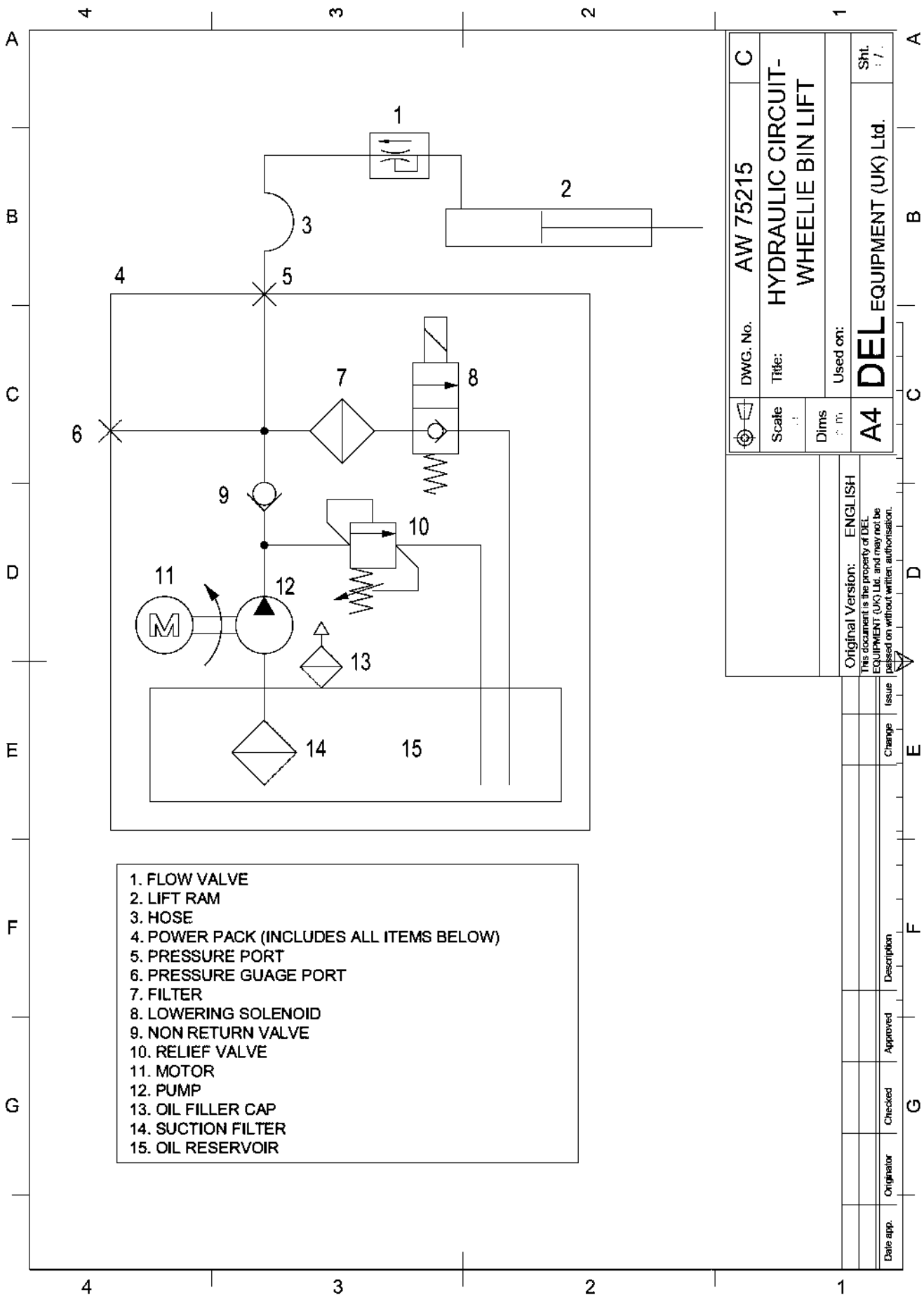
Please contact DEL to download this diagram



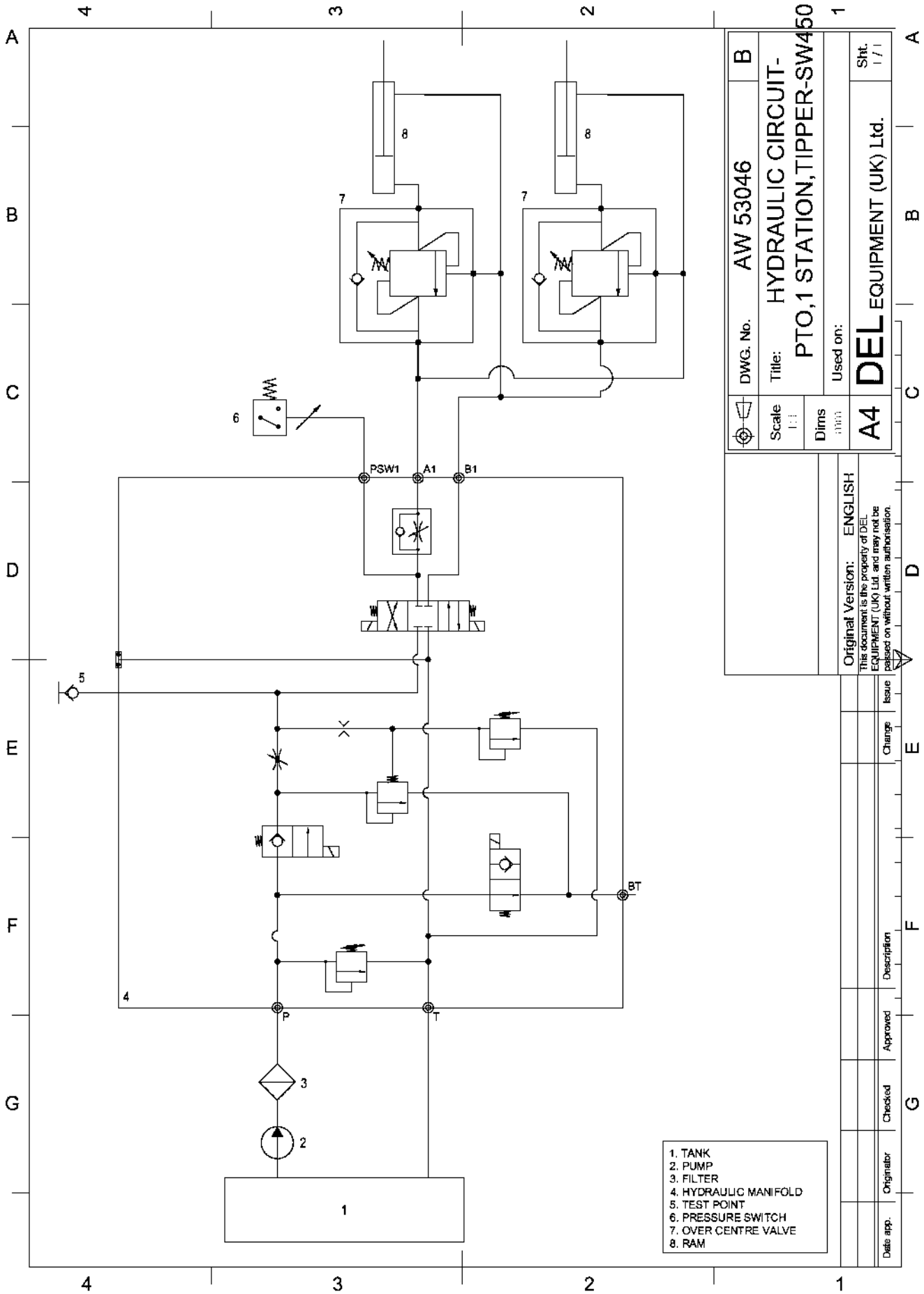


Please contact DEL to download this diagram

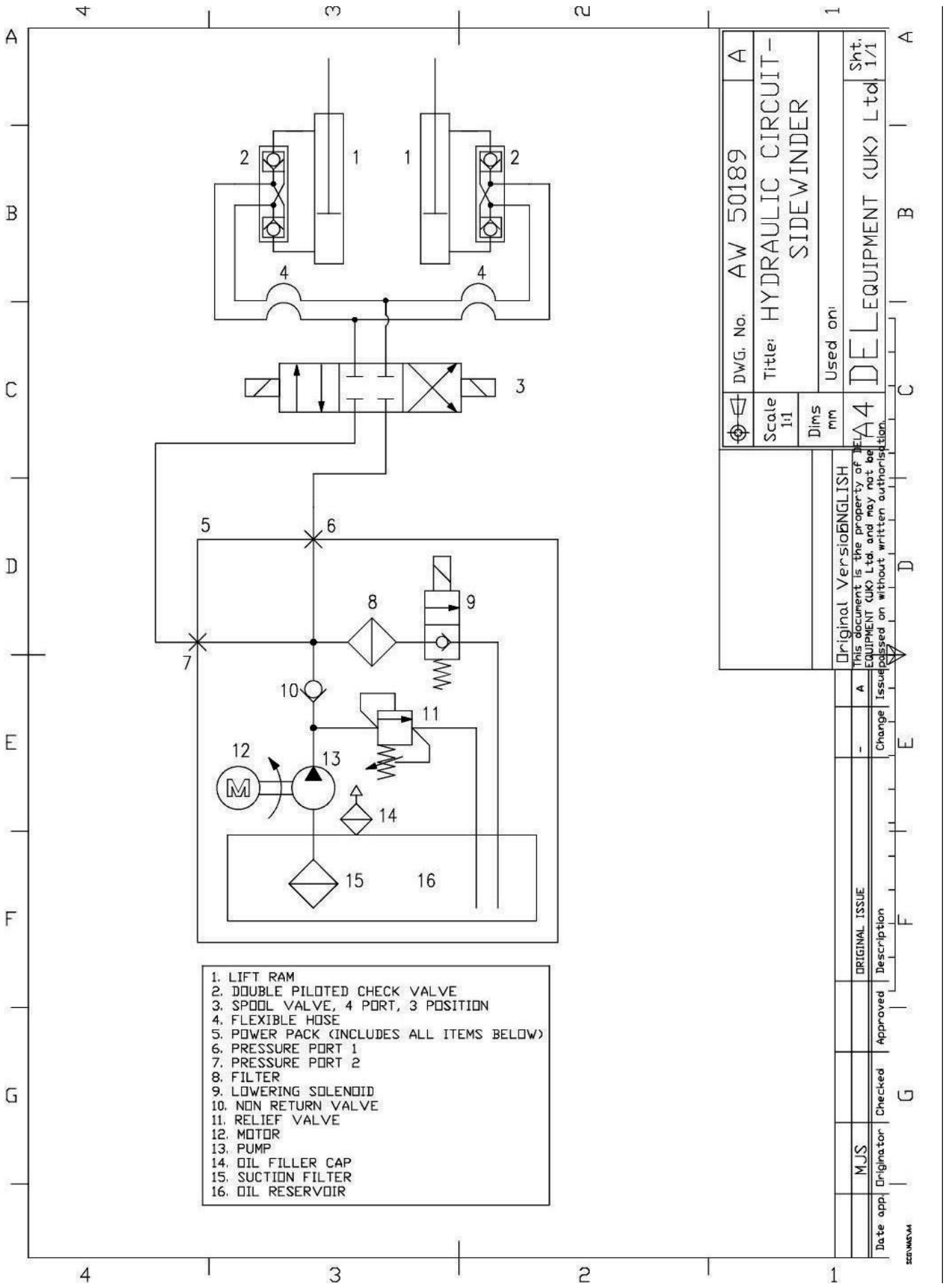

PUSH/PULL CAB SWITCH
STOW LIGHT IN CAB
45FT – 4 CORE
BUTT CONNECTOR TERMINATED IN PACK BOX
SWITCH IN ROOF ASSEMBLY
BLACK (NOT USED)
POWER CABLE
IN-LINE FUSE 200 AMP
4FT 35MM CSA POWER CABLE
24FT 35MM CSA
BATTERY
BUTT CONNECTOR
IN-LINE FUSE 30 AMP
4M – 4 CORE
HAND CONTROL
EMERGENCY STOP
RAISE
LOWER
DWG. No. AW 50615 C
Title: WIRING DIAGRAM, – SIDEWINDER
Used on: SIDEWINDER
DEL EQUIPMENT (UK) Ltd.
Material:
Finish: DEBURR
Tol.: GEN. ± 1.5 u.o.s.
F.M.E.A: NOT REQUIRED
Original Version: ENGLISH
Scale NTS
Dims mm
A4
Sht. 1/1
ORIGINAL ISSUE
This document is the property of DEL EQUIPMENT (UK) Ltd. and may not be passed on without written authorisation.



Please contact DEL to download this diagram



Please contact DEL to download this diagram


1. LIFT RAM
2. DOUBLE PILOTED CHECK VALVE
3. SPOOL VALVE, 4 PORT, 3 POSITION
4. FLEXIBLE HOSE
5. POWER PACK (INCLUDES ALL ITEMS BELOW)
6. PRESSURE PORT 1
7. PRESSURE PORT 2
8. FILTER
9. LOWERING SOLENOID
10. NON RETURN VALVE
11. RELIEF VALVE
12. MOTOR
13. PUMP
14. OIL FILLER CAP
15. SUCTION FILTER
16. OIL RESERVOIR
DWG. No. AW 50189
Title: HYDRAULIC CIRCUIT- SIDEWINDER
DEL EQUIPMENT (UK) Ltd
Original VersioENGLISH
This document is the property of DEL EQUIPMENT (UK) Ltd. and may not be reproduced on without written authorisation.

NOTES

Hiab UK Ltd,
Cargotec Industrial Park,
Ellesmere,
SY12 9JW.
Tel.: +44 (0) 1993 708811
E-mail: sales@del-uk.com | hiab.com