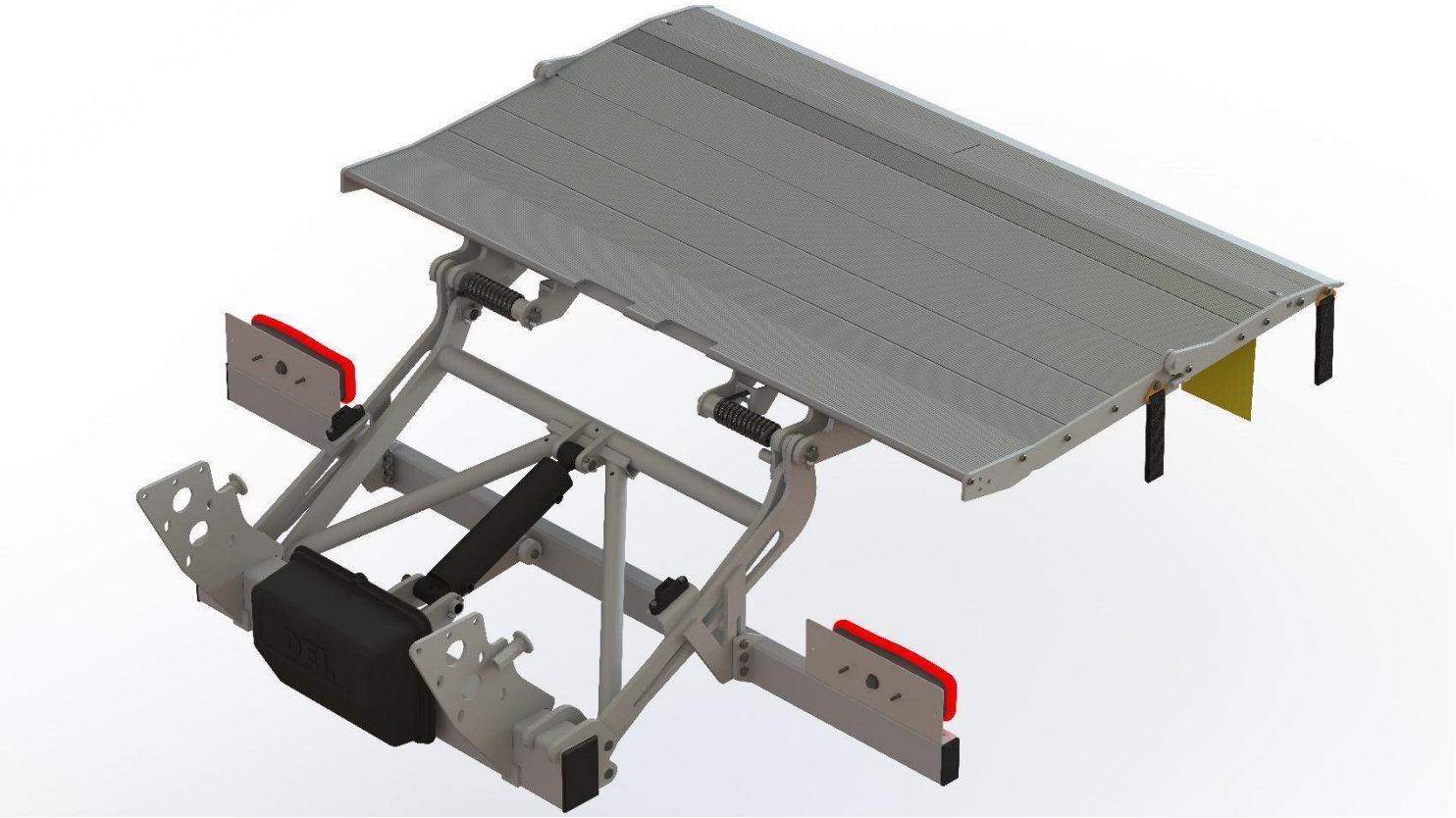
INSTALLATION MANUAL

TUCKUNDER TAILIFTS



UK CA CE

Pt / No 51189 Issue Q

DEL

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EC DECLARATION OF CONFORMITY FOR MACHINERY

We hereby declare that:

DEL Tailift Model: **DA**

- are in conformity with the provisions of the **Machinery Directive (2006/42/EC)** and the **EMC Directive (2014/30/EU)**
- and furthermore declare that parts of the following European harmonised standards have been used:

BS EN 1756-1:2021
BS EN 50498:2010

Signed: 

Name: John Carnall

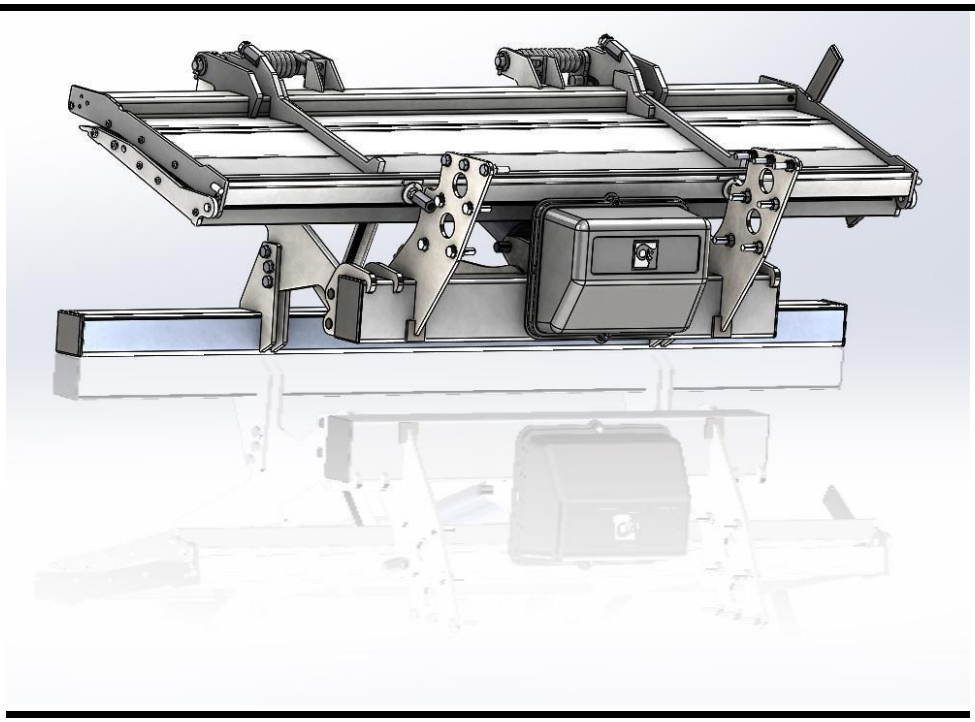
Position: VP, Sales and Services, UK & Ireland

Place, Date: Hiab UK Ltd, Ellesmere, 12/07/23

Important:

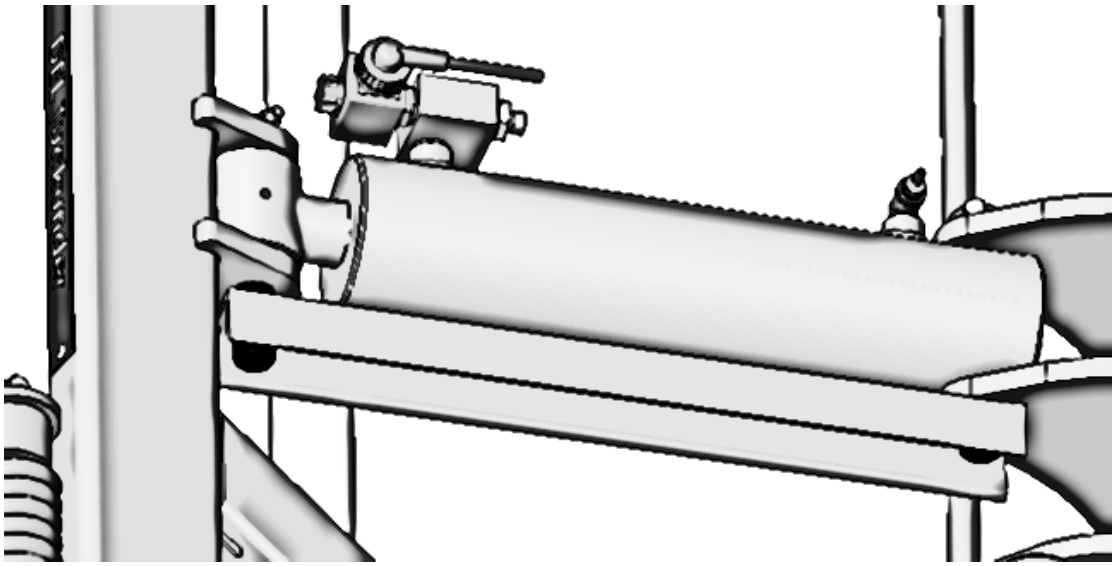
This declaration is null and void without a completed Lift Installation Test Certificate attached and all signatures completed, or if modifications are made to the machine without prior written approval from Hiab UK Ltd.

https://www.youtube.com/watch?v=8W3Milo_VqI



IMPORTANT

ENSURE THAT THE FITTING PLATE (SHOWN BELOW) IS FITTED BETWEEN THE RAM PINS BEFORE INSTALLATION. THIS WILL HOLD THE RAM APPROX 6 MM OPEN.
PLACE THE FITTING BAR ONTO BOTH PINS AND LET THE LIFT DOWN SO THE PLATE BECOMES TIGHT.



INTRODUCTION

This manual covers the installation and testing of the 'Tuckunder' tailift model. The correct installation and setting up of the lift is vital to the working life of the lift. Safety must be regarded as of paramount importance during installation. Read this manual fully before commencing work. The lift frame and platform are heavy and can crush. Never work under the lift unless it is securely supported and always disconnect the battery before starting work.

Do not make any design modification to the tailift unless written permission is first obtained from Hiab UK Ltd.

Please note that any unauthorised modification may: -

- Invalidate the warranty.
- Lead to equipment failure.
- Create a hazard that is not immediately obvious at the time of installation.

If you are unsure about any aspect of the installation procedure, please contact DEL service.

IMPORTANT

This manual forms part of the Inspection record for the tailift, and should be passed on to the end user, together with the operator's manual.

The tail lift installer shall, in conjunction with the manufacturer and user, confirm the compatibility between the tail lift and the vehicle taking into account the intended use.

1. X and Y – Dimension

   The 'X' and 'Y' dimension given in this manual is intended as a guide only.

   As long as the lift is installed following the checking procedure in this manual, the lift will operate correctly. The tolerance on the 'X' and 'Y' dimension is therefore ± 25mm.

2. Floor Plate

   On new vehicles it is normal to fit the floor plate as part of the floor and lower rear frame member. On existing vehicles the floor plate can be added to the rear, checking the legal overhanging requirements prior to fitting.

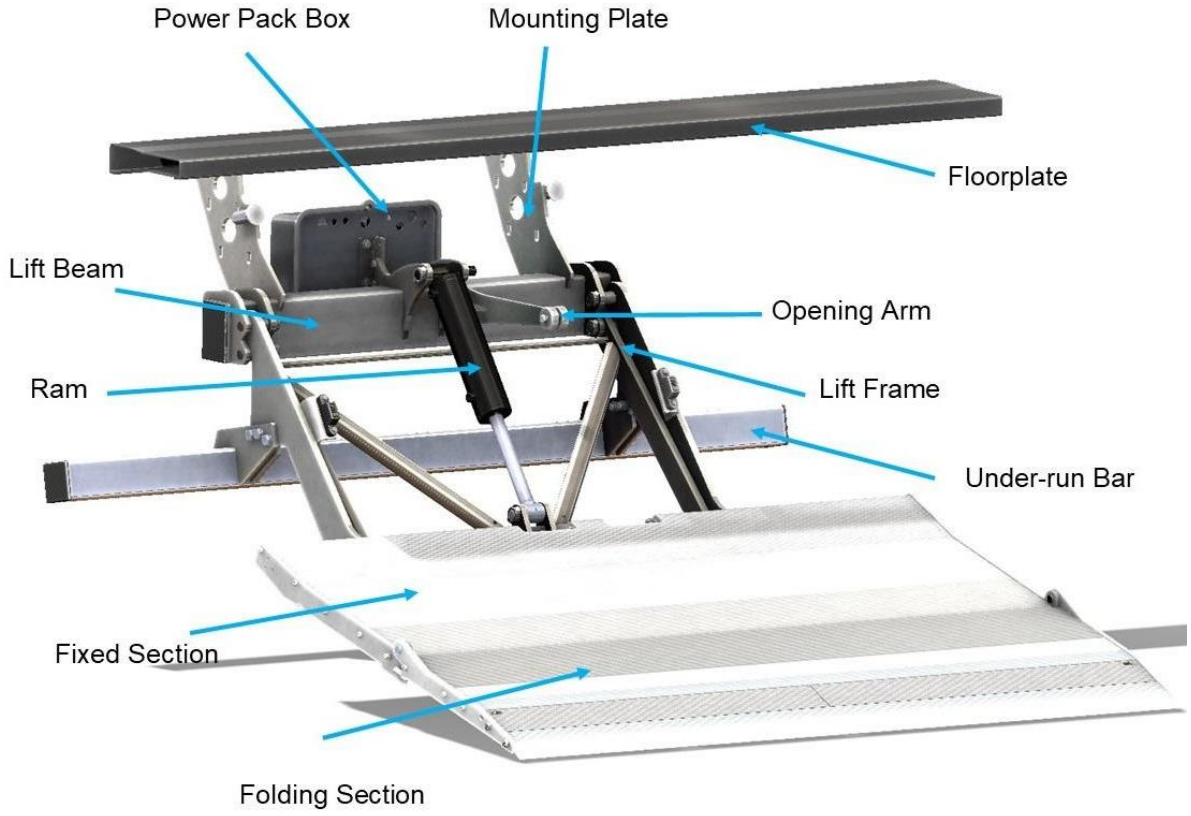
3. Power Pack

   The tailift is delivered with the power pack fully installed and tested.

CONTENTS

OPERATING SYSTEMS

The tailift is powered from the vehicle battery. A wire is taken from the battery positive to the power pack 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.



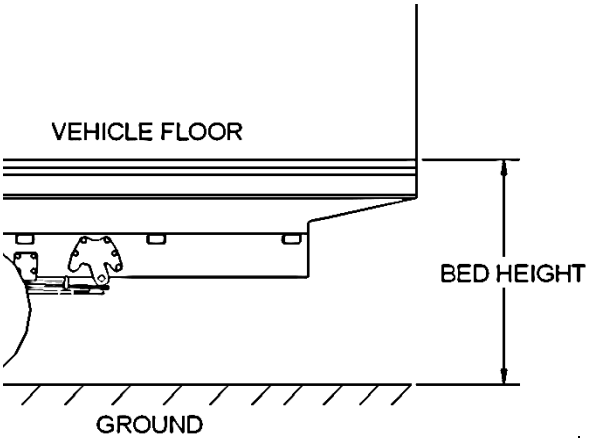
INSTALLATION PROCEDURE

Safety

Make sure you fully understand the safe operation of the tail lift by reading the operator/maintenance handbook before attempting to install the lift.
Ensure all work is supervised by a competent engineer in a clear area with adequate lighting.
Check that any specific requirements as stated in the relevant chassis manufacturer's bodybuilder handbook are adhered to.
Ensure all movements of the tail lift are limited at the end of travel by mechanical means.
If the platform is required to lift or lower wheeled load (s), then it must have a device(s) with a minimum height of 50mm to prevent the load(s) from rolling unintentionally off the edge.

1. Disconnect the battery and remove the lights and wiring harness from the back of the vehicle.
2. Measure the distance from the ground to the vehicle floor level. Check that the lift model is suitable for that lift height.

TUCKUNDER RANGE		Bed Height MIN *	Bed Height MAX
A	DA1000 MK5 26 ¾"	975	1190
B	DA1500HDG MK4	1190	1440

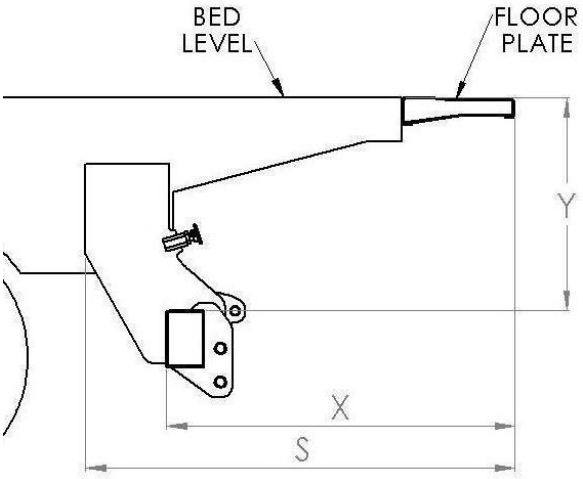


***** MIN Bed Height is the ***Laden*** Bed Height

3. Measure the platform depth to ensure that the platform is suitable for the vehicle's ***laden*** bed height.

TUCKUNDER RANGE		Platform Depth No Stops	Platform Depth Stops
A	DA1000 MK5 26 ¾"	1219	1219
B	DA1500HDG MK4	1376	1426

4. Use the chart below to obtain the 'Y' reference dimension needed in mounting the tailift (see the note at the start of this manual). Also check the 'S' reference dimension for interference with spring hangers. DEL recommends a minimum 20mm gap between the mounting plate and the spring hanger.



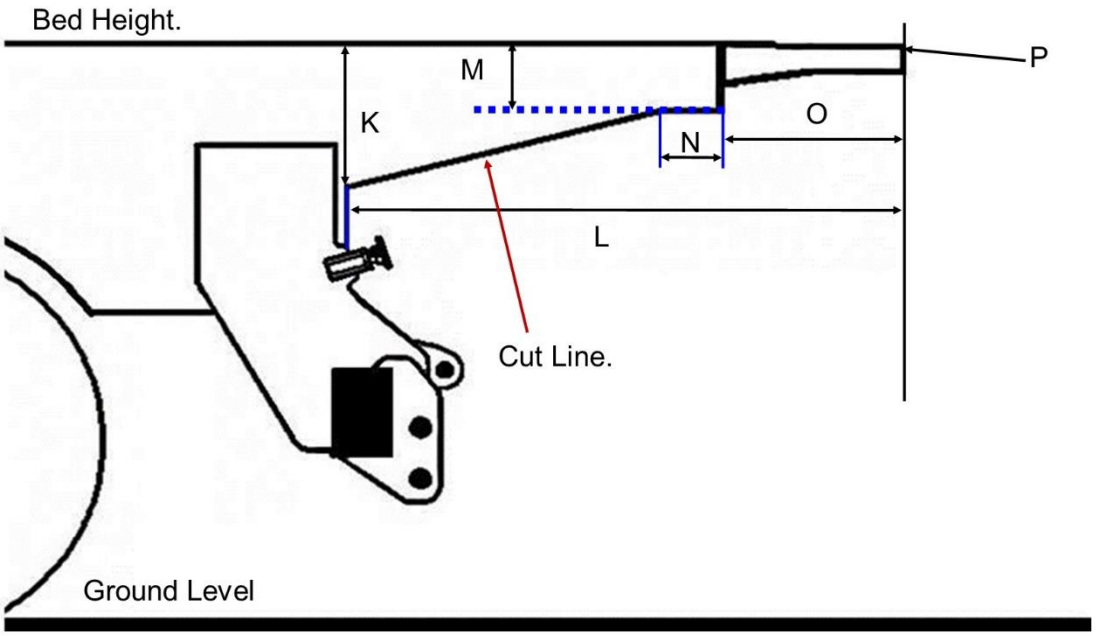
	TUCKUNDER RANGE	X	Y	S
A	**DA1000 MK5 26 ¾"**	803	499	1080
B	**DA1500HDG MK4**	929	572	1146

Dimension Y – Distance from the bed of the vehicle to the top of the tailift beam, reference only.
Dimension X – Distance from the front of the floor plate to the back of the tailift beam, reference only.

NOTE

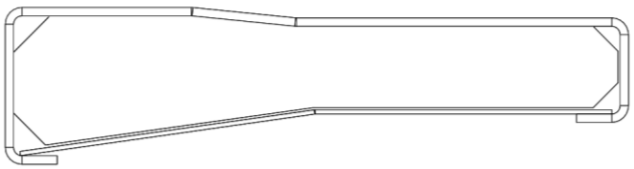
- The minimum clearance required between the tailift housing and the truck tyres is 125mm.
- Minimum bed height is with the vehicle fully loaded.
- Maximum bed height is with the vehicle empty.

5. Cut away or add to the chassis to obtain the dimensions required for your vehicle. The installation of all tuckunder lifts allow for a 20mm floor, 100mm bearer and 100mm runner



TUCKUNDER RANGE		K	L	M	N	O	P
A	**DA1000 MK5**	220	794	120	100	300	50
B	**DA1500HDG MK4**	253	912	120	100	300	50

6. Build in the floor plate to the rear frame, keeping the centre of the floor plate in the centre of the vehicle (it may be necessary to cut both ends of the floor plate and failure to remain central may result in damage to the floorplate and lift during operation.). The top of the floor plate is set to match the vehicle floor level and the front of the floorplate is 4mm lower to prevent water ingress.

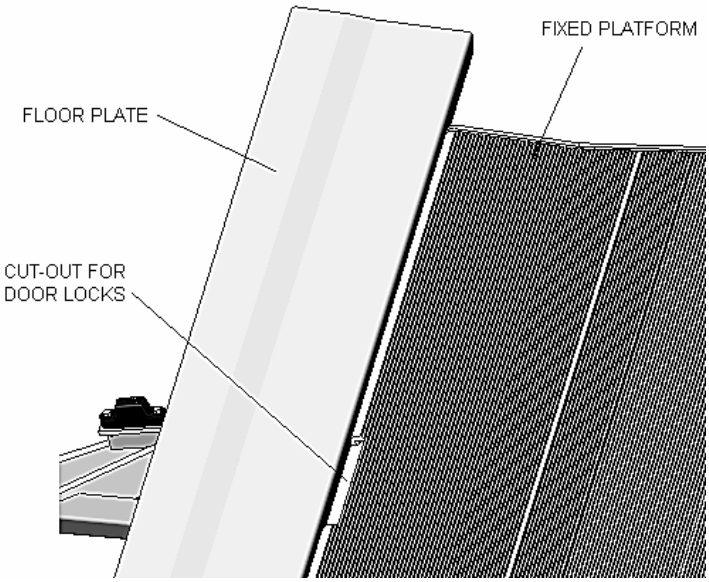


Fitting of lock equipment to the floor plate

‘Barn door’ type bodies

The floor plate and lift have been designed to allow the attachment of door locks to the outer face of the floor plate. If this is done, the front edge of the platform should be machined out to allow the platform to sit flush with the floor when in operation.

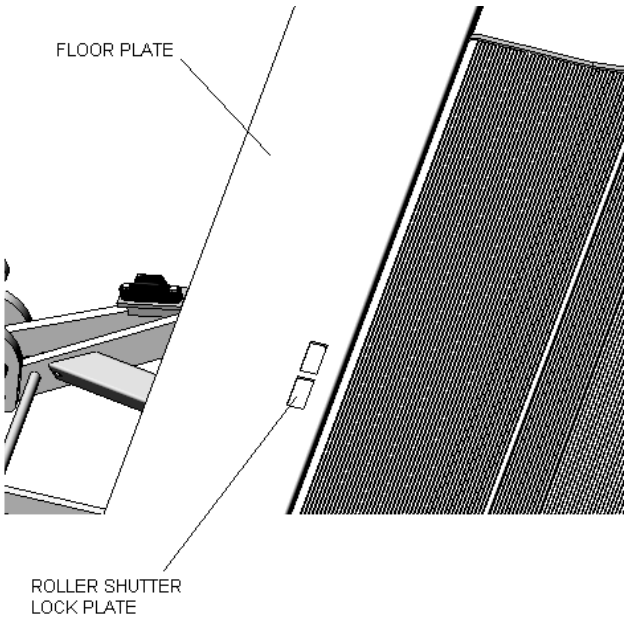
If a rear step assembly is going to be fitted then a Floorplate with a Cut-out as above must be used, as the step cannot be below the floorplate. Failure to do this WILL result in damage to the tail-lift during stowage and invalidate the Warranty.



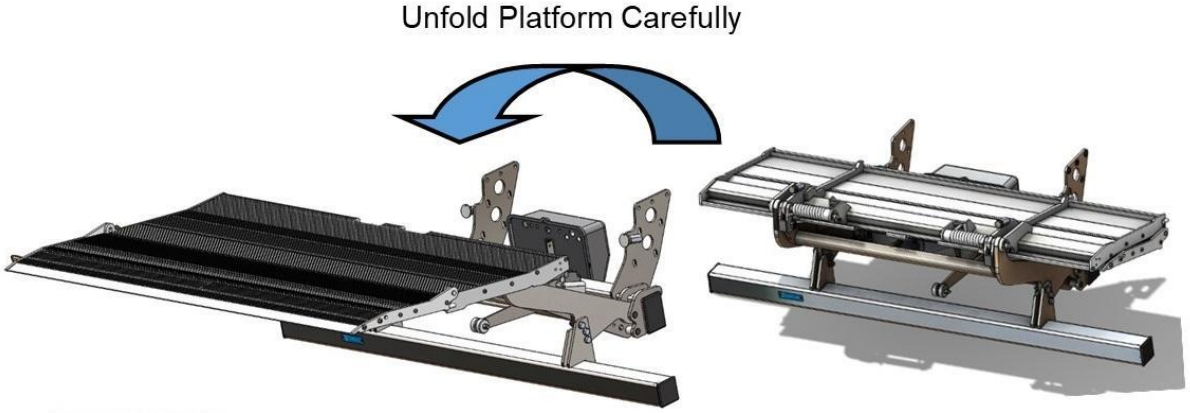
Roller shutter door bodies

The floor plate can be cut to allow for the roller shutter lock plate to be welded in. The floor plate will need to be cut on its top and bottom surface to allow the shutter hook to pass through. The hole in the underside of the floor plate should have its sides plated in with 4mm steel sheet. This will help retain the strength of the floor plate in the area of the lock and stop water ingress.

Note – Care must be taken to ensure that the heat from welding does not excessively warp the floor plate.



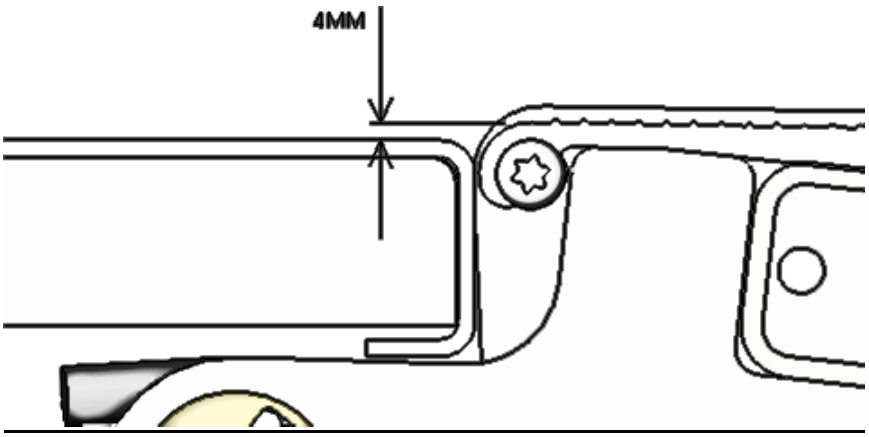
7. Connect the lift to a slave battery before pressing the down button to allow the lift platform to be unfolded.



!! CAUTION !! PLATFORM IS HEAVY AND CAN CRUSH, PLEASE USE EXTREAM CARE.

8. Position the fitting Plate/s over the ram pin's and lower lift slightly to Tighten. This will hold the ram/s approx 6mm open for installation.

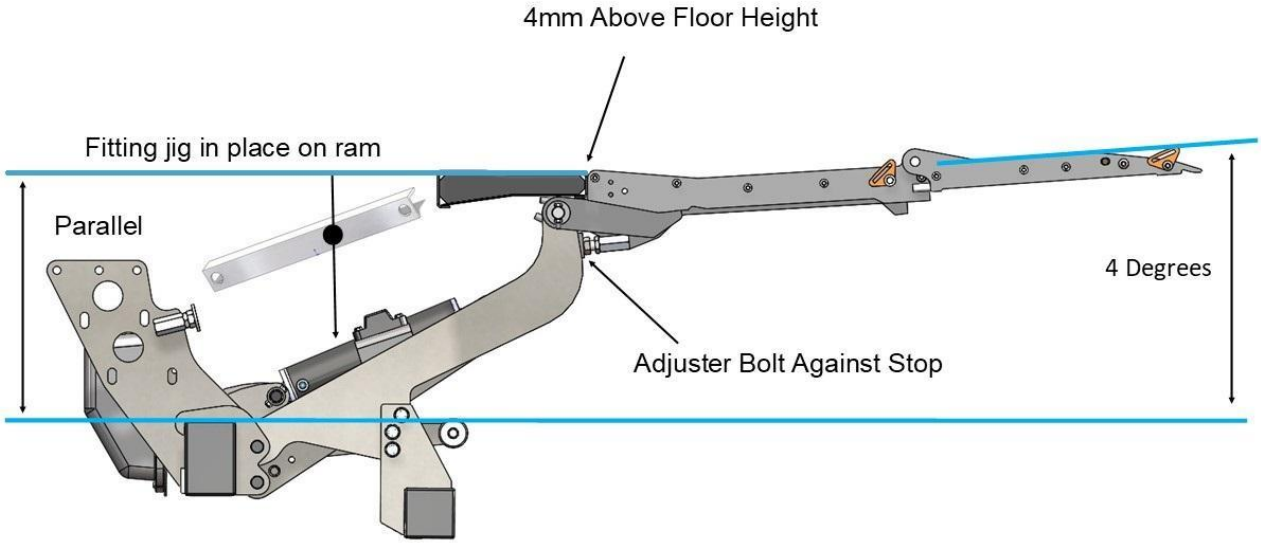
9. Using a chain lift, fork lift or overhead crane raise the platform to the rear of the vehicle.
   Position the platform so that it is 4mm above the top of the floor plate before clamping the platform to the floor plate.



Swing the tailift beam under the vehicle body, so that the mounting plates fit either side of the chassis. Ensure that the lift is positioned central about the chassis. If the gap between the mounting plates and the chassis exceeds 2mm each side, a shim should be inserted between the mounting plate and the chassis. Using a trolley jack, adjust the position of the beam ensuring that the top of the beam is parallel with the floor of the vehicle.

At this point, check the following (see drawing below)

a) The platform is positioned 4mm above the top of the floor plate
b) The beam is parallel (Square) to the floor of the vehicle
c) The fitting plate/s are installed holding the ram/s slightly open
d) The adjuster bolt is touching the stop plate, giving a platform angle of approx 4 degrees.
e) Check the 'X' and 'Y' reference dimensions for your lift. As these are reference dimensions, a tolerance of ±10mm is acceptable.



10. When correctly positioned, if the chassis runner is steel, run 3 off 1" long stitch welds around the top of the mounting plate, welding it to the runners on both sides. Also bolt the mounting plate to the chassis with one bolt each side only.
If the runner is aluminium or cannot be welded, bolt the mounting plates to the runner and chassis with 3 bolts each side only (ensure a large span of bolts).

Use the bolts provided with the lift, these are:

M14 bolts – DA1000 lifts, drill diameter 14mm holes

M16 bolts – DA1500 lifts, drill diameter 16mm holes

Ensure the bolts are tightened to the torque specified in the 'Technical Information' section of this manual.

This process will allow the fitment of the lift to be checked before it is fully fitted.

DO NOT ENTER THE WORKING AREA OF THE LIFT UNTIL IT IS FULLY FITTED.

11. Complete the tail lift wiring following the circuit diagram given. Fix the position of the hand control in a position which allows a good view of the working area of the lift.

12. Remove the clamps holding the platform to the floor plate, and any crane/forklift holding the platform.

13. Remove the fitting plate between the ram pins.

14. Adjust the rear protective device underrun bar width and height above the ground. **THE REAR PROTECTIVE DEVICE COMES IN ITS MAXIMUM LENGTH (UNLESS SPECIFIED) AND IT CAN BE CUT IF NECESSARY TO SUIT THE VEHICLE.**
    The **width** of the rear protective device (underrun bar) must at no point exceed the width of the rear axle measured at the outermost point of the wheels, excluding the bulging of the tyres close to the ground, nor must it be more that 100mm shorter on either side.

    The **height** above the ground must be adjusted to suit the bed height of every vehicle. The rear protective devices should be fitted **450mm*** above the ground, where 450mm cannot be achieved, try to fit it as close as possible.
    Please note:
    a) The height measured from the lowest part of the R58-03 rear protective device never exceed 450mm* above the ground.

* 500 mm or a departure angle according to ISO 612:1978 of 8°, whichever is less, when fitted to vehicles other than those with hydro-pneumatic, hydraulic or pneumatic suspension or those which have a device for automatic levelling.
* 550 mm when fitted to vehicles with a departure angle up to 8° according to ISO 612:1978.

15. Run the tailift through its complete cycle to ensure correct operation.

CAUTION

The lift is not completely fitted, DO NOT enter the working area of the lift, hold the lift at relief pressure when fully raised, or apply a load to the platform.

During this check, ensure

a) The platform comes up to the floor of the vehicle square and level, and is still set 1 to 4mm above floor level
b) The platform lowers to the ground, and has its ramp touching the ground when fully lowered.
c) The lift stows correctly, clearing the cut out in the chassis and any bodywork (e.g. steps) which may be fitted.

16. Finish the installation of the lift by fitting the remaining bolts through the mounting plates to the chassis. The lift needs to have a minimum of;

    3 off M14 bolts & 4 off M16 bolts each side – DA1000 lifts

    6 off M16 bolts each side – DA1500 lifts

    Ensure that all bolts are tightened to the correct torque, and that the greatest span of bolts as possible has been used.

17. Check the operation of the lift through its full range of motion.

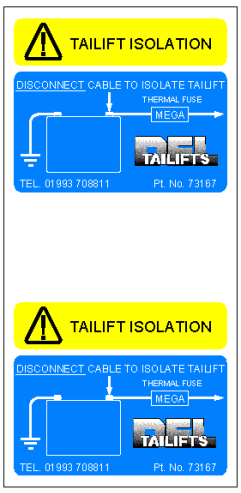
18. Carry out the post installation tests, which are detailed in the back of this manual. The test sheets must remain in the manual, and be kept with the operators manual as part of the service/maintenance record for the lift. Complete the test certificate and forward a copy to DEL.
19. Once the vehicle has been painted, the Warning, Instruction and Safe Load decals must be fitted.
20. Ensure that the manuals are passed on to the end user of the lift.

21. Complete the final inspection checklist.

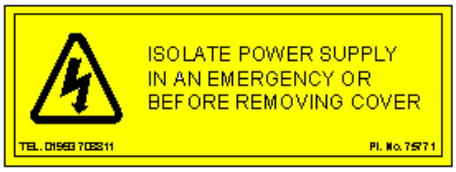
WARNING DECALS

22.

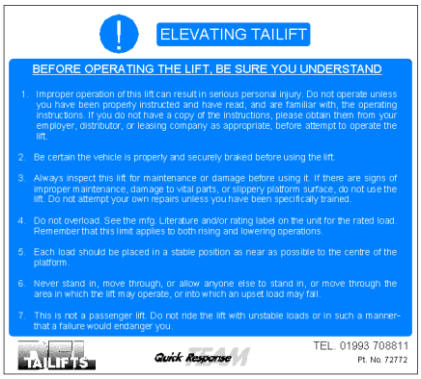
1) **EMERGENCY TAILIFT ISOLATION**
LOCATED AROUND THE POSITIVE CABLE TO THE BATTERY



2) **ISOLATE POWER SUPPLY**
LOCATED ON THE POWER PACK BOX

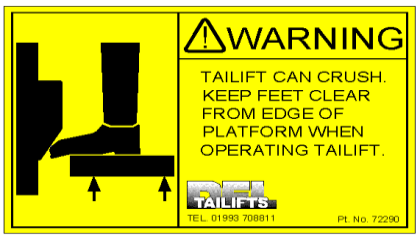


3) **ELEVATING TAILIFT**
LOCATED ON THE REAR PASSENGER SIDE OF THE VEHICLE AT EYE LEVEL

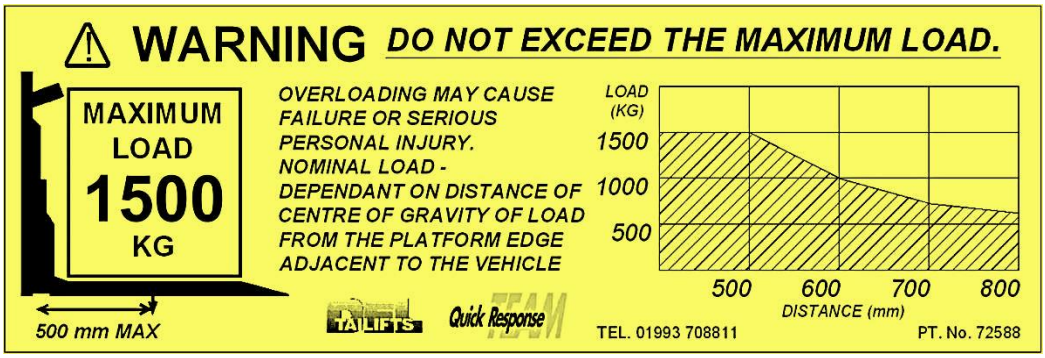


4) **KEEP FEET CLEAR**
LOCATED ON THE EDGES OF BOTH

5) **TAILIFT CAN CRUSH**
LOCATED ON THE FRONT FACE OF THE DOCKING BAY OR CORNER POSTS

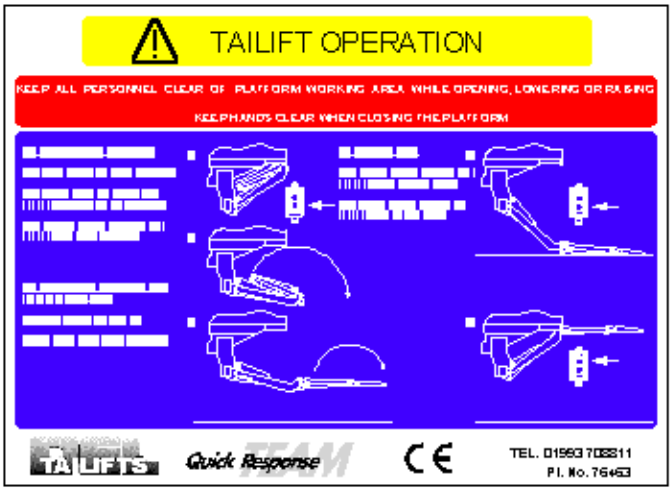


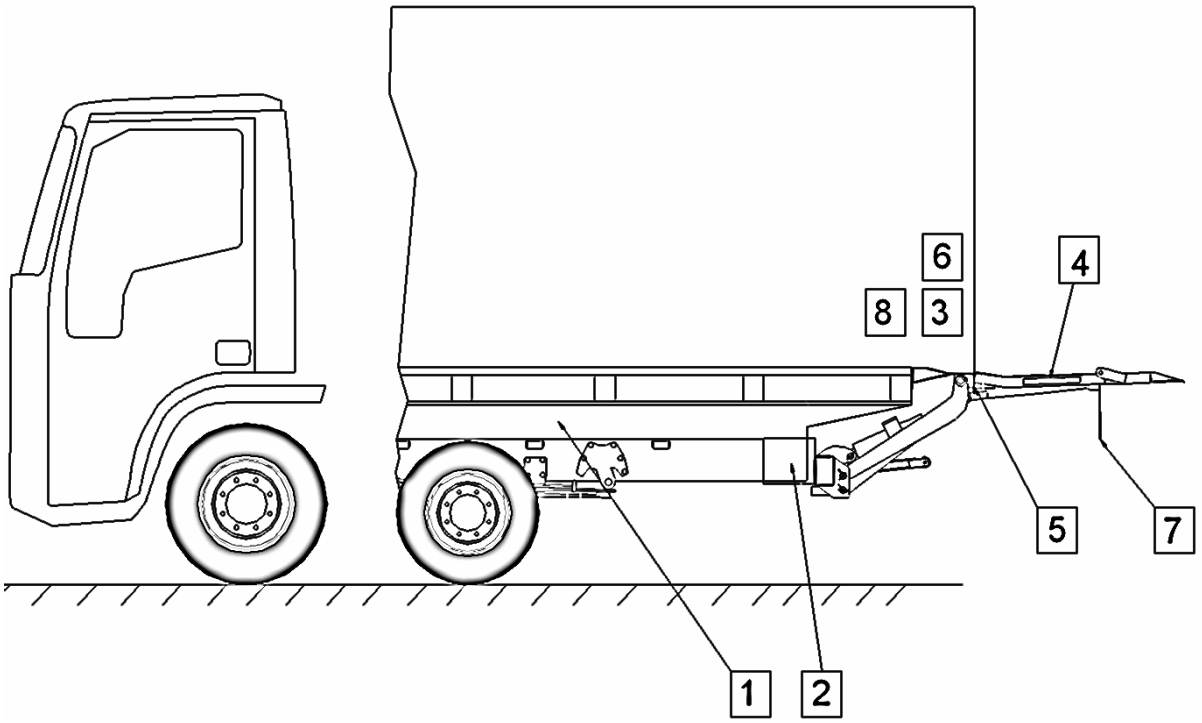
6) **MAXIMUM LOAD (1500KG SHOWN)**
LOCATED ON THE REAR PASSENGER SIDE OF THE VEHICLE AT EYE LEVEL



7) **FLAG**
LOCATED ON THE UNDERSIDE OF THE FOLDING (RAMP) SECTION OF THE PLATFORM AT BOTH ENDS

8) **TAILIFT OPERATION**
LOCATED ON THE REAR PASSENGER SIDE OF THE VEHICLE AT EYE LEVEL

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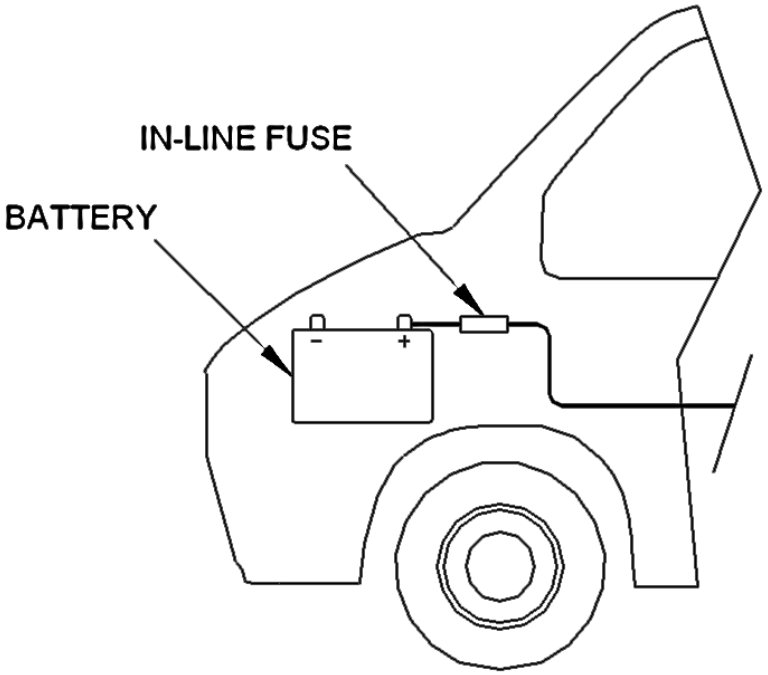
INSTALLATION OF IN-LINE FUSE & EARTH

Refer to page 31 for wiring installation recommendations.

Route the main battery cables from tailift to the battery along the chassis avoiding the exhaust, brake pipes, fuel pipes and sharp edges.

Locate the fuse holder on the positive cable, **as close to the battery as possible, inside the engine compartment** using the short cable to the battery +ve terminal. Connect the negative cable to the battery.

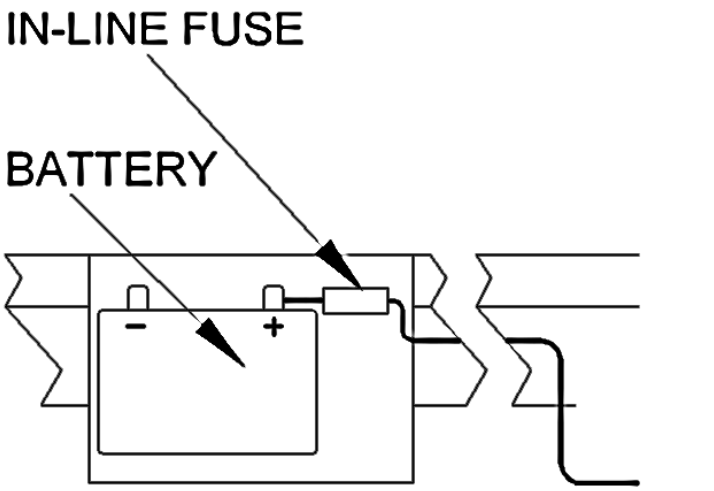
Battery may be located elsewhere on the vehicle. Consult Vehicle manual to confirm.



VEHICLE WITH CHASSIS BATTARY

Route the main battery cables from tailift to the battery along the chassis avoiding the exhaust, brake pipes, fuel pipes and sharp edges.

Locate **the fuse holder <u>inside</u> the battery case, using bolts, <u>not</u> self-tappers.** If there is insufficient space inside the case, locate **as close to the battery as possible, in an area <u>least</u> susceptible to the elements.**



Connect the negative cable to the battery.

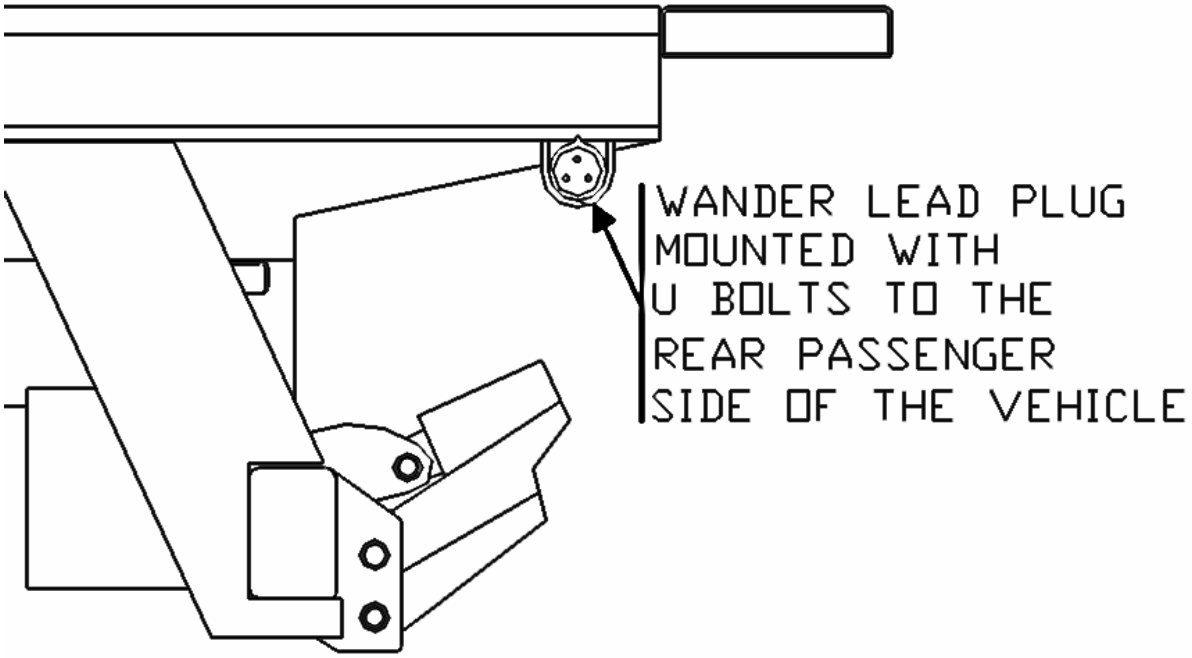
IF YOU ARE UNSURE ON FITTING THE INLINE FUSE PLEASE CONTACT DEL SERVICE

POWER PACK RELIEF VALVE

The powerpack relief valve has been factory set, if for maintenance purposes the valve needs to be adjusted, please contact the DEL service department.

LOCATION OF THE CONTROL POSITION

The standard control for Tuckunder model lifts is the Wander lead control. The hand control is plugged into the control socket located on the passenger side of the lift before use. The hand control must be disconnected after use and locked inside the driver's cab.



TESTS AFTER INSTALLATION

After the lift has been initially installed the following tests MUST be completed to ensure the lift has been installed and set up correctly in accordance with CE regulations. The results of the test should be entered on the test certificate provided in the back of this manual and a copy returned to DEL Equipment (UK) Ltd, the original should be kept in the manual as part of the inspection record for the lift.

Do not leave a loaded platform unattended

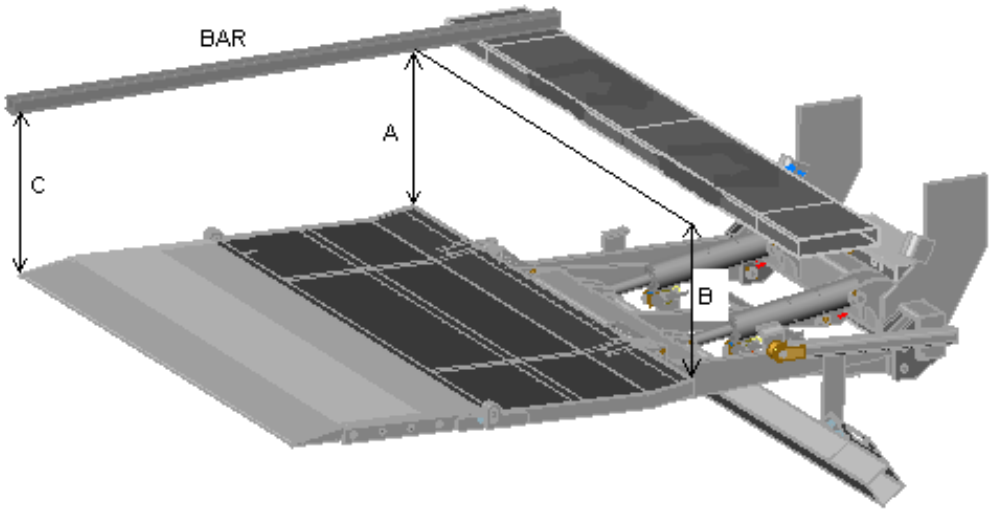
IMPORTANT - CE REGULATIONS REQUIRE THE TEST CERTIFICATE TO BE COMPLETED AND RETURNED TO Hiab UK Ltd.

1) Static weight tests

a) Deformation

This test is to ensure that the lift attachment is secure.

- Lower the platform mid-way between ground level and vehicle floor level.
- Measure the height of the platform from the vehicle floor (measurement A, B and C) as shown below and record the values in the table provided. Note that a bar clamped to the bed of the vehicle may be needed to aid measuring.



- Apply a load equal to the safe working load +25% to the platform, leave it for a few seconds before removing it (note that the power pack relief valve prevents this load from being lifted).

- Re-measure the distances A, B and C and record under ‘measurement 1’ in the table below.
- If the new values of A, B and C are not the same as the previous values repeat the test until they are, recording all subsequent tests in the spaces given.
- Check that no permanent deformation has occurred in the lift or its attachment to the vehicle, which would affect its function.

	Initial	Measurement 1	Measurement 2	Measurement 3
A				
B				
C				

b) Platform drift

This test is to ensure that the platform remains stationary within 15mm of its original position over a 15-minute test period.

- Raise the platform to vehicle bed height.
- Apply a load equal to the safe working load + 25% to the platform. (note that the power pack relief setting prevents this load from being raised)
- Measure the distances A, B, and C and record them in the table provided.
- Leave the platform loaded for 15 minutes.
- After the 15 minutes test period, re-measure the values A’ to C’ and record them in the table.
- Check that:
    1. The difference in the measurements do not exceed 15mm
    2. The difference between A’ and B’ does not exceed 70mm
    3. The difference between A’ and C’ does not exceed 51mm

Note the values given refer to the standard size platform of 1981mm wide by 1457mm deep. For other size platforms divide the difference between A’ and B’ by the width and the difference between A’ and C’ by the depth. The result of these should not be more than 0.035 (3.5%) of the width or depth as appropriate.

Initial	Measurement	After 15 minutes	Measurement
A		A’	
B		B’	
C		C’	

2) Test to verify that the lift cannot raise excessive load

- Lower the platform to Ground level.
- Apply the safe working load + 25% to the platform.

- Verify that the load cannot be lifted. (If weight CAN be raised please contact Hiab for advice.

3) Dynamic weight test

- Apply the safe working load to the platform.
- Ensure that the lift operates through its full range of movements.
- With the load still on the platform go straight to the safety tests.

4) Test of safety functions

VERTICAL SPEED

- Measure the height of the vehicle bed from the ground.
- With the safe working load applied to the platform measure the time taken for the platform to lower from the vehicle bed height to the ground
- With NO load on the platform, measure the time taken for the platform to rise from the ground to vehicle bed height.
- Record the values in the table below.
- Calculate the speed for both the lowering and raising operations (speed = bed height/time), and record them in the table.
- Check that the speeds do not exceed 150 mm/second

	Laden (lowering)	Unladen (raising)	Speed
Time			
Speed (A/Time)			

NOTE
Test the effort required to open and close platform using suitable weighing scales. Measure the effort required to initiate movement at the mid-point extremity of the platform section. This should not exceed 350N (35.7Kg.f).

CHECK LIST

- Static weight test complete ☐
- Excessive load test complete ☐
- Dynamic weight test complete ☐
- Safety function test complete ☐
- Vertical speeds measured ☐
- Effort test complete ☐

IF THE LIFT FAILS ANY OF THESE TESTS, CONTACT DEL EQUIPMENT

- **TECHNICAL INFORMATION**

a) Torque settings

SIZE	TORQUE (Nm)	
	GRADE 8.8	GRADE 10.9
M8	20	29
M10	40	57
M12	70	99
M14	112	158
M16	175	246

b) Hydraulic fluid

Automatic Transmission Fluid – Viscosity:
39 Centistokes at 40°C
7.5 Centistokes at 100°C
Type ‘A’ automatic transmission fluid or Shell T22 or equivalent is recommended.

c) Weight

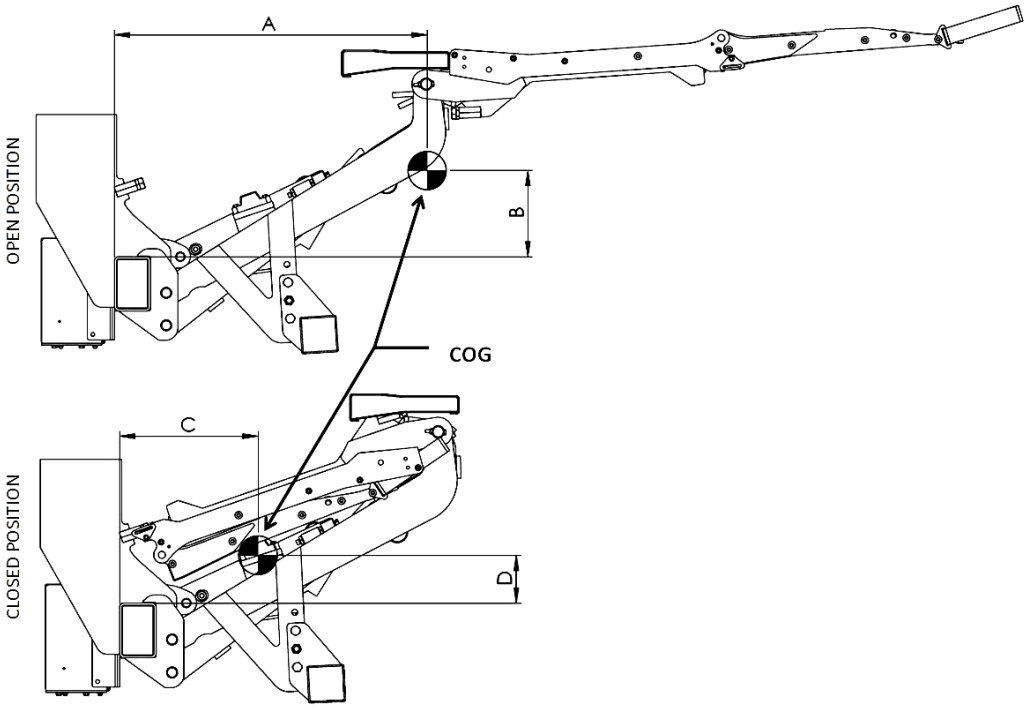
MODEL	OVERALL WEIGHT (KG)
DA1500	350
DA1000L	300

NOTE: - The above weights are approximate and are given as a guide only.

d) Centre of gravity

The centre of gravity of the tailift lies central about its width, and at the dimensions shown below. The centre of gravity of the load should be as close to the centre of the platform as possible.

	DA1500	DA1000
A	769	761
B	255	249
C	462	338
D	169	273



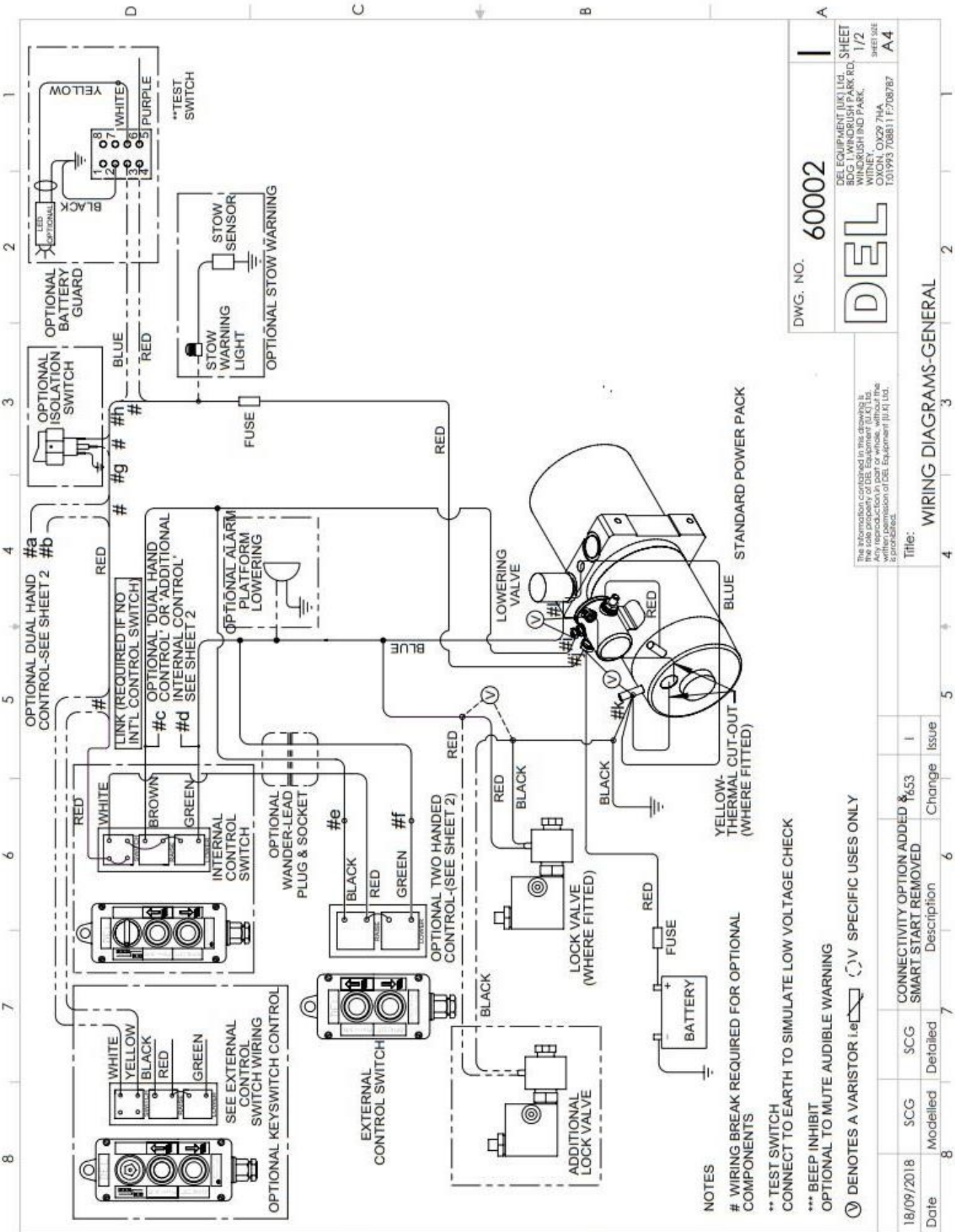
FINAL INSPECTION CHECKLIST

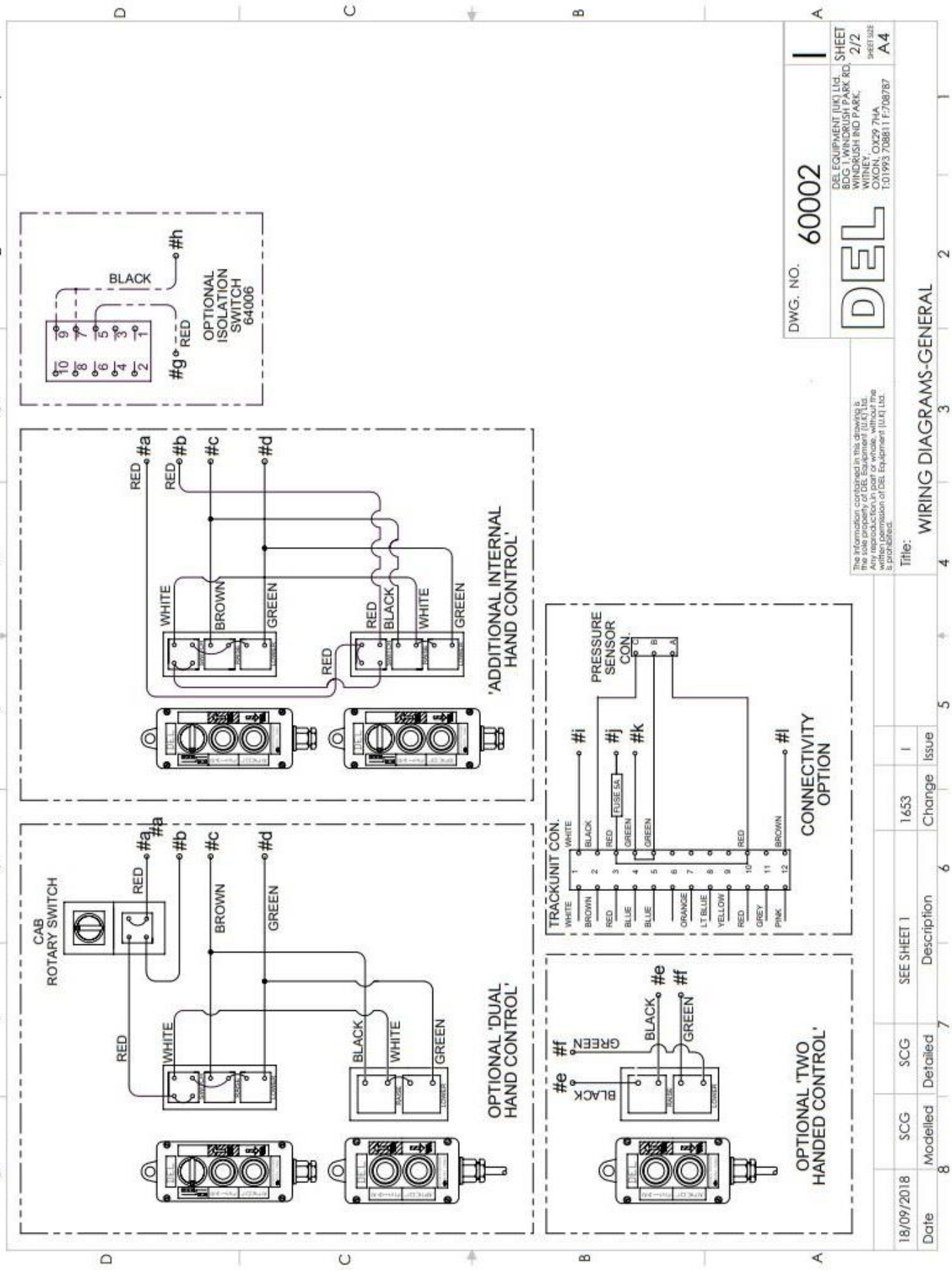
CAUTION: Do not use tailift if any of the items below are not checked and verified. If you have any questions contact DEL sales. Failure to verify the following could result in severe damage to the tailift or personal injury.

Installation is not fully complete until all the following items are checked and verified and the Installation Manual is passed on to the end user of the lift.

- ☐ Oil level meets fill mark in pump reservoir.
- ☐ All tack welds are now complete welds.
- ☐ Platform bed height set correctly.
- ☐ Hydraulic components checked for leakage.
- ☐ Battery cables attached and clamped tight.
- ☐ Lights are wired properly, are operational, and comply with current lighting Regulations.
- ☐ On/off switch inside lockable drivers cab or other device to prevent unauthorised operation in the absence of the operator is fitted.
- ☐ Fuse is fitted as close to the battery as is practical.
- ☐ Audible and visual warning signals operational (if fitted).
- ☐ Vehicle licence plate properly fitted and visible.
- ☐ All decals are in place and legible after painting. Reflective flags or alternative warning devices fitted.
- ☐ Visual checks to ensure any crushing or shearing risks are avoided and decals are in place warning of risks.
- ☐ Operator's manual in vehicle.
- ☐ Earth strap properly installed.
- ☐ Platform opens properly.
- ☐ Control switch operates properly and the direction of the control operation is logically consistent with the direction of travel. Only one control is operational at any one time. The controls are installed to give the operator a secure working position and also good visibility of the load, the platform and working area.
- ☐ Platform torsion assistance is working and the manual effort does not exceed 250N or 350N to initiate motion.
- ☐ Tailift tested and test certificate completed.
- ☐ Wire protection is fitted to all cable holes. Unshielded hydraulic pipes and electrical wires have been placed so as to avoid damage due to movements resulting from the operation of the tail lift or the vehicle.

WIRING DIAGRAM




OPTIONAL ISOLATION SWITCH 64006
BLACK
RED
#g
#h
'ADDITIONAL INTERNAL HAND CONTROL'
#a
#b
#c
#d
WHITE
BROWN
GREEN
RED
BLACK
CONNECTIVITY OPTION
TRACKUNIT CON.
PRESSURE SENSOR CON.
#i
#j
#k
#l
FUSE 5A
OPTIONAL 'DUAL HAND CONTROL'
CAB ROTARY SWITCH
OPTIONAL 'TWO HANDED CONTROL'
#e
#f
GREEN
BLACK
DWG. NO. 60002
DEL
DEL EQUIPMENT (UK) Ltd.
BDG 1, WINDRUSH PARK RD.
WINDRUSH IND PARK,
WITNEY,
OXON, OX29 7HA
T:01993 708811 F:708787
SHEET 2/2
SHEET SIZE A4
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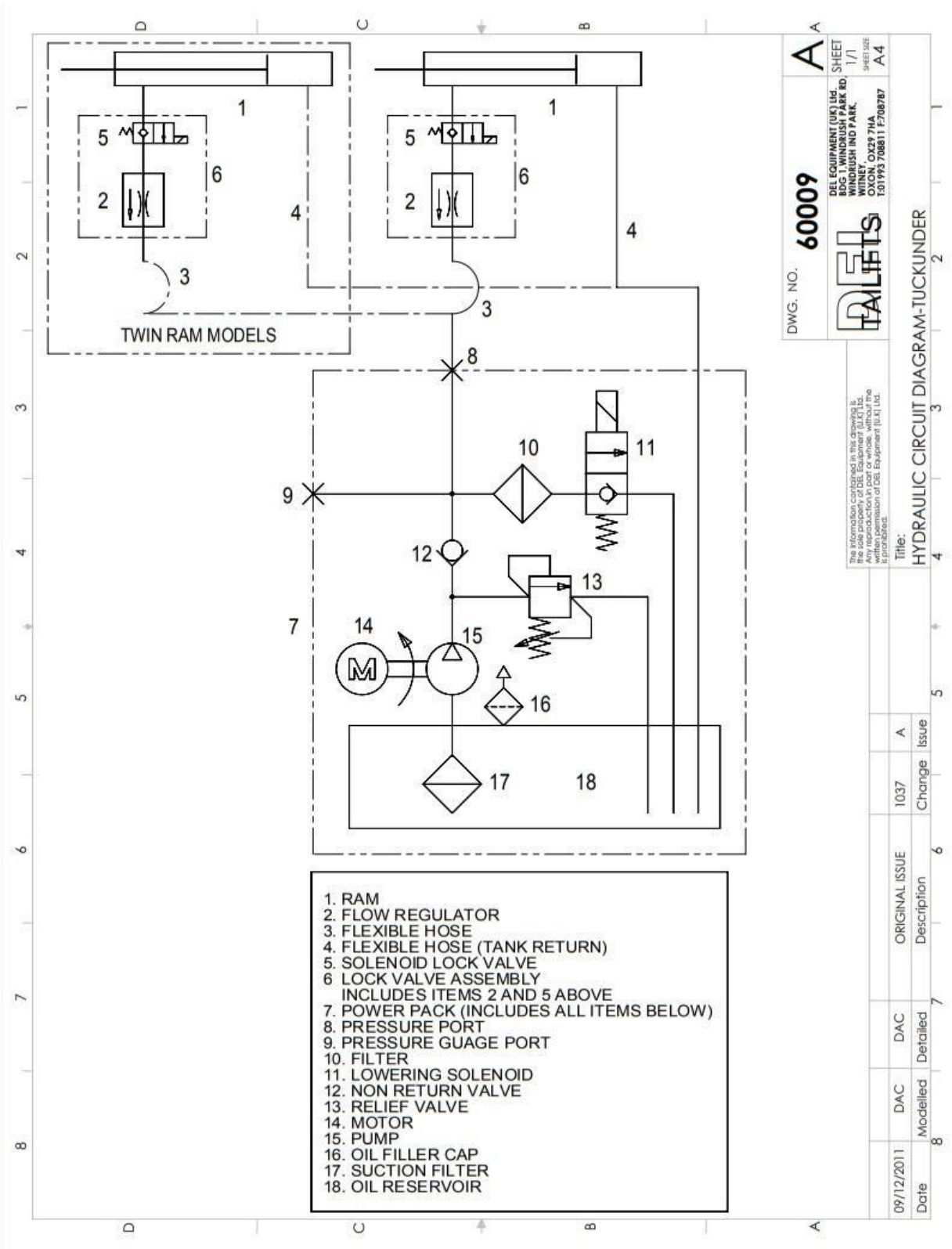
Title:
WIRING DIAGRAMS-GENERAL
18/09/2018 SCG SCG SEE SHEET 1 1653 I
Date Modelled Detailed Description Change Issue

HYDRAULIC DIAGRAM



Hiab UK
Cargotec Industrial Park
Ellesmere SY12 9JW
United Kingdom

TEL: 01993 708811

EMAIL: sales@del-uk.com
WEBSITE: www.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 tail lifts 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 Hiab UK Ltd at the address above.

Hiab UK
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Ellesmere SY12 9J
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WEBSITE: www.del-uk.com

LIFT TEST CERTIFICATE

DATE: DD / MM / YYYY

CUSTOMER NAME:		INSTALLER/TESTER NAME:	
ADDRESS:		ADDRESS:	
MODEL:		FITTED TO:	
SERIAL NO:		VEHICLE REG:	
RATED CAPACITY: (TEST LOAD)	kg	OVERLOAD SETTING: (TEST LOAD+25%)	kg

INSTALLATION TESTS	
1. STATIC TEST:	PASS / FAIL
2. DYNAMIC TEST:	PASS / FAIL
3. EXCESSIVE LOAD TEST:	PASS / FAIL
4. SAFETY FUNCTION:	PASS / FAIL
5. VERTICAL SPEED TEST:	PASS / FAIL
HAS THE FINAL INSPECTION CHECKLIST BEEN COMPLETED	YES / NO
HAS THE OPERATORS MANUAL BEEN PASSED ON TO THE END-USER	YES / NO

GENERAL OBSERVATIONS:

We certify that the product detailed above has been installed in accordance with the manufacturer's instructions and that all post installation tests have been completed and passed. We confirm that the manufacturer and end user have been consulted with regard to the product's compatibility with the vehicle taking into account the intended use.
The product has not been modified in any way. Any modifications have been approved in writing by the manufacturer.

TESTED BY:	SIGNED:
COMPANY:	

THIS CERTIFICATE SHOULD REMAIN IN THE INSTALLATION HANDBOOK

Electrical Cable Installation Notes

Power Cable Bend radius

A smaller bend radius than provided by the wire supplier will put extra stress on the installation as well as over time damage the internal copper strands. This will increase the electrical resistance and by that accelerate the turn of events that can lead up to that the wire breaks. Power cables must be installed with a minimum bend radius of 100mm

Power Cable Maximum distance between fixation points

A tight fixation is crucial for the power cables in order to avoid extra stress on the wires. The maximum distance is set so that impact from vibrations are lowered to a minimum. The recommended maximum clamping distance is 400 mm.

Clamping material

Wire installation should be made with, for the application, appropriate material. Recommendation is to use rubber clamps as much as possible. The use of cable ties should be avoided for fixating the power cables. If this can't be avoided the recommendation is to use them together with a specified clip solution.
The use of cable ties striping the wire together with other parts (such as pipes, hoses or brackets) is not recommended due to that chafing on either one or both parts will occur.

Bolting Torques

Battery Terminal Clamps

M6 Clamp Bolts: 5-6Nm

Fuse

Recommended tightening torque of M8 Fasteners: 12-18Nm

Motor and Start Switch Terminals

Recommended tightening torque of M6 Terminals: 4-5Nm

Recommended tightening torque of M8 Terminals: 8-10Nm

Contact Us:

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