Revision: 7.0 Year: 2021

Fitting and Service Manual

iCLASS FP **iCLASS P** **iCLASS SP**

CE

ISO 9001:2015 certified

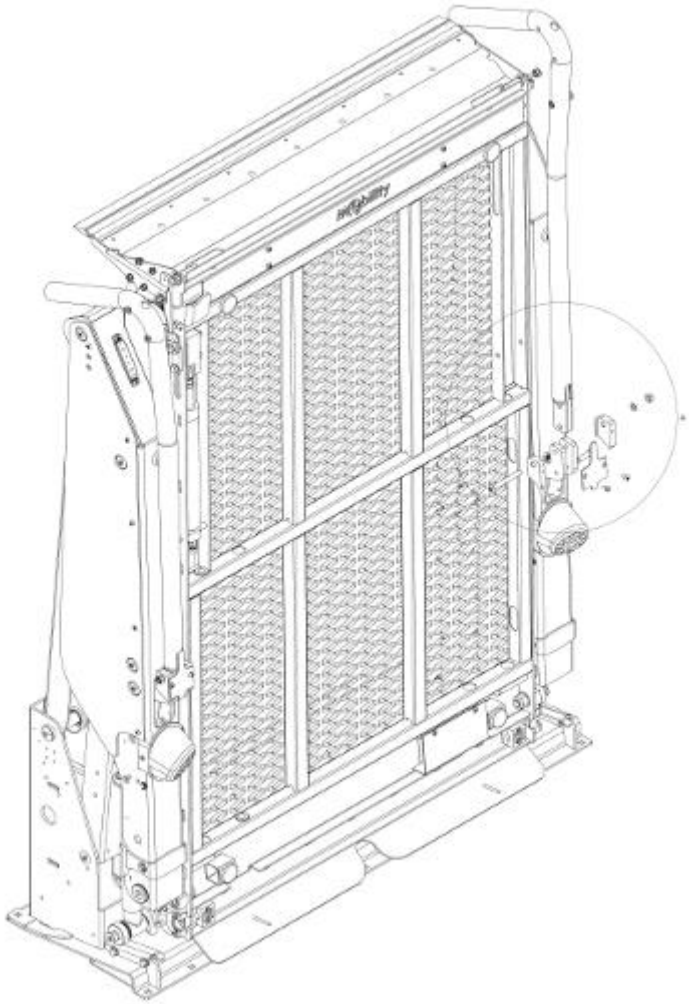
Revision Status

REVISION	DATE	NOTE
1.0	SEPTEMBER 2020	ORIGINAL VERSON
2.0	OCTOBER 2020	CONTENT UPDATE
3.0	OCTOBER 2020	CONTENT UPDATE
4.0	DEC 2020	WARNING UPDATE
5.0	FEB 2021	CONTENT UPDATE
6.0	JULY 2021	CONTENT UPDATE
7.0	JULY 2021	CONTENT UPDATE

Safety Handrails

WARNING: The Lift may be packaged and shipped **WITHOUT** Safety Handrails.

Handrail type should be selected and correctly installed **BEFORE** the first operation of the lift.



Correct installation should be carried out by an approved engineer.

See SECTION 5.7 for installation details.

Contents

1 General 6

1.1 Manufacturer 6

1.2 Safety Rules and Symbols 6

1.3 Using the Manual 8

1.4 Warnings 9

1.5 Documentation 9

1.6 IMPORTANT Wheelchair Integrated Occupant Seatbelts 10

1.7 Lift Owner and Lift Operator 11

1.8 Connectivity 12

2 Warranty 13

2.1 Genuine Spare Parts 13

3 Technical 14

3.1 Technical Description 14

3.2 iCLASS Model Types 14

3.3 Technical Specifications 18

3.4 Safety Devices 18

3.5 Doorsafe 19

3.6 mobility RDO REAR DOOR OPENER 20

3.7 iCLASS Accessibility 20

4 Logistics 21

4.1 Transport and movement 21

4.2 Packaging 22

4.3 Storage 22

5 Fitting and Installation 23

5.1 iCLASS P Dimensions 23

5.2 iCLASS SP Dimensions 24

5.3 iCLASS FP Dimensions 24

5.4 iCLASS Lift Fitting Kit 26

5.5 Lift positioning and fixing 27

5.6 Correcting the angle of the towers 30

5.7 Fitting Safety Handrails 30

6 Electrical 32
6.1 Power Supply 32
6.2 RDO Rear Door Opener Interface socket 35
7 Power Pack 36
7.1 Power Pack 36
7.2 Hydraulic Oil level check and top-up 37
7.3 Hydraulic Pressure Control 38
7.4 Pressure Control Switch and Pressure Connection Socket 38
7.5 Pressure Control Switch Adjustment 39
8 Commissioning 39
8.1 Lift Position Setting 40
8.2 iCLASS Weight Test Certificate 45
8.3 ECU and the Mobility Networks – Smart Lift App 48
8.4 Installing the Mobility Networks – Smart Lift App and Pairing to the ECU 48
8.5 Mobility Networks – Smart Lift App DEBUG Mode and Installer ECU Tools 49
8.6 Changing from 'Safety Mode' to 'Full Operation Mode' 50
8.7 ECU Details 50
8.8 Commissioning Log 51
9 Operation 53
9.1 Operation Introduction 53
9.2 Standard Operation 55
9.3 Emergency Operation 58
10 Reference Material 60
10.1 Torque Settings 60
10.2 Fastener Strength Conversion Chart 61
10.3 iCLASS Electrical Schematic 62
10.4 iCLASS Hydraulic Schematic 67
11 ECU 68
11.1 Setting 'Full Operation Mode' (non-Mobility Networks – Smart Lift App method) 68
11.2 Electrostatic Precautions 69
11.3 Firmware Updates 70
11.4 Firmware Update using the Mobility Networks App 71
11.5 ECU Pin Configurations 72
11.6 RTC - Battery Replacement 73
11.7 ECU Display Messages 74
12 Inspection and Servicing 77

12.1 Service Intervals 77
12.2 Daily Checks 77
12.3 Checks to be performed every 2 Weeks 78
12.4 Service Type A 79
12.5 Service Type B 80
12.6 Service Type C 81
12.7 Set lift to work height 81
12.8 Service Type D 82
12.8.1 Replace Arm Pivot Pin 82
12.8.2 Oil Check and Change 82
12.9 iCLASS Workshop Manual: Arm Cylinder Replacement 83
12.10 iCLASS Workshop Manual: Arm Gas Spring Replacement 84
12.11 iCLASS Workshop Manual: Safety Handrail Gas Spring Replacement 85
12.12 iCLASS Workshop Manual: Safety Hook Replacement 86
12.13 iCLASS Workshop Manual: Power Pack Replacement 87
12.14 iCLASS Workshop Manual: ECU Removal 89
12.15 iCLASS Workshop Manual: ECU Cover Removal 90
12.16 iCLASS Workshop Manual: Rotary Switch Replacement 90
12.17 iCLASS Workshop Manual: Platform Levelling 91
13 Cleaning 93
14 Lubrication 94
15 Inspection and Servicing 95
15.1 Inspection and Service Data Sheet 95
16 Troubleshooting 96
6.1 Switch Locations 101
17 iCLASS Labelling 101
17.1 Lift Labelling 101
17.2 Power Pack Labels - Outside 102

1 General

1.1 Manufacturer

Mobility Networks Holdings Ltd.
12 Estuary View Business Park
Whitstable
Kent, CT5 3SE
United Kingdom
Tel: +44(0) 1227 505 022

The iCLASS wheelchair lift, is manufactured by Mobility Networks Holdings Ltd.

(Mobility Networks)

ISO 9001:2015 certified

These registrations have been assessed and registered by NQA against the provisions the above International Standards.

1.2 Safety Rules and Symbols

Read this manual completely before commencing installation.
Particular care should be taken when these symbols are used:

WARNING	This symbol identifies the presence of instructions which need to be read and followed carefully in order to avoid potentially dangerous situations.
DANGER	This symbol identifies the presence of essential information needed to avoid potentially dangerous situations that could cause physical injuries and/or damage to the equipment.

To ensure smooth and safe operation, it is necessary to follow the procedures for the installation and servicing of the wheelchair lift.

WARNING

Carefully follow the instructions for the installation and service of the wheelchair lift within this manual. If the instructions within this manual have not been fully understood or further information is required, please contact Mobility Networks immediately. To avoid risk of personal injury, material damage to the equipment and vehicles or incorrect installation and use be sure to read and follow the contents of this manual.

DANGER

Should it be necessary to raise the vehicle being equipped, please check that the characteristics of the vehicle lifting device is compatible with the volume and weight of the actual vehicle otherwise there is a risk of serious damage and personal injury.

The Identification Plate, see Figure 1.2.1 is stamped with the data indicating the lift serial number. The Operator Manual requires these details to be recorded.

NOTE: The Lift Serial number is required for ALL correspondence with factory

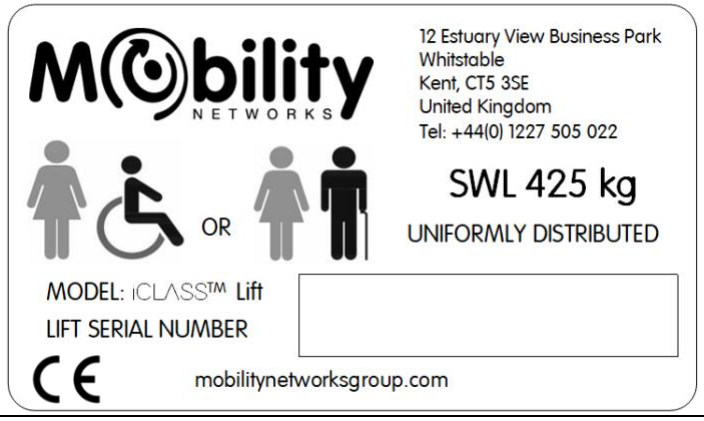


Figure 1.2.1 Identification Plate

Installer
Installation Date
Serial Number

WARNING

DO NOT REMOVE OR TAMPER WITH THE IDENTIFICATION PLATE, THIS WILL VOID WARRANTY

1.3 Using the Manual

This manual aims to provide users and operators with all the information they require to ensure that they are able both to use the lift appropriately and are able to manage it as autonomously and safely as possible.

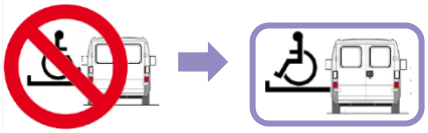
Before performing any operations on the lift, users and operators must carefully read the instructions given in this publication.

WARNING All installation and service procedures should be carried out in accordance with current health and safety laws. Changes or modifications made to the device not approved expressly by the party responsible for compliance could void the user's authority to use the equipment.

The Approved Service Engineer must:

- Ensure the vehicle stability is not affected by the lift, either stowed or fully deployed and fully loaded.
- Carry out the installation in accordance to the indications detailed within this manual.
- Carry out the installation by following the indications of the vehicle manufacturer.
- Complete the Warranty registration card.
- Carry out the verification check procedure for the first commissioning by following the instructions detailed in this manual.
- Register the verification check procedure for the first commissioning in the "use and maintenance" manual.
- Pass the required documentation to the final customer, in compliance to rules and regulations in force. Send another copy to the Mobility Networks to register the warranty.
- Carry out the inspections in compliance with the instructions detailed in this manual.
- Register the inspections in this manual.

1.4 Warnings

Stand clear of lift when in operation and keep bystanders away	
Park on level ground with plenty of manoeuvring space around the vehicle	
The disabled person must always face away from the vehicle the vehicle. Do not approach the vehicle threshold with your back to it. Make sure the platform is in position before leaving the vehicle	
Do not remain stood on the inner barrier / threshold plate when lowering or stowing the lift. Do not push against it during use.	

1.5 Documentation

The end user should receive with the iCLASS wheelchair lift:

The installation and weight test certification completed and signed by the installer.

Use and maintenance manual completed by the installer.

The latest version of all product documentation is available from the Mobility Networks App and website.

Mobility Networks is at your complete disposal for further clarification and instructions.

1.6 IMPORTANT Wheelchair Integrated Occupant Seatbelts

It is recommended to follow the Best Practice Guidelines of PMG.

Wheelchairs that are suitable for use as a seat in transport are recommended to comply with ISO 7176-19:2008+A1:2015 may be fitted with crashworthy integrated lap belts for use during transport.

It is recommended that when fitted, a crashworthy integrated lap belt is correctly fitted, positioned low on the passenger's pelvis and buckled-up before using the passenger lift.

Operators must be fully trained in the use of wheelchair tiedowns and occupant restraint systems (WTORS) that are compliant with ISO 10542-1:2012.

Operators should also be familiar with the use of other equipment used to assist people with different types of disability and the various types of wheelchair that may be encountered.

The wheelchair user or their family or care provider are responsible for ensuring that the wheelchair has the correct equipment installed and maintained, as recommended by the wheelchair manufacturer and equipment supplier.

*The above standards should be checked to make sure the latest version is used.

1.7 Lift Owner and Lift Operator

WARNING The lift owner is the person who purchases the product, uses or oversees the use of the lift, this person is legally responsible for the lift's safe use. They are responsible for distributing and ensuring that a copy of this manual is read and fully understood by all potential lift operators before operating the lift.

The operator is individually responsible for the safe use and maintenance of the lift. They are also responsible for the lift users and their own personal safety and in the event of an accident they will be prosecuted to the full extent of the law if they are deemed negligent. No operator will use the lift if they believe it is unsafe and doing so could injury themselves or others, they MUST report their concerns directly to their manager or Mobility Networks.

Legal action will also be taken if any unauthorized modifications are made to the lift without direct prior written authority by Mobility Networks.

The operator must be fully trained in all the operation aspects of the lift such as the transportation of people with motor deficiencies or disabilities. The operator must exhibit the following characteristics/ attributes for them to safely operate the lift:

PHYSICAL Possess the required physical qualities/ characteristics sufficiently to ensure safe operation of lift in a safe and controlled manner. Examples include:

- Good hearing & sight
- Physically capable of performing all operational functions of lift
- Not impaired by the consumption of legal and/or illegal substances (such as alcohol and / or drugs)

MENTAL Possess the required mental qualities / characteristics sufficiently to ensure safe operation of lift in a safe and controlled manner. Examples include:

- Understanding & application of the safety rules and procedures while operating the lift.
- Be constantly aware and pro-active to ensure the safety of operator, consumer and nearby people.
- Have the knowledge / skills to perform as an assistant and/ or operator in all aspects of lift operation, e.g. the safe transportation, loading and unloading of disabled and other passengers.

EMOTIONAL Possess the required emotional qualities / characteristics sufficiently to ensure safe operation of lift in a safe and controlled manner. Examples include:

- Work in a calm & safe manner while under stress so to prevent stress from impairing good judgement.
- To be emotionally stable during normal or abnormal situations

TRAINING Possess the required training qualities sufficiently to ensure safe operation of lift in a safe and controlled manner. Examples include:

- Completed operational training supervised by an experienced operator in Mobility Networks lifts in an environment which is safe and controlled. Such supervised training should allow the trainee to gain working experience in all operation aspects of the lift.

1.8 Connectivity

If the Powerpack has an LCD screen then lift functionality can be achieved wirelessly.

The lift can be controlled / programmed using the **Mobility Networks – Smart Lift** App.

(Download using the QR Code on front of manual / on the lift).

To pair:

On your mobile device, open the application and follow the instructions on the screen.

For both iOS / Android the app will ask for Bluetooth and Location settings to be turned on – otherwise the app cannot be used and it will close.

Connectivity works in the 3m zone shown in Figure 1.8.1

When operating the lift, ensure you are within reach of the power switch at all times and that you are able to view all corners of the platform.

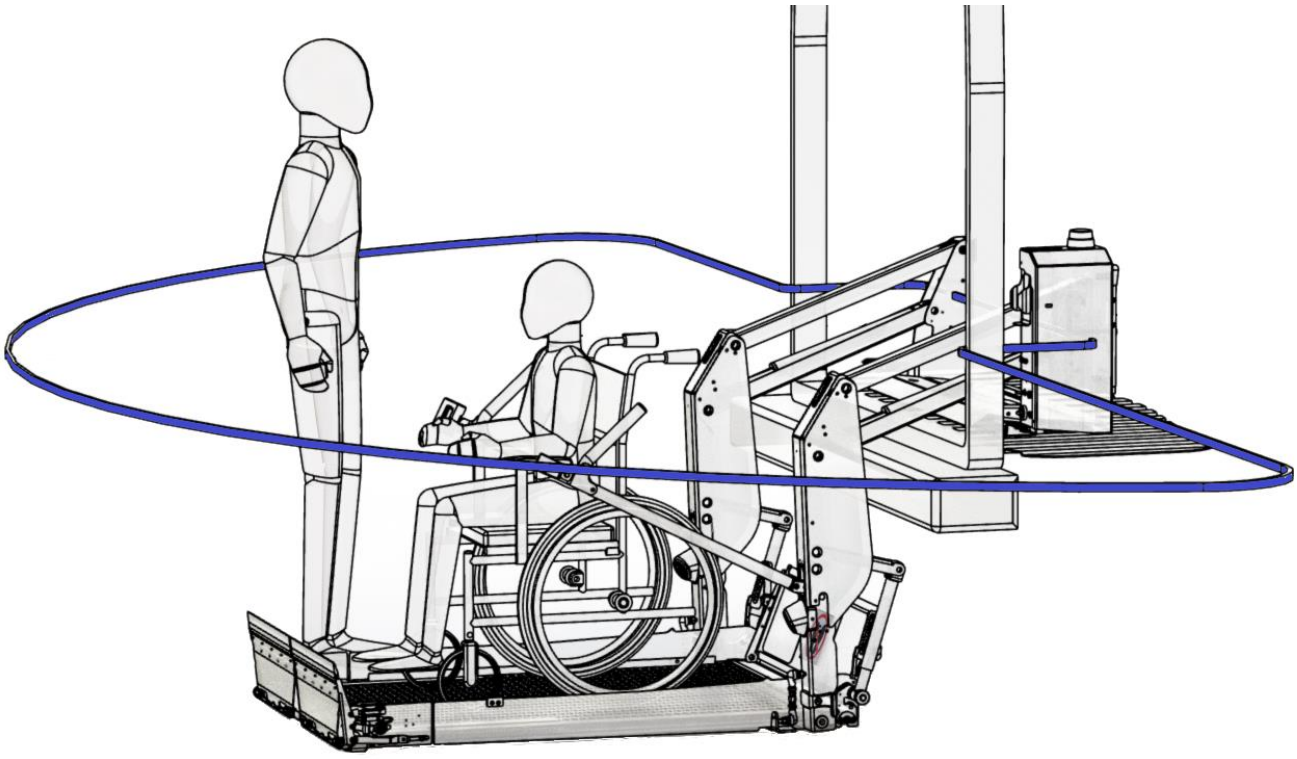


Figure 1.8.1 Wireless Connectivity Zone

WARNING

BEFORE OPERATING THE LIFT WITH THE App:

Make sure the lift and App are paired.

The PIN can be found on the Power Pack LCD Screen

2 Warranty

Mobility Networks Holdings Ltd. assures the hydraulic lift for 12 months from the date of delivery.

The Warranty covers defects concerning material quality and product manufacturing.

The Warranty does not cover consumables and defects or failures as a result of incorrectly performed installation. Ensure installation is performed in compliance with the manufacturer's instructions.

The Warranty becomes void in case of impacts caused by accidents and/or tampering carried out by personnel not authorized by Mobility Networks Holdings Ltd.

The Warranty will be automatically extended to 24 months when the installer uses the App to complete the installation process and product registration.

Mobility Networks refuses all responsibility for damages caused by:

- Improper use of the hydraulic lift.
- Platform overloading.
- A failure in carrying out "use and maintenance" manual instructions.
- A failure in carrying out maintenance operation as detailed in the "use and maintenance" manual.
- Interventions or modifications to the lift without Mobility Networks authorisation.

WARNING

Non-fulfilment of the manufacturer's specified regular inspection dates may affect or even void the product warranty.

2.1 Genuine Spare Parts

WARNING

USE ONLY GENUINE PARTS
USE OF NON-GENUINE PARTS AND HARDWARE MAY AFFECT OR EVEN VOID THE PRODUCT WARRANTY

3 Technical

3.1 Technical Description

The iCLASS wheelchair lift is installed on the deck of vehicles used for transporting persons with reduced mobility (PRM) in wheelchairs, allowing them to get into and out of the vehicle.

The lift consists of a base fixed to the vehicle loading deck, a pair of outer lifting arms installed on the sides of the base, and a loading platform, hinged between these.

Deploying/stowing and lifting/lowering movements of the lift are made by means of a parallelogram leverage mechanism driven by a pair of hydraulic cylinders (one for each outer arm). The machine is equipped with a hydraulic control unit and an electronic control box – the Power Pack which by means of a remote control performs the various functional movements.

The entire system is electrically powered by the batteries of the vehicle to which it is installed.

3.2 iCLASS Model Types

The **iCLASS** wheelchair lift is available in three models, which differ from one another in type of loading platform:

iCLASS P, with a whole one-piece platform: during stowing phase platform simply rotates from loading position to vertical and back during the deployment phase.

iCLASS SP, with a loading platform split longitudinally: the two parts of the platforms rotate to form a single loading platform during the deployment phase and they are separated automatically when stowing creating a space that can be used as an emergency exit from the vehicle.

iCLASS FP, with a folded platform deployed automatically during the opening phase and folds automatically during stowing in order to reduce the overall height of the lift at rest resulting in improved rear visibility for the driver of the vehicle.

It is also possible to prepare the wheelchair lift with following options:

Power supply voltage: 12V or 24V, Power Pack: fitted right or left.

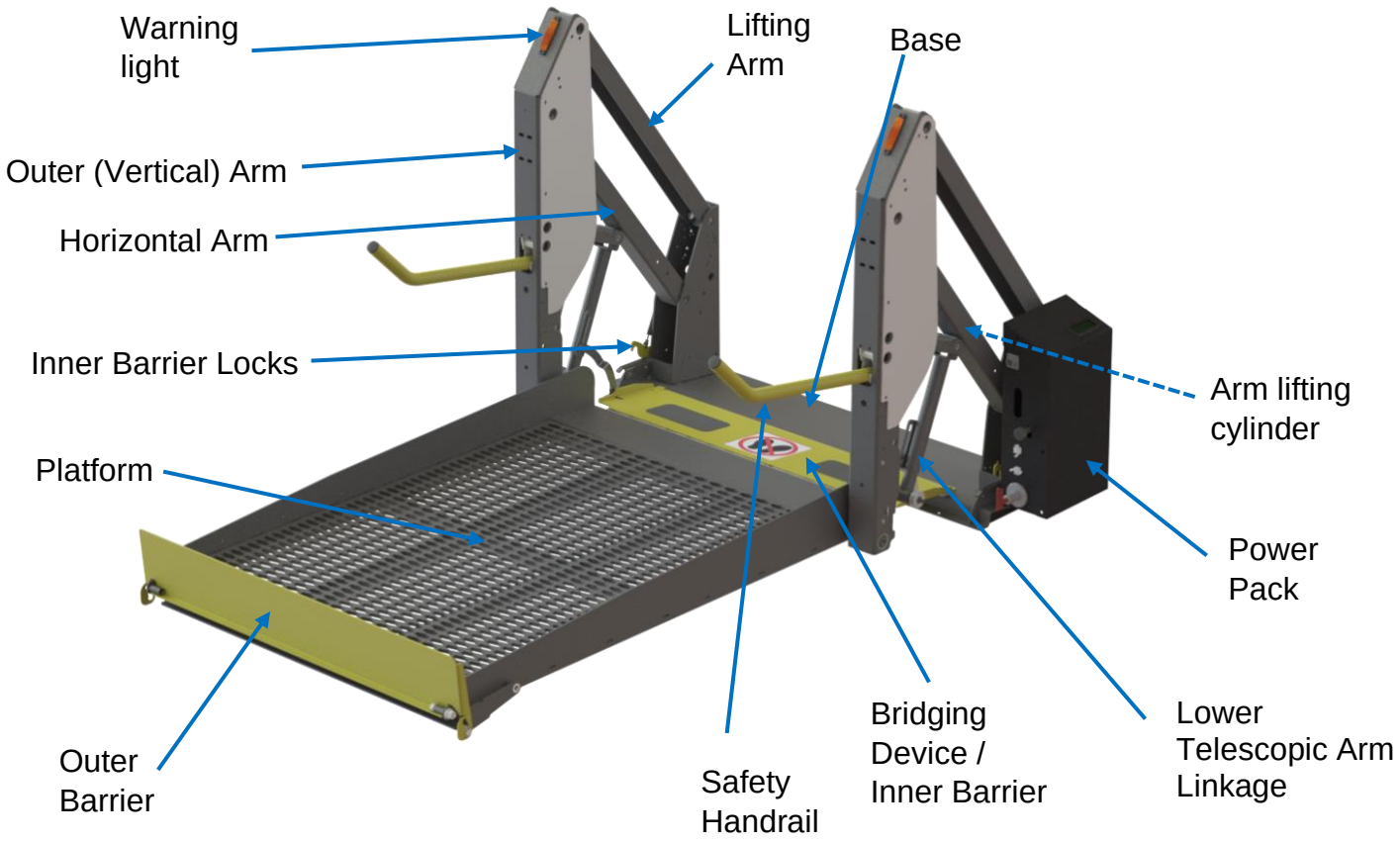
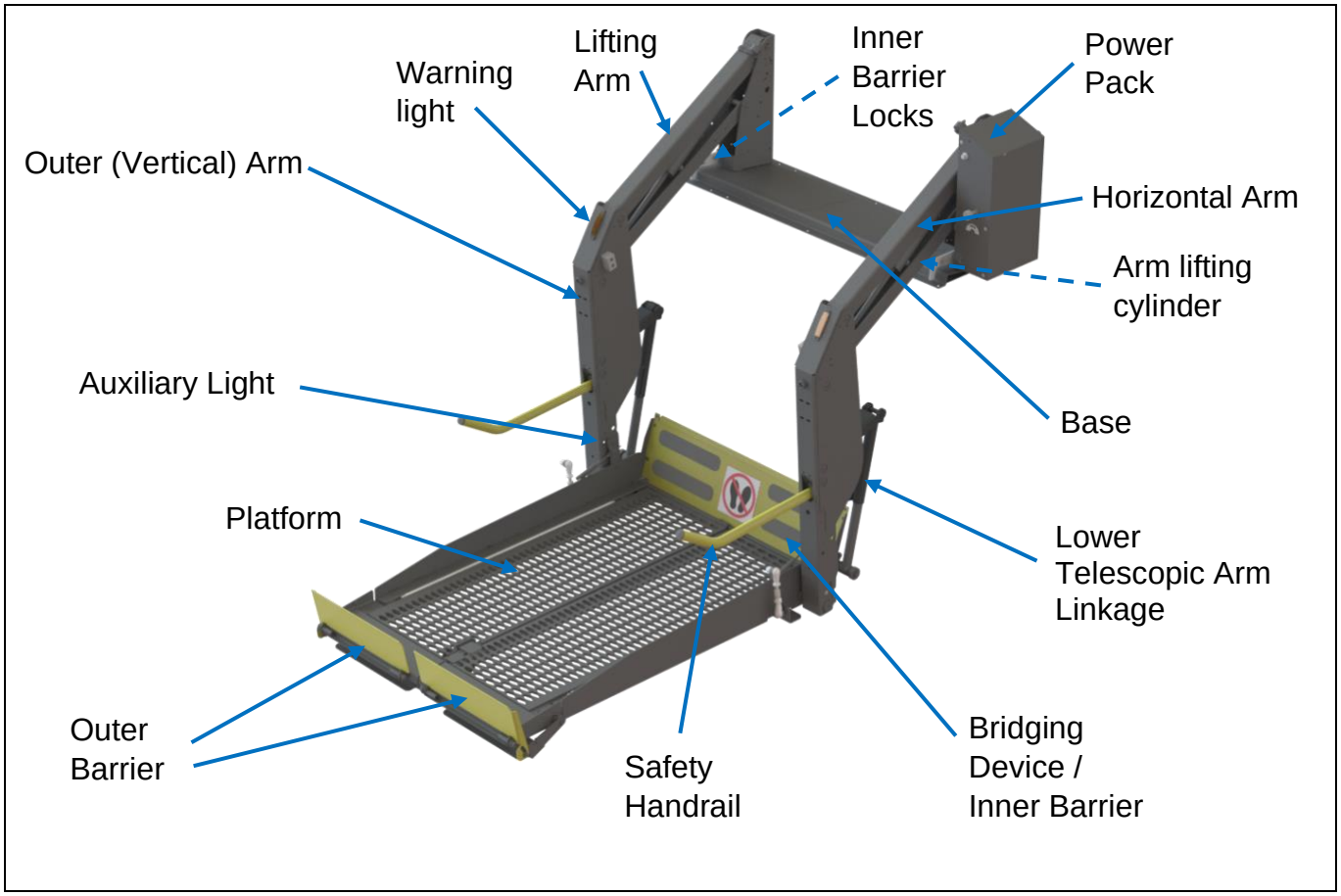
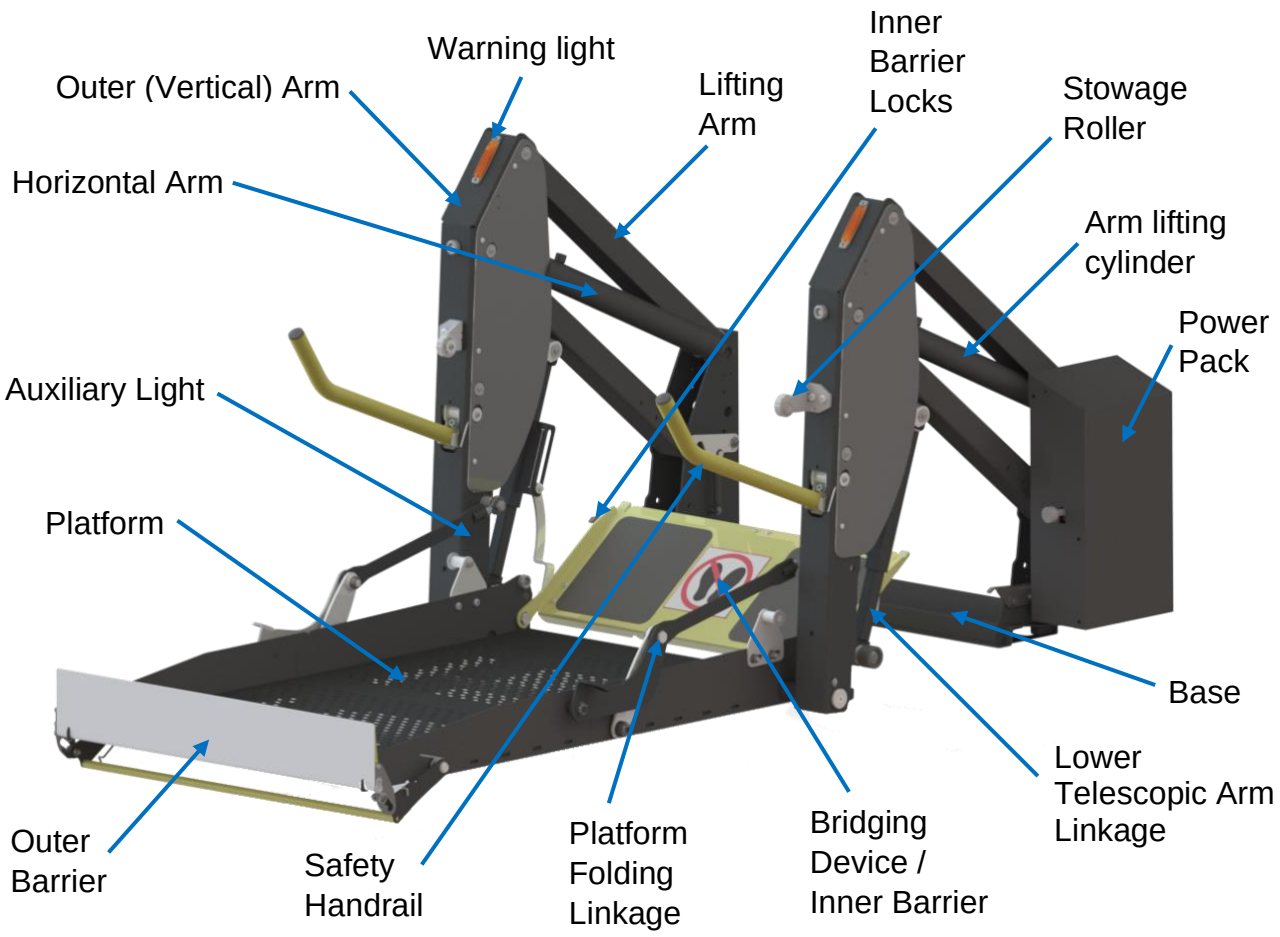


Figure 3.2.1 The iCLASS P wheelchair lift



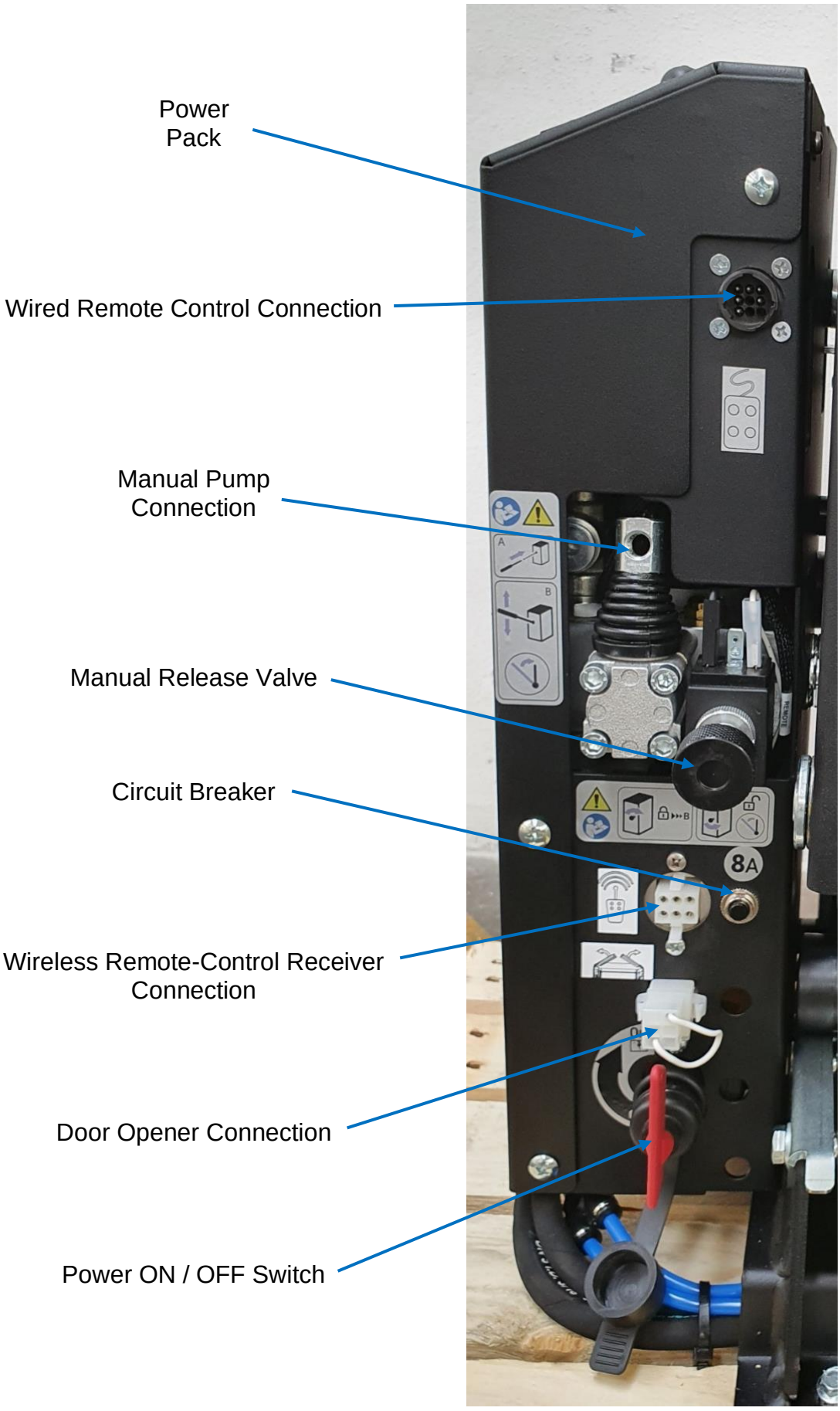
Above: Figure 3.2.2 The iCLASS SP wheelchair lift



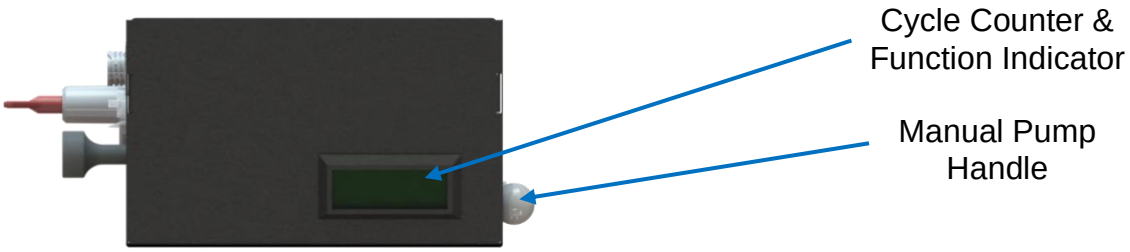
Above: Figure 3.2.3 The iCLASS FP wheelchair lift

Above: Figure 3.2.4 iCLASS SP Stowed

Above: Figure 3.2.5 iCLASS FP Stowed



Above: Figure 3.2.5 Power Pack



Above: Figure 3.2.6 Power Pack Top View

3.3 Technical Specifications

Supply Voltage	12 V / 24 V (option)
Electric motor power	500W
Maximum hydraulic system pressure	170 bar
Oil tank capacity	iCLASS Steel Reservoir: 1.5 l iCLASS Plastic Reservoir: 1.0 l
Safe Working Limit (uniformly distributed)	425kg
Maximum height reached (dependent on model)	0.79 - 1.22 m
Total mass of the lift (dependent on options fitted)	125 - 160 kg
Manual auxiliary hand pump	Included in Power Pack
Hydraulic oil (relevant to local environment)	15w – 32w (ATF type not recommended)
Sound Pressure (Normal) With audible warning	<70 dB >90 dB
Gas Spring operating temperature	-30°C to 80°C

3.4 Safety Devices

The items already described in previous section of the manual already provide a good level of safety, capable of avoiding danger if followed properly.

The iCLASS lifts are also equipped with additional safety and security devices:

- **Safety handrails:**
  To ensure a 'firm hold' during the lifting / lowering phase.
- **Bridging Device / Inner Barrier (Inner Roll Stop):**
  Portion of the platform lift that provides a transitional surface between the platform surface and the surface of the vehicle floor within the platform threshold area. Designed to retain mobility aids on the platform surface during the range of passenger operation.

- **Outer Barrier:**
  Wheelchair retention device that is located on the edge of the platform, is traversed during ground level loading and unloading, and is designed to retain wheelchairs on the platform surface during the range of passenger operation.
- **Guarding:**
  Covers are present on moving parts.
- **Protection against overturning:**
  Stops platform lowering in case of an obstacle which could induce overturning.
- **Safety pressure switch:**
  Prevents stowing when platform is still loaded.
- **Protection against overloading:**
  Prevents overload of the nominal loading capability of the lift.
- **Protection against hydraulic system leakage:**
  Maximum speed 150mm/s, typically 75mm/s. Hoses tested to over 4x max pressure value.
- **Safety Lock:**
  Prevents the unintentional opening of the platform in case of low hydraulic system pressure when the lift is closed.
- **External signalling:**
  Amber warning lights are fitted on each outer arm.

It is recommended that the iCLASS lift is used in conjunction with the Inboard Lift Doorsafe, as shown in Fig 3.5.1

See mobilitynetworksgroup.com for more details.

3.5 Doorsafe

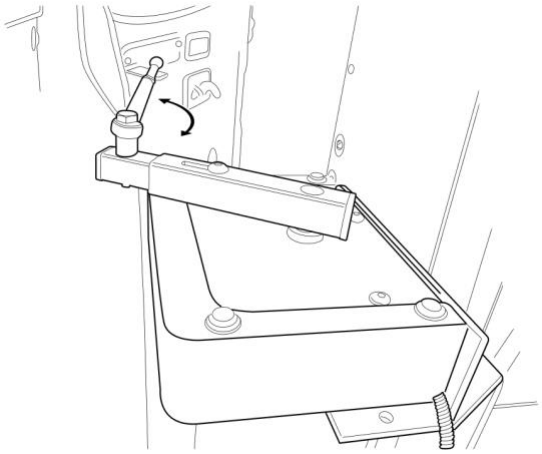
The Inboard Lift DoorSafe has been specifically engineered to act as a fixed, strong, physical barrier, used to protect passengers when the rear doors to a vehicle are open. LED lights and clear warnings give operators peace of mind that passengers are safe at all times. LED lights are an optional extra with the Inboard Lift DoorSafe barrier. The Inboard Lift DoorSafe is an automatic barrier with a manual override option. The manual override allows the barrier to be moved up and down in case sudden access is needed.

Above: Fig 3.5.1 The Doorsafe

The Inboard Lift DoorSafe is the perfect addition to any of Mobility Networks' Inboard lifts such as the iCLASS.

3.6 mobility RDO REAR DOOR OPENER

The mobilityRDO is an electrically operated rear door opener, which is often used in combination with the iCLASS Inboard wheelchair lift. The system is designed to be a “plug and play” system making it easy to mount, connect and use, thus saving man-hours.



Above: Figure 3.6.1 The RDO REAR DOOR OPENER

3.7 iCLASS Accessibility

The iCLASS lift is designed To Transport:

One person in a wheelchair with or without an attendant, with a size not larger than the width/ length of platform space available, or weight over the stated SWL capacity.

Or:

Two walking passengers. The operator should not attempt to transport more than two people at a time because of increased risk of passenger discomfort. The passengers also may require extra space for mobility devices such as sticks and frames.

WARNING The Operator must perform their proper hazard assessment and define the best practice for boarding and alighting the vehicle and lift.

4 Logistics

4.1 Transport and movement

For transportation, the lift must be secured to a pallet and packed with sheets of protective plastic and / or cardboard. For transportation purposes, a fork lift truck or a hoist is advised. All packing materials are recyclable. The packing materials should be disposed of correctly. If necessary, contact your local waste department for advice regarding disposal requirements.

DANGER Cardboard and protective plastic sheets used for packing purposes can cause suffocation. Dispose of responsibly.

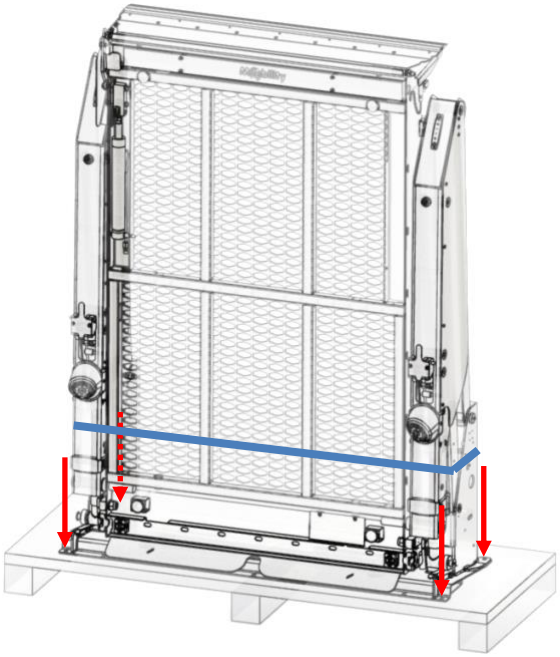


Figure 4.1 iCLASS P

Shipped on pallet showing fixing screw positions (RED). Use 10mm wrench to remove.
IF BANDED (BLUE), do not remove until instructed.

4.2 Packaging

Packaging may vary depending on model ordered and shipping methods.
The packaging weight is 15 kg.

WARNING During the unpacking process be very careful to not damage the contents.

Upon delivery of the lift perform the following inspections:

- Ensure the product delivered corresponds to the relevant documentation e.g. the order specification and the transport document.
- Examine packaging to ensure it is undamaged and all parts are intact during transportation.
- With great care, examine all devices to ensure they haven't been damaged during transportation and all parts haven't been tampered or removed.
- Ensure all documentation required for installation has been supplied. Store safely.

WARNING Before beginning any installation procedure of the wheelchair lift, you should:

- Verify if there are any specifications from the vehicle manufacturers to respect.
- Remove from the vehicle any unnecessary object that could impede the installation procedure of the lift (spare wheel, accessories etc.).
- Disconnect the electrical supply from the battery.
- Disconnect any electronic control units from the vehicle as specified by the manufacturer

4.3 Storage

If the lift is not used straight away, proceed as follows:

Transport lift to an appropriate storage area, free from atmospheric agents / elements.

Ensure all electrical / electronic devices are insulated from external environment so to prevent humidity damaging those components.

Storage area selected MUST ensure maximum temperature fluctuation is between 5°C to 50°C and humidity controlled.

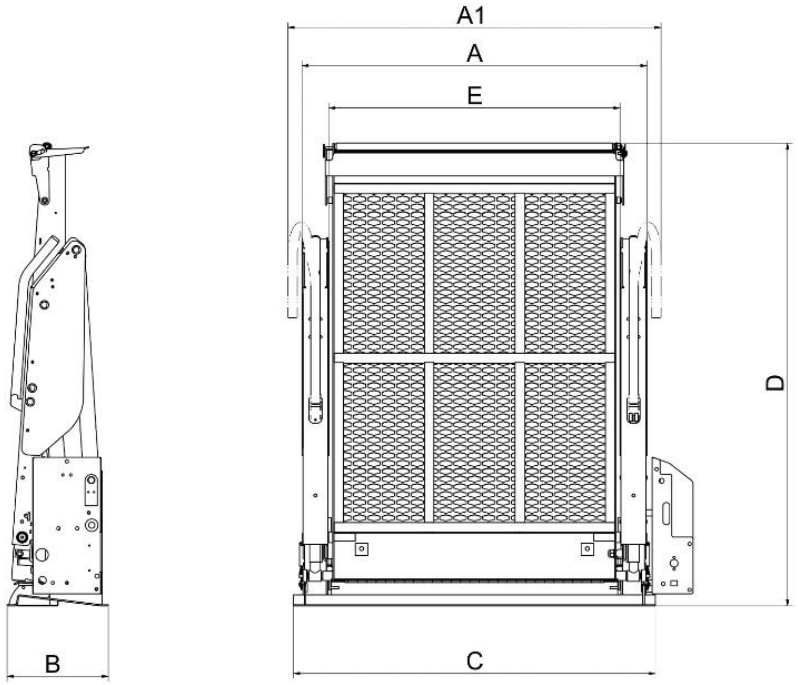
Ensure all sliding parts (guides, cylinders ...) are adequately protected from dust, rust and water damage.

Note: If a lift is to be dry stored for more than 12 months then the condition of all cylinder seals MUST be checked before operation.

WARNING

STORAGE OF THE LIFT IN CONDITIONS THAT DO NOT COMPLY WITH THE ABOVE MAY VOID THE WARRANTY FOR ANY PARTS THAT REQUIRE REPLACEMENT

5.1 iCLASS P Dimensions



The following diagrams show indicative overall dimensions of the versions and set-ups available of the iCLASS **P** wheelchair lift:

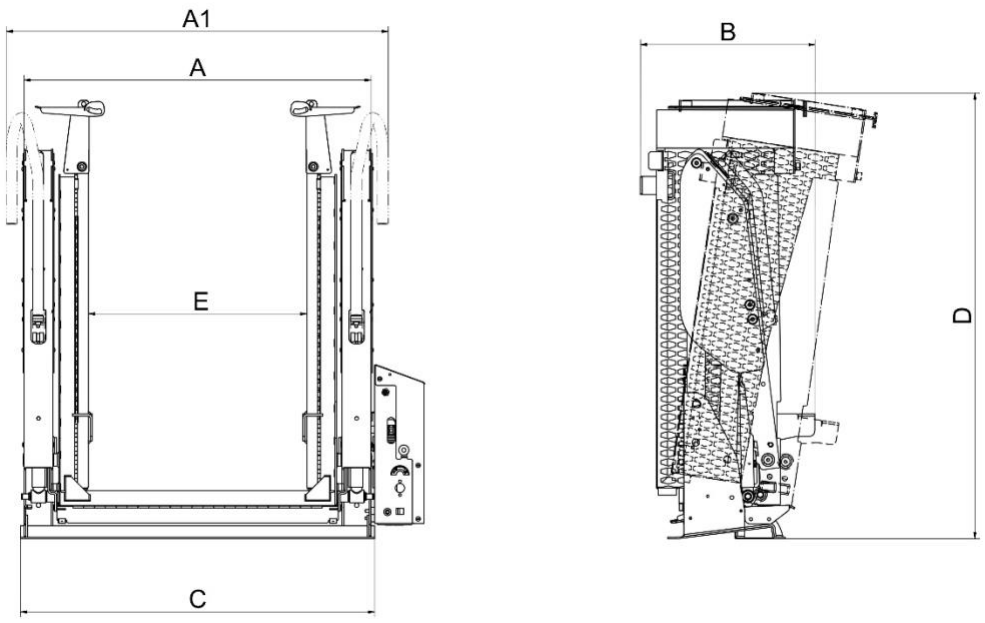
iCLASS **P**	**A**	**A1**	**B**	**C**	**D**	**E**	**Platform Length**	**Capacity**	**Lift Weight**	**Height from Ground Max**	**Clearance of arms from bumper**
iCLASS **P90138**	1106	1196	325	1285	1486	900	1380	425 kg	148 kg	1000	300
iCLASS **P80130**	1006	1096	325	1185	1406	800	1300	425 kg	140 kg	1000	300

Measurements are approximate.

Mobility Networks reserve the right to carry out product changes and improvements in order to enhance their quality at any time and without notice. In case of doubt, please contact Mobility Networks for the latest model updates.

5.2 iCLASS SP Dimensions

iCLASS SP



** =

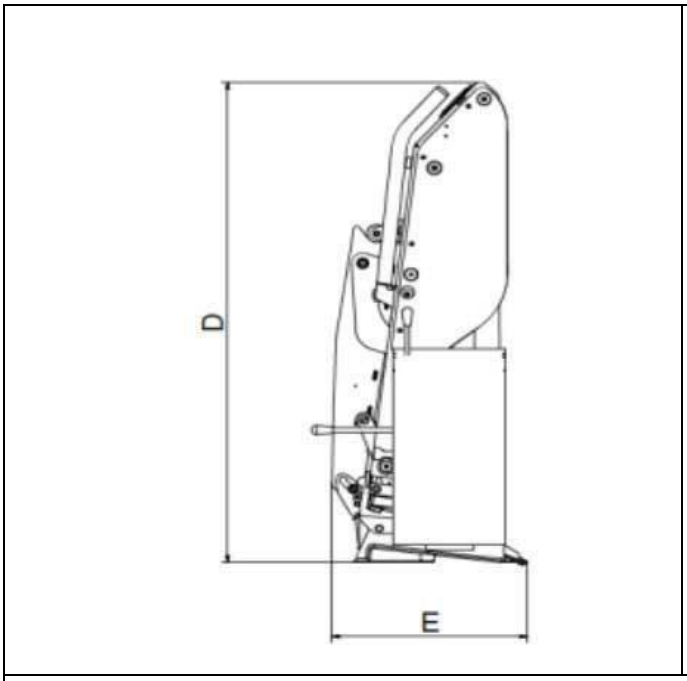
Width with fixed handrails

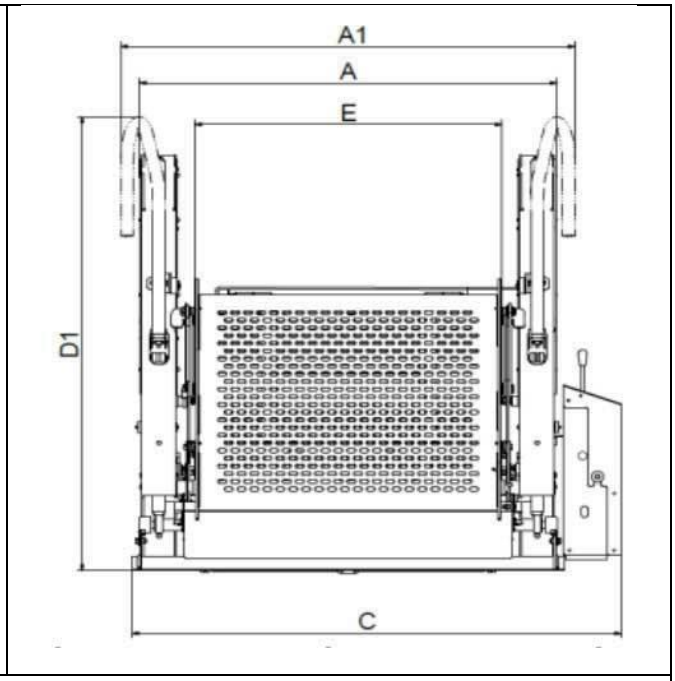
Measurements are approximate.

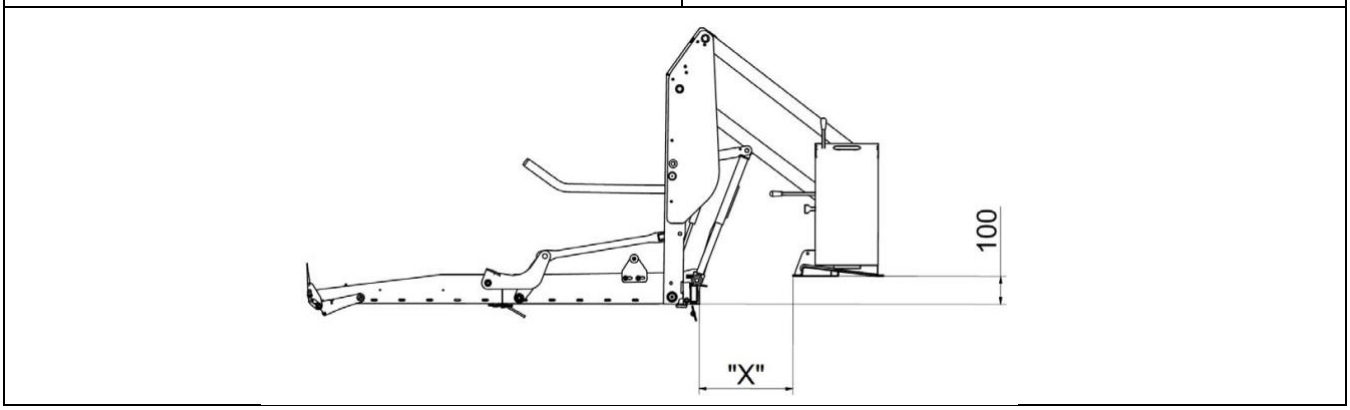
Mobility Networks reserve the right to carry out product changes and improvements in order to enhance their quality at any time and without notice. In case of doubt, please contact Mobility Networks for the latest model updates.

5.3 iCLASS FP Dimensions

iCLASS FP







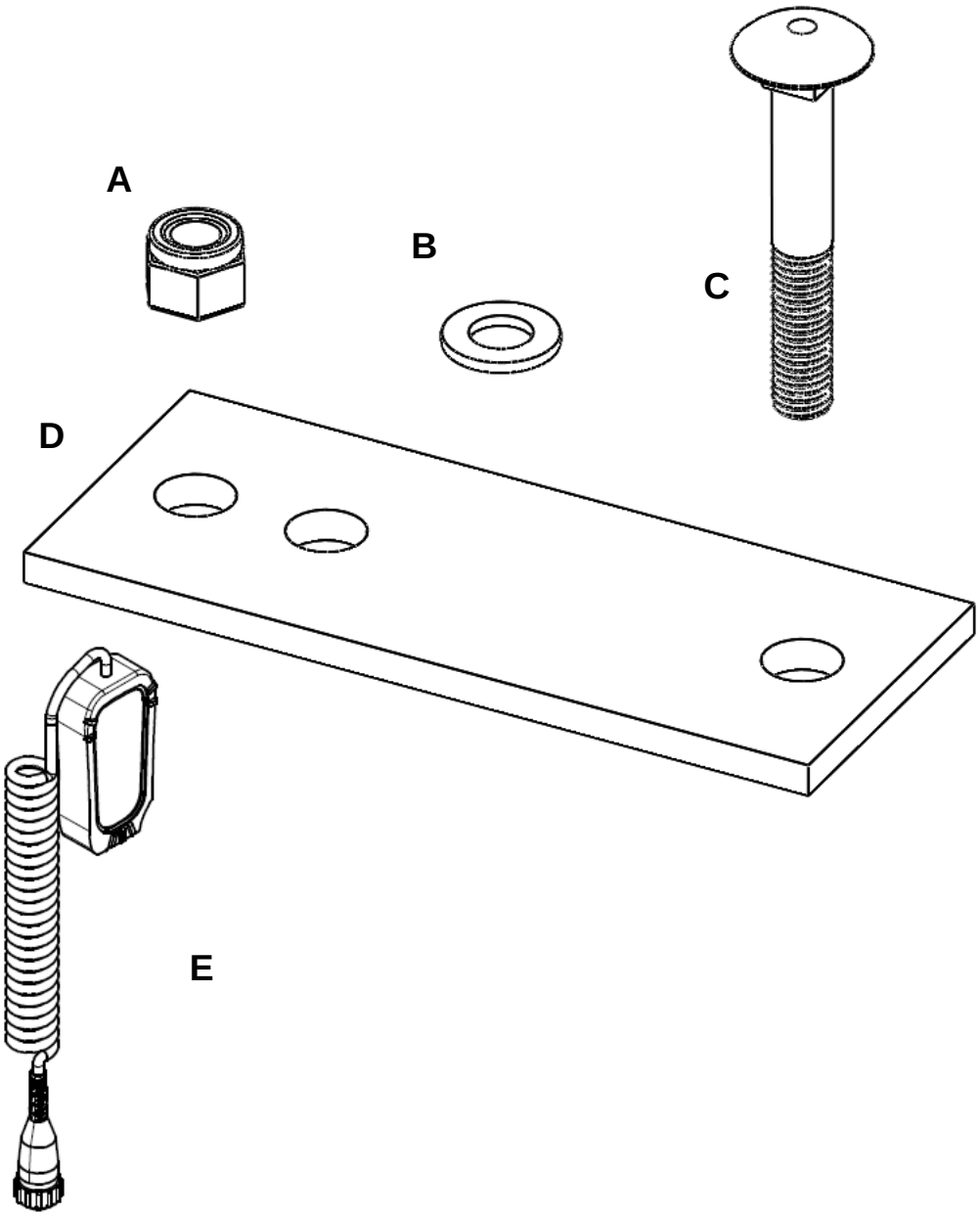
iCLASS **FP**	**A**	**A1 ****	**B**	**C**	**D**	**D1**	**E**	**Platform Length**	**Capacity**	**Lift Weight**	**Height from Ground Max**	**Clearance of arms from bumper ("X")**
iCLASS **FP84138**	1106	1196	385	1275	1181	1230	840	1380	425 kg	149 kg	1000	340
iCLASS **FP80150**	1058	1148	385	1195	1191	1240	800	1500	425 kg	151 kg	1000	340
iCLASS **FP70115**	1006	1096	385	1175	1074	1230	700	1150	425 kg	130 kg	790	320
iCLASS **FP74138**	966	-	385	1190	1181	-	740	1380	425 kg	145 kg	1000	340

Measurements are approximate.

Mobility Networks reserve the right to carry out product changes and improvements in order to enhance their quality at any time and without notice. In case of doubt, please contact Mobility Networks for the latest model updates.

5.4 iCLASS Lift Fitting Kit

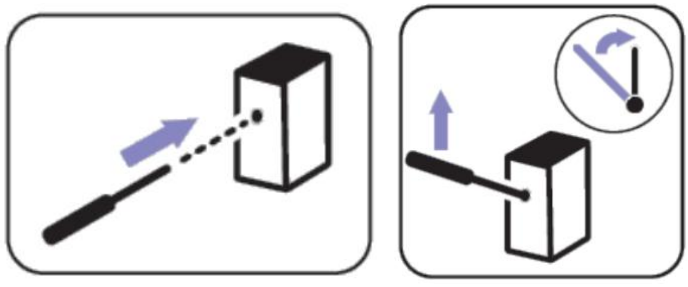
		Description	Quantity
A	501144	M10 Nyloc Nut	8
B	501480	M10 Washer	8
C	VIT0041	Carriage Bolt M10x70 Grade 8.8	8
D	PIA0317	Rectangular Under-Floor Plate	4
E		Wired Remote Control	1



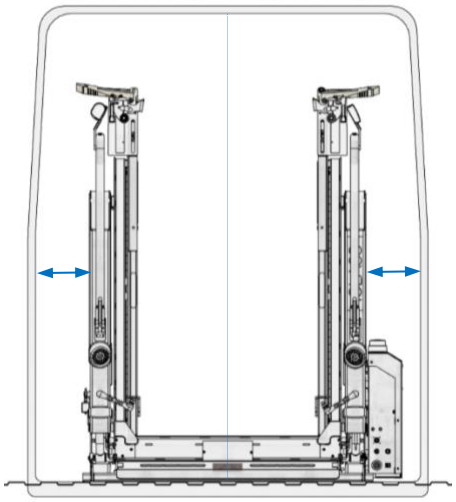
5.5 Lift positioning and fixing

- **DO NOT REMOVE INNER BANDING UNTIL THE LIFT HAS BEEN POSITIONED ONTO THE FLOOR IN THE VEHICLE AND SECURED**
- Pressurize the hydraulic system of the lift by using its hand pump: screw the provided lever into its proper place in the hydraulic control unit (Figure 5.5.1) and put the hand pump into action with an alternate vertical up-down movement until the pump resistance blocks the lift in the stowed position.
- Open the door(s) of the vehicle where the lift will be placed, and block them open. Measure the height and the width of the compartment and verify that they are bigger than the overall dimensions of the lift (Figure 5.5.2).
- Using a forklift or equivalent, raise the iCLASS lift to the same height as vehicle floor. Push the lift inside the vehicle in a central position in respect to the volume of the compartment. Align the external edge at the base of the lift parallel to the closing edge of the door(s).

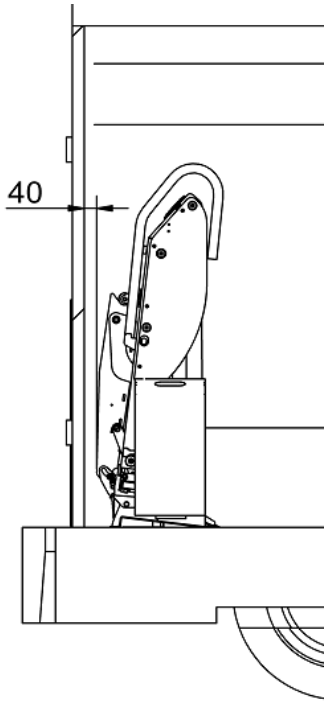
Verify, both inside and outside of the vehicle, that the doors of the vehicle close correctly with no interference with the lift. Measure the minimum distance between the doors and the lift; if it is more than 40 mm (1-1/2 inch) (minimum distance) (Figure 5.5.3) it is possible to move the lift toward the doors until it reaches the minimum distance. Ensure the lift is horizontally centred within the width of the compartment (Figure 5.5.2). Pay attention to the external edge at the base of the lift and the closing edge are positioned parallel (Figure 5.5.4).



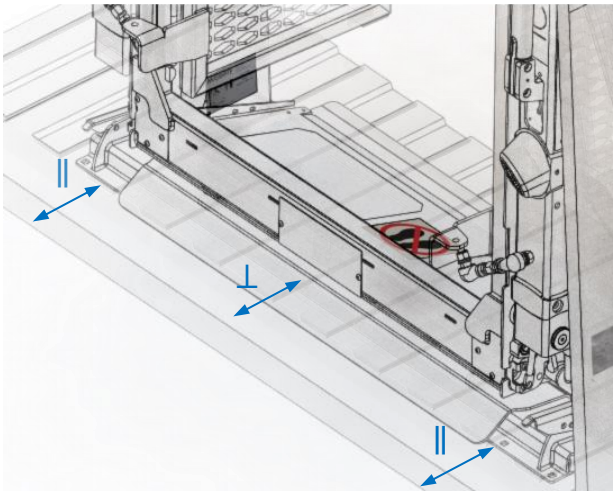
Above: Figure 5.5.1



Above: Figure 5.5.2



Above: Figure 5.5.3

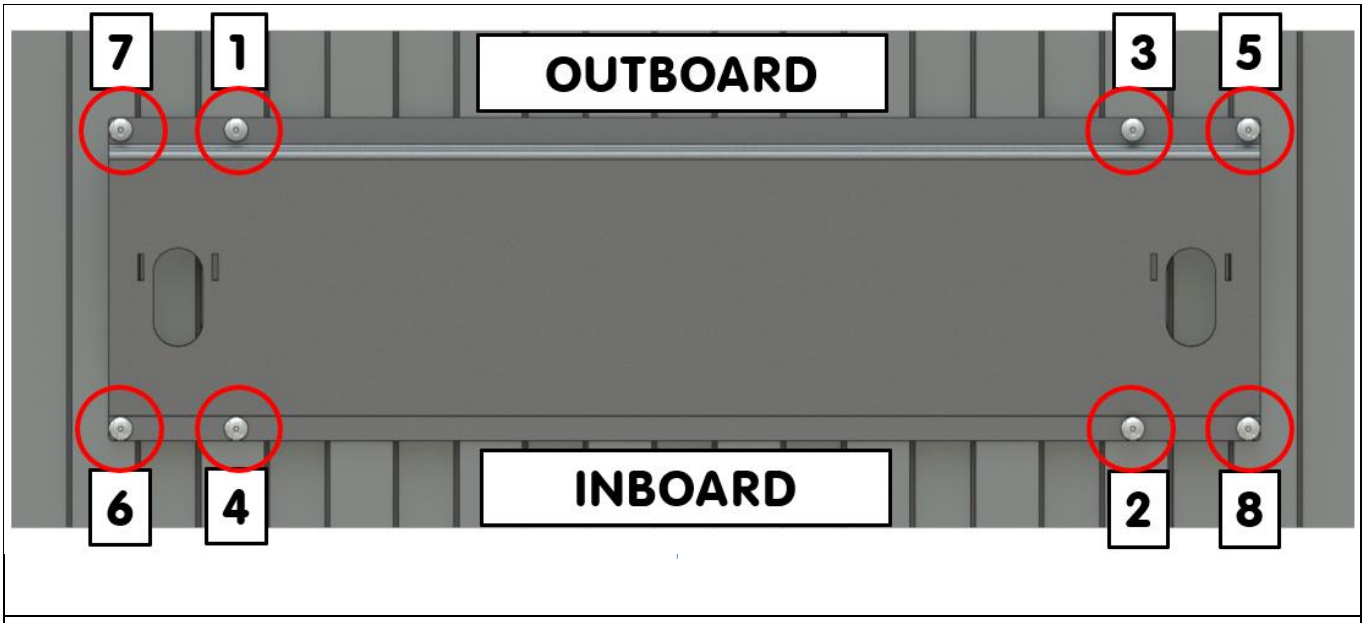


Above: Figure 5.5.4

WARNING	Before fixing the lift, ensure that there will be no interference of the fixing bolts with parts under the frame, such as fuel lines, hydraulic conduits or wireways, electrical wiring, cables etc. Move the lift sideways to avoid interference.

Having identified the exact position of the lift on the fitting surface area of the vehicle:

1. Trial Fit. Drill pilot holes, then 10mm to allow M10 Bolts to pass through. Initially, only drill and fix Holes 8 and 6. Fix lift using mounting bolts.
2. The shipping straps can now be removed
3. Deploy lift to make sure there is enough bumper clearance.
4. When sure that the position is OK, use the other 6 x holes at the base of the lift as a guide to drill holes. Refer to Figure 5.5.5

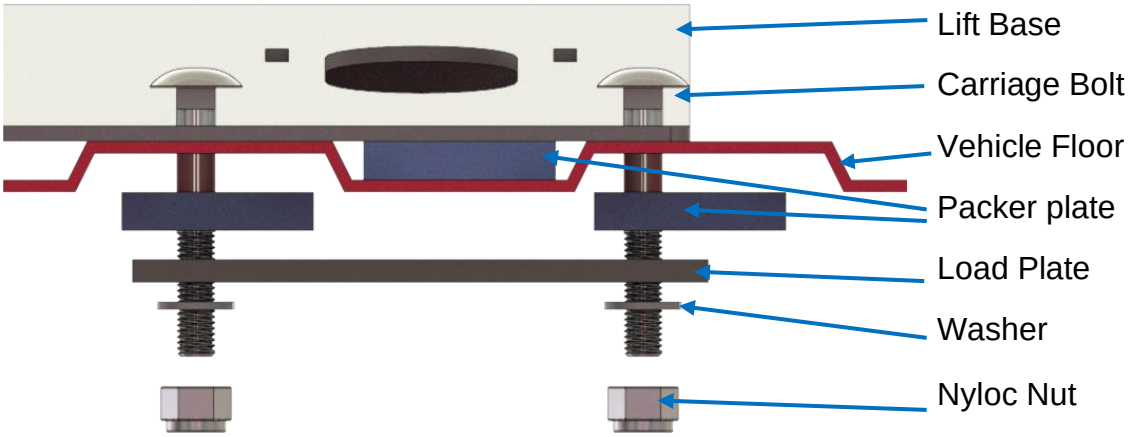


Above: Figure 5.5.5 Fixing Positions

It is important to ensure that the supporting surface to which the lift will be fastened is stable and that the holes do not affect the stability of the lift. The lift is provided with fastening plates and these have to be positioned, in correspondence to the holes, under the frame (Fig.5.5.6). Fit the Rectangular Under-Floor Plates under the floor using the M10 carriage bolts, nuts and washers) **Tighten to correct torque specification for the bolt type used (See Section 10.1). Tightening to final torque should be done in the order shown.**

WARNING If it is essential to use bolts with a length greater than those supplied, make sure that they are M10 class 10.9 bolts. Carriage bolts are recommended to reduce the possibility of trip hazards.

WARNING Most vehicles have a corrugated structure (Fig.5.5.6) and in these cases the empty spaces and voids need to be filled with packer plates (packers) in the bolt fixing area to prevent any panel crush Make packers from aluminium plate to make cutting to length and hole positions easier and help prevent damage from corrosion.



Above: Figure 5.5.6

WARNING - IF, in order to stiffen the area that will support the lift welding is needed, first unplug all the existing electrical connections on the vehicle and follow the manufacturer's instructions with care.

WARNING - It is the responsibility of the installer to verify the adequate resistance and crush proof characteristics of the surface of the vehicle to which the lift will be attached.

Mobility Networks Holdings Ltd. declines all responsibility for any damage to the vehicle or lift caused by these requirements.

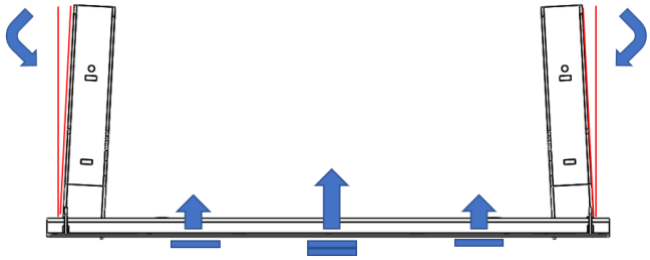
Incorrect fitting to that specified voids the warranty of the lift.

5.6 Correcting the angle of the towers

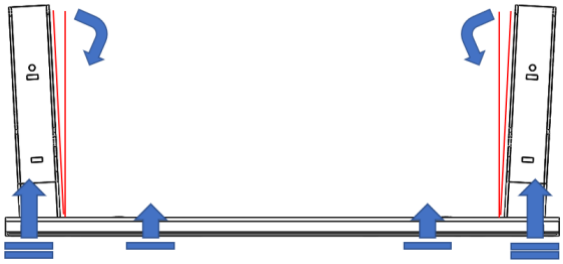
If, after fitting, the towers are not vertical it is possible to correct this as follows:

Figure 5.6.1 Towers angled inwards: Slacken the bolts and add packing under the base around the centre fastenings, working outwards with thinner packing until the towers are perpendicular to the base. Once adjustment is completed, tighten to correct torque.

Figure 5.6.2 Towers angled outwards: Slacken the bolts and add packing under the base around the outer fastenings, working inwards with thinner packing until the towers are perpendicular to the base. Once adjustment is completed, tighten to correct torque.



Above: Figure 5.6.1

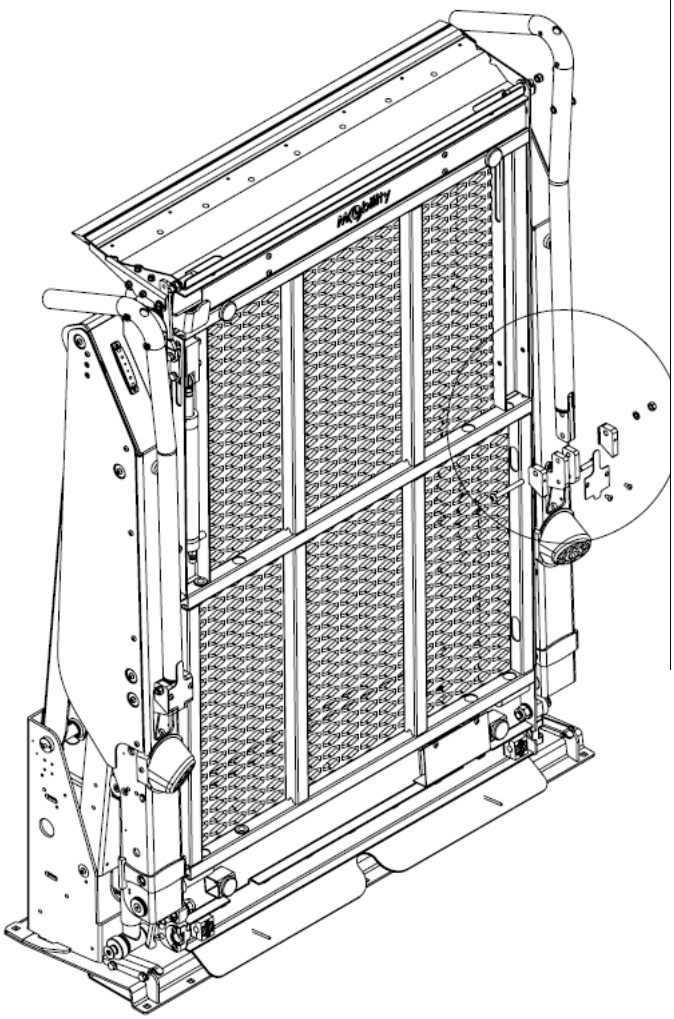


Above: Figure 5.6.2

5.7 Fitting Safety Handrails

WARNING:	The Lift may be packaged and shipped **WITHOUT** Safety Handrails. Handrail type should be selected and correctly installed **BEFORE** the first operation of the lift. Socket Cap Hex Screws are factory fitted to the lift.

	Tools Required: 3, 5, 6mm Hex (Allen) wrenches, 13mm Combination Wrench



Disassemble handle flange:

Remove cover plate (Quantity 2 M5 x 10mm dome hex screws) (with 3mm Hex (Allen) key (A)

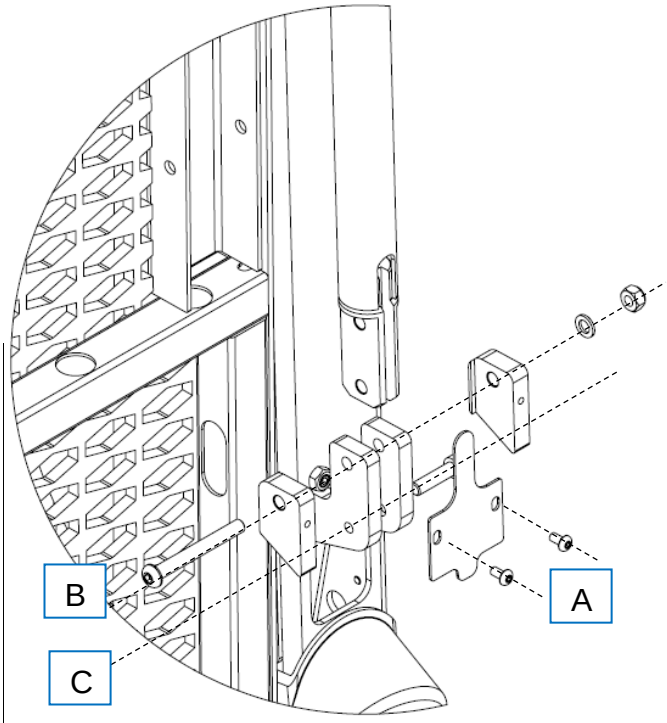
Remove M8 x 70mm dome hex screw (with 5mm hex (Allen) key, nut (with 13mm combination wrench) and washer. Note position of reinforcement plates and remove. (B)

Remove M8 x 30mm (with 6mm hex (Allen) key) hex cap screw. (C)

Fit safety handrail and reverse the above to re-assemble.

Thread lock (medium strength) must be used.

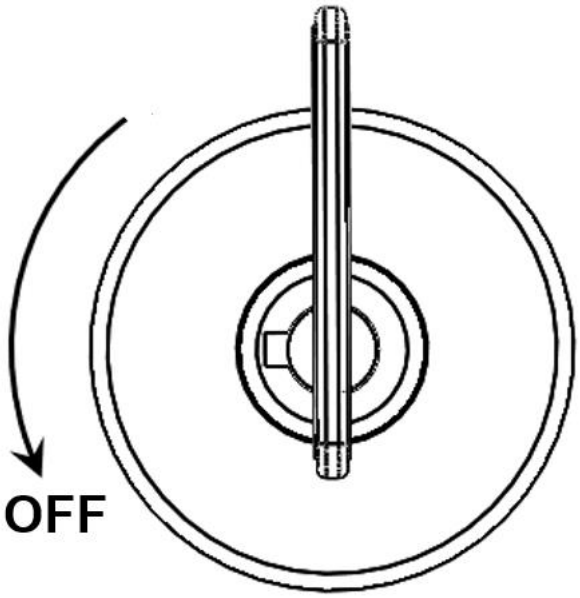
Tighten to torque specified in Section 10.1



6.1 Power Supply

After correct positioning and fastening of the lift to the loading deck of the vehicle:

Fit the battery isolation device.

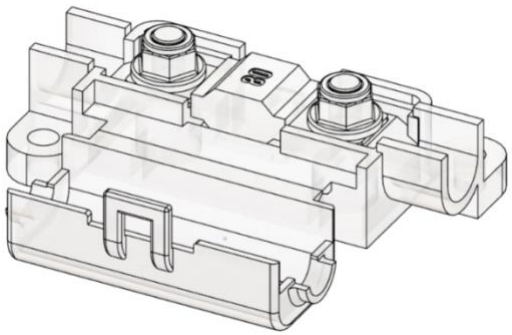
On the Powerpack, toggle down the LIFT POWER switch to **OFF** (Anti-clockwise)	

.

Above: Figure 6.1.1 Power Pack Connections

Connect the eyelet connectors of the 16 mm^2 wires to the vehicle battery.

RED wire to the POSITIVE (+) pole. The POSITIVE connection **MUST** have an 80A breaker (trip or MEGAFUSE, Figure 6.1.3) connected within 150mm (6”) of the battery.

	Left: Figure 6.1.2 Megafuse - shown open

Connect the BLACK wire to the NEGATIVE (-) pole.

WARNING

Minimum wire size for main power connections is 16 mm^2 (5 AWG).

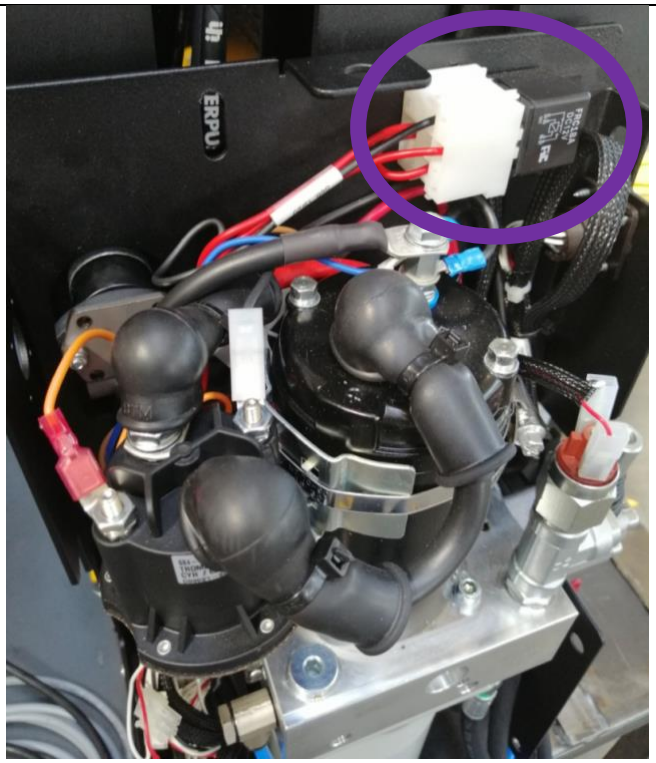
DO NOT use transformers or similar to convert AC supply to DC.

Mobility Networks is not responsible for damage caused by incorrect power connections.

Connect the Door Interlock Switch (Figure 6.1.3) so that it operates when the door is closed.

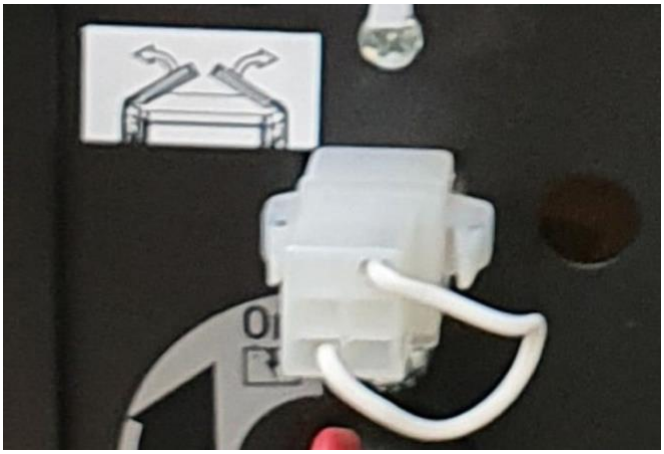
When the door is closed, the switched relay cuts off the power to the ECU even if the manual battery switch remains on.

The connection in then made to the relay within the powerpack (See Figure 6.1.4).

	
Above: Figure 6.1.3 Door Switch	Above: Figure 6.1.4 Power Pack Connection

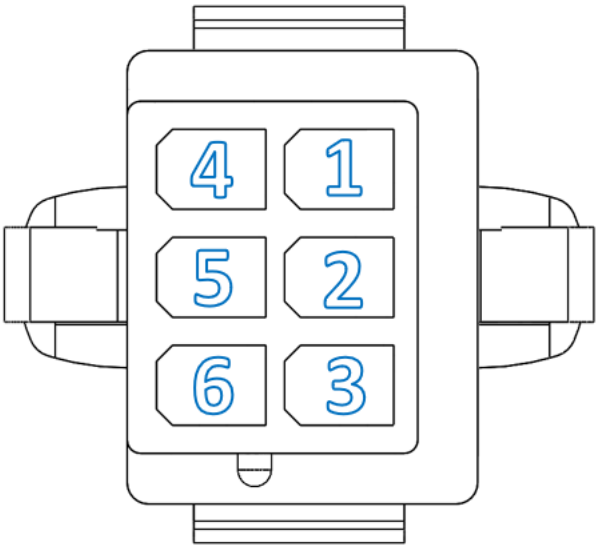
6.2 RDO Rear Door Opener Interface socket

Refer to the Door Opener Instruction Manual for further information.

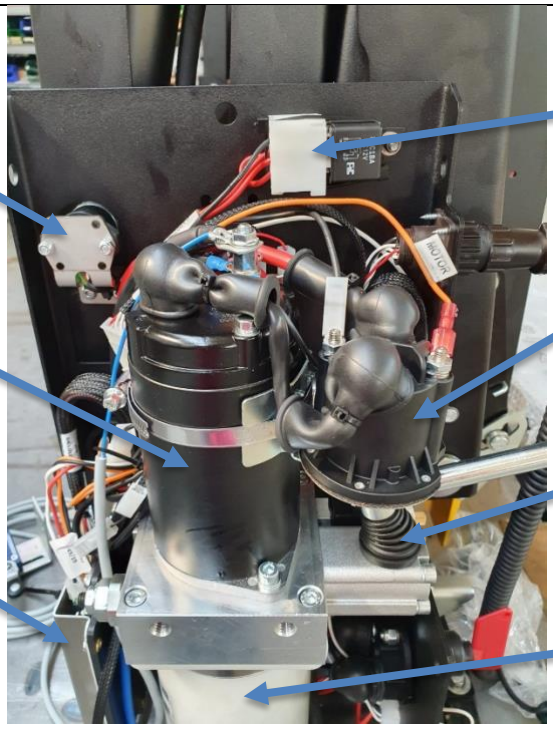


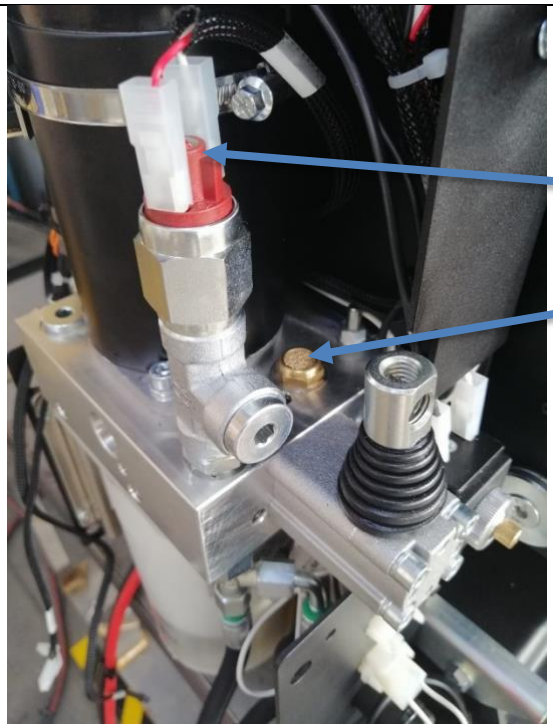
Above: Figure 6.2.1 RDO Rear Door Opener Interface socket location

The connections are as follows:

4. Not Connected		1. +12V Door Switch ‘Door Open’
5. Supply +12V 30A		2. +12V ‘Door Closed’ command to Door Opener
6. +12V Door Switch ‘Door Closed’		3. Ground

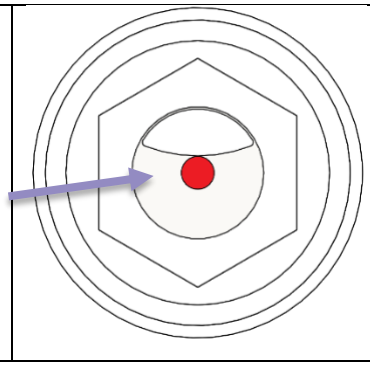
7.1 Power Pack

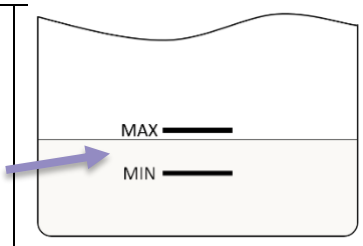




7.2 Hydraulic Oil level check and top-up

With the platform **FULLY** stowed regularly check that the oil level in the hydraulic oil tank is above the minimum level.

iCLASS with Steel Tank – check eyeglass oil level is at red circle	

iCLASS with Plastic Tank – check level is between MIN and MAX	

See Section 10.4 for full hydraulic schematic diagram. See previous page.

WARNING When the vehicle engine is switched off do not to operate the hydraulic unit for more than one minute to prevent excess drain of batteries.

WARNING When checking and filling/topping up oil, LIFT **MUST** BE **FULLY** STOWED.

WARNING Top-up hydraulic fluid with the same type fitted (see Technical Specification 3.3).

- Remove breather
- Top-up to correct level
- Replace breather

7.3 Hydraulic Pressure Control

WARNING

These instructions are for the exclusive use of appropriately trained technical personnel. Serious personal injury and damage to vehicle could be caused if these instructions are not adhered to.

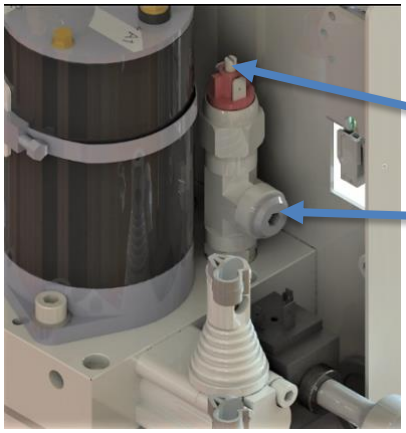
DANGER

Inside the hydraulic control unit there is a pressure socket.
A pressure check can be made by connecting a pressure gauge (manometer) to the pressure socket, see Figure 7.4.1.

WARNING

After disconnecting from the pressure socket replace the fitting cover or cap.
Mobility Networks decline all responsibility for damage caused by non-fulfilment of these instructions and automatically deem the warranty to be void in such cases.

7.4 Pressure Control Switch and Pressure Connection Socket



Above: Figure 7.4.1 iCLASS Stow Pressure Control Switch and Pressure Connection Socket

7.5 Pressure Control Switch Adjustment

DANGER	These instructions are for the exclusive use of appropriately trained technical personnel. Serious personal injury and damage to vehicle could be caused if these instructions are not fulfilled.

If necessary, the Platform Stow actuator can be adjusted as follows:

Turn Clockwise (CW) to decrease pressure sensitivity when moving platform to stowage position

Turn Counter-clockwise (CCW) to increase pressure sensitivity when moving platform to stowage position

If triggered, the display will show:

See Section 10 for ECU Messages, see Section 12 for adjustment procedures

8 Commissioning

WARNING

These instructions are for the exclusive use of appropriately trained technical personnel.

WARNING

The following verification checks are required for completion of the commissioning of the iCLASS wheelchair lift.

Ensure the instructions in this manual have been fully understood. If further information is required, please contact Mobility Networks immediately. Serious personal injury and damage to vehicle could be caused if these instructions are not adhered to.

Mobility Networks declines all responsibility if:

- the verification check for the first commissioning is not followed properly
- the appropriate records are not compiled correctly

as this will void the warranty.

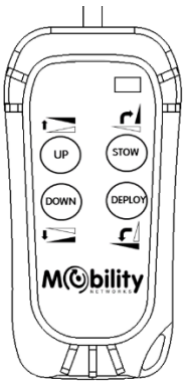
Pre-Operation:

- Ensure that there are no missing or damaged parts of the machine and there is no structural failure.
- Check that all pins are correctly housed in their seats, and that they are their respective locking stops aren't missing.
- Check the integrity of the spiral cable of the control pendent and the electrical connectors.
- Check the fasteners for all the pins of the lifting arms.
- Ensure that there are no loose bolts.
- Check for clashing between cables and hoses by performing five cycles and listening for unusual noises, whilst maintaining a safe distance from the lift.
- Ensure you perform the platform inclination adjustments. Adjusting the inclination of the platform is a fundamental operation for the correct operation of the lift. See section 12.17 for details.

IMPORTANT: Perform the following during commissioning and at 6-Monthly (or 5000 cycle) Check:

- **Outer Barrier Check, Stow Check, Inner Barrier Check**

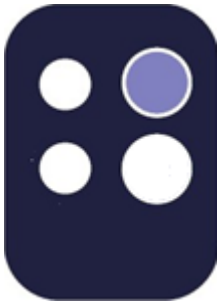
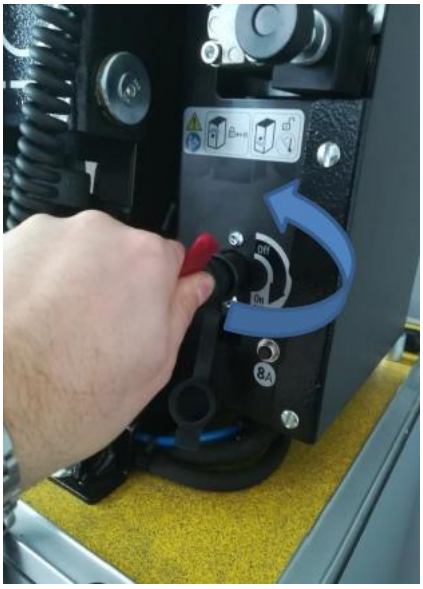
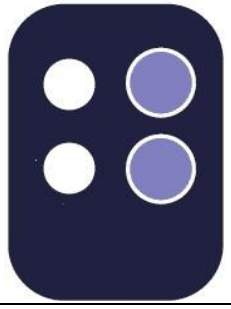
8.1 Lift Position Setting

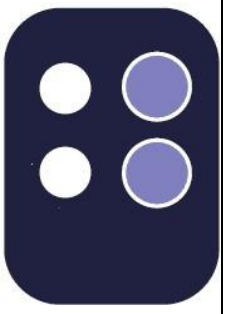
Remote control layout	

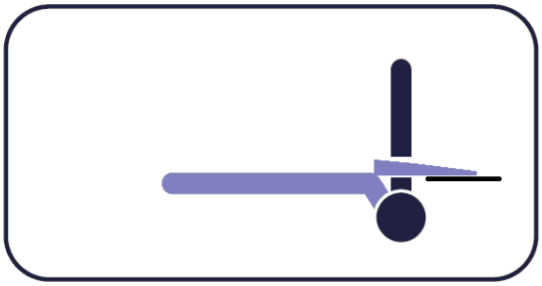
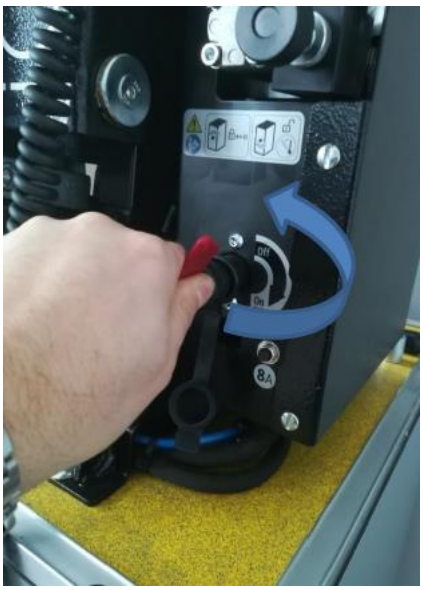
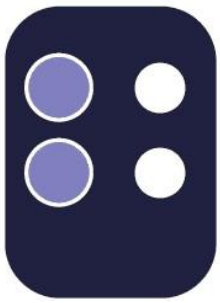
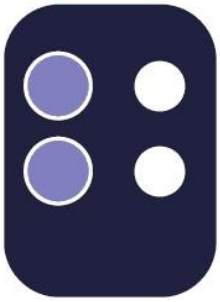
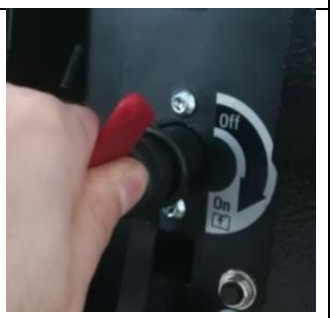
In order to set the Stowed position or the Floor Level proceed as follows:

Turn Power Pack OFF, wait a few seconds then:

Turn Power Pack ON

To set the STOW position:			
1	STOW the lift to fully closed position (use power or manual pump)		
2	Switch power to OFF		
3	Press and hold STOW & DEPLOY		

4	KEEP THE TWO BUTTONS PRESSED, switch power to ON		+	
5	KEEP BUTTONS PRESSED until the warning lights illuminate			
6	Release the buttons. Wait 5 seconds. Switch power to OFF Switch power to ON CHECK that the warning lights are no longer lit			
7	Stow Position Programming is now complete			
8	Start from the beginning if errors still occur			

To set the Floor Level:			
1	DEPLOY to open lift to floor level		
2	Switch power to OFF		
3	Press and hold UP & DOWN simultaneously		
4	With the two buttons pressed switch power to ON	 + 	

5	KEEP BUTTONS PRESSED until the warning lights illuminate	
6	Release the buttons Wait until lights blink While waiting DO NOT press any other buttons	
7	Then…	
8	Switch OFF	
9	Switch ON	
10	Floor Level Programming Complete	
11	Restart from stow programming if errors still occur	

8.2 iCLASS Weight Test Certificate

Once fitted, the lift installation MUST be certified and the results recorded on the following pages. Send a copy of these to the manufacturer either by copy and mail or photo / email. The lift warranty may be void without this.

……Copy and cut out, send the copy to Manufacturer....✂……

iCLASS Weight Test Certificate		
Installer:	**Serial Number:**	**Date:**

Perform the Static deformation test:

Position the platform at 'all out' position with lifting arms horizontal.
Measure the height of the platform and its angular alignment in relation to the loading area of the vehicle.
APPLY a load of SWL x 1.25 onto the platform and then remove it. **REPEAT** the test.

Static Deformation Test 1: Apply a load of SWL x 1.25 onto the platform and then remove it.
Static Deformation Test 2: Repeat the height and angular measurements of the platform.

Static Deformation Test 1	Height =	Angle =
Static Deformation Test 2	Height =	Angle =

Check there are no permanent deformations either to the lift or the vehicle fixings which could be a detriment to the correct functioning of the lift

Are permanent deformations visible?	**YES / NO**
FAIL if **YES, PASS** if **NO**	**FAIL / PASS**

Perform the Static Deviation Test:

Deploy the lift to vehicle floor level.
Apply a load of SWL x 1.25 onto the platform.
Static Deformation Test 1: Measure the height of the platform and its angular alignment in relation to the loading area of the vehicle.
Static Deformation Test 2: Repeat the measurements after 15 minutes.

Weight Test Certificate continues next page

……Copy and cut out, send the copy to Manufacturer....✂……

Static Deviation Test 1	Height =	Angle =
Static Deviation Test 2	Height =	Angle =
Is the vertical deviation of the platform between the two measurements greater than 15 mm and the angular change greater than 2 degrees?	**YES / NO**	
FAIL if **YES, PASS** if **NO**	**FAIL / PASS**	

Perform the Dynamic Test:

Position the platform at ground level. Apply SWL load onto the platform.

Does the lift function correctly, with a full cycle of movements, when fully loaded?	**YES / NO**
PASS if **YES, FAIL** if **NO**	**PASS / FAIL**

Perform the overload safety check:

Position the platform at ground level. Apply a load SWL x 1.25 the platform.

Does the lift platform leave ground level?	**YES / NO**
FAIL if **YES, PASS** if **NO**	**PASS / FAIL**

If any checks are negative contact the lift manufacturer

8.3 ECU and the Mobility Networks – Smart Lift App

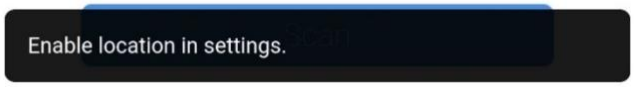
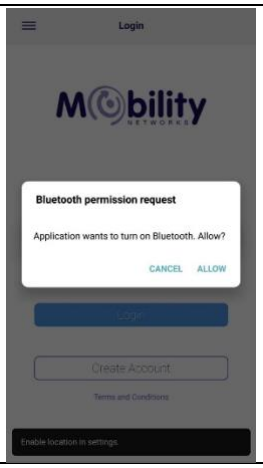
If there is an LCD screen on the power pack then the lift can be controlled / programmed using the **Mobility Networks – Smart Lift** App.

(Download using the QR Code shown on the front of manual / on the quick-start guide or on the lift).

Lift functionality can be achieved using Bluetooth® in the zone shown in Figure 1.8.1

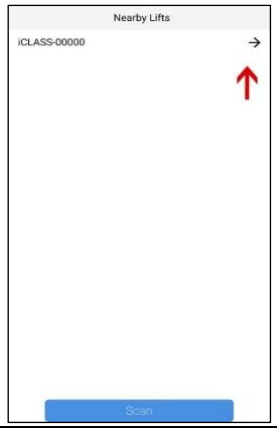
8.4 Installing the Mobility Networks – Smart Lift App and Pairing to the ECU

1. Switch on Bluetooth & Location services
   For both iOS and Android, the app will ask for Bluetooth & Location services.
   The App will automatically prompt the user to switch the services on.
   Without these, the App will not work and will close.

Open the application and follow on-screen instructions. Enable Location Services / Settings – the App will show a popup if the Location Services / Settings are not switched on and redirect the user to the Location Settings, allow when prompted	
Enable Bluetooth – the App will show a popup if the Bluetooth services are not switched on, allow when prompted	

2. Press Add to search for a new ECU if no devices were registered previously to the Mobility Networks App.	

3. After a device is found, press on the arrow to start the pairing procedure.
   The App will connect to the lift ECU.



4. Entering the pin – once connected successfully to the ECU a pop-up will request the user to input a PIN.
   The PIN of the lift is displayed on the LCD screen every time you initiate a pairing connection using the App.

If the wrong pin is entered, the ECU will sever the connection and the pairing procedure will restart.

8.5 Mobility Networks – Smart Lift App DEBUG Mode and Installer ECU Tools

DEBUG Mode is used to help with adjusting the safety mat and ECU and Lift Diagnostics. diagnostics.

DEBUG Mode is set as deactivated when lift leaves the factory. If activated the DEBUG mode increases the number of logs written to the SD card and activates the siren alarm and buzzer when platform is positioned at the floor level and safety mat is pressed.

DEBUG = 1 (active) DEBUG = 0 (disabled)

ECU logs: When DEBUG mode is activated the ECU saves logs to the SD card of all commands sent / received by the App, all button presses of the hand control and all the states of the ECU plus various other diagnostics.

See Section 11 for further ECU information

WARNING	ECU logs MUST be interpreted by a Mobility Networks Engineer

8.6 Changing from ‘Safety Mode’ to ‘Full Operation Mode’

Safety Mode delays or stops the operation of the lift if the lift was not taken out of safety mode or if one of the lift modules and / or sensors has started malfunctioning.

‘Full Operation Mode’ Once proper checks have been made by the engineers at the factory / by the final installer or after repairs have been made and checked, the lift can be put in ‘Full Operation Mode’.

If activated, **Safety Mode** delays the Deploy operation by 10 seconds, activates the buzzer and the LCD displays ‘**SAFETY MODE’** every time the lift is powered on. After the initial 10 second delay, the lift will resume operation but will reset the delay every time the lift is powered off.

Safety mode will stop all operations if the temperature of the ECU exceeds 80°C (176°F), Angle Sensor is disconnected or malfunctions, or if the battery voltage is low.

All lifts leave the factory with **Safety Mode** active and it is the Installer’s responsibility to put the lift in **Full Operation Mode**. Upon finishing the installation, it is recommended that the Installer pairs the lift to the **Mobility Networks – Smart Lift** App and sets the lift to **Full Operation Mode**. The date and time will also be recorded and the **Mobility Networks – Smart Lift** App will forward this info to the service provider as a record of a successful installation.

Full Operation Mode through the Mobility Networks – Smart Lift App

Change from **Safety Mode** as follows:

1. Login to the **Mobility Networks – Smart Lift** App
2. Pair with the lift
3. In the right-hand menu, navigate to the Installer section
4. Scroll to the bottom of the page
5. Toggle the checks and press the Ready button
6. Using the App, the Engineer can only set the Safety Mode to Active / Installer can only set **Full Operation Mode** to Active

Alternatively, ‘Safety Mode’ can be set to ‘Full Operation Mode’ using the wired remote, see Section 11

8.7 ECU Details

The ECU Hardware, Software and Serial Number details can be found on a label on the ECU, an example is shown in Figure 8.7.1.

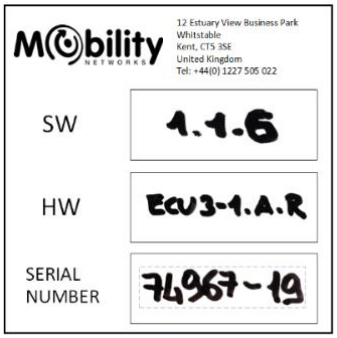


Figure 8.7.1

ECU Battery Type: CR1220

ECU Memory Card Type: Micro SD

8.8 Commissioning Log

The Installer shall check the following boxes to confirm and validate as follows:

1 IDENTIFICATION PLATE:

ID plate installed and fixings secure?	☐
Is the ID plate serial number legible?	☐

2 ENCLOSED DOCUMENTATION:

Manual for use and maintenance compiled	☐
Manufacture's Declaration of Conformity	☐
Installer's Declaration of Conformity	☐
Operator Manual Supplied. Installer Information and Serial Number Recorded	☐

3 LABELS AND SAFETY WARNING:

If cabin light fitted, does it work? (Section 3) (if not fitted note n/a)	☐
If signalling lights are fitted, do they work? (Section 3) (if not fitted note n/a)	☐
All Labels present and legible (Section 17)	☐

4 CONTROLLER:

Wired control pendent present? (if not note option fitted)	☐
Emergency manual controls operate and label present?	☐

5 STRUCTURE AND ASSEMBLY:

Confirm fastening bolts to the platform to correct torque	☐
Visual inspection of the integrity of all welds	☐
Absence of structural deformation	☐
Safety Handrails fitted, thread locked and fasteners torqued to specification	☐

6 HYDRAULIC SYSTEM:

Correct oil in the tank (Specification in Section 3.3)	☐
No oil leakage	☐
No oil in hydraulic cylinder breather holes (e.g. seal integrity)	☐
Hoses correctly routed	☐

7 FUNCTIONING OF THE LIFT:

Levelling of the platform at the loading floor in opening	☐
Levelling of the platform vs. loading floor in ascent / descent	☐
Closes Fully	☐
Ensure Functionality of Bridging Device	☐
Ensure Functionality of Outer Barrier	☐

8 ELECTRICAL SYSTEM:

Ensure operation of main Isolator switch	☐
Battery connected properly	☐
Vehicle battery fully charged	☐

9 SAFETY DEVICES:

Safety hook fitted and operational	☐
Safety pressure switch fitted and set correctly	☐

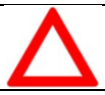
10 LOAD TESTS:

Verify static deformation	☐
Verify static deviation test	☐
Verify dynamic test	☐
Verify protection against overloading	☐

11 FULL OPERATION MODE:

Set Lift to Full Operation Mode	☐
Check all lift functions operate correctly in Full Operation Mode	☐

12 MOBILITY NETWORKS SMART LIFT APP

During handover the vehicle to the customer, inform them about the Mobility Networks Smart Lift App, show them how to download it to their smart phone	☐
Before using the lift make sure the user or operator knows how to confirm connection (Pairing) to the lift using the App	☐
 **WARNING**	
BEFORE OPERATING THE LIFT WITH THE APP: Make sure the lift and App are paired. The PIN can be found on the Power Pack LCD Screen	

9.1 Operation Introduction

Before operating tail lift:

Fully familiarize yourself with lift controls, relevant safety procedures and possible hazards signified by warning labels or highlighted in your Operator Hazard Assessment.

iCLASS lift safety:

- Only an authorized fully trained operator must control the lift.
- Secure vehicle doors fully open, well clear of the lift platform.
- Keep within the stated maximum safe working load (SWL).
- Keep people away from the operating area (inside and outside the vehicle).
- Ensure the platform is always level (horizontal, not more than 5°) see Figures 9.1.1 and 9.1.2.
- NEVER leave the lift unattended at ground level if passengers are onboard.
- When the lift is not in use controls should be deactivated.
- Ensure that the lift is correctly stowed after loading.

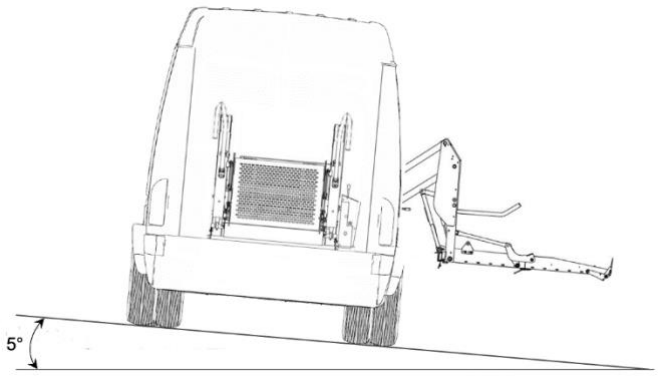


Figure 9.1.1

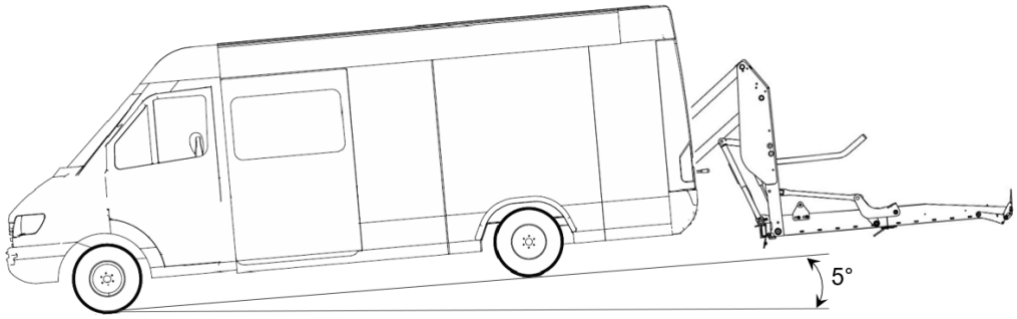


Figure 9.1.2

Operators ensure that:

- Lift will lower to firm, level ground
- Scooter or powered wheelchair is not larger than the lift platform in any direction
- Tail lift is in a FULLY operational condition. Report any defects.
- Lift internal flap lands flat onto vehicle floor.
- Lift external flap is set vertically (minimum 80°) and fully operational.
- Accompany the passenger on the lift is possible, but do not overload the lift.
- You have a clear view of the lift platform before the passenger moves onto it.
- NEVER leave passengers unattended at any time.
- The passenger should not be required to operate ANY controls.
- **When operating the lift, ensure you are within reach of the power switch at all times and that you are able to view all corners of the platform.**

Loading and Unloading procedure:

- Explain to passenger the sequence of movements that will occur.
- Where possible passenger should dismount the scooter / wheelchair and board the vehicle separately. Wheelchair user should point away from the Vehicle for loading and unloading.
- Ensure the lift platform and area around the lift are free from obstruction.
- Ensure the lift platform is in the correct position before moving onto it.
- Scooter / Powered Wheelchair should be pushed onto the lift platform, NOT DRIVEN.
- Ensure that persons or equipment do not overhang the platform.
- BEFORE the lift begins motion Scooter / Wheelchair brakes to be applied (or wheels blocked). Wheelchair integrated occupant seatbelts should be used.
- All power to the scooter / powered wheelchair is turned OFF.
- Operate lift platform to the vehicle floor.
- Scooter / Wheelchair should be pushed off the lift platform, NOT DRIVEN
- Scooter / Wheelchair and passenger should be restrained in the vehicle using the correct the correct equipment. (Wheelchair Tiedown and Occupant Restraint System, WTORS).

Please note: *The transportation of scooters and large powered wheelchairs may require a NON-STANDARD tail lift size or specification. Where possible Mobility Networks can provide longer, wider platforms, higher roll-off ramps, to help combat the increased hazards related to larger passenger vehicle transportation*

9.2 Standard Operation

In a safe area, park the vehicle on level ground, make sure there is enough room around the vehicle to enable safe operation. Open door(s) and secure fully open.

If automatic doors are fitted, refer to those instructions.

WARNING

Make sure that the relative movement of the platform corresponds to each command without jamming and unusual noises. STOP AND CHECK!

Power On:

- Toggle Clockwise the LIFT POWER switch to the ON Position (Section 5.1) and 9.2.1

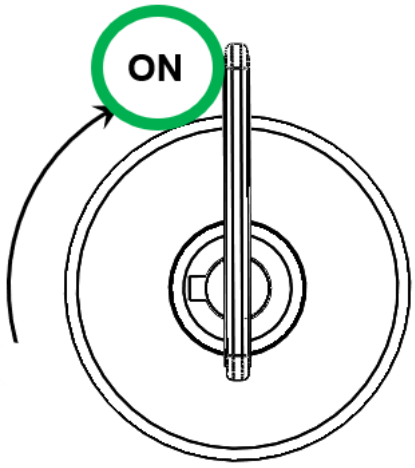


Fig. 9.2.1 Power On

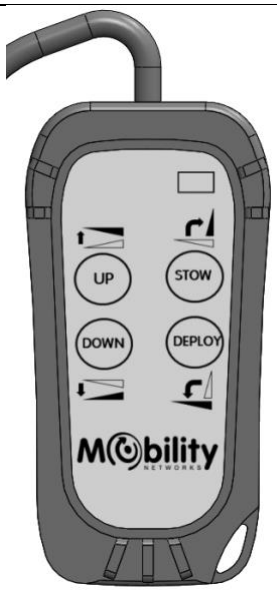


Fig. 9.2.2 Control Pendent

Deploy Platform:

Opening is a rotational movement that moves the loading platform from the vertical (closed) position to the horizontal loading position at vehicle floor level. (Figure 9.2.3).

- Operator MUST stand clear of deploying lift.
- Push and hold DEPLOY (Figure 9.2.2) button until platform stops at the horizontal loading position on the floor of the vehicle (Figure 9.2.4).
- Release button.
- The platform can now be loaded.

WARNING

Once the user is on the platform or before starting the lifting/lowering operation:

the wheelchair **MUST BE braked**.

fit wheelchair occupant seatbelts.

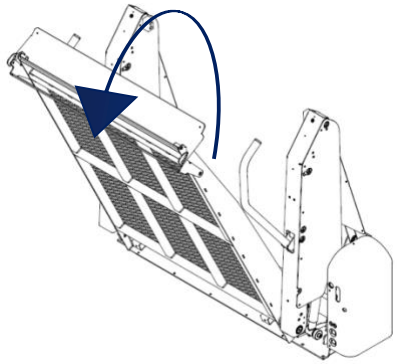


Figure 9.2.3 Platform deploy

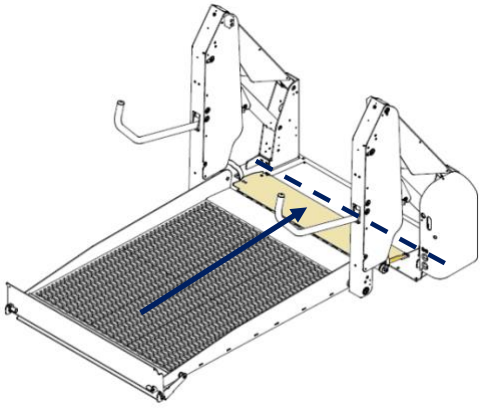
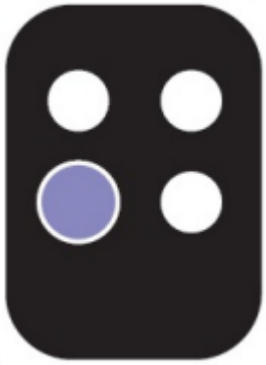


Fig 9.2.4 Platform at vehicle floor level

Lowering Platform:

- Push and hold DOWN (Figure 9.2.2) button until platform stops at the horizontal loading position on the ground.
- Release button.

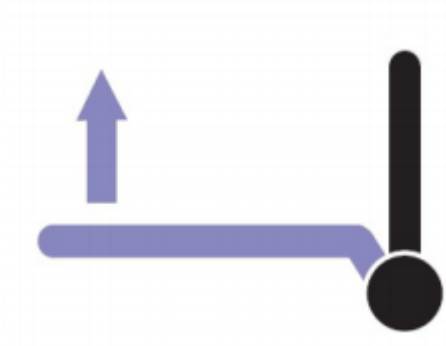
Once stopped at the ground level, platform is ready to be loaded or unloaded.



Raising Platform:

- Push and hold UP (Figure 9.2.2) button until platform stops at the horizontal loading position on the floor of the vehicle.
- Release button.

At this point the platform can be unloaded.



Stowing the Platform:

After making sure that no object has been left on the loading platform, proceed as follows for the closing manoeuvre:

Stowing is a rotational movement that moves the loading platform from the horizontal position to the vertical (closed) position at vehicle floor level.

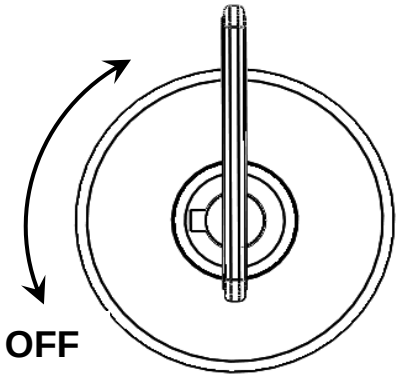
- Push and hold STOW (Fig 9.2.2) button until platform stops at the vertical loading position on the floor of the vehicle. Keep pressing until the power is interrupted.
- Release button.

Power Off:

- Toggle anti-clockwise the LIFT POWER switch to OFF
- The passenger compartment warning light extinguishes to confirm lift power is disabled.

WARNING

To avoid draining the batteries of the vehicle, remember to disable the system after each use of the lift.



9.3 Emergency Operation

WARNING

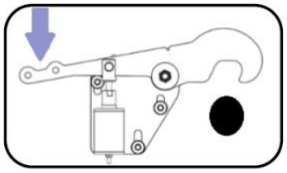
- **Note: For Emergency Operations, the lift must always be completely closed. Use the emergency hand pump to close the lift. Only when the lift is completely closed, the hook can be unlocked; this allows Emergency Operations to be performed safely.**
- Emergency manual controls are to be used to operate the lift in case of power supply failure. They are not intended for ‘normal’ use as an alternative to powered operation.
- Emergency manual controls must be exclusively used to help the user during lifting/lowering onto / off the vehicle and to close the opened lift, allowing to the vehicle to start again.

A complete **Emergency Operation** cycle is as follows:

DANGER

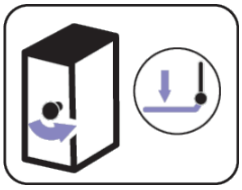
WITH LIFT CLOSED, RELEASE THE SAFETY HOOK AND CARRY OUT THE EMERGENCY OPERATIONS AS BELOW.

BEWARE OF MOVING PARTS.

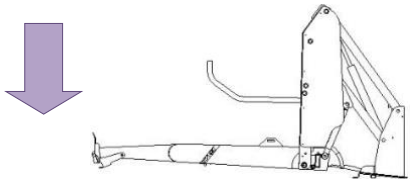


DEPLOY/DOWN

On the hydraulic unit, turn the manual override valve counterclockwise lowering using the black knob (marked by its relevant label).



The platform will open and will descend until making contact with the ground or if the lowering valve is closed (by turning the knob clockwise).

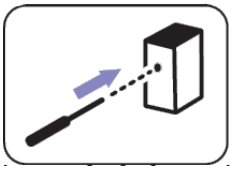


IMPORTANT

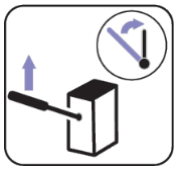
Before any other operation, close the lowering valve, by turning its knob clockwise.

UP/STOW

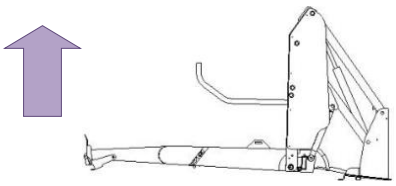
Tighten the lever, into the threaded hole. (inside the vertical slot marked by the relevant label).



Operate the pump manually alternating up / down vertical movements.



The platform will reach vehicle floor level to allow user on / off the platform. Continue to operate the pump to stow the platform.



10.1 Torque Settings

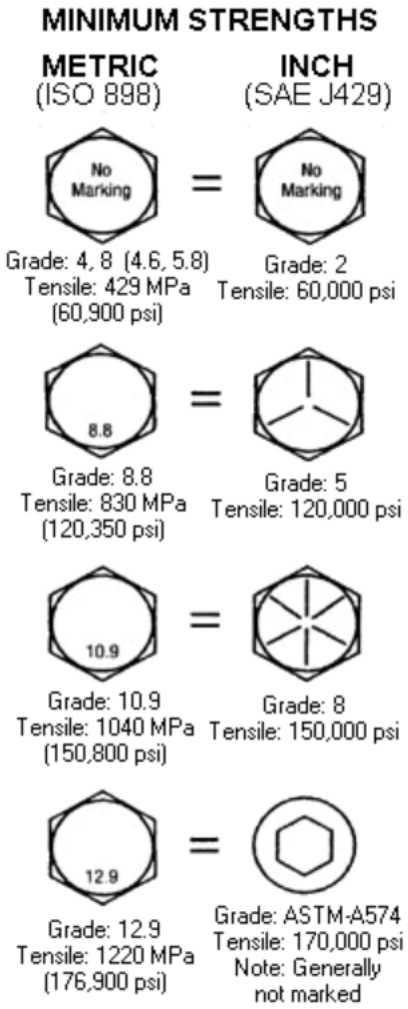
Thread Size	Torque Setting (Nm)		
HTS	**8.8**	**10.9**	**12.9**
M4	2.9	4.1	4.95
M5	5.75	8.1	9.7
M6	9.9	14	16.5
M8	12	34	40
M10	48	67	81
M12	83	117	140
M14	132	185	220
M16	200	285	340

Thread Size	Torque Setting (Nm)		
HTS Hex Flange	**8.8**	**10.9**	**12.9**
M6	9	14.7	16.8
M8	20	35.6	41
M10	40	70.6	81

Thread Size	Torque Setting (Nm)	
Stainless Steel	**A2-70**	**A4-80**
M4	2.6	3.5
M5	5.1	6.9
M6	8.8	11.8
M8	21.4	28.8
M10	44	58
M12	74	100
M14	119	159
M16	183	245
M20	135	165

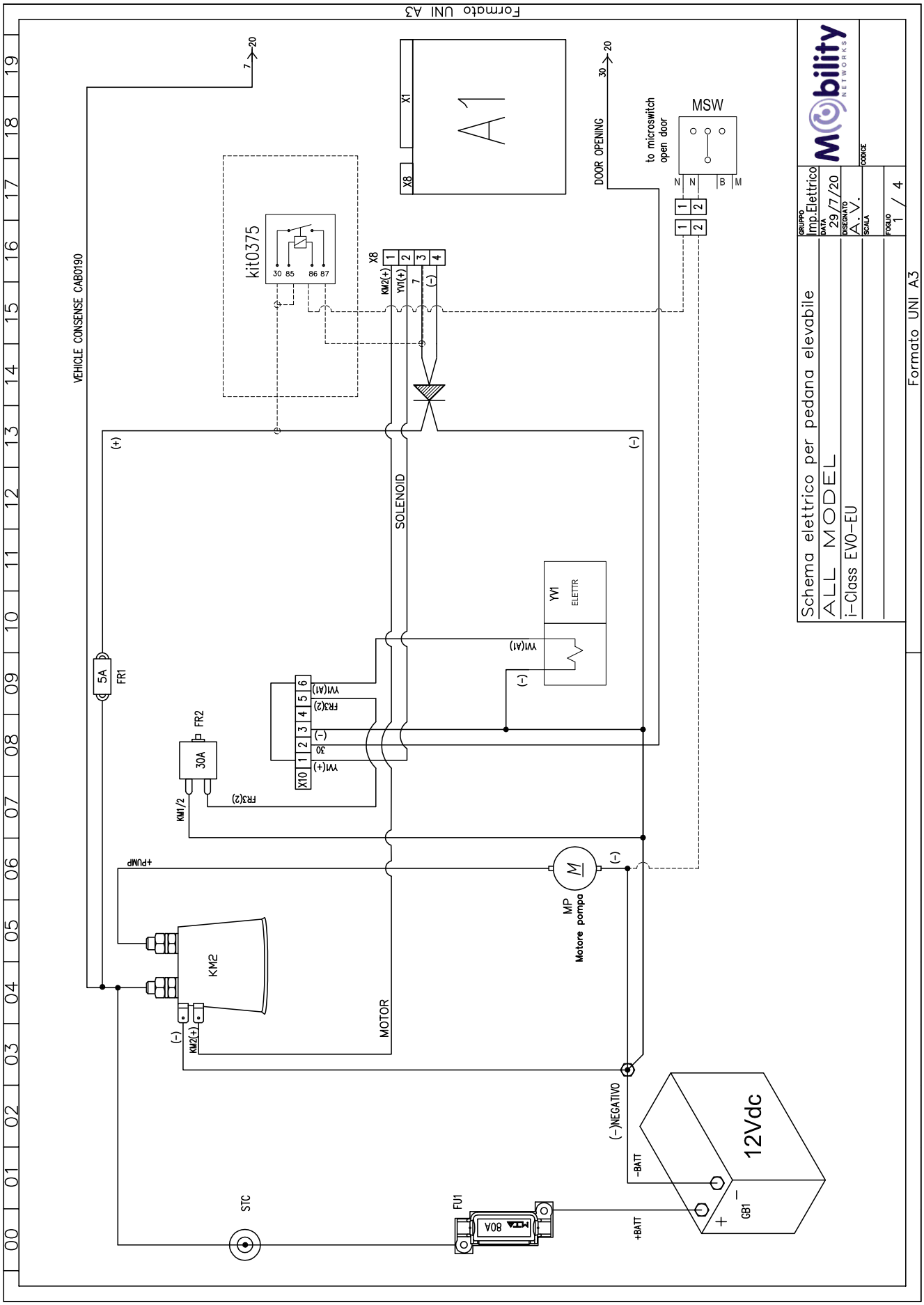
Thread Size	Torque Setting (Nm)
BSP	**A2-70**
1/8	17
1/4	35
3/8	47

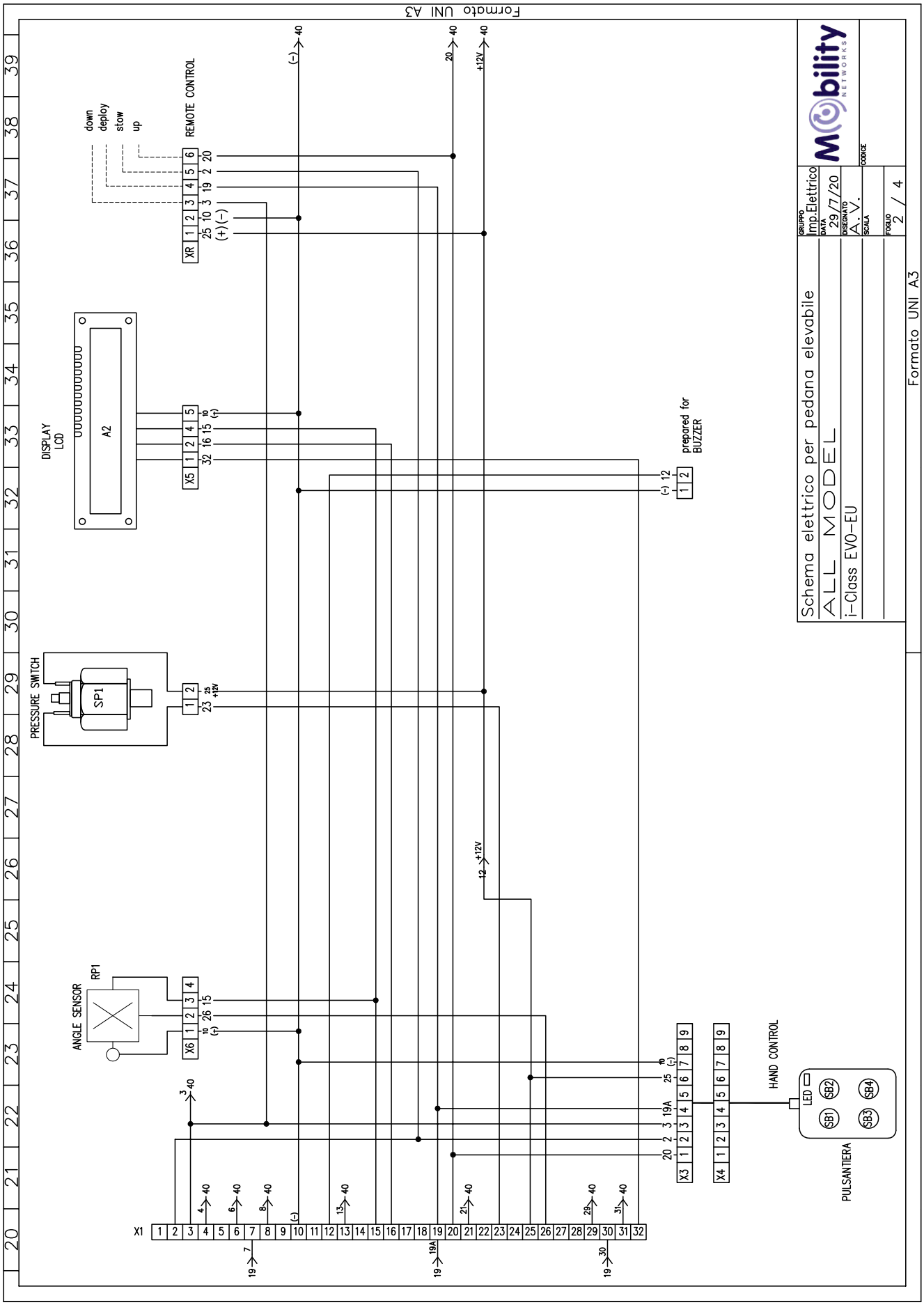
10.2 Fastener Strength Conversion Chart

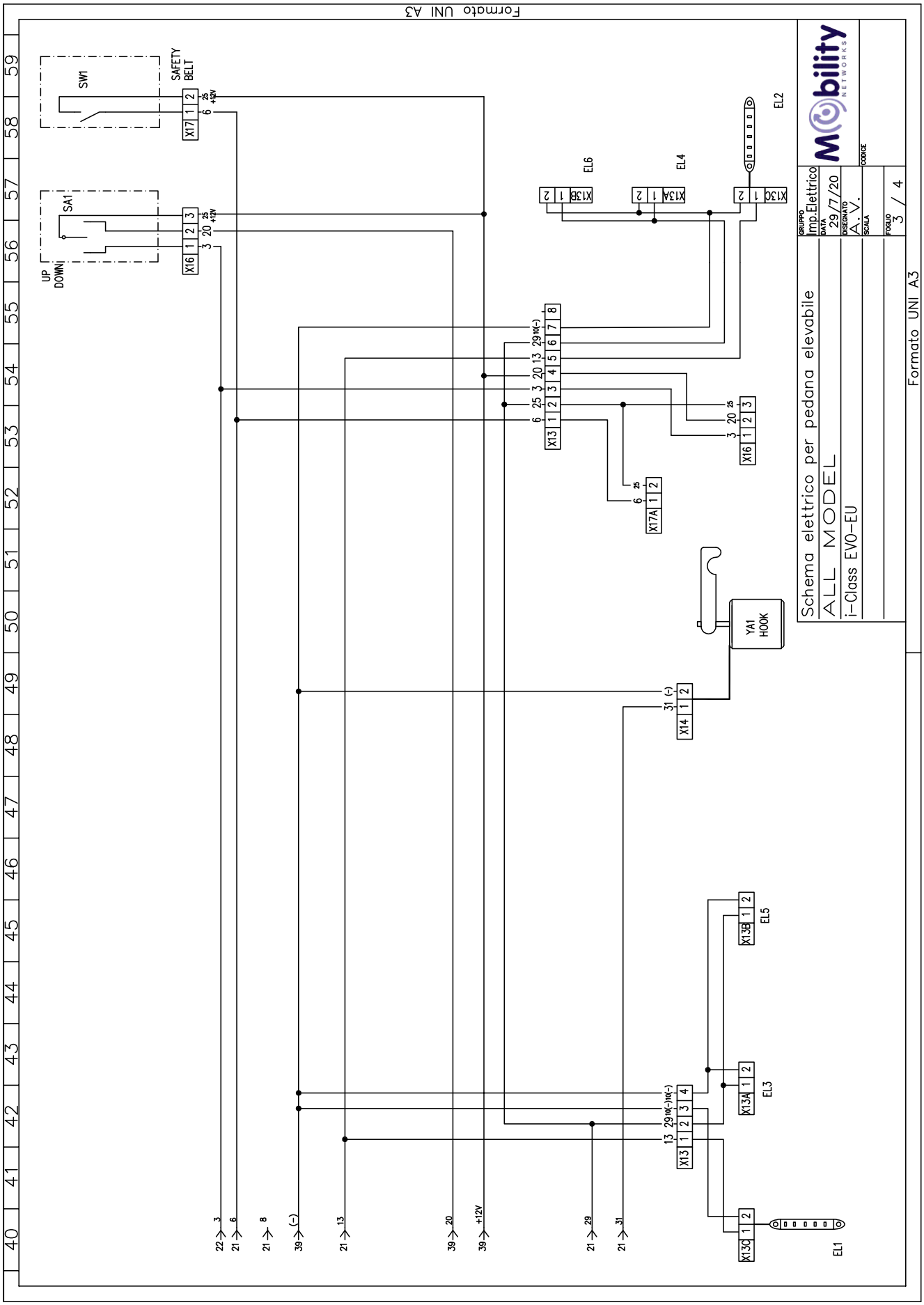


10.3 iCLASS Electrical Schematic

Code	Description	Position on Schematic	Code	Description	Position on Schematic
A1	Controller	17-19	MP	Motor	06
A2	LCD	32-35	RP1	Rotary (Angle) Sensor	23
EL1 – X13C	Connection to Warning Light	40	SA2	Power Switch	Not Shown
EL2 – X13C	Connection to Warning Light	57	SP1	Pressure Switch	28
FU1	Main Fuse (MEGAFUSE) 80A	00	SW1	Safety Belt Switch	58
STC	Power Switch	00	YA1	Safety Hook	50
FR1	Circuit Breaker / Trip Switch 5A	09	YV1	Motor Solenoid	09-10
FR2	Circuit Breaker / Trip Switch 30A	08	KIT0375	Door Interlock	16
GB1	Battery	00	X1	Hydraulic Wiring	20
XR	Remote Control	36-39	X8	ECU Wiring	16
KM2	Solenoid	04	MSW	Door open microswitch	19
EL3 – X13A	LED	42	EL5 - X13B	LED	45
EL4 – X13A	LED	57	EL6- X13B	LED	57







SIMB.	DESCRIZIONE	RAMO
A1	Scheda di controllo Control interface	17–>19
A2	Schermo LCD display LCD	32–>35
EL1 – X13C	Striscia LED per illuminazione ingombro laterale LED strip	40
EL2 – X13C	Striscia LED per illuminazione ingombro laterale LED strip	57
FU1	Fusibile batteria battery fuse	00
STC	Chiave staccabatteria Enable Key	00
FR1	Termica da 5A Thermal fuse 5A	09
FR2	Termica da 30A Thermal fuse 30A	08
GB1	Batteria 12 V 12V battery	00
XR	Controllo remoto Remote control	36–39
KM2	Avviamento motore Engine start	04

PREPARED FOR:

EL3 – X13A	Faro LED per illuminazione pedana LED headlight	42
EL4 – X13A	Faro LED per illuminazione pedana LED headlight	57
EL5 – X13B	Striscia LED per illuminazione pedana LED strip	45
EL6 – X13B	Striscia LED per illuminazione pedana LED strip	57

SIMB.	DESCRIZIONE	RAMO
MP	Motore pompa Engine	06
RP1	Sensore di angolo (posizione) Angle sensor	23
SA2	Interruttore si accensione Power switch	13
SP1	Pressostato NA per motore pompa Pressure switch (NA)	27
SW1	Switch per cintura di sicurezza Saafety belt switch	58
YA1	Elettromagnete per gancio di sicurezza Safety hook	50
YV1	Elettrovalvola pressione motore pompa Engine solenoid	09–>10
KIT0375	Interlock Interlock	16
X1	Cablaggio in centralina Hydraulic wiring	20
X8	Cablaggio 4poli ECU–Cent.idr. Ecu wiring (4poles)	16
MSW	Microswitch apertura porte Open doors microswitch	19

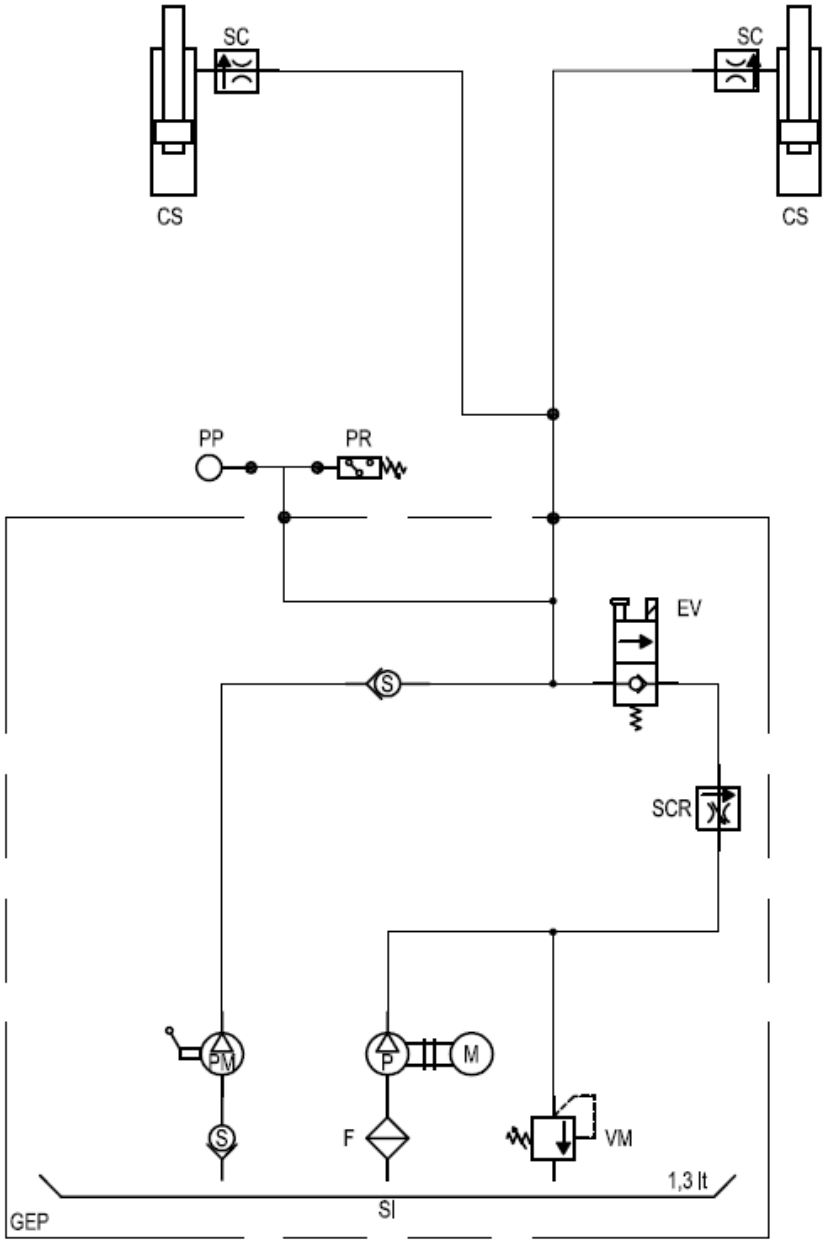
Formato UNI A3

Schema elettrico per pedana elevabile	GRUPPO Imp.Elettrico	Mobility NETWORKS
ALL MODEL	DATA 29/7/20	
i-Class EVO-EU	DISEGNATO A.V.	
	SCALA	CODICE
	FOGLIO 4 / 4	

Formato UNI A3

10.4 iCLASS Hydraulic Schematic

Code	Description	Code	Description
CS	Lift Cylinder	PP	Pressure Socket
EV	Lowering Valve	PR	Pressure Switch
F	Filter	S	Pressure Reduction Valve
GEP	Electric Pump	SC	Flow Restrictor
M	Electric Geared Motor	SCR	Compensated Flow Restrictor
P	Hydraulic Pump	SI	Oil Tank
PM	Manual Hydraulic Pump	VM	Relief Valve



11.1 Setting 'Full Operation Mode' (non-Mobility Networks – Smart Lift App method)

Full Operation Mode Purpose: To ensure that the proper checks were made by the engineers at the factory & by the final installer.

Safety Mode delays or stops the operation of the lift if it was not taken out of safety mode or if one of the lift modules and / or sensors has started malfunctioning.

If activated, **Safety Mode** delays the Deploy operation by 10 seconds, activates the buzzer and the LCD displays '**SAFETY MODE'** every time the lift is powered on. After initial 10 seconds delay, the lift will resume operation but will reset the delay every time the lift is powered off.

Safety mode will stop all operations if the temperature of the ECU exceeds 80°C, Angle Sensor is disconnected or malfunctions, or if the battery voltage is low.

All lifts leave the factory with **Safety Mode** active and it is the Installer's responsibility to put the lift in **Full Operation Mode**. Upon finishing installation, it is recommended that the Installer pairs the lift to the **Mobility Networks – Smart Lift** App and sets the lift in **Full Operation Mode**. The date and time will also be recorded and the App will forward this info to Manufacturer/Customer as a record of successful installation.

Alternatively, switching between **Full Operation Mode** and **Safety Mode** can be set using the wired remote as follows:

1. Power OFF ECU
2. Press and hold buttons DEPLOY & DOWN on the hand control
3. Power ON ECU
4. While holding DEPLOY & DOWN wait 5 seconds
5. On the LCD the message will display:
   UPDATING SAFETY MODE X
   X- will be the current value of the SAFETY MODE
6. 5 second timer starts
7. If SAFETY MODE is 0 and you want to KEEP lift in **'SAFETY MODE'**, power off the ECU now.
8. If SAFETY MODE is 0 and you want to ENABLE **'FULL OPERATION MODE'**, wait 5 seconds.
9. If SAFETY MODE is 1 and you want to put lift in **'SAFETY MODE'**, wait 5 seconds
10. After 5 seconds the LCD message will display:

    SAFETY SET= [X]

    REBOOT

    X- will be the current value of the SAFETY mode

11.2 Electrostatic Precautions

Electrostatic discharge or ESD is the sudden flow of electricity between two objects. ESD occurs when an object with a static electricity charge nears an object with a lower charge. When removing and working on the ECU, make sure to ground yourself on the metal case.

Static electricity commonly builds up when there is friction between two materials. Some of the components inside the ECU are sensitive to ESD and could be damaged.

The best method to prevent ESD is using a grounding wrist band, mat or table. They are designed to dissipate the static charge safely.

Whenever working inside the power pack disconnect the battery and all power supply cords before opening. Cycle and hold the power button to ON for five seconds after everything is disconnected. This will help prevent an unexpected shock and help eliminate sources of ESD.

Next, equalize the charge between yourself and the ECU. Touch the ground contact inside the power pack for two seconds before handling the circuit to discharge any residual electricity stored in your body.

Avoid clothing which conducts static electricity like wool and synthetic fabrics. It's also helpful to remove metal jewellery. Collect all the tools and supplies you'll need before you open the power pack. You may create unexpected charge each time you walk away.

If you have to open the ECU cover, avoid touching the surface of the circuit board. Special care should be taken to ensure the pins of the components inside the circuit board are not touched. Install the circuit board into the correct position using only as much pressure is needed to snap it into place. Never force the board into a position, and avoid bending it.

Only handle the ECU board if you are a trained installer.

When handling the circuit board, if possible, only touch the edges.

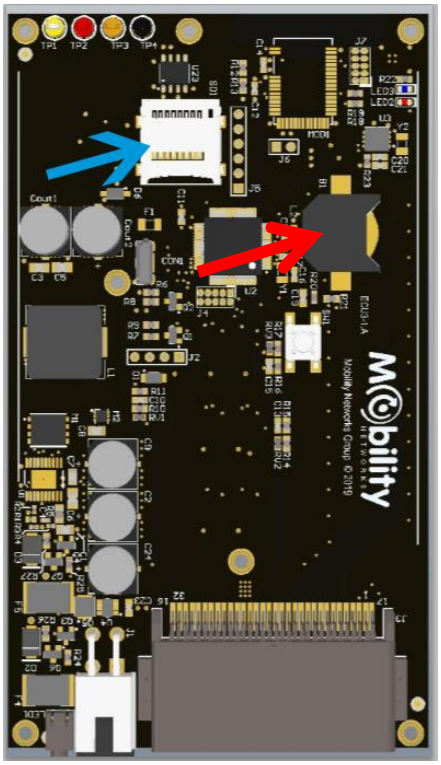
When handling the onboard components (SD Card and battery) make sure you are grounded.

 **WARNING**	Failure to observe these precautions may cause irreversible damage to the ECU and / or its components.

11.3 Firmware Updates

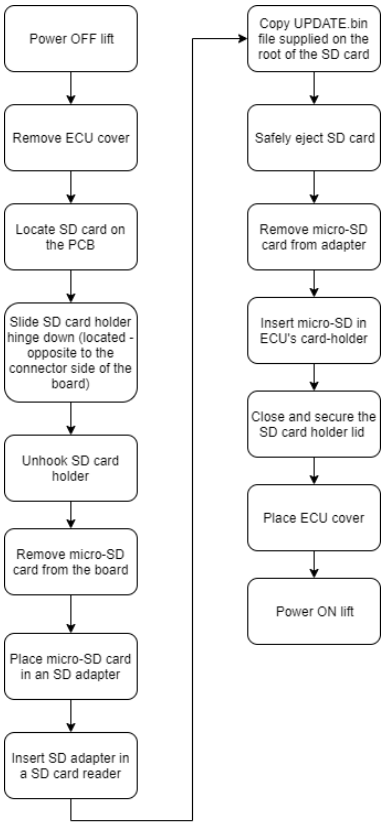
The SD Card Update can be summarized as follows:

1. Remove the ECU from the Power Pack (See Section 12.13).
2. Remove the ECU Cover.
3. Copy the UPDATE.bin file (supplied) on to a micro SD card
4. Insert the SD card into the micro SD card holder on the ECU circuit board.
5. Re-connect the ECU to the Power Pack (do not finally fit the ECU into the powerpack until it is fully tested).
6. Power ON ECU, make sure it has updated correctly and the lift functions as expected. Once successful, re-fit the ECU mounting screws and Power Pack cover.
7. The location of the SD card on ECU board is shown by the blue arrow in Figure 11.3.1



Above: Figure 11.3.1

The flowchart is shown below:



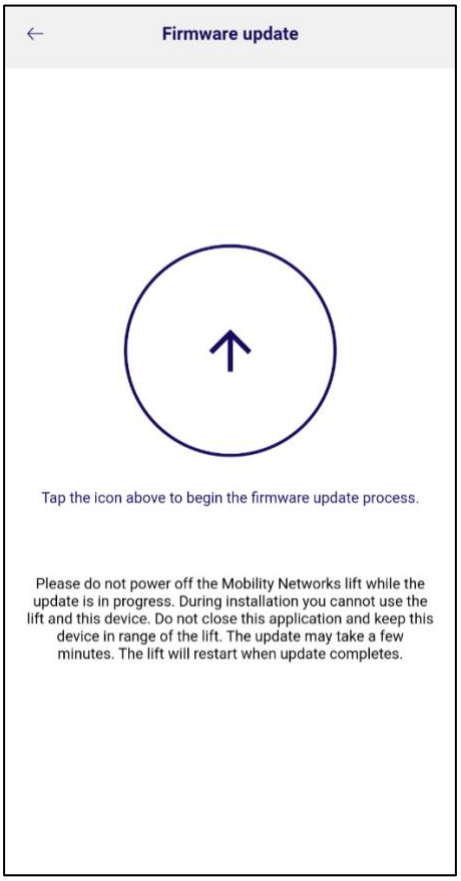
11.4 Firmware Update using the Mobility Networks App

The firmware update using the Mobility Networks App can be summarized as follows:
Users can download the latest version of the lift firmware which in turn directly upgrades the lift's functionality.

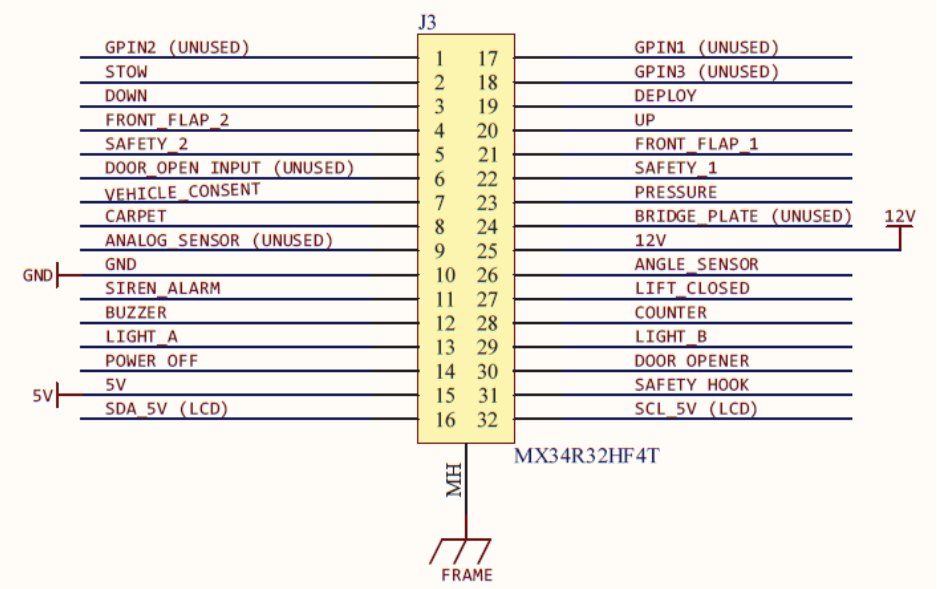
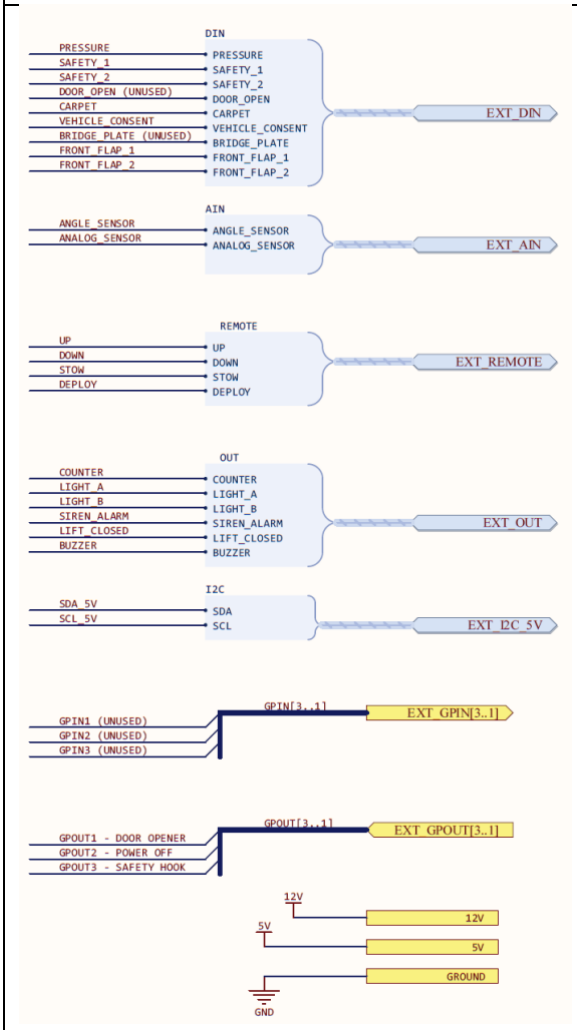
1. Power OFF lift
2. Open the Mobility Networks Smart App
3. Pair the Mobility Networks Smart App with your lift
4. Enter the PIN as it is displayed on the LCD
5. Tap on side menu and navigate to the *Firmware update* page
6. On the *Firmware update* page tap on the icon to begin the firmware update process.

Note 1. The firmware update will take anywhere between 5 to 7 minutes. Your saved settings such as floor / stow position will remain unchanged.

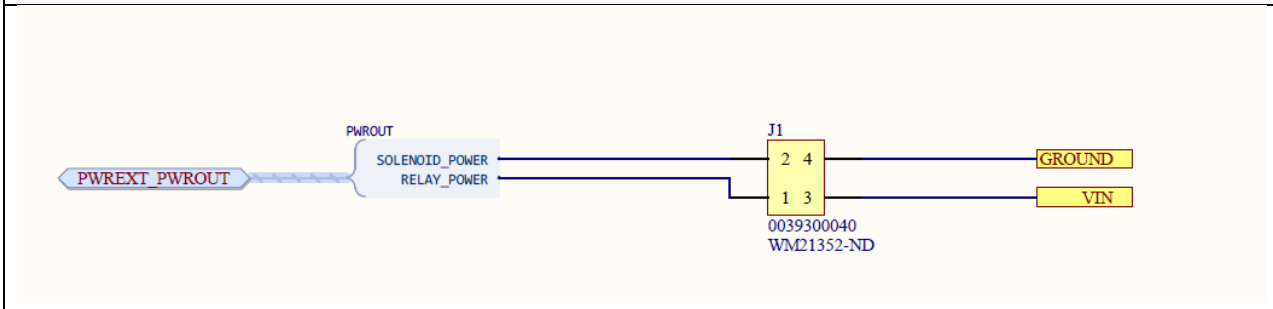
Note 2. As an Installer, you have the option to change the type of firmware (iCLASS 2021 & ADA / iCLASS FMVSS / FP / S).



11.5 ECU Pin Configurations

32-Pin Connector	
	Note: Supply Voltage can be 12V or 24V depending on lift configuration
	Note: Supply Voltage can be 12V or 24V depending on lift configuration

4-Pin Connector (Battery Input, Relay & Solenoid)



11.6 RTC - Battery Replacement

DANGER	This product contains a coin/button cell battery. If the cell battery is swallowed, it can cause severe internal burns and can lead to death. Keep away from babies and small children at all times. • If the battery is swallowed, immediately seek medical help • Risk of explosion if battery is replaced by an incorrect type • Dispose of used battery properly

If the ECU clock is no longer accurate or losing time, change the RTC battery. After replacing the battery, it is necessary to pair the lift with the Mobility Networks app to reset the clock.

Refer to Figure 11.3.1.
The red arrow shows the battery position on the ECU board.

1. Remove the ECU from the Power Pack (See Section 12.14).
2. Remove the ECU Cover (See Section 12.15).
3. The battery is installed with +positive side up.
4. To remove the RTC battery, use a non-metallic pry tool to push the battery out of its slot.
5. Wait at least thirty seconds before replacing the battery.
6. Replace the battery (1220 type) in the same socket it was removed from. Observe correct polarity.

11.7 ECU Display Messages

Information is displayed on the LCD as the following example:	
("CHK?","VEHICLE CONSENT")	
CHK?	displayed on the first line of the LCD
VEHICLE CONSENT	displayed on the second line of the LCD
Error Messages are summarized below:	
("CHK?","VEHICLE CONSENT")	Vehicle consent input disconnected
("CHK?", "DISCONNECT BELT")	When deploying the lift, the safety belt must be un-latched and the belt retracted fully
("CHK?", "PRESSURE SWITCH")	When stowing if pressure microswitch is pressed (will be displayed briefly)
("CHK?", "RETURN FLOOR LVL")	When stowing - pressure microswitch was pressed (will not allow stowing if pressure microswitch was pressed at any time when stowing) **Platform must return to floor level**
("CHK?", "SAFETY SWITCH")	Occurs when lifting – if platform is not levelled
("CHK?", "BELT")	Occurs when lifting / lowering, safety belt installed and belt is not connected (latched). Connect (latch) safety belt to allow lift to operate.
("SAFETY MODE","HIGH TEMP")	Triggered any time that at any time if internal ECU temp exceeds 80°C (176°F)
("SAFETY MODE","ANGLE SENSOR")	Triggered any time if the signal received from the angle sensor is faulty: - disconnected sensor - broken sensor
("SAFETY MODE","LOW BAT VOLTAGE")	Triggered any time if the battery voltage goes under 9V (with the relay LOW)

ECU Display Messages are summarized below:	
("UPDATING","FLOOR LVL")	Displayed when DOWN & UP buttons are pressed and lift is powered ON
("FLOOR SET= ")	Displayed after a 5 second delay when setting the FLOOR LEVEL
("UPDATING", "STOW LVL")	Displayed when STOW & DEPLOY buttons are pressed and the lift is powered ON
("STOW SET= ")	Displayed after a 5 second delay when setting the STOW LEVEL
("UPDATING", "SAFETY MODE")	Displayed when DEPLOY & DOWN buttons are pressed. The lift will cycle between SAFETY MODE ON / OFF after a 5 second delay
("SAFETY SET= ")	Displayed after a 5 second delay when updating the SAFETY MODE. 1 = enabled / 0 = disabled
("UPDATING", "DEBUG STATUS")	Displayed when pressing the UP & STOW buttons. The lift will cycle between DEBUG ON / OFF after a 5 second delay
("DEBUG SET= ")	Displayed after a 5 second delay when updating the DEBUG MODE. 1 = enabled / 0 = disabled
("WRONG BUTTONS")	User tried to power ON the lift with an unrecognized combination of buttons
("iCLASS", "SERIAL NUMBER")	Lift type and Serial Number supplied by the factory is displayed at every lift power ON
("PIN:", "1234")	The PIN is displayed every time the Mobility Networks Smart Lift app pairs with the lift
("FW: 1.2.1", "B: 13.1 V")	Version number and battery voltage is displayed at every lift power ON
("Service due soon!")	Displayed after the service counter goes above 4500 cycles, signaling that the service interval will soon be reached
("Service due now!")	Displayed after the service counter goes above 5000 cycles, signaling that the service interval was reached
("Counter: 1", "Closed" or "Deploying" or "Deployed" or "Lowering" or "Lowered" or "Lifting" or "Stowing")	Displayed in normal lift operation – the cycle counter and the state of the lift.
("REBOOT")	Displayed after an action that requires the ECU to be powered off

("UPDATING…","DO NOT POWER OFF”)	ECU Firmware Update using the Mobility Networks App is underway. Do not power off the lift while the update is in progress. During installation you cannot use the lift nor your device. Do not close the application and keep the device in range of the lift. The update will take a few minutes to complete and the lift will restart when the update completes.
("REPLACE NOW”, DAMAGED ECU”)	Replace ECU, short circuit detected.

12 Inspection and Servicing

12.1 Service Intervals

Service Interval	Service Type	
Daily	Daily	Complete Service Schedule for 4000 cycles or 12 months (whichever comes first)
2 Weeks	2 Weeks	
1000 cycles (or 3 months - whichever first)	A	
2000 cycles (or 6 months - whichever first)	B	
3000 cycles (or 9 months - whichever first)	A	
4000 cycles (or 12 months - whichever first)	C	
8000 cycles (or 24 months - whichever first)	D	

12.2 Daily Checks

Lift Inspection checks are required on a DAILY basis by the lift operating company.
The working life of the lift will be greatly prolonged if these steps are adhered to:

Daily Inspection Check List	Date:
Lift	
Vehicle #	
Engineer's Name:	
Customer Name:	
Customer Address:	
Phone #	

Check	**OK ?**
Visually Check Condition of Safety Belt. Deploy all webbing, check both sides and that stitching is in good condition (if fitted)	YES / NO
Visually check hydraulic fluid level using eyeglass	YES / NO
Visually check for any leaks or damage	YES / NO
Check for obvious signs of damage, and notify manager if necessary	YES / NO

Operation instruction labels are visible?	YES / NO
Check the hand pump handle is present	YES / NO
Handset control is working correctly and no signs of damage?	YES / NO
Platform is clean and dry?	YES / NO
Ensure the Handrail guards are present and undamaged	YES / NO
Check correct operation of Bridging Device / Inner Roll Stop	YES / NO
Check correct operation of Outer Barrier	YES / NO
Check warning lights are operating correctly	YES / NO

IF IN DOUBT CONTACT THE MANUFACTURER

12.3 Checks to be performed every 2 Weeks

Perform the following checks every 2 Weeks:

As Daily Checks plus:

Check	OK ?
Lubricate relevant parts with ACF-50	YES / NO
Check under the vehicle for damage and / or corrosion and that all fasteners are present and tight	YES / NO
Check condition of all cabling	YES / NO
Check that the vehicle interlock operates correctly – the lift cannot move out of stow position unless the interlock is operational	YES / NO
Check that the bridge plate warning system operates when it is occupied	YES / NO
Check that the outer barrier operates correctly when occupied	YES / NO
Check correct operation of emergency (manual) pump	YES / NO
With the lift is on the ground check that the oil level has not dropped, if so, check system for leaks and make necessary repairs.	YES / NO

12.4 Service Type A

Regular lift maintenance is recommended at the time or the cycles specified in 12.1 by the lift operating company. The working life of your lift will be greatly prolonged if these steps are adhered to.

This should include the following:

1. Check for obvious signs of damage and corrosion, replace parts as necessary.
2. Check the operation and stowing of the lift.
3. Check the rear roll-off-ramp operation. Lubricate with silicone spray.
4. Check bridging plate operates correctly, adjust as necessary.
5. Check handrail operation and security. If components are corroded, they should be replaced due to potential hazard to users! Check location pivot pins, these should be fully secure.
6. When cleaning the vehicle wash the working platform of the lift in accordance with instructions Section 13.
7. Check Up/ Down pump for fluid leaks and loose/ corroded electrics. Top up reservoir (with lift at ground position) with recommended Hydraulic Oil, do NOT overfill. Coat any exposed electrics with dielectric grease (to protect).
8. Lubricate lift in accordance with instructions Section 14.

IF IN DOUBT, CONTACT THE MANUFACTURER

12.5 Service Type B

Regular lift maintenance is recommended at the time or the cycles specified in 12.1 and records kept.

They are required for warranty claim. Without them the warranty may be void.

For Factory Trained Lift Engineers

As Service Type A checks plus:

Task	Description	Check Box When Completed
1	Check arm pivot pins, bushes, bearings and retaining grub screws, in particular the check the arm pin for wear and that fasteners are secure and torqued correctly.	
2	Check cylinder rod clevis and grub screws.	
3	Check all cylinders for oil leaks. Replace piston seal if excessive oil leaking from the cylinder.	
4	Check electrical cabling for signs of wear, if split or damaged this must be replaced!	
5	Check platform wear strips (on underside of platform extension surface) for wear, or 'fastening protrusion' replace if necessary.	
6	Check bridging plate for correct operation. The bridging plate must land flush with the vehicle floor and NOT form a trip hazard.	
7	Check that the platform does not have a side-to-side 'skew'. If a 'skew' is present the lifting cylinders should be adjusted.	
8	Check that the lift mounting brackets and track bolts are tight / secure and free from damage. Corrosion in this area of the lift is likely to occur, however if in an advanced state, components should be exchanged for new items.	
9	Check manual hand pump operation (see Auxiliary Hand Pump Operation Procedure), lubricate all pivot points. REMEMBER TO RETURN ANY MANUAL OVERRIDE KNOBS TO THEIR CLOSED POSITION.	
10	Check the handset wiring by powering the lift whilst manipulating the cable in any direction.	

IF IN DOUBT CONTACT THE MANUFACTURER

The following should be performed during Commissioning and at the Service Type B check:

A - Outer Barrier Function Check and Adjustment Performed	
B - Platform Stow Check and Adjustment Performed	
C - Inner Barrier Function Checked and Adjustment Performed	

12.6 Service Type C

Perform the same checks as Service Type A and B plus:

Check Hydraulic Fluid Level, Check the condition of all pins, arms and bearings, gas springs, power cables, fixing to vehicle, decals, anti-skid.

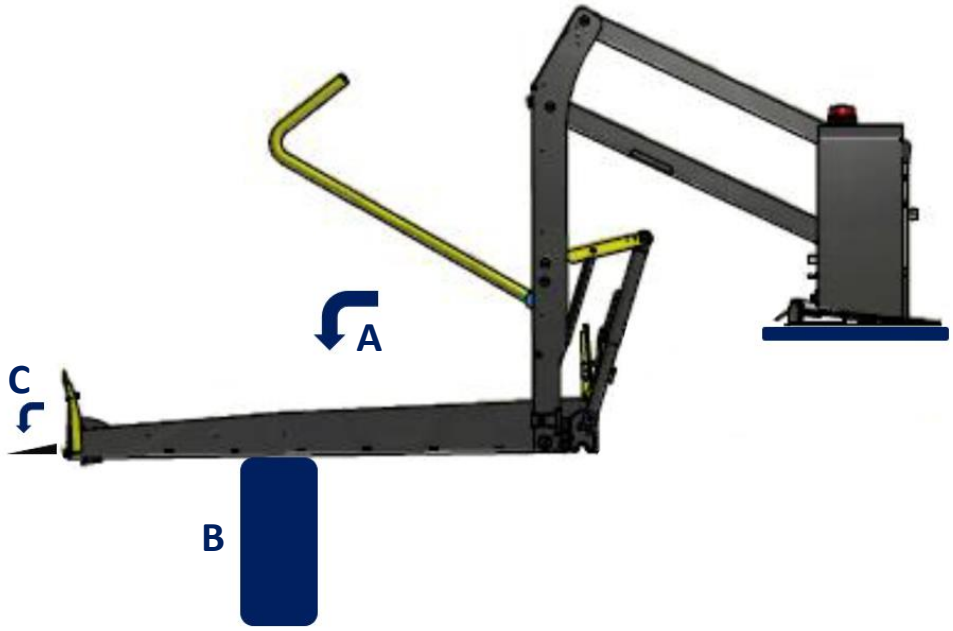
12.7 Set lift to work height

Preparation: Ensure a clean and uncontaminated work area.

Tools required: None
Disengage the Safety Hook and hold it open when manually deploying lift.

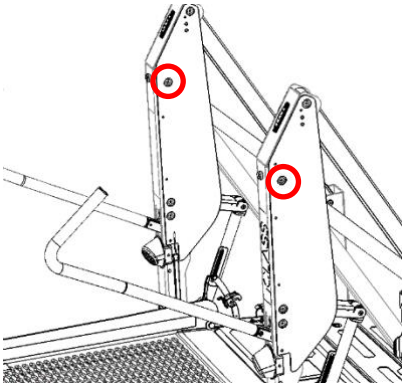
DANGER

Stand clear of deployment area of the lift when disengaging the Safety Hook. After completing the task **ALWAYS** make sure the Safety Hook operates correctly.

Use the manual release valve to lower the lift (A) onto a work station (B), allow all oil pressure to drain from system, outer-barrier will drop (C)	

12.8 Service Type D

12.8.1 Replace Arm Pivot Pin

Lower the lift onto a workstation (Section 12.7) Replace the Arm pivot pin and retaining fasteners (circled red, right) (Use 4mm Hex (Allen) wrench, punch and hammer). On re-assembly use thread locker on the fasteners (NOT the pins!)	

12.8.2 Oil Check and Change

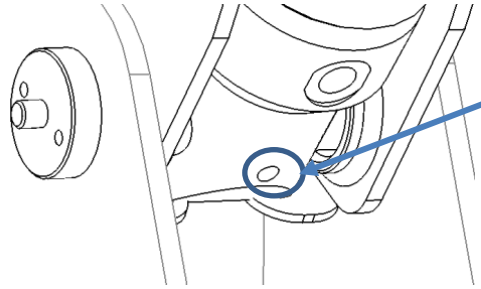
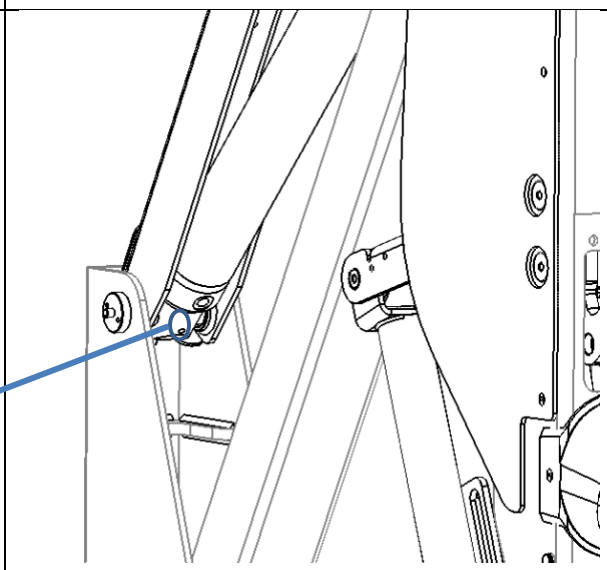
For translucent (plastic) tanks, check for dirt / debris and colour change. If there are signs of these then change the oil.

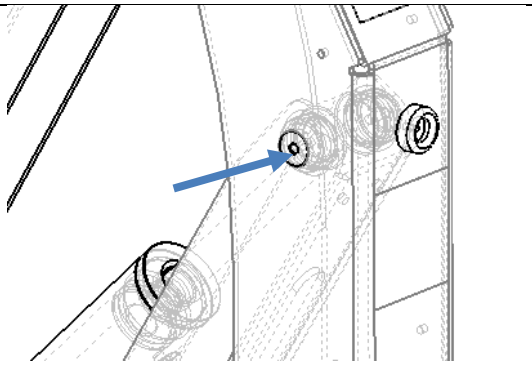
Lifts with steel tanks should have the fluid replaced regardless of condition.

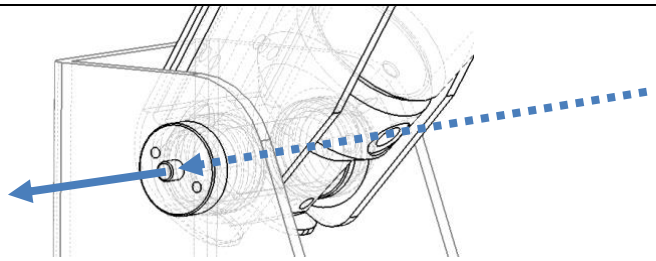
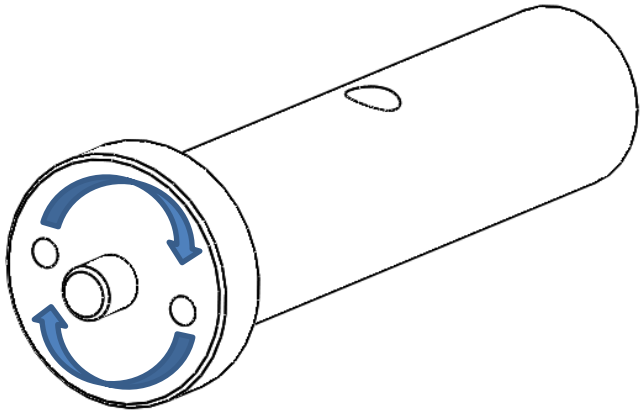
To change the oil, deploy the lift to ground level. Supporting the tank, remove the 4 nuts using 10mm wrench.

Empty the oil, clean the tank and re-fit it. Top up with the specified hydraulic oil (see specification section 3.3).

12.9 iCLASS Workshop Manual: Arm Cylinder Replacement

Tools required: 15mm diameter drift or punch set, and hammer. Hex (Allen) Wrenches 3, 4, 5mm.	Adjustable Pin Wrench. 13,14mm Combination Wrenches Diagonal cutters
With lift stowed, deploy slightly to allow access to M6 x 20mm grub-screw then fully remove it. (Use 3mm hex (Allen) key). Cut 2 x cable (zip) ties holding hydraulic pipes (not shown). 	
Disengage Safety Hook, Open manual release valve, allow platform to descend to **GROUND LEVEL**.	

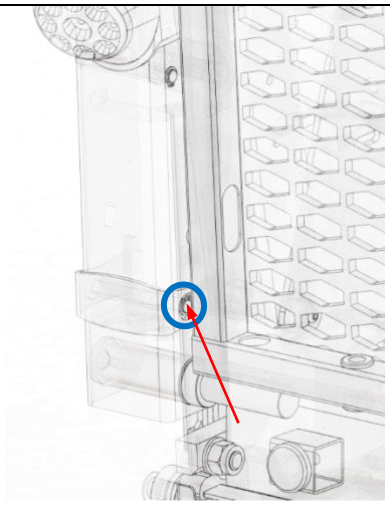
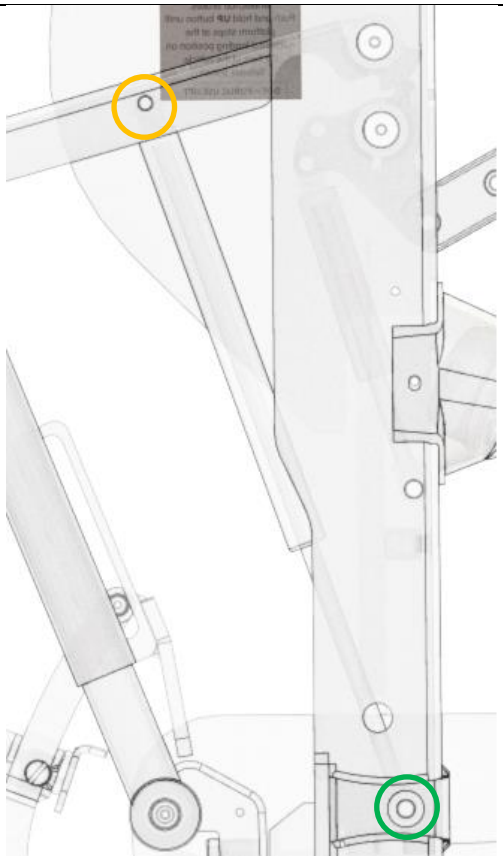
Remove Side Covers	
Remove M6 x 10mm dome head hex screw from piston end pin (use 4mm hex (Allen) key.	
Remove pin using drift then remove the drift.	

Remove tower end pin using drift. Remove cylinder but use the drift to support the upper arm hinge on the inside.	
Place absorbent cloth under hydraulic pipe connection, disconnect pipe using 14mm wrench. Protect pipe from dirt ingress.	
Disconnect breather connection using 13mm wrench. Cylinder can now be removed.	
Refitting Arm Cylinder:	
Reconnect breather hose then fit the cylinder to the top of the arm / tower. Fit pin from the outside then push through gently using a punch to re-align if required.	
Loosely reconnect hydraulic hose.	
Pull piston from cylinder then re-align with hole in vertical outer arm.	
Fit next pin, outer side to inner. Re-fit lower M5 fasteners using thread locker.	
Raise lift to almost stow position, make sure grub screw hole is accessible.	
Use the Pin Wrench to rotate the pin to allow threaded holes to align. Refit grub screw using 3mm hex key and thread locker.	
Lower back to ground level, bleed hydraulic system if required.	
Make sure all fasteners are tightened and perform lift cycles to check.	

12.10 iCLASS Workshop Manual: Arm Gas Spring Replacement

Tools required:

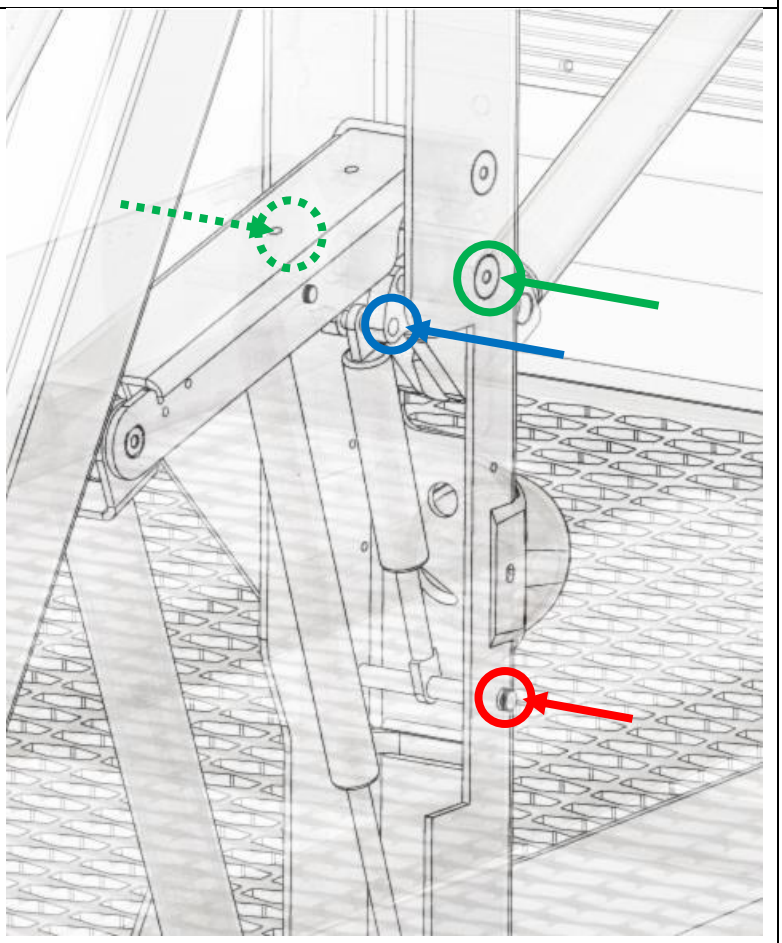
Small External Angled Circlip Pliers
Small Lever Bar
Pin punch set and Hammer
Small Locking Pliers

With the lift stowed, remove the lower inner circlip (blue). With the lever bar push the pin slightly outwards (red).	
Deploy lift to working height so gas spring is fully decompressed (open)	
WARNING DO NOT ATTEMPT TO REMOVE COMPRESSED GAS SPRING	
Remove Side Covers	
Remove lower outer circlip (green).	
On the upper mounting pin (orange), remove outer circlip then, using correct size punch, tap the retaining pin inwards. Retrieve the spacer. Release gas spring from upper pin.	
Using locking pliers, pull the lower pin outwards (use a hammer to tap gently outwards if required).	
The Arm Gas Spring can now be replaced.	
Assembly is reverse of the above.	

12.11 iCLASS Workshop Manual: Safety Handrail Gas Spring Replacement

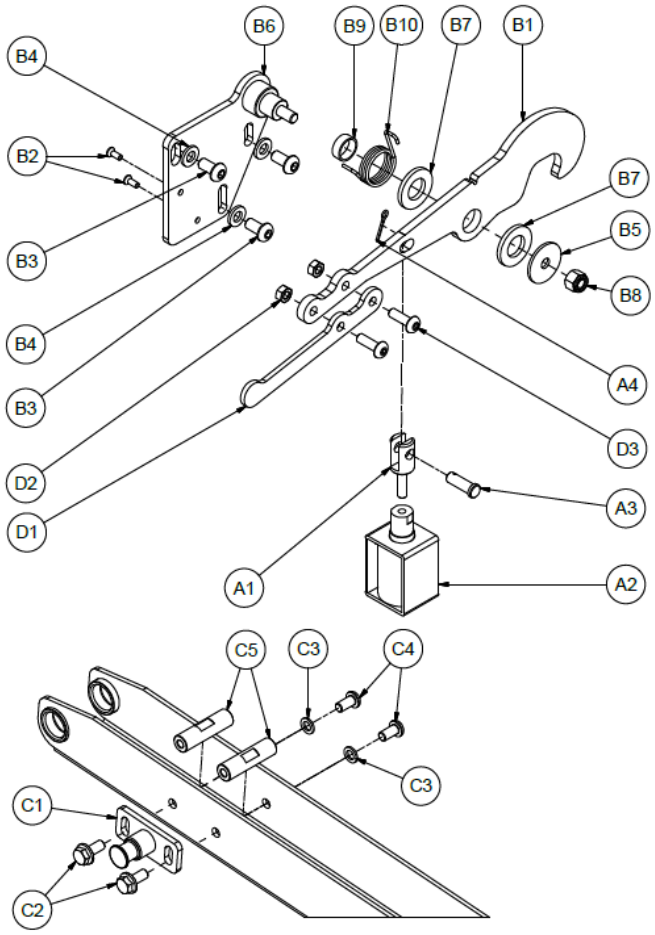
Tools required:
Small External Circlip Pliers
Pin punch set and Hammer

4mm Hex (Allen) wrench
Access is tight, if necessary, remove Arm Gas Spring.
Deploy lift to working height so gas spring is fully decompressed (open)
WARNING DO NOT ATTEMPT TO REMOVE COMPRESSED GAS SPRING
Remove the relevant arm

Remove Side Covers	
Remove lower outer circlip (red) then, using correct size punch, tap the retaining pin inwards (Just enough to release spacer). Retrieve the spacer. Release Safety Rail Gas Spring from lower pin.	
Remove upper safety rail mounting pin fasteners (green) M6 x 10mm dome head hex screw and washers (use 4mm hex (Allen) key).	
Push upper safety rail mount inwards, remove sub assembly.	
Release Safety Rail Gas Spring circlips and drift the pin out (blue), noting the position of the spacers.	
Replace the Safety Rail Gas Spring.	
Re-Assembly is reverse of the above.	

12.12 iCLASS Workshop Manual: Safety Hook Replacement

Tools required:
Hex (Allen) Wrench 4mm.
13mm Combination Wrench



Parts D1, D2, D3 are optional, used when the door opener is fitted.

Deploy lift to ground level.

Release B3 and B4, remove safety hook assembly from the lift tower.

Release C2, remove the Safety Hook Pin from the tower.

Replace Safety Hook Assembly and Safety Hook Pin.

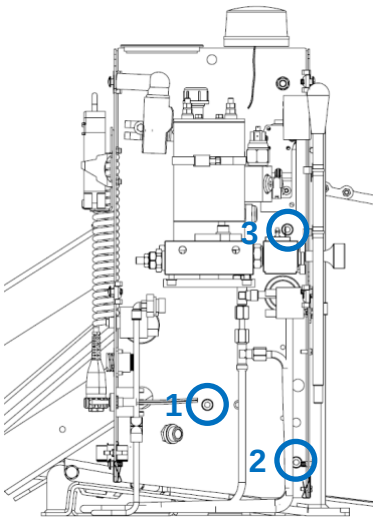
Re-Assembly is reverse of the above.

Cycle the lift a few times to make sure that the hook engages properly with the pin and that the release solenoid functions correctly. Make necessary positional adjustments if required.

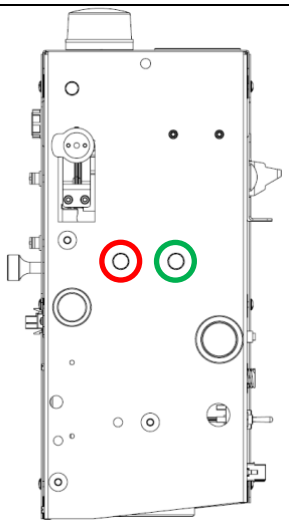
12.13 iCLASS Workshop Manual: Power Pack Replacement

Tools required:

Flat-blade screwdriver

19mm Combination Wrench Long reach 6mm T-Handle ball end hex (Allen) key
Release Safety Hook, Open manual release valve, allow platform to descend to **GROUND LEVEL**.
Power Off Lift
Disconnect Vehicle Battery
Remove Pump Handle Remove Power Pack Cover (Quantity 6 1/4 -turn screws, disconnect display, disconnect warning beacon, disconnect and remove remote control.
Disconnect vehicle negative (-) Power Pack connection
Disconnect vehicle positive (+) Power Pack connection (Do not allow red cable to touch any other part of the lift or vehicle body)
Disconnect all lift loom connections within the powerpack
The Power Pack is fixed to the lift tower using Qty 3 M8x30mm Hex Cap Screws. The positions are circled in the diagram right (the ECU and oil reservoir have been removed from the image for clarity). It is not necessary to remove oil reservoir to be able to remove the Power Pack. To access these, proceed as follows:
 Above: Figure 12.13.1
Remove and disconnect the ECU (See Section 12.14)

Slacken the hydraulic pump assembly fasteners, M10x25mm with 19mm combination wrench. Remove the fastener closest to the arm (green), retrieve star washer, (leave the fastener closest to the tower (red) slack and in place). The hydraulic pump assembly can now rotate.



Above: Figure 12.13.2

Remove the Power Pack Fasteners shown in Figure 12.13.1, remove centre (1), then bottom (2) then top (3). Use long reach 6mm T-Handle ball end hex (Allen) key.
Release the powerpack from the tower assembly (slightly turn the Power Pack to clear the rotary sensor).

Take care to prevent snagging of any cables. Pass them one by one through the aperture in the back of the Power Pack.

Refit then tighten the hydraulic pump assembly fasteners in Figure 12.13.2.

12.14 iCLASS Workshop Manual: ECU Removal

Tools Required: Flat blade screwdriver.

Make sure the lift is powered OFF then disconnect it from the vehicle battery.

Observe the warnings for ESD in the ECU section of the manual.

Remove the Power Pack cover, turn the ¼-turn screws counter-clockwise with a flat blade screwdriver. Carefully set the cover to one side (there is no need to disconnect the warning beacon light or display wiring) and lean it safely against the lift tower.

The ECU is held in place by 3 screws, see Figure 12.14.1. Remove them.

Above: Figure 12.14.1

Gently pull the ECU out of the Power Pack to be able to unclip the connectors from it. Set the ECU onto a flat, stable surface. Refitting is the reverse of the above.

12.15 iCLASS Workshop Manual: ECU Cover Removal

Tools Required: Phillips screwdriver.

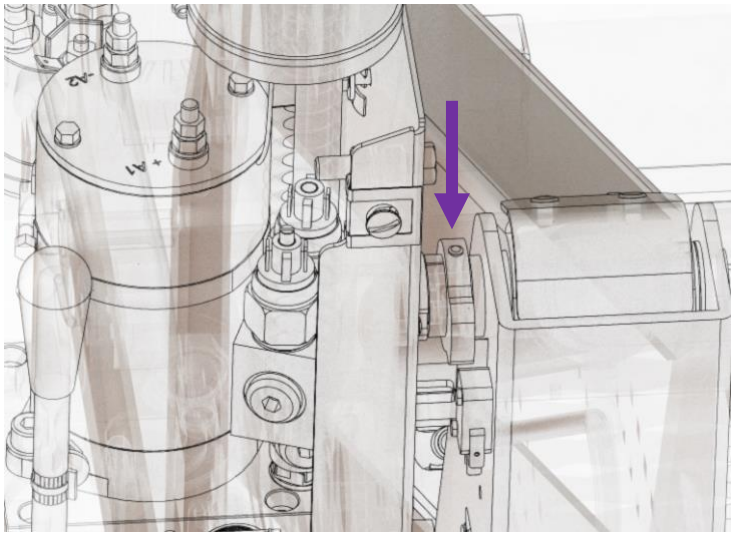
1. Remove ECU from Power Pack (See section 12.14)
2. Observe ESD precautions
3. Remove the 4 screws. The ECU cover can now be taken off.
4. Reassembly is the reverse of the above

Above: Figure 12.15.1

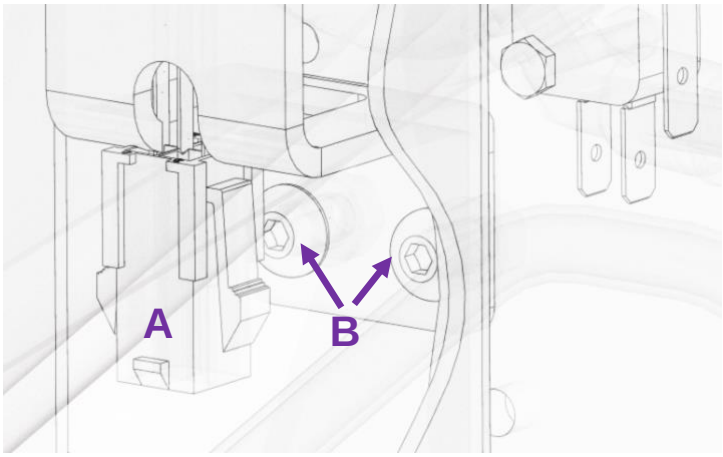
12.16 iCLASS Workshop Manual: Rotary Switch Replacement

Tools required:
Hex (Allen) Wrench 3mm
Diagonal (side) cutters
Pliers

1. Make sure the Power Pack is switched OFF.
2. Using the Hex (Allen) Wrench 3mm, slacken the rotary sensor cam grub-screw.



5. Follow the wire from the rotary sensor until a connector to the ECU is found then disconnect it (A)
6. Inside the Power Pack slacken and remove the rotary switch sensor mounting bracket fasteners (B).
7. The sensor / bracket sub assembly can now be removed.
8. Reassembly is the reverse of the above, take care that the sensor locating pins are fitted correctly.

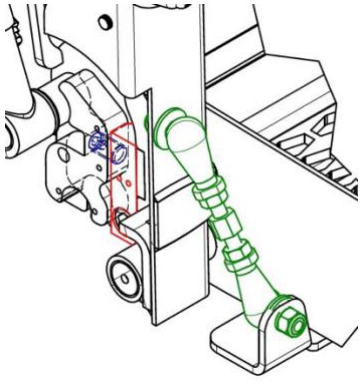


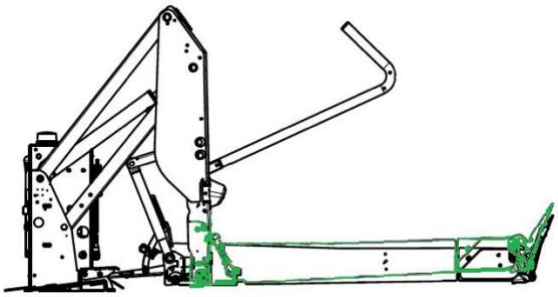
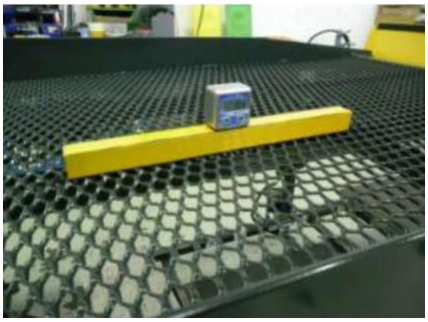
12.17 iCLASS Workshop Manual: Platform Levelling

Instructions for adjusting the platform after installation on the vehicle.

Adjusting the inclination of the platform is a fundamental operation for the correct operation of the lift. Some aspects, such as the model of the vehicle, the housing area of the lift, both side and rear of the vehicle, the ownership of the vehicle, affect the correct inclination of the platform pre-calibrated at the factory.

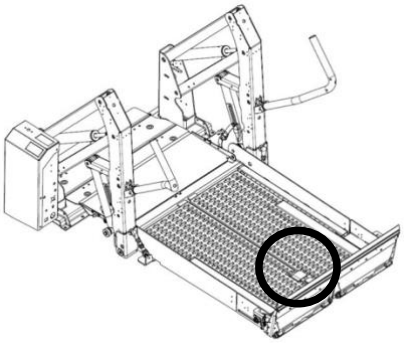
It is therefore necessary to carry out these operations after having mounted the lift on the vehicle.

<table>
<tr><td colspan="2">Move the platform and bring it to a position halfway between the ground and the loading surface to facilitate adjustments.</td></tr>
<tr><td>Using a size 6 Allen wrench, act on the anchors on both sides of the platform to adjust its inclination.</td><td>  </td></tr>
</table>

Turn the dowels clockwise to raise the footplate tip and unscrew them to lower it.	
Bring the inclination of the platform to **ZERO DEGREES** using a metric level to be placed on the platform.	
IMPORTANT: THE ADJUSTMENT OF THE GRAINS MUST BE PERFORMED SIMULTANEOUSLY ON BOTH SIDES OF THE PLATFORM AND UNIFORMLY TO ENSURE THE CORRECT LEVELLING OF THE PLATFORM.	

For the SP model, it is necessary to check the correct registration of the joints as per instruction.

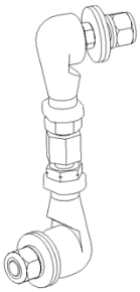
If the strikers are not aligned to closing and do not allow the platform to close correctly, the **CENTRAL SCREW** of the joint must be adjusted as follows:

From a closed platform, commend opening to bring the two halves of the platform closer. Loosen the joint nuts first and then the other in order to loosen the vice on the central screw.	  

To adjust the height of the half-platform, unscrew the **CENTRAL SCREW** clockwise or anti-clockwise. The half-platform will rise or lower, according to the data revolutions.	

NOTE: Each joint moves the adjacent half-platform. The manoeuvre must be performed on both joints to obtain a correct platform set-up.

ONCE VERIFYING THAT THE STRIKERS OF THE TWO HALF-PLATFORMS DO NOT TOUCH, TIGHTEN THE NUTS NEAR THE JOINTS.

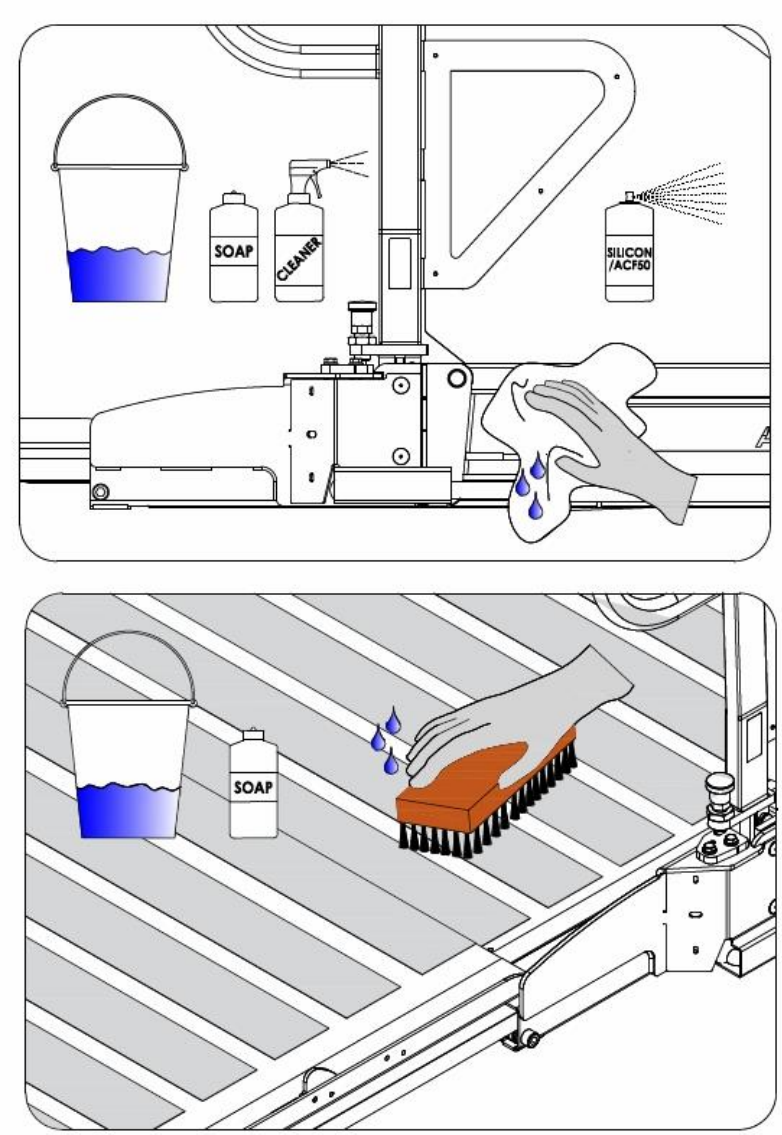
ATTENTION: The rotation of the screw depends on the joint. If it rotates right, it is the right joint. If it rotates left, it is the left joint.	

13 Cleaning

Great care needs to be taken during the cleaning process, all cleaning should be carried out by hand using a gentle cloth or sponge soaked in non-aggressive detergent and then rinsed with a cloth dampened with water. Ensure all moving parts are re-lubricated where necessary.

WARNING **DO NOT USE AGGRESSIVE DETERGENTS**

DO NOT USE PRESSURE WASHERS OR HOT WATER JET CLEANERS



After cleaning, check and re-lubricate parts per Section 14

See Figure 14.1 for lubrication, grease all pins, use ACF-50 for all other parts.

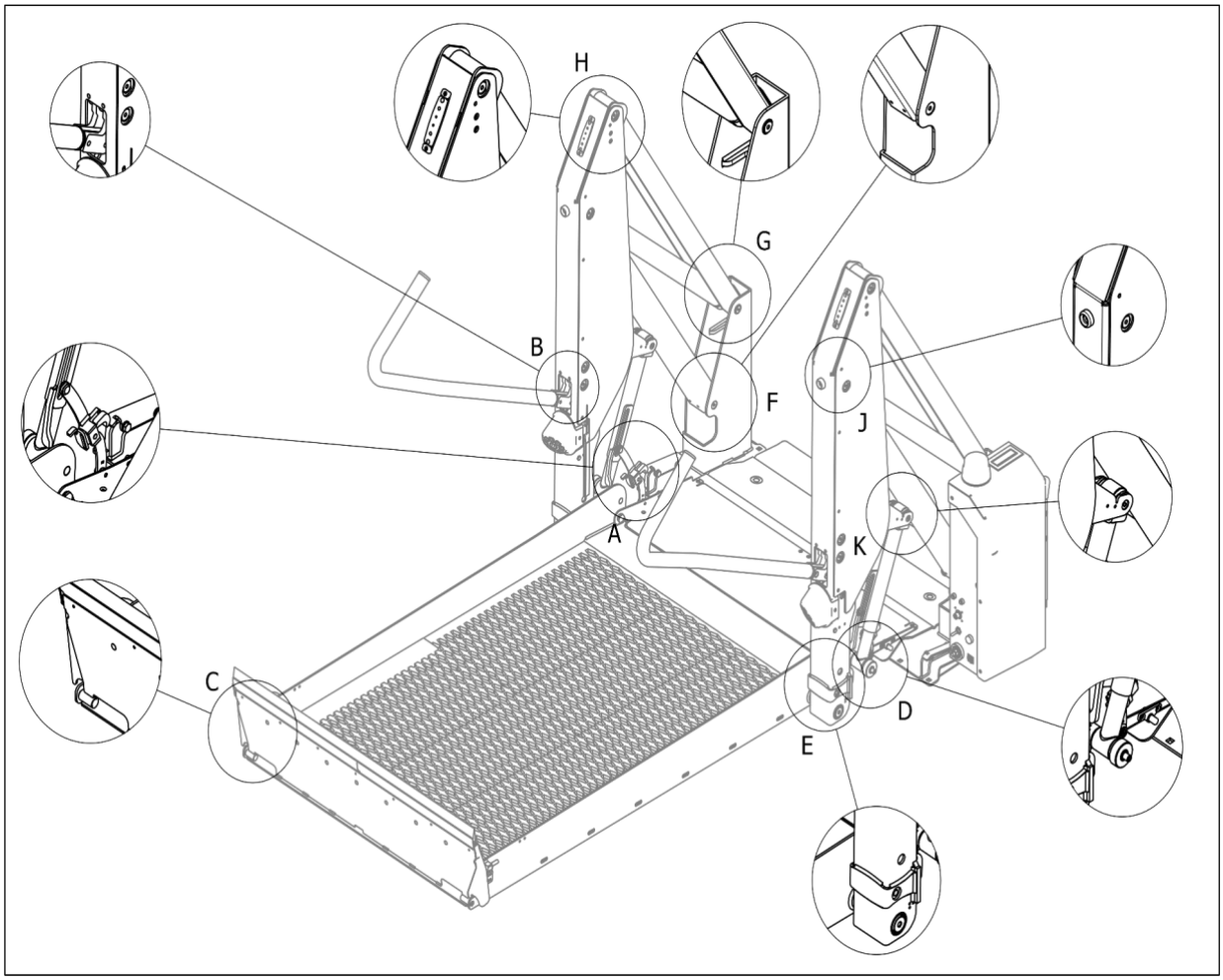


Figure 14.1 Lubrication points

15 Inspection and Servicing

15.1 Inspection and Service Data Sheet

Inspection / Service 1	**Inspection / Service 2**	**Inspection / Service 3**
Date	Date	Date
Driver/ Operator	Driver/ Operator	Driver/ Operator
Name	Name	Name
Signature	Signature	Signature

Inspection / Service 4 Date Driver/ Operator Name Signature	**Inspection / Service 5** Date Driver/ Operator Name Signature	**Inspection / Service 6** Date Driver/ Operator Name Signature
Inspection / Service 7 Date Driver/ Operator Name Signature	**Inspection / Service 8** Date Driver/ Operator Name Signature	**Inspection / Service 9** Date Driver/ Operator Name Signature
Inspection / Service 10 Date Driver/ Operator Name Signature	**Inspection / Service 11** Date Driver/ Operator Name Signature	**Inspection / Service 12** Date Driver/ Operator Name Signature

This page MUST be produced when claiming warranty repairs

16 Troubleshooting

	Control Handset		Electrical Issue
	Hydraulic Oil or Component		ECU Related

Problem	Cause	Solution
Lift not working / slow	Lower power available (less than 9 volts)	Charge battery, start engine, swap battery
Lift not working / slow	Low oil level in pump	Lower lift to ground, fill tank to within 20mm from top
Lift not working	Main Fuse / Circuit breaker blown or tripped	Reset or replace (should be location next to power source)
Lift not working / erratic	Control handset faulty	Check wires, pins, plugs replace handset if necessary

Platform does not deploy	Safety lock not unlocking (does hook lift when press DEPLOY?)	Manually override safety hook (to test)
	Control handset connected incorrectly	Check handset plug & pins are mated correctly
	Control handset faulty	Replace handset
	Lowering valve solenoid electrical circuit OPEN	Check and close circuit
	Lowering valve/solenoid broken (or blocked)	Replace (or remove and clean) lowering valve
	Deploy gas-springs not working	Test gas-springs, replace if not working to full power
	Closed position incorrectly programmed	Reprogram CLOSED position on ECU

Platform TWISTING when Deployed	Restriction in hydraulic cylinder / system?	Check for pinched hoses, replace if necessary
	Restriction in hydraulic cylinder / system?	Hydraulic cylinder restrictor blocked
	Damaged lifting hydraulic cylinder seals	strip and replace cylinder seals (or swap cylinder)

Lift FALLING out from vertical Stow and NOT unfolding	Arm gas-spring lost power	Replace if required
	Anti-rattle plate too tight (or wheel)	Adjust plate angle

Platform does not lower to Ground	Control handset connected incorrectly	Check handset plug & pins are mated correctly
	Control handset faulty	Replace handset
	Lowering valve/solenoid broken (or blocked)	Replace (or remove and clean) lowering valve
	ECU issue	Reprogram ECU (replace as last resort)
	Mechanical system dry / dirty	Clean and lubricate moving parts
	Lifting cylinder damaged (or corroded)	Check and replace if necessary

Platform does not STOP at correct vehicle floor height (when operating Up or Down?)	Loading level incorrectly programmed	Reprogram Floor-height level
	Rotary sensor issue	Adjust, re-set or replace
	Control handset connected incorrectly	Check handset plug & pins are mated correctly
	Control handset faulty	Replace handset

Platform does not lift UP from Ground (is main pump motor working or not?)	Motor working but no pressure: Manual override valve OPEN	Close valve
	Lowering valve solenoid electrical circuit OPEN	Check and close circuit
	Lowering valve/solenoid broken (or blocked)	Replace (or remove and clean) lowering valve
	Hydraulic pressure switch fault	Adjust pressure switch (replace if cannot adjust)

	Control handset faulty	Replace handset
	Hydraulic Powerpack fault	Replace whole powerpack unit
	ECU issue	Reprogram ECU (replace as last resort)

Platform does not STOW (fully up and vertical)	Hydraulic pressure switch fault	Adjust pressure switch (replace if cannot adjust)
	Lowering valve/solenoid broken (or blocked)	Replace (or remove and clean) lowering valve
	ECU issue (correct angle not programmed)	Reprogram ECU (replace as last resort)
	Control handset faulty	Replace handset
	Hydraulic Powerpack fault	Replace whole powerpack unit
	Mechanical parts locked/jammed	Trace broken/stuck linkage. Replace, clean, lubricate

Auxiliary handpump not working	Air in system	To bleed air out: open manual override tap, pump 10 times, close and retry
	Handpump broken (locked or pumping loose)	Replace handpump
	Manual override valve OPEN	Close valve
Inner barrier not lifting UP	Arm linkage not moving correctly	Check, clean adjust, lubricate
	Gas-strut lost pressure	Swap out for new
	Arm gas-spring lost power	Replace if required

Inner barrier not lowering	locking hooks stuck	Adjust hook and/or pins to suit. If worn replace parts
	Arm linkage not triggering hooks	Adjust to suit or replace striker/hook components

Inner barrier not locking	locking hooks not engaging	Springs not effective, adjust or replace
	locking hooks not engaging	Adjust hook and/or pins to suit. If worn replace parts
	Arm linkage not moving correctly	Check, clean adjust, lubricate

Handrail not deploying (or sticking)	Adjustment bolts incorrect position	Adjust to suit
	Handrail gas-strut worn / lost pressure	Swap out for new
	Internal cam worn	Adjust or replace cam / internal linkage parts

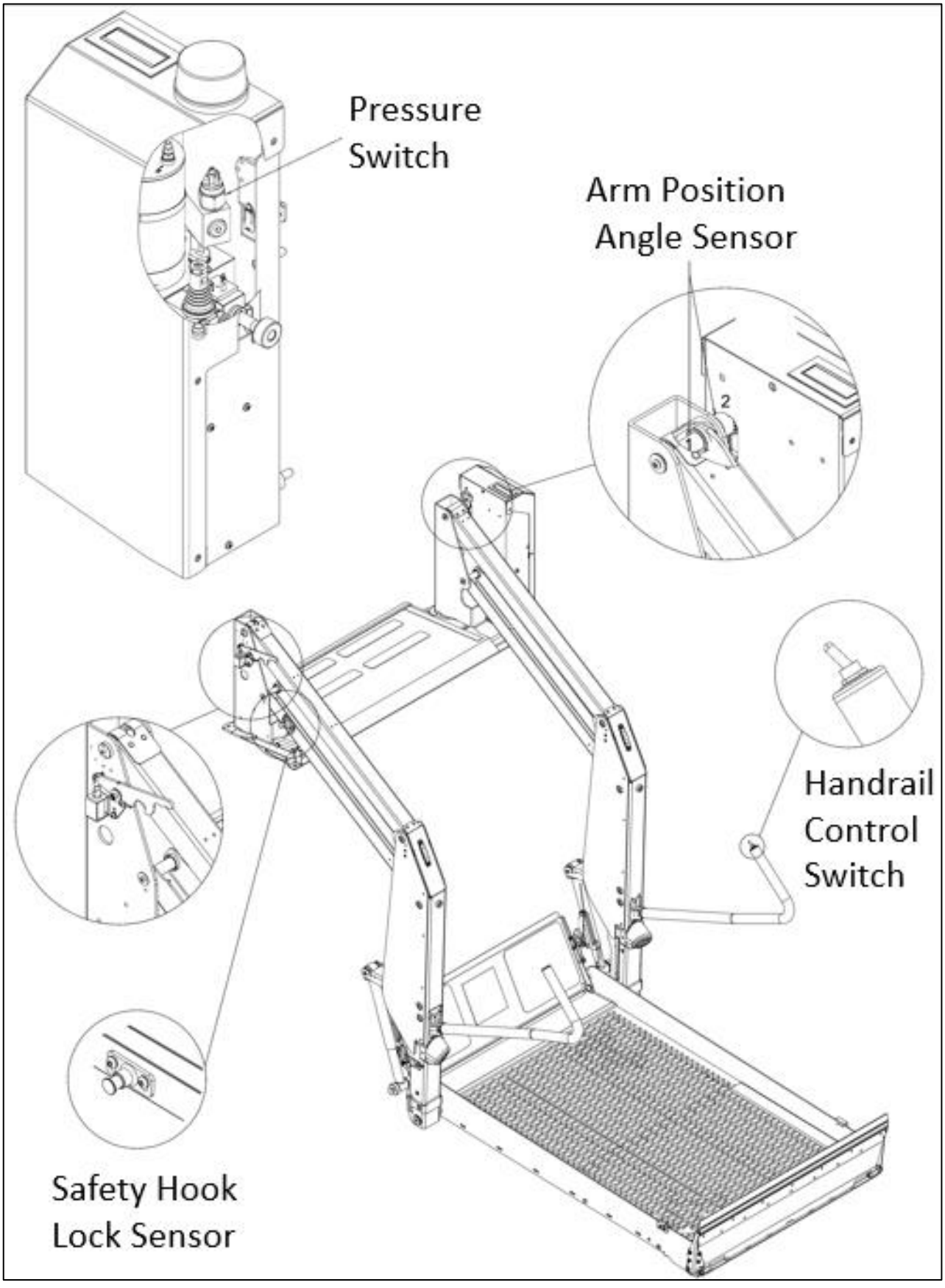
Manual Control Valve not working	Turning too far OPEN or CLOSED	Adjust OPEN or CLOSED, replace valve if required

Lift Pump issues: Noisy, Slow, cannot produce pressure	Lower power available (less than 10.5 volts)	Charge battery, start engine, swap battery
	Low oil level in pump	Lower lift to ground, fill tank to within 20mm from top

	Contaminated oil (swarf, grit, dirt, old oil, etc)	Check oil, flush system and add new oil
	Air in system	Operate system approx. 20 times to bleed
	Worn DC motor	Replace motor or pump
	Worn hydraulic pump	Replace powerpack
	ECU issue	Reprogram ECU (replace as last resort)

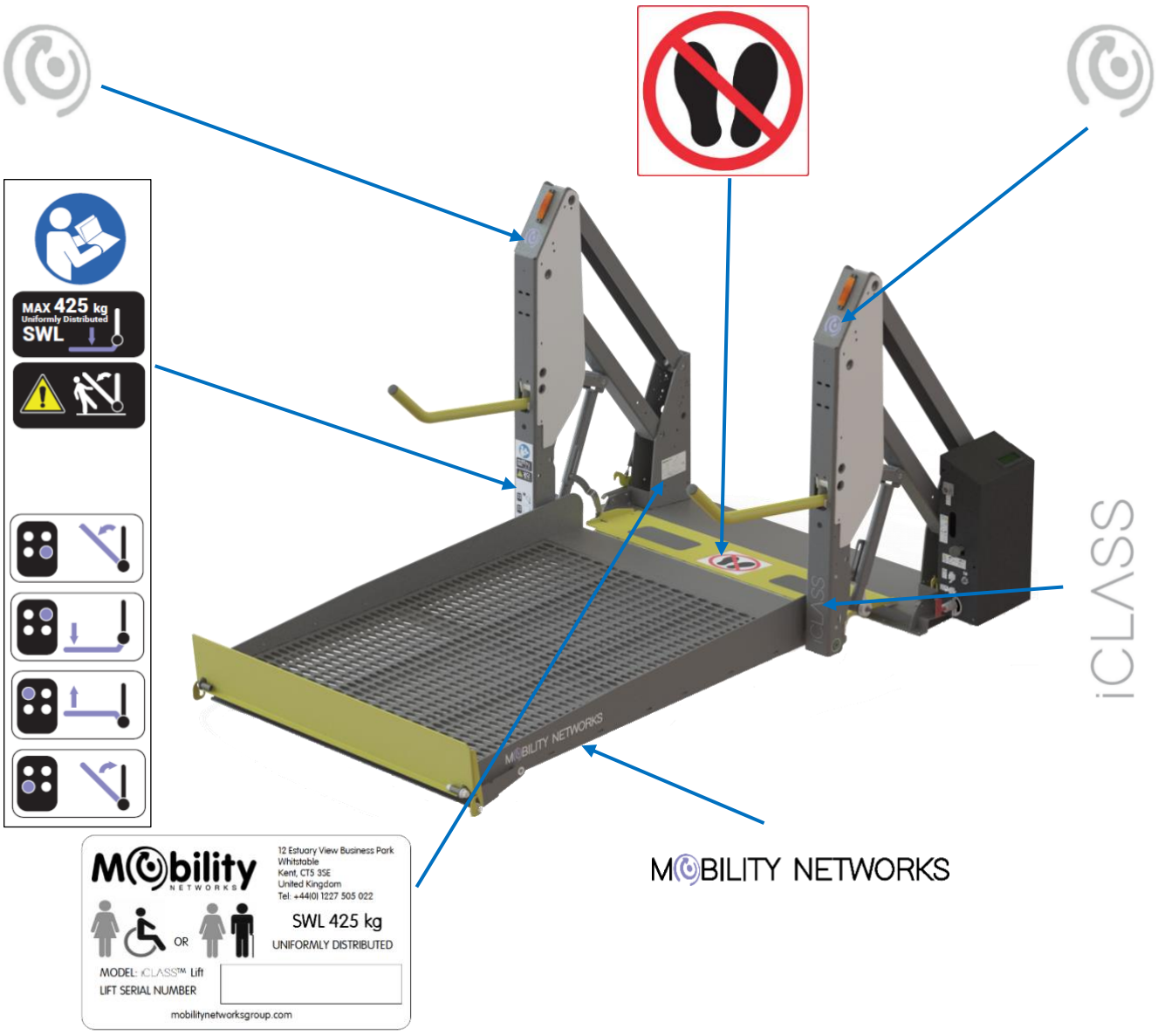
Platform not horizontal	Not adjusted correctly from installation	Adjust angle up or down (outer barrier should land first)
	Platform / parts damaged	assess and replace where required

Auxiliary Lights not on	Faulty wires	Check wires repair or replace
	Faulty Lights	Check repair or replace
	ECU board blown	Replace ECU



17 iCLASS Labelling

17.1 Lift Labelling



17.2 Power Pack Labels - Outside