



A MOBILITY
NETWORKS COMPANY

Access Operation & Maintenance Manual *(including Mega Lift)*

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Information

Section 1



IMPORTANT

The new lift owner/operator should refer to this manual for operating instructions, future warranty and servicing work. This manual should be kept safely for the entire working life of the lift.

When quoting the lift serial number to the manufacturers, this number can be found in the top right hand corner of the S.W.L. sticker located on the roll-off ramp. The number is also stamped into the aluminium platform main section (near side).

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WARRANTY TERMS & CONDITIONS

Warranty Cover & Period

The P.L.S. warranty covers parts and labour, and is effective for 36 months from date of commission by P.L.S.

Procedure

- 1 An operator requiring attention to a unit would contact P.L.S. quoting serial number.
- 2 P.L.S. will instruct either the factory Service Department, or contact an appointed Service Agent issuing an official order number to effect the repair.
- 3 All parts will be issued free of charge subject to the return of the faulty components.

N.B. Any work carried out or charges generated without authorisation will not be reimbursed.

Conditions

- 1 Warranty does not extend to units, which have not been regularly serviced by duly appointed personnel. Including a 6 monthly LOLER certification.
- 2 All warranty work must be carried out by factory appointed personnel using approved parts and materials.
- 3 The units must be made available for repair during normal working hours (08.00-17.00 Hours Monday to Friday excluding public holidays).
- 4 No delivery costs or travel time will be reimbursed except by prior agreement and as specified on the official order.
- 5 Warranty does not include the cost of:
 - a Consumable parts i.e. fuses, bulbs and electrical connections.
 - b Driver misuse.
 - c Accident damage.
 - d Items, which are subject to the level of, wear which would normally involve replacement during normal service and maintenance operations.
- 6 No claim will be accepted for:
 - a Replacement vehicle hire.
 - b Loss of earnings.
- 7 The warranty agreement does not supersede the suppliers liability for all components defined in the Sales of Goods Act 1979 and the supply of Goods Act 1982.
- 8 Months 24 to 36 of the warranty require the vehicle to be returned to PLS for Free of charge warranty work. Otherwise labour and travel time will be charged at £40 per hour.

Access Lift Technical Data

The 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 badge capacity (300Kgs unless upgraded by PLS).

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 walking sticks and frames.

Capacity:

Standard Lift = 300Kgs (possible upgrade to 350Kgs available by special request)

Specifications:

Lift type	:Underfloor cassette
Voltage	:12Volts standard (24Volts available)
Power system	:Electro-hydraulic pump.
Hydraulic fluid type	:PLS Blue (specific formulation) or ATF
Control	:Pendant via wanderlead
Bridge-plate width	:680mm or 730mm or 780mm (usable)
Platform width	:725mm or 775mm or 825mm
Platform length	:1240mm or 1410mm to 1780mm
Weight of lift (inc pump module)	:137Kgs to 234Kgs
Working pressure	:170 Bar MAX
Max amp draw at pump	:75 amps
Safety systems	:Dead man button control
	:Platform roll-off barrier (ramp)
	:Bridging plate
	:Main power isolation switch
	:& or Driver isolation switch
	:Hose valves fitted inside cylinder body
	:Hydraulic hoses rated x 4
	:Stow position warning light (optional)
	:Flashing LED side light pods x 2 (optional)

Important Information

LOLER '98

What is LOLER?

The Lift Operations and Lifting Equipment Regulations 1998 which came into force on 5th December 1998.

Basically LOLER replaced existing legal requirements relating to the use of Lifting equipment.

What does LOLER do?

The Regulations require that lifting equipment provided for use at work is:

- 1 Strong and stable enough for the particular use and correctly marked to indicate safe working loads.
- 2 Used safely in a planned and organised way by **Competent People**.
- 3 Examined, inspected and tested on a regular basis by **Competent People**.

How can PLS help?

Passenger Lift Services offer a Bi-Annual examination and weight testing programme carried out only by PLS Approved engineers.

Each certificate is individually numbered and security marked to ensure authenticity.

To begin your programme of

compliance with LOLER '98 call now on: 0121 552 5503

What equipment does LOLER cover?

All equipment used at work for lifting or lowering loads.

Who do the regulations affect?

Any person responsible for providing or having control over the provision of lifting equipment in the workplace - the *duty* holder.

What should the duty holder be aware of?

The Health and Safety Executive (HSE) have produced a publication - 'The Safe Use of Lifting Equipment' lifting operations and lifting regulations 1998 approved code of practice and guidance (APCPG).

How do I obtain a copy of this publication?

By mail order from:

HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 6FS

Tel: 01787 881165 Fax: 01787 313995

What do the regulations require me to do?

The regulations impose a number of requirements on the duty holder including ensuring that:

- The lift operations are carried out and supervised in a safe manner by **Competent People**.

What do the regulations require me to do?

The regulations impose a number of requirements on the duty holder including ensuring that:

- The lift operations are carried out and supervised in a safe manner by **Competent People**.
- Where equipment is used for lifting people it is suitably marked and safe for the purpose.
- Before the lifting equipment is used for the first time it is thoroughly examined by a **Competent Person** and thereafter at regular intervals.

Who Qualifies as a Competent Person?

A person who has appropriate practical and theoretical knowledge and experience for the lifting equipment to be examined to enable them too detect actual or potential defects or weaknesses and to asses their importance in relation to the equipment and it's installation. i.e. A person holding a service training certificate by the manufacturer.

It is essential that the competent person is sufficiently independent and impartial to allow objective decisions to be made.

Does this mean the competent person must be employed by an outside company?

No **BUT** if in-house examiners are used you must ensure that their total impartiality to carry out the examination(s) without 'fear or favour'.

Are the regular intervals specified?

YES - but you have a choice - you can follow the specified period intervals of at least six months for equipment used for lifting people **or**

You can have a examination scheme drawn up and have the equipment examined in accordance with this scheme.

Are there other criteria requiring a thorough examination?

- 1 After installation and before putting into service (Installation and Weight Test Certificate)
- 2 If re installed on a different vehicle.
- 3 Following exceptional circumstances which may jeopardise the safety of the lift.
- 4 Following an accident or dangerous occurrence.
- 5 After significant changes in conditions of use.
- 6 After long periods out of use.

How do the regulations relate to other HSE legislation?

The requirements of the regulations need to be considered alongside other Health and Safety Law in particular the Management of Health and Safety at Work regulations which contain important duties regarding the preparation of a risk assessment.

How are the regulations enforced?

Health and Safety Officers enforce the regulations.

The Duty Holder must be able to produce a valid examination certificate when requested by a Health and Safety Officer.



SAFETY INSTRUCTIONS

IMPORTANT- FAMILIARISE YOURSELF WITH CONTROLS AND SAFETY PROCEDURES *BEFORE* USING LIFT.

TAIL LIFT SAFETY

Only an authorised operator must control the lift.

Secure the vehicle doors in the open position well clear of the platform.

Keep within the maximum safe working load.

Keep people away from the operating area (inside and outside the vehicle).

Ensure that the platform is level.

Switch off the isolator (if fitted) before leaving the lift unattended.

VEHICLE SAFETY

Do not operate the lift on a steep hill, camber or uneven ground.

Ensure that the vehicle handbrake is firmly applied.

Ensure that the platform is properly stowed after loading.

Do not move the vehicle with the platform lowered near the ground.

Do not move the vehicle with a person / load on the platform.



PEDESTRIAN PASSENGERS ENSURE THAT:-

- Passengers keep clear of the platform edges.
- They hold onto the hand rails.
- They do not climb onto the platform.
- They do not leave the platform before it reaches the floor or ground.



WHEELCHAIR PASSENGERS ENSURE THAT:-

- Operator is behind wheelchair.
- They are stable.
- They do not overhang the platform.
- Their handbrakes are applied.
- Electric wheelchairs – engage neutral.

INSIDE THE VEHICLE ENSURE THAT:-

- Wheelchairs are clamped to the floor.
- Seatbelts are used.

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Safety Instructions for 'Scooters' and Large Powered Wheelchairs

Before operating tail lift:

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

Tail lift safety:

- Only an authorised (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 of vehicle).
- Ensure that the platform is always level (horizontal, not more than 5°).
- NEVER leave the lift unattended at ground level if passengers are on board.
- When lift is not in use the controls should be deactivated.
- Ensure that the lift is correctly stowed after loading.

Operators ensure that:

- Lift will lower to firm, level ground.
- Scooter or powered wheelchair is not larger than lift platform in any direction.
- Tail lift is in a FULLY operational condition. Report any defects.
- Lift bridging-plate lands flat onto vehicle floor.
- Roll-off ramp is set vertically (approx. 80°), and fully operational.
- Accompany the passenger on the lift if possible, but do not overload the lift.
- You have a clear view of the lift platform before the scooter moves onto it.
- NEVER leave passengers unattended at any time.
- The passenger should not be required to operate ANY controls.

Loading & Unloading procedure:

- Explain to passenger the sequence of movements that will occur.
- Where possible passenger should dismount scooter and board vehicle separately.
- Ensure that the lift platform and area around the lift are free from obstruction.
- Ensure that the lift platform is in the correct position before moving onto it.
- Scooter should be pushed onto the lift platform, NOT DRIVEN.
- Ensure that persons or equipment do not overhang the platform.
- Scooter brakes are applied BEFORE lift begins motion (or wheels blocked).
- All power to scooter is turned OFF.
- Operate lift platform to vehicle floor.
- Scooter is pushed off the lift platform, NOT DRIVEN.
- The scooter should be clamped to the vehicle floor using the correct equipment.
- The passenger utilises the static vehicle seats and seatbelts.

Please note: The transportation of scooters and large powered wheelchairs may require a 'NON STANDARD' tail lift size or specification. Where possible PLS can provide longer, wider platforms, higher roll-off ramps

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"ACCESS" SEMI-AUTOMATIC OPERATING PROCEDURE

TO OPERATE;

1. Pull the lift isolation switch (if fitted in the drivers area) to the 'ON' position. If not fitted in the drivers area power will be activated when doors adjacent to the lift are opened.
2. Unclip safety chain located on r/hand side (if fitted).
3. Briefly press the 'DOWN' button.
4. Holding the retaining catch up (located on the left hand side of the lift), pull the lift out from beneath the vehicle - release the retaining catch.
5. Ensuring that the lift has travelled fully out from beneath the vehicle press the 'UP' button until the platform is at a comfortable working height.
6. Raise the hand rail(s) - check that they have located fully down into their sockets.
7. Pull the rear platform extension out until the platform surface 'drops' flush.

TO STOW;

1. Press the 'UP' button until the lift is at a comfortable working height. Do NOT attempt to stow the lift from a low position.
2. Briefly lift the rear platform surface and push the rear platform extension fully home.
3. Lift the hand rail(s) out of its socket and fold across the platform surface.
4. Press the 'DOWN' button until the lift stops and then push the lift underneath the vehicle. CHECK that the lift is stowed correctly by attempting to pull the lift out again without releasing the retaining catch.
5. RE-ATTACH SAFETY CHAIN ONTO HOLE PROVIDED IN ROLL-OFF RAMP.
6. Push the lift isolation switch to the 'OFF' position - if fitted. Otherwise closing doors will isolate lift.

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"ACCESS" PASSENGER LIFT

POWERMATIC

OPERATING PROCEDURE

(EXTERNAL CABLE BOX LOCK)

TO OPERATE;

1. Open the vehicle door(s) where the lift is located.
2. Unclip safety chain located on r/hand side (if fitted).
3. Pull the external box lock handle (located above the lift), press "UP" button on the handset, release external box lock handle.
4. The lift will travel to the out position then automatically begin to rise. Stop the lift at a comfortable working height.
5. Raise the hand rails, making sure that they have located fully into their sockets.
6. Pull the platform extension out until the platform surface 'drops' flush.

TO STOW;

1. Press the 'UP' button until the lift is at a comfortable working height (This must be above the level of the lift cassette). DO NOT attempt to stow the lift from a low position.
2. Briefly lift the rear platform surface and push the platform extension fully home.
3. Lift the hand rails out of their sockets and fold across the platform surface.
4. Press the 'DOWN' button. The lift will reach the stow position then automatically divert the power to the "IN" function. With the lift away check that it is stowed correctly by attempting to pull the lift out again, without pulling the retaining catch.
5. **RE-ATTACH SAFETY CHAIN ONTO HOLE PROVIDED IN ROLL-OFF RAMP.**
6. Close the vehicle doors to isolate the lift power.

N.B. Should the power IN & OUT system fail, the lift can be pulled and pushed into the box by hand.

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AUTOMATIC MEGA COACH LIFT OPERATION INSTRUCTIONS

These instructions MUST be read and understood before attempting to operate the lift and floor system.

TO CONTROL THE LIFT:

- a) Main isolation switch, by the driver.
- b) Four button controller:
 - i) Lift out / up
 - ii) Lift down / in.
 - iii) Bridge-plate / handrails deploy (unfold).
 - iv) Bridge-plate / handrails stow (fold).

TO DEPLOY THE LIFT:

1. Unlock safety catch (and/or un-attach safety chain).
2. Turn on main isolation switch (by driver).
3. Power lift out of cassette by pressing the '**out / up**' button. After approx 8 seconds lift is fully deployed and begins to rise automatically.
4. Stop the travel of the lift and press the '**bridge-plate / handrail deploy**' button. The bridge-plate will power to the vertical position, followed by the handrails.
5. Now press the '**out / up**' button to take the platform up to the floor to take a passenger down, or press the '**down / in**' button to pick up a passenger waiting to be loaded.

TO STOW THE LIFT:

1. When all loading / unloading are completed press the '**bridge-plate / handrail stow**' button and the bridge-plate and handrails will fold up to the stowed positions. **This should be done with the lift above stow height.**
2. By pressing the '**down / in**' button the lift will power down to its stowage height then automatically divert power to the 'in' function to stow the lift in the back of its cassette box.
3. Turn off the main isolation switch.
4. Re-lock safety catch (and/or attached safety chain).

If in doubt please phone the company for further instructions. Tel: 0121 552 0660

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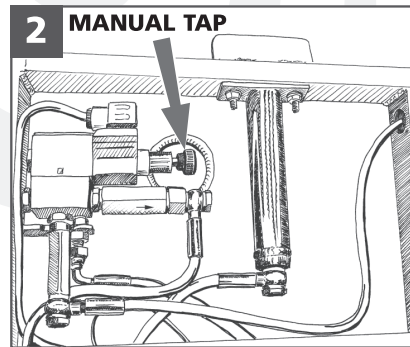
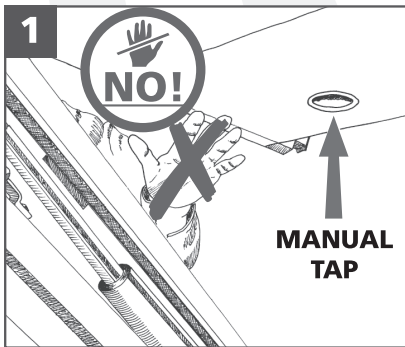
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Bridge Plate Manual Override

- 1) **To lower the bridging plate:** Access the manual override tap underneath the lifting platform from the MIDDLE of the lift. Do NOT attempt to turn the tap with your hand (arm) in between the lifting platform and the lift arms (see diagram 1). Screw the tap IN (clockwise) to release pressure from the cylinder and the bridging plate will drop.
- 2) **To raise the bridging plate:** The release tap should be opened FULLY. Diagram 2 shows the release tap inside of the platform. Access can also be gained by removing the platform aluminium.



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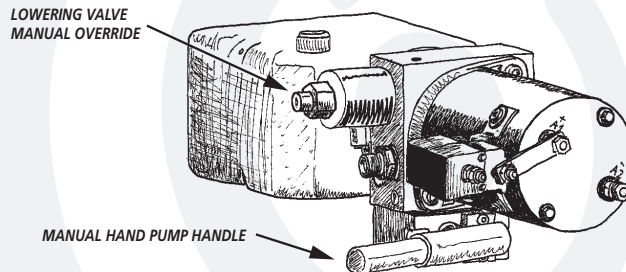
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"ACCESS" PASSENGER LIFT AUXILIARY HAND PUMP OPERATION PROCEDURE (SAVERY POWERPACK)

A hand pump allows the lift to be used in the event of any electrical fault. The unit which is integral with the powerpack comprises a single acting piston pump with removable operating lever. This is found either under the rear of the vehicle on the nearside or internally on the nearside rear. Remove the black plastic cover to gain access to the pump. To use the pump proceed as follows:

PREPARATION

1. Take the operating lever from its stowage.



TO LOWER THE PLATFORM

2. Push in and turn anti-clockwise the RED lowering valve.

TO RAISE THE PLATFORM

3. Close the RED lowering valve by turning clockwise.
4. Connect the operating lever to the hand pump.
5. Operate the lever until platform is at required height.

STOWAGE PROCEDURE

6. Using the hand pump, stow the platform in the normal way.
When power is restored to the lift, check that the 'RED lowering valve' is correctly closed (clockwise).
7. Stow the operating lever.

N.B. Should the power IN & OUT system fail, the lift can be pulled and pushed into the box by hand.

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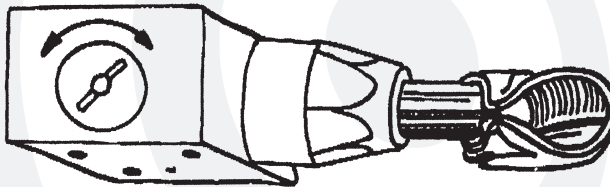
"ACCESS" PASSENGER LIFT AUXILIARY HAND PUMP OPERATION PROCEDURE (MONARCH POWERPACK)

A hand pump allows the lift to be used in the event of any electrical fault. The unit which is integral with the power pack comprises a single acting piston pump with removable operating lever. This is found either under the rear of the vehicle on the nearside or internally on the nearside. Remove the black plastic cover to gain access to the pump. To use the pump proceed as follows:

PREPARATION

1. Take the operating lever from its stowage.

Note: The notched end is also used as a 'spanner' for operating the relief valve.



TO LOWER THE PLATFORM

2. Open the relief valve (anti-clockwise).

TO RAISE THE PLATFORM

3. Close the relief valve (clockwise).
4. Connect operating lever to hand pump.
5. Operate lever until platform is at required height.

STOWAGE PROCEDURE

6. Using the hand pump, stow the platform in the normal way.
When power is restored to the lift, check that the relief valve is firmly closed (clockwise).
7. Stow the operating lever.

N.B. Should the power IN & OUT system fail, the lift can be pulled and pushed into the box by hand.

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Daily Check Sheet

Lift Serial Number: _____	Date: _____
Person carrying out checks: _____	Name: _____
Sig: _____	

To Check	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Comments
Fluid level								
Fluid leaks								
NO obvious signs of damage								
Operation instructions visible								
Hand pump handle present								
Handset control working								
Platform is clean and dry								
Box lock working correctly								
Carriage centre lock working								
Handrails clean and working								
Handrail side guards present								
Bridge plate alloy landing on vehicle floor end correctly								
Roll-off ramp landing to ground								
Warning light working (if fitted)								

Notes:

N.B. The above is to be used in conjunction with the operating company guidelines and Risk Assessments.

Access Service Data Sheet

Date lift was first issued:/...../.....

Lift requires monthly checks and lubrication by driver/operator. Refer to Maintenance manual for instructions. Every six months service and twelve monthly weight test should be carried out by an appointed service engineer.

Month 1 Date:/...../..... Driver/Operator Name Signature	Month 2 Date:/...../..... Driver/Operator Name Signature	Month 3 Date:/...../..... Driver/Operator Name Signature
Month 4 Date:/...../..... Driver/Operator Name Signature	Month 5 Date:/...../..... Driver/Operator Name Signature	Month 6 Date:/...../..... Driver/Operator Name Signature
Month 7 Date:/...../..... Driver/Operator Name Signature	Month 8 Date:/...../..... Driver/Operator Name Signature	Month 9 Date:/...../..... Driver/Operator Name Signature
Month 10 Date:/...../..... Driver/Operator Name Signature	Month 11 Date:/...../..... Driver/Operator Name Signature	Month 12 Date:/...../..... Driver/Operator Name Signature

This page must be produced when claiming warranty repairs.

Monthly Safety Checks for Operators

Regular lift maintenance is recommended at MONTHLY intervals 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, replace parts as necessary.
2. Check the operation and stowing of the lift, if the platform base is touching the bottom of the box adjust stow height (parts shown on page 2.13, # 26) by raising the N/S and O/S stowing bolts on the rocker.
3. Check the box lock operation (page 2.11) by attempting to pull the lift out of the box with the lock engaged. If this can be achieved, the hook (7) will need to be LOWERED in relation to the handle (12) and the lock nut (180) firmly re-tightened.
4. Check the carriage lock (parts shown on page 2.07, # 46) operation by attempting to push the lift back into the box once the platform has been fully deployed. If this can be achieved the carriage lock mechanism will require adjustment.
5. Check the rear roll-off-ramp operation. Check ramp 'dummy pin' (part shown on page 2.15 # 72) which holds ramp in vertical position whilst lift is stowed. Lubricate roll-off pivots with silicone spray.
6. Check bridging plate operation (parts shown on pages 2.15 – 2.18) see page 1.20 for full adjustment instructions.
7. Check platform extension operation and security of alloy sheet. N.B. DO NOT overtighten M6 bolts which hold extension alloy! Check platform end stops (part shown on page 2.15, # 177) are tight and vertically aligned.
8. Check hand rail operation and security. If components are corroded they should be replaced due to potential hazard to users! Check location pivot pins, via the M8 S/S grub screws, these should be thread locked into position.
9. When cleaning the vehicle wash the working platform of the lift.
10. Check 'pull out' handle is fully secure.
11. Check Up/Down pump for fluid leaks and loose/corroded electrics. Top up reservoir (with lift at ground position) with PLS Blue hydraulic oil, do NOT overfill. Coat any exposed electrics with dielectric grease (or similar) to protect.
12. Lubricate lift in accordance with 'Lubrication Diagram' page 1.21.

IF IN DOUBT CONTACT THE MANUFACTURER.

Maintenance 6 monthly, for appointed Service Engineers

As monthly safety checks plus:

1. Check arm pivot pins, bearings and retaining grub screws (page 2.13 – 2.14).
2. Check cylinder pivot pins and grub screws (page 2.13 – 2.14).
3. Check cylinders for oil leaks, ensure 'end gland' (page 3.05 # 4) is tight. Replace piston 'o' ring (seal) if leaking.
4. Remove bottom sheet, check all hoses and fittings for leaks, wear or perishing. When bottom sheet is replaced remember to position retaining bolts with the nuts on the OUTSIDE of stowage box.
5. Remove lift from box to check centre bearings and carriage mechanisms. Lift is removed by unbolting 'carriage stops' (page 2.03 #2) and detaching 'umbilical' via the quick release coupling (QRC) (page 3.11) and electrical connector on the rear of the carriage.

N.B. When electrical connector is re-positioned the cable tie MUST be replaced (see drawings on page 5.12 for correct alignment).

6. Clean the interior of the stowage cassette and degrease the side tracks and centre rack (or guide) with solvent. DO NOT GREASE TRACKS OR CENTRE GUIDE, USE SILICONE SPRAY ONLY.
7. Check nylon strips on platform surface for wear, replace if necessary.
8. Check bridging plate operation is correct. The bridging plate must land flush with the vehicle floor and NOT form a trip hazard. For full adjustment of the mechanism see page 1.20.
9. Check that the lift mounting brackets and track bolts are tight / secure (page 5.08) 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.
10. Check manual hand pump operation (see page 1.11 - 1.12), lubricate all pivot points. REMEMBER TO RETURN MANUAL TAP TO THE CLOSED POSITION.
11. Check condition and security of arm side guards (page 2.13 #61), replace if damaged.

IF IN DOUBT CONTACT THE MANUFACTURER.

Access Trouble Shooting

Symptom	Possible Cause	Solution
Lift will not come out of box	Circuit breaker tripped.	Re-set circuit breaker (push button in) situated on vehicle .
	Handset button failure.	Check wiring inside handset or change module.
	Box lock not fully disengaged.	Make sure lock handle is fully up, and lock-pin is free of hook.
	Lift is powered up inside box.	Press 'DOWN' on handset to lower lift or open the down valve to release pressure.
	Motor not working or slipping	Check wiring connections, plugs and pins also check pinion location pin which may have slipped out and jammed into rack.
Lift fails to power UP	Circuit breaker tripped.	Re-set circuit breaker (push button in) situated on vehicle battery.
	Handset button failure.	Check wiring inside handset or change module.
	Hose burst.	Check for leaking oil, replace necessary components.
	Low oil level in reservoir draws air into system.	Top up reservoir with PLS BLUE hydraulic oil.
	Change over switch not set.	Re-set switch mounted on carriage which changes the OUT motion to UP.
	Carriage lock is jammed/stuck	Check pivot bolt, re-tighten and lubricate. Check carriage switch setting.
Lift fails to power DOWN	Crash valves locked out.	Power lift UP to re-set, or unscrew hydraulic fitting on lifting cylinder.
	Relief valve blocked.	Remove, clean and re-fit.
	Handset button failure.	Check wiring inside handset or change module.
Lift fails to power IN	Circuit breaker tripped.	Re-set circuit breaker (push button in) situated on vehicle battery.
	Handset button failure.	Check wiring inside handset or change module.
	Change over switch not set.	Re-set switch mounted on carriage lock which changes the DOWN motion to IN.
	Carriage lock not disengaging.	Make sure platform extension is fully home. Make sure platform is stowed correctly.
	Motor not working or slipping	Check wiring connections, plugs and pins also check pinion location pin which may have slipped out and jammed into rack.

Platform will not extend	Extension legs not free from stow pegs.	Power platform UP to release extension stops.
	Extension is locked in clip.	Extension is locked via a plastic clip mounted underneath the platform, pull out extension with more force.
Platform does not retract fully	Roll-off ramp hose catching.	Reposition hose/pipe.
	Extension legs are hitting rocker, or stow pegs.	Move lift platform to a higher position before attempting to stow.
	Extension lock not engaging correctly.	Push extension away with more force, or re-align lock position.
Roll-off ramp not reaching floor. NOTE: Keep finger on down button	Lack of lubrication.	Spray all pivots and moving parts with silicone.
	Ramp damaged or bent.	Replace damaged parts.
	Roll-off cylinder failure.	Bleed the hydraulics at the cylinder. If cylinder is leaking fluid, replace seals, or whole cylinder.
Bridging plate not dropping to vehicle floor.	Lift not raised to max up position.	Power lift UP fully to floor height.
	Mechanism requires adjusting.	Re-set and test bridge plate mechanism.
	Alloy is damaged.	Replace damaged components.
Bridging plate not returning to vertical position.	Mechanism requires adjusting.	Re-set and test bridge plate mechanism.

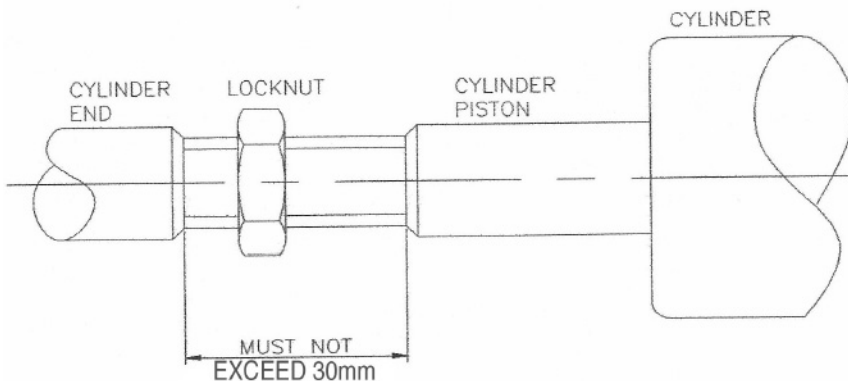
Floor height adjustment of platform

(also vertical stowing position on rear of vehicle)

Should it be necessary to adjust the lift to vehicle floor height, or if an imbalance of cylinder stroke requires adjustment, the following steps should be taken:

- 1 Remove the plastic top and bottom arm cover, retained with cap headed bolts.
- 2 Undo the 24mm lock nut at cylinder ends.
- 3 With the lift powered down to the floor (i.e. pressure off the hydraulic system) turn the pistons anti-clockwise to increase the lift height or clockwise to decrease the lift height.
- 4 Power the lift up to floor height and put the platform in it's vertical position. Final adjustment to correct a cylinder imbalance is carried out in the same manner.
- 5 Re-tighten lock nuts and refit plastic arm guards.

N.B. Under no circumstances should the thread be unscrewed more than 30mm as insufficient thread portion will be left in the cylinder end resulting in possible damage to cylinder, lift and personnel. Should it be necessary to extend beyond this point please refer to our technical department.



How to set (or re-set) the mechanical bridging plate system

- 1 Power lift to MAXIMUM UP position.
- 2 Fold bridge-plate (I) over (to vehicle) to its maximum position. With the bridge-plate in this position the plunger bar (B) should be 2 to 3mm away from the roller (or cam)(H) on the bridge-plate hinge (I).
- 3 Lock plunger bar (B) into position with mole grips.
- 4 Set TOGGLE (F) length, there must be a minimum of 20mm of thread showing.
- 5 Push ARM CRANK (K) (from the left to right) into the platform. There should be one thick washer (N) between the inside of the platform and the CAM (J). Push CAM fully across to the left, and rotate forward until it touches the bridge-plate rocker bar (G). Tighten one (of the four) grub screws (L) to retain position.
- 6 Drill through the M6 holes in the CAM and just into the CRANK (K) (approx. 2mm), with a 5mm drill bit. Do this to the three exposed M6 tapped holes in the CAM (J).
- 7 Utilizing BLUE thread-lock fit M6 x 6mm, 'dog-nosed' grub screws into the available threads.
- 8 Remove the original 'retaining' grub screw, thread-lock and re-tighten.
- 9 Lower the lift platform, then power up to floor position to 'settle' the mechanism.
- 10 Set the single collar (D) forwards to take up any 'over-stroke' in the plunger.

Fig 1

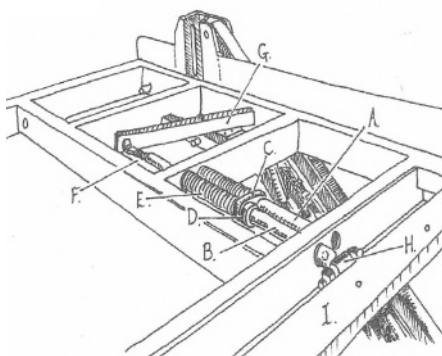
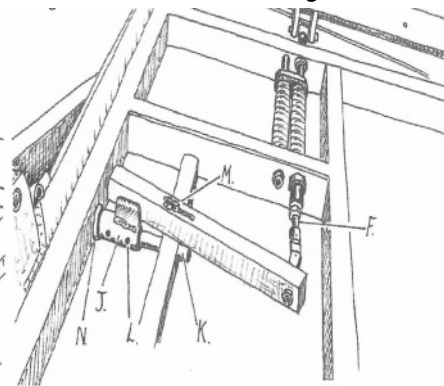
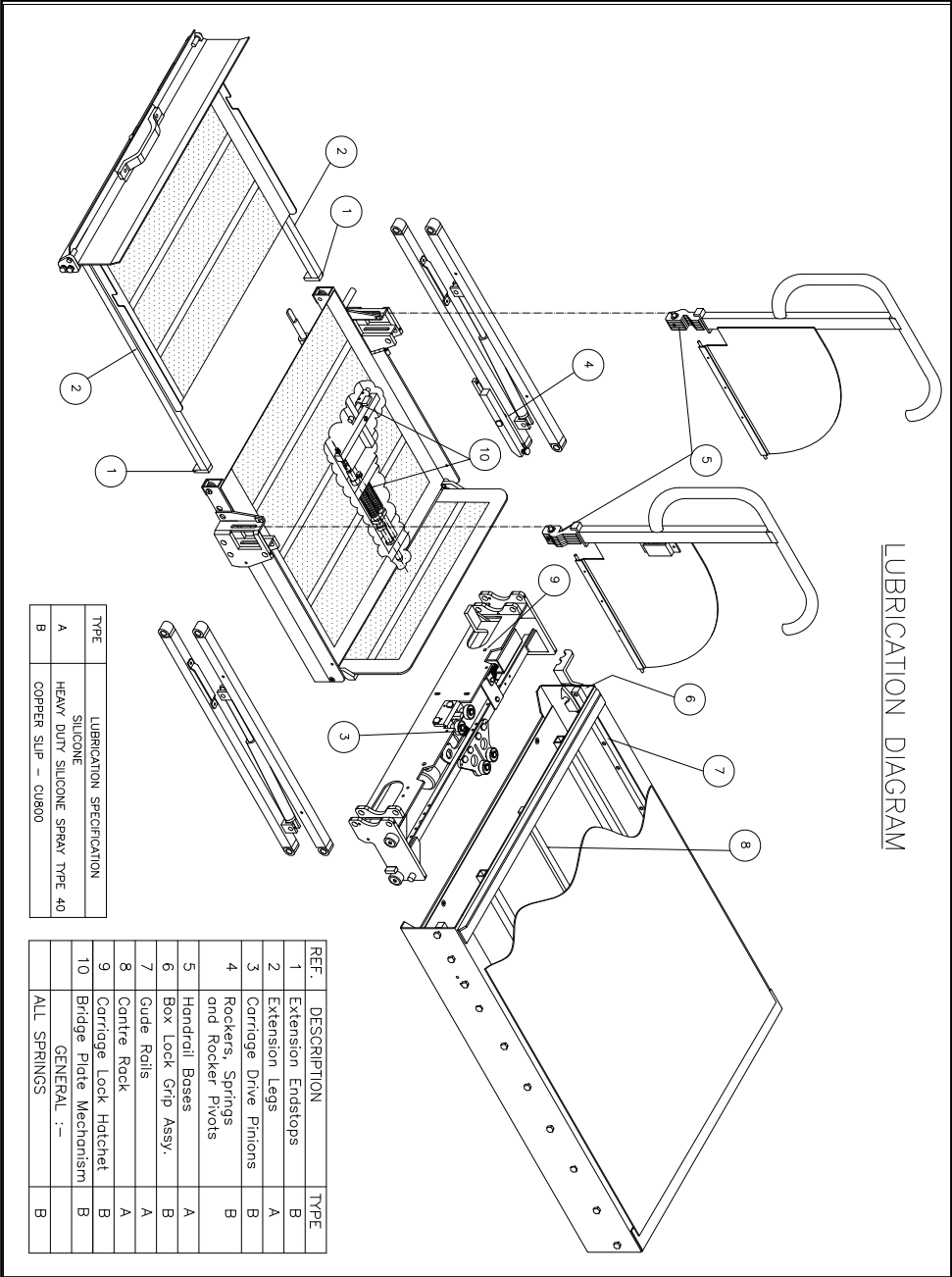


Fig 2

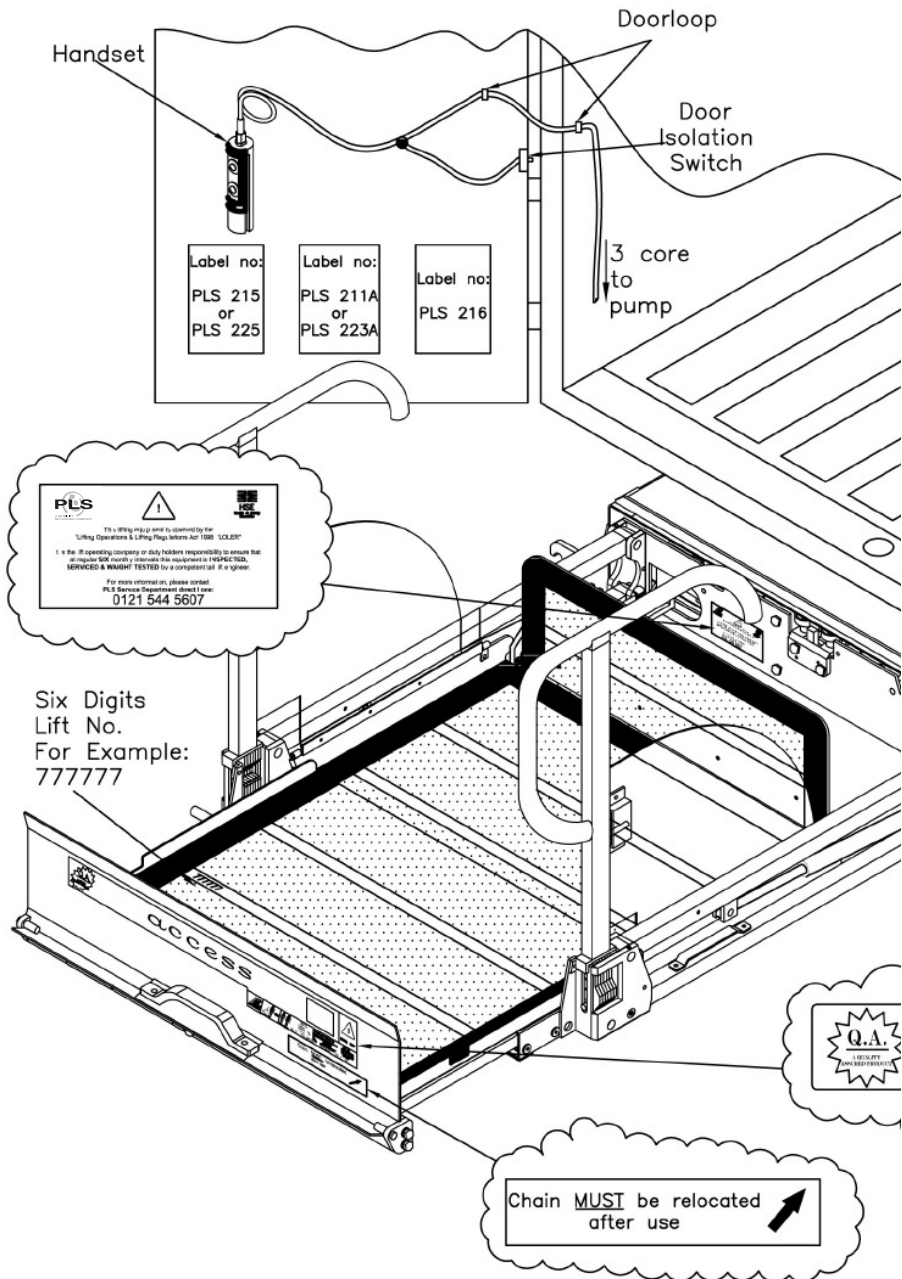


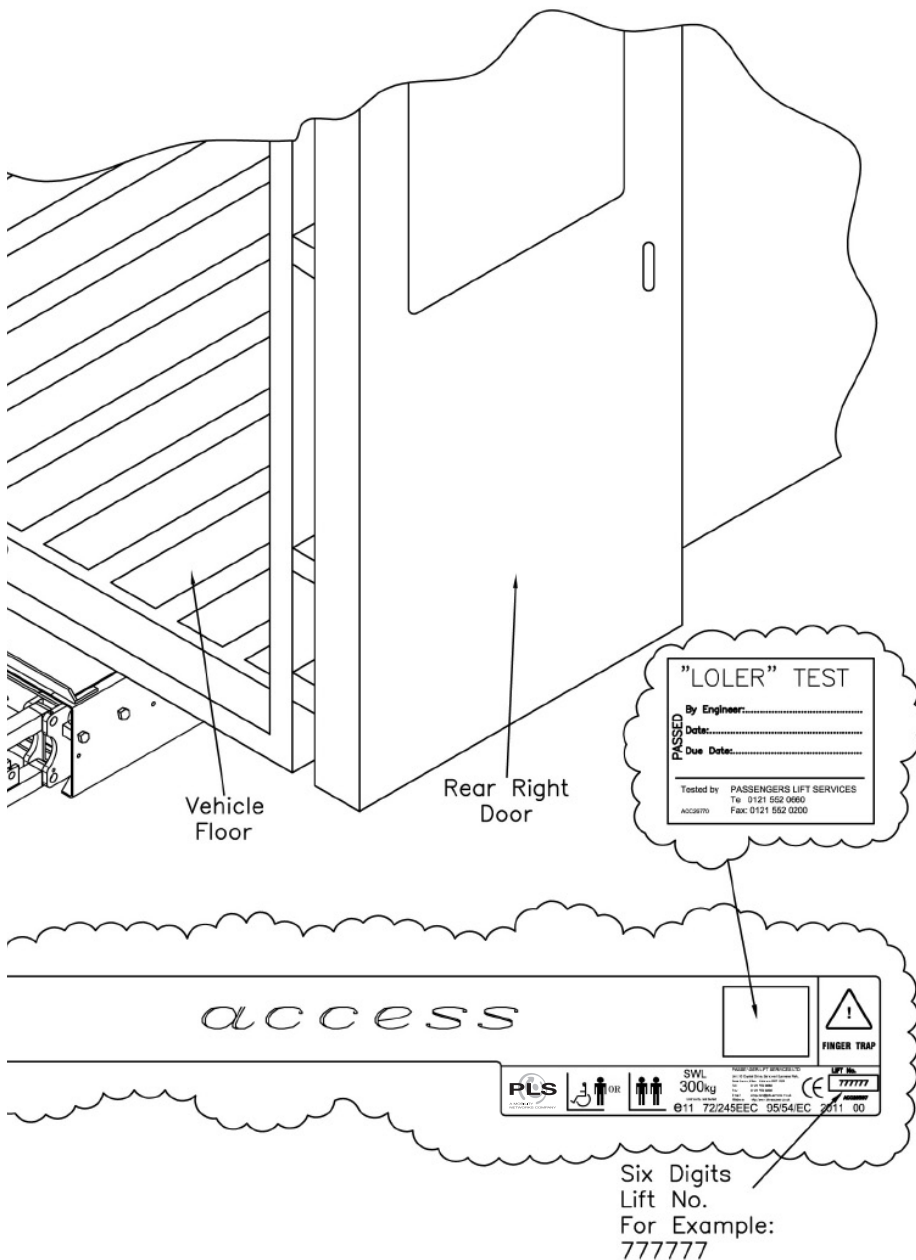
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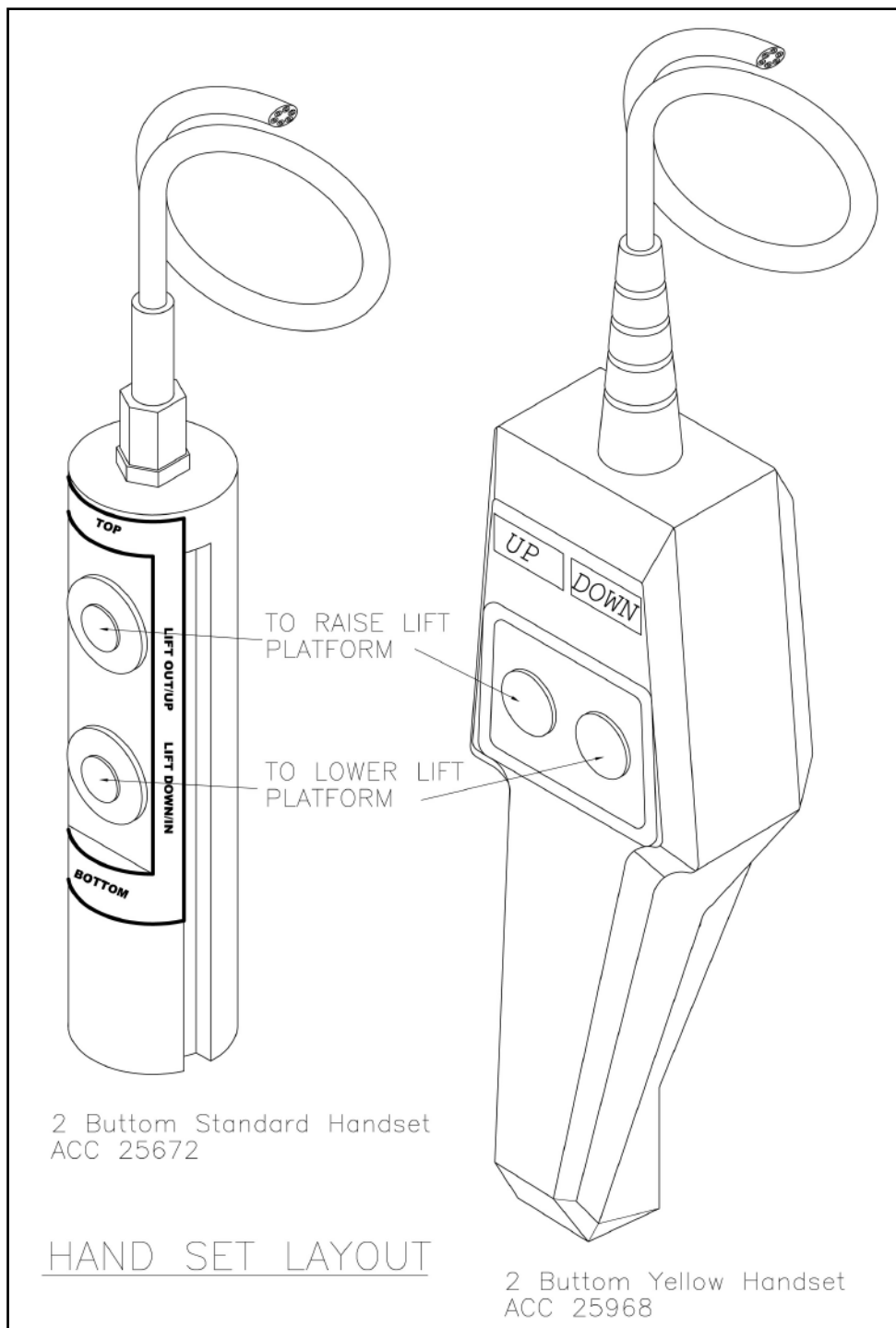
- | | |
|------------------------|---|
| A = Double plunger | H = Bridge-plate hinge roller (or cam) |
| B = Plunger bar | I = Bridge-plate hinge |
| C = Twin collar | J = Cam |
| D = Single collar | K = Arm crank |
| E = Plunger bar spring | L = M6 x 6mm grub screw, dog-nosed |
| F = Toggle | M = Rocker bar retaining pin, and split pin |
| G = Rocker bar | N = Cam spacer (thick washer) |



DECAL DIAGRAM









Ordering spare parts

Section 2

Ordering spare parts for Access Lift

ATTN: PLS Service/Parts Department

Customer:	Lift No:
Contact:	Order No:
Address:	Tel No:
	Date:
	Discount %:
Postcode:	Carriage £:

Quantity	Description	Part No.	Price each	Total

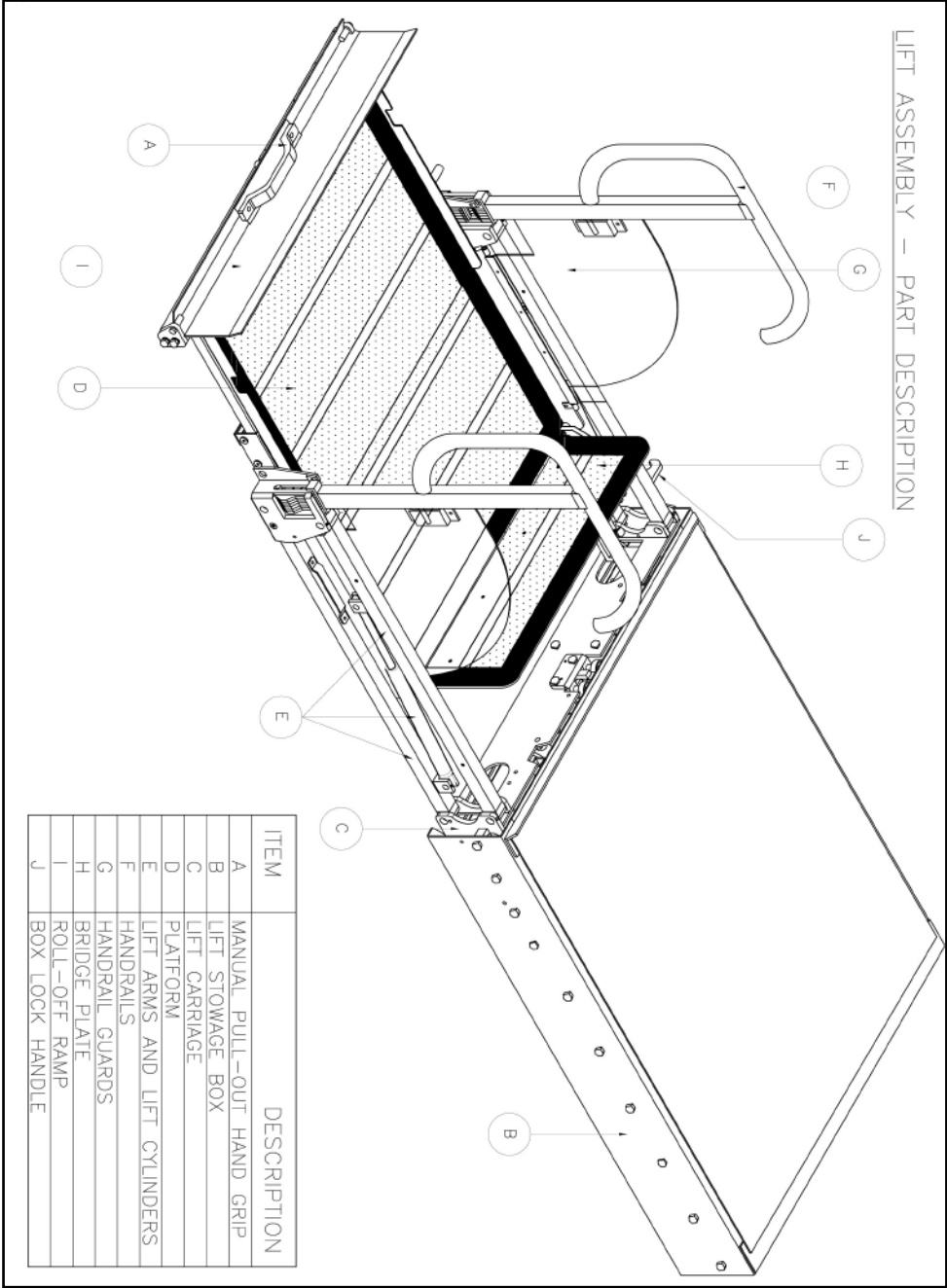
Sub Total:

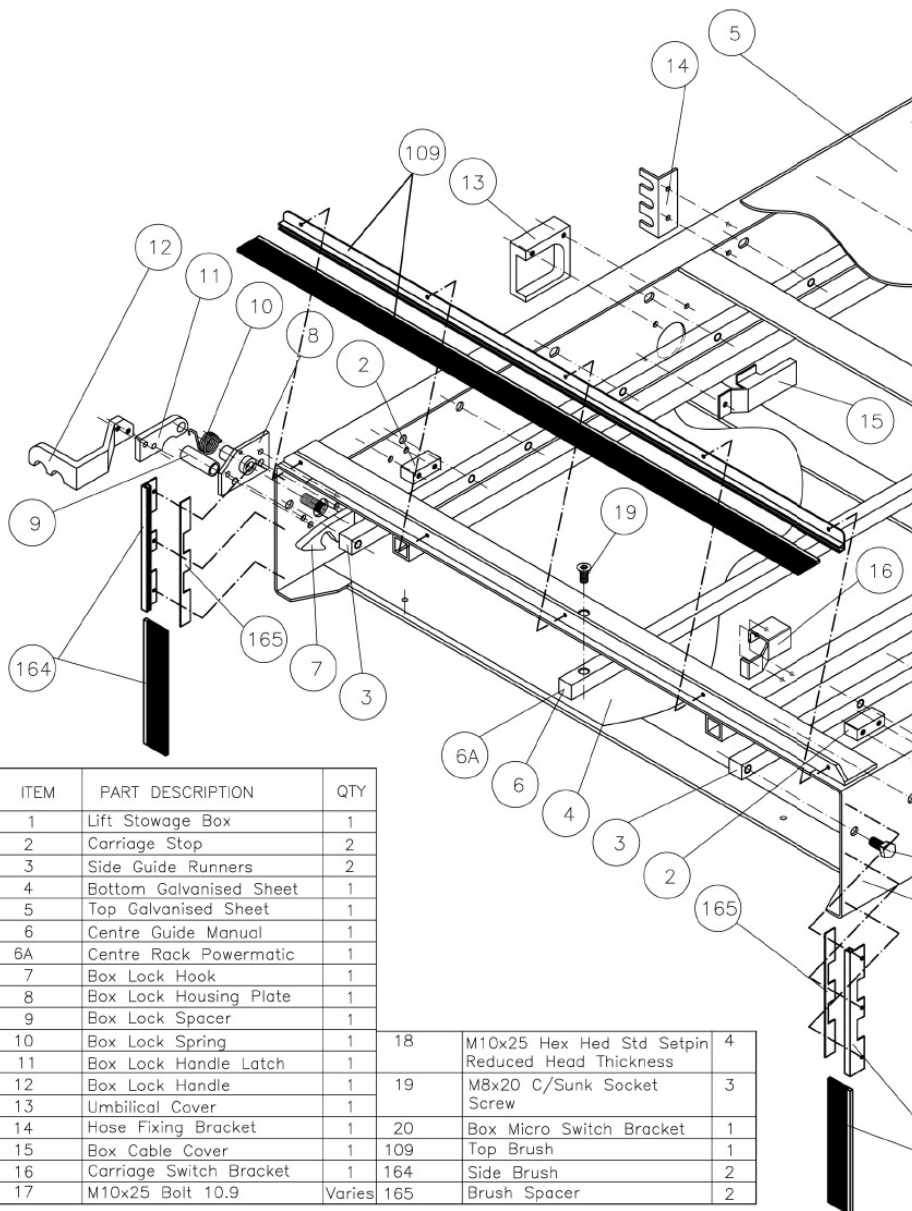
Sub Total (after discount)

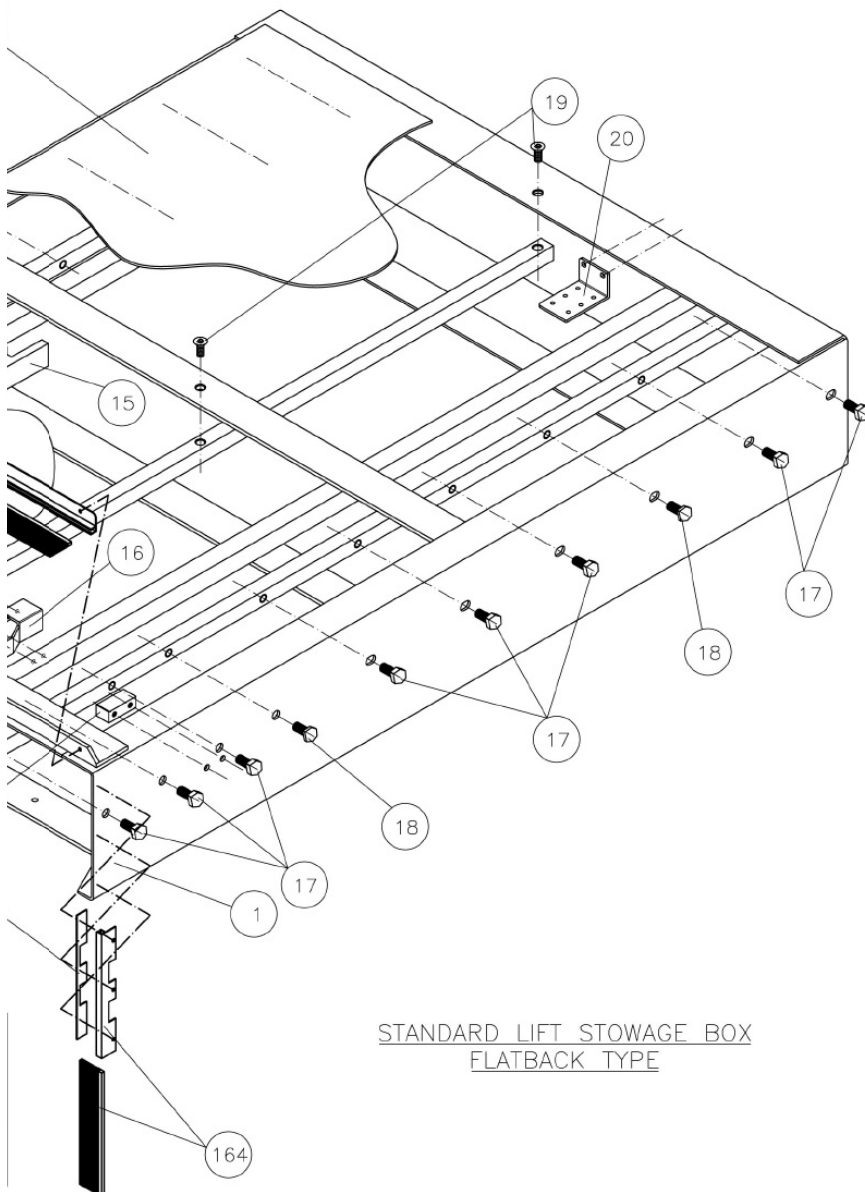
Carriage:

VAT:

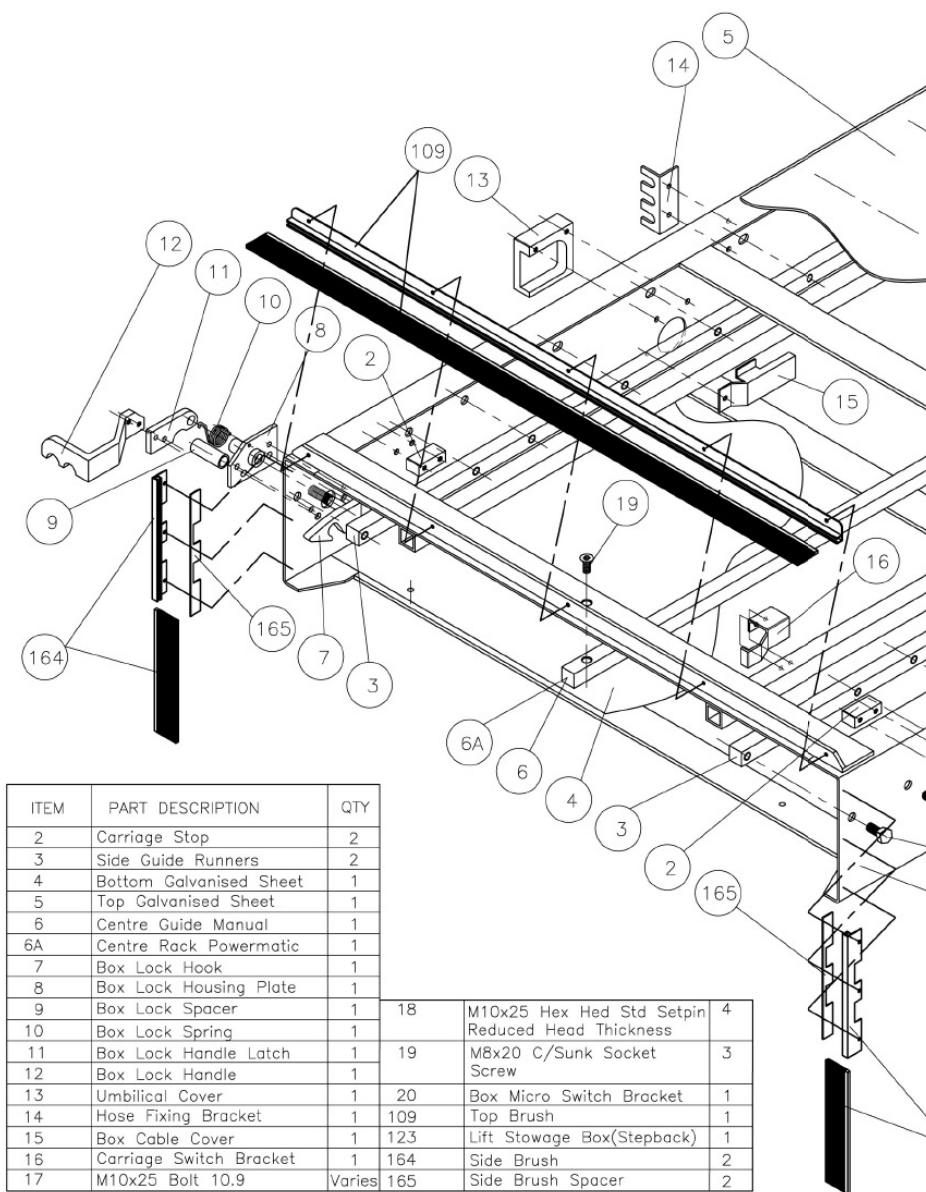
Total:

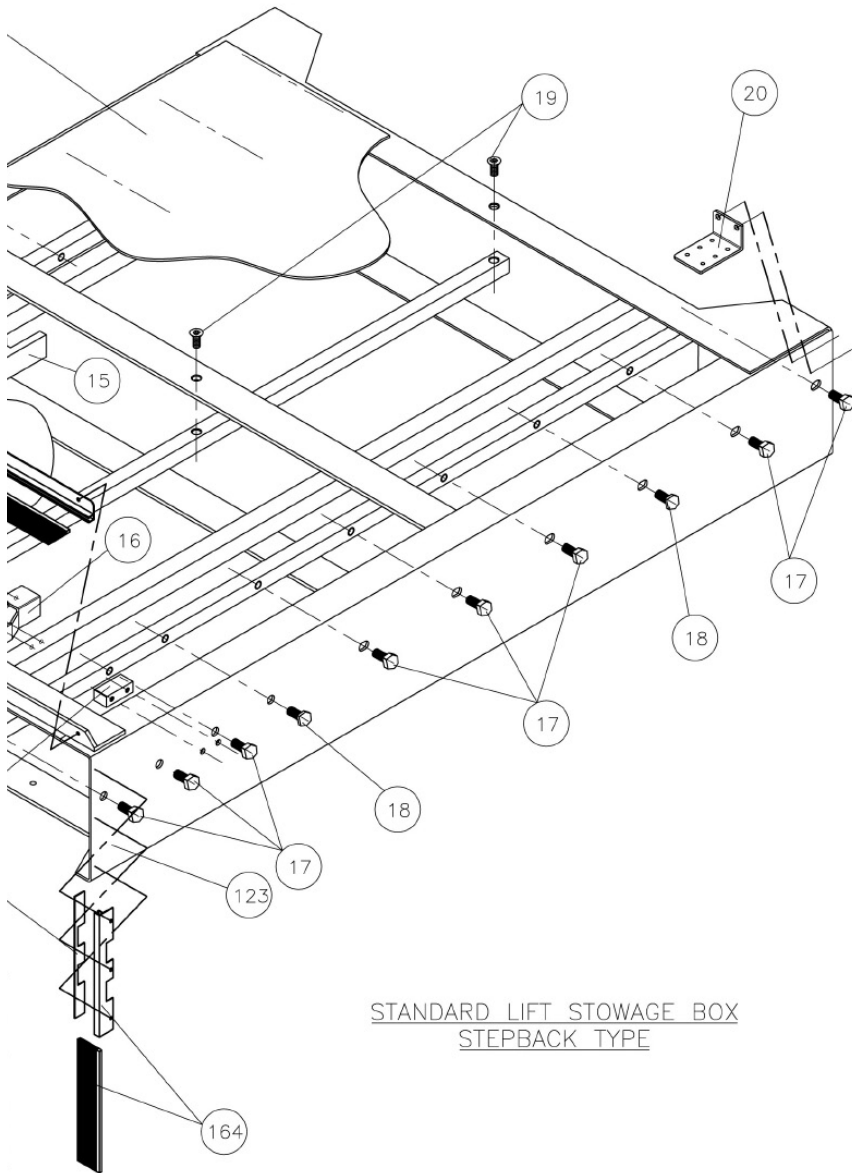




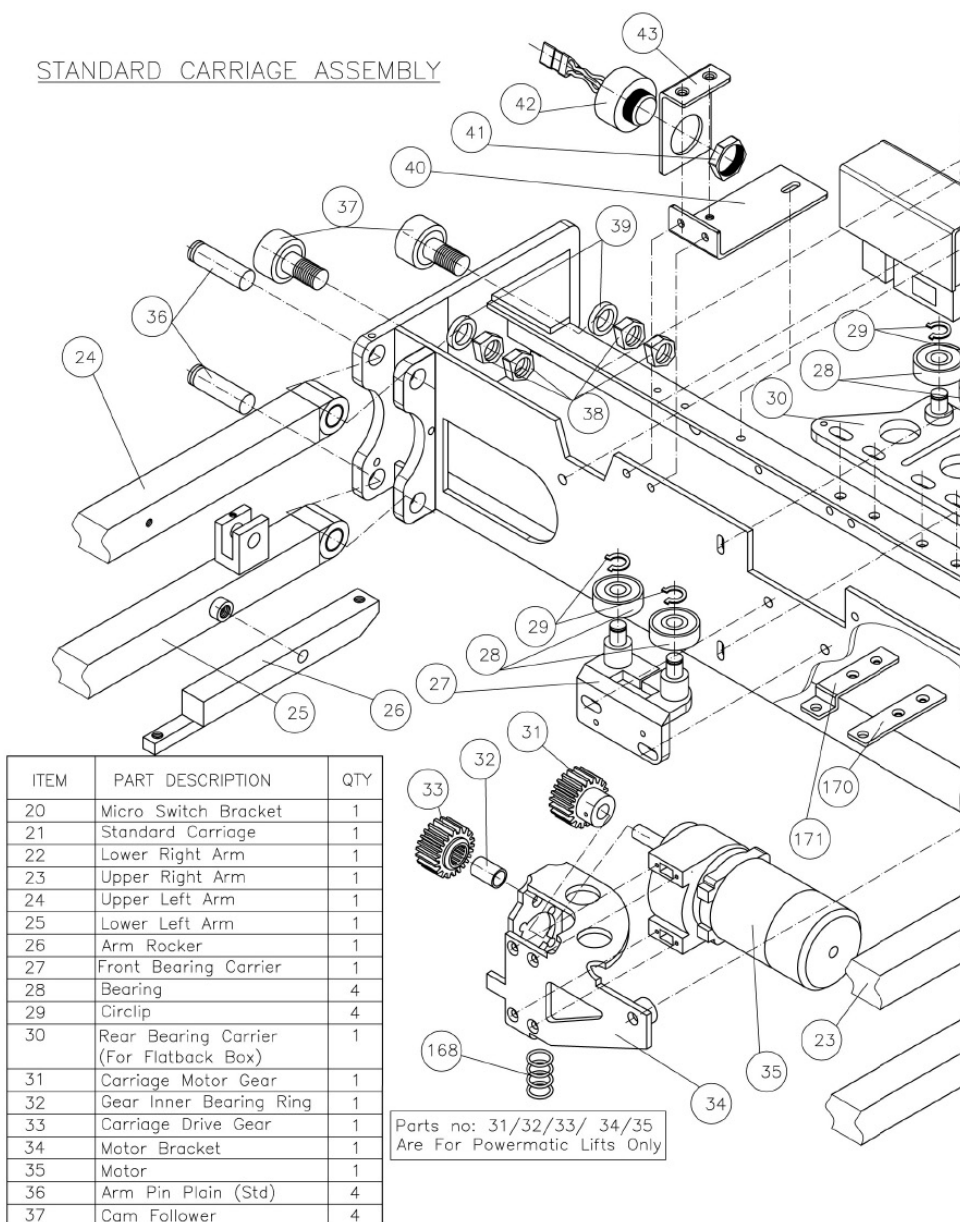


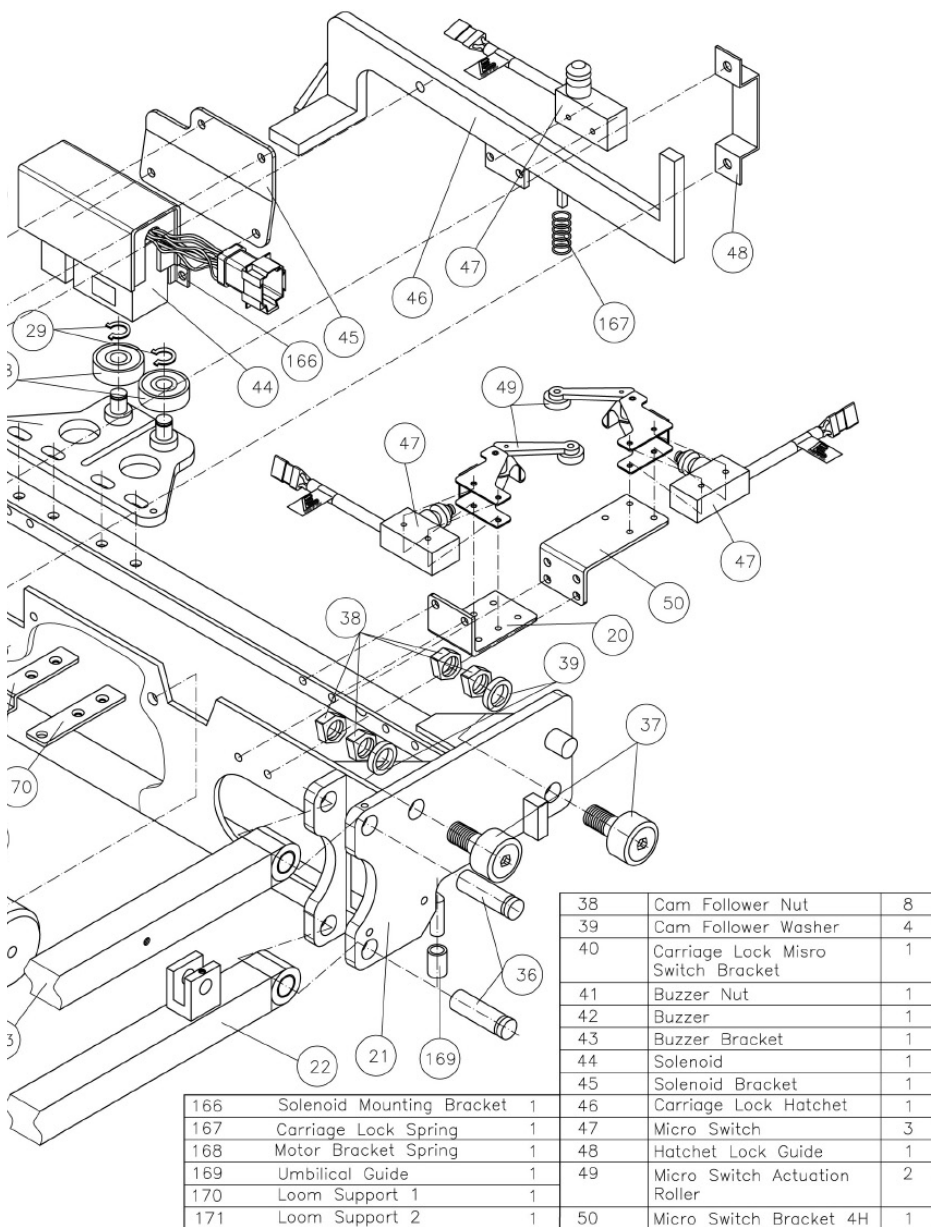
STANDARD LIFT STOWAGE BOX
FLATBACK TYPE



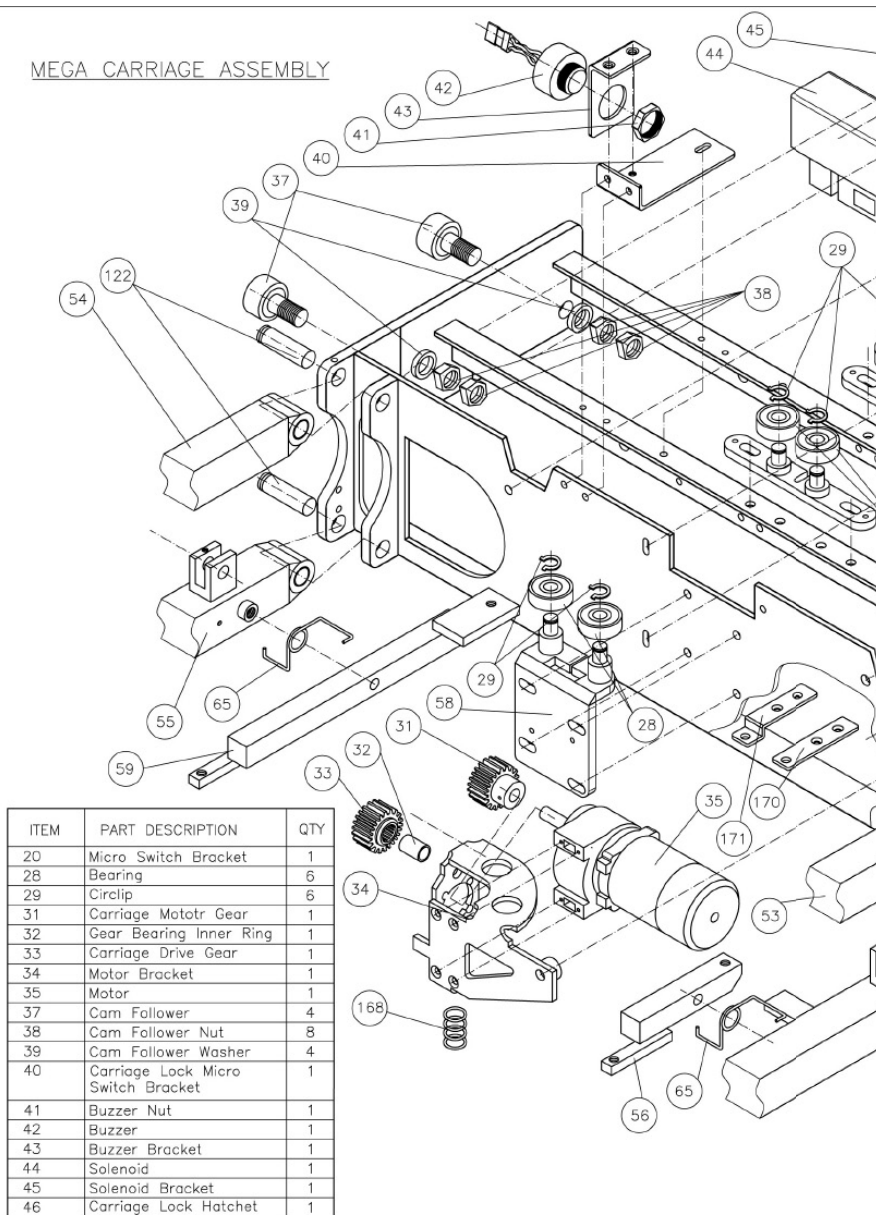


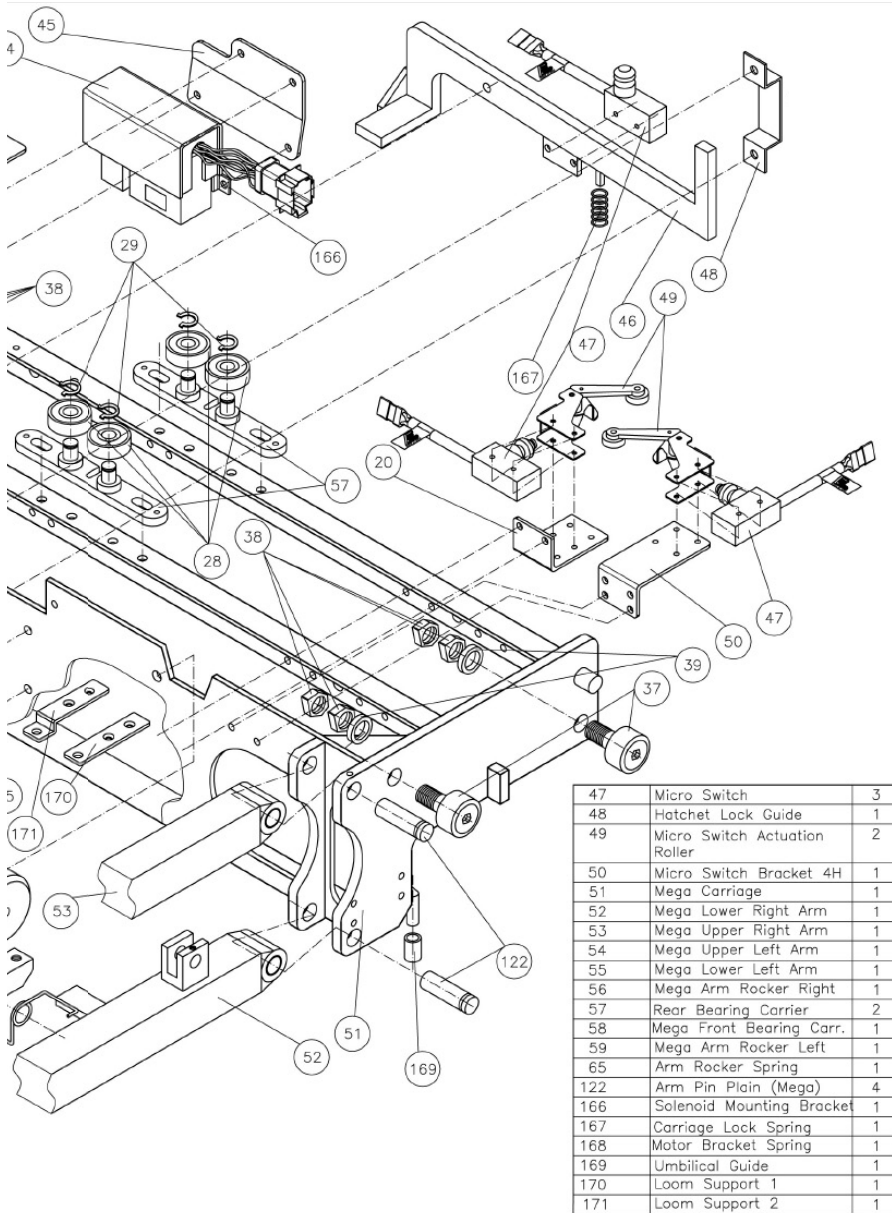
STANDARD CARRIAGE ASSEMBLY

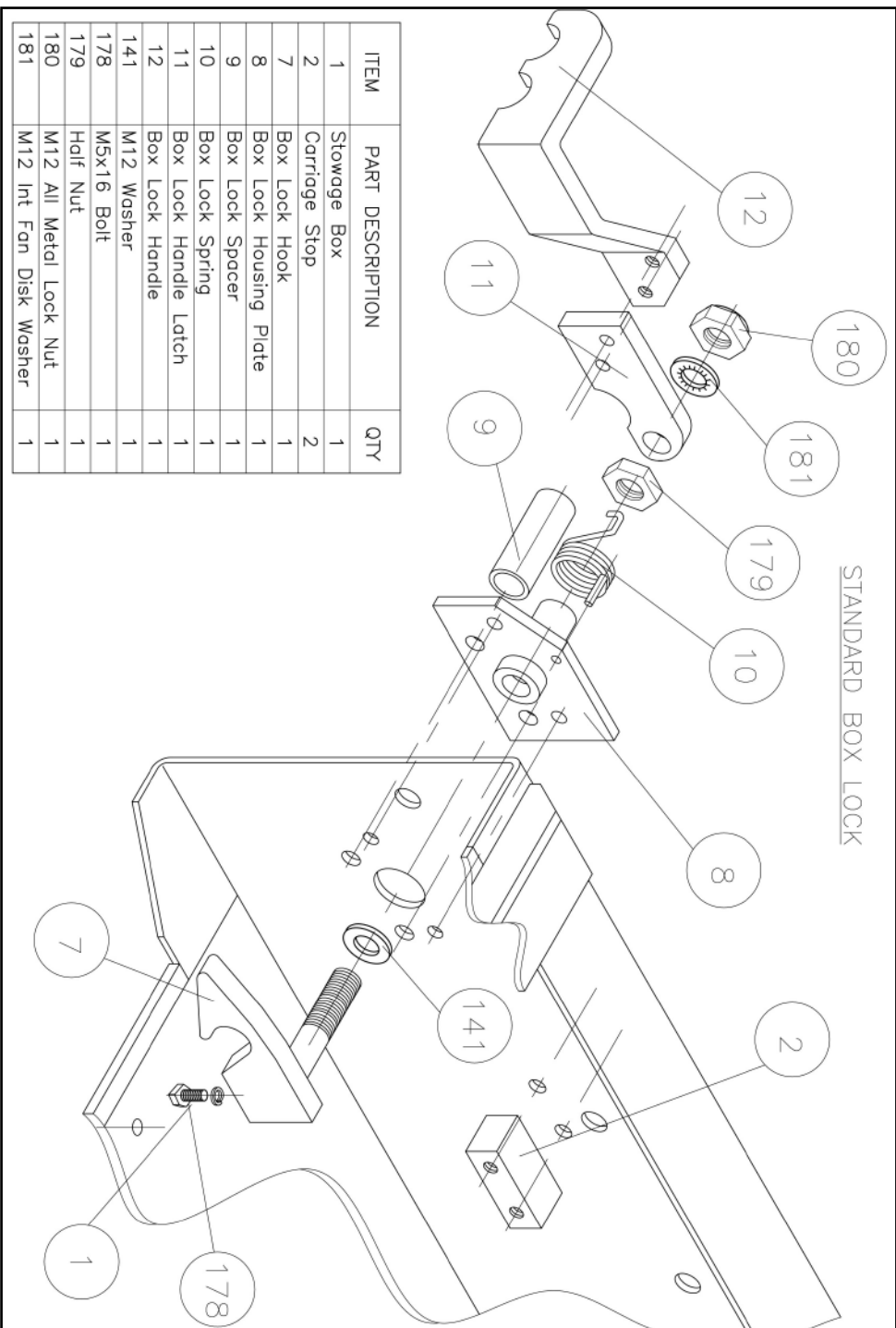




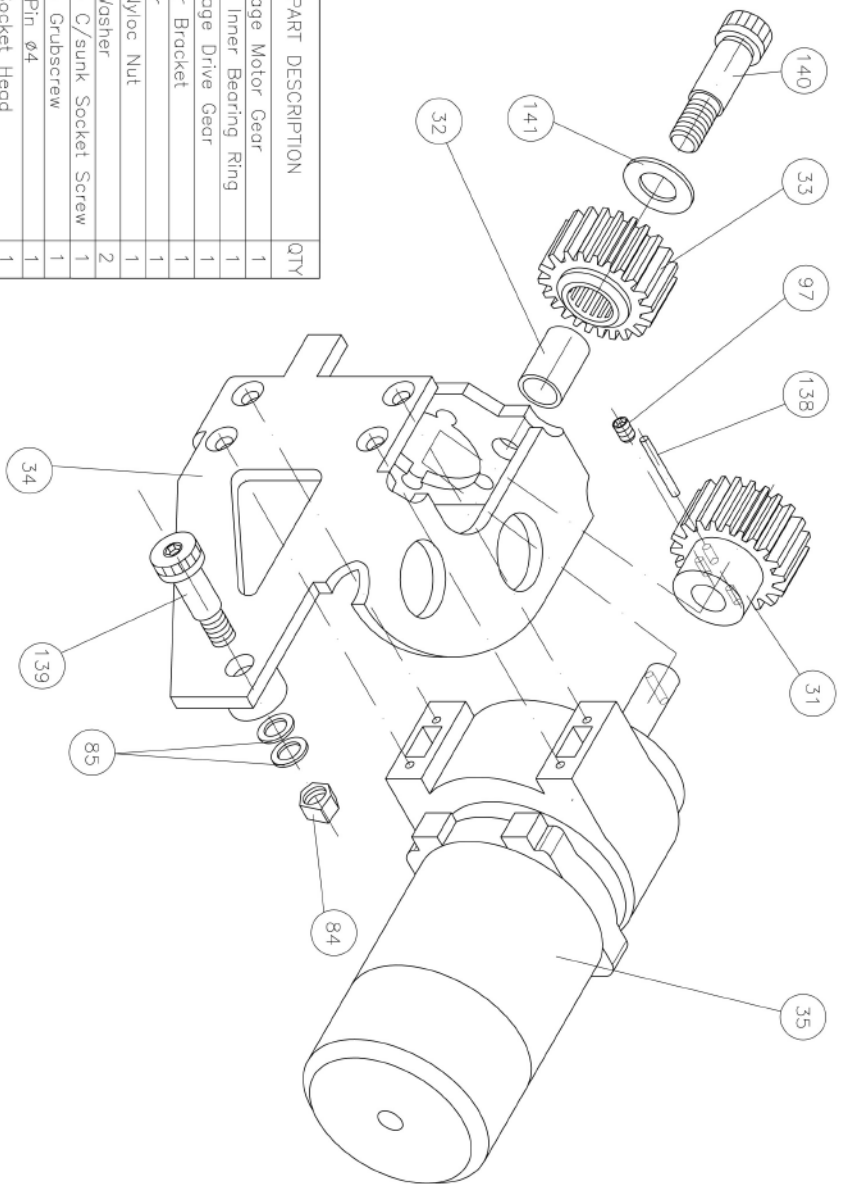
MEGA CARRIAGE ASSEMBLY



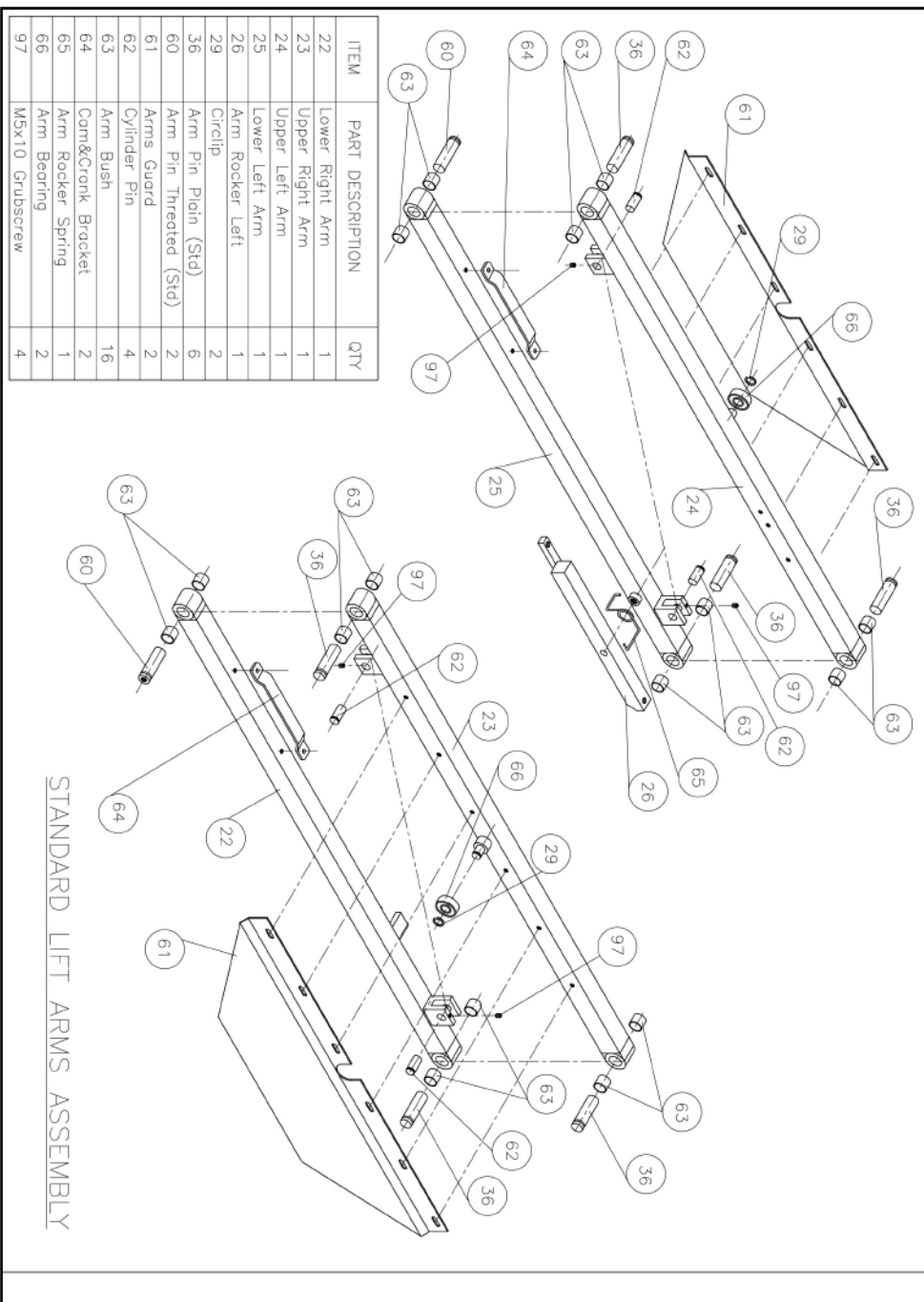


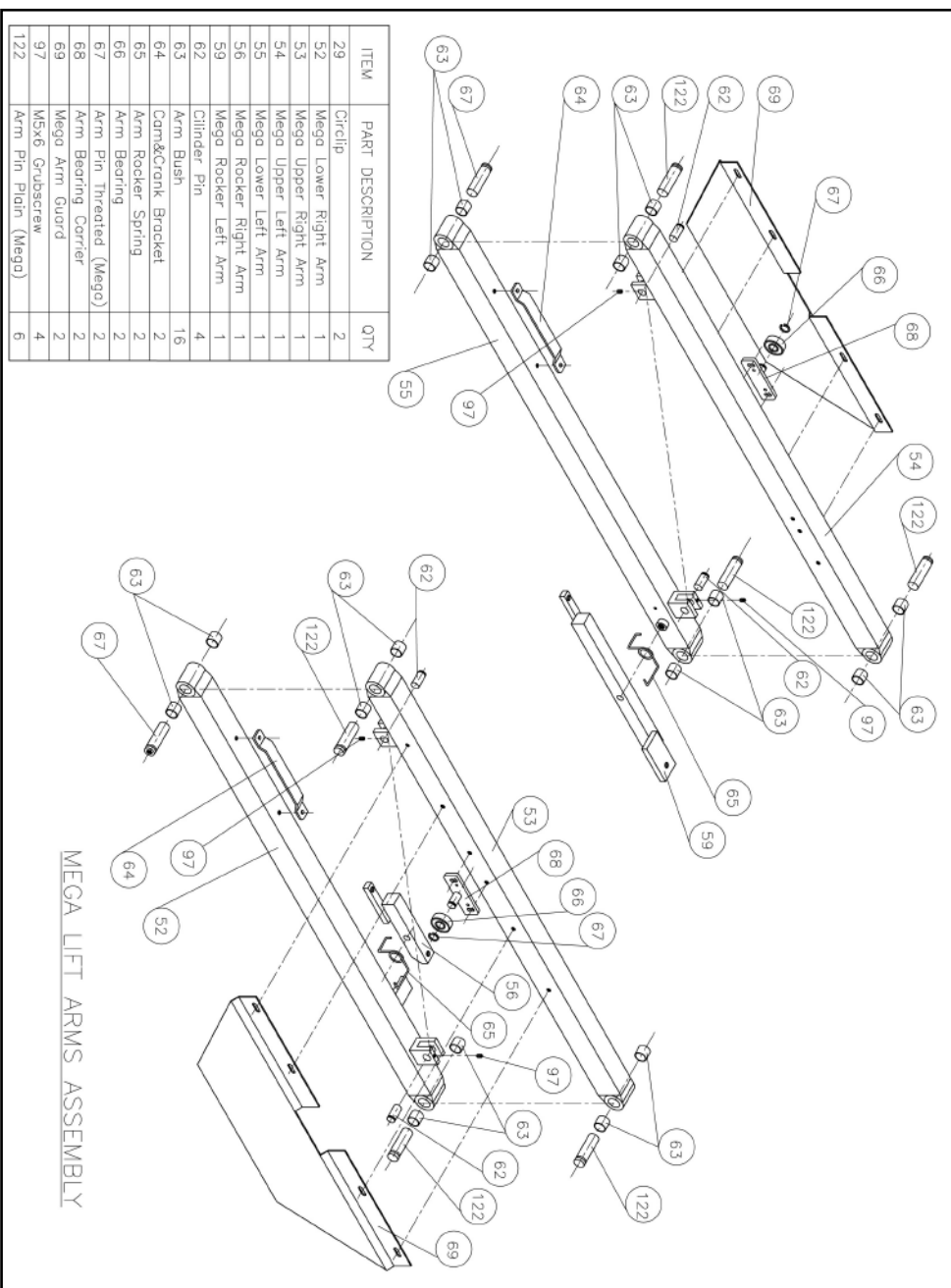


ITEM	PART DESCRIPTION	QTY
31	Carriage Motor Gear	1
32	Gear Inner Bearing Ring	1
33	Carriage Drive Gear	1
34	Motor Bracket	1
35	Motor	1
84	M8 Nyloc Nut	1
85	M8 Washer	2
95	M8x8 C/sunk Socket Screw	1
97	M5x6 Grubscrew	1
138	Roll Pin Ø4	1
139	M8 Socket Head Shoulder Screw	1
140	M10 Socket Head Shoulder Screw	1
141	M12 Washer	1

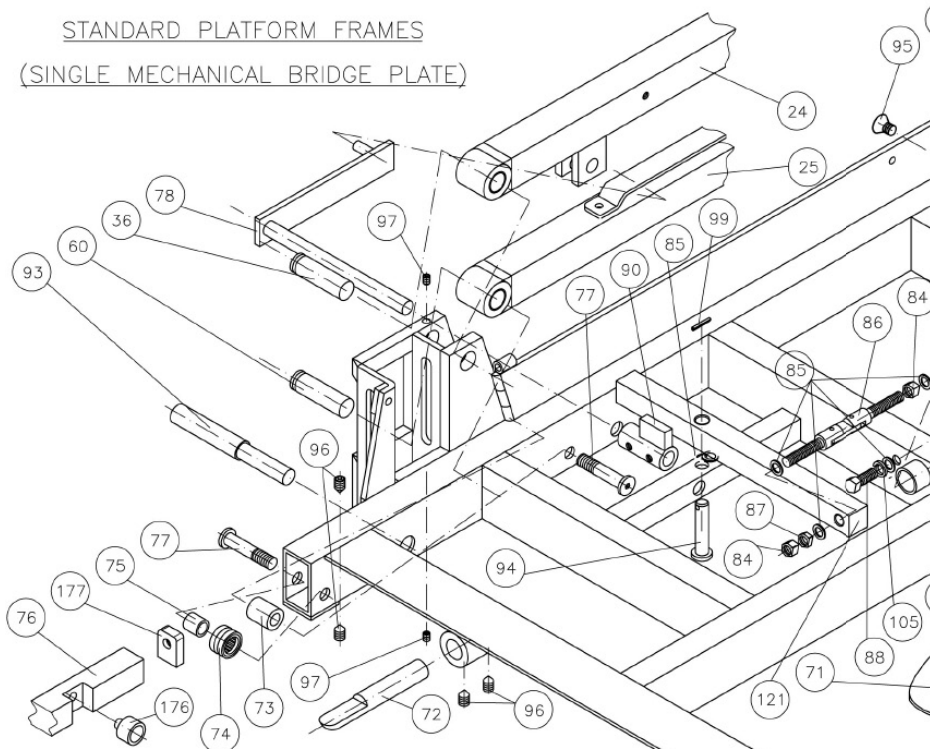


In/Out MOTOR DRAWING

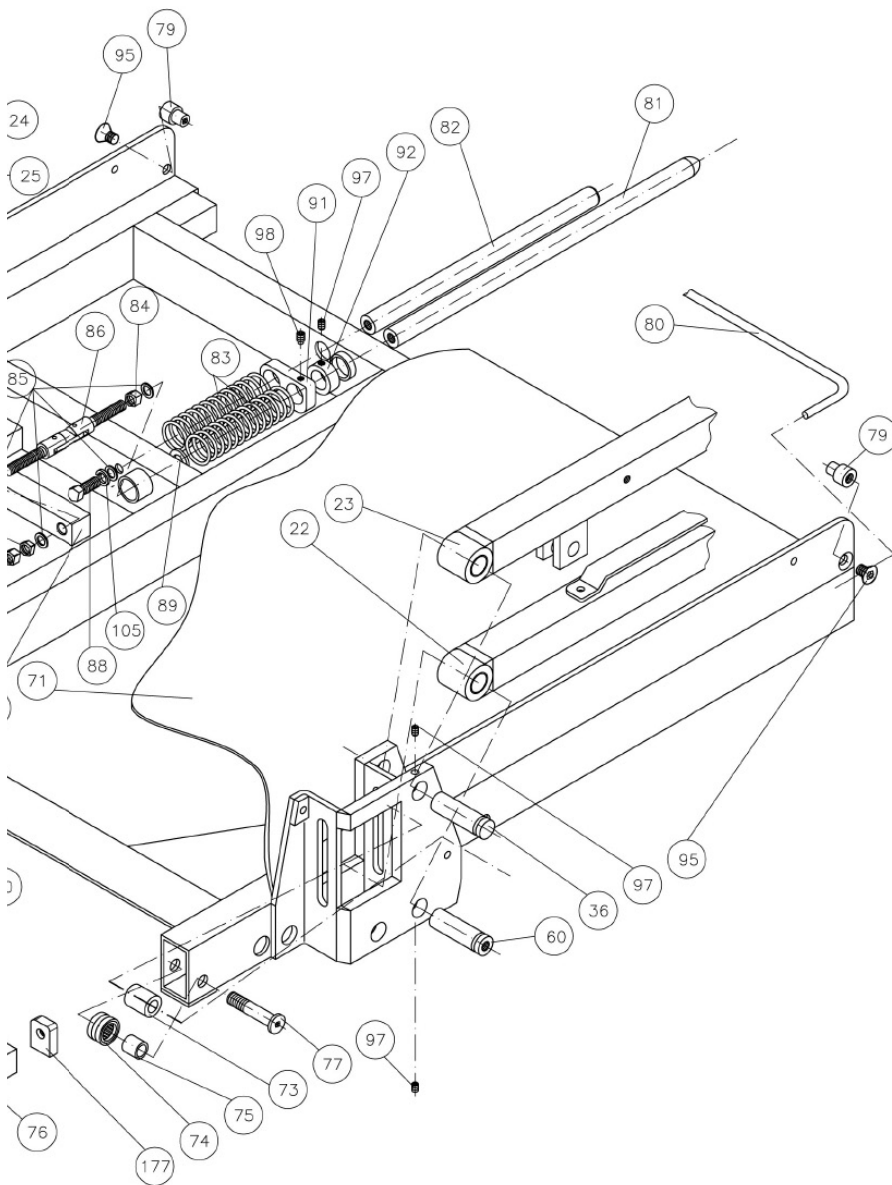




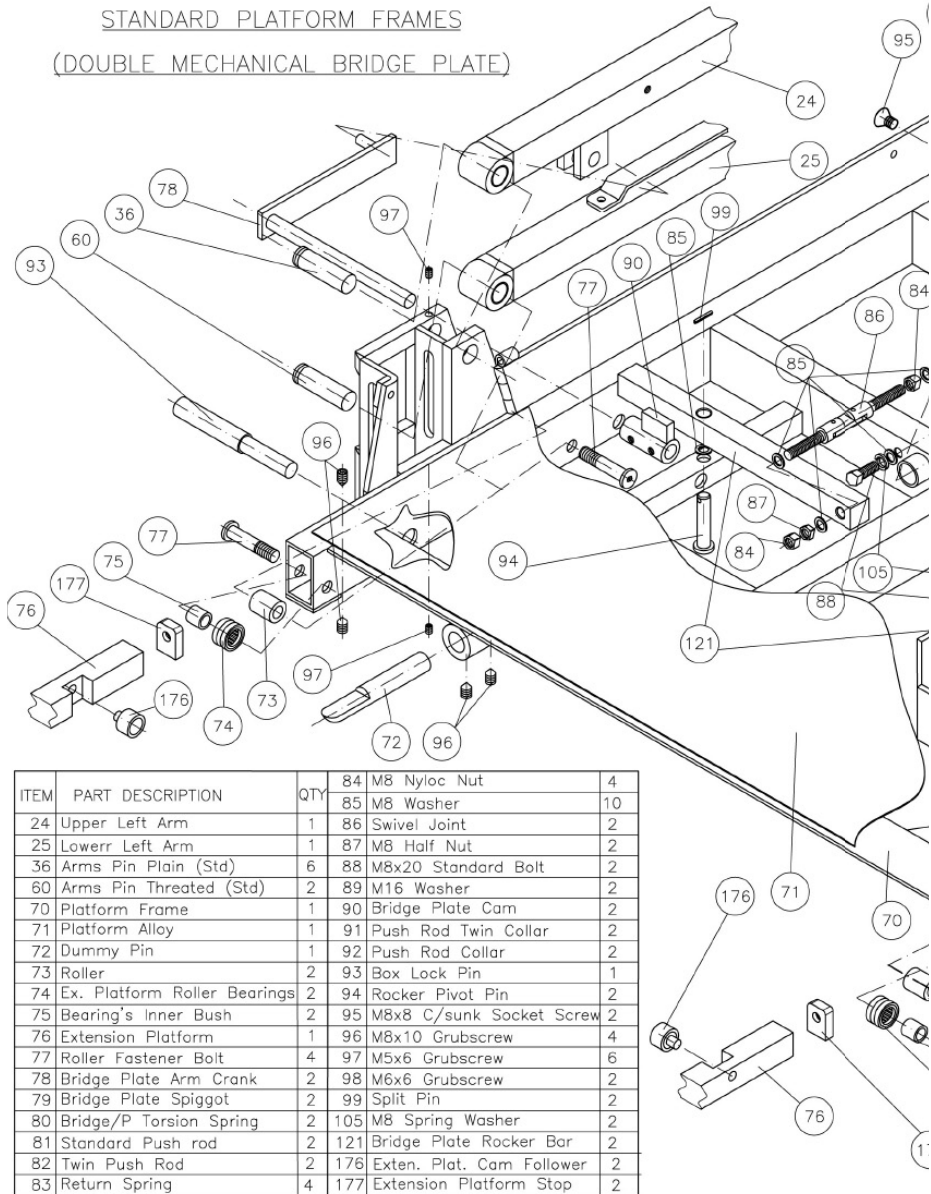
STANDARD PLATFORM FRAMES
(SINGLE MECHANICAL BRIDGE PLATE)

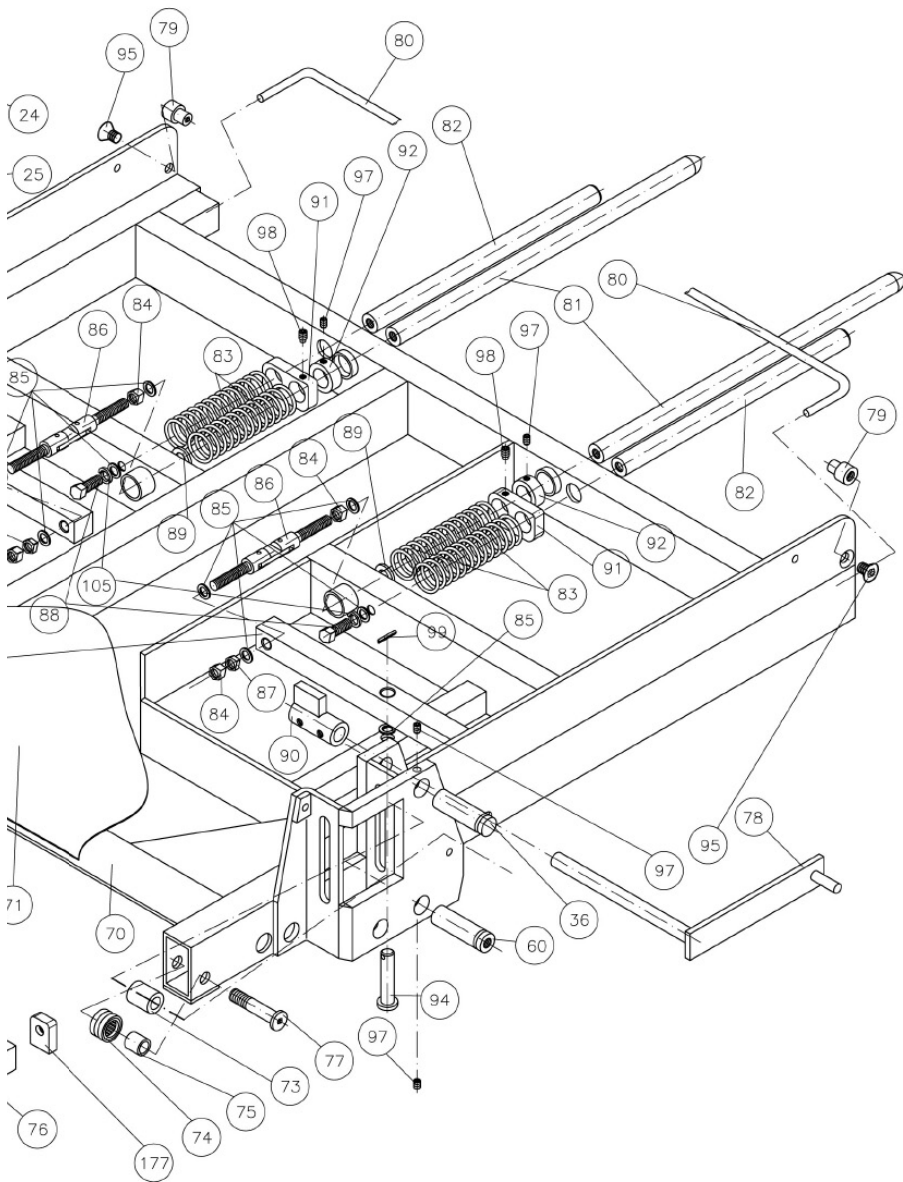


ITEM	PART DESCRIPTION	QTY			
			83	Return Spring	2
			84	M8 Nyloc Nut	2
22	Lower Right Arm	1	85	M8 Washer	5
23	Upper Right Arm	1	86	Swivel Joint	1
24	Upper Left Arm	1	87	M8 Half Nut	1
25	Lower Left Arm	1	88	M8x20 Standard Bolt	1
36	Arms Pin Plain (Std)	6	89	M16 Washer	1
60	Arms Pin Threaded (Std)	2	90	Bridge Plate Cam	1
70	Platform Frame	1	91	Push Rod Twin Collar	1
71	Platform Alloy	1	92	Push Rod Collar	1
72	Dummy Pin	1	93	Box Lock Pin	1
73	Roller	2	94	Rocker Pivot Pin	1
74	Ex. Platform Roller Bearings	2	95	M8x8 C/sunk Socket Screw	1
75	Bearing's Inner Bush	2	96	M8x10 Grubscrew	4
76	Extension Platform	1	97	M5x6 Grubscrew	5
77	Roller Fastener Bolt	4	98	M6x6 Grubscrew	1
78	Bridge Plate Arm Crank	1	99	Split Pin	1
79	Bridge Plate Spigot	2	105	M8 Spring Washer	1
80	Bridge/P Torsion Spring	1	121	Bridge Plate Rocker Bar	1
81	Standard Push rod	1	176	Exten. Plat. Cam Follower	2
82	Twin Push Rod	1	177	Extension Platform Stop	2

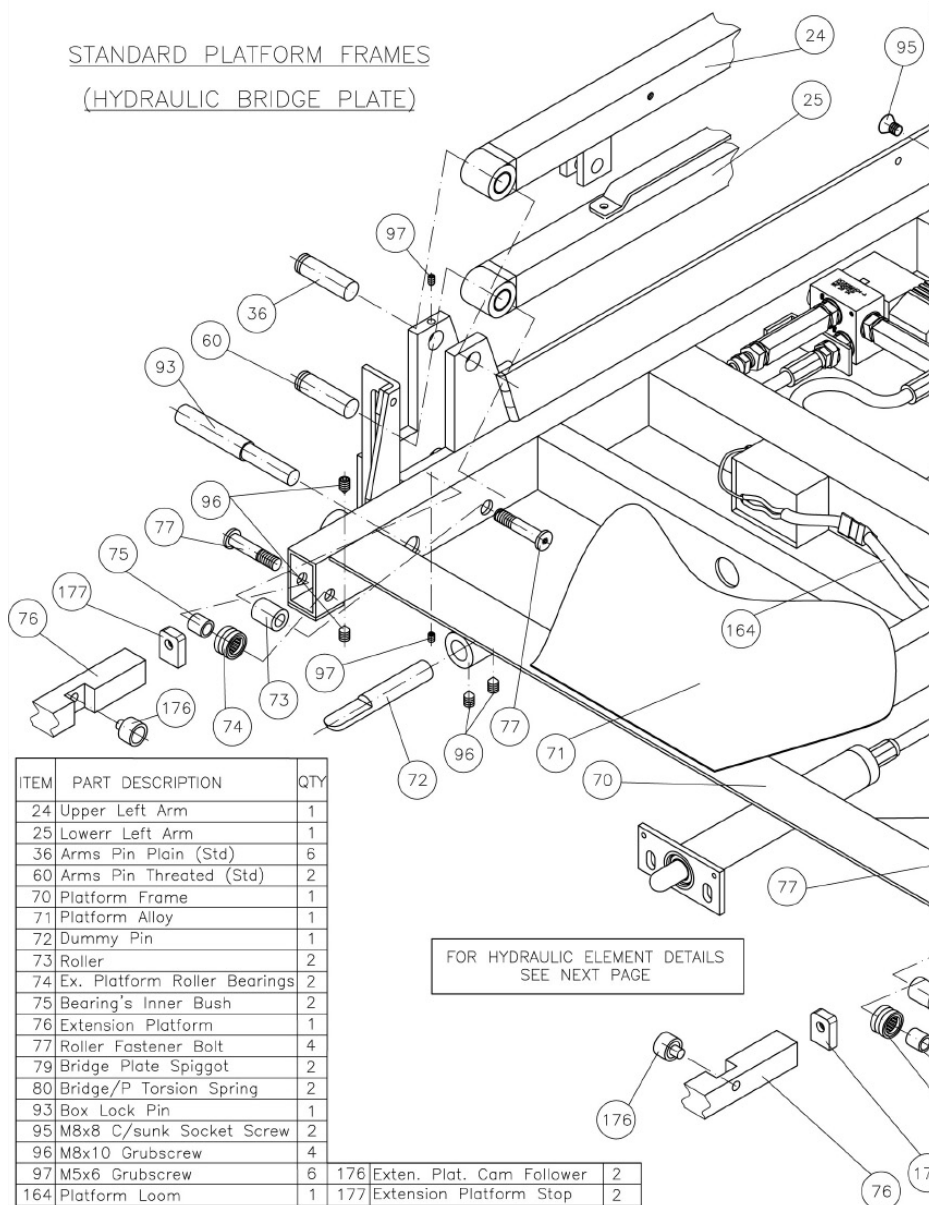


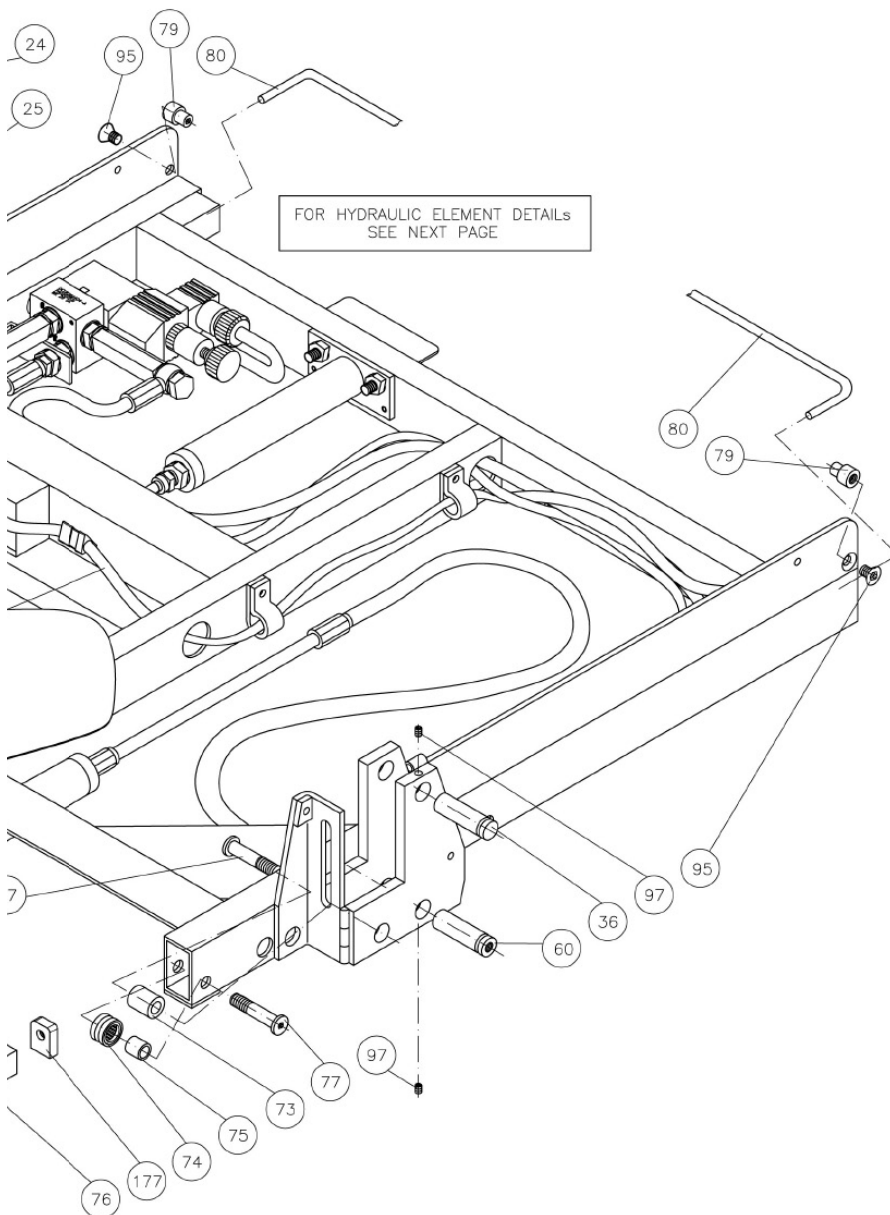
STANDARD PLATFORM FRAMES (DOUBLE MECHANICAL BRIDGE PLATE)

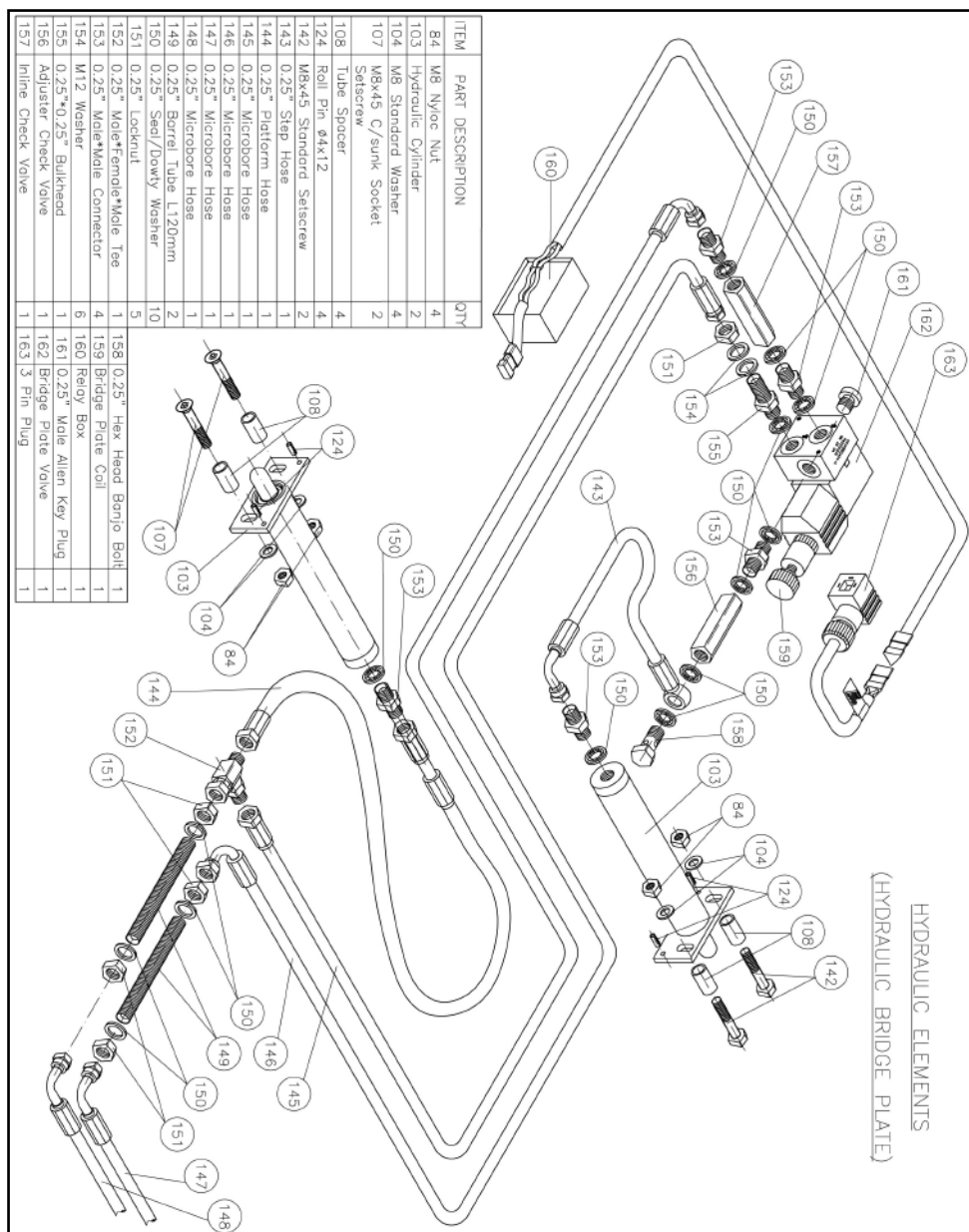




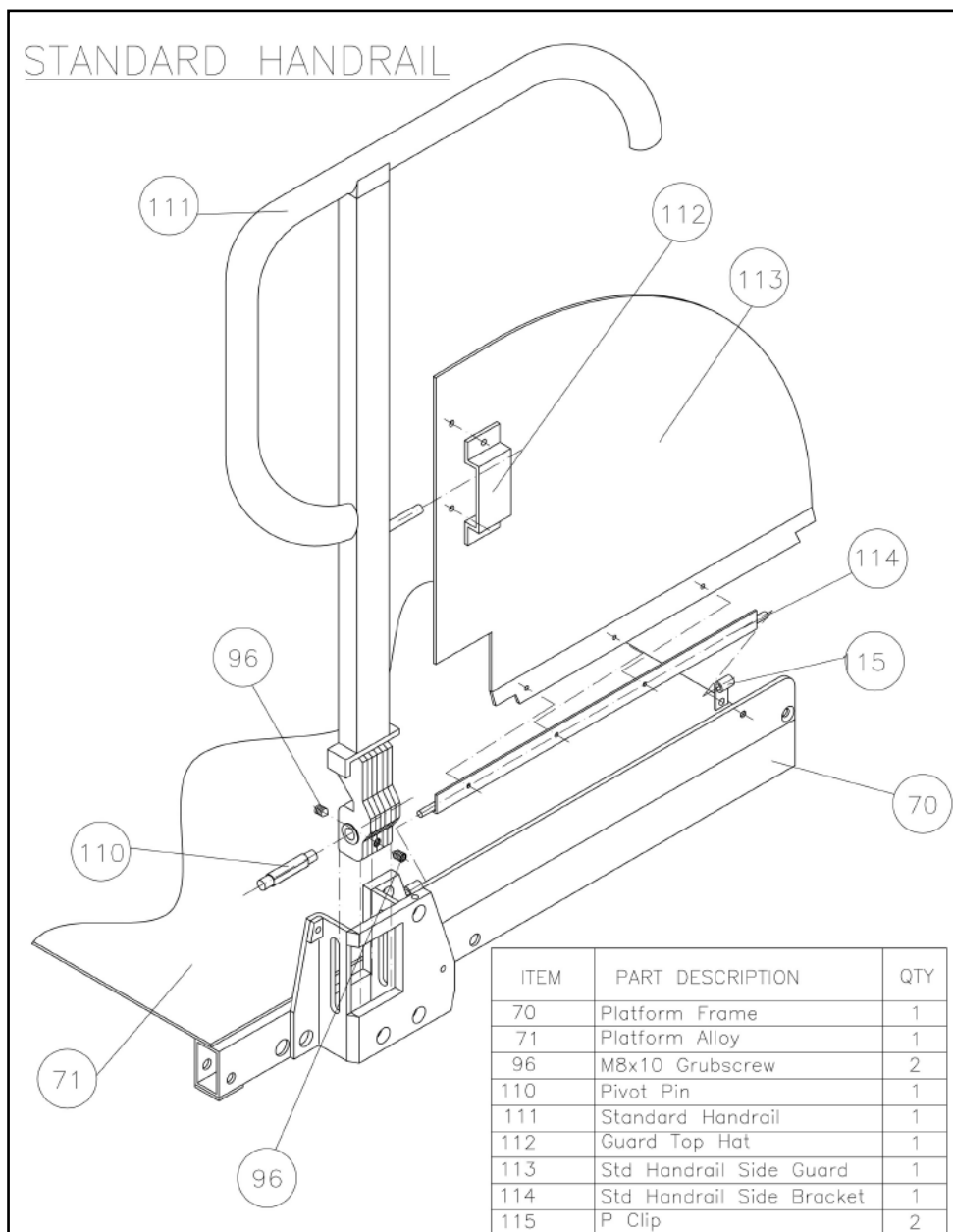
STANDARD PLATFORM FRAMES (HYDRAULIC BRIDGE PLATE)



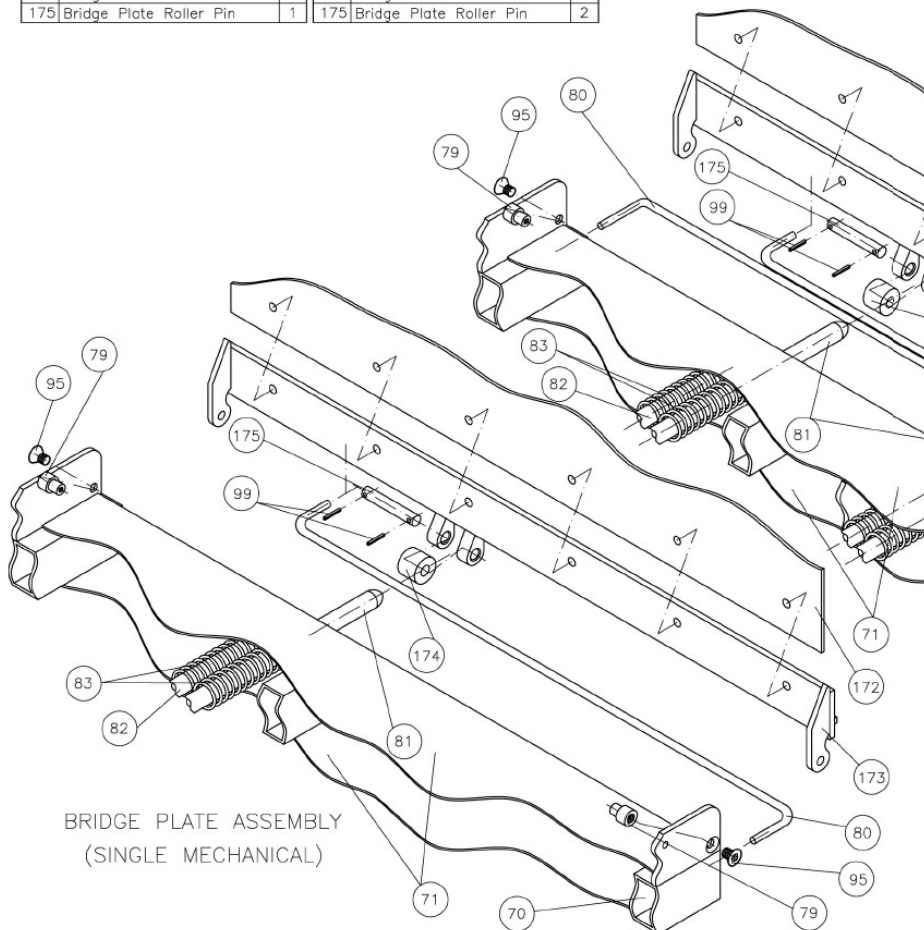


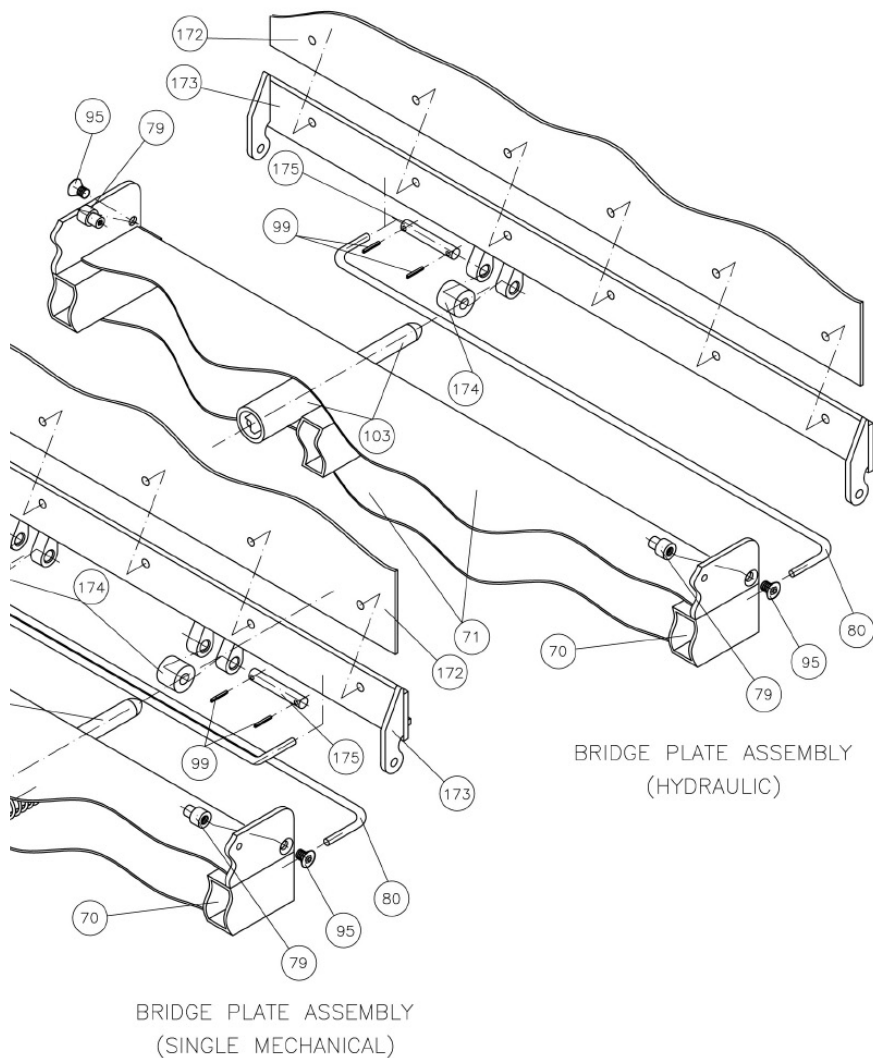


STANDARD HANDRAIL



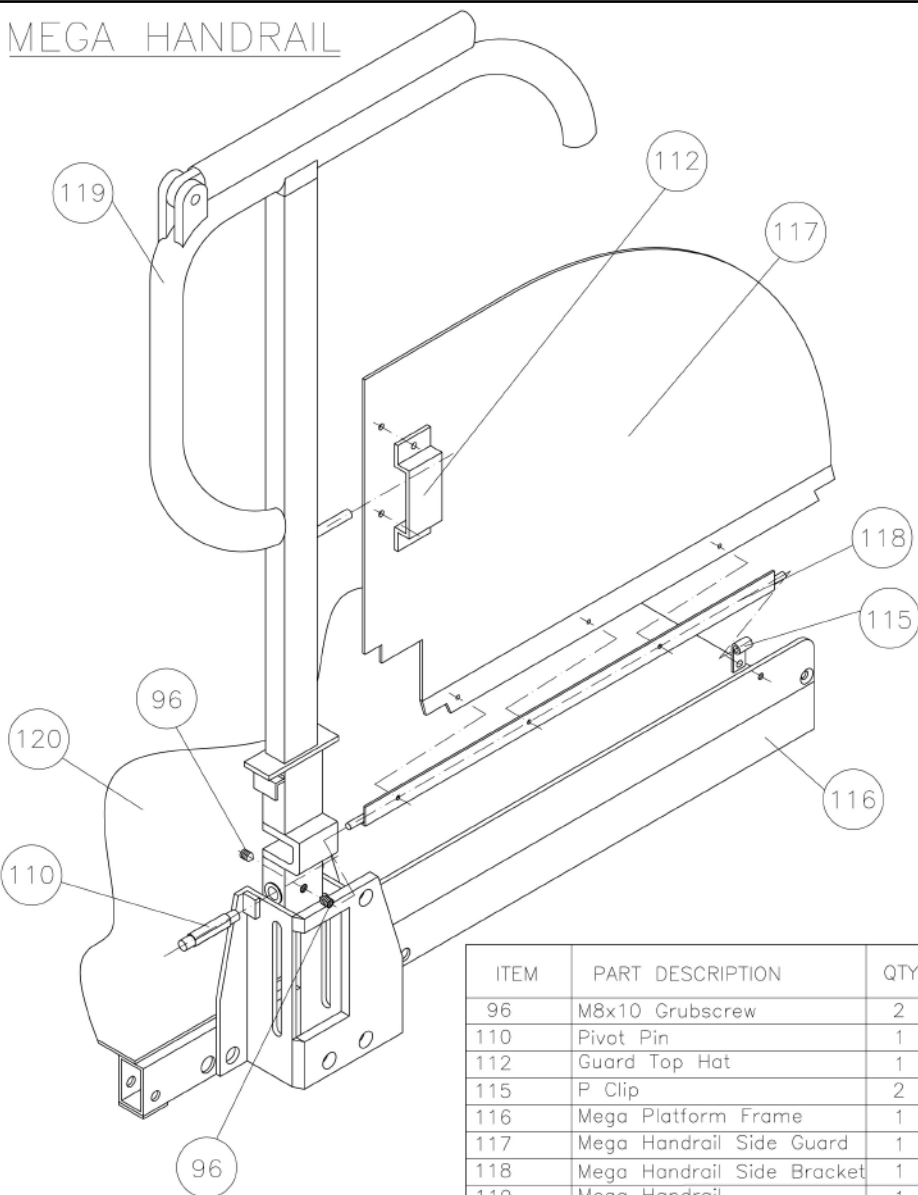
ITEM	PART DESCRIPTION FOR SINGLE MECHANICAL	QTY	ITEM	PART DESCRIPTION FOR DOUBLE MECHANICAL	QTY	ITEM	PART DESCRIPTION FOR HYDRAULIC	QTY
70	Platform Frame	1	70	Platform Frame	1	70	Platform Frame	1
71	Platform Alloy	2	71	Platform Alloy	2	71	Platform Alloy	2
79	Bridge Plate Spiggot	2	79	Bridge Plate Spiggot	2	79	Bridge Plate Spiggot	2
80	Bridge Plate Torsion Spring	1	80	Bridge Plate Torsion Spring	2	80	Bridge Plate Torsion Spring	2
81	Standard Push Rod	1	81	Standard Push Rod	2	95	M8x8 C/Sunk Socket Screw	2
82	Twin Push Rod	1	82	Twin Push Rod	2	99	Split Pin	2
83	Return Spring	2	83	Return Spring	4	103	Hydraulic Cylinder	1
95	M8x8 C/Sunk Socket Screw	2	95	M8x8 C/Sunk Socket Screw	2	172	Bridge Plate	1
99	Split Pin	2	99	Split Pin	4	173	Bridge Plate Hinge	1
172	Bridge Plate	1	172	Bridge Plate	1	174	Bridge Plate Roller	1
173	Bridge Plate Hinge	1	173	Bridge Plate Hinge	1	175	Bridge Plate Roller Pin	1
174	Bridge Plate Roller	1	174	Bridge Plate Roller	2			
175	Bridge Plate Roller Pin	1	175	Bridge Plate Roller Pin	2			



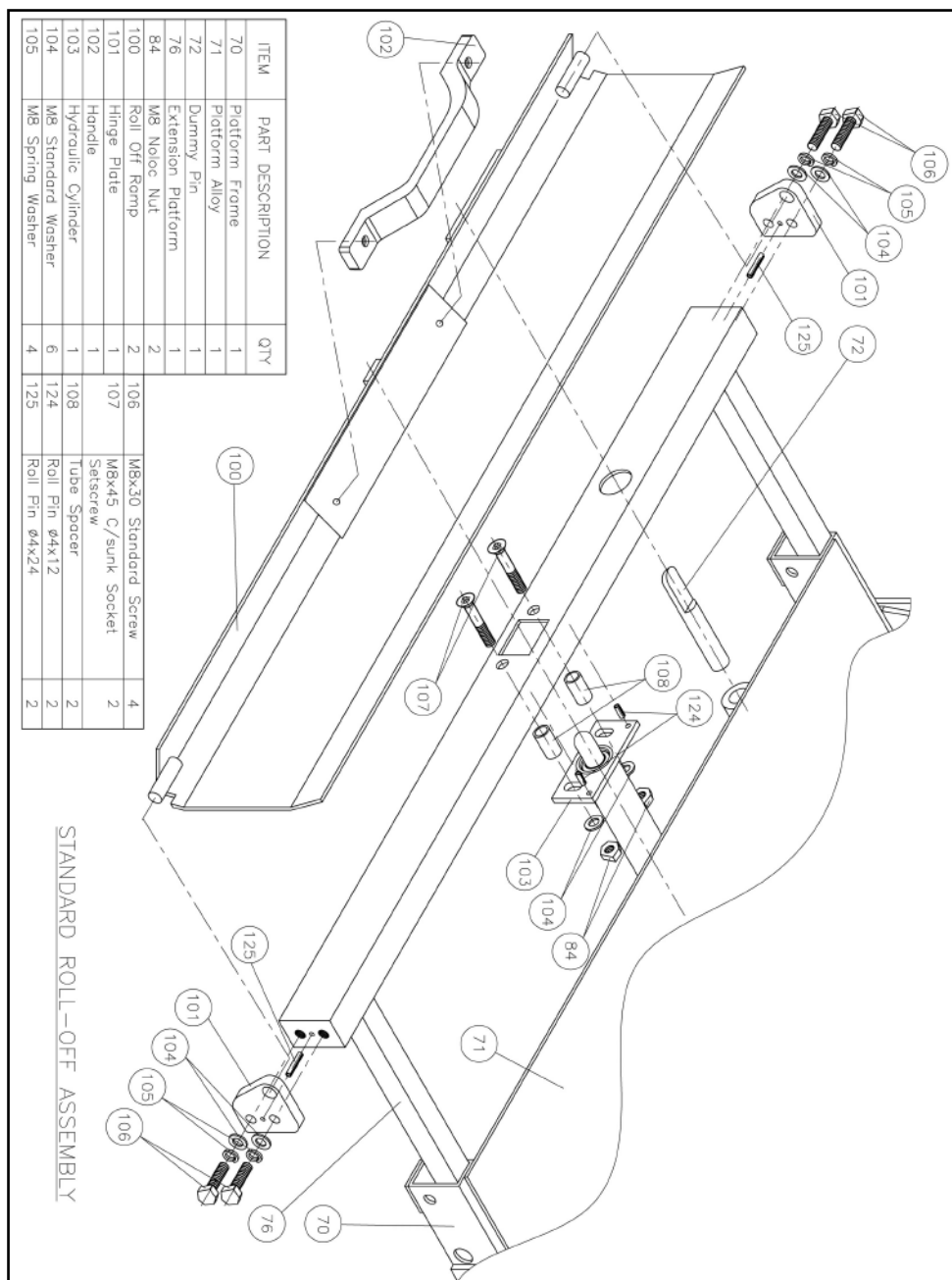


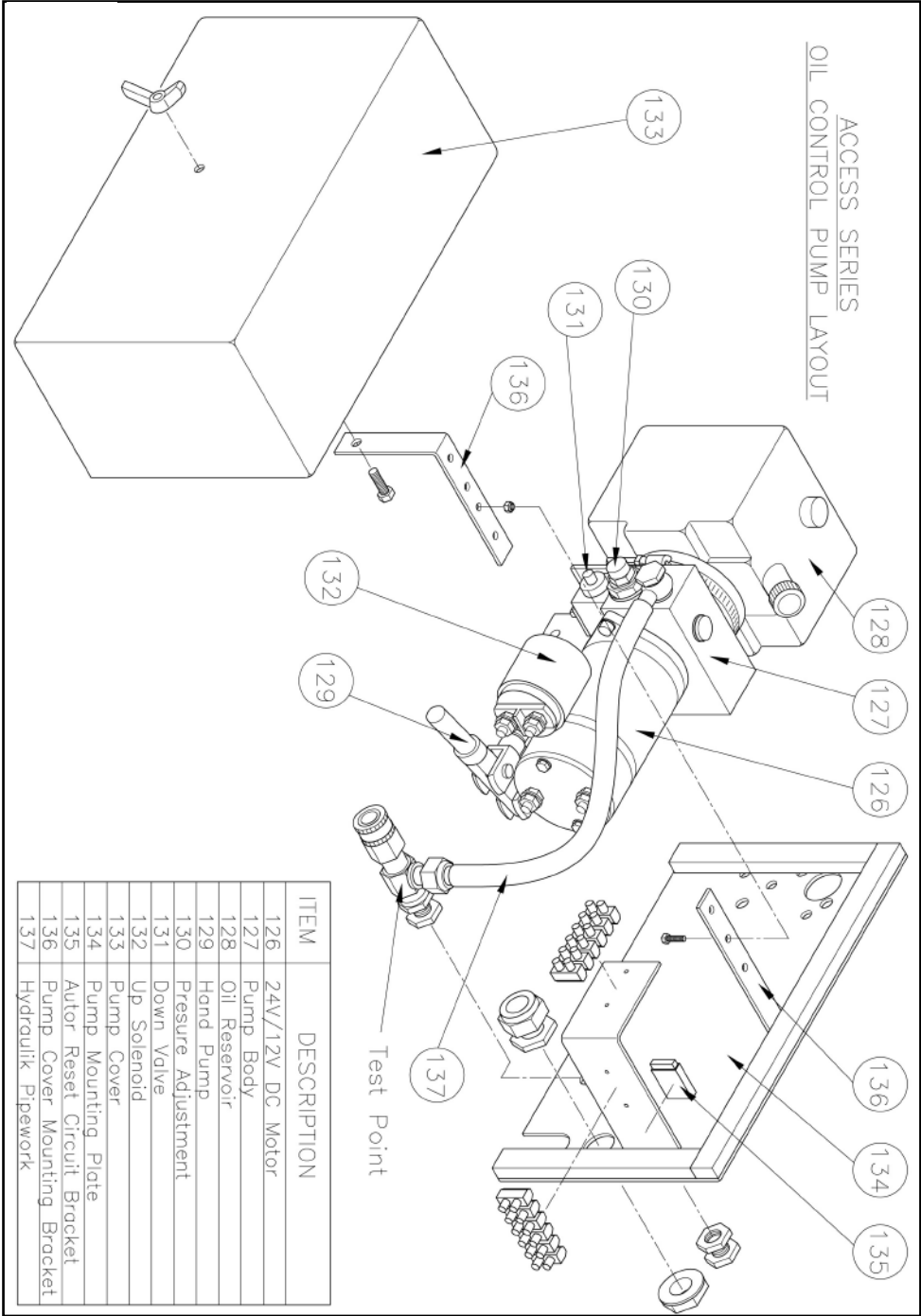
BRIDGE PLATE ASSEMBLY

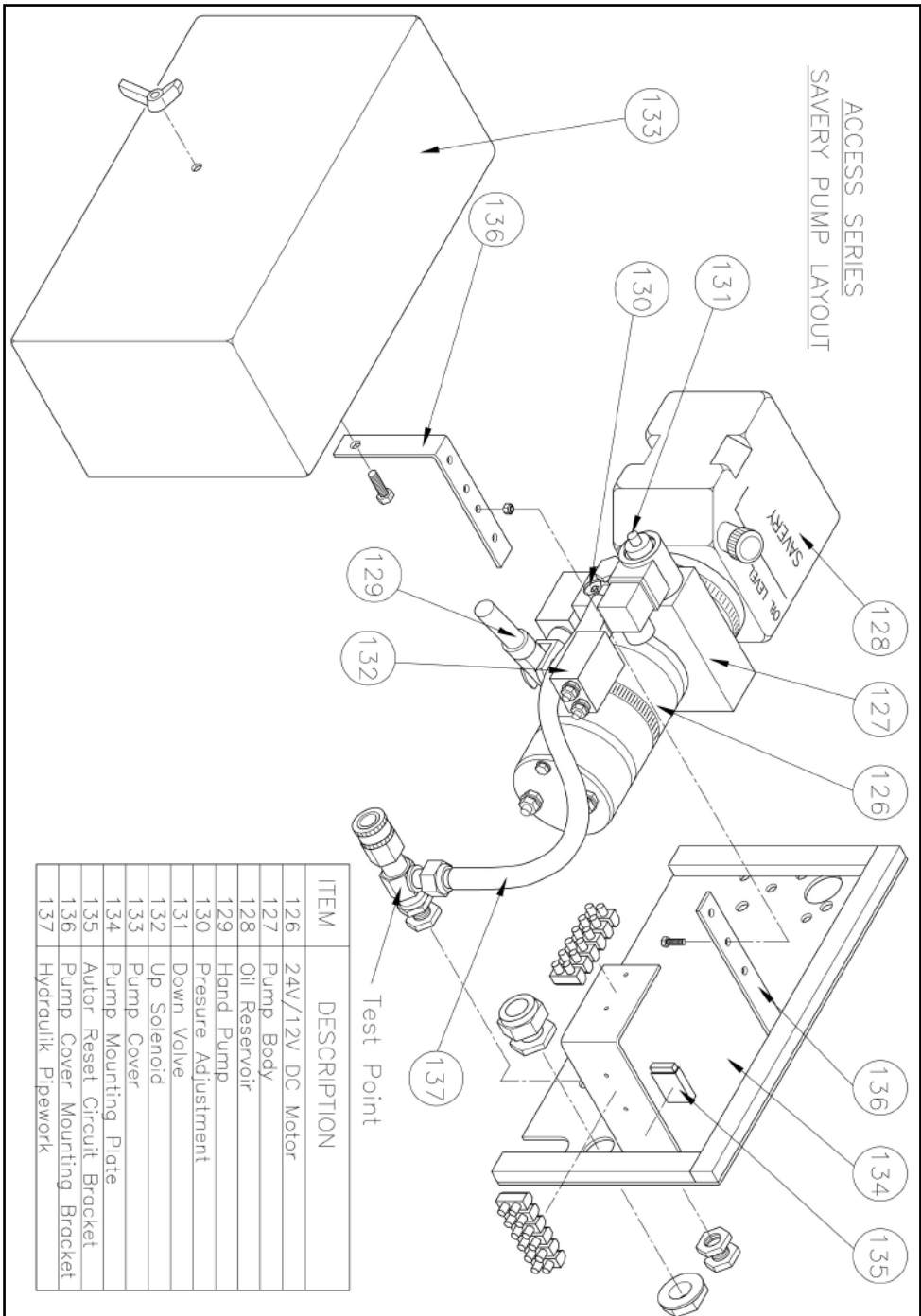
MEGA HANDRAIL



ITEM	PART DESCRIPTION	QTY
96	M8x10 Grubscrew	2
110	Pivot Pin	1
112	Guard Top Hat	1
115	P Clip	2
116	Mega Platform Frame	1
117	Mega Handrail Side Guard	1
118	Mega Handrail Side Bracket	1
119	Mega Handrail	1
120	Mega Platform Alloy	1





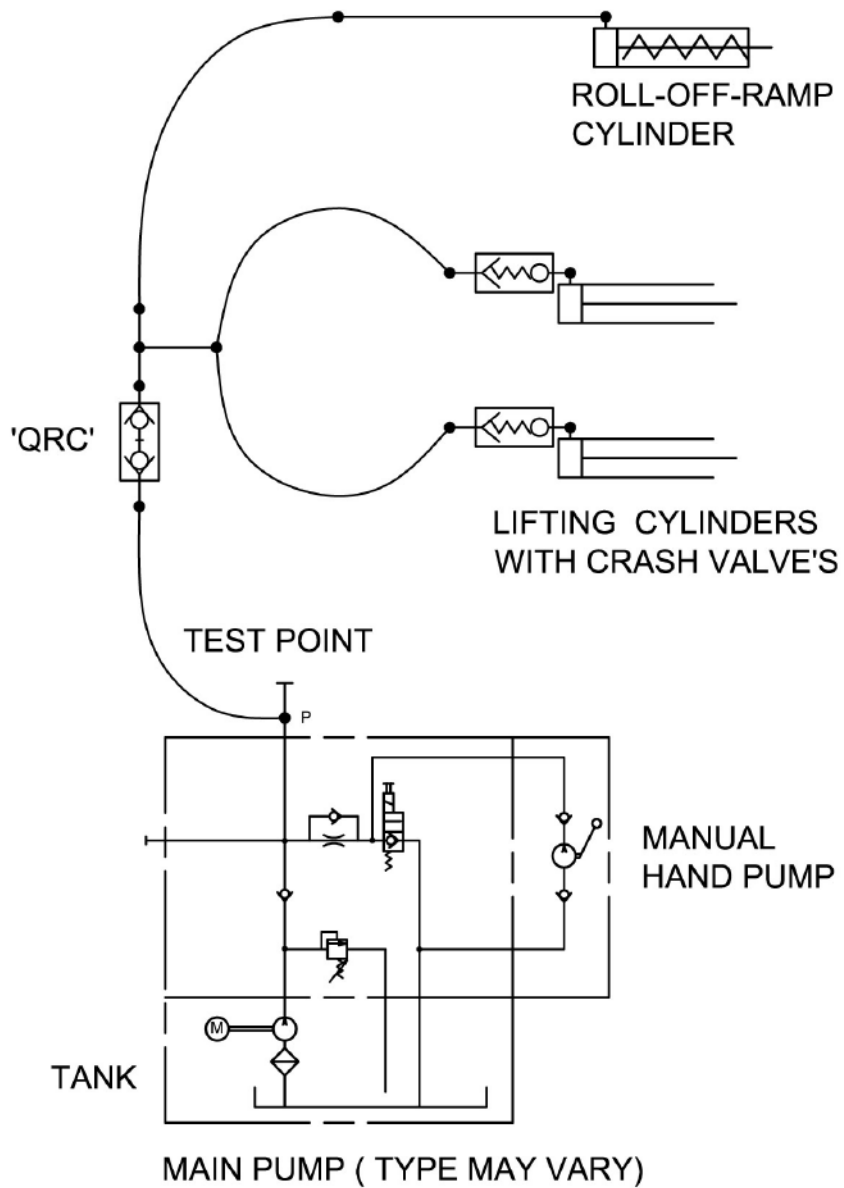


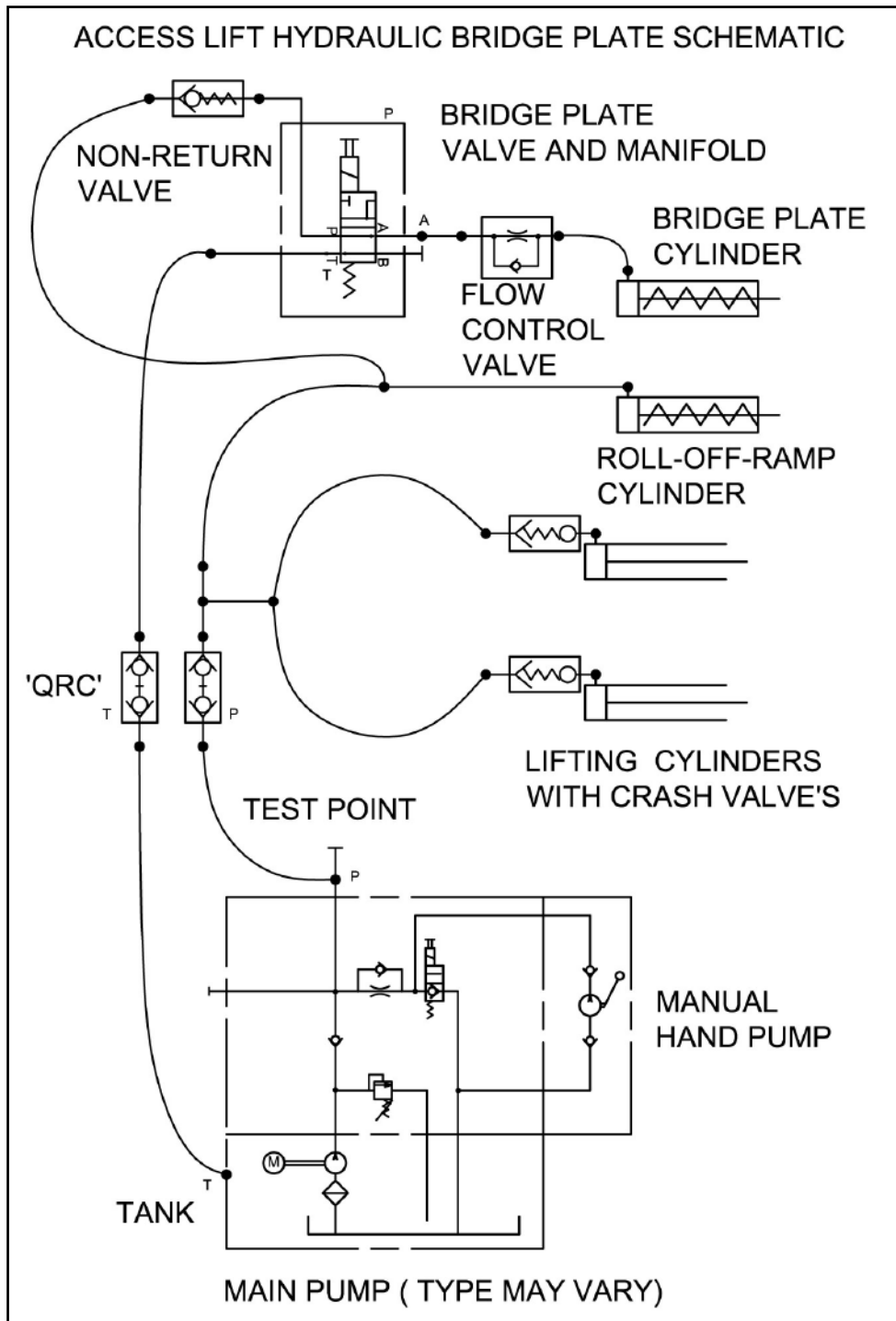


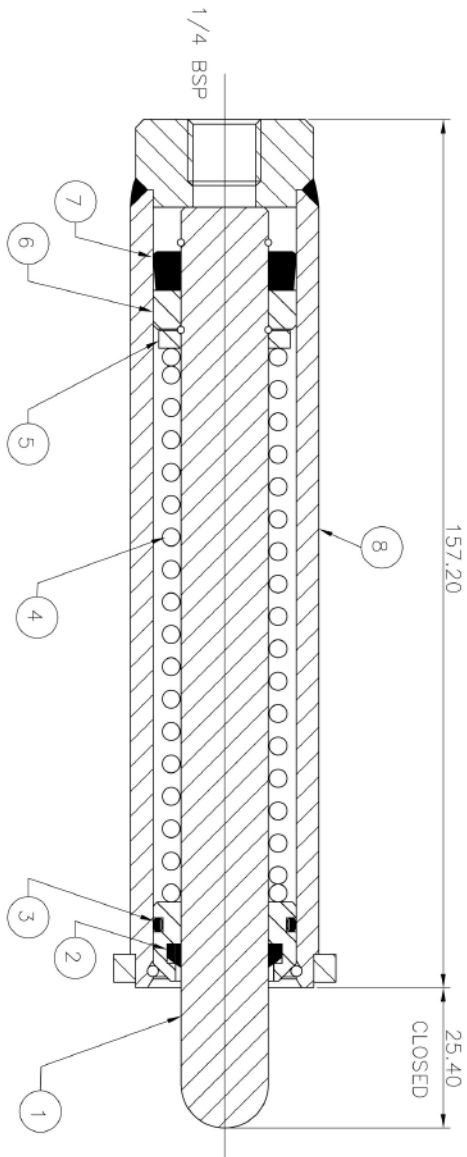
Hydraulic

Section 3

ACCESS LIFT HYDRAULIC SCHEMATIC



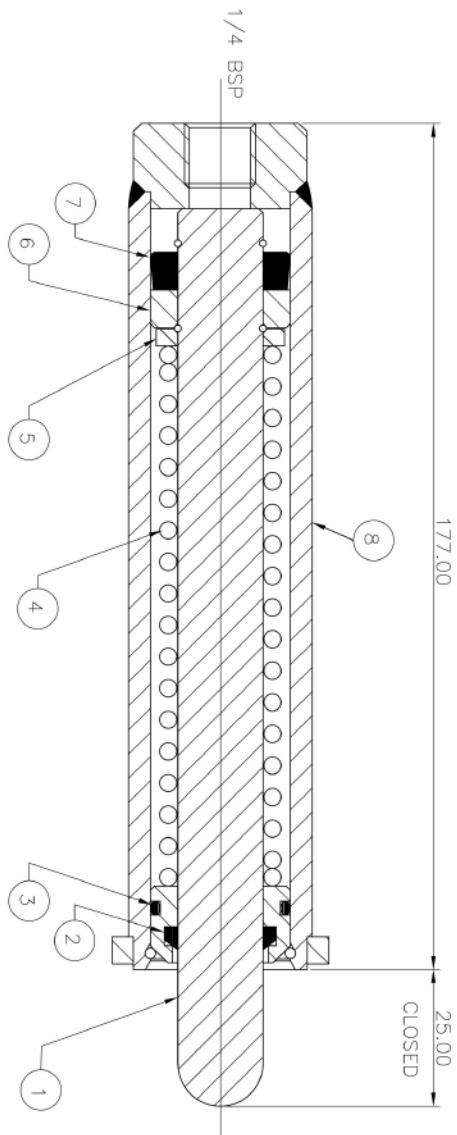




ITEM	CYLINDER PART NUMBERS	CYLINDER PART DESCRIPTION
1		ROD
2		WIPER
3		GLAND 'O' RING
4		SPRING
5		WASHER
6		PISTON
7		PISTON SEAL
8		CYLINDER BODY

SINGLE ACTING HYDRAULIC RAM
 CYLINDER BORE = 25.40 (1.000")
 CYLINDER O/D = 35.30 (1.312")
 ROD DIA = 15.87 (1.625")
 STROKE = 41.30 (1.625")
 MAXIMUM PRESSURE = 207 BAR

ROLL-OFF-RAMP CYLINDER
 CROSS SECTION
 PART REF:- ACC25445

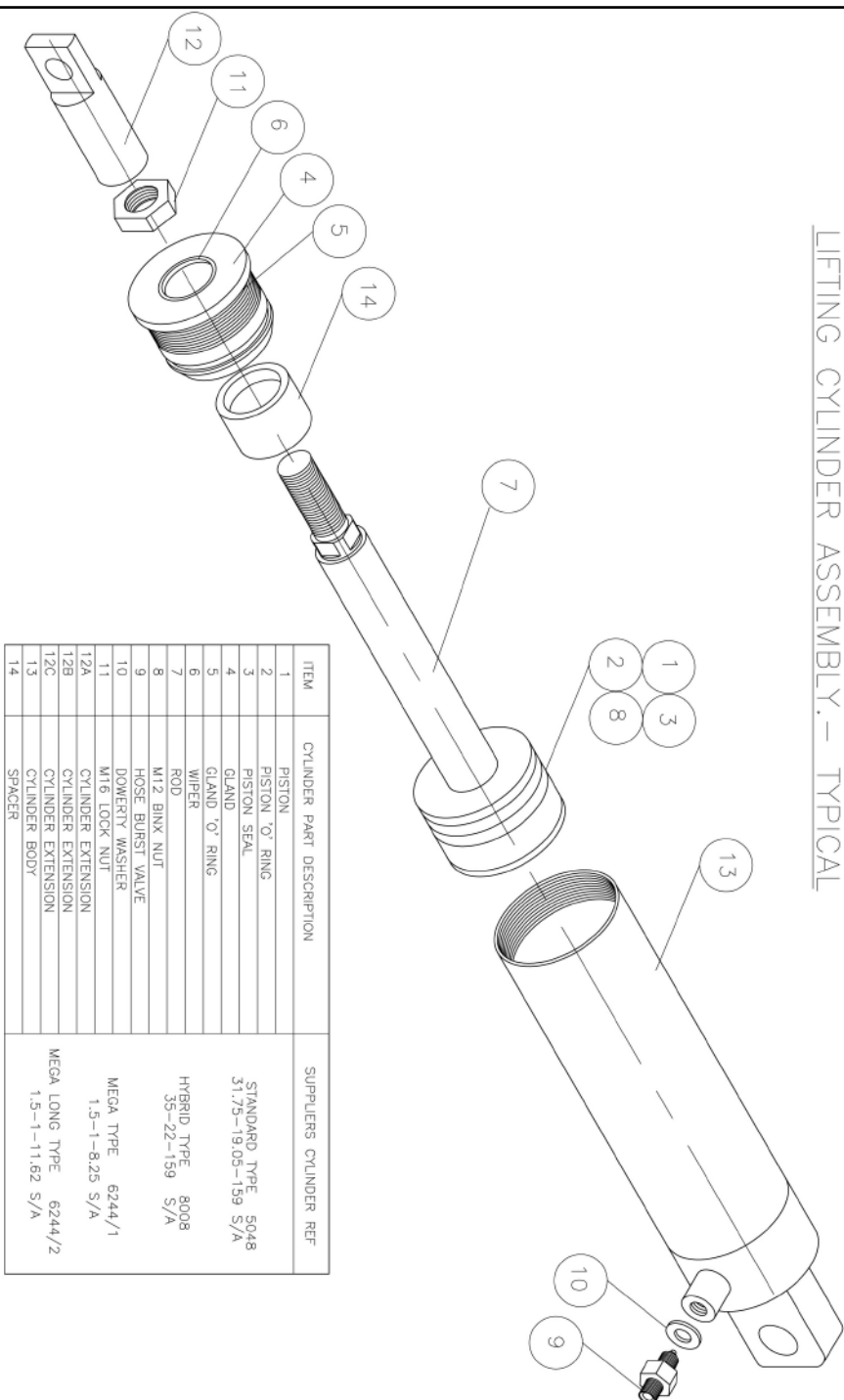


ITEM	CYLINDER PART NUMBERS	CYLINDER PART DESCRIPTION
1		ROD
2		WIPER
3		GLAND 'O' RING
4		SPRING
5		WASHER
6		PISTON
7		PISTON SEAL
8		CYLINDER BODY

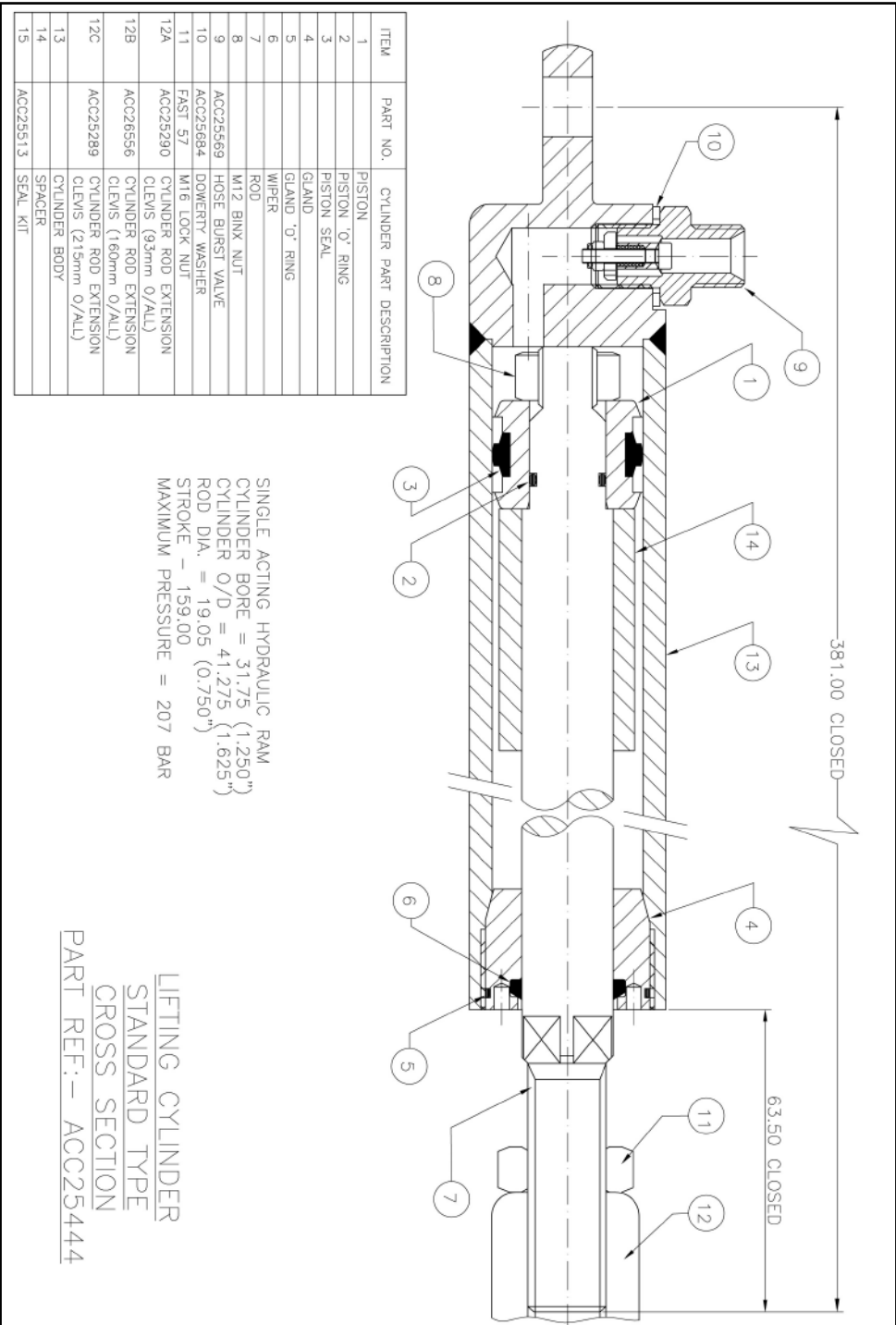
SINGLE ACTING HYDRAULIC RAM
 CYLINDER BORE = 25.40 (1.000")
 CYLINDER O/D = 33.30 (1.312")
 ROD DIA = 15.87 (.625")
 STROKE = (2.750")
 MAXIMUM PRESSURE = 207 BAR

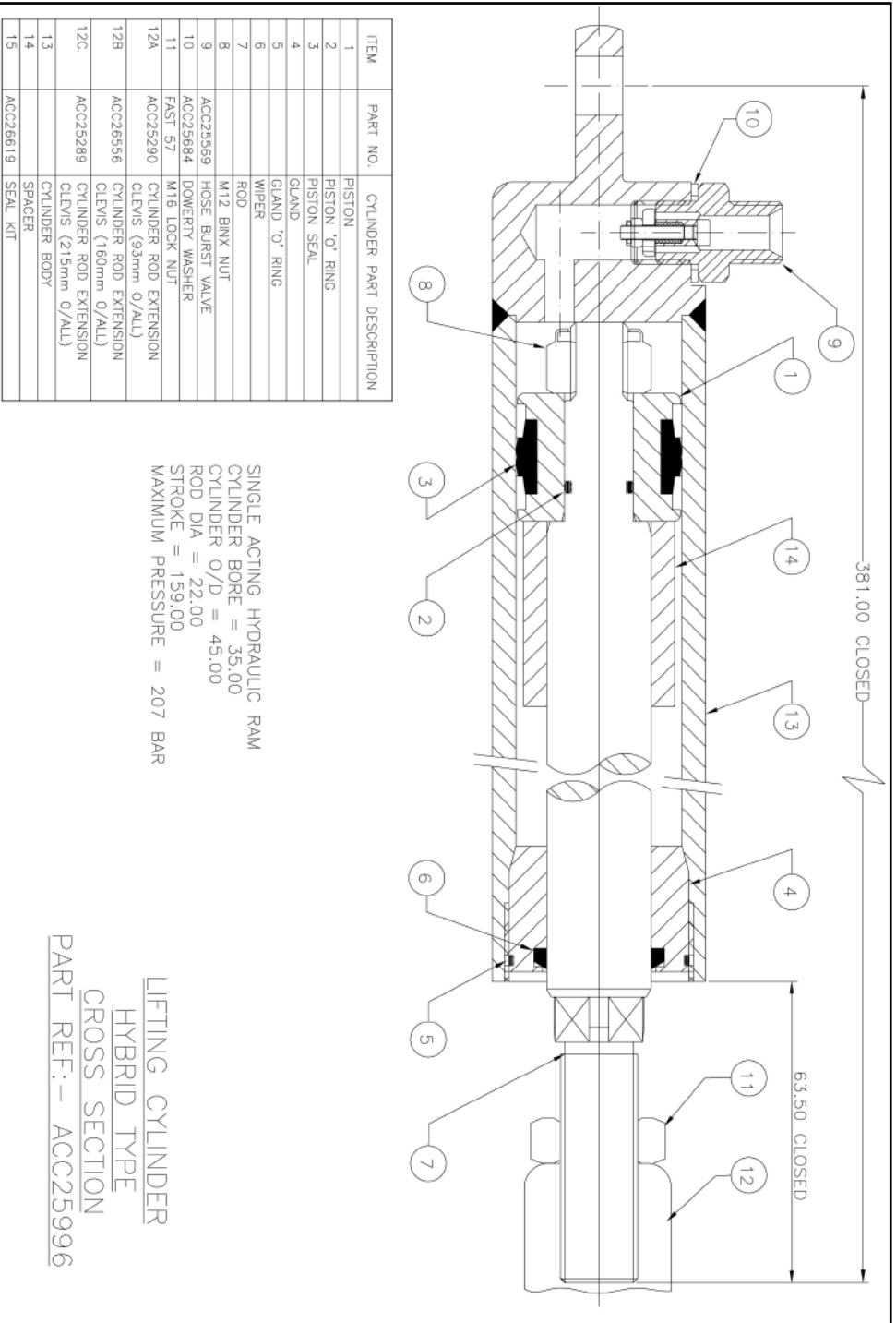
BRIDGE PLATE CYLINDER
 (HYDRAULIC BRIDGE PLATE)
 CROSS SECTION
 PART REF:— ACC25567

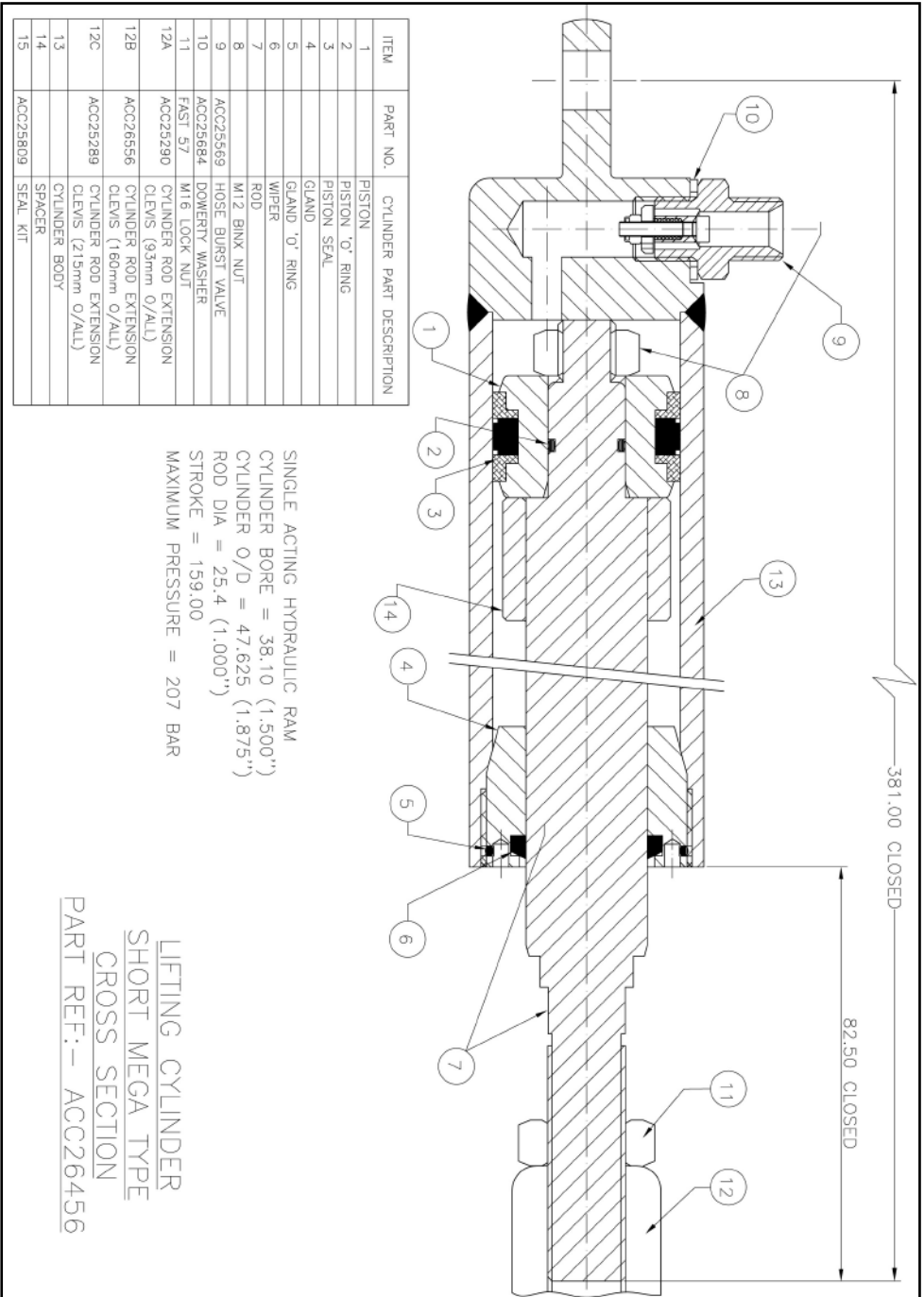
LIFTING CYLINDER ASSEMBLY.— TYPICAL

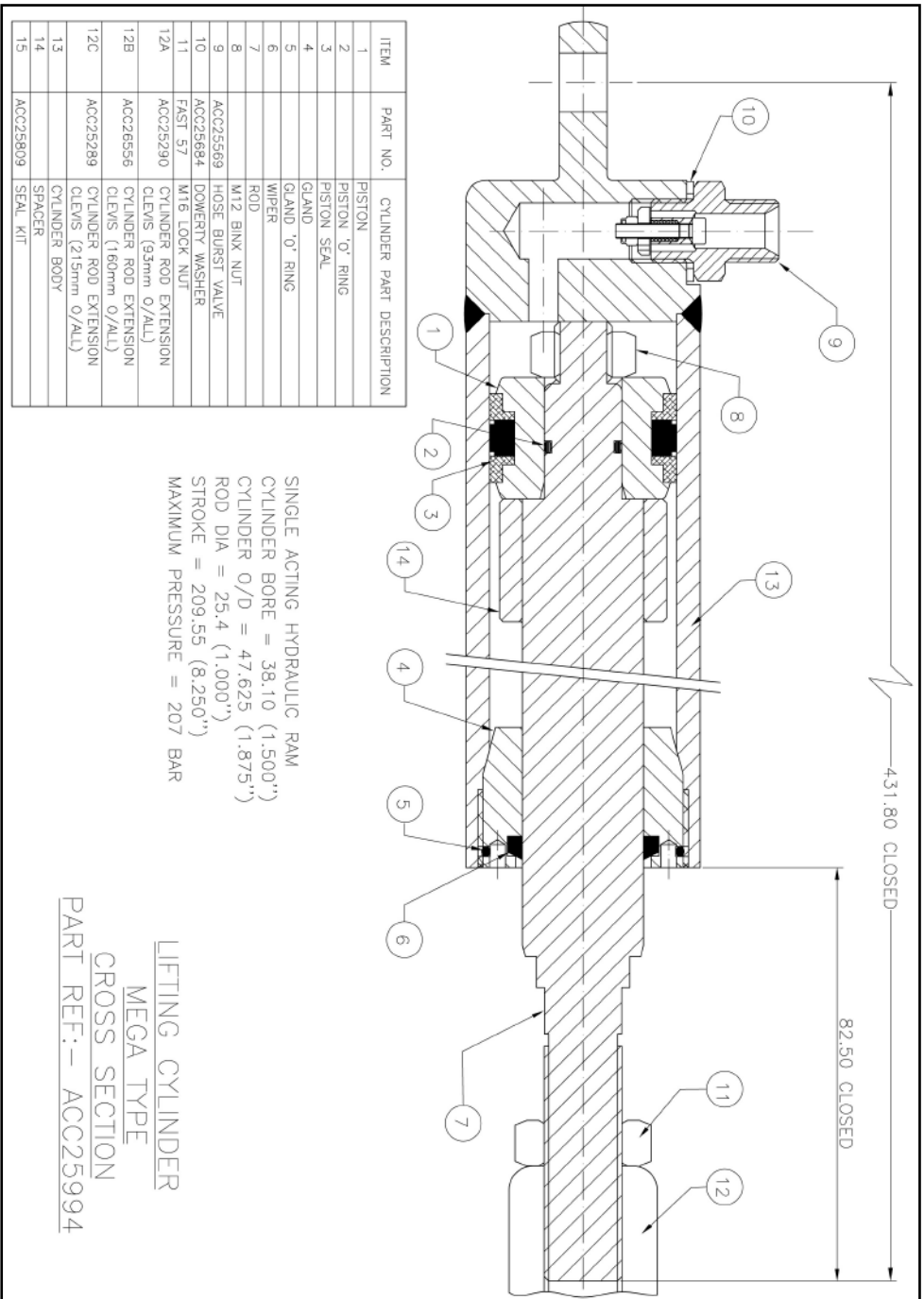


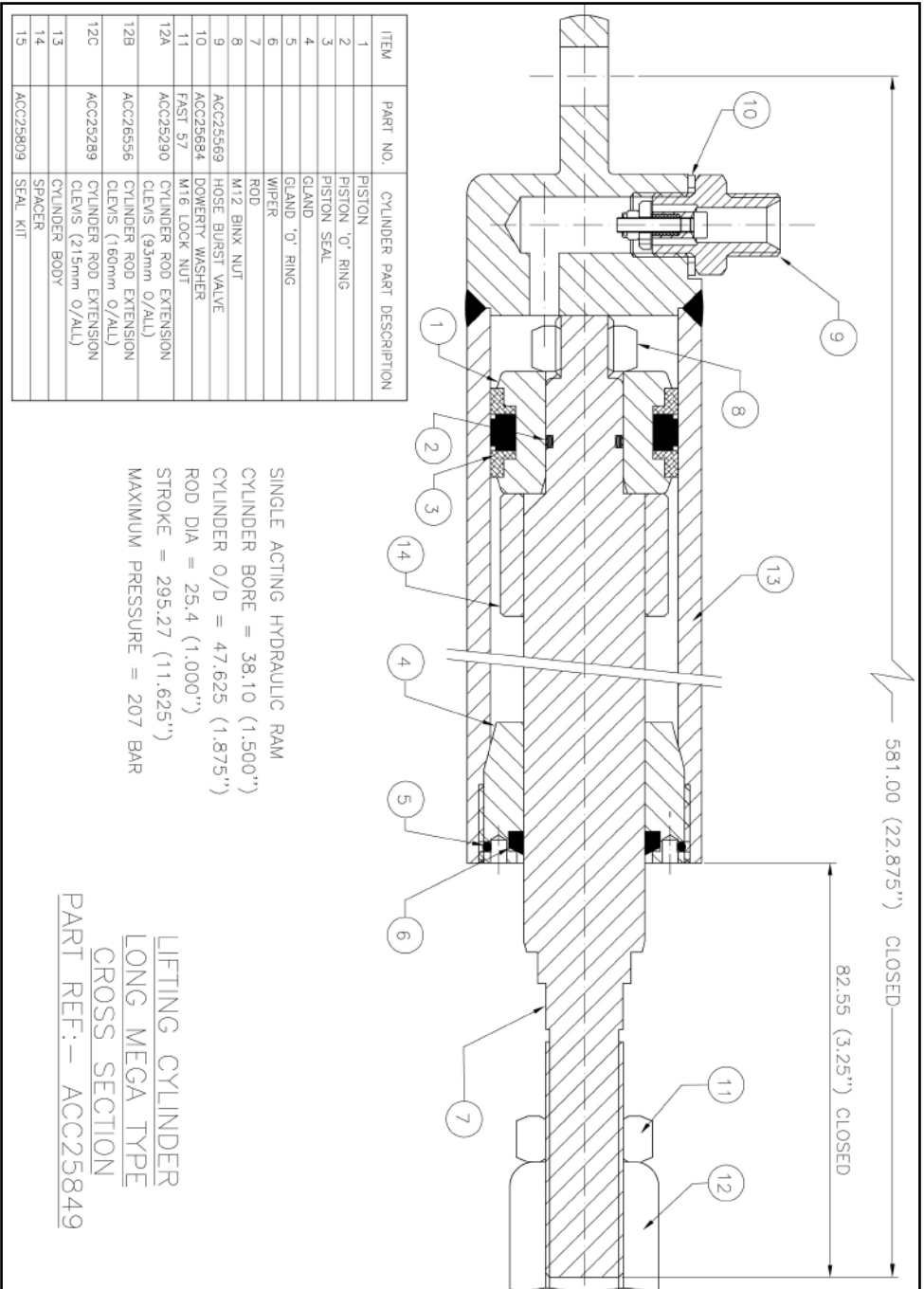
ITEM	CYLINDER PART DESCRIPTION	SUPPLIERS CYLINDER REF
1	PISTON	
2	PISTON 'O' RING	
3	PISTON SEAL	STANDARD TYPE 5048 31.75-19.05-159 S/A
4	GLAND	
5	GLAND 'O' RING	
6	WIPER	HYBRID TYPE 8008 35-22-159 S/A
7	ROD	
8	M12 BINX NUT	
9	HOSE BURST VALVE	
10	DOWERTY WASHER	
11	M16 LOCK NUT	MEGA TYPE 6244/1 1.5-1-8.25 S/A
12A	CYLINDER EXTENSION	
12B	CYLINDER EXTENSION	
12C	CYLINDER EXTENSION	
13	CYLINDER BODY	MEGA LONG TYPE 6244/2 1.5-1-11.62 S/A
14	SPACER	

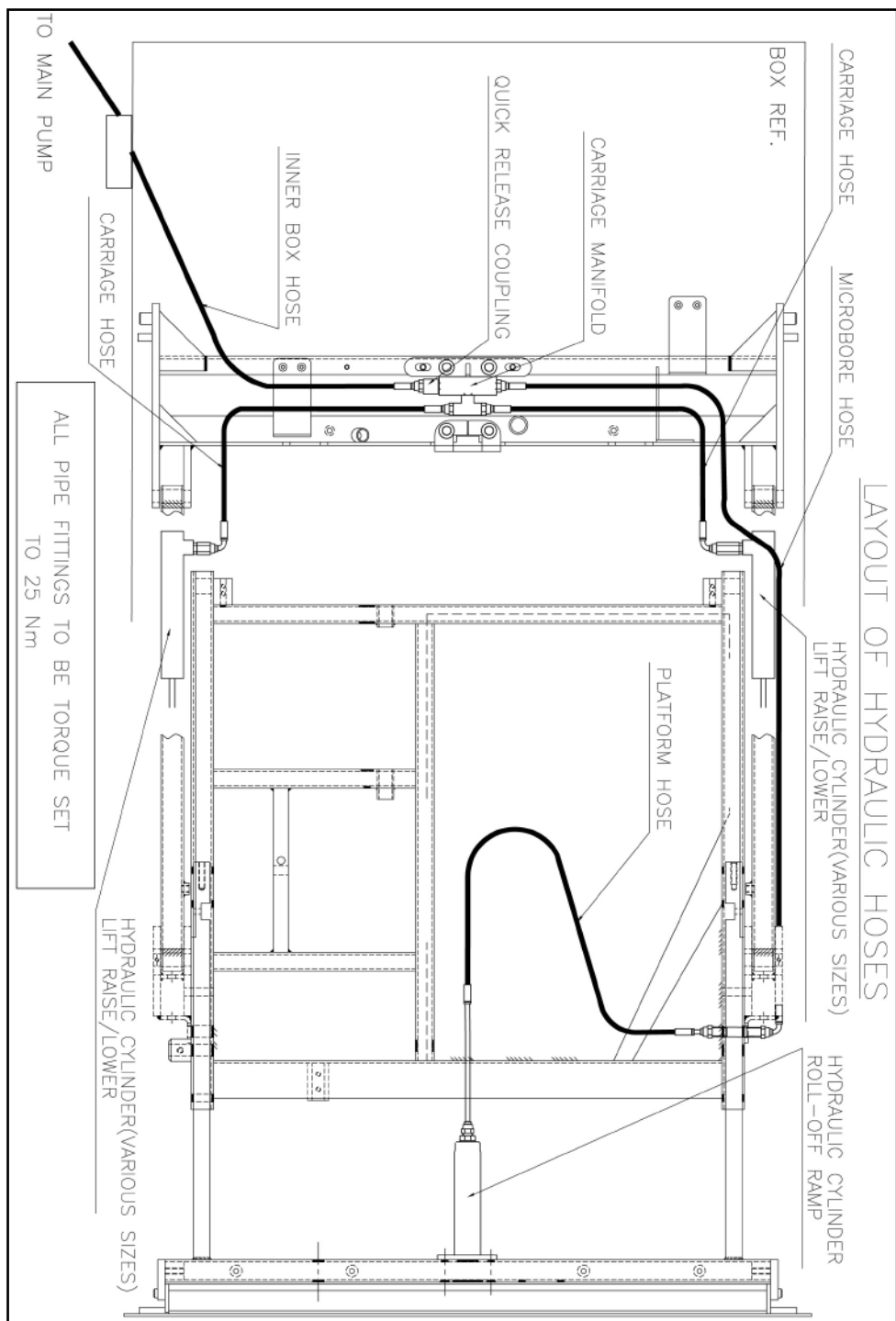


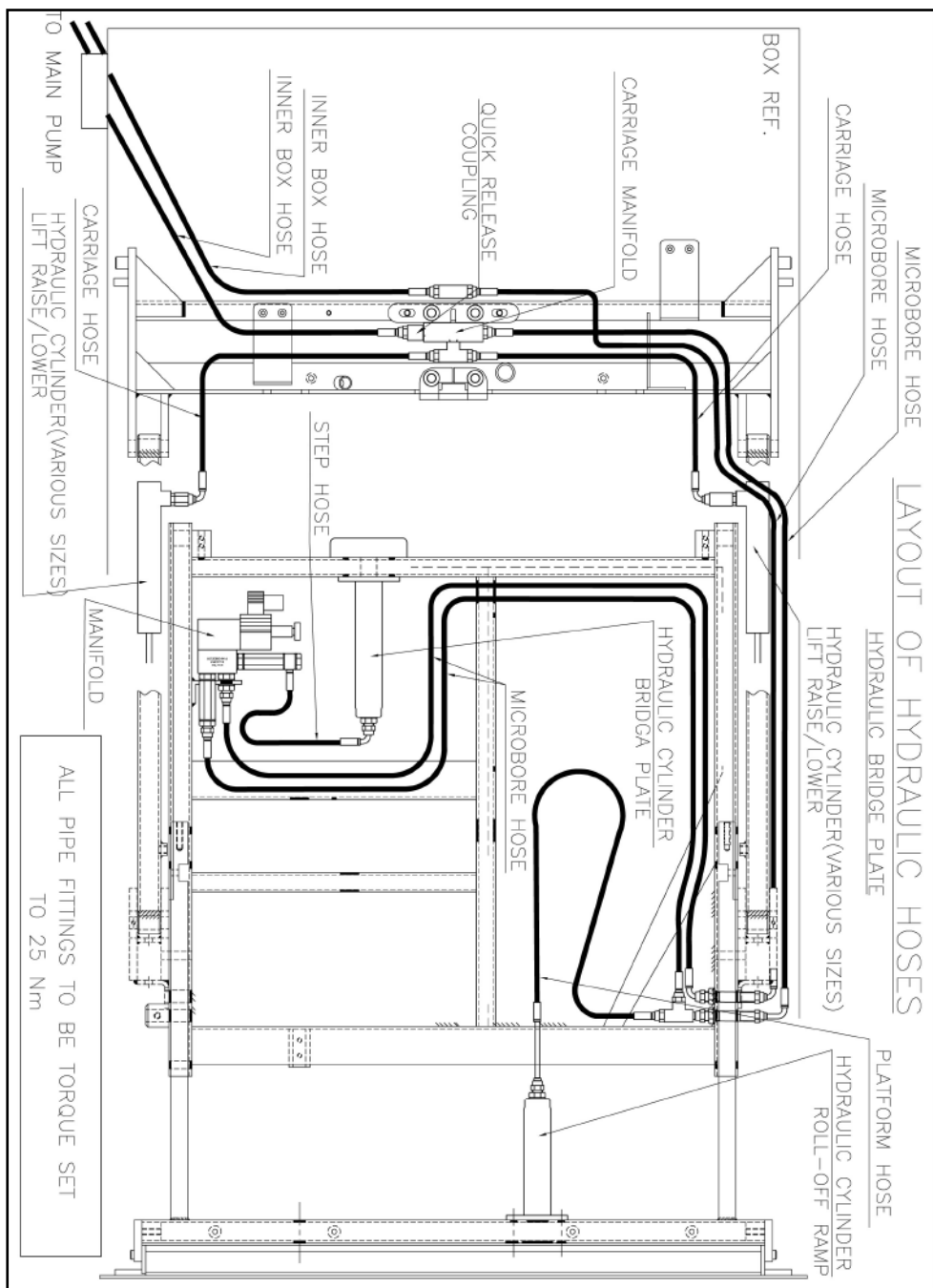








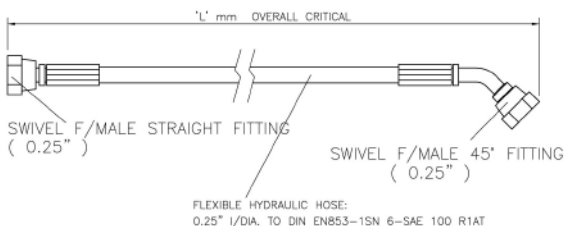




'ACCESS' LIFT HOSES

CARRIAGE HOSES

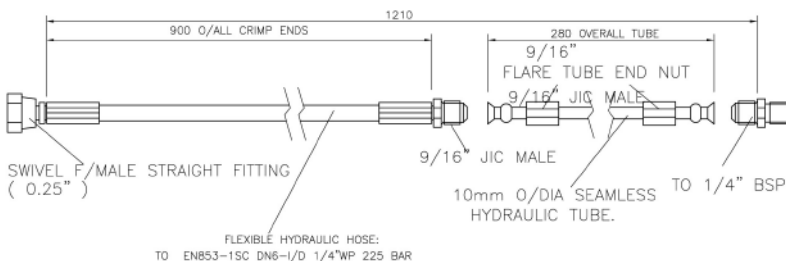
IDENTIFICATION '29000-1'



'L'
450 mm
520 mm
600 mm
650 mm
770 mm
850 mm
400 mm

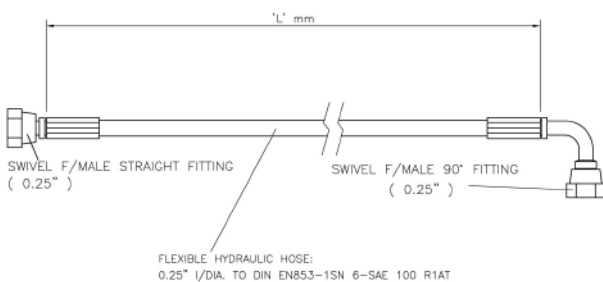
PLATFORM HOSES

IDENTIFICATION '29000-2'



OUTER BOX HOSES

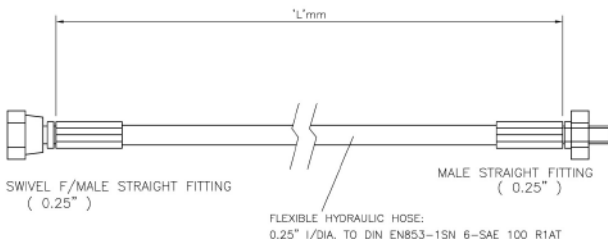
IDENTIFICATION '29000-3'



'L'
700 mm
1000 mm
1200 mm
1300 mm
1400 mm
1600 mm
1700 mm
2000 mm
2500 mm
3200 mm

INNER BOX HOSES

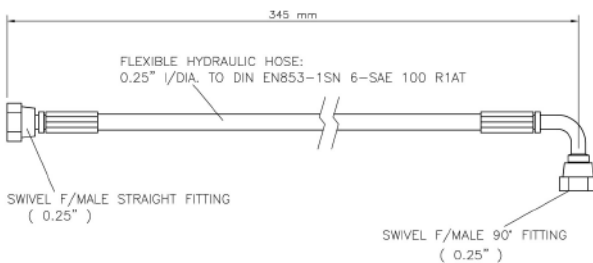
IDENTIFICATION '29000-4'



'L'
1250 mm
1350 mm
1450 mm
1650 mm
2000 mm
6500 mm

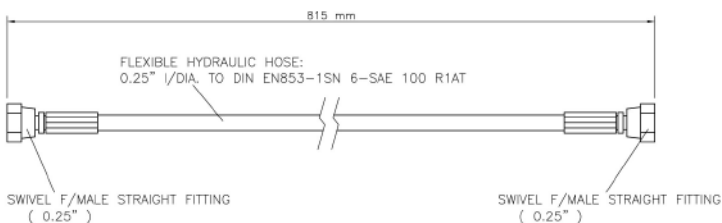
SAVERY PUMP HOSES

IDENTIFICATION '29000-7'



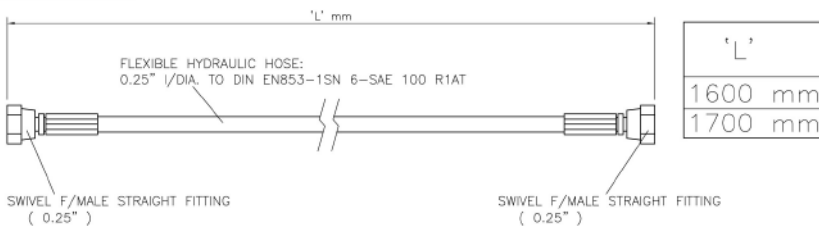
PLATFORM HOSES

IDENTIFICATION '29000-8'



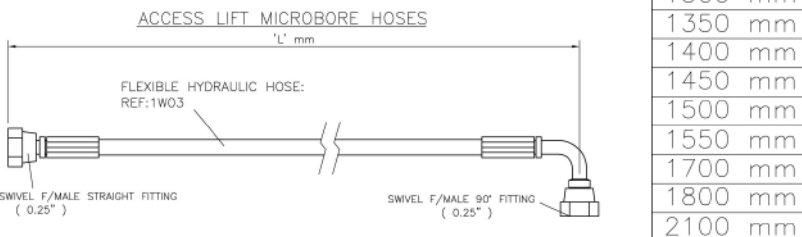
UNIVERSAL OUTER BOX HOSES

IDENTIFICATION '29000-9'



MICROBORE HOSES

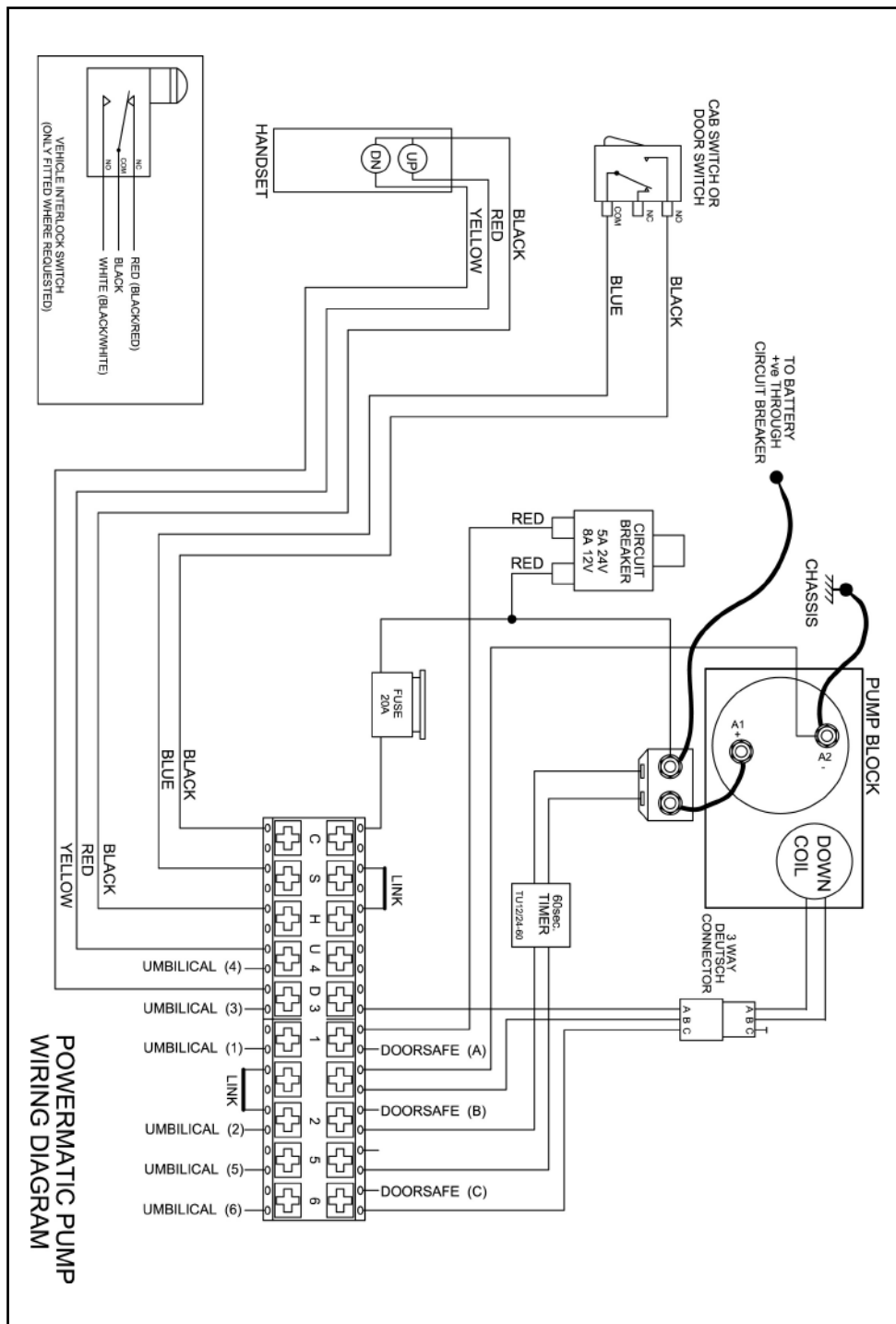
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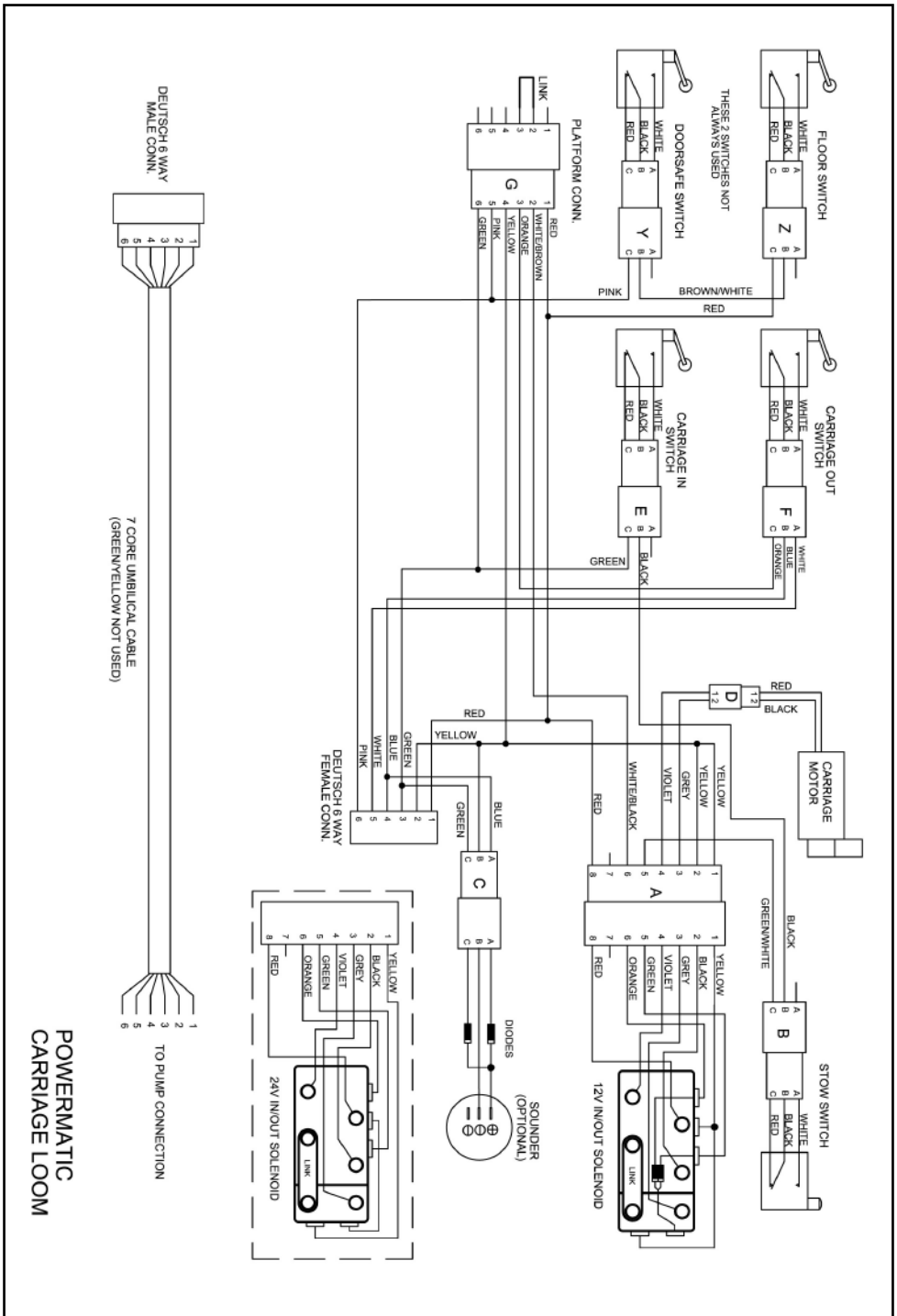


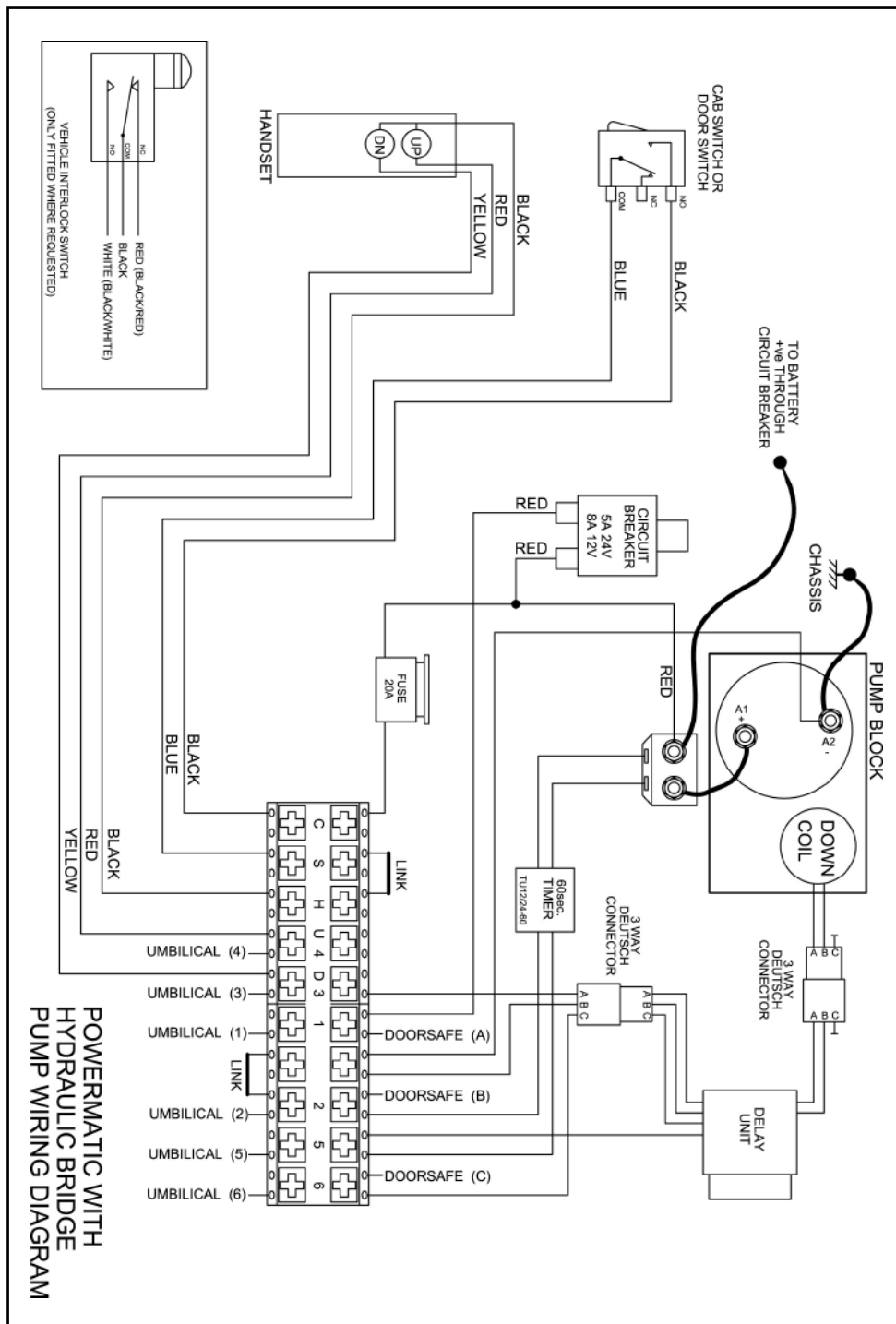


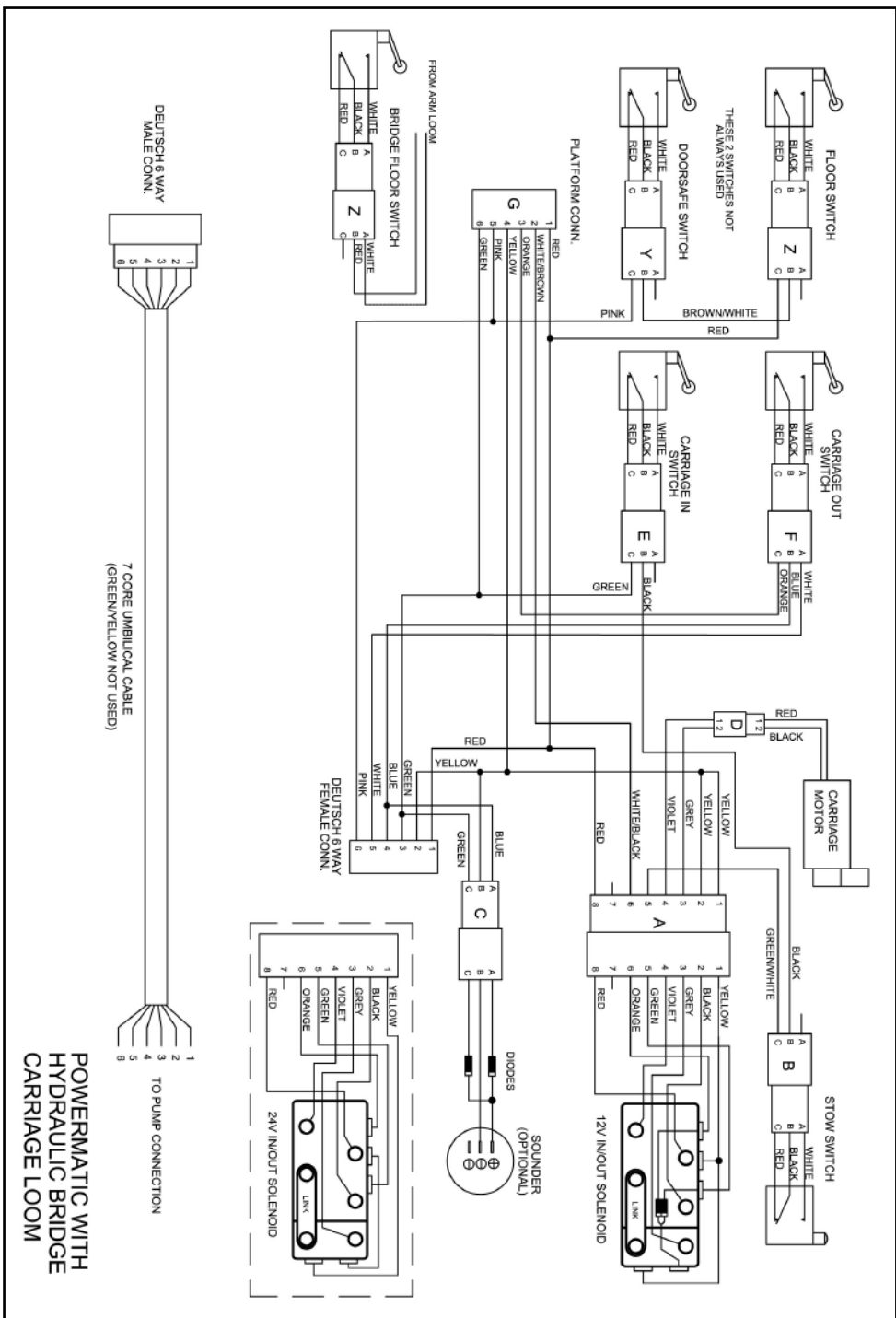
Electrical

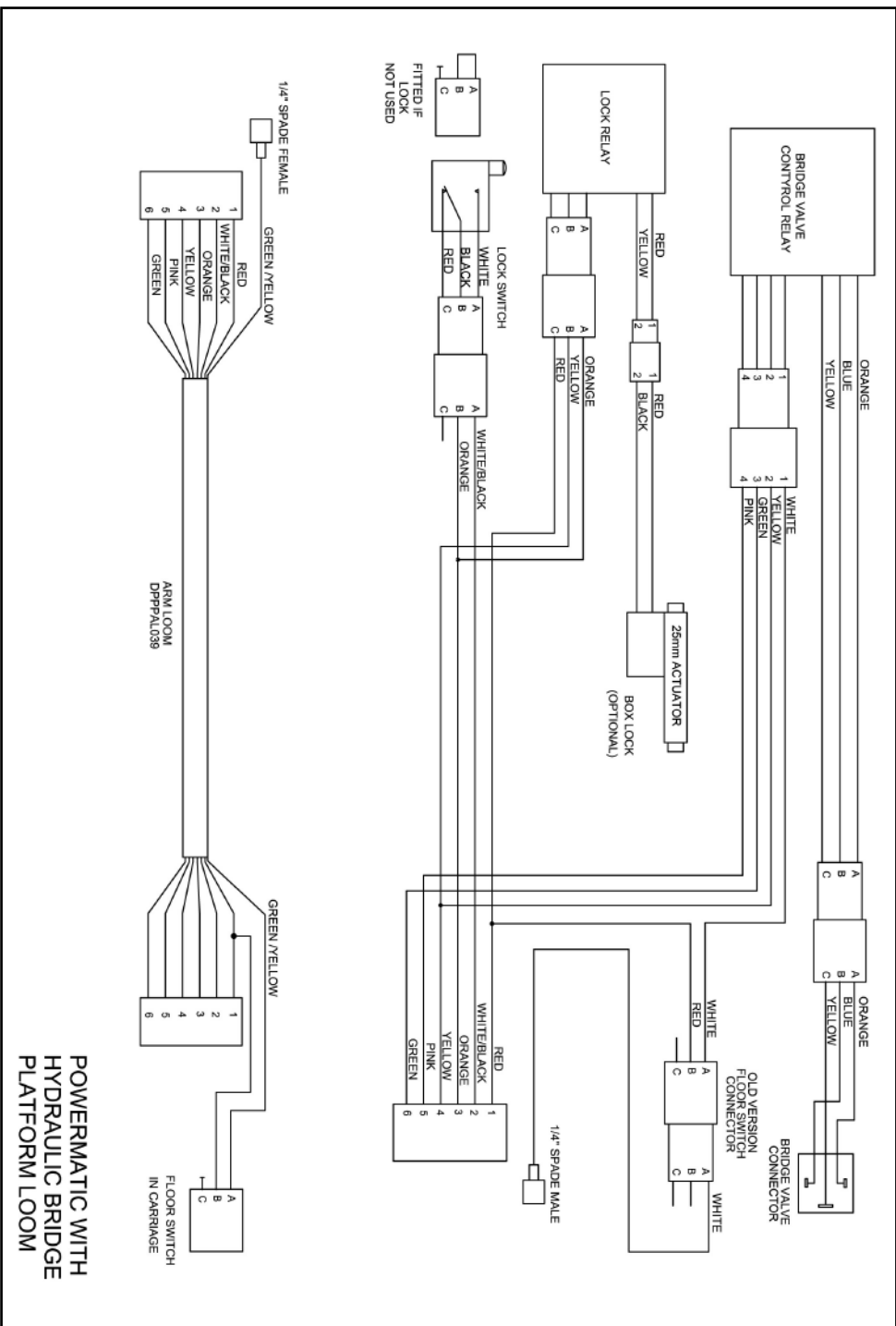
Section 4

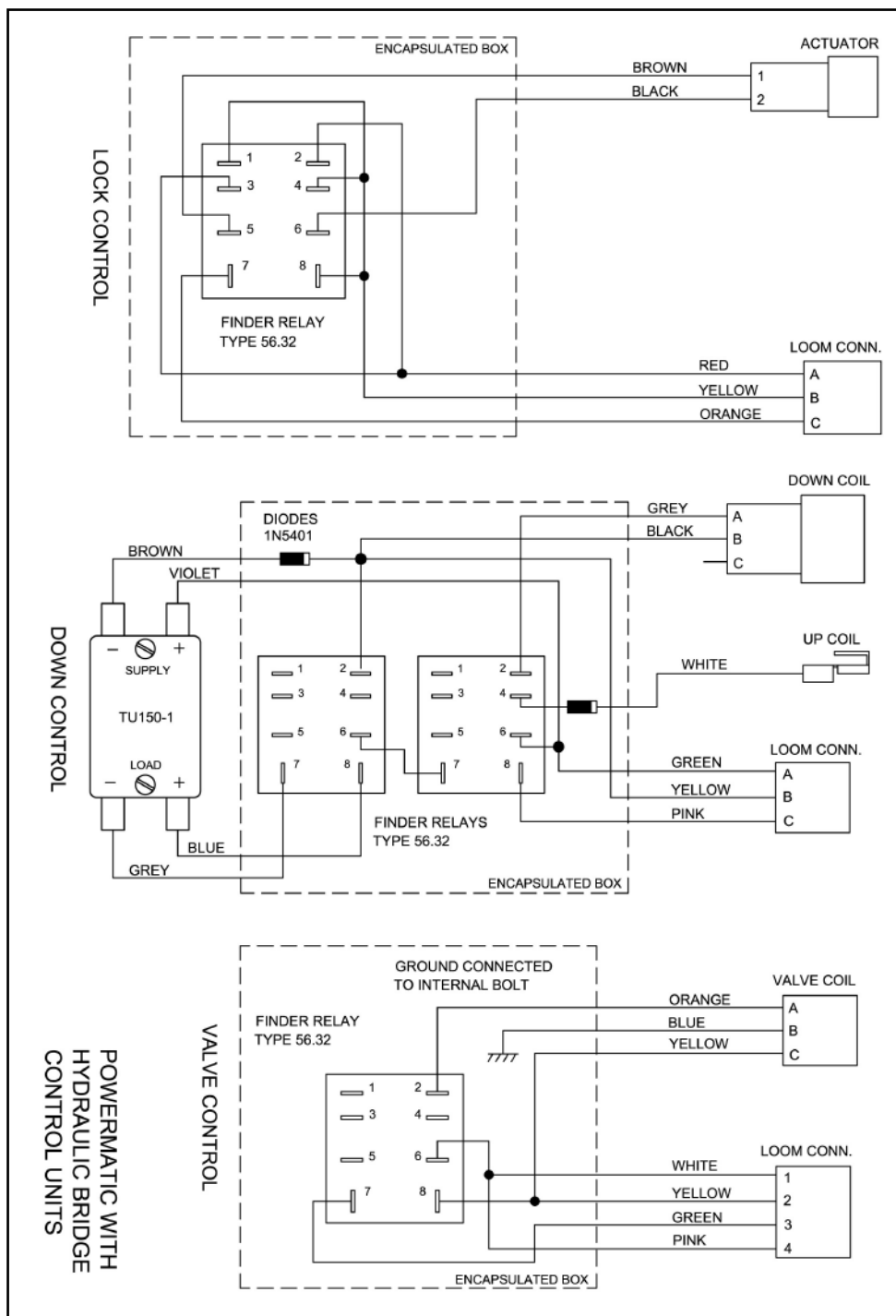














Lift installation & testing

Section 5

1. GENERAL INSTRUCTIONS FOR LIFT INSTALLATION

1.1 Panel Vans

The tail lift is supported with four brackets which are bolted through the vehicle chassis. On nearly all PANEL VANS the rear brackets pick up on existing holes in the chassis although the near-side rear bracket may require relocating towards the front of the vehicle to allow for the box lock mechanism (see page 5.08 – 5.11). This will require drilling new holes in the chassis or bracket to suit. Some front bracket holes may require enlarging depending on bolts used!

- Note: when drilling through box section always use spacer tubes to prevent deformation of the vehicle sections.
- Never drill two holes less than 10mm apart.
- Do not drill too closely to the edge of a chassis member.

The brackets are positioned roughly in each of the four corners of the lift box. They will normally coincide with spaces between 'TRACK BOLTS' or OVER the specially turned down studs.

1.2 Coach Built Vehicles (in addition to 1.1)

On most coach built vehicles it will be necessary to drill new holes in the chassis for the installation brackets (occasionally holes exist in the chassis ends which can be used). The rear brackets **MUST** be mounted a minimum of 250mm from the 'mouth' of the lift box. This will allow clearance for the box lock mechanism. The position of fitting brackets may also be determined via the body mounting points. Always use the strongest parts of the chassis available.

1.3

The lift is usually mounted as close to the underside of the vehicle chassis as possible for maximum ground clearance. Normally however the rear valance of the vehicle protrudes downward, lower than any of the chassis members, e.g. position 'A' on page 5.08 – 5.09. Position 'A' can determine length of 'B', this is the drop from the underside of the chassis to the bottom lip of the tail lift box. However on some coach built vehicles length 'B' is determined by the type of lift fitted.

- Remember to check lift build paperwork for a top of box to vehicle floor height measurement. A top of box to underside of chassis dimension may also be included.
- Remember to add box depth to measurements to extrapolate potential ground clearance.

In some cases it may be necessary to cut the rear valance, to gain extra ground clearance.

1.4

It should be clarified that the front of the tail lift is the end of the box closest towards the front of the vehicle, on page 5.08 – 5.11, position 'Y'. The back of the tail lift is the open end of the box, which is at the rear of the vehicle, position 'X'.

1.5

The length of 'B' on page 5.08 – 5.11, can be the same for the front and rear brackets although usually the front brackets are lower, thus allowing a tilt on the box (positive tilt). This means that point 'Y' can be a maximum of 25mm lower than point 'X' for ALL lifts. Note, for POWERMATIC applications this distance should not be greater than 15mm. Note; check that:

- When platform lowers fully to ground it is level.
- Front and rear of platform land at the same time.
- Roll-off ramp reaches the ground easily.

Note: The front bracket should be as close to point 'Y' as possible.

1.6

When all four brackets have been attached to the chassis, tighten the bracket bolts on ONE SIDE OF THE CHASSIS ONLY, leave the other side loose! Push the lift box under the vehicle and lift the fixed bracket side into position and clamp. It may be necessary to remove and relocate the track bolts (protruding from side of lift box). If bolts clash with bracket positions replace with turned down head versions. Tighten all chassis bolts to brackets (see page 5.14 for torque settings) and replace track bolts removed. The hydraulic support bracket (top view page 5.12) should be retained wherever possible. This will locate the external hose(s) correctly. Note:

- HANDLE THE LIFT CASSETTE WITH GREAT CARE, GALVANIZED SECTIONS ARE VERY SHARP.
 - Any track bolts removed should be replaced and tightened into position when the box is correctly positioned. Turned down studs which are NOT covered by a bracket should be replaced with M10 x 25mm bolts, retained with a spring washer.
-

1.7

The zinc plated top sheet should be secured into position at this stage (some vehicles will require the sheet fitting into position prior to installing the box), as it facilitates handling the cassette much easier. The top sheet is secured into position using a run of Polyethylene Sealant around the top edges of the lift cassette. If the top sheet is required to be removable it may be located with SHORT M6 bolts or 'Duct tape' (if Duct tape is used it will require regular checks and possible replacement).

1.8

The final positioning of the box is also determined by the location of the extension arms, when the lift is raised to its fully UP position (mainly Coach Built vehicles). See page 5.10 - 5.11. Ensure a floor end gap 'G' of at least 15mm, before the end of the platform extension arms comes into contact with the rear of the vehicle, it may be necessary to pull the box out from underneath the vehicle. It is usual for the RAISED HEIGHT to be less than the DROP DISTANCE. Note;

- Check lift doesn't hit vehicle edge with platform extension closed prior to drilling and fixing final cassette position.

5.02

1.9

The cassette box is secured into position via M10 x 30mm Hex head (8.8 strength min) bolts, washers and nylocks. Note;

- THE BOLT HEADS MUST BE ON THE INSIDE OF THE LIFT CASSETTE WITH THE WASHERS AND NYLOCKS ON THE OUTSIDE. If fitted backwards the length of bolt will contact with lift innards and stop lift from functioning. The kit is supplied with 2 M10 x 30mm 'turned down head' bolts, these are used on the front bracket at the rear side of the vehicle. They fit behind the umbilical cable and allow it to fit closely to the side of the box.

How to remove the lift innards

If the box is to be fitted first (lift innards added when box positioned) the lifting section will need to be removed from the lift cassette box!

- 1) Remove the 'stop blocks' one fitted each side of the lift by removing the M8 bolts (two bolts each).
- 2) When removed mark up the stop blocks Left and Right. These must be repositioned in the same manner. If not the lift may power out too far!
- 3) Detach hydraulic QRC (quick release coupling) from rear for Carriage section.
- 4) Detach the electrical multiplug from rear of Carriage.
- 5) Remove cable ties holding umbilical to rear of Carriage.
- 6) The lift may now be removed from cassette.

AFTER REMOVAL PLACE A CABLE TIE AROUND THE ROLLER ARM OF THE 'OUT & UP' MICRO SWITCH, LOCATED ON THE RIGHT SIDE TOP OF THE CARRIAGE. THIS WILL AVOID DAMAGING THE SWITCH WHEN REPLACING THE LIFT INTO CASSETTE.

Note: If the lift powers UP inside the cassette when re-installed, remember to cut off the cable tie that has been fitted across the micro switch. Replace the cable tie that holds the umbilical to the rear of the carriage (lower drawing page 5.12). Make sure that when the lift is powered fully OUT the umbilical is not too tight!

2. INSTALLATION of HYDRAULIC'S & ELECTRIC'S

(See Hydraulic & Electrical sections in manual)

2.1

The lift 'fitting kit' is supplied with a length of 16mm battery cable and a separate length of three core cable (0.75mm min). These should firstly be run from the lift position to the battery and the position of the isolator switch respectively. Follow existing vehicle cables if possible.

DO NOT ATTACH CABLES TO FUEL LINES OR BRAKE PIPES. DO NOT RUN THROUGH HOLES IN CHASSIS OR MEMBERS WITH FUEL LINES. AVOID SHARP EDGES BY PROTECTING CABLE WITH CONDUIT OR KNOCK-ON EDGING STRIPS.

The battery cable is protected via a circuit breaker which should be attached to the positive feed on the battery. The isolator switch is either a door mounted earthing pin switch (mainly panel vans), or a cab switch for coach built vehicles. These cables are then secured above

the pump location on the near side, to the front of the rear brackets, if mounted externally. The type of isolator switch is dependent on the vehicle specification. Door mounted switches should be protected from damage and water ingress.

2.2

If the pump is to be mounted internally, the cables should be secured to the near side corner at the back (rear) of the vehicle, and run through the floor with the hydraulic hose (and umbilical wiring if Lift is a Powermatic type). PLS usually drill through the vehicle floor with a 44mm diameter hole saw and protect the wiring and hoses with split 43mm conduit. The lifts are usually supplied for external pump fitting, to give space inside the vehicles. However, internal mounting will extend the working life of the powerpack greatly.

2.3

The three core cable is normally run up the near side pillar of the vehicle (panel vans) and across to the door using fittings supplied. If a door switch is used this is drilled through the door on the hinge side and adjusted to strike the pillar. The handset wire is run through a grommet on the lock side of the door and all connections are made behind the door cover panel.

If a cab switch is required (mainly coach built vehicles) run a 3 core cable to the front of the vehicle (see wiring diagrams). On most coach built vehicles the handset (pendant control) is fixed to the back panel of the vehicle adjacent to the near side door and connections made using the small black plastic box supplied.

2.4

The hydraulic connection is made between the back of the pump plate and the connection on the side of the cassette, using the flexible hose supplied in kit. This hose length can vary depending on pump position required. The pump is attached to the mounting bracket using 2 off M10 x 60mm bolts. Note:

- ONLY USE PLS SUPPLIED HYDRAULIC HOSES.

2.5

The 16mm earth strap for the pump is attached to a suitable 'clean' point on the vehicle chassis, usually a bracket bolt. All other wiring should be routed to the pump using the large plastic glands. All connections are made in accordance with the instructions on the wiring blocks (number to number) fitted to the pump. The battery feed (live feed in) is attached to the UP solenoid (mounted on the side of the pumps motor) of the loose terminal then tightened. **Note:**

- CONNECT THE LIFT WIRING ON THE CARRIAGE FIRST BEFORE CONNECTING THE BATTERY POSITIVE.

2.6

When mounting the pump location bracket wherever possible the pump should be positioned above the lift box (usually second set of holes from bottom of bracket).

NOTE: THE PUMP MUST BE POSITIONED SO THAT THE HANDPUMP CAN BE OPERATED SAFELY THROUGHOUT THE ENTIRE TRAVEL OF THE LIFT OPERATION.

5.04

3. FITTING OF THE LIFT PLATFORM INTO THE CASSETTE

3.1

When the lift box has been fitted, and both the electric's and hydraulics installed, the lift innards can be located into the box. With tilting the back edge of the lift a little the cam-followers on the side of the lifts carriage, will locate on the box tracks. The lift can then be pulled up to the horizontal position and pushed forward into the box until it is completely home.

3.2

There will be two zinc plated solid metal blocks, usually located with a cable tie to the handrails. These are the lift STOP BLOCKS, they should be bolted into the lift box just underneath the side tracks, at position 'W' on page 5.08 – 5.11. The bolts used should be M8 x 25mm, a spring retaining washer is also required. With the blocks in place the lift can not come out of the box.

3.3

The next operation is to connect the inner box hose to the back of the lift carriage via the quick release coupling (QRC)(see page 3.11). The MALE section of the coupling is located at the back of the carriage, the collar of this coupling should be pulled back away from the open end. The FEMALE end to the inner box hose (umbilical) can then be inserted. It is important to make sure that this connection snaps fully home, because the lift will not power correctly otherwise. The multiplug on the umbilical can be connected to the plug on the carriage. A large cable tie should be used to reattach the umbilical into position on the back of the carriage (see page 5.12). Finally the cable tie used to hold the micro switch on the carriage can be cut off, failure to do this will result in the lift trying to power UP instead of OUT (on Powermatic lifts).

4. ADJUSTING THE LIFT TO SUIT THE VEHICLE FLOOR HEIGHT

4.1

The lift can now be powered up to the vehicle floor height. The floor height of the lift is set at the manufacturers, however in some instances it may be necessary to make minor adjustments. Firstly the bridging plate should be slightly higher than the vehicle floor. To raise the tail lift height, it is necessary to lower the platform below stowing level (see page 1.19 for FULL instructions). Undo the cylinder locking nut and lengthen the cylinder pistons equally, on both sides of the lift.

4.2

If at this stage the bridging plate is lowering too soon, it will be necessary to adjust the bridge plate activator (see page 1.20 for full instructions). Take the lift to vehicle floor height, at this position the gap between the bar (B), and the roller (H) on the bridge plate hinge (I), should be no more than 2 to 3mm. If this gap is greater, loosen 'toggle' lock nut (F), then wind the bar out, making it longer. Raise and lower the lift to check adjusted operation. Remember to re-tighten nut (F). For comprehensive bridging plate adjustment please see page 1.20.

4.3

When the lift is operational the bottom sheet can be fitted inside the lift cassette. It should be slid into the box, then secured with 2 off M6 x 15mm bolts, fastened through the strap at the mouth end of the box. Note; threads should protrude downward, i.e. nuts on outside of box.

4.4

The lift can now be fully weight tested to 125% of its maximum carrying capacity (375Kgs). The pump should then be set at 300Kgs capacity. This is achieved by turning the allen headed bolt P.R.V. IN or OUT to the required position. Re-tighten lock nut when setting is finalized. Note; initial pressure levels will be factory set.

4.5

The manual override of the lifts hand pump should be tested at this time as well as the hydraulic cylinder crash valves. To test the crash valves a suitable tap equipped valve should be connected to the tee location on the hydraulic hose at the power pack. The open end of the valve should then be piped into a container to restrict spillage of hydraulic fluid. With the lift in the raised position, (both unladen and laden with test weights), quickly open the tap to simulate a hydraulic hose bursting. The cylinder crash valves should react by regulating the pressure flow of the fluid, the lift will descend in a down-wardly motion, at a controlled speed. Disconnect valve (tap) and replace blanking cap when finished.

NOTE: A crash test kit is available from PLS parts department.

4.6

The tail lift 'Test Certificates' should always be properly filled out at the end of lift installation, this comprises of a LOLER and Weight Test documents. Certificates are supplied with fitting kit, copies are provided on page 5.15 and 5.16.

5. EXTRA NOTES FOR POWERMATIC APPLICATIONS

5.1

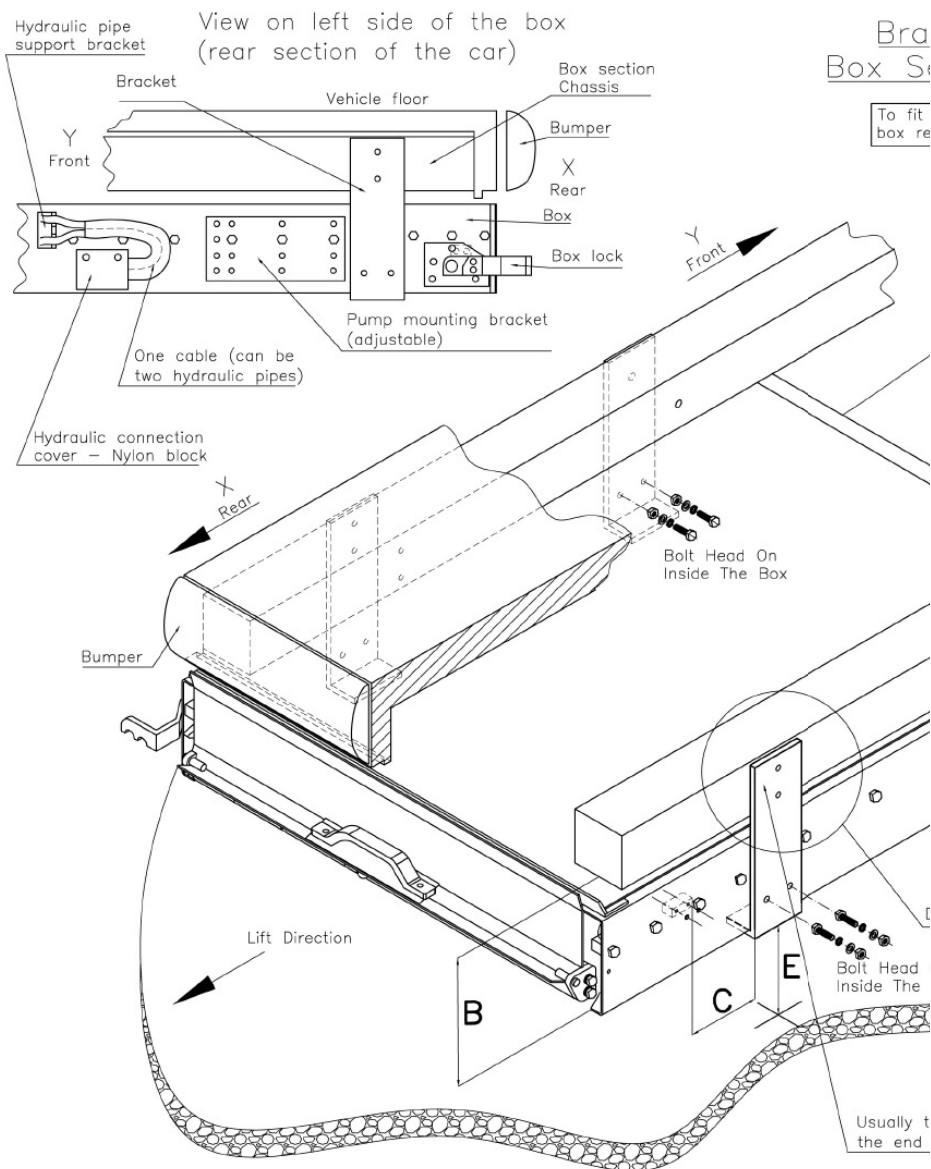
This system works by incorporating two limit switches inside the lift. These detect the position of the unit and transfer the power between the carriage mounted motor (for in/out motion), and the external pump (up/down movement). The installation of a Powermatic lift is the same as a manual because all of the extra wiring is internal, and factory set. Note;

- The change over switch (mounted at the right side of centre, of the carriage with roller attached), will leave the factory with a cable tie over the switching mechanism. This is to stop the switch from being damaged in transport. Cable tie must be removed prior to first operation. If not the system will think that the lift is not at end of travel and continue to power the carriage motor.
- If the lift has not been removed from cassette during the installation process, make sure that the hydraulic connection at the back of the carriage is connected correctly. This is disconnected at the factory to avoid oil spillage and the lifting cylinders dropping!

5.06

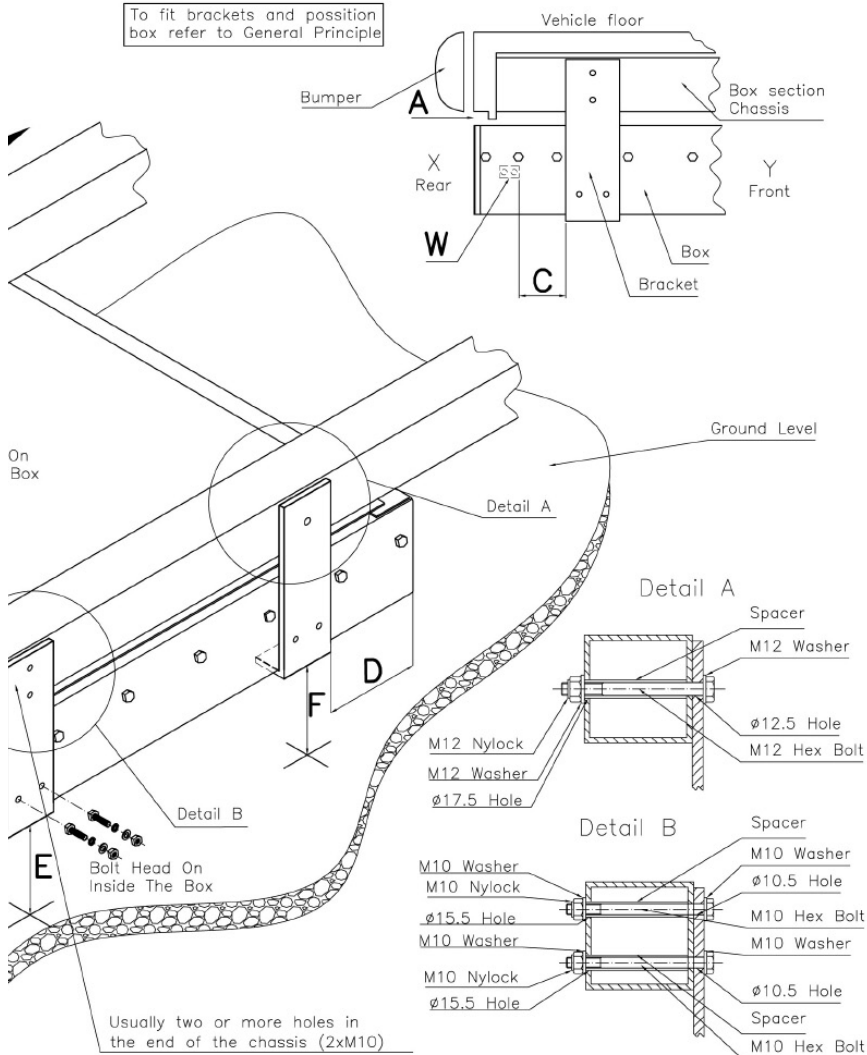
LOAD TESTING A FITTED LIFT

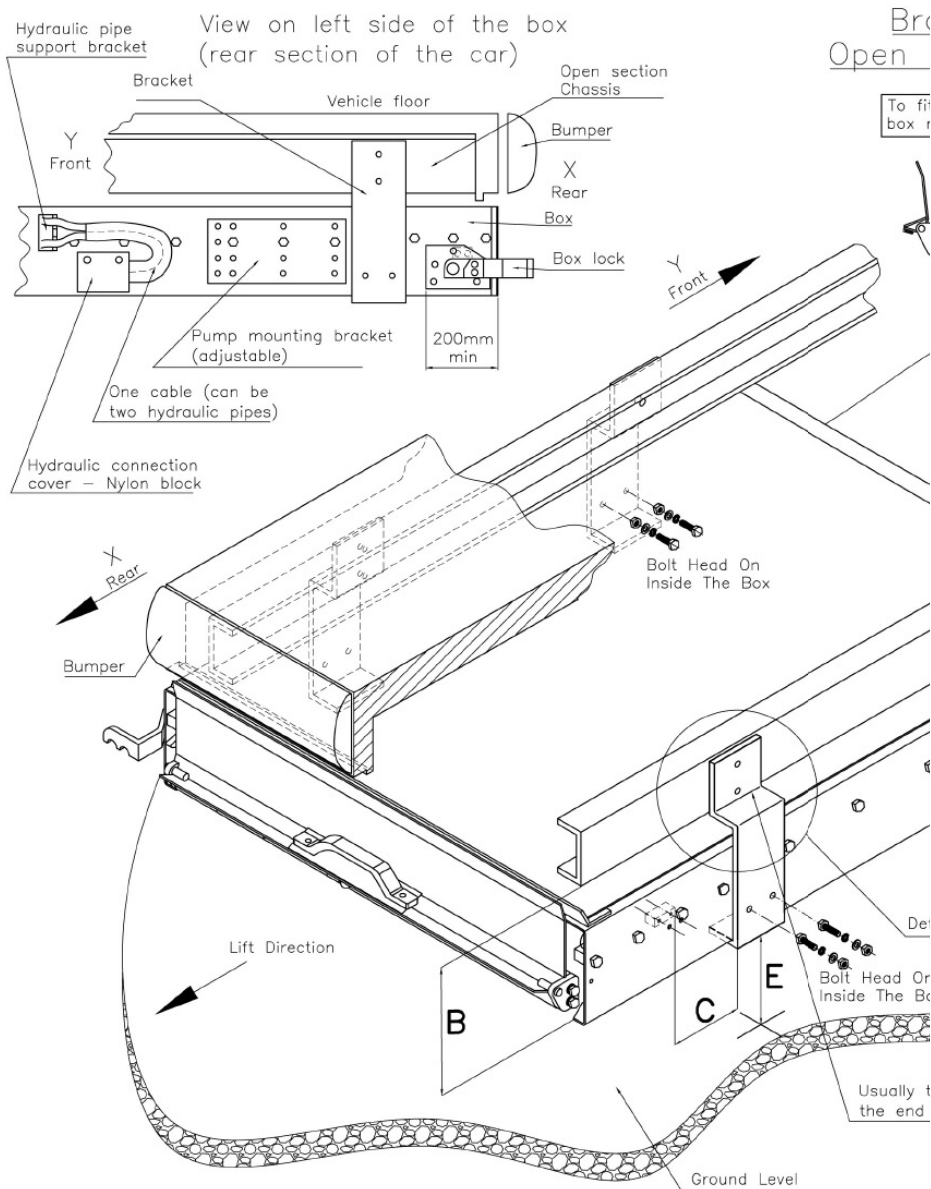
1. S.W.L. to vehicle floor.
 - a) Load platform with 300Kgs and attach pressure gauge to 'test point' on pump unit.
 - b) Power the lift FULLY UP to vehicle floor height.
 - c) Visually check mounting brackets for movement and strength.
 - d) Leave lift for 10 minutes (at full floor height) and check for creep. Should be NO more than 15mm down.
 - e) Lower lift to ground and add weight to 125% (i.e. 375Kgs for a 300Kgs badged lift). The lift MUST NOT be able to power UP with this load on! If lift rises turn the lifting pressure DOWN. Turn valve (fitted on pump face) clockwise to increase power and anti-clockwise to decrease. NOTE: Valve must NEVER be fully tightened IN. Minimum one full turn back.
 - f) Remove overload weight and raise lift to vehicle floor height. Check the full UP and DOWN stroke 5 times. Check that the lift raises 'smoothly' towards the top of stroke and does not struggle. If lift is 'sluggish' increase the relief valve pressure.
 - g) Remove weight.
2. Check hand pump operation and lowering 'DOWN' valve.
3. Check that all 'manual handling' components are free and easy to operate (i.e. handrails and platform).
4. Check roll-off ramp operates 'smoothly' with NO trip hazards present.
5. Check bridge plate operation. With full S.W.L. weight on the platform the bridge plate should land correctly (flush) with the vehicle floor. If it does not lay flat the actuator rod should be adjusted (see page 1.20).
6. Fill in LOLER certificate (page 5.15).
7. Fill in Weight Test certificate (page 5.16).



Bracket Fit To Box Section Chassis View on right side of the box (rear section of the car)

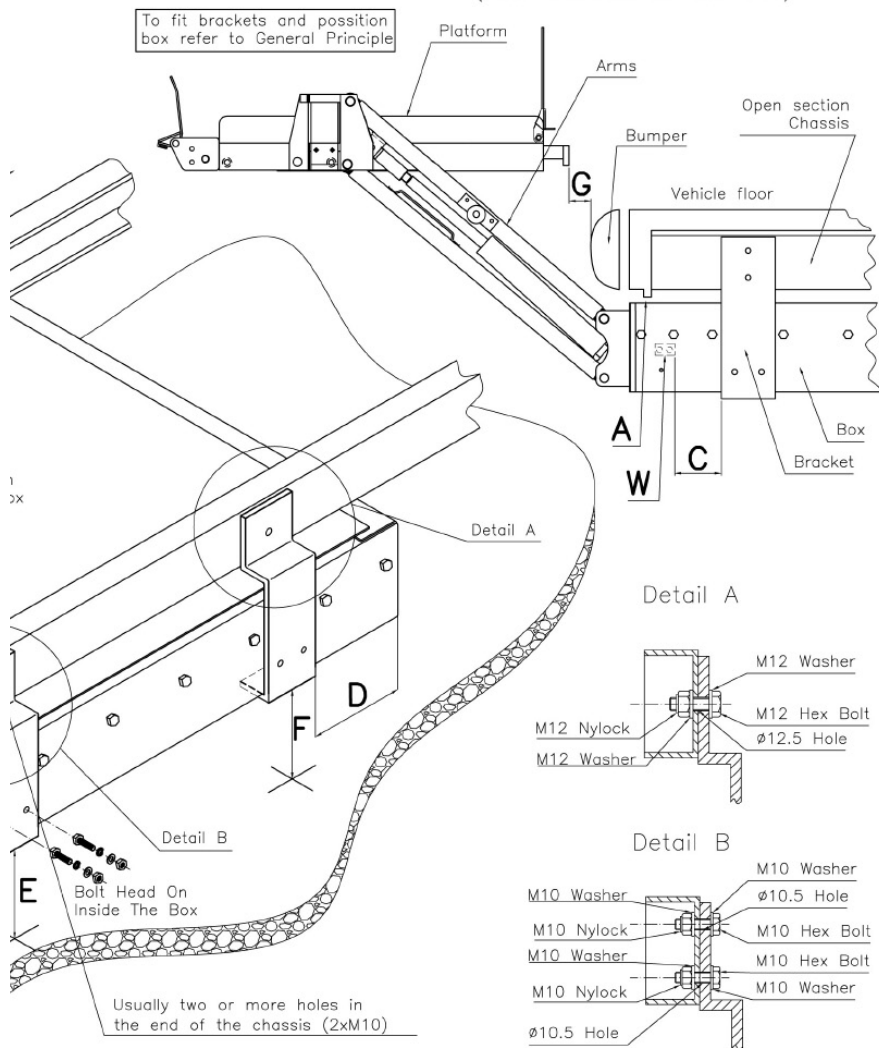
To fit brackets and position box refer to General Principle

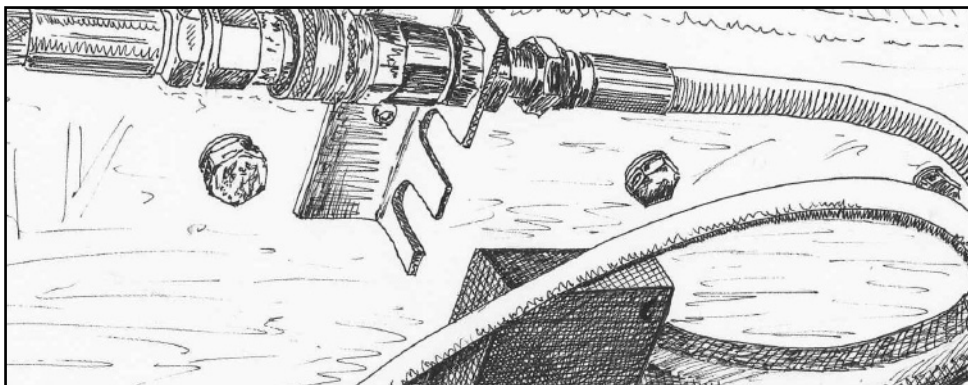




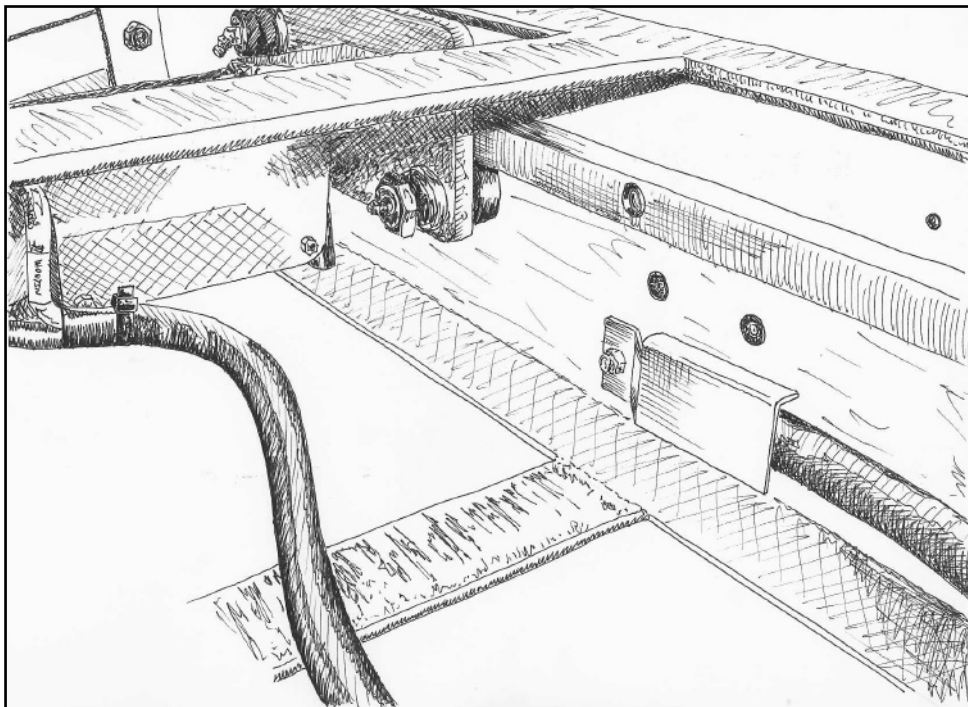
Bracket Fit To Open Section Chassis

View on right side of the lift
(rear section of the car)

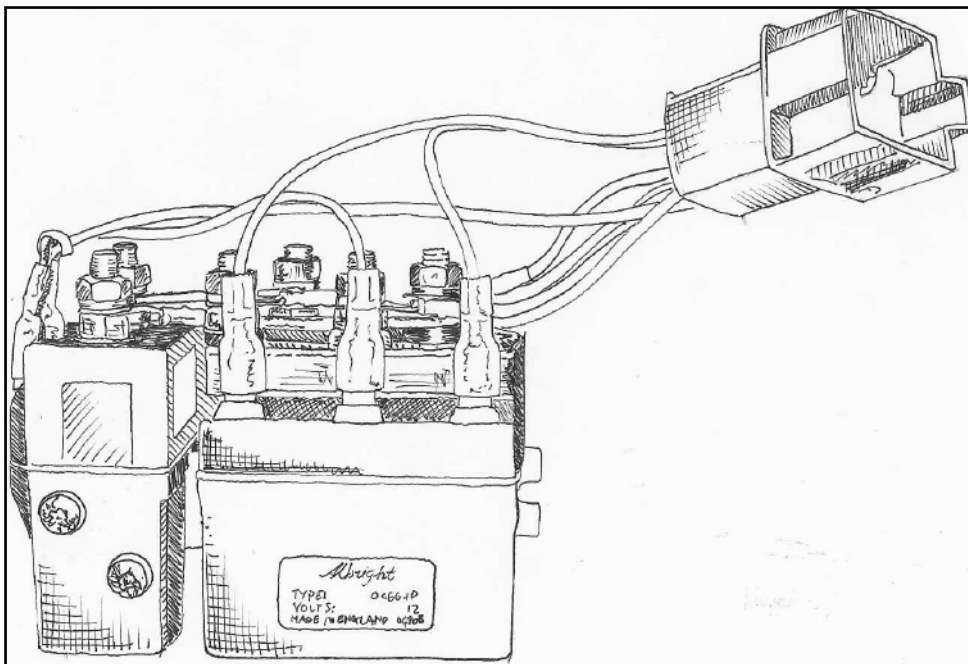




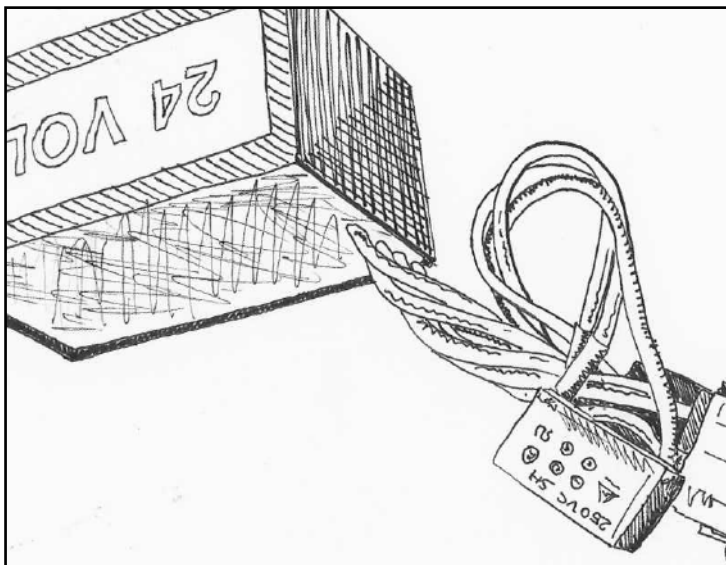
Umbilical exit from box



Umbilical entrance inside box (showing bolt on hose guard)



Solenoid assembly (shown without cover)



Relay assembly (has been updated by above solenoids)

PLS Recommended Torque Settings (Nm)

Thread Size	Tensile Grades of Fastenings			
	4.6	8.8	10.9	12.9
M4	2	3.2	4.5	5.59
M5	4	6.4	9	11.3
M6	6.8	10.9	15.3	19.1
M8	16.3	26.1	36.8	46.1
M10	32.2	51.5	72	92.1
M12	56	90	126	159
M14	89	142	200	255
M16	136	218	307	368



Installation/Examination and Confirmation of Weight Certification

Certificate No.

Lift Serial No.

The following test conforms to the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER 98), for Passenger Carrying Vehicle Tall Lifts.

Operating Company (Lift owners) Address:	Location of Examination (Address):						
Base Vehicle Reg:	Date of Last Examination:						
Safe Working Load (Kgs):	Date of this Examination:						
Relief Valve Setting (BAR):	Date of next Examination:						
Reason for Examination:							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="padding: 5px;">Test Applied</td> </tr> <tr> <td style="width: 50%; padding: 5px;"> Ramp Stop Operation ☐ Bridging Plate Operation ☐ Platform Stability ☐ General Corrosion Condition ☐ Handset Condition OK ☐ Operation Time OK ☐ Hoses in Good Condition ☐ Unions in Good Condition ☐ All Hydraulic Cylinders ☐ In/Out Motor OK ☐ In/Out Pump Condition ☐ Up/Down Pump Condition ☐ </td> <td style="width: 50%; padding: 5px;"> Hand Pump Working ☐ Hand Rail Condition ☐ Umbilical Hose Condition ☐ All Bearings & Pins ☐ All Important Fastenings ☐ All Electrical Wiring ☐ Condition of Lift Box ☐ Fittings Brackets ☐ Welds & General Fabrication OK ☐ Crash Test Applied ☐ Downward Creep in 10 Mins ☐ Overload Test Applied ☐ S.W.L. Test Applied ☐ </td> </tr> </table>		Test Applied		Ramp Stop Operation ☐ Bridging Plate Operation ☐ Platform Stability ☐ General Corrosion Condition ☐ Handset Condition OK ☐ Operation Time OK ☐ Hoses in Good Condition ☐ Unions in Good Condition ☐ All Hydraulic Cylinders ☐ In/Out Motor OK ☐ In/Out Pump Condition ☐ Up/Down Pump Condition ☐	Hand Pump Working ☐ Hand Rail Condition ☐ Umbilical Hose Condition ☐ All Bearings & Pins ☐ All Important Fastenings ☐ All Electrical Wiring ☐ Condition of Lift Box ☐ Fittings Brackets ☐ Welds & General Fabrication OK ☐ Crash Test Applied ☐ Downward Creep in 10 Mins ☐ Overload Test Applied ☐ S.W.L. Test Applied ☐		
Test Applied							
Ramp Stop Operation ☐ Bridging Plate Operation ☐ Platform Stability ☐ General Corrosion Condition ☐ Handset Condition OK ☐ Operation Time OK ☐ Hoses in Good Condition ☐ Unions in Good Condition ☐ All Hydraulic Cylinders ☐ In/Out Motor OK ☐ In/Out Pump Condition ☐ Up/Down Pump Condition ☐	Hand Pump Working ☐ Hand Rail Condition ☐ Umbilical Hose Condition ☐ All Bearings & Pins ☐ All Important Fastenings ☐ All Electrical Wiring ☐ Condition of Lift Box ☐ Fittings Brackets ☐ Welds & General Fabrication OK ☐ Crash Test Applied ☐ Downward Creep in 10 Mins ☐ Overload Test Applied ☐ S.W.L. Test Applied ☐						
Description of Defects Identified and Remedial Work Required:							
I the undersigned confirm that the above Lift was examined in accordance with LOLER 98 regulations on: And that Certificate No: was issued in confirmation of a satisfactory weight test.							
<table style="width: 100%;"> <tr> <td style="width: 40%;">Signed: </td> <td style="width: 20%;">Position/Qualifications </td> <td style="width: 40%;">Examining Company </td> </tr> <tr> <td>Date: </td> <td colspan="2"></td> </tr> </table>		Signed:	Position/Qualifications	Examining Company	Date:		
Signed:	Position/Qualifications	Examining Company					
Date:							



Installation/Examination and Confirmation of Weight Certification

Certificate No.

Lift Serial No.

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Base Vehicle Reg:	Date of Last Examination:
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Safe Working Load (Kgs):	Date of this Examination:
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Relief Valve Setting (BAR):	Date of next Examination:
-----------------------------	---------------------------

Reason for Examination:

Test Applied	
Ramp Stop Operation	☐
Bridging Plate Operation	☐
Platform Stability	☐
General Corrosion Condition	☐
Handset Condition OK	☐
Operation Time OK	☐
Hoses in Good Condition	☐
Unions in Good Condition	☐
All Hydraulic Cylinders	☐
In/Out Motor OK	☐
In/Out Pump Condition	☐
Up/Down Pump Condition	☐
Hand Pump Working	☐
Hand Rail Condition	☐
Umbilical Hose Condition	☐
All Bearings & Pins	☐
All Important Fastenings	☐
All Electrical Wiring	☐
Condition of Lift Box	☐
Fittings Brackets	☐
Welds & General Fabrication OK	☐
Crash Test Applied	☐
Downward Creep in 10 Mins	☐
Overload Test Applied	☐
S.W.L. Test Applied	☐

Description of Defects Identified and Remedial Work Required:

I the undersigned confirm that the above Lift was examined in accordance with			
LOLER 98 regulations on:		Examining Company	
And that Certificate No:			
was issued in confirmation of a satisfactory weight test.			
Signed:		Position/ Qualifications	
		Date:	

Welding Information

Welding What is welding?

Welding is an industrial process used for joining metals. It involves many processes in which two pieces of metal are joined together or separated by application of heat, pressure or a combination of both.

Welding can be performed in a wide range of work environments.

Welding is a high risk and labour intensive activity. It exposes workers to a number of hazards that may be detrimental to health and can have both acute and chronic effects. Welding related accidents can also be fatal.



Hazards and risks associated with welding

Welders are exposed to the following hazards:

- Electric shock - due to contact with electrically live components.
- Radiation burns - burns to the eyes or body due to large quantity of visible light, ultraviolet and infrared from the welding arc.
- Body burns - burns due to weld spatter or hot or molten material, or due to burning of clothing.
- Fire and explosion - due to arc, flame, sparks or spatter or electrical faults in combination with flammable materials, gases or liquids.
- Fumes - due to inhalation of harmful fumes and gases from the welding process.
- Noise - welding environments are sufficiently noisy to be above the limit level (85dB(A)).
- Slips, trips and falls - due to arrangements of tools and power lines in different work environments.
- Manual handling - due to the use of heavy tools and equipments.

Difficult work situations such as work outdoors, in confined spaces or on steel structures can also add to the hazards of welding.

Managing risks associated with welding

The best way to manage the risks associated with welding is by implementing risk management programs. Risk management is a method that requires the identification of hazards, assessment of the risks and implementation of suitable controls to reduce the risk to an acceptable level.

It is essential to evaluate and review a risk management program. Evaluation involves ensuring that control measures have eliminated or reduced the risks, and review aims to check that the process is working effectively to identify hazards and manage risks.

Employer's responsibilities in managing risks

If a hazard is identified the employer must ensure that an assessment of the risk is made and a control measure is implemented.

The employer is responsible for designating individuals who are competent in the safe operation of their equipment and safe welding process. A competent person is one who has, through a combination of training, education and experience, acquired knowledge and skills that enable the person to correctly perform that task.

Employee's responsibilities in managing risks

The HSE requires employees, while at work, to:

- take all reasonably practicable steps to not take any action, or make any omission, that creates or increases a risk to take all reasonably practicable steps to not take any action, or make any omission, that creates or increases a risk to their or others' health and safety.
- cooperate with the employer to the extent necessary to enable the employer or other person to fulfill duties and obligations imposed on them.
- use equipment, supplied by the employer in accordance with any instructions given by the employer consistent with its safety equipment, supplied by the employer in accordance with any instructions given by the employer consistent with its safe and proper use. This is of particular importance for welding activities as the use of personal protective equipment is essential in such activity.

[illegible]



Part Numbers

Section 6

LIFT PARTS REFERENCE GUIDE

REF. NO.	DESCRIPTION	PART NUMBER
1	Lift Stowage Box (flat back)	Quote lift number
2	Carriage stop	ACC 25027
3	Box side guide carriage runners	Quote lift number
4	Box bottom galvanised sheet	Quote lift number
5	Box top galvanised sheet	Quote lift number
6	Box top centre guide carriage runner (Manual)	Quote lift number
6A	Box top centre guide carriage rack (Powermatic)	Quote lift number
7	Box lock hook	ACC 25036
8	Box lock housing plate	ACC 25669
9	Box lock spacer	ACC 25030
10	Box lock spring	ACC 26207
11	Box lock handle latch	ACC 26368
12	Box lock handle (Standard)	ACC 25037
13	Ubilical cover	ACC 25995
14	Umbilical fixing bracket	ACC 25976
15	Box internal cable cover	ACC 26018
16	Carriage switch bracket	ACC 26370
17	M10x25 bolt (10.9) high tensile	ACC 26626
18	M10x20 bolt (reduced head)	FAS 80088
19	M8x20 countersunk head socket screw	FAS 80032
20	Box micro-switch bracket	ACC 25038
21	Carriage fabrication (Standard type)	Quote lift number
22	Lower right lifting arm	Quote lift number
23	Upper right lifting arm	Quote lift number
24	Upper left lifting arm	Quote lift number
25	Lower left lifting arm	Quote lift number
26	Left hand stowing rocker	Quote lift number
27	Carriage front bearing carrier	ACC 25084
28	Roller bearing	ACC 25645
29	Circlip	FAS 80109
30	Carriage rear bearing carrier (for flat back box)	ACC 26519
31	Carriage motor gear	ACC 26065
32	Carriage drive gear inner sleeve	ACC 25959
33	Carriage drive gear	
34	Carriage motor bracket	ACC 25198
35	Carriage motor	ACC 25449 - 12v ACC 25671 - 24v
36	Arm pin - plain (Standard lift)	ACC 25285
37	Carriage cam follower	ACC 25739(std)
38	Carriage cam follower lock nut	ACC 25740 45deg
39	Carriage cam follower washer	grease nipple
40	Carriage lock micro-switch bracket	ACC 25061
41	Buzzer nut	PNXBUZ222
42	Buzzer	
43	Buzzer bracket	ACC 26045
44	Solenoid	24v / 12v

45	Solenoid bracket	ACC 25350
46	Carriage lock hatchet	Quote lift number
47	Mico-switch	ACC 25598
48	Hatchet lock guide	ACC 25026
49	Mico-switch actuator roller	ACC 25907
50	Micro-switch bracket	ACC 25046
51	Carriage fabrication (Mega type)	Quote lift number
52	Lower right lifting arm (Mega)	Quote lift number
53	Upper right lifting arm (Mega)	Quote lift number
54	Upper left lifting arm (Mega)	Quote lift number
55	Lower left lifting arm (Mega)	Quote lift number
56	Left hand arm rocker (Mega)	Quote lift number
57	Carrier rear bearing carrier	ACC 25085
58	Carriage front bearing carrier (mega)	ACC 26201
59	Right hand arm rocker (Mega)	Quote lift number
60	Arm pin - threaded (Standard lift)	ACC 25286
61	Arm guard	Quote lift number
62	Cylinder pin	ACC 25291
63	Arm bush	ACC 25641
64	Cam and crank bracket	ACC 25029
65	Arm rocker spring	ACC 25734
66	Arm bearing	ACC 26376
67	Arm pin - threaded (Mega lift)	ACC 25790
68	Arm bearing carrier	ACC 25370
69	Arm guard (Mega)	Quote lift number
70	Platform fabrication	Quote lift number
71	Platform alloy	Quote lift number
72	Dummy pin	ACC 25034 low cut ACC 25035 high cut
73	18 dia roller	ACC 25344
74	Extension Platform roller bearings	
75	Bearing inner bush	
76	Extension platform	Quote lift number
77	Roller fastener bolt	FAS 80111
78	Bridge plate crank arm	ACC 25070 - std ACC 25789 - mega
79	Bridge plate spigot	ACC 25611
80	Bridge plate torsion bar	Quote lift number
81	Standard push rod	ACC 25101
82	Twin push rod	ACC 25102
83	Return spring	ACC 26391
84	M8 nyloc nut	FAS 80000
85	M8 washer	FAS 80021
86	Swivel joint	ACC 25104
87	M8 half nut	FAS 80026
88	M8x20 hex. Hd. Setpin	FAS 80045
89	M16 washer	FAS 80086
90	Bridge plate cam	ACC 25071

91	Push rod twin collar	ACC 25103
92	Push rod collar	ACC 26204
93	Box lock pin	ACC 25977
94	Rocker pivot pin	ACC 26111
95	M8x8 countersunk socket head screw	FAS 80015
96	M8 x10 grubscrew	ACC 25537
97	M5x6 grubscrew	ACC 25594
98	M6x6 grubscrew	FAS 80003
99	Split pin	FAS 80106
100	Roll-off-ramp	Quote lift number
101	Hinge plate	ACC 25073
102	Handle	ACC 25455
103	Roll-off-ramp hydraulic cylinder	ACC 25445
104	M8 washer	FAS 80026
105	M8 spring washer	FAS 80101
106	M8x30 setscrew	FAS 80053
107	M8x 45 countersunk socket head screw	FAS 80158
108	Tube spacer	ACC 25570
109	Top brush	ACC 25476
110	Handrail pivot pin	ACC 26209
111	Handrail	Quote lift number
112	Handrail side guard fixing bracket	Quote lift number
113	Handrail side guard	Quote lift number
114	Handrail side guard hinge	Quote lift number
115	Handrail side guard hinge p-clip	ACC 25561
116	Platform fabrication (mega)	Quote lift number
117	Handrail side guard (mega)	Quote lift number
118	Handrail side guard hinge (mega)	Quote lift number
119	Handrail (mega)	Quote lift number
120	Platform alloy (mega)	Quote lift number
121	Bridge plate rocker bar	ACC 25106
122	Arm pin plain (mega)	ACC 25431
123	Lift Stowage Box (step back)	Quote lift number
124	Roll pin 4 dia x 12mm	ACC 25534
125	Roll pin 4 dia x 24mm	FAS 80050
Savery Power Pack		12v or 24v
Oil Control Power Pack		12v or 24v
126	Pump motor	Power pack parts (reference only)
127	Pump body	
128	Oil reservoir	
129	Hand pump	
130	Pressure adjustment	
131	Down valve	
132	Up solenoid	
133	Pump cover	
134	Pump mounting plate	
135	Auto reset circuit	
136	Pump cover mounting bracket	

6.03

137	Hydraulic pipework	Power pack parts
138	Gear roll pin	FAS 80226
139	M8 socket head shoulder bolt	FAS 80191
140	M10 socket head shoulder bolt	FAS 80192
141	M12 washer	FAS 80041
142	M8x45 hex hd. Setpin	FAS 80065
143	"0.25"" Step hose"	Quote lift number
144	"0.25"" Platform hose"	Quote lift number
145	"0.25"" Microbore hose"	Quote lift number
146	"0.25"" Microbore hose"	Quote lift number
147	"0.25"" Microbore hose"	Quote lift number
148	"0.25"" Microbore hose"	Quote lift number
149	"0.25"" Barrel tube"	CON 10150
150	Dowty washer	HU 02
151	"0.25"" Locknut"	ACC 25732
152	"0.25"" Male/female/male tee"	CON 10144
153	"0.25"" Male/Male connector"	CON 10146
154	M12 washer	FAS 80041
155	"0.25""x0.25"" bulkhead"	CON 10143
156	Adjuster check valve	FLA 35528
157	Inline check valve	FLA 35131
158	"0.25"" hex hd. Banjo bolt"	HU 15
159	Bridge plate coil	ACC 26049 - 24V ACC 26052 - 12V
160	Relay box	ACC 26251
161	"0.25"" Maleallen key plug"	CON 10149
162	Bridge plate valve	ACC 26049 - 24V ACC 26052 - 12V
163	3-pin plug	ACC 25472
164	Box side brush unit	Quote lift number
165	Box side brush unit spacer	ACC 25934
166	Solenoid mounting bracket	ACC 25985
167	Carrige lock spring	ACC 25552
168	Motor bracket spring	ACC 25647
169	Umbilical guide	ACC 26061
170	Loom support	ACC 25876
171	Loom support	ACC 26016
172	Bridge plate	Quote lift number
173	Bridge plate hinge	Quote lift number
174	Bridge plate hinge roller	Quote lift number
175	Bridge plate hinge roller pin	ACC 25702
176	Extension platform cam follower	ACC 256 73
177	Extension platform stop	ACC 25365
178	M5x16 bolt	FAS 80072
179	M12 Half nut	ACC 25751
180	M12 All metal lock nut	FAS 80206
181	M12 Int fan disc washer	CON 10246



Notes

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