



Please ensure that you fully read and understand this manual before you operate the lift

"ORIGINAL INSTRUCTIONS"

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DATA

Models covered by this handbook:

Models: "V" series

Type: Underfloor beam single tier

Safe Working Loads: 500kg uniformly distributed

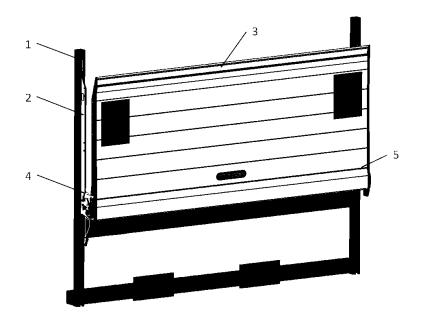
Fuse: Main circuit 200 Amp

Control circuit 7.5 Amp

Power Source: DC Electro-hydraulic 12V or 24V

Operational Noise: 69 dB (Limitation)

LOCATION DIAGRAM



View of Lift

- 1. Column
- 2. Runner
- 3. Platform
- 4. Platform Catch
- 5. Stowlock
- 6. Top Flap (RQR518 only)

SAFETY INSTRUCTIONS

Tail Lift Safety

Only a trained and authorised user must operate this lift.

Secure the vehicle door(s) in open position, well clear of the platform.

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

Ensure that the load is stable and secure at all times.

Do not exceed the maximum safe working load.

Do not drop heavy loads on to the platform.

Keep clear of unguarded platform edges.

Do not allow persons to stand in the area of movement.

Do not allow persons to climb on to the lift or the load.

Keep the area in and around the tail lift free from obstruction.

Ensure that the platform is level.

Do not use the platform as a bridge.

Switch off the isolator before leaving the tail lift unattended.

Push loads from vehicle to an elevated platform. (Do not pull.)

Do not use to lift/tow loads for which the lift was not designed.

Vehicle Safety

Ensure that the vehicle is standing on firm level ground.

Ensure that the vehicle hand brake 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 load on the platform.

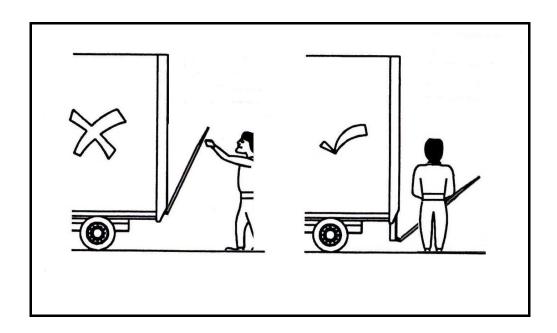
Ensure lift is adequately illuminated when operating in darkened areas

TAKE CARE WHEN OPENING PLATFORM

The tail lift platform is counter-balanced by one or more springs in the form of steel torsion bars. In the event of failure of a spring, the platform, when released from the stowed position, may deploy with much more force than usual. In this event DO NOT ATTEMPT TO CONTROL THE OPENING OF THE PLATFORM. Release the platform and stand clear.



PRIOR TO OPENING, LOWER THE PLATFORM TO A SAFE HEIGHT POSITION YOURSELF RELATIVE TO THE PLATFORM SO AS TO AVOID RISK OF INJURY DURING OPENING.



The products covered by this handbook include one or more heavy duty springs which from time to time during the operation of the lift store considerable levels of energy.

Such springs include:

- Torsion bars
- Torsion springs
- Helical springs
- Gas springs

Heavy duty springs are typically used in counter-balanced platforms and platform extensions, and in conjunction with single-acting hydraulic cylinders.

Special care must be taken when:

- Fitting
- Servicing
- Repairing
- Dismantling

Lifts incorporating these springs or the springs themselves.

Before carrying out work on the lift, precautions should be taken to:

- 1. Read the Fitting and Service manuals as appropriate.
- 2. Ensure that the work is supervised by a competent engineer.
- 3. Ensure bystanders are not exposed to risk.
- 4. Use adequate protective clothing.
- 5. Secure movable parts, e.g. platform and runners.
- 6. Carefully relax spring elements before attempting their removal or adjustment.
- 7. Use special tools if necessary for example, to pre-compress gas springs before installation.

If any doubt exists regarding the safe working practices involved with heavy duty springs, consult the Customer Service Department of Plafinger Tail Lifts Ltd before proceeding with the work.



Warning: Spring elements store energy and are potentially dangerous. Incorrect installation, use, adjustment or removal may result in serious injury.

INTRODUCTION

General

The purpose of these instructions is to enable the user to operate the tail lift safely and continue to maintain its reliability.

Modifications

If it is desired to make a modification to the tail lift, PALFINGER TAIL LIFTS Itd are prepared to consider advising on the suitability of such modification, provided that such request is made in writing to the Engineering Department before the modification is carried out.

If PALFINGER TAIL LIFTS Itd approves such alteration, they will give their written authorisation which shall be retained by the person in receipt of such written approval.

All liability under the provision of the Consumer Protection Act 1987 shall be that of a person, firm or company responsible for any unauthorised modification to the tail lift and such liability shall include a complete indemnity to PALFINGER TAIL LIFTS Itd against any claim being made by or on behalf of the person suffering such loss or damage.

Maintenance

The Customer Services Department at our Welwyn Garden City factory will be pleased to discuss a Preventive Maintenance contract to suit your special requirements.

Service and Repair

This Handbook covers <u>operating procedures</u> for your PALFINGER TAIL LIFTS ltd tail lift, together with guidance on routine maintenance, lubrication and adjustments.

For major overhaul or repair work, you are recommended to use the services of an authorised PALFINGER TAIL LIFTS Itd Service Outlet. A list of such Outlets - both Service Agents and Authorised Repairers - is available from the Company.

Should you prefer to carry out your own overhauls or repair work, you are strongly advised to contact the Company's Customer Services Department who can provide details of Service Training Courses, Service Manuals and Service Safety Handbooks.



DO NOT CARRY OUT **REPAIR** WORK ON THIS TAIL LIFT UNLESS YOU HAVE THE NECESSARY SAFETY TRAINING/INFORMATION.

FOR SAFETY, RELIABILITY AND WARRANTY PROTECTION, ENSURE THAT GENUINE PALFINGER TAIL LIFTS Itd PARTS ARE USED

Policy

The PALFINGER TAIL LIFTS Itd policy is one of continuous product development and the Company therefore reserves the right to alter product or component specifications without notice, and without obligation to update products previously supplied.

SAFETY DEVICES

Introduction

To safeguard both load and operator, the lifting mechanism is equipped with the following safety devices:

Load Safety Device (L.S.D.)

An L.S.D. is fitted at the top of each runner and will act automatically to stop the platform in the unlikely event of chain failure.



If an L.S.D. engages, do not attempt to force down the platform or runner. The L.S.D. will engage even harder and may cause damage. ON.

WARNING

To ensure that L.S.D. units are always in good condition, they should be replaced whenever they have been operated.

Flow-Control Valve

A flow-control valve is fitted within the ram valve to limit the rate of descent of the platform.

Ram Valve

A solenoid operated valve directly screwed to the ram forms a hydraulic lock preventing the lowering of the platform unless the 'down' button is pressed, even if there is a leak or break in the hydraulic piping.

The ram valve works in conjunction with the stowlock to ensure that the platform is safe and secure while the vehicle is traveling.

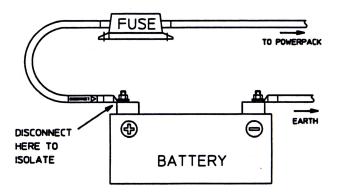
Short Circuit Protection

A 200 amp (or 150amp if agreed by PALFINGER TAIL LIFTS ltd.) fuse assembly is fitted in the feed line to the power pack at the vehicle battery.

The fuse assembly protects the motor, starter solenoid and cable from short circuits and excessive lift usage.

Lift Isolation

To provide electrical isolation of the lift during maintenance, the link between the fuse and the battery should be disconnected at the battery terminal.



Work Light

A work light is available from PALFINGER TAIL LIFTS ltd if required.

CONTROLS AND OPERATING FEATURES

Isolator Switch

An isolator switch is positioned in the cab of the vehicle.

Push switch to 'I' for on and '0' for off.

Switch illuminates when circuit is made.

Ensure that the isolator switch is off before driving away.



Up and down push buttons positioned at the nearside rear of the vehicle are each marked with an arrow to indicate direction of movement of the platform.

Press appropriate button to raise or lower the platform. Release button to stop the platform.

Upper Control Station (Optional)

A second three-button control can be fitted inside the vehicle body for the operation of the lift from the floor of the vehicle. The control is used in the same manor as the lower control. The upper button is a changeover switch which isolates the lower control station when selected.

Platform Catch

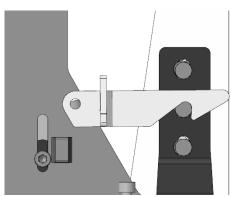
A catch on the runner engages a catch plate or pin on the platform for holding the platform vertical.

To release, lift the catch. When closing the platform the catch will engage automatically.



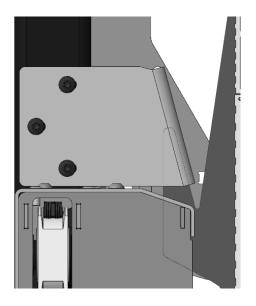






Stowlock

A Stowlock positioned on the offside* of the tail lift acts to hold the platform firmly in the closed position while the vehicle is in transit. The lock is fully automatic in operation and requires no action on the part of the operator.



OPERATING INSTRUCTIONS

To Switch On

Switch on the isolator in the vehicle cab.

To Open the Platform

Refer to safety instructions

- Lower platform (at least 100mm) to a convenient height by pressing' down' button.
- Release the platform catch and pull the platform to the horizontal position.

TO OPEN THE PLATFORM IN CASE OF BREAKDOWN – refer to fault finding.

To Raise or Lower the Platform

Use the 'up' or 'down' buttons.

To Stow the Platform

- Bring the platform to a convenient height (at least 100mm below vehicle floor level).
- Hinge the platform up and ensure that the platform catch is engaged.
- Raise the closed platform using the 'up' button until upward movement is checked by the column stops.

To Isolate the Lift Controls

• Switch off the isolator in the vehicle cab.

(SAFETY GATE OPERATION

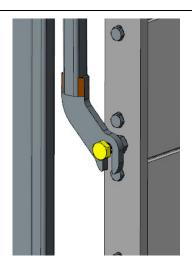
Stow

Operate

The gates allow to open during platform is open to horizontal position.

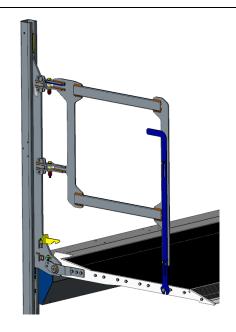


Before platform is stow check if gates connected to platform.

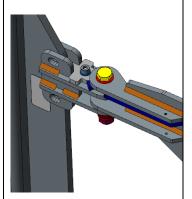


Commets

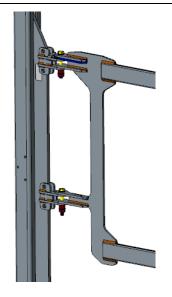
Make sure bottom of gates hook in with platform – see picture above



To allow gates to open, lift the stowing latch out of the stowing clip by either handle and rotate about the pivot bolt, before locating the latch in to the other stowing clip.

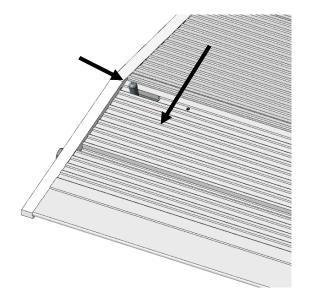


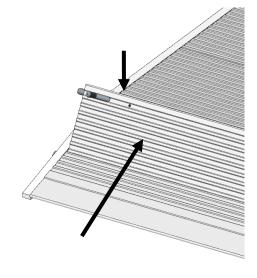
Lift up the gate so that the top boss clears the locating pin and swings the gate out to the side of the platform.



Once the gate is at the side of the platform, allow the gate to drop down so that the same pin is located within the other slots on the base of the top boss.

Trolley Stop Operation





To open the trolley stops on the platform, kick the pin outwards across the slot in the platform. The trolley stop will then spring up automatically.

To close the trolley stop, stand on the trolley stop until the latch clicks into place.

MAINTENANCE

The intermediate service is recommended at three-monthly intervals but could be made more or less frequently depending upon lift usage and the operator's experience. The operator may find it advantageous to schedule the servicing of the tail lift to coincide with that of the vehicle.

The lift will <u>not</u> be automatically serviced when the vehicle is serviced.

Any scraping, grating or rough running should be investigated and the cause eliminated before further deterioration of performance occurs.

If the checks indicate a problem, contact PALFINGER TAIL LIFTS Itd or one of the accredited PALFINGER TAIL LIFTS Itd Service Agents who are equipped and trained to carry out this work.

Parts

FOR SAFETY, RELIABILITY AND WARRANTY PROTECTION, ENSURE THAT GENUINE PALFINGER TAIL LIFTS Itd. PARTS ARE USED

Three-monthly Service

- Power pack oil level
- Hydraulic system
- Chains
- Electrical system
- Platform level (fore & aft)
- Platform level (side to side)
- Platform vertical stowage
- L.S.D. freedom
- L.S.D. engagement
- Lubrication

Annual Service



Full details are available from PALFINGER TAIL LIFTS ltd. Service Department or one of the PALFINGER TAIL LIFTS ltd. Service Agents.

- 1. ISOLATE THE TAIL LIFT ELECTRICALLY BEFORE REMOVING COVERS (see page 3)
- 2. HIGH PRESSURE OIL
- 3. HEAVY DUTY SPRINGS
- 4. CRUSHING HAZARDS

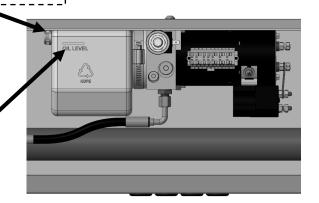
Filler Cap/ Dipstick

Power Pack Oil Level

With the lift platform lowered to ground level, top up with PALFINGER TAIL LIFTS ltd. Hydraulic Oil (or an alternative) to the oil level line on the tank.

Change the oil every two years.

OIL LEVEL (TRANSLUCENT



List of Hydraulic Oils

- PALFINGER TAIL LIFTS ltd. Hydraulic Oil
- ISO VG32
- Mobil DTE 22
- B.P. Energol HLP 22
- ROC Kiron 22
- Castrol Hyspin AWS 22
- Shell Tellus Oil 22
- Elf Olna 22
- Texaco Rondo HD 22
- Esso Nuto H22
- Total Azolla VG 22
- Lorco HT 22

Hydraulic System

- Check hose and connections for leaks and damage, replace any worn or chafed hose.
- With the platform at its highest level, check ram for leaks at piston rod end.
- Cure any leaks that are detected.

Electrical System

- Check that isolation switch light illuminates when lift is 'on'.
- Check all switches for correct operation, and that the motor starter solenoid is operating correctly.
- Check all switches for possible damage.
- Check all cables and connections for possible damage.
- Check fuses are correct and in place.

Chains

- Check throughout the range of travel that chains are seated on the sprockets.
- Check condition of the chain sprockets.
- Sprocket assemblies must be renewed if any show sign of wear or damage.

Check both chains for:-

- Cracked or missing link plates
- Elongated holes in link plates
- Rivet heads in danger of pulling through link plates
- Rust or corrosion particularly inner faces of link plates.
- Stiffness or wear in any section of chain, especially around the bottom of the runners.

Check each of the four anchors for:-

- Wear and/or damage particularly for loose or worn anchor pins
- Anchor pins with damaged ends
- · Security of split pins

With the platform unloaded at mid-height, check both chains for excessive extension at the runners and in beam.

- Place the platform at a mid-height.
- Measure the chains over 15 pitches, especially the lengths immediately above bottoms of the runners.
- Check that no measurement exceeds 242mm in any position.

If the maximum chain extension is exceeded, renew both chains complete with end fittings.

If other chain faults are found, chains must be renewed but end fittings and sprockets may be re-used provided they are proved to be in good condition without wear or damage of any kind.

 If no faults are found, thoroughly lubricate chains using PALFINGER TAIL LIFTS ltd chain lubricant spray.

Platform Level (Fore & Aft)

Check that platform is level when loaded and unloaded.

If platform is not level, check platformhinge blates and runner stops.

Check that both stop are in contact with their respective runners, when the platform is unloaded.

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Platform Level (Side to Side)

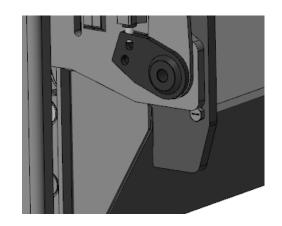
The lift should be level and adjusted to the required floor height prior to delivery

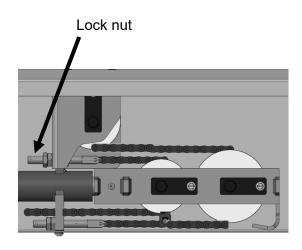
Both runners should contact the column stops Together-

A small amount of adjustment on the left hand side only can be achieved, if chain has become slack.

- Remove beam cover.
- Place a block (approximately 50mm high), under the side of platform to be adjusted and lower platform on to it.
- Release lock nut.
- · Adjust length of chain.
- Tighten lock nut.
- Replace beam cover.
- Raise platform to release L.S.D
- Remove the block.
- Check movement of the platform throughout its range.

(RQ510/517 Beam Shown)

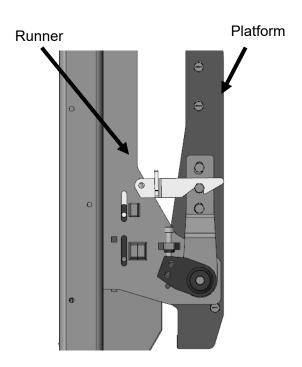




Platform Vertical Stowage

Check that when closed, the platform is raised to the stops and the platform is pulled firmly in against the rubber buffers

If stowage is not correct; check that the stowlock is not worn or damaged and adjust packing under buffers – when the platform is closed, both the buffers should be in contact to prevent platform rattle.



L.S.D Freedom

Place the platform in the horizontal position, raise and lower the platform through its full travel, checking that L.S.D. does not engage or partially engage.

L.S.D. Engagement

With the platform at a convenient height, lift up the platform about 100mm using jacks or lifting the platform by hand (two persons at one side of the platform).

The L.S.D. should engage positively and hold the platform at the elevated position.

Release the L.S.D. by pressing the 'up' button and repeat the check on the other side of the platform.

Demarkation

Ensure that reflective flag(s) and/or strips are clear and in position.

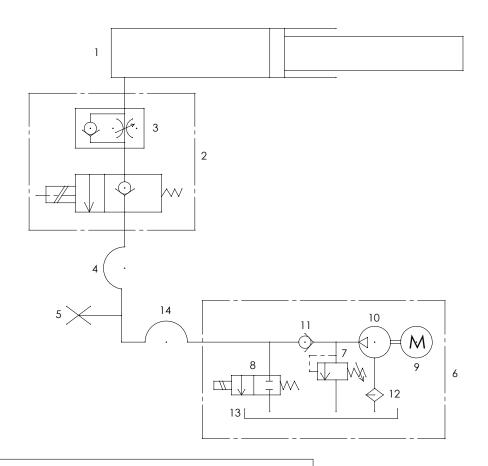
LUBRICATION CHART

Item	Recommended Lubricant	Method of Application
Chain	Rocol Heavy Duty Chain and Drive Spray	Spray
Runner Slide Pads	General purpose grease	Grease gun
Platform Hinge Pins	Oil	Oil can
Platform Catch Pivot	Oil	Oil can
Load Safety Device (L.S.D.) (2 points)	Light Oil	Oil gun or aerosol. (Ensure good penetration of oil to all moving parts.

Lubricate items in accordance with the chart and wipe away surplus lubricant.

- 1. It is important to fully lubricate the complete lift including the L.S.D. after the tail lift has been subjected to steam cleaning or any other degreasing process. Particular attention must be paid to the exposed chain.
- 2. When washing or steam cleaning the outside of the vehicle, always place the platform in the fully stowed position.
- 3. Deploy the platform at floor height when cleaning the inside of the vehicle.

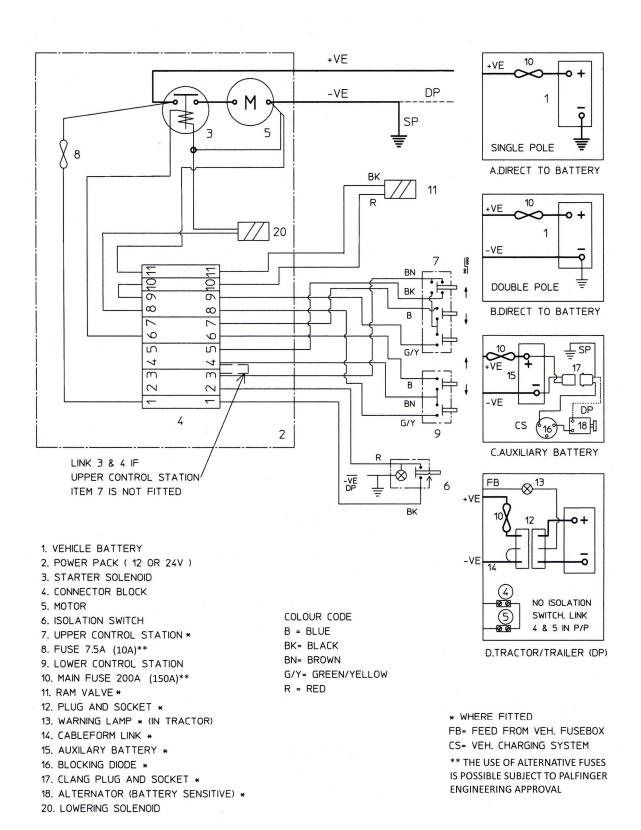
SCHEMATIC HYDRAULIC CIRCUIT



- 1. RAM
 2. RAM VALVE
 3. FLOW REGULATOR CARTRIDGE
 4. HOSE
 5. PRESSURE GAUGE PORT
 6. POWER PACK (INCLUDES 7-14)
 7. PRESSURE RELIEF VALVE
 8. RELEASE VALVE (12 OR 24V)

- 9. MOTOR (12 OR 24V) 10. PUMP 11. NON-RETURN VALVE 12. STRAINER 13. RESERVOIR 14. HOSE

ELECTRICAL CIRCUIT DIAGRAM



FAULT FINDING-GENERAL

If a fault develops, check through the Table in numerical order starting at 1.

Opening the Platform in Case of Breakdown



- 1. Ensure that the platform catch is engaged
- 2. Remove two securing bolts from side of stowlock bracket and withdraw block*
- 3. Open platform by releasing platform catch.



RE-FIT THE STOWLOCK BLOCK* SECURELY BEFORE DRIVING AWAY THE VEHICLE

RQ518 and RQU518 use a roller with a single bolt.

RQR518 uses a roller with single bolt on both sides (access to bolts behind facia strips.)

	FAULT		CAUSE	ACTION
1.	Platform will not raise or lower	a.	Isolator switch in cab not on	Place switch in 'on' position.
	lowei	b.	Control circuit fuse blown in power pack	Investigate cause before replacement.
		C.	Main circuit fuse blown.	Investigate cause before replacement.
		d.	Flat battery	Fit recharged battery to vehicle.
		e.	Electrical fault	Check all wiring & electrical connections.
		f.	Broken chain	If a chain is found to be broken, renew both chains as a pair.
		g.	L.S.D. engaged at the column stops	See L.S.D. Fault Finding.
2.	Platform will not raise	a.	Tail lift overloaded	Remove excess load.
		b.	No oil in reservoir	Check and remedy any leaks, fill up.

FAULT	CAUSE	ACTION
3. Platform will not lower	Faulty release valve in the power pack	Check electrical connections to valve coil. Replace valve coil or complete valve as necessary.
	b. Chain jamming on sprocket(s)	Free chain and eliminate cause. Check condition of chain and replace if necessary.
	c. Runners jamming in columns.	Check for wear. Check column straightness. Lubricate (see Lubrication Chart).
	d. L.S.D. engaged	See L.S.D. Fault Finding.
Platform will only descend slowly	Insufficient maintenance and lubrication.	Lubricate. See chart for details.
	b. Undue wear of mechanical components including runner slide pads.	Replace as necessary.
	c. Incorrect hydraulic oil in system.	See page 14 for recommended oils.
	d. Restricted hose.	Check hose for external damage.
	e. Faulty hydraulic valve	Check and clean out valve.
5. Platform tilted (from side-to-side)	a. Incorrect chain adjustment.	Adjust chain.
Gluoy	b. Passage of chains, runners or platform obstructed.	Check freedom of all moving parts associated with chains.
	c. L.S.D. engaged.	See L.S.D. Fault Finding.
Platform does not rise smoothly.	Insufficient hydraulic oil in reservoir.	Top up with recommended oil.
	b. Air lock in system.	Operate 'up' control to blow off relief valve for a few seconds at top of platform stroke. Repeat two more times dwelling between each operation for one minute with platform on the ground.
	c. Excessive mechanical wear.	Renew any worn component. See also 3.c.
	d. Lack of lubrication.	Lubrication Chart for details.

	FAULT	CAUSE	ACTION
7.	Platform creeps down	a. Release valve faulty.	Check and clean out valve, replace valve cartridge if necessary. If dirt is found, clean out complete system and fill with clean hydraulic oil See Page 14 for recommended oils. Renew valve cartridge if necessary.
		b. Ram seal failing.	Remove beam cover and check the end of the cylinder through which piston protrudes whilst operating the 'up' control. Any discharge of oil, particularly at the end of the 'up' stroke, indicates seal failure. Renew ram seals if failure is indicated.
8.	Platform will not reach floor of vehicle on full ram stroke.	a. Chain incorrectly adjus	ted. Adjust chains. Ensure chains have not worn beyond recommended limits, if so replace both chains.
9.	Platform will not raise or reach floor of vehicle.	 Insufficient hydraulic oi reservoir. 	Top up reservoir with recommended hydraulic oil.
		b. Flat battery or electrica	ıl fault. See 1.c. and d.
		c. Power pack motor fault	t. Check motor including brushes.
		d. Obstruction in column	Remove obstruction. Check for damage. Replace parts as necessary.
10.	Motor continues to run when 'up' button is released.	a. Starter solenoid stuck.	Sharply tap side of solenoid to release armature. Disconnect main fuse. 1. Keep clear of lift mechanism. 2. Protect hands and eyes from sparks and burns.
		b. 'Up' button stuck	Disconnect control circuit fuse.
		c. Control wiring fault.	Disconnect control circuit fuse.
11.	Top flap (where fitted) does not open or close fully.	a. Hinge damage	Check, clean and repair parts as required.
		b. Gas spring faulty	Check for damage and pressure loss. Replace as required.

FAULT FINDING - LOAD SAFETY DEVICE

The following chart applies to each side of the lift independently.

	FAULT		CAUSE	ACTION
L.S.D. engages, or tends to engage during normal	a.	Chain broken.	Renew both chains and L.S.D.	
	lowering	b.	Auxiliary spring failed.	Renew L.S.D.
		C.	Snail cam not rotating freely.	Remove L.S.D., clean, check for freedom of movement and relubricate.
		d.	High friction in runner/column (causing chain to slacken).	Check column for obstruction and lubricate runner rollers and pads.
		e.	L.S.D. operating mechanism badly adjusted.	Adjust operating rod length.
	L.S.D. does not positively engage when tested.	a.	Main spring failed.	Renew main spring.
	• •	b.	Snail cam not rotating freely.	Refer to 1.c.
		c.	Wear on snail cam teeth.	Replace L.S.D. with new unit.
		d.	L.S.D. operating mechanism badly adjusted.	Refer to 1.e.
3.	L.S.D. remains engaged at the column stop.	a.	Obstruction in L.S.D. clearance aperture.	Clear obstruction.
	are column stop.		Signature aportare.	(Remove column stop for access - ensure column stop is replaced before operating lift).
				RQR518
				Remove stowlocks and open platform.
				Open top flap.
				Remove column stop for access
				Ensure column stop is replaced before operating lift.



If an L.S.D. engages, do not attempt to force down the platform or runner. The L.S.D. will engage even harder and may cause damage. If a chain is not broken, use the 'up' button to disengage the L.S.D. If a chain is broken, use a jack under the affected runner to facilitate securing of platform.

REVISIONS

DATE	ECN NO.	ISSUE NO.	DESCRIPTION
06/2018	26082	_	New document
06/2020	A23591	Α	New English address on last page
05/2022	A24750	В	Relief valve adjustment removed, new English address on last page



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