

*Operation Manual for Molnar
Hoists Two Post Hoist (4.5 Tonne)*

M245-A

UNIVERSAL OPERATION

M O L N A R



HOISTS



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INTRODUCTION

This Operation Manual has been written for the safe use and maintenance of Molnar M245 'Universal' Two Post Hoists.



Molnar Hoist M245-A-SSSSSS "Universal"

Molnar Hoists vehicle hoists, parts and accessories; made in Australia and built to the highest safety standards. The Molnar M245 'Universal' Two Post Hoist is intended for use in commercial workshops for wheels free lifting of a wide range of cars and automotive vehicles. Two Post Hoists are designed to optimise workshop clear floor space for ease of access, cleaning and freedom of movement for equipment.

All operators should familiarise themselves with this manual before operation of the vehicle hoist. A copy should always be readily available for operators to refer to if and when required.

As the policy of Molnar Hoists is one of continuous improvement, the manufacturer reserves the right to change specifications without notice. Information is correct and true at time of printing.

Updated 8 December 2015

OVERVIEW

Operators should familiarise themselves with the vehicle hoist shown here in Diagrams 1A & 1B.

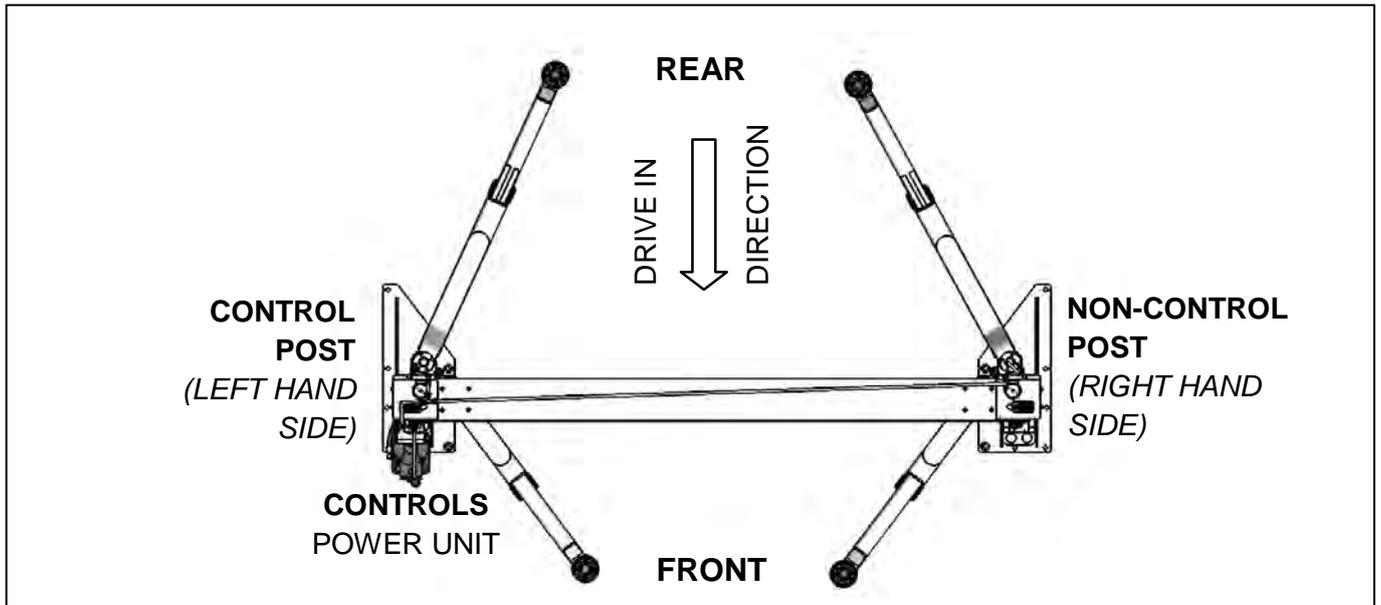


Diagram 1A – Top Down View of M245 Hoist

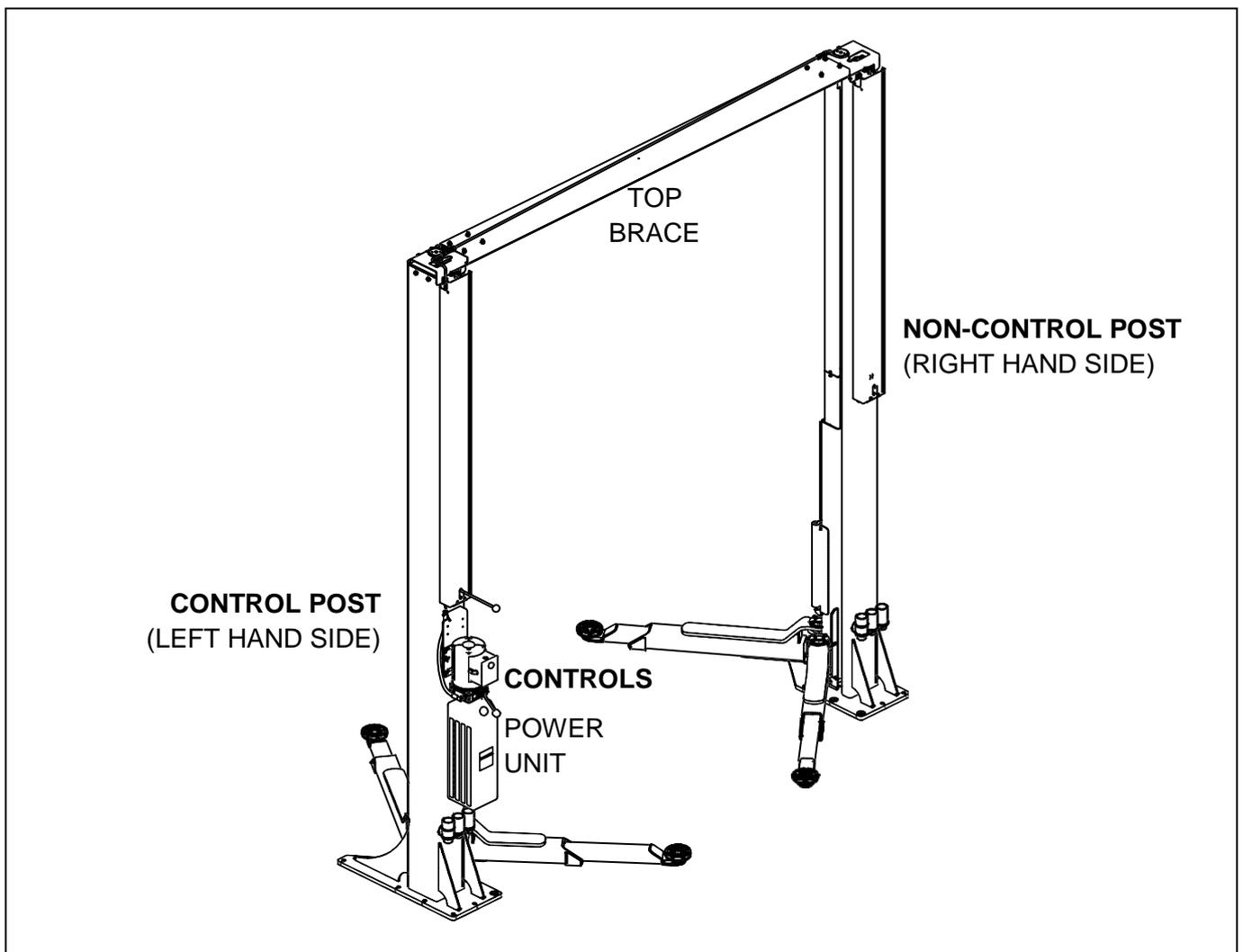


Diagram 1B – Isometric View of M245 Hoist

SAFETY PRECAUTIONS

For your own safety and the safety of equipment, always take the following precautions
 Failure to comply with these precautions may result in loss of load, damage to unit and/or personal injury



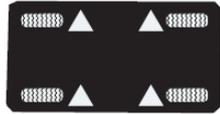
Ensure you carefully read and understand the Operation and Safety Instructions detailed in this Manual before using the hoist.



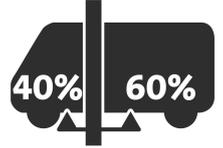
Load must be locked at all times, except when raising or lowering.



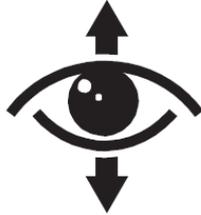
Use vehicle manufacturer's recommended pick-up points. All 4 pick-up pads must support the load.



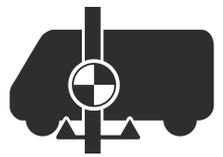
Not recommended for vehicles with weight distribution ratios greater than 60:40.



Monitor vehicle, hoist and area for obstructions and/or personnel before use and during operation.



Vehicle's centre of gravity must be within the pick-up pad area. Ideally the centre of gravity should be in line with the rear edge of the posts.



Maximum capacity. 4.5 tonnes (4500kg)
 Do not exceed 1125 kg per arm



Not recommended where the distance between pick-up points is less than 33% (one-third) of the vehicle's length.



Perform risk assessment before attempting to lift loaded vehicles.



Do not attempt to operate hoist from under the vehicle.



Ensure pre-operation checks are carried out before use



Do not oil or grease the lifting arm assemblies.





Regular service and maintenance to be carried out as described in the Service Manual. Failure to do so may void warranty and cause risk of injury.



Do not try to adjust relief valve as it has been set at maximum operating efficiency.



This vehicle hoist is not designed to be used in & around steam cleaning nor be installed in the open, exposed to the elements. Hoist operated in such conditions are not covered by our warranty.



Do not force safety release lever into the off position while weight is resting on the carriage safety locks.



In moist conditions, ensure moving components are well lubricated.

To prevent rust in the cylinder, raise the hoist to full height and leave it there when not in use.

Seal and protect all electrical components from element.



Remove brake fluid spills immediately as they will damage the powder coat. Clean the hoist with warm water and non abrasive pH neutral detergents. Surfaces should be thoroughly rinsed to remove residue. After floor cleaning, thoroughly rinse base of the hoist to remove residue.



Use only recommended wire rope lubricants



Do not make any changes to safety equipment.



Always use safety supports when removing or installing heavy components.



Do not operate if damaged.



LOADING VEHICLES

1. Ensure the hoist is fully lowered, the lifting arms are positioned out of the way and the area is clear of obstructions and/or personnel before use.
2. Check the weight and weight distribution of the vehicle and review key areas;
 - a. Where is the engine located?
 - b. Is it front wheel drive, rear wheel drive or four wheel drive?
 - c. Is the vehicle heavily loaded?
 - d. Are there accessories fitted such as bull bars, wheels, fuel tanks, racks etc.



Refer to Vehicle Positioning Guidelines for more details on positioning vehicles

3. Drive the vehicle in so it is central between the posts. If required, use a spotter to guide you but ensure the spotter is never directly in the vehicle's path.
4. Position the vehicle so the centre of gravity is as close as possible to the rear edge of the posts.
5. Secure the vehicle to prevent it from rolling.
6. Position the lifting arms under the vehicle and position the pick-up pads underneath the vehicle's pick-up points.

Note: The vehicle manufacturer's pick-up points may be indicated with triangle shaped markings.

7. Adjust the pick-up pads so they are as close to the pick-up points as possible, this may require fitting extension adaptors. See Diagrams 2A & 2B

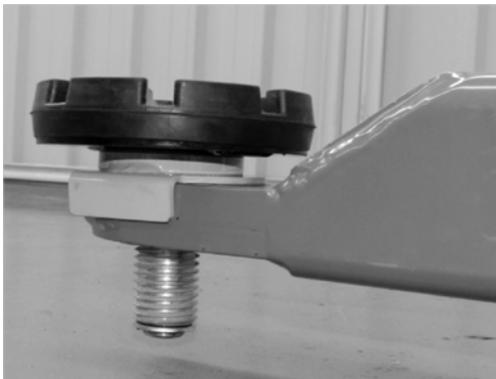


Diagram 2A – Pick-up pad adjusted down to its minimum height



Diagram 2B - Pick-up pad on extension adaptor and adjusted up to its maximum height.

UNLOADING VEHICLES

1. Lower vehicle hoist to the ground.
2. Lower pick-up pads and remove extension adaptors.
3. Position lifting arms out of the way of the vehicle.
4. Drive the vehicle away from the hoist. If required, use a spotter to guide you but ensure the spotter is never directly in the vehicle's path.

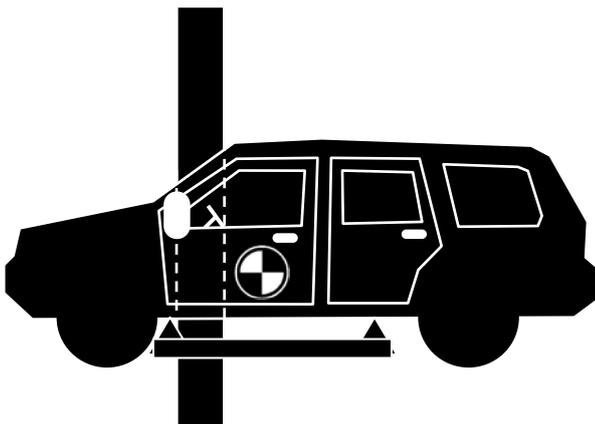
VEHICLE POSITIONING GUIDELINES

These guidelines are for positioning the majority of Passenger and Commercial vehicles on a Molnar M245 'Universal' Two Post vehicle hoist, each vehicle is different so the operator will be required to do their own risk assessment prior to lifting.

General Pre-Lifting Checks:

- Check the vehicle for loads carried
- Check accessories/options fitted
- Check the size and weight of the wheels
- Check the Wheelbase and Vehicle length
- Check the drive-train
- Check the vehicle design for weight distribution and centre of gravity.
- Check if the vehicle needs to be driven on forwards or backwards.
- Check Manufacturers recommended lifting points

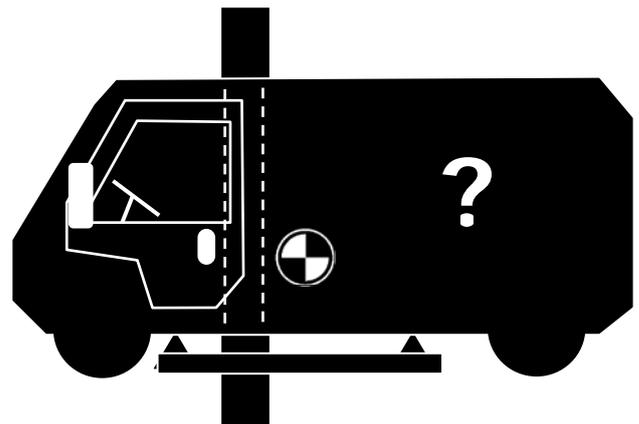
Passenger Car or Utility Vehicle Positioning



Begin by aligning Side Mirrors and Steering Wheel in line with the Posts.

The Centre of Gravity should approximately be the driver's position in the vehicle.

Commercial Vehicle Positioning



Begin by aligning the Rear Edge of the Driver's Door with the Posts.

The Centre of Gravity should approximately be the mid-point of the vehicle.



For asymmetric loading, vehicle Centre of Gravity should be just to the rear of the posts



Always Check stability of vehicle on the hoist at a low height before working underneath; reposition the vehicle if it is not stable.

OPERATING INSTRUCTIONS

Instructions on operation of vehicle hoist; refer to Diagram 3 for controls.

TO RAISE

1. To raise the vehicle hoist, press and hold the Raise Button.
2. When the pick-up pads are just contacting the vehicle, check the pick-up pads for location and contact, the arms for clearance and the arm locks for full engagement (refer to Diagrams 4A & 4B).
3. Raise the vehicle only until the tyres are at least 150mm clear of the floor. At this point, check the weight balance of the vehicle and its support on the ads. If not secure, lower vehicle hoist to the ground and repeat steps 1 to 3.
Note: another lifting method may be required if vehicle cannot be securely supported on a two post lift.
4. Raise vehicle to desired height, release raise button and lock the hoist.
Note: Locks should make an audible clicking sound during raising, if sound not heard, lower vehicle hoist to ground, remove vehicle and do not use until rectified.

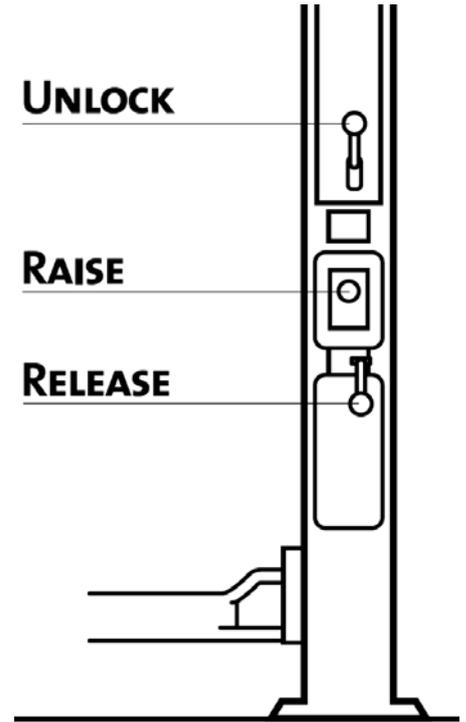


Diagram 3 – Operating Controls

TO LOCK

1. Hold down Release Lever until the locks hold the load of the vehicle.

TO LOWER

1. Ensure the area is clear of obstructions and/or personnel.
2. Raise the hoist approximately 50mm
3. Hold down the Unlock Lever then hold down the Release Lever.

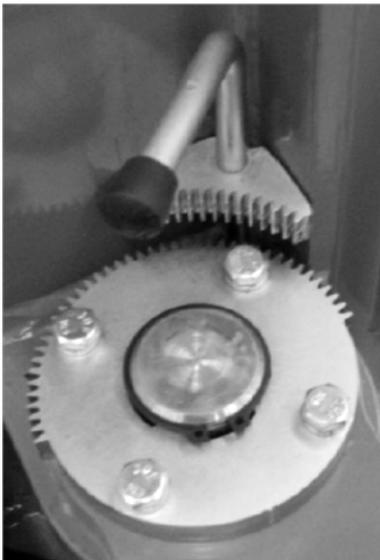


Diagram 4A – Arm Lock fully disengaged



Diagram 4B – Arm Lock fully engaged.

MAINTENANCE

Requirements of the Operator to keep the vehicle hoist in safe, good working order and maintain warranty.

Owner Maintenance Schedule



*It is the Hoists Owner's responsibility and Duty of care to maintain the hoist.
This must be recorded and retained.*

 Pre-Operational	 Monthly	 6 Monthly
<p>Visual Inspections</p> <ul style="list-style-type: none"> > Access and Clearance > Work area clean & tidy > Structure > Loose or damaged parts > Decals & control markings > Pick-up pads > Hydraulic fluid levels <p>Functional Inspections</p> <ul style="list-style-type: none"> > Operating controls > Carriage locks > Arm locks > Unusual noise or vibration <p>Check Accessories</p>	<p>Visual Inspections</p> <ul style="list-style-type: none"> > Flooring > Anchor bolts > Structural alignment > Structural integrity > Visual appearance > Operation manual > Displayed notices > Compliant Clearance > Pick-up pads > Balance cables > Hydraulic System Leaks > Pulleys <p>Functional Inspections</p> <ul style="list-style-type: none"> > Lubrication > Isolation switch > Limit switch <p>Check Accessories</p>	<p>Visual Inspections</p> <ul style="list-style-type: none"> > Oil leaks from cylinders > Oil leaks from pipe joints <p>Functional Inspections</p> <ul style="list-style-type: none"> > Installation check

Note: Service intervals are based on an average operation of 8 lifts per day, 5 days per week, 50 weeks per year (2,000 cycles). If operation cycles are more frequent, the service and inspection frequency should be reviewed and set at an appropriate level with your Technician. The intervals shown are the minimum time periods for inspections.

Owner Maintenance Information

PRE-OPERATIONAL INSPECTIONS

Pre-operational inspections should be conducted before the start of each shift.

Pre-Operational Visual Inspection

- **ACCESS & CLEARANCE:** Ensure there are no obstructions around the hoist (or vehicles when on the hoist) that could prevent operators working safely on and around the hoist and vehicle.
- **WORK AREA CLEAN & TIDY:** The work area should be clean and tidy prior to operation to eliminate the risk of slips and trip hazards, i.e. oil, parts, tools, hoses, etc.
- **STRUCTURE:** A visual inspection of the structure for anomalies that may indicate damage or deterioration. Anomalies must be reported to the authorised person. Only an authorised person may assess the condition of the structure. The result of this assessment must be reported and recorded.
- **LOOSE OR DAMAGED PARTS:** A visual inspection of hoist components for anomalies that may indicate parts are damaged or loose. The result of this assessment must be reported and recorded.
- **DECALS & CONTROL MARKINGS:** Check to see that the hoist's decals and markings for controls are not only present, but are in a good, clean condition and clearly visible.
- **PICK UP PADS:** Check condition of pick up pads to ensure they are clean, the material and structure is in good condition, and not excessively worn or otherwise damaged.
- **HYDRAULIC FLUID LEVELS:** Check the amount of hydraulic fluid in the system is within the correct limits.

Daily Functional Inspection

- **OPERATING CONTROLS:** Operating controls should be tested by activating through the full range of operation.
- **CARRIAGE LOCKS:** Without a vehicle on the hoist, raise the hoist 500mm while listening for the locking toggles, the toggles in both posts should click in unison. Lower the hoist back to the ground to ensuring the locking toggles are properly disengaging.
- **ARM LOCKS:** With the hoist fully lowered, check the arms locks have properly disengaged by checking if all lift arms pivot freely. Raise the hoist 200mm and check the arm locks have properly engaged by trying to pivot all lift arms and checking that the arm locks prevent the lift arms from pivoting.
- **UNUSUAL NOISE OR VIBRATION:** If during operation, unusual noise or vibration is detected, it must be reported and treated as a potential fault.
- **ACCESSORIES:** Accessories should undergo the same visual and functional inspection as the hoist.

MONTHLY INSPECTIONS

In addition to pre-operational inspections, more in depth inspections should be conducted every month.

Monthly Visual Inspections

- **FLOORING:** Check condition of floor area where the hoist is mounted, i.e. is not cracked or crumbling, especially in the region surround anchor bolts.
- **ANCHOR BOLTS:** Check the anchor bolts are secure in the concrete , anchor bolts must be tight and are not excessively corroded or otherwise deteriorated or damaged.
- **STRUCTURAL INTEGRITY:** Visually check the physical condition of the structure components for damage, deformation, corrosion or any other signs of deterioration.
- **VISUAL APPEARANCE:** Check the overall appearance of the hoist for damage, signs of deterioration or other potential indicators of faults or hazards.
- **OPERATORS MANUAL AVAILABLE:** The operator's manual for the hoist must be available , in good condition and easily accessible to operators.
- **DISPLAYED NOTICES:** Critical hoist information needs to be displayed on the hoist clearly, easily visible and legible for operators;
 - Operating Instructions: Details on how to safely operate the hoist.
 - Safe Working Load of the hoist
 - Load Distribution is how the vehicle should be loaded safely on the hoist.
- **COMPLIANT CLEARANCE:** Ensure there are no temporary or permanent obstructions around the hoist or vehicles on the hoist that that encroach into the safe area clearance limits.

- **BALANCE CABLES:** The balance cables must be visually checked for signs of deterioration and if necessary, cleaned and re-lubricated.
- **HYDRAULIC SYSTEM LEAKS:** After the operational check, the areas of the hydraulic circuit must be inspected for leaks. Evidence of fluid on the hoist can be a sign of a potential fault.
- **PULLEYS:** Visually check rotation during raising and lowering of the hoist.



If pulleys are not rotating freely, pulleys must be removed/inspected/replaced by an authorised service agent.

Monthly Functional Inspections

- **LUBRICATION:** All lubrication points must be inspected and re-lubricated as required.
- **ISOLATION SWITCH:** Confirm that there is an appropriate isolation switch to allow the hoist to be safely isolated and locked out to prevent accidental or unwanted operation.
- **LIMIT SWITCH:** Ensure the limit switch prevents the operation of the hoist beyond the limits of travel.
- **ACCESSORIES:** Accessories should undergo the same visual and functional inspection as the hoist.

6 MONTHLY INSPECTIONS

In addition to monthly inspections, other inspections should be conducted every 6 months.

6 Monthly Visual Inspections

- Check for oil leaks from cylinders. If leaks are detected, call your service provider.
- Check for oil leaks around pipe joints in the posts and tank. If leaks are detected, tighten oil fittings.

6 Monthly Functional Inspections

- Check Installation;
 1. Rock the hoist to check any movement.
 2. Use a spirit level to ensure posts are vertical in both axes.
 3. Visually inspect anchor bolts.
 4. Ensure anchor bolts are tight to 155Nm torque.
 5. Check that the shimming of the hoist is secure and in good condition.

BALANCE CABLE ADJUSTMENT

Note; this procedure must be followed exactly to ensure the correct amount of tension on the cables. If cables are too loose the vehicle could become unstable and if too tight damage to the cable could occur.

1. Raise the hoist 50mm off the locks and release the safety locks and lower the hoist to within 120mm of the bottom.
2. Using 2 of the 90mm pad adjusters, place between the carriage and base plate. Lower the hoist until carriages are sitting on the adaptors; refer to Diagram 5
3. On the control side, hold the cable swage at the top of the safety rack (the swage is a hex and will take a 14mm open-ended spanner) tighten the cable nylock nut (24 mm deep socket and ratchet) until the pad adaptor under the non-control carriage IS JUST MOVABLE
4. On the non-control side, hold the swage at the top of the safety rack and tighten the cable nylock nut until the adaptor under the carriage on this side has stopped moving.
5. Run the hoist up and listen to the synchronisation of the lock engagement.
6. Adjust the cable nut on the "high" side until the locks are in Unison.
7. Remove the 90mm pad adaptors



Diagram 5 – Using Pad Adaptors for Gauging Balance Cable Adjustment

TECHNICIAN MAINTENANCE SCHEDULE *(detailed in the Service Manual)*

Requirements of the Service Technician to keep the vehicle hoist in safe, good working order and maintain warranty.



Service and safety inspections on the hoist must be performed by a competent person. This must be recorded and maintained.

 In the first 6 Weeks	 Every Year	 Every 2 Years	 Every 10 Years
<ul style="list-style-type: none"> > Replace the hydraulic oil > Readjust the balance cables 	<ul style="list-style-type: none"> > Safety operation test > Balance cable inspection, adjustment and lubrication > Lubricate pulleys > Lifting arms, pivot pins > Pick-up pads > Hydraulic oil and system > Electrical controls and limit switch > Structural & general check > Accessories condition 	<p>In addition to regular Yearly tasks</p> <ul style="list-style-type: none"> > Replace the hydraulic oil > Clean tank and filter 	<p>In addition to regular Yearly and 2 Yearly tasks</p> <ul style="list-style-type: none"> > Replace pick-up pad rubbers > Balance cables and pulleys; removal and inspection
<p><i>The first oil change should occur within the first 6 weeks of operation to keep the hydraulic system in good working condition.</i></p> <p><i>Although recommended, this is not mandatory.</i></p>	<p><i>If the yearly service and safety inspection is not performed, the warranty is null and void.</i></p>	<p><i>To keep the hydraulic system in good working condition, oil changes are required every 2 years or 4,000 cycles.</i></p>	<p><i>After 10 years of service, remove the balance cables and pulleys from the hoist, clean and inspect them to ascertain serviceability, replace if required. If the hoist is in a high working or extreme environment, the balance cables should be replaced.</i></p>

TROUBLE SHOOTING

Q	!	A
Shuddering/shaking or sound of abrasion from posts during raising or lowering.	Guide Blocks Dry	Apply General Purpose Grease to Guide Tracks.
	Vehicle Weight is too far towards the front of the hoist.	Lower vehicle and reposition, refer to Positioning Vehicles section.
Hoist not staying up	Lowering Handle Sticking	Lubricate Lowering Handle Pivot
	Contaminated Oil blocking valves	Change Oil
	Faulty Control Valve	Contact Service Technician
Hoist Not Locking	Hoist won't lock in low height	Hoist must be raised a minimum of 350mm for Carriage Locks to engage
Motor will not run	No Power Supply	Check Circuit Breakers
	Limit switch stuck	Check operation of limit switch and limit switch actuator.
	Faulty Contactor	Contact should be replaced*
Motor runs but will not lift	Incorrect Phase wiring	Change rotation of motor*
	Lowering Handle Sticking	Lubricate Lowering Handle Pivot
	Hoist overloaded	Remove vehicle
Carriages not horizontal	Balance cables need adjustment	Refer to Balance Cable Adjustment section for procedure or contact Service Technician.
	Balance cables need replacing	If balance cable(s) are damaged, contact a Service Technician to replace.
Oil Leaks	Loose fittings	Tighten fittings
	Faulty fittings	Replace fittings
	Leaking Hydraulic Cylinder	Contact your service provider
Hoist will not lift to maximum height	Low hydraulic oil level	Top up hydraulic oil

** To be performed by a Qualified Electrician only.*



For more information, please contact us or your local Molnar Representative

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onwards & upwards