Spare Parts for Molnar Hoists
Two Post Hoist (4.5 Tonne)
M245-A
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INTRODUCTION

This Servicing Manual has been developed for the maintenance and repair of Molnar Hoists M245 ‘Universal’ Two Post Vehicle Hoist.

A basic level of competency and experience handling machinery and tools is assumed of people using this Manual.

This Manual has been laid out in a progressive format and should be read in its entirety for best preparation prior to performing repairs or maintenance on a Molnar M245 ‘Universal’ 2 Post Hoist.

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 13 February 2017
OVERVIEW

Technicians should familiarise themselves with the M245 shown here in Diagrams 1 & 2.

Diagram 1 – Top Down View of M245 Hoist

Diagram 2 – Isometric View of M245 Hoist
SAFETY

Always follow local safety regulations as a priority when conducting maintenance and repairs.

<table>
<thead>
<tr>
<th>Personal protective equipment</th>
<th>Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves</td>
<td>Notes marked require specific attention to ensure procedure is completed safely and correctly.</td>
</tr>
<tr>
<td>Ear &amp; eye protection</td>
<td></td>
</tr>
<tr>
<td>Steel capped boots</td>
<td></td>
</tr>
<tr>
<td>Safety cones, warning, signs and tape</td>
<td></td>
</tr>
</tbody>
</table>

Electrician

A licensed electrician must perform all electrical work including power connection and wiring.

TOOL LIST

Listed here are tools and equipment Molnar Hoists recommend for performing maintenance and repair work on the M245 ‘Universal’ Two Post Hoists.

### Standard Maintenance Tool Kit
- Flat Blade Screwdriver
- Phillips Head Screwdriver
- Metric Allen Key set
- Clamp wrench (Vice Grips)
- Rubber mallet
- Hammer
- Large Adjustable wrench
- Small Adjustable wrench
- Torque wrench with ½" drive (minimum 155Nm torque capacity)
- Metric Spanner Set
- 9/16" open ended spanner
- Metric Socket and Ratchet Set
- Deep Series 24mm socket
- Needle-nose pliers
- External circlip pliers
- Black Texta
- 2.4 metre platform-style step ladder or an appropriate elevated work platform
- 1200mm spirit level
- Soft, Lint-free cloth (to protect cylinder rod)

### Repairs Tool Kit
- Pry bar
- Oil funnel
- ½” drive impact gun
- 27mm Spanner or Socket
- Drip Tray
- Empty oil container with min. 20 litre capacity
- Packers (for cylinder support during removal)
- ‘F’ Clamp
- Small Plastic Bags
- Cable Ties
- Masking Tape

### Recommended Cleaning Kit
- Eye Protection
- Rubber Gloves
- Soft bristle brush
- Lint-free, soft cloths
MATERIALS LIST

Listed here are materials Molnar Hoists recommend for performing maintenance and repair work on the M245 ‘Universal’ Two Post Hoists.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grease</td>
<td>High quality lithium grease with molybdenum sulphide additive</td>
</tr>
<tr>
<td>Dry Lubricant</td>
<td>CRC Dry Glide</td>
</tr>
<tr>
<td></td>
<td>Wurth HHS Dry Lube</td>
</tr>
<tr>
<td>General Lubricant</td>
<td>CRC Tac-2</td>
</tr>
<tr>
<td></td>
<td>Wurth HHS Lube</td>
</tr>
<tr>
<td>Wire Rope Lubricant</td>
<td>Lanotec heavy duty liquid lanolin</td>
</tr>
<tr>
<td></td>
<td>85-90 gear oil</td>
</tr>
<tr>
<td>Hydraulic Oil</td>
<td>High Quality, Anti-Wear 46 Weight (AWH 46)</td>
</tr>
<tr>
<td></td>
<td>NOTE: Sites in different climates may require a different weight of hydraulic oil.</td>
</tr>
<tr>
<td>Powder Coated Surface Cleaner</td>
<td>Dilute solution of mild detergent</td>
</tr>
<tr>
<td></td>
<td>e.g., pH-neutral liquid hand wash or dishwashing detergent in warm water.</td>
</tr>
<tr>
<td>Metal Surface Cleaner</td>
<td>WD-40</td>
</tr>
<tr>
<td>Degreaser</td>
<td>Lanotec Citra Force</td>
</tr>
<tr>
<td></td>
<td>Water Soluble Degreaser</td>
</tr>
</tbody>
</table>
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

- Servicing a Hoist must be performed and recorded by a competent person. Ensure you are authorised to service a hoist and that you are familiar with all aspects of the hoist.

- Do not conduct maintenance with vehicle on hoist.

- 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.

- In moist conditions, ensure moving components are well lubricated. Seal and protect all electrical components from elements.

- Do not oil or grease the lifting arm assemblies.

- Use only recommended wire rope lubricants

- Cordon off work area using safety cones or other safety barricade. Ensure area is clear of any obstruction prior to servicing.

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

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

- Clean the hoist with warm water and non-abrasive pH neutral detergents. Surfaces should be thoroughly rinsed to remove residue.

- Do not make any changes to safety equipment.

- Isolate hoist from power to protect from unintended movement when working on internal components, balance cables and power system.


**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.*

<table>
<thead>
<tr>
<th></th>
<th>Pre-Operational</th>
<th>Monthly</th>
<th>6 Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Inspections</strong></td>
<td>&gt; Access and Clearance</td>
<td>&gt; Flooring</td>
<td>&gt; Oil leaks from cylinders</td>
</tr>
<tr>
<td></td>
<td>&gt; Work area clean &amp; tidy</td>
<td>&gt; Anchor bolts</td>
<td>&gt; Oil leaks from pipe joints</td>
</tr>
<tr>
<td></td>
<td>&gt; Structure</td>
<td>&gt; Structural alignment</td>
<td>Functional Inspections</td>
</tr>
<tr>
<td></td>
<td>&gt; Loose or damaged parts</td>
<td>&gt; Structural integrity</td>
<td>&gt; Installation check</td>
</tr>
<tr>
<td></td>
<td>&gt; Decals &amp; control markings</td>
<td>&gt; Visual appearance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Pick-up pads</td>
<td>&gt; Operation manual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Hydraulic fluid levels</td>
<td>&gt; Displayed notices</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Functional Inspections</strong></td>
<td>&gt; Compliant Clearance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Full operation cycle of hoist</td>
<td>&gt; Pick-up pads</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Operating controls</td>
<td>&gt; Balance cables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Carriage locks</td>
<td>&gt; Hydraulic System Leaks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Arm locks</td>
<td>&gt; Pulleys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Unusual noise or vibration</td>
<td><strong>Check Accessories</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Check Accessories</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
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.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the first 6 Weeks</td>
<td>Replace the hydraulic oil  &gt; Readjust the balance cables</td>
</tr>
<tr>
<td>Every Year</td>
<td>Safety operation test  &gt; Balance cable inspection, adjustment and lubrication  &gt; Lubricate pulleys  &gt; Lifting arms &amp; pivot pins  &gt; Pick-up pads  &gt; Hydraulic oil and system  &gt; Electrical controls and limit switch  &gt; Structural &amp; general check  &gt; Accessories condition</td>
</tr>
<tr>
<td>Every 2 Years</td>
<td>In addition to regular Yearly tasks  &gt; Replace the hydraulic oil  &gt; Clean tank and filter</td>
</tr>
<tr>
<td>Every 10 Years</td>
<td>In addition to regular Yearly and 2 Yearly tasks, a Major Inspection is required. Remove and Inspect  &gt; Balance Cables  &gt; Locking Toggles  &gt; Arm Lock Components  Replace  &gt; Balance cable pulleys  &gt; Carriage Slide Block  &gt; Pick-up pad rubbers</td>
</tr>
</tbody>
</table>

The first oil change should occur within the first 6 weeks of operation to keep the hydraulic system in good working condition. Although recommended, this is not mandatory.

If the yearly service and safety inspection is not performed, the warranty is null and void.

To keep the hydraulic system in good working condition, oil changes are required every 2 years or 4,000 cycles.

After 10 years of service, remove the balance cables 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.

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 reviewed and set at an appropriate level with your Technician. The intervals shown are the minimum time periods for inspections.
ELECTRICAL CHECK

Electrical repairs should be performed by a qualified, licensed electrician.
The isolation switch for the hoist should be in safe and easy reach of the operator.

1. Isolate hoist from electrical power.
2. Check that there is no exposed wiring on the hoist.
3. Check that the raise button, motor and contactor box are all secure and in good condition.
4. Reconnect hoist to power and check raise button, motor and limit switch are functioning correctly.

INSTALLATION CHECK

Footing should be repaired if there are cracks in the concrete near the hoist.

1. Check condition of concrete
2. Check anchor bolts are tight and in good condition.
3. Check posts are vertical in both planes and any shimming is secure and in good condition.

COVER REMOVAL

Release Cable Cover Removal

1. Remove black knob from end of lock release lever by unscrewing.
2. Loosen the screws securing the Release Cable Covers then remove them by lifting up and away from the post.
3. If performing maintenance with covers off, refit black knob to end of lock release lever.

Cylinder Cover Removal

Gloves are recommended for handling cylinder covers.

Do not raise hoist past 1st lock without cylinder covers fitted; cylinder covers secure the cylinders in correct position for operation.

To avoid damaging cylinder cover screws, do not use powered screwdrivers.

Top Cylinder Cover Removal

1. Set the hoist onto the first lock.
2. Loosen cylinder cover securing screws located at the top of the top cover.
3. While holding the cylinder cover, remove securing screws located at the bottom of the top cover.
4. The top cover should be easily removed by sliding down off the securing screws.
5. To avoid losing screws, refit the screws after cover has been removed.

Bottom Cylinder Cover Removal

1. Set the hoist onto the first lock.
2. Loosen cylinder cover securing screws located at the bottom of the bottom cover.
3. While holding the cylinder cover, remove securing screws located at the top of the bottom cover.
4. The bottom cover should be easily removed by sliding up off the securing screws and out from the carriage.
5. To avoid losing screws, refit the screws after cover has been removed.
CYLINDER REPLACEMENT

**WARNING:** The complete cylinder weight is approximately 20kg, it is recommended to obtain assistance for cylinder handling.

When disassembling and reassembling the hydraulic fittings, first mark an alignment point on both sides of the fitting. The fitting must be retightened to the same torque on reassembly to achieve correct seal. 
Refer to Diagram 3

Cylinder Removal

1. Set hoist on first lock and apply ‘F’ clamp to hold down the hydraulic release lever to drain oil from system.
2. Isolate electrical power supply to the hoist.
3. Remove the cylinder covers

**NOTE:** An impact gun is required to effectively remove or refit the cylinder nyloc nut. For this purpose, only use the impact gun by applying only in short bursts; short bursts should only turn the nut and not the cylinder shaft, thus protecting the cylinder from damage.

4. Using an impact gun and 27mm socket, remove the nyloc nut from the bottom of the cylinder rod. Refer to Diagrams 4 & 5
5. Disconnect oil line that connects to the top of the cylinder and secure the end with a small plastic bag a cable tie over the end of the oil pipe to contain any drips. Refer to Diagram 6
6. With an Allen key, loosen the 2.5mm grub screw (should not require more than 2 turns) in the cylinder end cap located at the top of the cylinder. Rotate the cylinder to get better access to the grub screw if required. Refer to Diagram 7
NOTE: When removing or refitting the cylinder end cap, ensure the O-ring is maintained in position at the top of the thread. Refer to Diagram 8

7. Place wedge/packers between the top of the carriage and the underside of the cylinder barrel to support the weight of the cylinder. Wrap the wedge with a soft, clean cloth to protect the cylinder rod from damage. Refer to Diagram 9

8. Hold the cylinder barrel and unscrew the cylinder end cap; it should only be hand tight but you can use a pair of circlip pliers to loosen if too tight. Refer to Diagram 10

9. While holding the cylinder, remove the wedge/packers and allow it to slide down inside the carriage until it comes to rest. Refer to Diagram 11

10. Refit (and secure with grub screw) the cylinder end cap and plug the cylinder oil line (use the plug supplied with the replacement cylinder) to prevent movement of the rod when handling the cylinder. Refer to Diagrams 12 & 13

11. Lift the cylinder up and out of the carriage. Refer to Diagram 14

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**Diagram 8 – Indication for Cylinder End Cap O-Ring**

**Diagram 9 – Bar covered with Soft Cloth used to support Cylinder**

**Diagram 10 – Removing Cylinder End Cap with Circlip Pliers**

**Diagram 11 – Lowering Cylinder down into the Carriage**

**Diagram 12 – Cylinder being Capped & Plugged.**

**Diagram 13 – Close-up image of fitting plug to hydraulic fitting.**

**Diagram 14 – Handling Cylinder in/out of Carriage**
Cylinder Fitting

Cylinder Fitting is almost the same process as the Cylinder Removal process in reverse. Please familiarise yourself with the cylinder removal process before continuing.

1. Ensure to plug the cylinder oil line (plug should be supplied with the cylinder) this will prevent movement of the rod when handling the cylinder. Refer to Diagrams 12 & 13
2. Remove the nyloc nut from the end of the cylinder rod, and fit rod end down into the centre of the carriage. Refer to Diagram 14
3. By hand, start the nyloc nut onto the cylinder piston rod end. Refer to Diagram 15
4. Continue to tighten with 27mm socket and impact gun used in short bursts until nut is firmly tightened.
5. Loosen off nyloc nut by a ½ turn to allow some clearance for movement of the cylinder.
6. Loosen the 2.5 mm locking grub screw (max. 2 turns) and remove the cylinder end cap. Refer to Diagram 7
7. Remove the plug from cylinder oil line.
8. Pull the cylinder barrel up and feed through the hole in the top plate at the top of the post, then while holding the cylinder barrel, place wedge/packers between the top of the carriage and bottom of the cylinder barrel. Refer to Diagram 9
9. Refit the cylinder end cap (firmly hand tighten) to the cylinder barrel and secure by tightening the 2.5mm locking grub screw.

NOTE: When removing or refitting the cylinder end cap, ensure the O-ring is maintained in position at the top of the thread. Refer to Diagram 8

NOTE: When reassembling hydraulic fittings, re-apply the same torque, do not overtighten.

10. Connect the oil line to the new cylinder, firmly hand tighten, then using spanners, tighten a further 1/2 turn exactly. Refer to Diagram 16. If reassembling, the fittings should return to the same torque; this can be achieved by marking the fittings for alignment. Refer to Diagram 3
11. Ensure the cylinder is positioned with brackets square to the carriage. Refer to Diagrams 17 & 18
12. Clean up any oil that has leaked onto the floor or the hoist. Make sure to check and clean inside the post, under the carriage.
13. Remove wedge/packers under cylinder barrel and fit the bottom cylinder cover only.
14. Remove ‘F’ Clamp and reconnect electrical power supply to the hoist.
15. Complete bleeding of hydraulic system before fitting top cylinder cover.
Bleeding Hydraulic System

1. Ensure top cylinder cover(s) are removed.
2. Ensure the cylinder(s) is positioned with brackets square to the carriage. Refer to Diagrams 17 & 18
3. Raise the hoist 50mm and then lower hoist to ground but continue to hold down release lever for a further 90 seconds to clear air from system.
4. Check oil level, and;
   a. Top up oil if required, or;
   b. Change oil if replacing cylinder or power pack components.
5. Run hoist through 3 full cycles unloaded each time holding down the release lever for a further 30 seconds after lowering to ground.
6. Check cylinder oil line connections for leaks. If a leak is found, retighten fitting, wipe clean and repeat steps 1-6
7. Refit top cylinder cover(s) and check operation by running the hoist through 3 cycles loaded with a vehicle.
BALANCE CABLE INSPECTION

Balance Cable Replacement Criteria

Balance Cables (Wire Ropes) shall be replaced immediately if in any area of the cable;

A. Wire breaks exceed 4 wires within 48mm (Refer to Diagrams 19 & 20),
B. Wire breaks exceed 10 wires within 240mm (Refer to Diagrams 19 & 20), or
C. There is break in a single strand (Refer to Diagram 19), or
D. Is severely corroded, worn or damaged (Refer to Diagrams 21 & 22), or
E. Expected to exceed any of the above replacement criteria before the next service.

Balance Cable & Pulley Inspection Procedure

Please make note of the precautions before starting the inspections.

- **To inspect the balance cables and pulleys the tension on the cables must be released to enable these items to be correctly inspected and lubricated.**
- **Use gloves when handling Wire Ropes to avoid injury from broken wires.**
- **To properly assess wire ropes, you must bend them to expose any broken wires, refer to Diagram 23. Give special attention to the sections that run over the pulleys; check both the inner and outer running areas of these sections.**
When working on the cable ends, protect the exposed cylinder rod by thickly wrapping a soft cloth around the tools used. If the cylinder rod is damaged it may lead to damage of cylinder seals and cause the cylinder to leak. Avoid contacting the cylinder where possible. Refer to Diagram 24

1. Set hoist on first lock and hold down the release lever for 10 seconds to ensure the load is on the locks.
2. Remove all cylinder covers.
3. Measure and note the amount of thread protrusion of the top cable end located at the top of each carriage. Refer to Diagram 25
4. If top cable end thread protrusion is less than 40mm, go to step 5, if greater than 40mm, follow these steps;
   a. Loosen off the nut until the top of the nut is level with the top of the top cable end thread on both sides.
   b. Remove the bottom pulley from both posts and note orientation of pulley. Refer to Diagram 26
   c. Pull the bottom cable end down from the bottom of each carriage and wind each nut on a further 25mm. Refer to Diagram 27
   d. Clean old grease from bottom pulleys and bottom pulley pins then re-grease.
   e. With the cables seated in the grooves, refit the bottom pulleys on both posts ensuring the small shoulder is facing towards the post (away from circlip) when refitting.

5. Starting at the control post, then repeat for non-control post:
   Use a 9/16" open ended spanner to hold the balance cable end inside the top of the carriage safety rack. Use a 24mm deep socket with ratchet to loosen the cable nut till the top of the nut is just level with the end of the cable. Avoid contacting the cylinder rod with the tools. Refer to Diagram 24
6. On all accessible sections of balance cables, clean dirt and old lubricant if necessary, inspect for damage by ‘reverse bending’ (bending 90 degrees in opposite directions) the cables to expose any broken wires and then lubricate with Wire Rope lubricant.
7. Inspect all balance cable pulleys (per side there are 2 top, 1 bottom) for;
   a. wear in the groove, and
b. internal diameter wear by examining the amount of clearance on the shafts.

8. Lubricate the top balance cable pulley shafts with general spray lubricant.
9. Refit all top cylinder covers and ensure the cylinder brackets are square to the carriage.
10. Lock hoist at top position and hold down the release lever for 10 seconds to ensure the load is on the locks.
11. On previously inaccessible sections of balance cables, clean dirt and old lubricant if necessary, inspect and then lubricate with Wire Rope lubricant.
12. Check all balance cables are correctly seated in pulley grooves then conduct balance cable adjustment procedure.
13. Refit bottom cylinder covers.
14. Lower hoist to ground.

BALANCE CABLE ADJUSTMENT

Follow balance cable adjustment procedure to ensure correct tension; if balance cables are not correctly adjusted, damage to hoist, vehicles, equipment or personnel could occur.

Balance Cable Adjustment Check

1. Remove the Cable Covers
2. While raising the hoist, listen and observe the lock engagement. The locks should engage and release in unison, if not, tighten the top balance cable end on the carriage that is running “higher” or complete the Balance Cable Adjustment Procedure.
3. Ensure that the Lock Release cable is tensioned correctly or perform the Lock Release Cable Adjustment Procedure.
4. Replace Cable Covers
Balance Cable Adjustment Procedure

1. Set hoist onto first lock and remove the bottom cylinder covers from both posts.
2. Raise the hoist 100mm.

3. Take 2 x 90mm pad extensions, place 1 between the carriage and base plate on each post. Refer to Diagram 28

   For units in the High configuration (4040mm Overall Height), add a 2mm Allen Key on top of the Pad Extension on the Non-Control Side only. Refer to Diagram 29

4. Lower the hoist until carriages are just sitting on the extensions so they cannot be removed. Refer to Diagram 30
   a. For units in the High configuration (4040mm Overall Height), add a 2mm Allen Key on top of the Pad Extension on the Control Side only to allow for the extra length cable adjustment. Refer to Diagram 29

5. On the control side, hold the top cable end at the top of the carriage with 9/16” spanner and tighten the cable Nyloc nut with 24 mm Deep Socket or Spanner until the non-control carriage has raised just enough that the pad extension could be removed. Refer to Diagram 30
   a. For units in the High configuration (4040mm Overall Height), remove the 2mm Allen Key at this point.

6. On the non-control side, hold the hold the top cable end with 9/16” spanner and tighten the cable Nyloc nut until the non-control carriage lowers back onto the pad extension just so much that the pad extension cannot be removed.

7. If top cable end thread protrusion is less than 40mm, go to step 5, if greater than 40mm, follow these steps;
   a. Loosen off the nut until the top of the nut is level with the top of the top cable end thread on both sides.
   b. Remove the bottom pulley from both posts and note orientation of pulley. Refer to Diagram 26
   c. Pull the bottom cable end down from the bottom of each carriage and wind each nut on a further 25mm. Refer to Diagram 27
   d. Clean old grease from bottom pulleys and bottom pulley pins then re-grease.
   e. With the cables seated in the grooves, refit the bottom pulleys on both posts ensuring the small shoulder is facing towards the post (away from circlip) when refitting.
f. Restart Balance Cable Adjustment procedure.
8. Raise the hoist 50mm and replace 90mm Pad Extensions.
10. Set hoist onto first lock and replace the bottom cylinder covers from both posts
11. Lower hoist to ground and perform Lock Release Cable adjustment.

Lock Release Cable Adjustment Procedure

1. Remove the Release Cable Covers.
2. Raise the hoist off the locks.
3. Lubricate the locking toggle pivots and lock release cable pulley shafts then check they all pivot freely.
4. Check the return springs are in good condition and positively engage locking toggles.
5. Hold down the lock release lever fully and compare the disengagement of the non-control lock to the control side. The non-control side lock should retract as much or more than the control side, Refer to Diagram 31, if not go to Step 8.
6. Set hoist onto first lock and hold down the hydraulic release lever for 10 seconds.
7. Check the tension of the lock release cable. Refer to Diagram 31
   a. If loose, go to Step 8.
   b. If tight, go to Step 12
8. Loosen off the clamping nut on the non-control side lock. Refer to Diagram 33
Do not overtighten the clamping nuts on locks, damage to lock release cables may occur. The spacing between washers should be 1.5mm. It is recommended to use a 1.5mm Allen Key to gauge the correct spacing as shown in Diagram 34.

9. Pull the cable down tight and hold while re-tightening. Refer to Diagram 33.
10. Check correct spacing of clamping washers on lock using 1.5mm Allen Key and adjust if necessary.
11. Raise hoist off locks and recheck the movement of the non-control lock when holding down the lock release lever. Repeat process with more tension on cable if disengagement is insufficient.
12. Trim any excess lock release cable that hangs below the cable cover bracket. Refer to Diagram 35.
13. Run a light coating of lock release cable lubricant over the length of the lock release cable.
15. Replace cable covers and lower hoist to ground.
**BALANCE CABLE & PULLEY REPLACEMENT**

Balance Cable & Bottom Pulley Removal

*Do not operate hoist without balance cables.*

Refer to Diagram 36 (Balance Cable Layout) and Diagram 2 (Isometric View of M245 Hoist)

1. Raise the hoist and lock on first lock position.
2. Remove cylinder covers
3. Starting with Balance Cable 2 on the Control Side, hold the cable end at the top of the load hold rack with 9/16” open-ended spanner, remove the cable Nyloc nut with Deep (24 mm) Socket and Ratchet.
4. Remove the retaining circlip and bottom pulley (F) from the bottom of the post and check condition.
5. Pull the loose cable end down out through the bottom of the load hold rack.
6. Pull the cable out of the top over top pulley (D) and feed the loose cable end into the overhead beam assembly.
7. At the bottom of non-control carriage at the heel block riser, remove the nut from the opposite cable end.
8. Now that both ends of Balance Cable 2 are free, pull the entire balance cable over the top pulley (E) and up out through the top of the control post.
9. Repeat Steps 3-8 for the Non-Control Side, Balance Cable 1 and pulleys (A), (B) & (C).

New Balance Cable and Bottom Pulley Replacement

Refer to Diagram 36 (Balance Cable Layout) and Diagram 2 (Isometric View of M245 Hoist)

1. Starting with the control post, feed cable end from new Balance Cable 2 down the centre of the top of the control post over pulley (E) down and out through the hole in the heel block riser closest to the load hold rack.
2. Run this cable end up inside the load hold rack and fit the Nyloc nut.
3. Feed the loose end of the cable through the overhead beam assembly, over pulley (D), down inside the post until it protrudes through the bottom of the non-control heel block riser.
4. Wind the Nyloc nut onto the loose end of this balance cable so 15-20mm of cable end thread is protruding from the end of the Nyloc nut.
5. Refit existing bottom pulley (F) and retaining circlip if in good condition or replace with new components if necessary. Note that the small shoulder of the pulley should be towards the inside of the post, the flat side should be facing outwards to the circlip. Ensure balance cable is firmly sitting in the groove of the pulley.
6. Repeat Steps 1-5 for the Non-Control Side, new Balance Cable 1 and pulleys (A), (B) & (C).
7. Check balance cables are;
a. Run through the correct area of the carriage
b. Run over the correct pulleys
c. Correctly seated in the pulleys
d. Not twisted around the cylinder.

8. Conduct Balance Cable Adjustment procedure.
9. Replace cylinder covers.

TOP BALANCE CABLE PULLEY

When disassembling and reassembling the hydraulic fittings, first mark an alignment point on both sides of the fitting. The fitting must be retightened to the same torque on reassembly to achieve correct seal. Refer to Diagram 3 and the Cylinder Replacement procedure.

Top Balance Cable Pulley Replacement

1. Lock hoist on first position
2. Isolate hoist from electrical power.
3. Remove the cable covers, disconnect lock release cable from Non-Control Side locking toggle and pull the lock release cable back to the Control Side locking toggle and coil up over handle to keep out of the way while working.
4. Remove both Balance Cables.
5. For both cylinders, follow the Cylinder removal procedure to the end of Step 8; leave cap off and the cylinders supported by the wedges.
6. Remove the top hydraulic pipe, secure plastic bags over the ends with cable ties to control leaks and set the pipe aside.
7. Remove the nut holding the limit sensor bar and remove the limit sensor bar.
8. Remove the 2 screws holding the limit switch in position. Secure the switch to the cable “P” clip with a cable tie.
9. Remove the bolts holding the overhead beam to the top of the posts and remove the overhead beam assembly.
10. Remove the 2 bolts securing the top plate to the post and remove the top plate.
11. Remove the top pulley pin, top pulley and spacer from the top plate.
12. Lubricate the internal diameter of the new top pulleys and spacer with grease and fit the new top pulleys and spacer onto the pulley pin with the orientation of spacer in the centre with a top pulley on either end with the shoulders facing outwards. Refer to Diagram 37
13. Refit the items in order and secure
   a. Top plate to post (bolts)
   b. Overhead beam to top plates (bolts)
   c. Remove cable tie from limit switch cable then refit limit switch to control post (screws)
   d. Limit sensor bar to overhead beam (nyloc nut)
15. Reactivate power supply for hoist.
16. Adjust balance cables, lock release cable and bleed hydraulic system.
17. Refit all covers and lower hoist to ground

CARRIAGE SLIDE BLOCKS

Carriage Slide Block Tracks Inspection and Lubrication

When cleaning Carriage Slide Block Tracks, refer Diagram 38, inspect for signs of wearing or scraping inside posts. Significant long freshly made marks will indicate requirement to fit new carriage slide blocks.

1. Rock each carriage front to back and side to side inside the post to check for excessive clearance.
2. Lower hoist to ground remove top cylinder covers
3. Wipe clean the top section of tracks inside the posts and inspect.
4. Apply fresh grease to Carriage Slide Block Tracks in the areas accessible above carriages.
5. Refit top cylinder covers, raise hoist to top lock and remove bottom cylinder covers
6. Wipe clean the bottom section of tracks inside the posts and inspect.
7. Apply fresh grease to Carriage Slide Block track in the areas accessible below carriages.
8. Refit the bottom cylinder covers.
9. Run hoist through full cycle and remove covers to inspect tracks grease coverage. Apply more grease in areas if necessary.
10. Lower hoist to ground.

Carriage Slide Block Replacement

When disassembling and reassembling the hydraulic fittings, first mark an alignment point on both sides of the fitting. The fitting must be retightened to the same torque on reassembly to achieve correct seal. Refer to Diagram 3 and the Cylinder Replacement procedure.

1. Remove arms from carriage.
2. Lock hoist on first position
3. Isolate hoist from electrical power.
4. Remove Cylinder and Balance Cables and follow the Top Balance Cable Pulley Replacement procedure until after the top plate has been removed.
5. For the Control Post only, disconnect limit switch, disconnect wiring*, disconnect hydraulic oil lines and remove power pack.
6. Unbolt anchor bolts and lower post to ground. Take care to not damage the thread of the anchor bolts and use an eye bolt through the lifting point hole on the post.

7. Replace the nuts onto the anchor bolts to protect the threads and maintain the bolt position in the floor.

8. Take note of the location of any shims.

9. Lay the post down sideways and slide the carriage out the top of the post.

10. Remove retaining screws from heel carriage slide blocks and then remove all heel and channel slide blocks.

11. Fit new channel slide blocks using rubber mallet to knock into place if required and then fit and secure the heel Carriage Slide blocks with screws.

12. Clean slide tracks inside post and re-grease.

13. Place a thin wedge between the post and locking toggle to hold it disengaged to allow the carriage to move down the post.

14. Fit the carriage and remove the wedge from the lock toggle when the carriage is at the first lock position.

15. Remove the nuts from the anchor bolts, ensure the shims are still correctly located and then lift the post to carefully fit back over the anchor bolts ensuring not to knock down any of the bolts or damage the threads.

16. Fit nuts to anchor bolts and tighten to bolts specified setting.

17. Refit the items in order and secure
   a. Top plate to post (bolts)
   b. Overhead beam to top plates (bolts)
   c. For the Control Post only;
      i. Attach power pack
      ii. Reconnect hydraulic oil lines
      iii. Reconnect wiring* (electrician)
   d. Limit switch to control post (screws)
   e. Limit sensor bar to overhead beam (nyloc nut)


19. Reactivate power supply for hoist.

20. Adjust balance cables, lock release cable and bleed hydraulic system.

21. Refit all covers.

22. Refit arms to carriage.

23. Lower hoist to ground.

*NOTE: Incoming power wiring disconnection to be performed by a Qualified Electrician only.
HYDRAULIC SYSTEM CHECK

1. Lower hoist to ground.
2. Check level of hydraulic fluid in tank using dip stick if an accurate visual determination not possible.
3. Check all external hydraulic oil pipe connections for tightness and wipe clean with cloth while making note of any hydraulic oil found around fittings or power unit. Refer to Diagram 39
4. Raise hoist to top and lower, locking on first lock and then remove cylinder covers.
5. Check all hydraulic oil pipe connections and cylinder for oil leaks. Replace any faulty, leaking components.
6. Replace cylinder covers and lower hoist to ground.

Diagram 39 – Hydraulic Line Layout displaying location of Fittings

REPLACING HYDRAULIC OIL

*Hydraulic oil should be replaced every 4,000 cycles or 2 years, whichever comes first.*

1. Fully lower hoist to the ground.
2. Isolate hoist from power
3. Unbolt tank from power pack and set on the ground under the pump to catch draining oil.
4. Replace Tank with Drip Tray on the ground under the power pack to catch drip other.
5. Dispose of waste oil as per local regulations.
6. Wipe the inside of the tank clean to remove any sediment and residual dirty oil.
7. Remove filter from inlet pipe of power pack
8. Drain and clean the filter with degreaser then blow out filter with compressed air and wipe dry.
9. Inspect filter and replace if unable to clean effectively.
10. Wipe remaining oil from valve block and pump
11. Refit filter.
12. Refit tank to power pack and fill with new hydraulic oil.
STRUCTURAL CHECK
1. Check for corrosion, distortion, crack welds or any damage or deterioration to the hoist structural components. Replace faulty components.
2. Check all bolts, screws and fasteners are tight starting from the arms and working up to the overhead beam assembly.

SAFETY OPERATION TEST
1. Lower Hoist to ground
2. Remove load from hoist and clear area.
3. Check all 4 arms pivot freely
4. Remove both Release Cable Covers
5. Raise hoist to top of travel while watching and listening to check that the locking toggles on both sides are engaging and releasing simultaneously.
6. Check that the limit switch stops motor operation when hoist reaches maximum travel limit.
7. Lower hoist to approximately 1m from the ground.
8. Lift arms to check for excessive play (indicating wear) around pivot pins.
9. Pull arms out to full extent to check extension stops.
10. Check all 4 Arm Locks;
   a. While rotating the arms, lift and release the arm lock to check engagement at different rotations.
   b. Lock the arms at their normal working position and apply a firm sideways force to check they are restraining movement.
   c. Inspect the condition of the arm lock teeth
   d. Check the arm lock disc securing bolts are tight
11. Raise hoist and simultaneously activate the overhead limit switch to ensure it stops motor operation when engaged.
12. Lower hoist onto locks to check carriage is positively held by locking toggles on both sides.
13. Lower hoist to ground to check lock release system is working and properly adjusted.
14. Check balance cables are in good condition and functioning correctly.

PICKUP PADS
Check pickup pads rubber are in good condition, replace if necessary.

Wind the pad all the way down and all the way up. If not retained at the extent of the height limit, check for damage and replace components where necessary. If the pad thread is damaged, replace the assembly.

Pickup Pad Replacement
1. Unscrew pickup pad retaining screws.
2. Pull rubber pad section away from pickup pad assembly.
3. Fit new rubber pad to pickup pad assembly.
4. Secure by refitting pickup pad retaining screws.
DOOR PROTECTORS

Check door protectors are clean and in good condition, replace if necessary.

Door Protector Replacement

1. To remove door protectors, push tube vertically upwards and pivot bottom of tube away from carriage so tube is at approximately 30 degrees from carriage, then pull the tube down and away from the top door protector retaining bracket.
2. Slide the internal steel tubing out of the old door protector foam and slide steel tubing inside new door protector foam.
3. To refit door protectors, reverse step 2.

MAJOR INSPECTION

In addition to regular maintenance, Major Inspections are required at a minimum of 10 year intervals (or equivalent based on usage or environment) to assess suitability for continuation of operation.
<table>
<thead>
<tr>
<th><strong>Q</strong></th>
<th><strong>A</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shuddering/shaking or sound of abrasion from posts during raising or lowering.</strong></td>
<td><strong>Guide Blocks Dry</strong></td>
</tr>
<tr>
<td><strong>Guide Blocks Worn</strong></td>
<td><strong>Replace Guide Blocks</strong></td>
</tr>
<tr>
<td><strong>Vehicle Weight is too far towards the front of the hoist.</strong></td>
<td><strong>Lower vehicle and reposition, refer to Positioning Vehicles section.</strong></td>
</tr>
<tr>
<td><strong>Groaning sound</strong></td>
<td><strong>Balance Cables are too tight</strong></td>
</tr>
<tr>
<td><strong>Pulleys require lubrication</strong></td>
<td><strong>Lubricate Pulleys</strong></td>
</tr>
<tr>
<td><strong>Hoist not staying up</strong></td>
<td><strong>Release Lever Sticking</strong></td>
</tr>
<tr>
<td><strong>Contaminated Oil blocking valves</strong></td>
<td><strong>Change Oil</strong></td>
</tr>
<tr>
<td><strong>Faulty Valve</strong></td>
<td><strong>Contact Molnar Hoists</strong></td>
</tr>
<tr>
<td><strong>Locks Not Engaging</strong></td>
<td><strong>Contact Molnar Hoists</strong></td>
</tr>
<tr>
<td><strong>Hoist will not lift to maximum height</strong></td>
<td><strong>Low hydraulic oil level</strong></td>
</tr>
<tr>
<td><strong>Hoist Not Locking</strong></td>
<td><strong>Hoist won’t lock in low height</strong></td>
</tr>
<tr>
<td><strong>Damaged or missing components</strong></td>
<td><strong>Replace components</strong></td>
</tr>
<tr>
<td><strong>Lock catching on non-control side only</strong></td>
<td><strong>Lock release cable out of adjustment</strong></td>
</tr>
<tr>
<td><strong>Lock release cable out of faulty</strong></td>
<td><strong>Adjust lock release cable</strong></td>
</tr>
<tr>
<td><strong>Lock release lever not pulled down far enough</strong></td>
<td><strong>Pull lever down fully when lowering</strong></td>
</tr>
<tr>
<td><strong>Lock catching on control side only</strong></td>
<td><strong>Lock release cable set too tight</strong></td>
</tr>
<tr>
<td><strong>Carriages not synchronising</strong></td>
<td><strong>Balance cables need adjustment</strong></td>
</tr>
<tr>
<td><strong>Balance cables need replacing</strong></td>
<td><strong>If balance cable(s) are damaged, contact a Service Technician to replace.</strong></td>
</tr>
<tr>
<td><strong>Worn or Damaged pulley(s)</strong></td>
<td><strong>If balance cable pulley(s) need replacing, contact a Service Technician.</strong></td>
</tr>
<tr>
<td><strong>Oil from fitting</strong></td>
<td><strong>Fitting is loose</strong></td>
</tr>
<tr>
<td><strong>Fitting has been overtightened/is faulty</strong></td>
<td><strong>Replace fitting</strong></td>
</tr>
<tr>
<td>Q</td>
<td>A</td>
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<tr>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
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<tr>
<td><strong>Oil leaking from breather (on top of the cylinder barrel)</strong></td>
<td>Piston Seal is faulty Replace Piston Seal</td>
</tr>
<tr>
<td><strong>Oil Leak from Piston Rod (bottom of cylinder barrel)</strong></td>
<td>Gland Seal is faulty Replace Gland Seal</td>
</tr>
<tr>
<td><strong>Oil Leaks</strong></td>
<td>Loose fittings Tighten fittings</td>
</tr>
<tr>
<td></td>
<td>Faulty fittings Replace fittings</td>
</tr>
<tr>
<td></td>
<td>Leaking Hydraulic Cylinder Contact Molnar Hoists</td>
</tr>
<tr>
<td><strong>Motor runs but will not lift</strong></td>
<td>Incorrect Phase wiring Change rotation of motor#</td>
</tr>
<tr>
<td></td>
<td>Release Lever Sticking Lubricate Release Lever Pivot</td>
</tr>
<tr>
<td></td>
<td>Hoist overloaded Remove vehicle</td>
</tr>
<tr>
<td><strong>Motor will not run</strong></td>
<td>No Power Supply Check Circuit Breakers</td>
</tr>
<tr>
<td></td>
<td>Limit switch stuck Check operation of limit switch and limit switch actuator.</td>
</tr>
<tr>
<td></td>
<td>Faulty Contactor Contactor should be replaced#</td>
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</tbody>
</table>

# NOTE: 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