

# SM Series **FOUR POST HOIST**

4, 5 & 6 Tonne Electro-Hydraulic Four Post Hoist

## Operation and Maintenance Manual



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PART OF THE  
STENHØJ GROUP

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Please read this manual before you get started.

You must read and understand the precautions for safety purposes and any damages that may occur to your property.

If these instructions are not followed strictly, the hoist is not covered by warranty.



**MOLNAR**  
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**Updated 11/5/2020**

## **WARRANTY**

### **Molnar Hoists Warranty Statement**

Molnar Hoists warrants that the Molnar Hoists product and Molnar Hoists approved parts sold under this warranty:

1. Will be free from defects in materials and workmanship, and shall conform to and perform in accordance with, the related documentation supplied by Molnar Hoists including specifications and instructions on product.
2. Will comply with the Australian and New Zealand standard quality requirements in force at the time of manufacture.

Note: Please retain a copy of the product invoice and records of maintenance. In the event of a warranty claim, Molnar Hoists will require a copy of these to process the warranty claim.

### **Warranty Period**

In addition to all rights and remedies which you may be entitled to under Australian Consumer Law and any other relevant legislation, Molnar Hoists warrants each of its products to be free of defects in materials and workmanship for a maximum period of three (3) years on individual products and one (1) year on spare parts and accessories. The Warranty period commences and is calculated from the date on which the product is first purchased by its original owner.

Warranty repairs do not extend the length of the warranty period. All replaced parts and products become the property of Molnar Hoists. New or reconditioned parts and products may be used in the performance of warranty service. Customers will be charged for repair or replacement of the product made after the expiration of the warranty period, at the rates and terms then in effect by Molnar Hoists or its authorised dealers.

\* Costs for travel over 30 kilometers from the closest Molnar Hoists authorised service dealer are not covered under this Warranty and additional fees may apply.

### **Warranty Claims Procedure**

To claim under this warranty, you can lodge a claim by sending a completed Molnar Hoists Warranty Claim Form to Molnar Hoists at the email address provided.

Warranty Claim Forms can be downloaded directly from the Molnar Hoists website and emailed to **warranty@stenhoj.com.au**

<https://molnarhoists.com.au/documentation/warranty/>

## GENERAL INFORMATION

### Information about the operating manual

This operating manual describes the operation and maintenance of the machine.

Strict compliance with all the specified notes on safety and instructions is essential for safe working and proper handling of the equipment.

Apart from that, all accident prevention instructions valid at the place of use and the general safety regulations must also be adhered to.

This operating manual is part of the product and should always be kept in the immediate vicinity of the machine, accessible for the personnel entrusted with installation, operation, maintenance and cleaning.

For better representation of the explanations, the graphical artwork in this manual is not strictly according to scale, but may slightly vary from the actual design of the machine.

The operating manuals of the supporting components apply alongside this operating manual.

Please observe the notes contained therein - especially the safety notes.

### Explanation of symbols

Important safety and machine-technical notes in this operating manual are marked with symbols. The notes must be adhered to in order to avoid accidents, personal injuries and damage to property.



#### **WARNING!**

This symbolizes dangers that can lead to adverse effects on health, injuries, permanent physical damage or to death.

Adhere at all costs to the notes specified regarding work safety, and be particularly careful in these cases.



#### **WARNING! Danger of electric current!**

This symbol draws attention to dangerous situations involving electrical currents. There is a danger of serious injury or death if the safety notes are not complied with. The work may only be carried out by qualified electricians.



#### **ATTENTION!**

This symbolizes notes, which if not complied with, can lead to damages, malfunctions and/or break-down of the machine.

## SAFETY

This section offers an overview of all important safety aspects for an optimal protection of personnel against danger and ensures safe and disruption free operation of the machine. In addition to this, concrete notes on safety to avert danger are provided and marked with symbols in the individual chapters. Furthermore, any pictograms, signs and labels on the machine are to be observed and kept legible at all times.

### General

At the time of development and manufacture the equipment complies with the valid and established technical rules and regulations and is safe to operate. However, danger may arise from this machine if it is used unprofessionally by untrained personnel, or if it is used improperly or not for the purpose it is intended for. Each person entrusted with work on or with the machine must have read and understood the operating manual before starting work.

The customer is advised to demand a written confirmation that all relevant persons have read the operating manual.

Changes of any kind as well as attachments or conversions to the machine are prohibited.

Safety, warning and operation related decals on the machine must always be kept in legible condition.

Damaged decals or stickers must be immediately replaced.

Specified settings and adjustment ranges must be strictly complied with.

### Plant Design Registrations

**SM440-S**

Registration Number: V1900719

**SM440-A**

Registration Number: V1901646

**SM450-A**

Registration Number: V1701294

**SM460-S**

Registration Number: V1901057

**SM460-A**

Registration Number: V1900167

### Customer's Responsibility

This operating manual should always be kept in the immediate vicinity of the machine, accessible for the personnel entrusted with installation, operation, maintenance and cleaning. The machine must only be operated in technically perfect and safe condition. Always ensure free access to all safety features and check these at regular intervals.

The customer is obliged to determine compliance of work safety measures specified with the current status of legal statutes and to observe any new regulations over the entire period in which the machine is used. The laws on industrial safety and regional directives and regulations valid at the place of use of the machine are to be complied with. The generally valid notes on industrial safety and accident prevention instructions as well as the valid environmental protection regulations applicable at the place of use are to be observed and adhered to alongside the notes on industrial safety in this operating manual.

The customer and personnel authorized by him/her are responsible for the disruption-free operation of the machine as well as for unambiguous determination of responsibilities during installation, operation, maintenance and cleaning of the machine.

Details of the operating manual are complete and must be adhered to without limitation!

Furthermore, the customer must also ensure that:

- Other dangers that result from special working conditions at the place of use are determined in a risk assessment.
- All other instructions and notes on safety that result from the risk assessment of workplaces on the machine are summarized in operating instructions.

### Intended Use

Operational safety is only guaranteed when adhering to the intended use of the device.

This lifting device is specially developed to lift motor cars and we strongly recommend not to lift any other equipment with this automotive lift.

The lifting platform has been designed and built for the use inside workshops. Use of the lift for under-sealing of cars and car wash is not allowed. Riding, climbing and/or standing on the lifting platform as well as using it for lifting or lowering loads other than the ones specified above or installing and operating it outside in an unprotected environment is prohibited.



#### **ATTENTION!**

Any other use of the device that differs from this or exceeds this is prohibited and is considered unintended use!

Claims of any kind against the manufacturer and/or his authorized representatives resulting from damage caused by unintended use of the device are excluded. The customer is solely liable for any damage occurring during unintended use. Intended use also includes correct adherence to assembly, operating, maintenance and cleaning instructions.

## Work Safety

Compliance with the notes on safety can help to avoid personal injury and material damage when working on the machine. Failure to comply with these notes will cause a considerably risk of injury for persons and danger of damage or destruction of the machine. Non-compliance with the safety regulations causes the exclusion of any liability or compensation claims against the manufacturer or his representative.

### Personal Safety Equipment

In principle, the following is to be worn when working on or with the machine:

Protective working clothes.

Tight fitting work clothing (minimal tear strength, no wide sleeves, no rings or other jewelers etc.).

Safety gloves.

Safety boots for protection against heavy falling down objects and slipping on non-skid proof ground.

### Dangers Which May Arise from the Machine

The machine was subjected to a risk analysis. The resultant construction and design of the machine corresponds to the current status of technology. However, certain remaining risks cannot be avoided!



#### **WARNING! Danger of electric current!**

Electrical power can cause severe injuries. There is a danger to life caused by electric current if the insulation or individual components are damaged.

Switch off the main switch and secure against switching on again before maintenance, cleaning or repair work. Switch off the power supply before starting work in the electrical system and make sure that the system is dead. Do not remove any safety features or do not modify such installations in a way that would adversely affect their function.



#### **WARNING! Danger of injury!**

Hydraulic power can cause severe injuries. In case of damage to individual components fluid may escape under high pressure and cause injury and material damage!

Always relieve all pressures before starting work in the hydraulic system.

Do not remove any safety features or make them inoperative as a result of modifications.

Do not change any pressure settings beyond the values specified in this operating manual.

## OPERATING PERSONNEL

The device must only be operated and serviced by authorized, trained and instructed expert persons who:

- are at least 18 years of age and
- have been thoroughly instructed in operation and
- can provide evidence of their suitability to operate lifting platforms and
- have been entrusted in writing by the operating company to operate the lifting platform.

An instructed person is someone who has been trained and, if necessary, instructed practically in the tasks entrusted to him/her and the possible dangers resulting from improper actions; and who has been instructed both about the necessary protective features and about protective measures.

Qualified personnel include those who can assess the work entrusted to them and recognise potential dangers based on their specialist training, knowledge and experience as well as their knowledge of appropriate conditions.

If personnel do not have the necessary knowledge, then they are to be trained accordingly. The equipment must only be operated and serviced by persons who are able to perform their work in a reliable manner. For this purpose, any mode of operation that adversely affects the safety of persons, the environment or the machine is to be avoided. Persons who are under the influence of drugs, alcohol or medication that affects their responsiveness may under no circumstances carry out work on or with the machine.

The employment of personnel must be based on the applicable regulations concerning age and qualification.

The responsibilities concerning operation and maintenance must be clearly specified in order to avoid uncertainties in competence.

The operator must ensure that unauthorized persons keep a sufficient clearance to the equipment.

The operator is obliged to report immediately any changes to the equipment which adversely affect the safety to the operator.

### Behavior in Case of Accidents

#### Preventative Measures

- Always be prepared for accidents or fire !
- Keep first aid equipment (first aid kit, blankets, etc.) and firefighting equipment close to hand.
- Make personnel familiar with the location and use of safety, accident reporting, first aid and rescue equipment and have this training confirmed.
- Clear access routes for rescue vehicles.

#### If Worst Comes to the Worst: Do the Right Things!

- Shut down the machine immediately.
- Inform the responsible person at the place of use.
- Alarm a physician and the fire brigade.
- Rescue persons from the danger zone, start first aid measures.
- Keep access routes for rescue vehicles clear.



## STRUCTURE AND FUNCTION

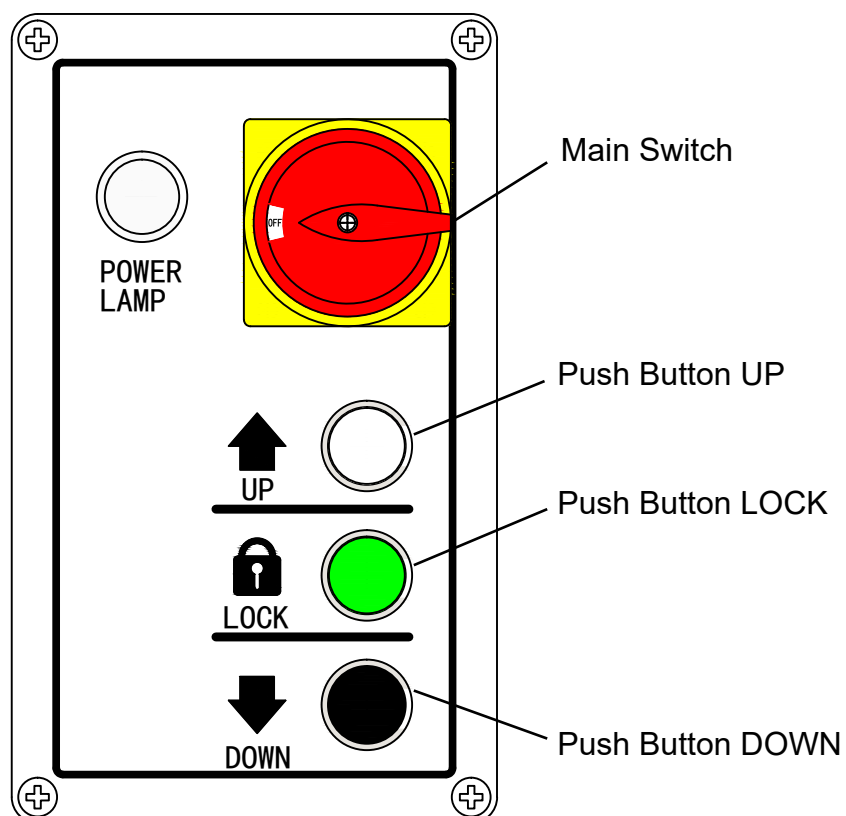
The hoist is an electro-hydraulic 4 post surface-mounted hoist.

The hoist consists of 2 pairs of posts connected with cross beams. The 2 platforms rest on the cross beams.


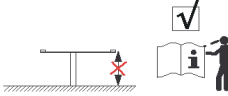


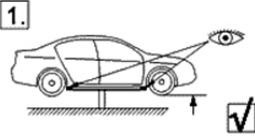
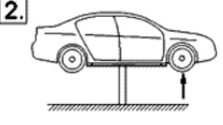
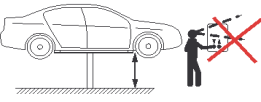
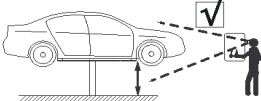
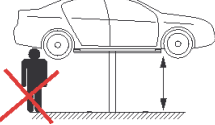
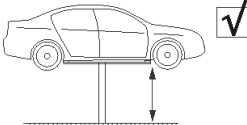
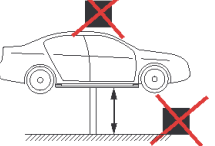
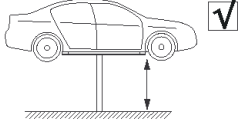
Platforms and cross beams are raised and lowered by means of cables and a hydraulic cylinder placed under one platform. The cables are attached to a yoke on the piston rod and run via cable pulleys to the four post tops with an incorporated adjustment device.

The hydraulic pump unit and control box are placed on the rear right post.

The hoist is operated by means of pushbuttons showing the UP, DOWN and LOCK functions with indicators. The pushbuttons are placed on the control box - see illustration below.



## START UP AND OPERATION INFORMATION

 	<p>The lifting platform must only be operated by authorised persons. Strict compliance with the comprehensive operating manual is mandatory, especially in case of faults.</p>
 	<p>Climbing up or standing on lifted load or load bearing device is strictly prohibited.</p>
 	<p>After slight initial lifting the operator must check that the load is correctly positioned on the load bearing device. Only then the load may be lifted further.</p>
 	<p>Always keep an eye on load bearing device and load when moving the lifting platform.</p>
 	<p>No persons must be in the movement range of load bearing device or load while the lifting platform is in motion.</p>
 	<p>The movement range of load and load bearing device must be kept clear of any obstructions.</p>

### Start Up

As agreed, initial start-up of the equipment will be carried out by employees of the manufacturer or by authorised partner companies.

Unauthorized initial start-up is not permitted.

The machine is handed over to the customer following set-up, initial start-up and implementation of test runs by the manufacturer. After this the machine can be operated in strict compliance with the information in the operating instructions.



### **WARNING! Danger of injury!**

Start-up may only be carried out by qualified technical personnel while observing the safety instructions.

## SAFETY AND OPERATION

### Safety

Please read the paragraphs "Work safety", "Personal safety equipment" and "Operating personnel".



#### **WARNING! Danger of injury!**

During lifting and lowering movements the lifting platform generates dangers which could lead to severe injury, such as crushing or shearing off of limbs or by heavy objects slipping off or falling down.

In order to avoid accidents the following should be noted when operating lifting platforms:

- During the up or down movement of the lifting platform the danger zone and the immediate vicinity of the lifting platform should be free of persons. The distance between persons and the lifting platform should be at least 2 m.
- Accessing the load bearing devices, riding on, climbing onto and standing on the lifted platform is strictly prohibited.
- Do not load the lifting platform beyond the max. permitted load bearing capacity.
- Observe the permitted load distribution (see section "Technical Data").
- Load the lifting platform evenly. Possible shifting of the vehicle's center of gravity caused by the disassembly of vehicle components must be taken into account.
- Do not initiate any vibration of the lifting platform while performing assembly work on the vehicle.
- Always keep the main switch locked to avoid unauthorized operation and unintended switching on.

### Operation

The hoist should only be operated by trained personnel!

#### **Approach**

Before driving the vehicle onto the lift, check that platforms fully lowered (and the locking pins for slip plates must be fitted).

#### **Raising**

Push UP-button (motor starts): raise hoist to a bit above required working height.

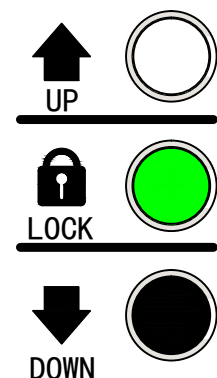
#### **Parking**

Let go of UP-button and push LOCK-button until platforms rest on all 4 ratchets.

#### **Lowering**

Check that no person or obstruction is under platforms. Push DOWN-button, the hoist raises shortly to release ratchets and then lowers the hoist.

**NOTE:** Always park hoist (press LOCK button) before starting to work under it.



## MAINTENANCE

### Safety



#### **WARNING! Danger of injury!**

Improperly performed maintenance work can lead to severe physical injury or damage to property. Any work related with care and maintenance must only be carried out by qualified and authorized expert personnel.

Strictly observe when performing maintenance work:

- Switch off the system and secure against switching on again.
- Perform work only with the device stopped.
- Secure movable parts against unintended movement.
- See paragraph "Personal safety equipment"



#### **WARNING! Poisoning hazard!**

Lubricants are harmful to health! Skin damage (rashes, inflammation, allergies, etc.) can occur on contact of skin with oils and lubricating greases.

Therefore:

- Please observe instructions and safety data sheets from the manufacturer !
- Lubricants are not to be consumed or swallowed. In case of unintended consumption seek medical advice immediately (bring along the packing).
- When handling lubricants, use suitable skin protective and skin-care products or oil-resistance gloves.
- Rinse any spatters in the eye immediately with a lot of water!
- If the skin is dirtied by any lubricants, wash off immediately with soap and water.



#### **WARNING! Danger of injury!**

Lubricants which fall on the ground are a source of danger as they present a risk of slipping. Lubricants are to be adsorbed and removed by spreading sawdust or oil adsorption and afterwards scrapped according to local environment regulation.

## Maintenance Checks

### Check Daily

- Check lock assemblies to see that they function properly.

### Check Monthly

- Safety mechanism operation.
- Condition of pulleys and pins.
- Condition of cables.
- Overall cleanliness.

### Check Six Monthly

- Oil leaks from the cylinder, pipe joints and anchor bolts
- Cables
- Cables must be inspected by a **COMPETENT** person. (Cables are considered a wear and tear item and not subject to the regular 3 year warranty)
- Inspect for wear, rust and broken wires.

### Yearly

Service and safety inspection on hoist shall be performed by a competent person. This inspection must be recored. If the 12 monthly service and safety inspection is not performed, the warranty is null and void.

**NOTE:** 10 Year service must include removal of pulleys to inspect and clean bushes.

### 2 Yearly

Hydraulic oil should be replaced (irrespective of the amount of use to which the hoist is subjected). Fill Hydraulic Tanks to oil level line with ISO 46 Hydraulic oil. (i.e. Castrol Hyspin AWH 46)

## Lubrication

### Pulleys

All pulleys shall be greased **monthly**. This includes the four transverse beam pulleys as well as the front and rear pairs of pulleys under the platform. (Pulley pins are supplied with grease nipples for easy greasing, i.e. Castrol Spheerol LMM Grease).

### Cables

Cables shall be lubricated **at least every six months**. This extends the life of the cable and helps protect against rust. (i.e. Lanotec Heavy Duty Lanolin Spray)

## CLEANING

Cleaning of hoists helps prevent corrosion damage.

Corrosive fluids such as brake fluid, oil, fuel or other solvents must be wiped off immediately, otherwise damage will occur to the coating.

Special attention must be paid to the corrosive effect of salt in autumn and winter periods. The cleansing agents must not have any abrasive effect, nor contain solvents.

The hoist must be cleaned at least once a week.

The hoist must be cleaned with a non-corrosive cleansing agent.

Clean and wipe the hoist according to the following scheme:

When:	Where:	How:	Remarks:
Every week	Platforms	Clean and wipe	Wearing surfaces must be slightly oiled
	Drive-on ramps		
	Post / base plate		
	Cross beams		

The manufacturer does not accept any claim concerning the paint peeling off or corrosion damages caused by missing or insufficient cleaning or maintenance.

### Repair of damages:

Repair of damages on the coating must be carried out immediately in order to minimize the extent of the repair.

### The damages will typically be:

Damages which do not affect the metal surface but affects the coating itself  
Damages going down into the metal surface.

### Repairs:

Contact the manufacturer for guidance.

Please state RAL number of paint.

## TROUBLE SHOOTING

### Action in Case of Breakdown

In case of a breakdown, check the following points:

- Electricity cut.
- Main fuses.
- Electric motor.
- Obstruction under hoist.

If the hoist is still not working, the hoist must not be started or repaired by unqualified staff. Contact the nearest authorised service shop.

Do not start repairing the hoist until the main switch has been cut off.

Do not disconnect the safety system and do not operate the hoist after breakdown and prior to repair.

### Trouble Shooting Chart

Symptom:	Cause:	Remedy:
Platforms no longer horizontal when resting on the ratchets	Incorrect adjustment	Adjust platforms and cross beams until they are horizontal. Slacken nut under top plate for rail. Raise or lower ratchet rails as required by means of adjustment bolts in top of posts. After adjustment tighten lock nut under top plate for rail. Ratchet rails should preferably be adjusted to lowest possible position.
Platforms no longer horizontal when hanging in cables under load	One or several cables stretched	Adjust cables
Activation of control to lower hoist from topmost position does not release ratchets	One or more of the cables have stretched	Adjust cables
Ratchets are not released regardless of parking height	Power source failure	Cure fault
	Lock solenoid failure	Replace lock assembly
	Platforms are not lifted free from ratchet rails	Raise lift a little and lower.
	One ratchet binding	Let an assistant operate UP button so that lift ascends in small jerks. Meanwhile pull ratchet free manually. Use pliers or grips.
	Defective solenoid valve	Replace solenoid valve
Oil leakage	High pressure hose defective	Replace hose
	Leaks at fittings	Tighten
	Cylinder seals defective	Replace or repair cylinder

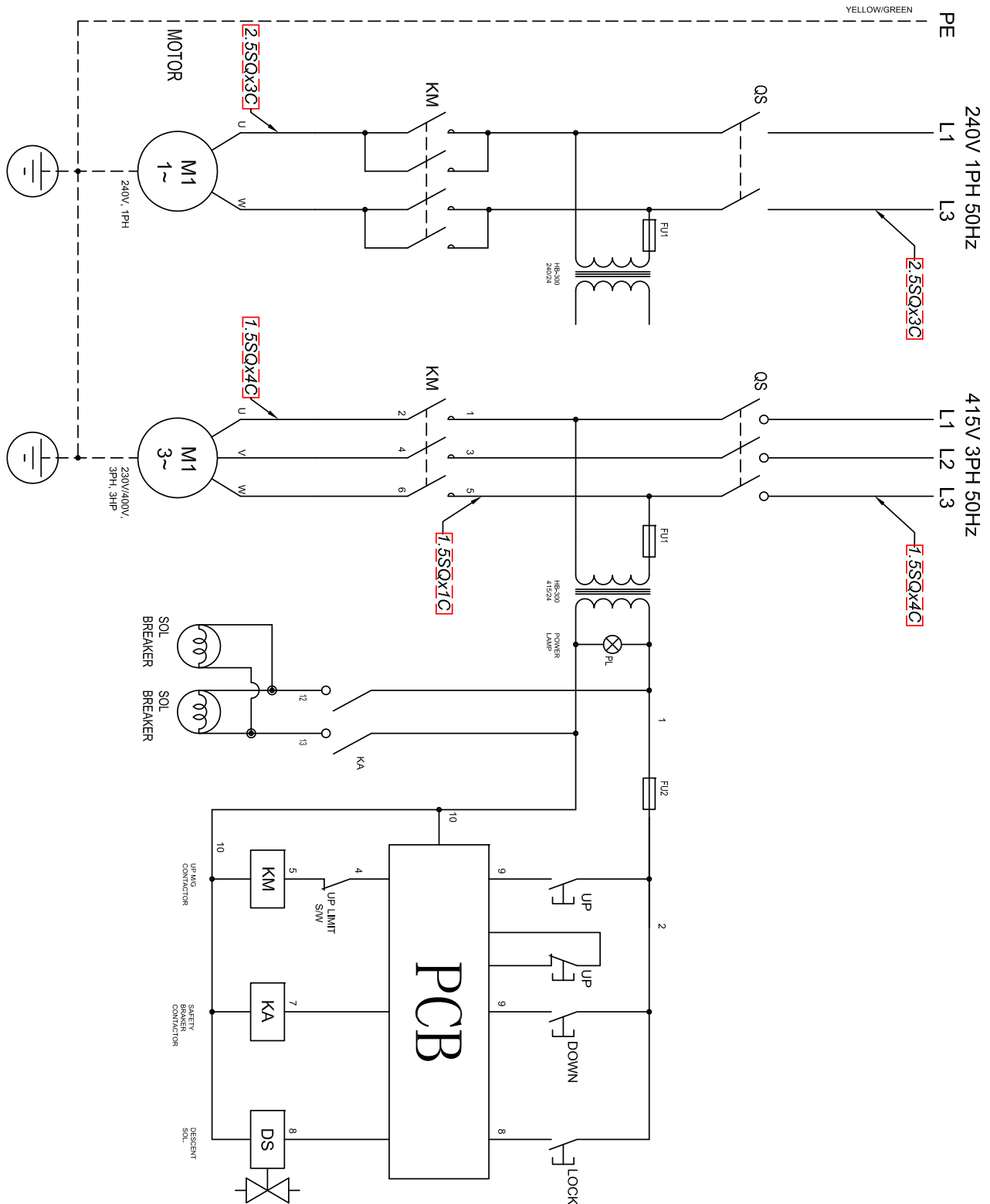
Symptom:	Cause:	Remedy:
Unusually high noise level	Pump worn	Replace pump
	Hoist overloaded	Max. load - see decals
	Seal in high pressure cylinder defective	Replace or repair cylinder
	Incorrect post position	Reposition posts according to installation instructions
	Oil pressure release valve out of adjustment	Adjust relief valve to correct setting.
Hoist cannot ascend	Overloading	Max. load - see decals
	Insufficient pressure from pump unit	See pump info below
Hoist cannot descend	Pump does not start	See pump info below
	One or more of the ratchets still activated	Lift free from ratchet rails before lowering
Hoist cannot reach topmost position	Insufficient oil in tank	Fill up oil tank
	Incorrect cable adjustment (too long)	Adjust cable
Platform descends when ratchets are not engaged	Leaks in hydraulic system	See above oil leakage info
	Lowering valve/ non-return valve leaking (internal in the pump unit)	Call authorised service technician
Pump unit cannot start	Electric failure	Check fuses.
	Incorrect electric connections	Call authorised electrician
	Fault in control box	
	Faulty electric motor	
	Defective pushbutton	Replace
Pump unit delivers none or insufficient pressure	Pump defective	Replace pump
	Air in hydraulic system	Lower platforms to bottom position without load and keep pressing DOWN-button for approx. 20 sec.
	Non-return valve or oil pressure relief valve defective (internal in pump unit)	Call authorised service technician



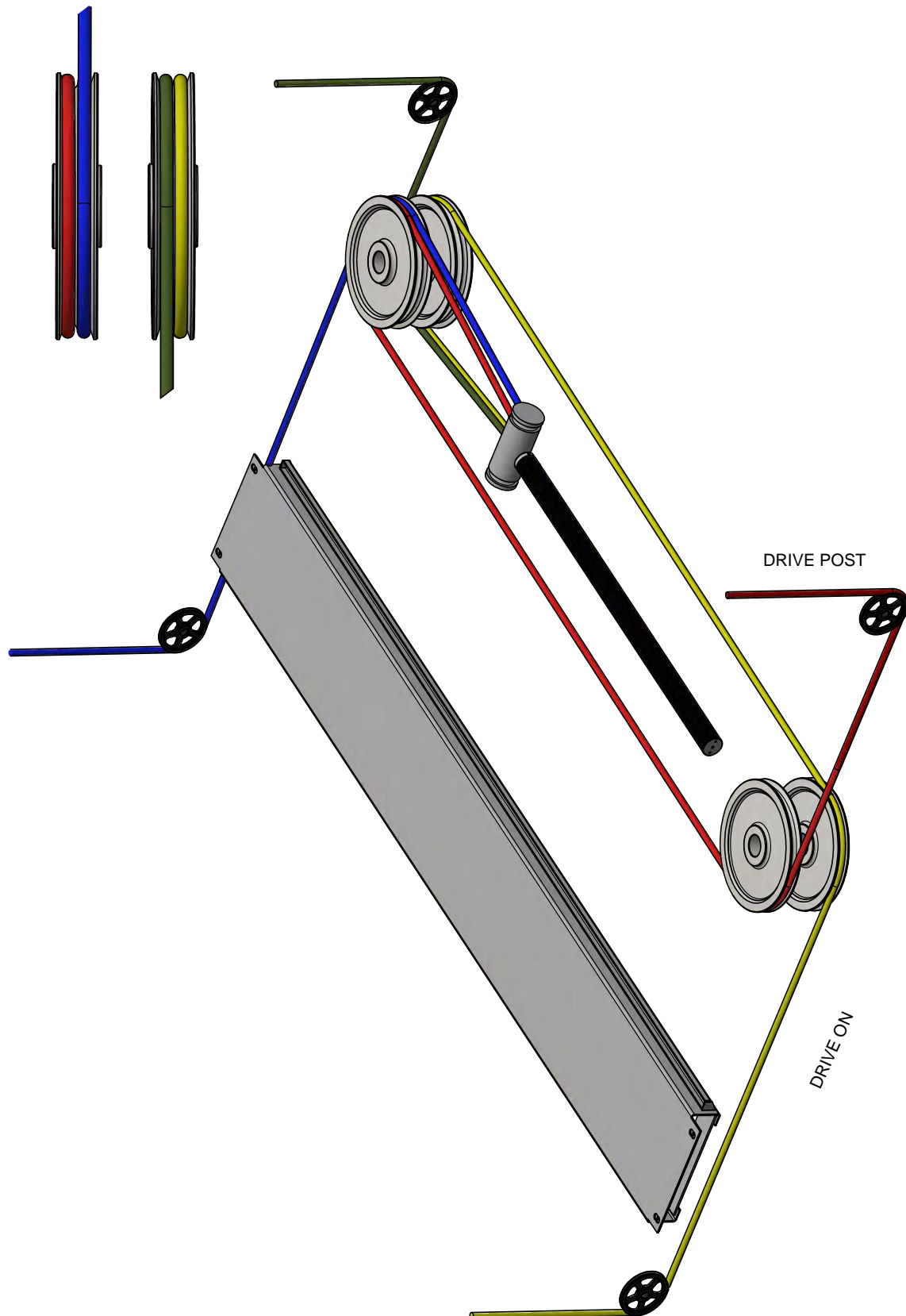
# Molnar SM 4 Post Hoists

## Single and Three Phase Wiring Diagram

(Hoist Serial Number 4P5D0142 Onwards)



## SM440 & SM450 Cable Arrangement Diagram



## SM460 Cable Arrangement Diagram

