



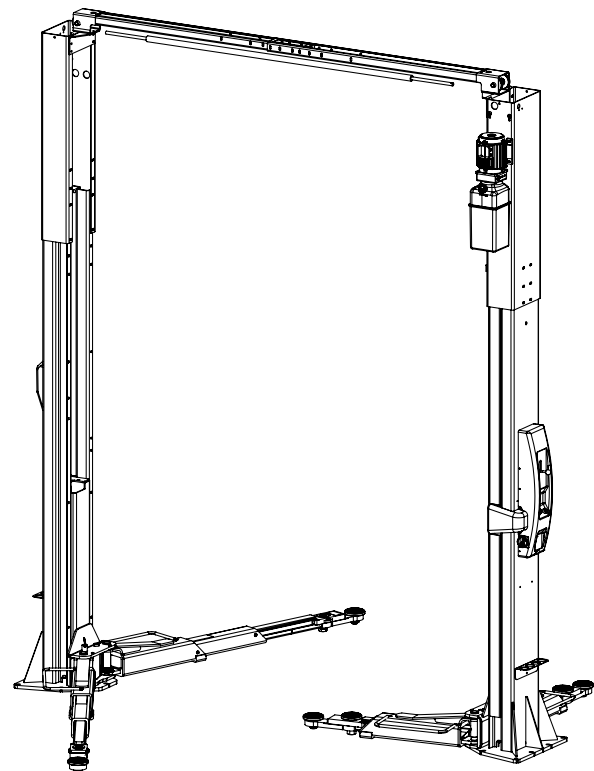
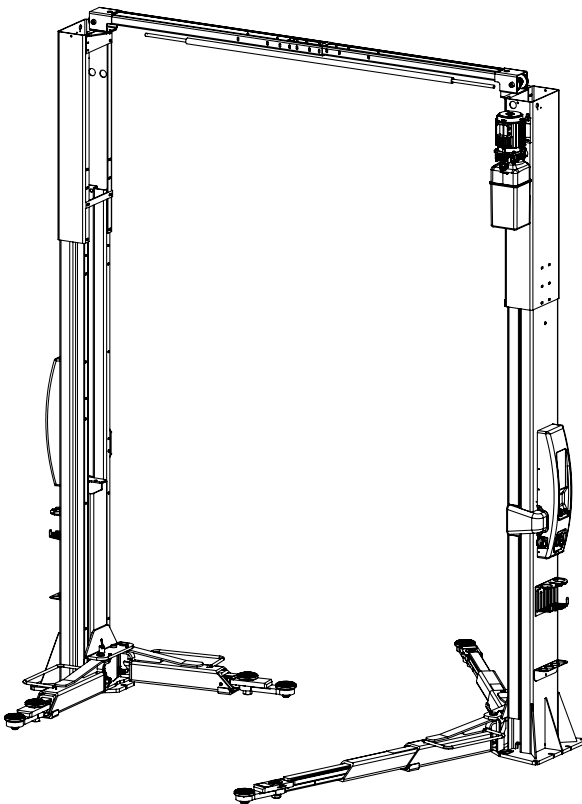
SPO54/SPO55

E And M



(700 Series)

Two Post Surface Mounted Lifts



Installer: Please return this booklet to literature package and give to lift owner/operator.

EG-Konformitätserklärung EC Declaration of Conformity

im Sinne der EG-Richtlinie 2006/42/EG über Maschinen (Anhang II A)
according to EC directive 2006/42/EC on machinery (Annex II A)

Name und Anschrift des Herstellers

Name and address of the manufacturer:

Rotary Lift
2700 Lanier Drive
Madison, IN, 47250 USA

Name und Anschrift seines in der EU

niedergelassenen Bevollmächtigten
his authorised representative in EU

BlitzRotary GmbH
Hüfing Str.55
78199 Bräunlingen, Germany

Diese Erklärung bezieht sich nur auf die Maschine in dem Zustand, in dem sie in Verkehr gebracht wurde; vom Endnutzer nachträglich angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt. Die Erklärung verliert ihre Gültigkeit, wenn das Produkt ohne Zustimmung umgebaut oder verändert wird.

This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user. The declaration is no more valid, if the product is modified without agreement.

Hiermit erklären wir, dass die nachstehend beschriebene Maschine / **Herewith we declare**, that the machinery described below

Produktbezeichnung / product denomination:

Serien- / Typenbezeichnung / model / type:

2-Säulen-Hebebühne / 2-post vehicle lift

SPO55; Basistyp in verschiedenen

Ausführungen / base type in different versions;

gekennzeichnet mit E, M, EH0, EH1, EH2, EH4, GR

für: /marked with E, M, EH0, EH1, EH2, EH4, GR for:

Tragfähigkeit 5500 kg / capacity 5500 kg

Mit Tragarmverlängerung AE-250 mm: /

with arm extension type AE-250 mm:

Tragfähigkeit 5000 kg / capacity 5000 kg

Maschinen-/Seriennummer / machinery / serial number:

Baujahr / Year of manufacture: 20...

allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG entspricht.

Die Maschine entspricht zusätzlich den Bestimmungen der Richtlinien 2004/108/EG über elektromagnetische Verträglichkeit und 2006/95/EG über elektrische Betriebsmittel (*Schutzziele wurden gemäß Anhang I, Nr. 1.5.1 der Maschinenrichtlinie 2006/42/EG eingehalten*).

is complying with all essential requirements of the Machinery Directive 2006/42/EC.

In addition the partly completed machinery is in conformity with the EC Directives 2004/108/EC relating to electromagnetic compatibility and 2006/95/EC relating to electrical equipment (Protection objectives have been met in accordance with Annex I No. 1.5.1 of the Machinery Directive 2006/42/EC).

Angewandte harmonisierte Normen / Harmonised Standards used

EN 1493: 2010	Fahrzeug-Hebebühnen / Vehicle lifts
EN ISO 12100:2010	Sicherheit von Maschinen - Grundbegriffe / Safety of Machinery- Basic concepts
EN 60204-1:2006+A1:2009	Elektrische Ausrüstung von Maschinen / Electrical equipment of machines
EN 349:1993+A1:2008	Sicherheit von Maschinen-Mindestabstände / Safety of machinery - Minimum gaps
EN ISO 13850:2008	Sicherheit von Maschinen-Not-Halt / Safety of machinery - Emergency stop

Angewandte sonstige technische Normen und Spezifikationen/ Other technical standards and specifications used:

BGG 945	Prüfung von Hebebühnen / inspection of vehicle lifts
BGR 500	Betreiben von Arbeitsmitteln / management of working appliances
BGV A3	Unfallverhütungsvorschrift elektrische Anlagen und Betriebsmittel / law accident prevention regulation of electric facilities and equipment

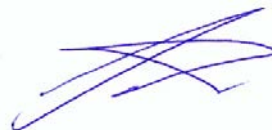
Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen:

The person authorised to compile the relevant technical documentation:

Herr Pohl; Hüfing Str. 55; 78199 Bräunlingen

Ort / Place : Bräunlingen

Datum / Date : 04.12.2015



Frank Scherer
Geschäftsführer / Managing Director

EG-Konformitätserklärung EC Declaration of Conformity

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Madison, IN, 47250 USA

**Name und Anschrift seines in der EU
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Herewith we declare, that the machinery described below

Produktbezeichnung / product denomination:

Serien- / Typenbezeichnung / *model / type*:

2-Säulen-Hebebühne / 2-post vehicle lift
SPOA30/SPOA40/SPO40/SPO54

Tragfähigkeit 3100/4500/4500/5000 kg /
capacity 3100/4500/4500/5000 kg

Maschinen-/Seriennummer / *machinery / serial number*:

.....

Baujahr / *Year of manufacture*:

20...

allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG entspricht.
Die Maschine entspricht zusätzlich den Bestimmungen der Richtlinien 2004/108/EG über elektromagnetische Verträglichkeit und 2006/95/EG über elektrische Betriebsmittel (*Schutzziele wurden gemäß Anhang I, Nr. 1.5.1 der Maschinenrichtlinie 2006/42/EG eingehalten*).
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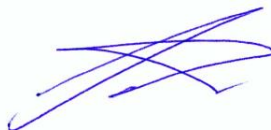
Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen:

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Herr Pohl; Hüfing Str. 55; 78199 Bräunlingen

Ort / *Place* : Bräunlingen

Datum / *Date* : 19.03.2013



Frank Scherer
Geschäftsführer / *Managing Director*

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ANNEX

- SPO55E,SPO55M,SPO54E,SPO54M:
Hydraulic circuit diagram, Electric wiring diagram,
Parts break down, spare parts list.
- Maintenance schedule: Instructions for conducting
visual inspections and function testing
- Inspection log

1.Introduction

1.1 About this operating manual

The post lift conforms to state of the art technology and complies with the applicable occupational health & safety and accident prevention regulations. Notwithstanding, improper use or use other than that which is intended may result in a risk of fatal or physical injury to the user or third parties and may also result in damage to property.

It is therefore imperative that the relevant people carefully read and understand this operating manual. Read the instructions carefully to prevent incorrect use, potential hazards and damage. The post lift should always be operated according to regulations.

Please note the following:

- The operating manual must be kept near the lift and be easily accessible for all users.
- This operating manual provides information on the two post lifts SPO54E, SPO54M, SPO55E, SPO55M variant with column extension EH0, EH1, EH2, EH3, EH4, GR.
- **Make sure that you have read and understood Chapter 2, Safety and also the operating instructions supplied with the machine.**
- We assume no liability for damage and operational breakdowns which may occur as a result of non-compliance with the instructions contained within this operating manual.
- Installation and commissioning of the lifts is described in detail in Chapters 11 to 12. Installation may only be carried out by authorized installation specialists and qualified electricians.
- If you should run into difficulties please contact a specialist, our customer service or spare parts department or one of our representatives.
- Illustrations may differ from the supplied version of the machine. Functions or processes to be carried out remain the same.

Disclaimer:

We assume no responsibility for printing errors, mistakes and technical changes.

The brands and trademarks mentioned in this document refer to their owners or the products thereof.

1.2 Warning and information symbols

1.2.1 Symbols in this documentation

Warnings are identified by the following symbols, depending on the hazard classification.

Be especially aware of safety and hazards when working in situations identified by warning symbols.

Comply with the occupational health & safety and accident prevention regulations which are applicable in your country.



DANGER

Risk of death or injury

Direct threat to life and health of people. Non-compliance may lead to death or serious injury.



WARNING

Risk of death or injury

Potential risk to life and health of people. Non-compliance may lead to serious or critical injury.



CAUTION

Risk of injury

Potentially hazardous situation. Non-compliance may lead to minor or moderate injury.

ATTENTION

Damage to property

Potentially hazardous situation. Non-compliance may lead to damage to property.

Other Symbols



INFO symbol

Useful information and Tips.



Bullet point:

For lists with key information on the respective subject.



Handling instructions:

Carry out the detailed steps in sequence.



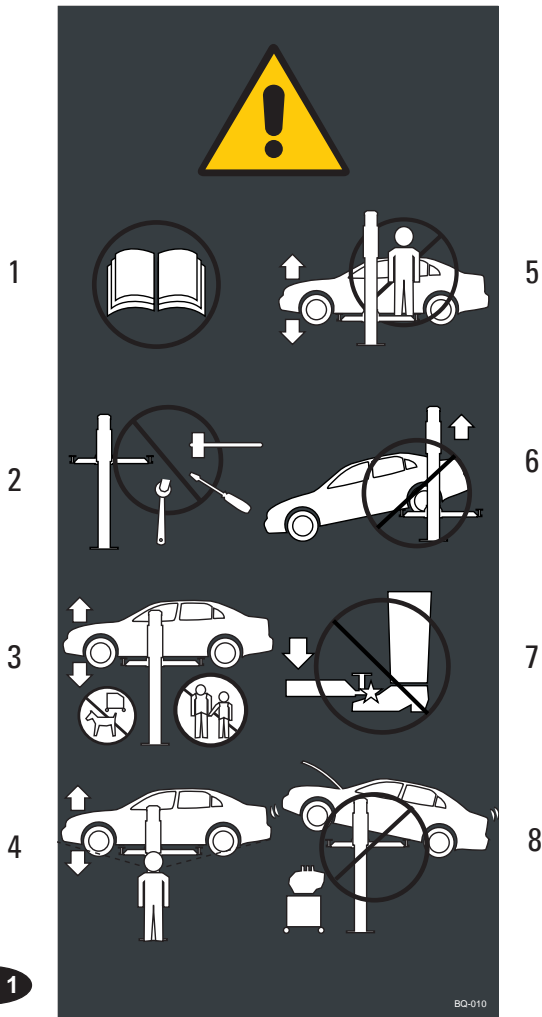
Handling instructions, warning

Carry out the detailed steps in sequence.

1.2.2 On the product



Observe all warning notices on products and ensure they remain legible.



Warning sticker on control column

1. Read original operating instructions.
2. Never place any objects on the lifting platform.
3. Keep people and animals away from lifting platform.
4. Watch vehicle when raising and lowering.
5. Riding prohibited.
6. One-side, one end, one corner raising of vehicle prohibited.
7. Risk of crushing feet on lowering.
8. Throwing objects under the lift when lowering.

Operating instructions in brief

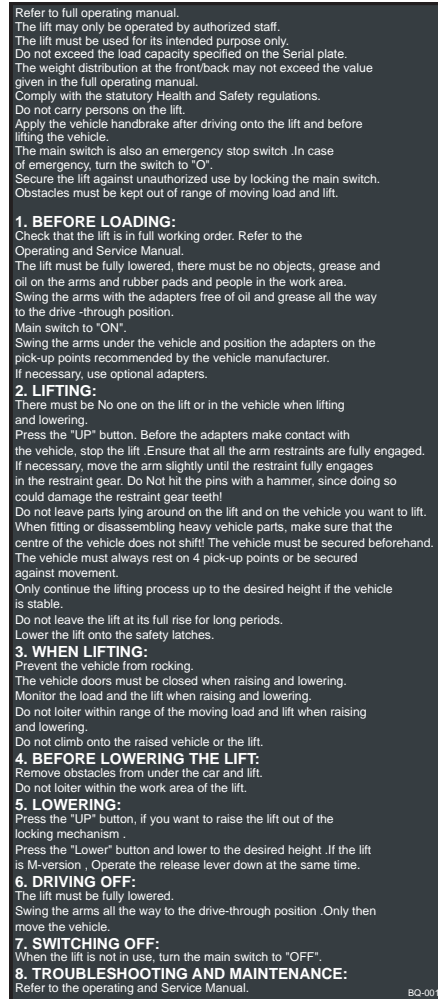


Fig. 2

These instructions contain information on operation of the lifting platform.

1.3 Intended use

The post lift may only be used:

- In indoor areas for lifting unoccupied motor vehicles.
- For lifting vehicles with a max. load capacity of 5000kg, 5500kg, according to the lift variant.
- If the weight is distributed correctly. By default, the load should be centered in the direction of motion. If the main load (e.g. engine) is however at the front or the back, the following applies:
at front max. 3/4,
at back 1/4 of load or vice versa.
- In accordance with the technical data in Chapter 7, in technically sound condition.

1.4 Incorrect use, incorrect behavior

Incorrect behavior presents a residual risk to the life and health of the people working in the lift area.

The manufacturer assumes no liability for damage resulting from use other than the intended purpose and from incorrect behavior.

The following is prohibited:

- Climbing onto or riding on the post lift or the load.
- Lifting when there are people in the vehicle.
- Lifting/lowering when people or animals are in the danger zone, in particular below the lift.
- Jerky lifting or lowering. Do not cause the lift to vibrate.
- Throwing objects onto or under the lift.
- Lifting a vehicle at the incorrect pick-up points when using a lifting table.
- Lifting a load on only one arm of the lift.
- Loitering or working in the danger zone when it is not lowered into the lock position (latch bars).
- Activating the machine when safety equipment or mechanisms are not in place (Example: locking latches are not fitted).

- Lifting loads not listed in Chapter 1.3.
- Lifting vehicles containing hazardous goods.
- Operating outdoors or in workshops at risk from fire or explosion.
- Washing cars on the post lift.
- Modifications of any kind.

1.5 Internal accident, health and safety, and environmental information

This operating manual does not include the operating instructions which need to be drafted by the user of the post lift. The internal operating instructions regulate actions within the company for the prevention of accidents, and risks to health & safety and the environment.

These also include actions in the case of an emergency, first aid measures etc.

2. Safety

2.1 Operators

The post lift may only be operated without supervision by persons who:

- Are 18 years old and above.
- Are familiar with the basic regulations on health & safety and accident prevention.
- Have been trained to handle and operate the post lift.
- Have proven their ability to do so to the company.
- Have been expressly appointed in writing to operate the lift.
- Have read and understood the operating manual.

2.2 Basic safety requirements

- Only operate the post lift after a specialist has certified in the inspection log that it has been correctly set up.
- Always follow the operating instructions (labels on the post lift).
- If several people work on the post lift, a supervisor must be appointed by the company.
- The post lift may only be operated in technically sound condition with regard to safety and with all safety mechanisms in place.
- The control box or control unit may only be opened by a qualified electrician.
- Safety inspections must be conducted regularly, at least once annually.
- If signs of a defect appear, immediately shut down the post lift, inform a supervisor and contact the customer service if necessary.
- Keep the work area clean and free of oil, grease, and contamination.
- Before standing or working in the danger zone underneath the lift, lower it into the lock position (latch bars) using the "Down" button.
- There must be no obstacles in the path of the main lift.
- Always monitor the load carefully when lifting and lowering.
- Always stop the vehicles safely, centered on the columns. Secure the vehicle against shaking with pick up points.
- Take steps against traffic in the area of the post lift. Do not park other vehicles in the danger zone.
- Do not load lifts beyond the permitted capacity, comply with the permitted axle loads and load distribution in accordance with Chapter 2.3.

- When disassembling or fitting heavy vehicle parts, watch out for dangerous shifts in the weight balance, in particular when the vehicle is supported by extension arm. Secure the vehicle beforehand.
- Always fully lower, switch off and secure main lifts to prevent unauthorized use after completion of work (turn main switch to "OFF" and lock).
- Follow the maintenance and service schedule, record performance of maintenance and servicing (Chapter 9).
- Installation, maintenance and servicing may only be carried out by authorized specialists (maintenance contractors) (Chapter 9).
- Only qualified electricians may work on the electrics.
- Only trained people with knowledge of hydraulics/pneumatics may work on hydraulic or pneumatic equipment.
- Appropriate personal protective equipment must be worn when working in the area of the lift in accordance with the applicable health & safety and accident prevention regulations. For example, protective gloves, protective goggles, safety shoes.
- Only original spare parts from the manufacturer may be used.
- The lift must be inspected by a specialist after repairing any supporting parts.

2.3 Permitted axle loads and weight distribution

Before lifting the vehicle, you must ensure that the weight distribution is correct.

When the weight distribution is correct (default position in direction of motion) the main load is located at the front (e. g. engine).



WARNING

Risk of injury through toppling of the vehicle when incorrectly loaded.

→ Comply with the permitted load capacity as in Fig. 3 and 4.

→ Comply with the permitted weight distribution as in Fig. 3 and 4.

Figure 3&4:

- Main lift 5000 kg (SPO54)
5500kg (SPO55)
- With extension arm
4450kg (SPO54)
5000kg (SPO55)

Permitted weight distribution

- Main lift
SPO54 front max. 3/4:
F1 = max. 3750kg
back max.1/4:
F2 = max. 1250 kg

- SPO55 front max. 3/4:
F1 = max. 4125kg
back max.1/4:
F2 = max. 1375 kg

- With extension arm
SPO54 front max. 3/4:
F1 = max. 3340kg
back max.1/4:
F2 = max. 1110 kg

- SPO55 front max. 3/4:
F1 = max. 3750kg
back max.1/4:
F2 = max. 1250 kg

2.4 Ban on unauthorized modifications or alterations

- Unauthorized modifications and alterations to the post lift are not permitted for safety reasons.
- The operating permit shall also be deemed null and void.
- The Declaration of Conformity also becomes null and void.

2.5 Experts, competent persons

The post lift must be inspected after commissioning and at regular intervals (after max. one year), as well as after design modifications or repair of supporting parts. **Inspections may be carried out by the following people:**

Certified expert

These are people who have specialist knowledge in the field of lifts based on their professional training and experience.

Fig. 3

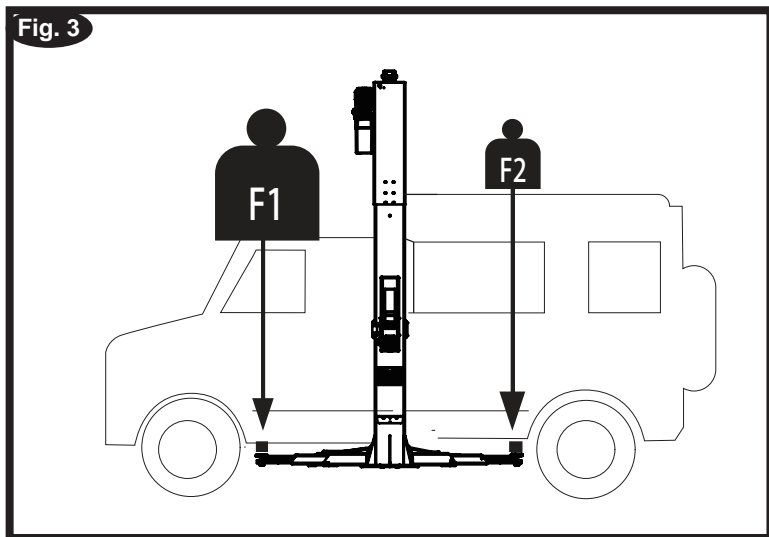
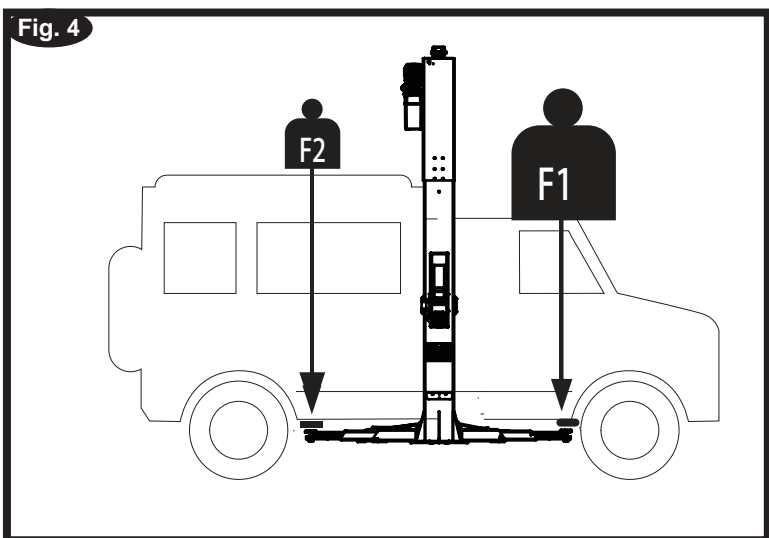


Fig. 4



Experts should be able to inspect lifts and make an expert assessment thereof.

TÜV experts, specialist engineers from the manufacturer or self-employed specialist engineers can be used for inspections.

Competent persons

These are people who have adequate knowledge in the field of lifts based on their professional training and experience.

They are sufficiently familiar with health & safety and accident prevention regulations as well as with lift technology in order to be able to assess the occupational health & safety compliance of lifts.

2.6 Maintenance contractors, installation staff

Maintenance, servicing and installation work may only be done by companies or specialists authorized by the manufacturer.

These people trained in the field of lifts are competent persons, who are trained for maintenance as well as repair work.

A competent person is a person who has adequate knowledge based on his professional training and experience and is also familiar with key regulations so that he:

- Can assess the work assigned to him,
- Can recognize potential risks,
- Can take actions required to eliminate the risk,
- And has the required knowledge of repair and fitment.

The specialist knowledge of a competent person must enable him to be in a position to

- Read and fully understand circuit diagrams,
- Fully understand the context with particular regard to any installed safety equipment.
- Possess knowledge of the function and design of system components.

Simple faults on the post lift may be rectified by operating staff.

In the event of a more serious fault, contact an authorized maintenance contractor.

2.7 Safety inspections by competent persons

Safety inspections must be carried out to guarantee the safety of lifts.

Safety inspections should be carried out in the following cases:

- Before initial operation, after initial installation. Use the form "Initial safety inspection before installation".
- After initial operation at regular intervals, but at least once a year. Use the form "Regular Safety Inspection".
- After any design modification to parts of the lift. Use the form "Unscheduled Safety Inspection".



The initial safety inspection as well as the safety inspections must be carried out by a **competent person**. We recommend that you also perform maintenance in the course of the inspection.



Unscheduled safety inspections and special maintenance work are required in the event of design modifications to the lift (fitting additional parts). The safety inspection must be carried out by a **competent person**.



Use the form supplied in the Annex containing lists for carrying out safety inspections. Please use the relevant form and staple it to the manual after completion.

3.The 2-Post Lift

3.1 Overview of parts

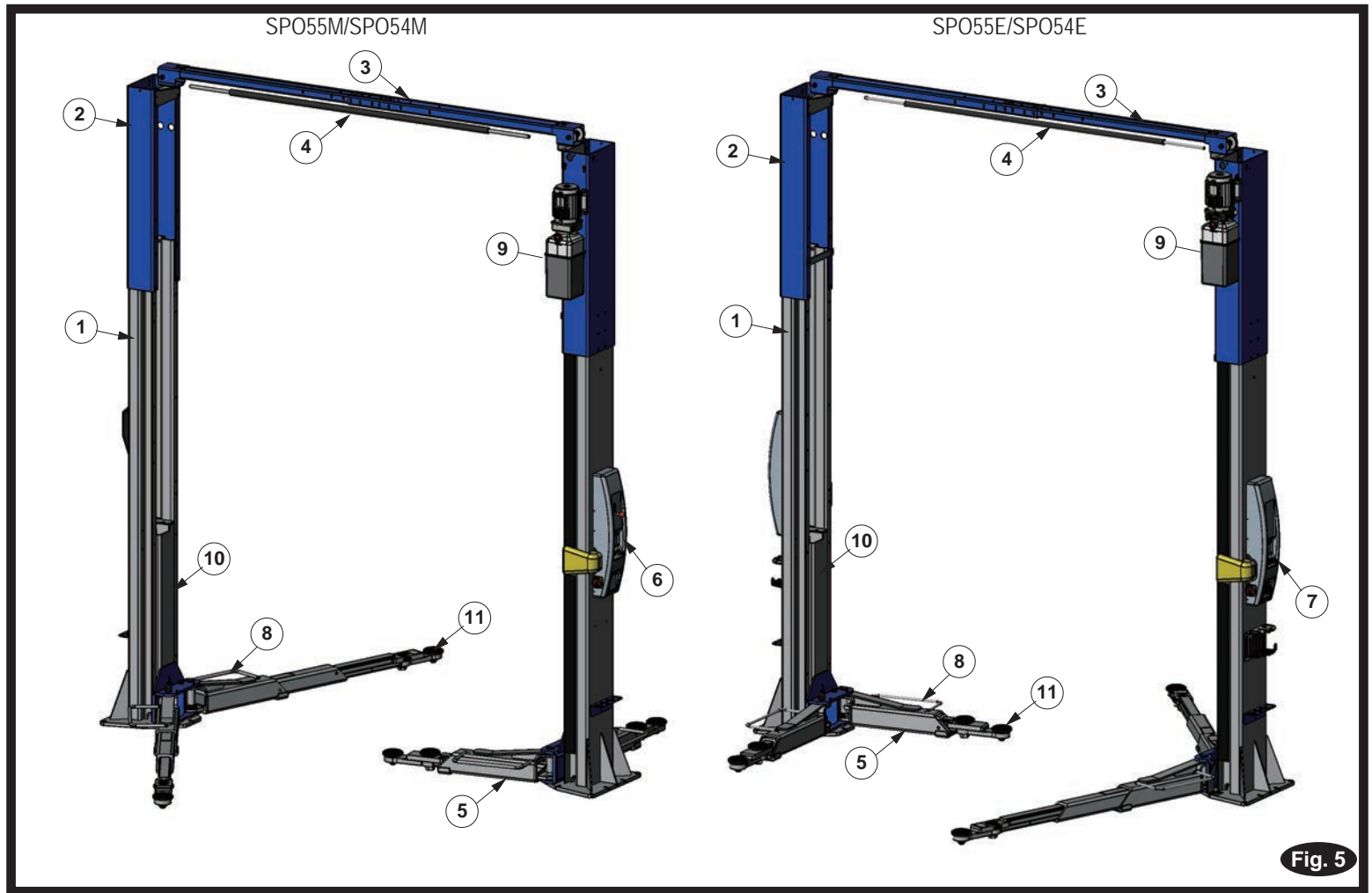
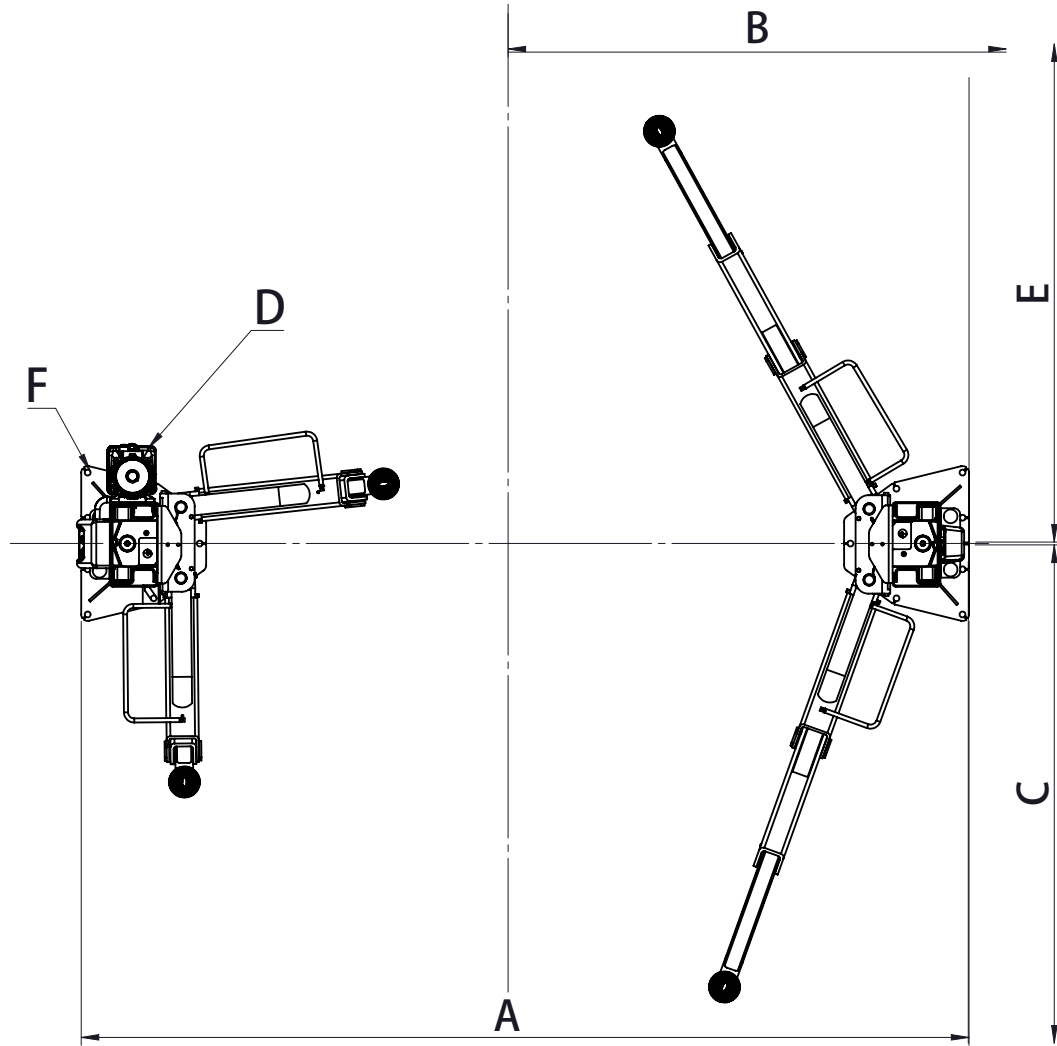


Figure 5: Example of a 2-post lift with extension arm

1. Standard lift column
2. Extension column
3. Cross beam
4. Up limit bar
5. Lifting arm
6. M Control box
7. E Control box
8. Arm guard
9. Power unit
10. Lifting carriage
11. Extension arm (option)

Fig. 6



3.2 Work area, danger zones

Figure 6: Work area, danger zones.



WARNING

Risk of injury in the danger zone of the post lift in the event of incorrect behavior.



Only remain in the danger area if you have been trained and briefed and assigned to the area.



Keep the work area clean.



Keep escape routes clear so that you can leave the danger zone quickly and safely in the event of an emergency.

Figs. 6 Detail

A	3496mm
B	1829mm Minimum to nearest obstruction or bay. 2134mm minimum nearest wall.
C	3962mm Minimum to nearest obstruction.
D	Power Unit
E	3962mm Minimum to nearest obstruction.
F	(14) 20mm Anchors



Lift Location: Use architects plan when available to locate lift. Fig. 6 shows dimensions of a typical bay layout.

3.3 Safety mechanisms

See figures 7 ... 12



WARNING

Safety mechanisms protect both people and lift. They must not be disabled!

- ➔ Post lift danger zones are protected by safety mechanisms.
- ➔ Function and condition of the safety mechanisms must be checked daily!
- ➔ If safety mechanisms are triggered, the post lift stops immediately.

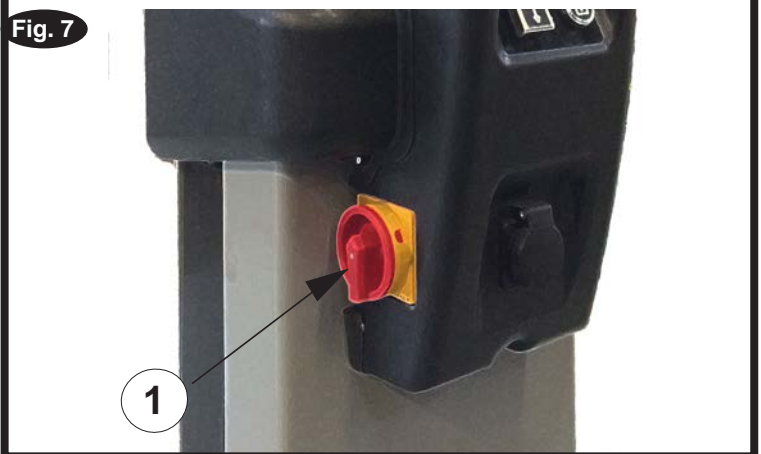
- ➔ If the post lift is moved or taken out of use for long periods, check the safety mechanisms before re-commissioning and repair if necessary.
- ➔ If safety mechanisms are defective, the post lift must be taken out of use immediately and the main switch locked with a padlock. Any further use must be prevented until the machine is fully repaired!

1. Lockable main switch

"ON" setting: Post lift ready for use.

"OFF" setting: Post lift out of use. The mains voltage is still present inside the control box. Switching off (OFF) immediately stops any movement of the post lift (= emergency stop).

Fig. 7

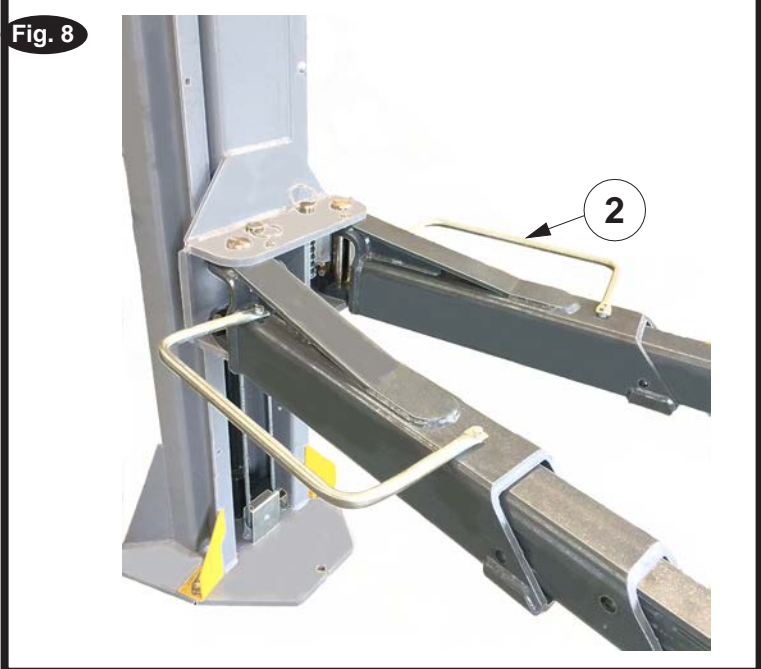


2. Foot protection arm guard on each lifting arm

When lowering the lift, the arm guard keep the foot away from the arm (foot protection, otherwise a crushing or shearing exists).

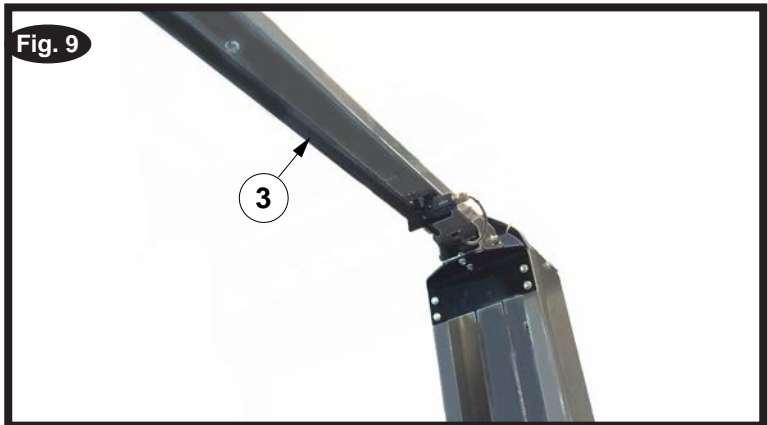
Always keep the foot and any other objects away from the lifting arm when lowering the lift.

Fig. 8



3. Up limit bar on the crossbeam

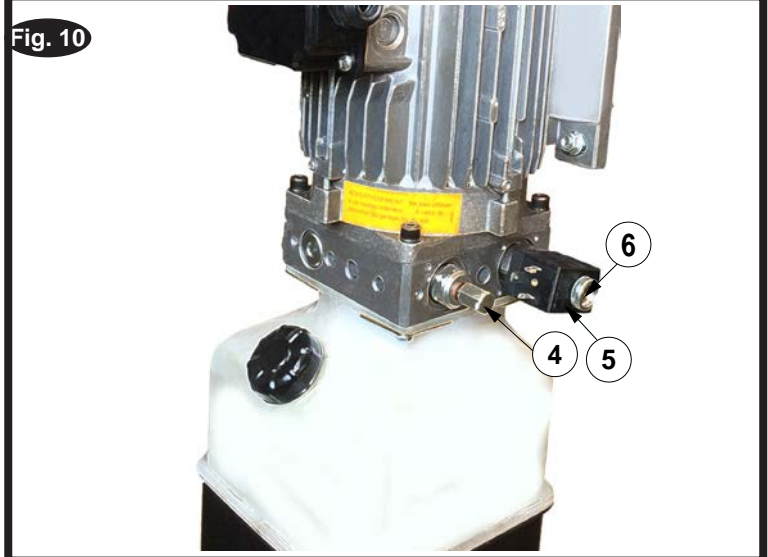
An limit bar prevents the vehicle from being lifted too high. This feature effectively protects taller vehicles from being damaged. (→3)



4. Pressure relief valve

The pressure relief valve (→4) is factory set to ca. 225-243 bar.

Prevents the lift with the limit of overload.



5. Lowering valve (emergency release)

Pos.5 Lowering valve for emergency release of the lift ,push the spool (→6).before this step ,please double check the lift without any objects below. detail steps see section in operation.

6. Locking latch on each lift column

The locking mechanism consists of a latch dog(7.2) and windows on the carriage(7.1).

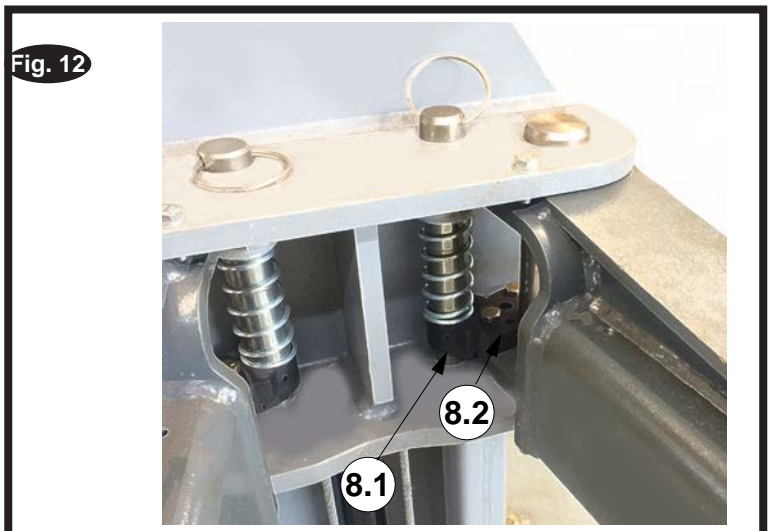
If a fault occurs in the hydraulic system, the brake mechanism is activated. The windows on the carriage is pressed against the latch bar .



7. Arm gear and locking block on each lift

The locking mechanism consists of a arm gear(8.2) and locking block (8.1).

Prevents the lifting arm rotating when the lift raising and lowering.



3.4 Control unit



All movement of the lift stops immediately when you release a pressed button.

1. Lockable main switch(For E&M Version)

"ON" setting: Post lift ready for use.

"OFF" setting: Post lift out of use. The mains voltage is still present inside the control box.

Switching off (OFF) immediately stops any movement of the post lift (= emergency stop).

2. UP button (For E&M Version)

Functions only if the button is pressed,the lift raise.

3. Down button (For E&M Version)

Functions only if the button is pressed,the lift lower.

For M version,it need work together with the release handle,the lift lower,and if only down button pressed ,the lift locked on the latch dog.

4. Down button (For E Version)

Functions only if the button is pressed,the lift locked on the latch dog.keep button pressed until both carriages lock securely into the latch dog.

5. Safety latch release handle (For M Version)

Functions only if the handle fully down and hold work together with down button pressed ,the lift lower.



More detail in next operation section.



Fig. 13



Fig. 14

4.Operation



DANGER

before loading vehicle on lift.

To avoid personal injury and/or property damage, permit only trained personnel to operate lift. After reviewing these instructions, get familiar with lift controls by running the lift through a few cycles



DANGER

weight & overhead bar or sensor will contact highest point on the vehicle.

Always lift the vehicle using all four adapters. NEVER raise just one end, one corner, or one side of vehicle.

Assure vehicle frame can support its



DANGER

Risk of fatal injury in the event of malfunction or damaged parts.



Shut down post lift. To do so, set the main switch to "OFF" and lock it with a padlock.



Consult a competent person.



DANGER

Risk of injury when lowering the load onto objects below the lift or the vehicle. Vehicle may topple over.



Before lowering, you must remove all objects from underneath the lift. This applies in particular to chassis stands and auxiliary jacks.



Always monitor the lift and vehicle carefully when lifting or lowering.



DANGER

Risk of fatal injury if load is incorrectly distributed on both lifting tables. Vehicle may topple over.



Check that axle loads and weight distribution are correct in accordance with Chapter 1.3.



Secure the load with adequately sized chassis stands.



When working with the post lift, make sure you follow the instructions listed in Chapter 2. Safety.

4.1 Before Loading:

- Inspect Lift - See "Operator Inspection And Maintenance". Never operate if lift malfunctions or has broken or damaged parts.
- Lift must be fully lowered and service bay clear of all personnel before the vehicle is positioned onto lift.
- Swing arms out to full drive-thru position.
- Assure area around lift is free of tools, debris, grease, and oil.
- Assure Adapter Pads are free from grease and oil.
- Do Not allow unauthorized persons in shop area while lift is in use.
- Do Not use any part of the lift as a crane or as a support for another lifting mechanism (i.e.: block & tackle, etc.).
- Turn E-Stop switch to "ON" Position, Fig 14. For E series lifts turn both E-Stop switches "ON", Fig 13.

4.2 Loading:

- Do Not allow unauthorized or untrained persons to position vehicle or operate lift.
- Do Not drive over arms.
- Do Not overload lift. See capacity label on lift.
- Use Only adapter extenders provided by the manufacturer. Do Not use wood, concrete blocks, or other improvised extenders.
- Spot vehicle over lift with left front wheel in proper spotting dish position, Fig. 15. Position vehicle according to the center of gravity, not for door opening clearance.
- Check the condition of the pickup points of the vehicle.
- Swing arms under vehicle and position adapters at vehicle manufacturer's recommended lift points, Fig. 15. Adjust adapters to the required height to keep the vehicle level and properly balanced.


- Use optional adapters for under body clearance when required.

- Use adapter extension combination to keep lift as level as possible.

4.3 To Raise Lift:

- **Do Not** permit anyone on lift or inside vehicle when it is being raised or lowered.

- Maintain visual contact with arms, pickup points, & vehicle throughout the motion of the lift while remaining clear of lift.

- For Lifts: Actuate RAISE Switch  on Control Box to raise lift, Fig. 13/14.

Note: Allow 2 seconds between motor starts. Failure to comply may cause motor burnout.

- Stop before making contact with vehicle. Check arm restraint pins for engagement. If required, slightly move arm to allow restraint gear and pawl to mesh.


DO NOT hammer pin down as this will damage the restraint gear teeth.


- Raise vehicle until tires clear the floor.

- Stop and check adapters for secure contact at vehicle manufacturer's recommended lift points.

- Continue to raise to desired height only if vehicle is stable on lift.

- Lower lift onto safety latches after desired height is reached. (Lift is to be raised high enough for locking latches to engage.)

- For M Series Lifts: Actuate LOWERING Switch  to lower lift onto locking latches.

- For E Series Lifts: Actuate  control panel to lower lift onto locking latches.

- **DO NOT** go under vehicle if all four adapters are not in stable contact at vehicle manufacturer's recommended lift points.

- Repeat complete spotting, loading, and raising procedures if vehicle is unstable.

4.4 While Using Lift:

- Avoid excessive rocking of vehicle while on lift.
- Always use safety stands as needed for stability when removing or installing heavy components. (i.e.: engines, transmissions, etc.) Use 4 safety stands.

- Raise safety stands to meet vehicle, do not lower vehicle onto stands.

- Avoid accidental touching of exposed exhaust system on raised vehicles. Watch for air hoses and electrical cords which may be tripped over.

- Wear safety glasses while working under vehicle.

4.5 Before Lowering Lift:

- Remove all tools or other objects from lift area.

- Assure personnel are not in lift area.

4.6 To Lower Lift:

- Remain clear of lift when lowering vehicle. Keep Feet Clear!

- **For M Series Lifts:**

- Actuate RAISE switch to raise lift off locking latches.


- Actuate SAFETY LATCH RELEASE handle fully and hold.

- Actuate LOWERING Switch to lower lift, Fig. 14.



LATCH release handle is deadman-type design. Must be held down to lower lift. Do not override these self-closing lift controls.

- **For E, Series Lifts:**

- Push  on control panel to raise lift off of locking latches.

- Push  on control panel to lower lift.

4.7 Unloading:

- Remove adapters from under vehicle and swing arms to full drive-thru position before moving vehicle.
- Assure Exit area is clear of objects and personnel before removing vehicle from lift.

4.8 Power Off:

- Turn E-Stop switch to "OFF" position while lift is not in use. if need, lock the switch with a padlock.

5. Problems, causes, actions

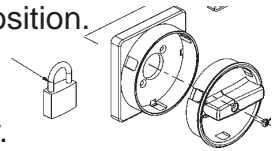
The following lists contain information on potential problems, their causes, and actions to rectify the fault.

i Repairs to safety mechanisms on the lift may richtungen only be carried out by authorized maintenance contractors (component persons).

During a breakdown (power failure), the lift remains automatically in safe mode. This means that all movement is halted.

i If the lift is out of order for long periods, carry out the following steps:

1. Lower the lift to the lowest position.
2. Switch the main switch to Off and lock with a padlock.
3. Disconnect the power supply.



5.1 Troubleshooting by the operator

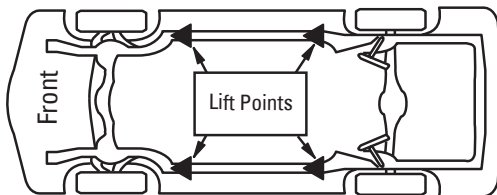
The following troubleshooting measures may only be carried out by an authorized operator.

Before doing so, make sure that power supply is connected, the main switch is in the "ON" position.

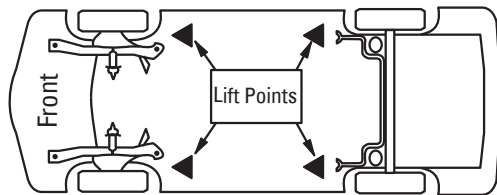
i If the problem is not rectified by the listed measures, you must seek advice from a competent person.

i The troubleshooting measures listed in 5.2 may only be carried out by maintenance contractors.

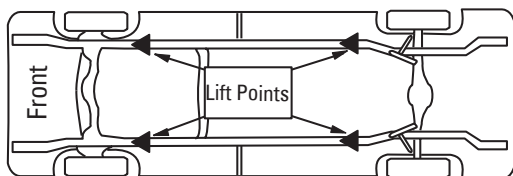
Typical Lift Points



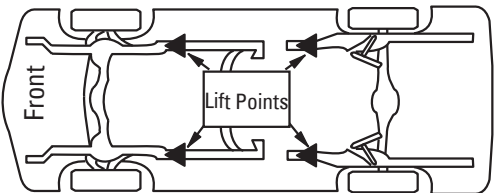
Perimeter Frame



Unitized Body



Pickup Truck



Stub Frame

Fig.15



Most specialty or modified vehicles cannot be raised on a frame engaging lift. Contact vehicle manufacturer for raising or jacking details.

WARNING

Problem	Possible cause	Actions
The motor is not running.	<ul style="list-style-type: none"> • Blown fuse or circuit breaker. • Overhead Sensor Actuated. • Up button not functioning. 	<ol style="list-style-type: none"> 1. Replace blown fuse or reset circuit breaker (customer side). 2. Check sensor or incorrect connection. 3. Check UP button. 4. Contact service representative for further assistance.
Motor runs but will not raise lift.	<ul style="list-style-type: none"> • Low oil level. • Overloading lift. 	<ol style="list-style-type: none"> 1. Check and Fill tank. 2. Check vehicle weight and/or balance vehicle weight on lift.
Lift won't lower.	<ol style="list-style-type: none"> 1. Down button not functioning. 2. Safety Latches won't release. 3. Lowering Valve not functioning. 	Contact service representative for further assistance.
Lift going up unlevel.	See actions	Contact service representative for further assistance.
Anchors will not stay tight.	See actions	Contact service representative for further assistance.
Locking latches do not engage.	See actions	Contact service representative for further assistance.
Slow lifting speed or oil blowing out filler breather cap.	See actions	Contact service representative for further assistance.
Lift slowly settles down.	See actions	Contact service representative for further assistance.


5.2 Troubleshooting by authorized maintenance contractors

Problem	Possible cause	Actions
Motor does not run.	<ol style="list-style-type: none"> 1. Blown fuse/circuit breaker. 2. Incorrect voltage to motor. 3. Bad wiring connections. 4. Up switch burned out. 5. Overhead limit switch burned out. 6. Motor windings burned out. 	<ol style="list-style-type: none"> 1. Replace fuse or reset breaker. 2. Supply correct voltage to motor. 3. Repair and insulate all connections. 4. Replace switch/control buttons. 5. Replace overhead limit switch. 6. Replace motor.

Motor runs but will not raise lift.	<ol style="list-style-type: none"> 1. Overloading lift. 2. Motor running on low voltage. 3. Debris in lowering valve. 4. Pump sucking air. 5. Suction stub off pump. 6. Low oil level. 7. Improper relief valve adjustment. 8. Open lowering valve. 	<ol style="list-style-type: none"> 1. Check vehicle weight and/or balance vehicle weight on lift. 2. Supply correct voltage to motor. 3. Clean lowering valve. 4. Tighten all suction line fittings. 5. Replace suction stub. 6. Fill tank to proper level . 7. Replace relief valve. 8. Repair/replace lowering valve.
Lift slowly settles down.	<ol style="list-style-type: none"> 1. Debris in check valve seat. 2. Debris in lowering valve seat. 3. External oil leaks. 	<ol style="list-style-type: none"> 1. Clean check valve. 2. Clean lowering valve. 3. Repair external leaks.
Slow lifting speed or oil blowing out filler breather cap.	<ol style="list-style-type: none"> 1. Air mixed with oil. 2. Air mixed with oil suction. 3. Oil return tube loose. 	<ol style="list-style-type: none"> 1. Change oil . 2. Tighten all suction line fittings. 3. Reinstall oil return tube.
Lift going up unlevel.	<ol style="list-style-type: none"> 1. Equalizer cables out of adjustment. 2. Lift installed on unlevel floor. 	<ol style="list-style-type: none"> 1. Adjust equalizer cables to correct tension. 2. Shim lift to level columns .
Anchors will not stay tight.	<ol style="list-style-type: none"> 1. Holes drilled oversize. 2. Concrete floor thickness or holding strength not sufficient. 	<ol style="list-style-type: none"> 1. Relocate lift using new bit to drill holes. Reference installation instructions for proper anchoring method and minimum spacing requirements. 2. Break out old concrete and re-pour new pads for lift per lift installation instruction.
Lift stops short of full rise or chatters.	<ol style="list-style-type: none"> 1. Air in hydraulic lines or cylinder. 2. Low oil level. 	<ol style="list-style-type: none"> 1. Start unit, raise lift about 610mm. Open cylinder bleeders approximately 2 turns. Close bleeders when fluid streams. Fully lower lift and refill power unit per Step 2 below. 2. Fully lower lift. Fill tank .
Locking latches do not engage.	<ol style="list-style-type: none"> 1. Latch shafts rusted. (Usually occurs on outside installations or in high humidity areas such as wash bays.) 2. Broken latch spring. 	<ol style="list-style-type: none"> 1. Remove covers, oil latch mechanism. Depress latch release handle several times to allow oil to coat shaft. 2. Change the latch spring.
Locking latches do not disengage(M series).	<ol style="list-style-type: none"> 1. Latch cable is broken. 2. Cable is off sheaves. 3. Latch cable is loose. 	<ol style="list-style-type: none"> 1. Replace cable. 2. Check position of upper sheaves. 3. Replace cable.
Locking latches do not disengage(E series).lift can not lower down.	<ol style="list-style-type: none"> 1. solenoid burning hot. 2. solenoid broken 	<ol style="list-style-type: none"> 1. Waiting 5-10 mintues . 2. Replace solenoid

6. Authorized lowering

Only by authorized competent persons



WARNING

Risk of injury in the case of incorrect behavior. Only authorized competent persons may lower lifts as described below.

Cordon off the danger zone, prevent access by all persons.
Constantly monitor the danger zones when lifting or lowering.
No-one may remain in the lift traffic zone.
Only qualified electricians may carry out work on the electrics.

If your lift is in a raised position and you lose power it is important to know how to lower the lift manually. Make sure nothing is under the lifting structure of vehicle and all unauthorized personnel are away from the lift area.

1. Place a hydraulic jack and pipe under the carriage on the master control side. Jack should be rated to lift the capacity of the vehicle.
2. Raise lift off of the locking latch. You should only have to raise lift approximately 1/4" to disengage the lock.
3. Remove control panel and pull locking latch back, Fig. 16. If you can not pull it back with your fingers then you don't have the latch off of the lock. Repeat Step 2 until lock is disengaged.
4. Place a flat piece of steel behind latch dog and back of column to keep it off of the lock.
5. Slowly lower hydraulic jack and pipe out from under the arm carriage.
6. Repeat step 1 thru 5 on slave control panel column.
7. The lift is now being held up by hydraulics at this point.
8. Remove cap from lowering valve on power unit and twist and pull to lower lift, Fig. 16. The lift will lower at a slow speed. Replace cap on lowering valve after the lift has been lowered.
9. If your facility lost power your lift will operate when you regain power.
10. If your facility power was not lost, have a certified electrician check wiring to lift or call an authorized Rotary repair person.

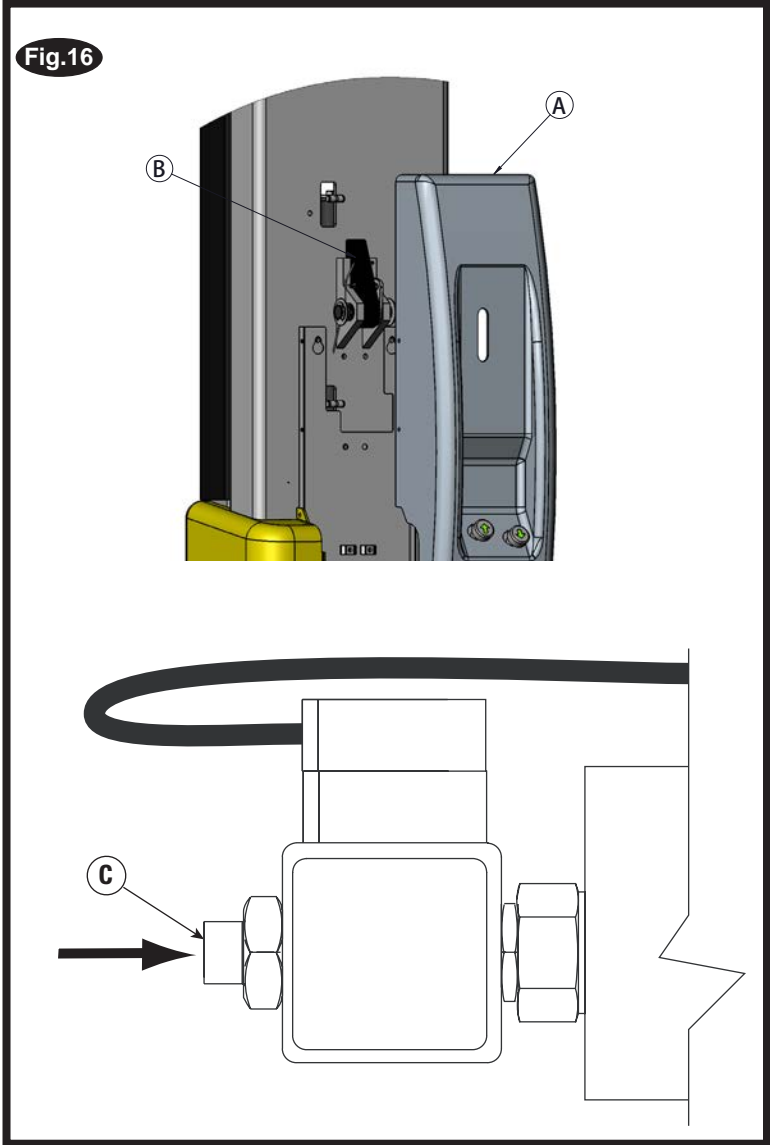


Fig. 16 Detail	
A	Control Panel
B	Locking Latch Dog
C	Pull to manually lower lift

7.Technical data

Tragfähigkeit 5000 kg.
Lifting capacity 5000 kg.
capacité de levage 5000 kg.

- ①

Steuereinheit E- Anschluß 3Ph/400V/50Hz/3kW
, Schutzart IP 54
control unit electric supply 3Ph/400V/50Hz/3kW
. protection IP 54
unité de commande raccordement électrique
3Ph/400V/50Hz/3kW, protection IP 54
- ②

Aufnahmeteller Durchmesser 125 mm
lifting pad diameter 125 mm
patin support diamètre 125 mm
- ③

Hubhöhe 1985 mm- Hubzeit: ~60 sec
lifting height 1985 mm- lifting time: ~60 sec
hauteur de levage 1985 mm- temps de levage: ~30 sec
- ④

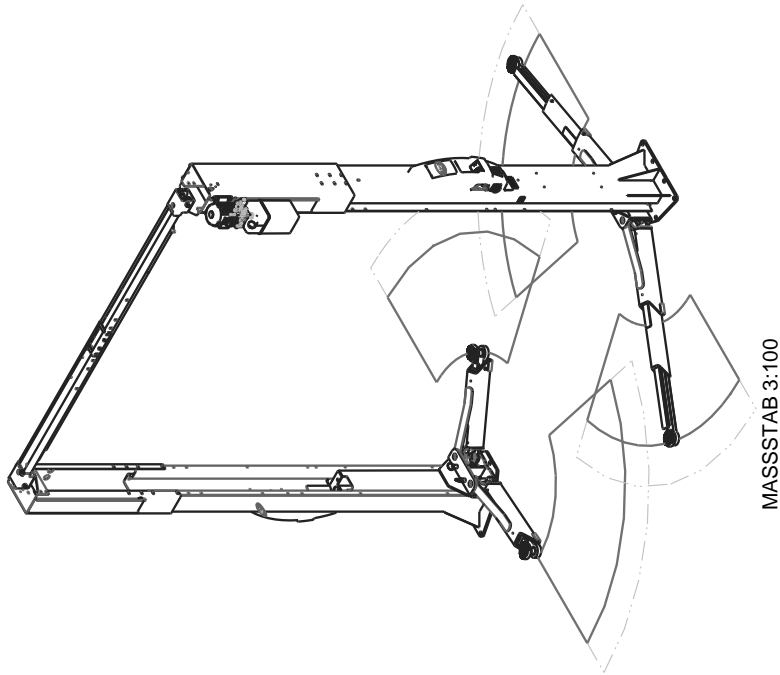
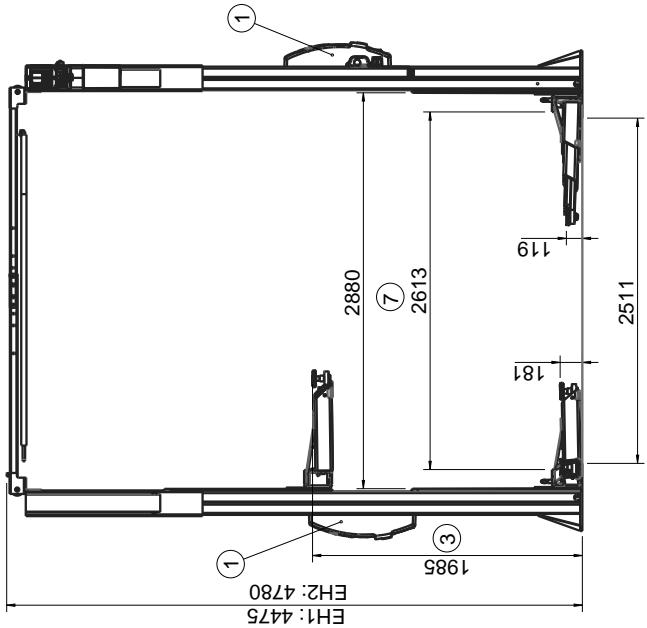
Tragarm vorne 765 - 1640 mm
front lifting arms 765 - 1640 mm
bras porteur l'avant 765 - 1640 mm
- ⑤

Tragarm hinten 765 - 1640 mm
rear lifting arms 765 - 1640 mm
bras porteur arrière 765 - 1640 mm
- ⑥

Hydraulikaggregat
hydraulic power unit
L'agrégat d'hydraulique
- ⑦

Durchfahrbreite 2613 mm
clearance width 2613 mm
largeur de passage 2613 mm
- Wenn kein befestigter Untergrund vorhanden ist,
mind. Fundamentgröße 4000x2200x200
Betonqualität B25(C25/20) mit Bewehrung
if no solid floor is available, the foundation must be
at least 4000x2200x200
Concrete quality B25 (C25/20) with reinforcement in concrete
s'il n'y a pas de fondation fixes la dimension mini des
fondations est de 4000x2200x200
qualité du beton B25(C25/20) avec beton arme

2. Bedienteil, Steckdose und Luftanschluß
2. control unit, socket and air plug
2. unité de commande, prise de courant



MASSTAB 3:100

Flächenpression p=1.43daN/cm²
surface pressure p=1.43daN/cm²
pression de surface p=1.43daN/cm²

Konstruktionsänderungen vorbehalten.
Für Bauplanung neuestes Maßblatt anfordern!
we reserve the right to technical modifications.
please request latest scale drawings for construction purposes!
Sous réserve de modifications techniques. Pour la planification
de construction, prière de demander des croquis côtés

ALL DIMENSIONS IN MILLIMETERS		TWO ANGLE PROJECTION		SPO54 Specification	
UNLESS OTHERWISE NOTED: ANGULAR DIMENSIONS: ± 1° OTHER DIMENSIONS: ± 0.30mm ± 1.6mm (over 305mm)		DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED 0.8mm MIN. CORNER BREAK REMOVE ALL BURRS		ROTARY LIFT	
NOTES:		DIMENSIONS IN MILLIMETERS		A 1 of 1	
The design and detail illustrated in the drawing is the property of Rotary Lift. It is being loaned with the expressed condition that it will not be duplicated or used except by permission and is subject to return upon request.		REV CO NUM DATE BY		hp 3:100 20-Jan-14	
-		20-Jan-14		SPO54	

Tragfähigkeit 5500 kg.
Lifting capacity 5500 kg.
capacité de levage 5500 kg.

- 1

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, Schutzart IP 54
control unit electric supply 3Ph/400V/50Hz/3kW
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unité de commande raccordement électrique
3Ph/400V/50Hz/3kW, protection IP 54
- 2

Aufnahmeteiler Durchmesser 125 mm
lifting pad diameter 125 mm
patin support diamètre 125 mm
- 3

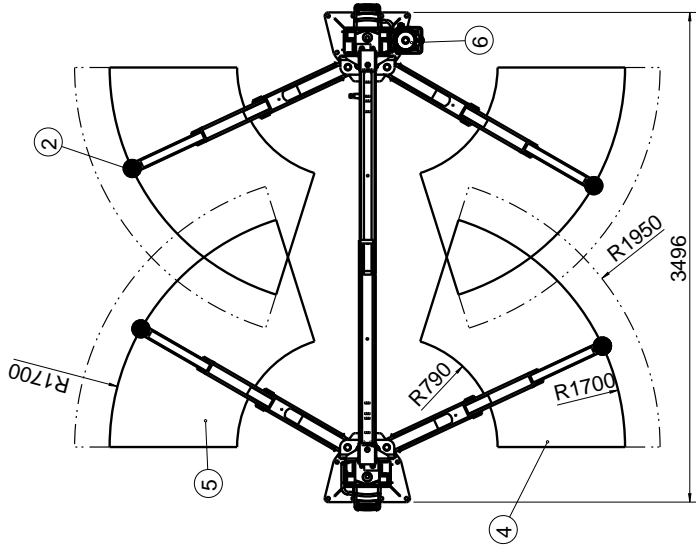
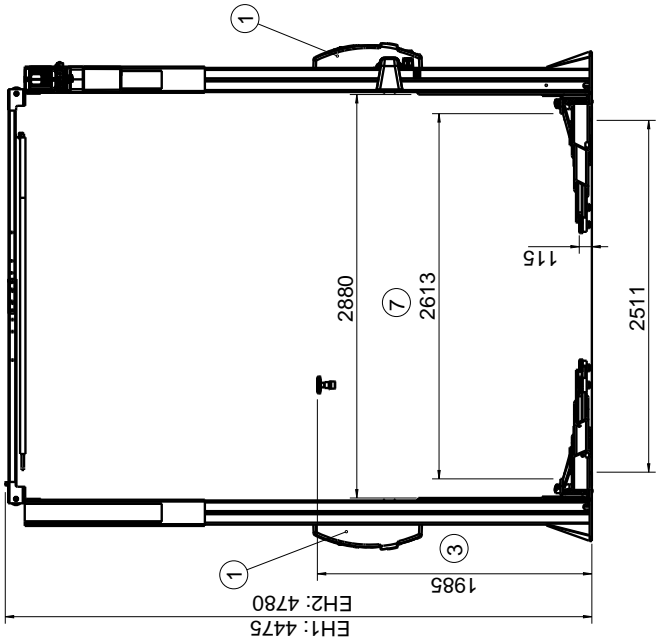
Hubhöhe 1985 mm- Hubzeit: ~60 sec
lifting height 1985 mm- lifting time: ~60 sec
hauteur de levage 1985 mm- temps de levage: ~30 sec
- 4

Tragarm vorne 790 - 1700 mm
front lifting arms 790 - 1700 mm
bras porteur l'avant 790 - 1700 mm
- 5

Tragarm hinten 790 - 1700 mm
rear lifting arms 790 - 1700 mm
bras porteur arrière 790 - 1700 mm
- 6

Hydraulikaggregat
hydraulic power unit
L'agrégat d'hydraulique
- 7

Durchtahtbreite 2613 mm
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- Wenn kein befestigter Untergrund vorhanden ist,
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2. Bedienteil, Steckdose und Luftanschluß
2. control unit, socket and air plug
2. unité de commande, prise de courant
- Tragfähigkeit 5000 kg mit Verlängerung AE250.
Lifting capacity 5000 kg with extension AE250.
capacité de levage 5000 kg avec extension AE250.



Flächenpressung $p=1.57\text{daN/cm}^2$
surface pressure $p=1.57\text{daN/cm}^2$
pression de surface $p=1.57\text{daN/cm}^2$

Konstruktionsänderungen vorbehalten.
Für Bauplanung neuestes Maßblatt anfordern!
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please request latest scale drawings for construction purposes!
Sous réserve de modifications techniques. Pour la planification
de construction, prière de demander des croquis côtés

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Tragfähigkeit 5500 kg.
Lifting capacity 5500 kg.
capacité de levage 5500 kg.

- 1

Steuerinheit E- Anschluß 3Ph/400V/50Hz/3kW
Schutzart IP 54
control unit electric supply 3Ph/400V/50Hz/3kW
protection IP 54
unité de commande raccordement électrique
3Ph/400V/50Hz/3kW, protection IP 54
- 2

Aufnahmeteller Durchmesser 125 mm
lifting pad diameter 125 mm
patin support diamètre 125 mm
- 3

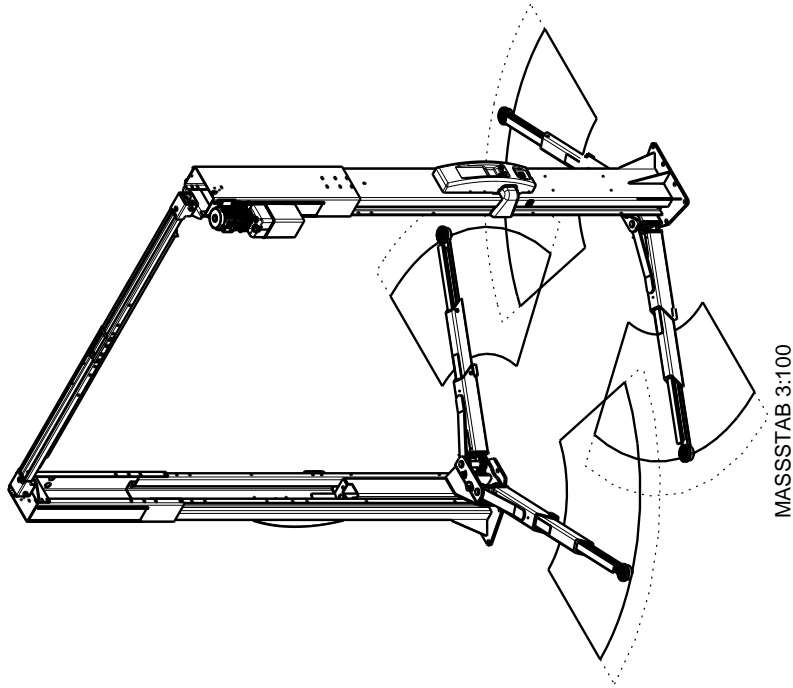
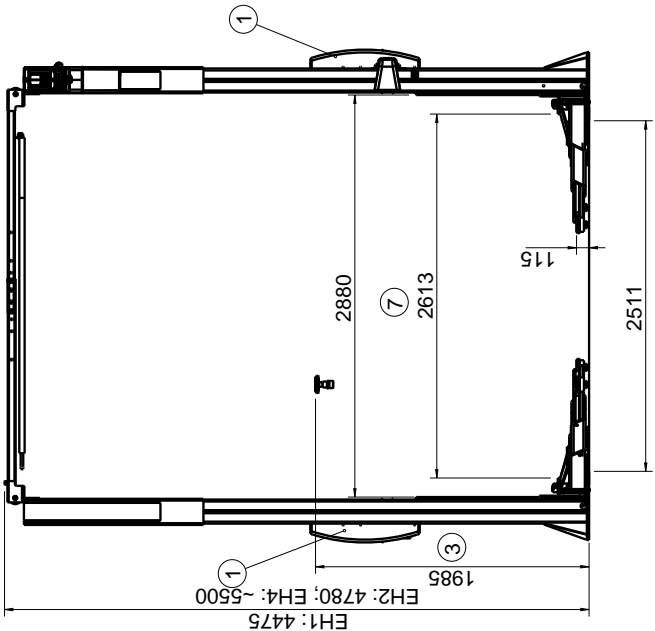
Hubhöhe 1985 mm- Hubzeit: ~60 sec
lifting height 1985 mm- lifting time: ~60 sec
hauteur de levage 1985 mm- temps de levage: ~30 sec
- 4

Tragarm vorne 790 - 1700 mm
front lifting arms 790 - 1700 mm
bras porteur l'avant 790 - 1700 mm
- 5

Tragarm hinten 790 - 1700 mm
rear lifting arms 790 - 1700 mm
bras porteur arrière 790 - 1700 mm
- 6

Hydraulikkaggregat
hydraulic power unit
L'agrégat d'hydraulique
- 7

Durchfahrbreite 2613 mm
clearance width 2613 mm
largeur de passage 2613 mm
- Wenn kein befestigter Untergrund vorhanden ist,
mind. Fundamentgröße 4000x2500x200
Betonqualität B25(C25/20) mit Bewehrung
if no solid floor is available, the foundation must be
at least 4000x2500x200
Concrete quality B25 (C25/20) with reinforcement in concrete
s'il n'y a pas de fondation fixes la dimension mini.des
fondations est de 4000x2500x200
qualité du béton B25(C25/20) avec béton arme
2. Bedienteil, Steckdose und Luftanschluß
2. control unit, socket and air plug
2. unité de commande, prise de courant
- Tragfähigkeit 5000 kg mit Verlängerung AE250.
Lifting capacity 5000 kg with extension AE250.
capacité de levage 5500 kg avec extension AE250.

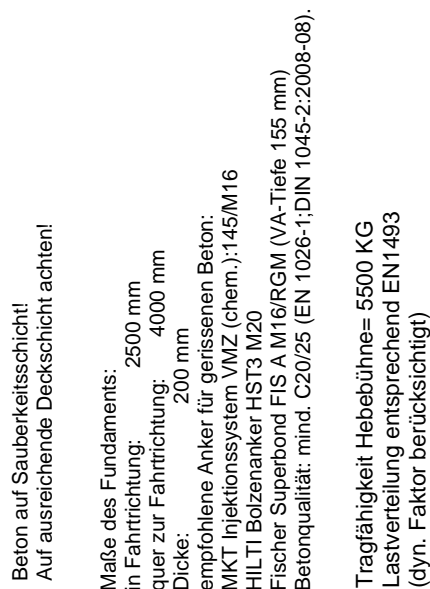
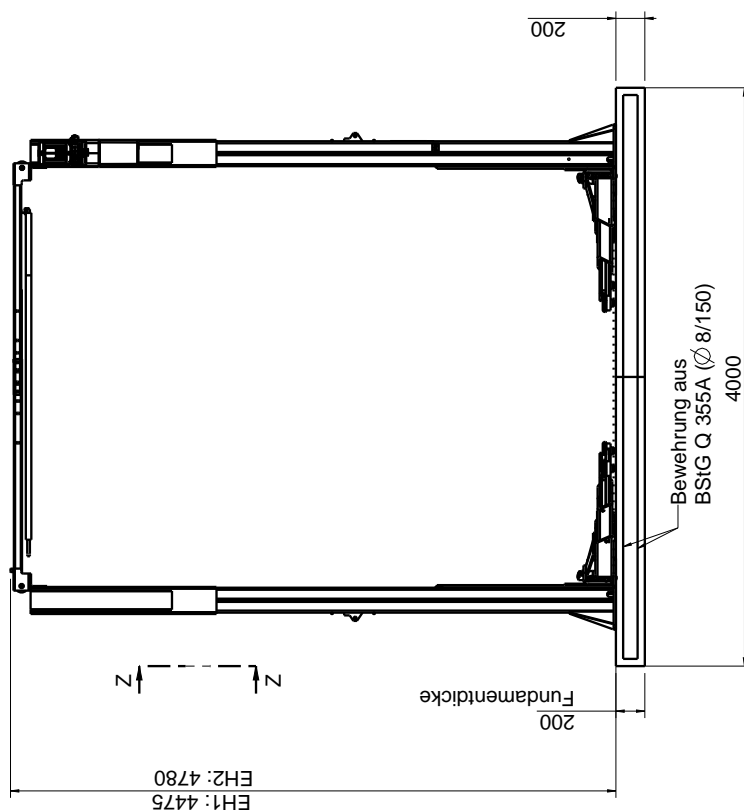


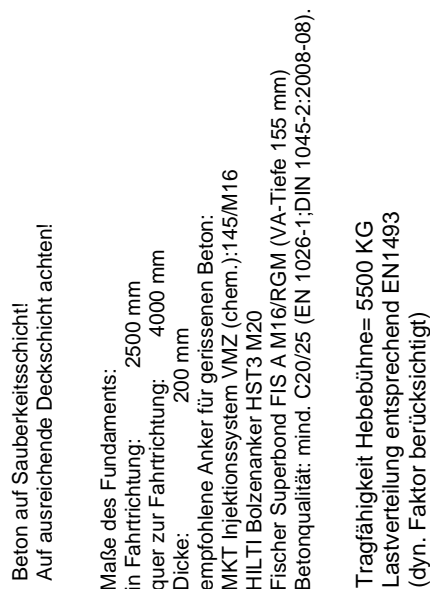
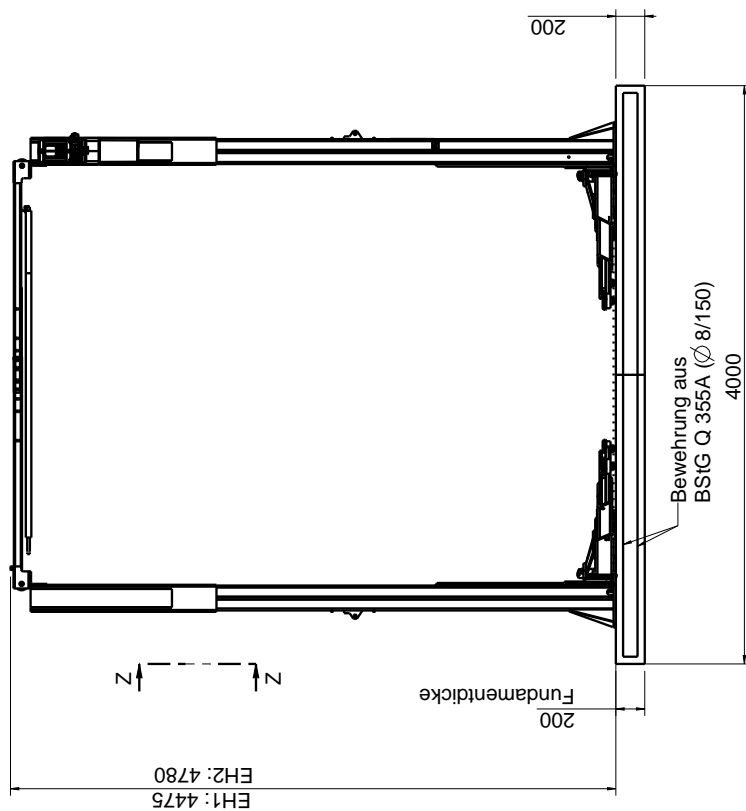
MASSTAB 3:100

Flächenpressung $p=1.57\text{daN/cm}^2$
surface pressure $p=1.57\text{daN/cm}^2$
pression de surface $p=1.57\text{daN/cm}^2$

Konstruktionsänderungen vorbehalten.
Für Bauplanung neuestes Maßblatt anfordern!
we reserve the right to technical modifications.
please request latest scale drawings for construction purposes!
Sous réserve de modifications techniques. Pour la planification
de construction, prière de demander des croquis côtés

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27

[illegible]

8.Cleaning

- Only clean the lift when not loaded (without vehicle).
- Clean main lift, and all work areas daily. In doing so, always keep all post lift components clean.

i If the lift is in a particularly dirty environment, clean accordingly more frequently.

- Do not use abrasive cleaning materials on lift parts and covers. Use lint-free cloth.
- Do not use compressors or high pressure cleaners for cleaning work.
- Always consult a maintenance contractor if you identify a hazard.
- Prior to maintenance make sure that fittings and fixtures are free of oil, lubricants, and cleaning materials.
- Do not clean cable with water. if Cables (running steel cable) be lubricated with a suitable lubricant, from example from Duotac, CRC or Mobil (Mobilarma 798).

This can significantly increase the service life of the cable. Lubricant can be applied by spraying, dipping, or brushing.

9.Maintenance and repair



Inadequate maintenance and repair work may cause serious injury and also lead to damage to property. A safety risk as well as a risk of fatal injury exists during operation.

- Follow the maintenance and repair instructions below carefully.
- Regularly clean the post lift (→ Chapter 8).
- Comply with maintenance intervals (→ Chapter 9.3). This will keep the post lift in perfect working condition and guarantee safe operation.
- Maintenance and repair work must be documented (→ annex, maintenance schedule, regular maintenance reports, and repair reports).

9.1 Qualification of maintenance and repair staff

Maintenance and repair work may only be carried out by an authorized **maintenance contractor** (→ Chapter 2.6).

9.2 Maintenance and repair safety regulations

- Only qualified electricians may work on electrical equipment on the machine.
- Only qualified staff with specialist knowledge and experience with hydraulics or pneumatics may work on hydraulic or pneumatic equipment.
- **Ensure that you follow the instructions listed in 2, Safety.**
- When working on the hydraulics or on pneumatic equipment, ensure that you follow the safety regulations listed in the supplied power unit operating instructions annexed to this manual.
- Only perform maintenance on unloaded lifts and lifting tables.
- Main lifts must be lowered completely or latched into the lock positions (locking latches).

- Prevent environmental hazards:
 - Mineral-oil-based hydraulic oil is combustible and a water pollutant. It must only be used in conjunction with the relevant safety data sheet and if all specified measures contained therein are implemented.
 - Provide suitable oil drain pans and oil absorbents.
 - Ensure that no hydraulic oils, lubricants or cleaning materials contaminate the soil or leak into the drainage system.
 - Comply with local regulations for handling water pollutants, for example for absorbing leaking fluids or fluids from oil separators.
- Avoid contact with or inhalation of toxic substances such as hydraulic fluid.
- Wear protective clothing, for example protective goggles, protective gloves etc.
- Before all maintenance and repair work:
 - secure the post lift zone with a red-white chain and warning notices.
 - turn the main switch to OFF ("OFF" Position).
 - disconnect the air supply (manometer on the compressor unit to 0 bar)(only for E version).
 - inform all persons in the area about the maintenance and repair work.
- Only use original spare parts from the manufacturer.
- Tighten all fittings after maintenance work according to the specified torque figures.
- The default setting for safety valves must be a maximum of 10 % or a minimum of 20 bar above the operating pressure of the machine. The safety valve settings may not be adjusted.
- Remove all used materials, tools and other objects from the danger zone after cleaning, maintenance, and repair work.
- Dispose of hydraulic oils, lubricants, cleaning materials, and replaced parts in accordance with environmental regulations.

9.3 Maintenance work



WARNING

Potential crushing and shearing hazard to limbs caused by uncontrolled lowering motion.



In particularly dirty environments, maintain the post lifts accordingly more frequently.
Only perform maintenance on unloaded lifts, i.e. without vehicle.



WARNING

Risk to people and the environment caused by toxic substances when emptying or filling the hydraulic oil tank.



Avoid contact with or inhalation of hydraulic oil or Vaseline oil.



Provide a suitable oil drain pan and oil absorbent.



Ensure that used oil doesn't contaminate the soil or wash away into the drainage system.



Comply with local regulations for handling water pollutants.



Dispose of used oil in an environmentally friendly manner.



Hydraulic oil is highly inflammable, combustible.



DANGER

Risk of fatal injury if anchor bolts are loose. Post lift may slip, the load may collapse.



Stop operating the post lift.

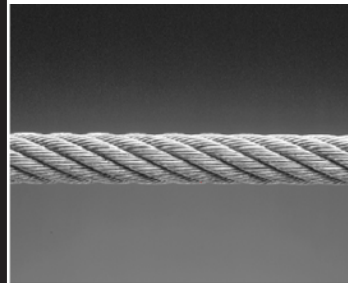
Secure the post lift. If this cannot be done, provide an approved foundation then anchor and secure the post lift properly.

Daily inspection

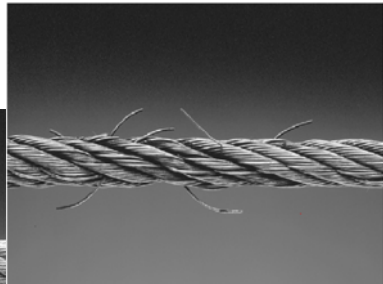
1. Check cables and sheaves for wear. If parts are worn, call local service representative.
2. Inspect adapters for damage or excessive wear. If parts are worn, call local service representative.
3. Check for permanent deformation to the latches. If present, call local service representative to replace parts.
4. Check the function of overhead sensor.
5. Check the operation of the synchronization or equalization system so that both sides raise and lower equally. Perform check with and without a vehicle representative load.
6. With a representative vehicle on the lift, check the lowering speed (not to exceed 0.15m/s).
7. Check for proper function of swing arm restraints.

Fig.17

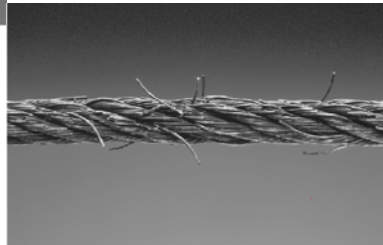
Acceptable, undamaged cable



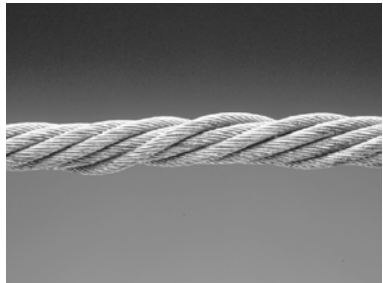
Unacceptable cable with broken strands



Unacceptable cable - heavily frayed



Unacceptable cable - severely contracted



Monthly maintenance

1. Turn the main switch to OFF ("OFF" setting) and lock with a padlock.
2. Check whether the lifting arms are horizontally aligned during lifting and lowering. Re-adjust stretched cables (→ Chapter 12. Commissioning).
3. Check whether screw fittings have come loose.
4. Check the hydraulic oil level (Hydraulic tank). If necessary, refill with approved hydraulic oil (→ Chapter 9.4)
5. Inspect the tank cover of the hydraulic tank. The vent cap must be clean so that no vacuum can form.
Clean if necessary.
6. Check hydraulic component seals (visual inspection).
7. Clean and check base of lift. Remove any rust and touch-up with paint.
8. Monthly check the rubber pads for wear, replace defective pads if need.
9. Lubricate locking latch shafts. Actuate latch handle several times for oil to penetrate joints.
10. Turn main switch to ON ("ON" setting).
11. Check that control buttons and switches function properly.
12. Carry out a function test with and without load.
13. Complete a maintenance report (→ Annex).

Six month maintenance

1. Raise lift .
2. Turn main switch to OFF ("OFF" setting) and lock with a padlock.
3. Lubricate post lift with approved lubricant
 - Lightly grease the lifting slides running surface.
 - Lightly grease the thread of the disk adapters for smooth operation.
4. Check the nuts of the cable ,make sure all nut works well and not loose. Also Check anchor bolts for tightness.
5. Turn the main switch on ("ON" setting).
6. Conduct function test. Lower lift completely.
7. Complete a maintenance report (→ Annex).

Annual maintenance

1. Turn the main switch off (Position "OFF") and lock with padlock.
2. Check Hydraulic cylinder and Hydraulic hoses for leaks (visual inspection). With lift loaded, stop the lift at midpoint of travel and observe for drifting

down and hydraulic leaks.

3. Inspect electrical cables for damage (visual inspection).
4. Turn the main switch on again (Position "ON").
5. Check that control buttons and switches function properly.
6. Replace illegible or missing labels on the post lift. Reorder from the manufacturer.
7. Conduct safety inspections (→ Chapter 2.7).
8. Complete maintenance report and inspection report from safety inspection (→ Annex).

9.4 Approved hydraulic oils



Important information

- Only use hydraulic oils in accordance with DIN 51524 for the hydraulic system.
- Only use biodegradable oils (HEES-based on synthetic esters).
- Use PTFE seals or foam elastomers if the water content is high.

ATTENTION

Seals may be destroyed if the incorrect hydraulic oil is used.

- Do not use rapeseed based oils. The water content of the hydraulic oil must not exceed 2%.
- Do not mix bio-oils with mineral oils. Mixing leads to foaming problems and corrosion damage.
- Make sure that the oil is not contaminated by any other oil or water.
- Use a proportionally lower viscosity bio-oil as a replacement for mineral oil. This improves the lubrication properties, reduces energy consumption and generates less heat.

HEES32-bio-oils can, for example, be used as a replacement for mineral oil HLP46:

- PLANTOSYN 3268
- BECHEM HYDROSTAR HEES 32
- BP Biohyd 32
- Mobil EAL Hydraulic Oil 32



Oils and grease

Only use consistency classification II oils and grease.



Water pollutants

Oils and grease are water pollutants in terms of the Water Management Act (WGH).

Always dispose of these in an environmentally friendly manner in compliance with the applicable regulations in your country (→ Chapter 14. Disposal).

9.5 Check, refill, change the hydraulic oil



Risk to people and the environment from toxic substances when filling the hydraulic oil tank.

- ➔ Avoid contact with and inhalation of hydraulic oil.
- ➔ Wear protective clothing (protective goggles, protective gloves). Provide suitable oil drain pans and oil absorbents.
- ➔ Ensure that no hydraulic oils, lubricants, or cleaning materials contaminate the soil or leak into the drainage system.
- ➔ Comply with local regulations for handling water pollutants, for example for absorbing leaking fluids or fluids from oil separators.
- ➔ Hydraulic oil is highly inflammable, combustible.

1. Check hydraulic oil level on the hydraulic oil tank.



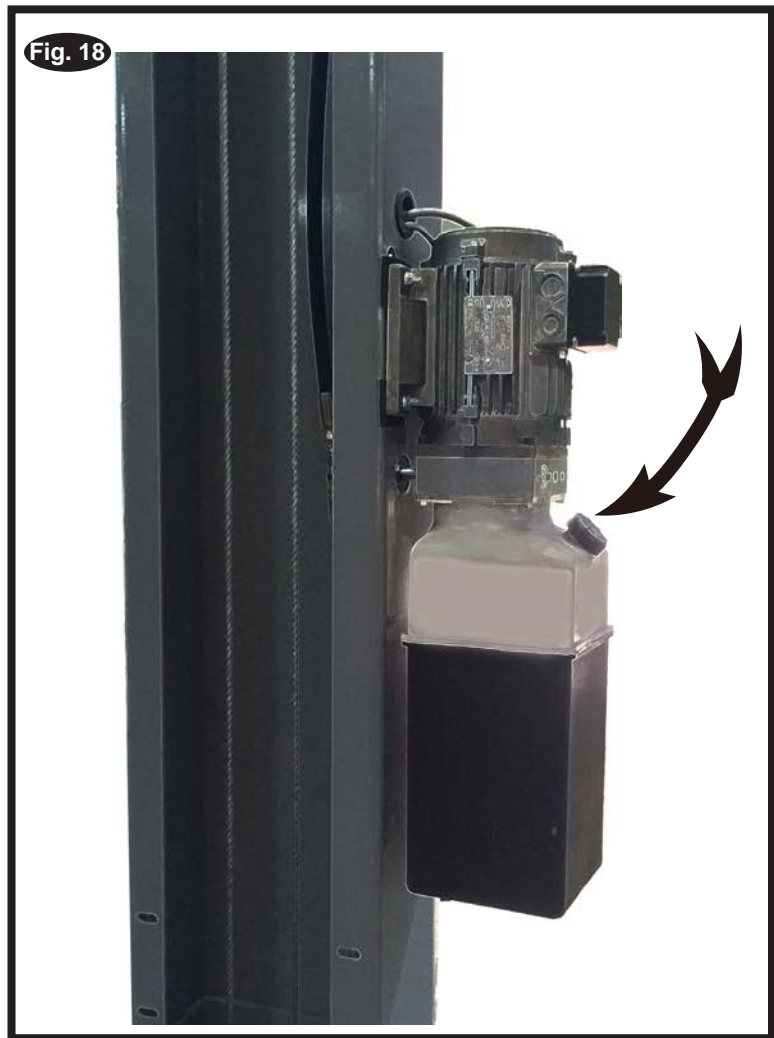
The oil level must not exceed the minimum value ("min").

2. Place the oil drain pan under the tank, remove tank cap and refill hydraulic oil to the "max" mark.
3. Ensure that the vents work and that no vacuum is generated.
4. Screw on the tank cap so that the tank is properly sealed.
5. Remove oil residues on the floor or on the lift with an approved detergent. Dispose of used cleaning cloths in the correct manner.
6. Complete a maintenance report (→ Annex).

An oil change is carried out depending on the extent to which the hydraulic oil has degraded. To do so, proceed as follows:

1. Lower arriages completely, turn main switch off ("OFF" position) and lock it.
2. Place the oil drain pan under the hydraulic oil

Fig. 18



tank, completely disassemble the tank and empty out the remaining oil into the drain pan.

3. Replace the hydraulic oil tank in the correct manner.
4. Fill approved hydraulic oil up to the "max"-mark. Maximum capacity of empty tank.
5. Bleed the cylinders both column.
6. Remove oil residues on the floor or on the lift with an approved detergent. Dispose of used cleaning cloth in the correct manner.
7. Turn main switch back on ("ON" setting).
8. Check that control buttons and switches function properly.
9. Carry out function tests with and without load.
- 10 Complete maintenance report (→ Annex).

9.6 Repair work (Repairs)



DANGER

If repairs are carried out incorrectly, they may cause serious injury and also lead to damage to property. A safety risk as well as a risk of fatal injury exists during operation.

- ➔ Repairs may only be carried out by trained customer service staff.
- ➔ Follow all safety regulations and warnings in this chapter.
- ➔ Always follow the repair instructions below.
- ➔ Repair work must be documented (→ Annex, inspection logbook).



Always refer to the information received during the manufacturer's training.

Changing the cylinder or seal kit.

Before removing cylinder make sure you have the correct seal kit or cylinder(see-Annex).

Cylinder Removal Procedure

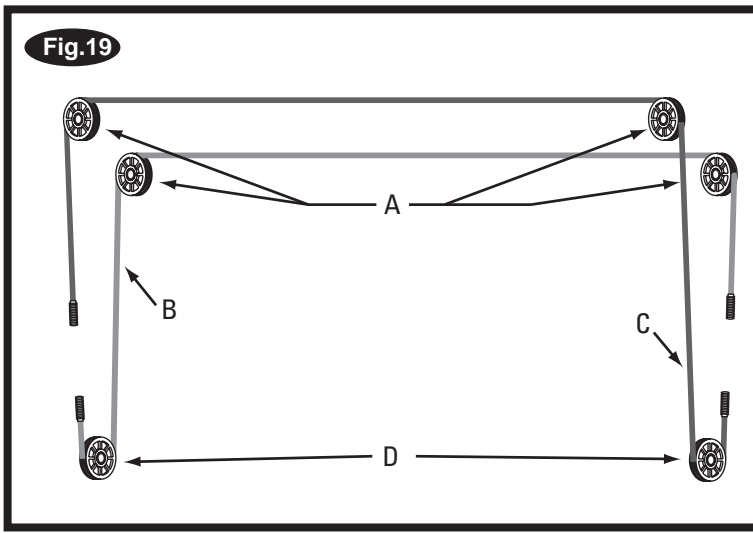
- 1) Loosen the equalizer cable on the opposite carriage.
- 2) Raise the lift to the top and rest the carriage on the top latch position.
- 3) Check to make sure the carriage is secure on latches.
- 4) Make sure the pressure has been relieved from the system.
- 5) Follow the proper LOCKOUT/TAGOUT procedures for disconnecting power to lift.
- 6) Remove the lower sheave cover at base of column.
- 7) With lowering valve depressed, manually pull cylinder down out of carriage.
- 8) Disconnect the swivel hose fitting at base of cylinder.
- 9) Cap hose ends and cylinder adapter to prevent fluid loss.
- 10) Carefully remove cylinder from column.

Cylinder Rebuilding(for changing the seal kit)

- 1) Remove manual bleeder and extend plunger from casing.
- 2) Remove piston retaining ring or clip.
- 3) Remove plunger from casing.
- 4) Clean inside of casing, making sure all debris is removed with mineral spirits.
- 5) Inspect seal for damage.
- 6) Replace seal and all other components (wiper, wear ring, etc.).
- 7) Coat seal with oil or white grease.
- 8) Reinstall plunger, retaining ring, and manual bleeder being careful not to scratch or dent plunger surface.

Cylinder Replacement

- 1) Reinstall cylinder and reconnect hose fitting.
- 2) Reconnect power source.
- 3) Install lower sheave cover.
- 4) Raise cylinder in column through the carriage lifting plate and cylinder centering bar.
- 5) Lower both carriages.
- 6) Adjust equalizer cables.
- 7) Carefully raise carriages about two feet. Bleed air from both cylinders.
- 8) Fully lower lift.
- 9) Check and add fluid as necessary.
- 10) Raise lift to full rise and check for leaks.
- 11) Tag lift back in service.



Replace cables/cable sheaves

- Damaged cables must be replaced promptly.
- **If cables / cable sheaves are damaged, inform maintenance contractors and customer service immediately.**
- **Always replace all cables together as a set.**
- If the cable is too slack → Chapter 12. Commissioning.
- Replace cables as per the manufacturers training.

10. Transport, Storage



DANGER

Crushing and shearing hazard for limbs when unloading. Caused by collapsing or slipping of the load.

- ➔ Only unload the packing unit and transport to the installation site with a forklift truck or pallet jack with a sufficient load capacity.
- ➔ Only use hoists approved for the total weight (straps, chains etc.).
- ➔ Attach these so that the load cannot slip (check the center of gravity of the load).
- ➔ Only secure individual components to loadbearing parts. Always lift vertically, steadily and without jerking.
- ➔ Carry out a visual inspection before offloading.
- ➔ Do not stand close to or underneath swinging loads.
- ➔ Constantly monitor the danger zone when lifting or lowering.
- ➔ Always transport hydraulic components empty of oil.

ATTENTION Lift components may be damaged if offloaded incorrectly.

- ➔ Do not damage plates on the underside of the lift when lifting.
- ➔ Several parts are inserted into the components, for example into the columns. Offload these carefully to prevent damage.
- ➔ When offloading, proceed from top to bottom.

10.1 Transport

The lift is supplied in a packing unit (base unit) plus a separate extension columns. The packing unit comes with the following documentation:

- Transport description giving suitable suspension points, total weight, centre of gravity, required cable lengths, transport locks, etc.
- List of all individual components included in delivery.

10.2 Offloading

1. Inspect the shipment for any shipping or transport damage. Immediately report any damage to your supervisor and to the transport firm.
2. Transport the packing unit to the installation site. This must conform to the approved environmental conditions (→ Chapter 7. Technical data).
3. Unfasten the transport locks for the large parts on the front of the packing unit.
4. Offload the columns and column extensions and set down carefully.
5. Remove all other components from the pallet and set down carefully.
6. Inspect the supplied parts according to the packing list provided.
7. Dispose of packaging in an environmentally friendly manner, in compliance with the regulations applicable in your country (→ Chapter 16. Disposal).

10.3 Storage

Lift components must always be stored in a dry place (no corrosion protection).

Recommended Storage Conditions

- Ambient temperature: -5 ... +50
- Relative humidity, 30 % ... 95 %
with condensation, at 20 °C



The manufacturer provides no warranty for corrosion damage caused by incorrect storage.

11. Assembly(installation)



DANGER

Incorrect installation work may lead to serious injury and material damage. A safety risk as well as a risk of fatal injury exists during operation.

- Follow the instructions below carefully.
- Only customer service staff authorized by the manufacturer may assemble and commission the post lift.
- Correct installation and commissioning must be documented in the inspection logbook. To do so, use the form "Initial safety inspection before installation".

11.1 Assembly safety instructions

- Verify that the foundation is suitable before assembling.(→ Chapter 7 Technical data.)
- Think about and prevent potential sources of danger before assembly (→ Chapter 1. Intended use, improper use, incorrect behavior, and internal incident, health & safety, and environmental information).
- Operators must be able to view the post lift and the danger zone in full from the control unit (→ Chapter 3.2. Work area, danger zone).
- Refer to the technical data in chapter 7.
- Route and protect on-site power cables according to manufacturers specifications.
- Only qualified electricians may carry out electrical work on the electrical equipment of the machine.
- Only qualified staff with specialist knowledge and experience with hydraulics or pneumatics may work on hydraulic or pneumatic equipment.
- When working on the hydraulics or on pneumatic equipment, ensure that you follow the safety regulations listed in the supplied power unit operating instructions annexed to this manual.
- **Ensure that you also follow the instructions listed in 2. Safety.**

11.2 Quick assembly instructions



The lift components are already preassembled ex works. When assembling these must simply be joined together, electric, pneumatic, and hydraulic lines must be properly connected.

1. Determine the installation site of the post lift.
Check the foundation. If necessary, reinforce the foundations at the point where the lift columns will be positioned.
2. Make preparations for installation. Prepare electrical and pneumatic connections (only E version).
Check the foundation for unevenness and level it out. Use spacers and shims.
3. Set down both columns, crossbeams, extensions and prepare them for assembly.
4. Fasten the extension column to base column, and bracket.
5. Stand the lift columns upright, anchor and secure to the floor.
6. Fasten the overhead assembly to the columns.
7. Assemble the hydraulic module, rotate hydraulic hose, electric wires (especially for E version).
8. Connect the equalizing cables.
9. For M version, connect and rotate the locking latch cable.
10. Connect the electrics and other components.
11. Power up the post lift and carry out initial commissioning. Make minor adjustments to the post lift.

11.3 Site specifications

- The post lift may only be installed above ground and indoors.
- Refer to the building plans when selecting a site.
- When anchoring to the floor, take into account any pipes, cables, and supply lines lying there.
- Ensure that the load capacity of the foundation is adequate.
- Support surface for lift columns:
Reinforced concrete, concrete quality C20/C25
- Floor must be designed for a floor anchor.
- Concrete dimension 4000x2500x200 mm. (→ Chapter 7 Technical data.)



Do not fit post lifts onto asphalt or a similar unstable surface, since the anchor may come loose in the floor.

- Comply with the specified minimum distances and clearances (→ Chapter 3.2. Work place, danger zone)

11.4 Installation preparations

1. Provide an electrical outlet close to the lift column with the control unit:
 - Electrical, according to the lift variant:
400 V (3xL+N+PE) for power unit motor
220V AC for control and solenoid.
see electric wiring diagram in annex.
2. Level out any uneven floor areas around the lift columns. If required, fill bearing surfaces for lift columns with reinforced concrete (concrete quality C20/C25).
3. Equalize slight differences in height between lift columns using spacers or shims.

11.5 Prepare the columns.

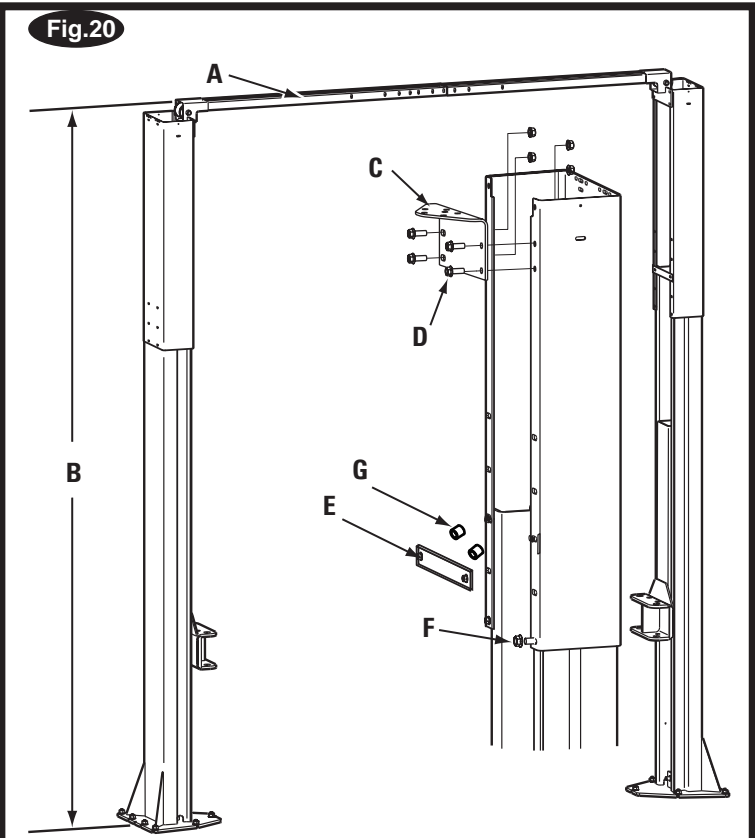


Fig. 20 Detail

A	Overhead assembly
B	See spec drawing
C	Overhead mounting bracket
D	3/8"-16NCx3/4" HHCS and flanged lock nut
E	Tie bar - use (2) 3/8"-16NCx2-1/2" carriage bolts \ flanged lock nuts and spacer(G) between.
F	Use (2) 3/8"-16NCx3/4" carriage bolts and flanged lock nuts in front and (2) in back.

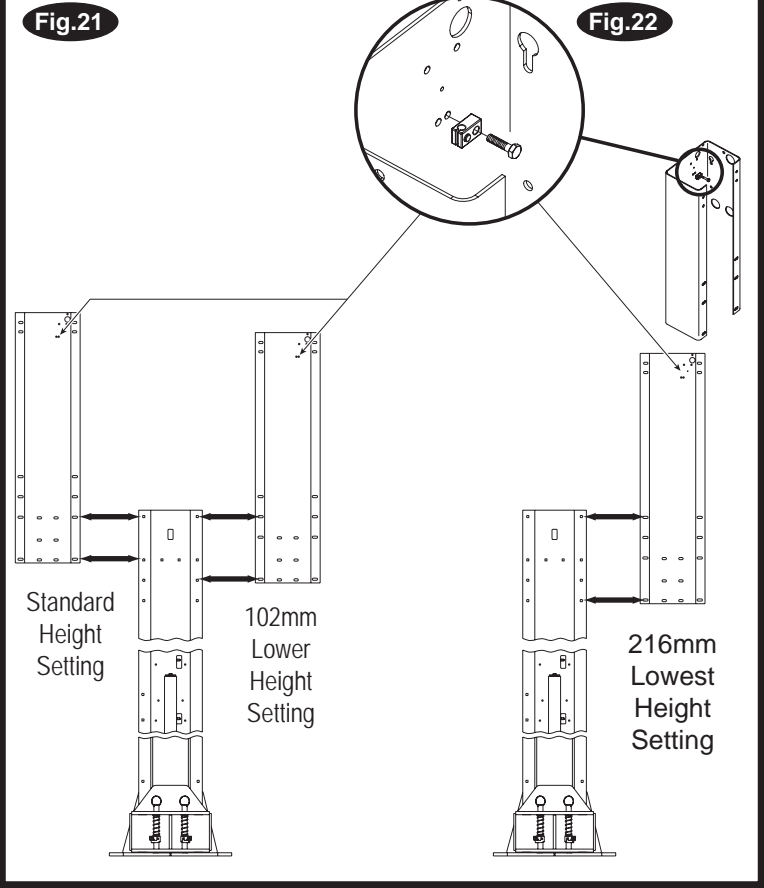


Lift Height: See Fig. 20 for overall lift height of each specific lift model. Add 30mm to overall height to lowest obstruction.



CAUTION

DO NOT install this lift in a pit or depression due to fire or explosion risks.




ATTENTION E Series Lifts DO NOT Have Latch Cable Guides or Locking Latch Cables.

1. Latch Cable Guides for M Series Lifts: Install the latch cable conduit guide brackets to column extensions with (1) 1/4"-20NC x 1" HHCS and 1/4"-20NC Flanged Lock Nuts, Fig. 22. HHCS should go through hole nearest the edge as shown, Fig. 22.
2. Column Extensions: Install the column extensions as shown, Fig. 21. Install Tie Bar as shown, Fig. 20. Overhead Mounting Bracket: Install Mounting Brackets to column extensions, Fig 20.
3. Lift Setting: Position columns in bay using dimensions shown in spec drawings. With column lying on the floor, two people can lift the top of the column and walk towards the base. As the column approaches vertical, one of the two people should move to the opposite side of the column and assist in slowly setting the column flat on its base. Both column base plate backs must be square on center line of lift. Notches are cut into each base plate to indicate center line of lift. Using appropriate equipment, raise carriage to first latch

position. Be sure locking latch is securely engaged.

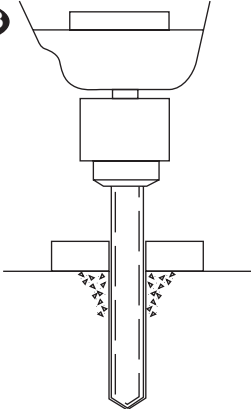
4. **Concrete and Anchoring:** Concrete shall have a compression strength of at least C20/25 and a minimum thickness of 200mm. Drill (14) 20mm dia. holes in concrete floor, using holes in column base plate as a guide. See Fig. 23.



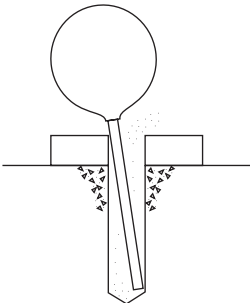
DO NOT install on asphalt or other similar unstable surfaces. Columns are supported only by anchors in floor.

5. **IMPORTANT:** Using the horse shoe shims provided, shim each column base until each column is plumb, Fig. 24. If one column has to be elevated to match the plane of the other column, full size base shim plates should be used (Reference Shim Kit). Recheck columns for plumb. Tighten anchor bolts to an installation torque. Shim thickness **MUST NOT** exceed 13mm. If anchors do not tighten to the requirement by installation torque, replace concrete under each column base with a new strengthen concrete pad keyed under and flush with the top of existing floor. Let concrete cure before installing lifts and anchors. Detail information, please contact customer service.

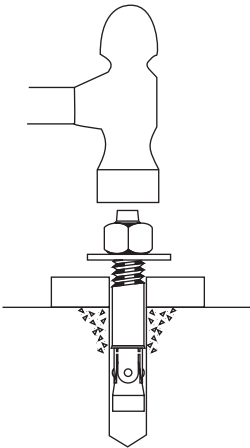
Fig. 23



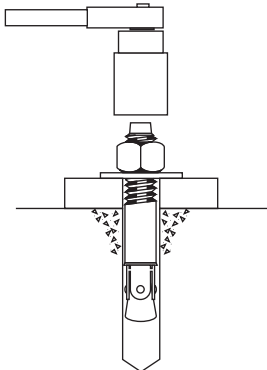
Drill holes using 20mm carbide tipped masonry bit drill bit.



Clean Hole



Run nut down just below impact section of bolt. Drive anchor into hole until nut and washer contact base.



Tighten nut with torque wrench .

Fig.24

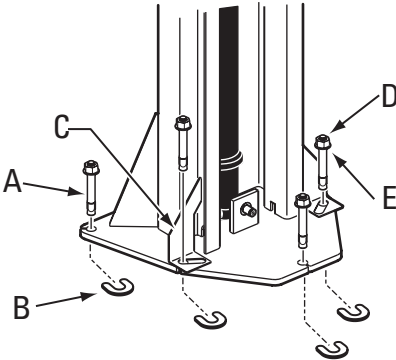


Fig. 24 Detail	
A	Anchor
B	Shims (13mm maximum)
C	Toe guard
D	Nut
E	Flat washer

11.6 Prepare the Overhead assembly.

- 1 Adjust overhead to 2896mm between centerline of sheave pins, Fig. 25. Install (2) 3/8"-16NC x 3/4" Flanged HHCS & Flanged Lock Nuts, do not tighten. Install overhead stiffener angle inside center of overhead using (4) 3/8"-16NC x 1" Flanged HHCS and Flanged Lock Nuts, see Fig.25.
- 2. Mount Overhead switch assembly towards power unit column using (2) 1/4"-20NC x 3/4" lg. HHCS, 1/4"-20NC Nuts and 1/4" Star Washers, Fig. 25 & Fig. 26.
- 3. Insert 1/4"-20NC x 2-3/4" HHCS through pivot hole in end of switch bar. Insert opposite end of

bar through slot in switch mounting bracket Fig 25. Then secure HHCS and Switch Bar to overhead as shown, using (2) 19mm spacer and 1/4"-20NC Lock Nut. Tighten Hex bolt leaving 1.6mm gap between the spacer and the overhead assembly.

3. With a ladder by each column, two people position the overhead assembly onto column mounting brackets and fasten with 3/8"-16NC x 3/4" Lg. Flanged HHCS. Use (1) star lock washer on power unit side, Fig. 27. Use middle holes. Tighten bolts at center of overhead assembly.

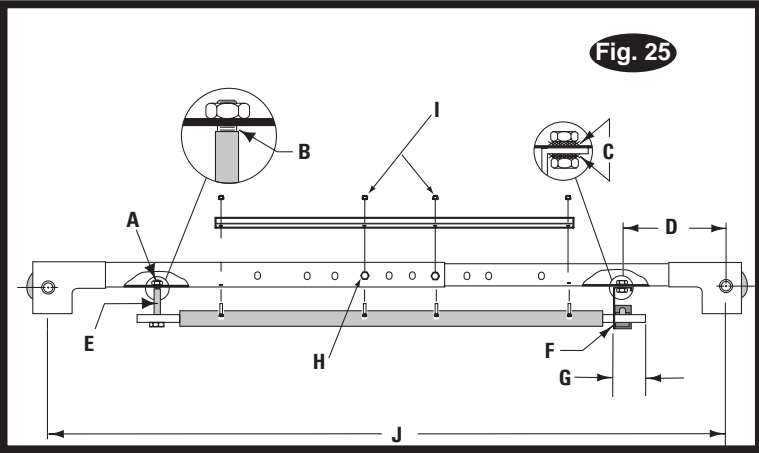


Fig. 25

Fig. 25 Detail	
A	1/4"-20NC x 2-3/4" HHCS and lock nut.
B	1.6mm gap
C	Star washers
D	299mm
E	(2) 19mm Spacers
F	Overhead Switch
G	50mm minimum
H	(2) 3/8"-16NC x 3/4" HHCS and flanged lock nut.
I	(4) 3/8"-16NC x 1" HHCS and flanged lock nut.
J	2896mm

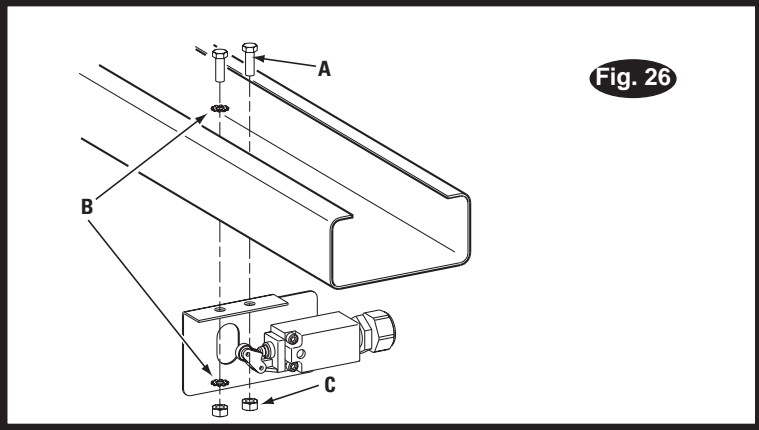


Fig. 26

Fig. 26 Detail	
A	(2) 1/4"-20NC x 3/4" lg. HHCS
B	On one side use (2) 1/4" External Tooth Lock washers.
C	(2) 1/4"-20NC Zinc Hex Nuts

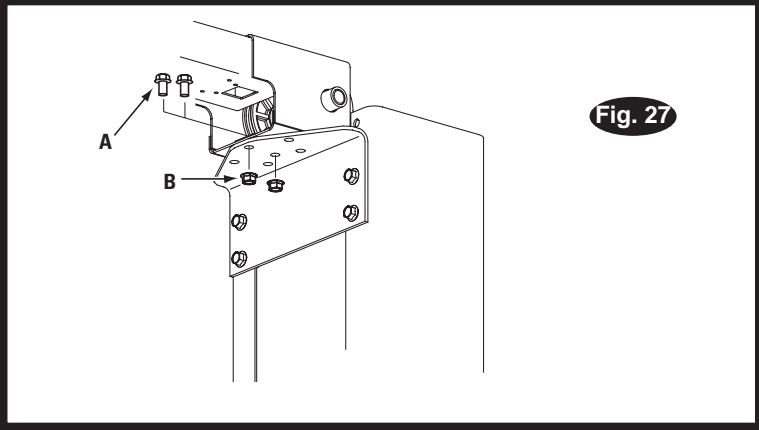


Fig. 27


Fig. 27 Detail	
A	(2) 3/8"-16NC x 3/4" HHCS
B	(2) 3/8" Lock Nuts

11.7 Assemble the hydraulics module.

- Only qualified staff with specialist knowledge and experience of hydraulics may work on hydraulic equipment.
- Always follow the safety regulations in the hydraulic power unit instructions in the annex to this manual.

The hydraulic power unit with motor and tank is supplied separately and is assembled as follows:

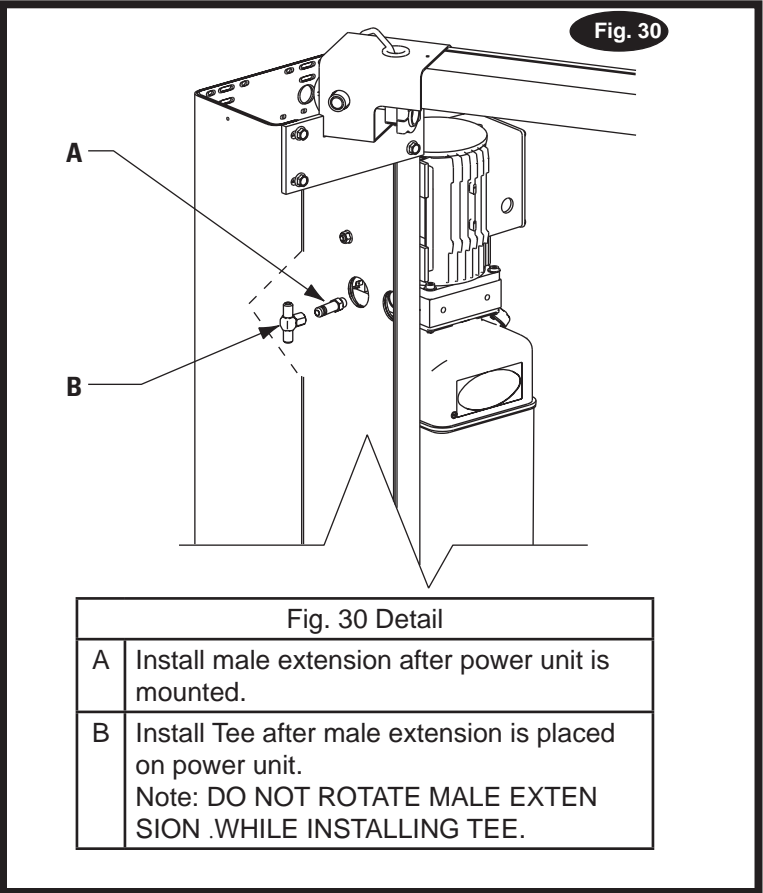
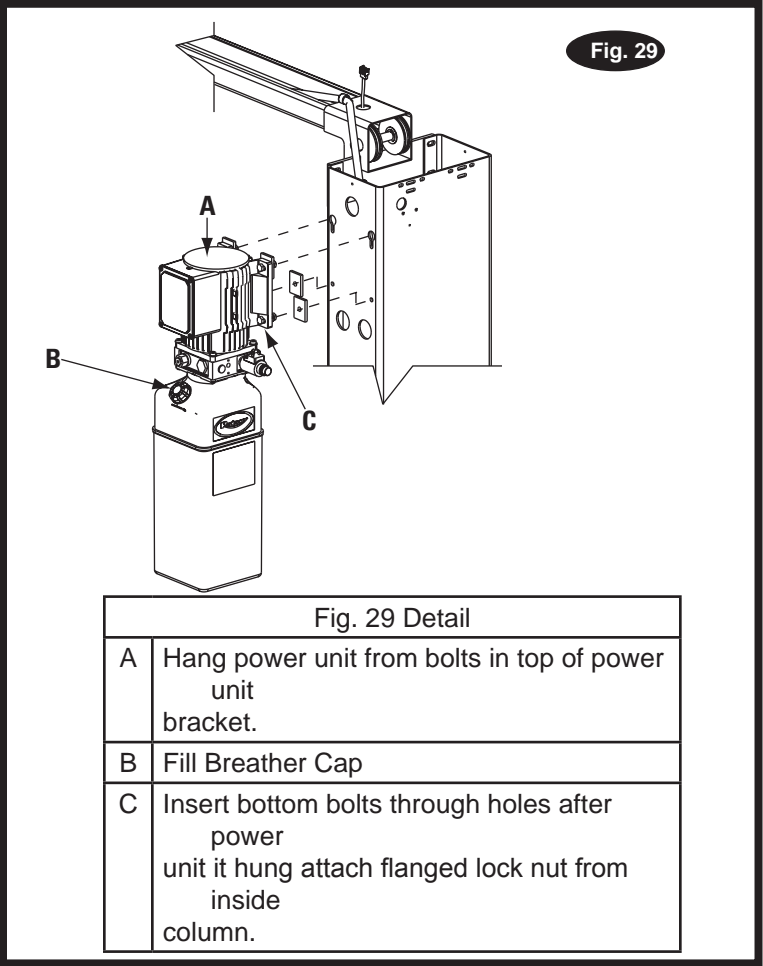
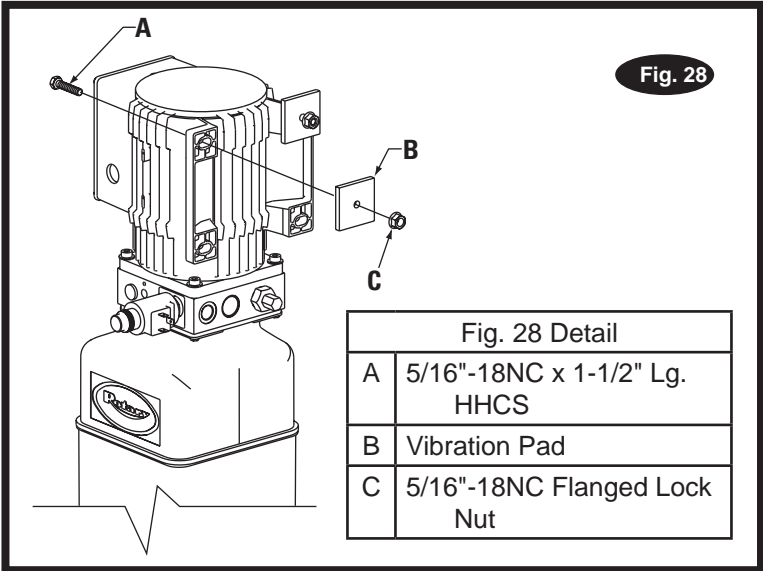
1. Put (2) 5/16"-18NC x 1-1/2" HHCS through top holes in power unit bracket using Vibration Pad to hold in place, Fig. 28.
- Install 5/16"-18NC Flanged Nuts until bolt end is flush with end of nut.
- Install power unit onto column extension, Fig. 29.
- Slide bolt/nut combination into top set of holes and down to bottom of slot.
- Install HHCS, Vibration Pad, and Flanged HHCS in bottom power unit holes and tighten. (Be sure to place vibration pad between power unit and column extension). Tighten top HHCS and Nut.
- Install and hand tighten Male Extension to pump until O-ring is seated, Fig 30. Continue to tighten the lock nut to 14 - 20Nm (1.4 - 2.1kg-m), or until the nut and washer bottom out against the pump manifold.




Risk of injury from heavy hydraulic power units.

CAUTION

➔ If possible, assemble the complete unit in pairs.



2. Flared Fittings Tightening Procedure:



Over tightening lock nut may tear O-ring.

CAUTION

➔ Install Female Swivel Tee To Male Extension, Fig. 30. Use Flared Fittings Tightening Procedure to tighten the Female Swivel Tee to the Male Extension.

Flared Fittings Tightening Procedure

1. Screw the fittings together finger tight. Then using proper size wrench rotate the fitting 2-1/2 hex flats.

IMPORTANT Flare seat **MUST NOT** rotate when tightening. Only the nut should turn.

2. Back the fittings off one full turn.

3. Again tighten the fittings finger tight then using a wrench, rotate the fitting 2-1/2 hex flats. This will complete the tightening procedure and develop a pressure tight seal.

IMPORTANT Over tightening will damage fittings resulting in fluid leakage.

3. Clean adapters and hose. Inspect all threads for damage and hose ends to be sure they are crimped. Install hose using Flared Fittings Tightening Procedure, Section 2.

Adapter & Hose Installation (see Fig. 31)

- 3.1 Install item (2) with hose clamps, on power unit column side connecting it to the cylinder (1) first.
- 3.2. Install item. (3) with hose clamps item (5) starting at opposite cylinder and working toward the power unit. All excess hose should be at bends & inside overhead assembly.
- 3.3. Connect item (2) & item (3) to Tee (4).

NOTE: Route Power Unit hose inside columns using slots provided at column base, Fig. 32. Route Overhead Hose in column channel on outside of column, Fig. 32. Overhead hose goes over top end of overhead assembly, Fig. 33.

4. Oil Filling: Remove fill-breather cap on power unit, Fig. 31. Fill to MIN_____ mark on tank with approved hydraulic oils(→ Chapter 9.4,approved hydraulic oils). Replace fill-breather cap.

Fig. 31

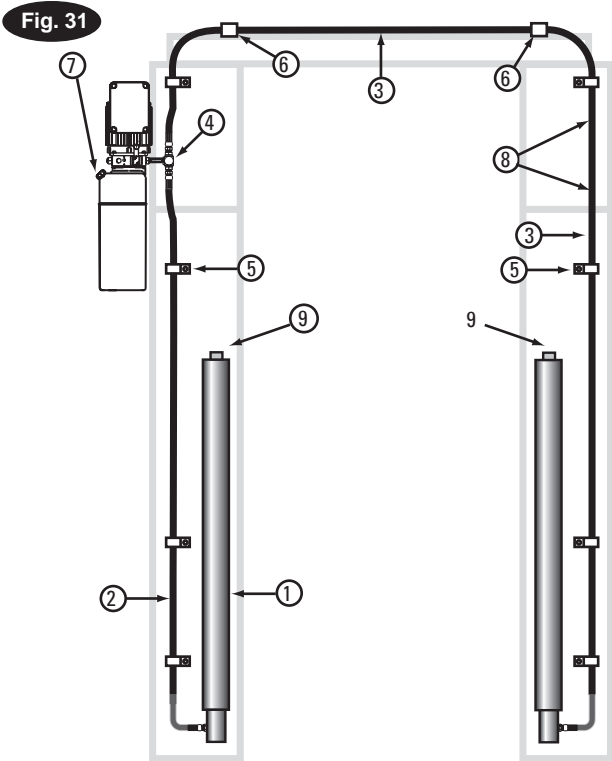
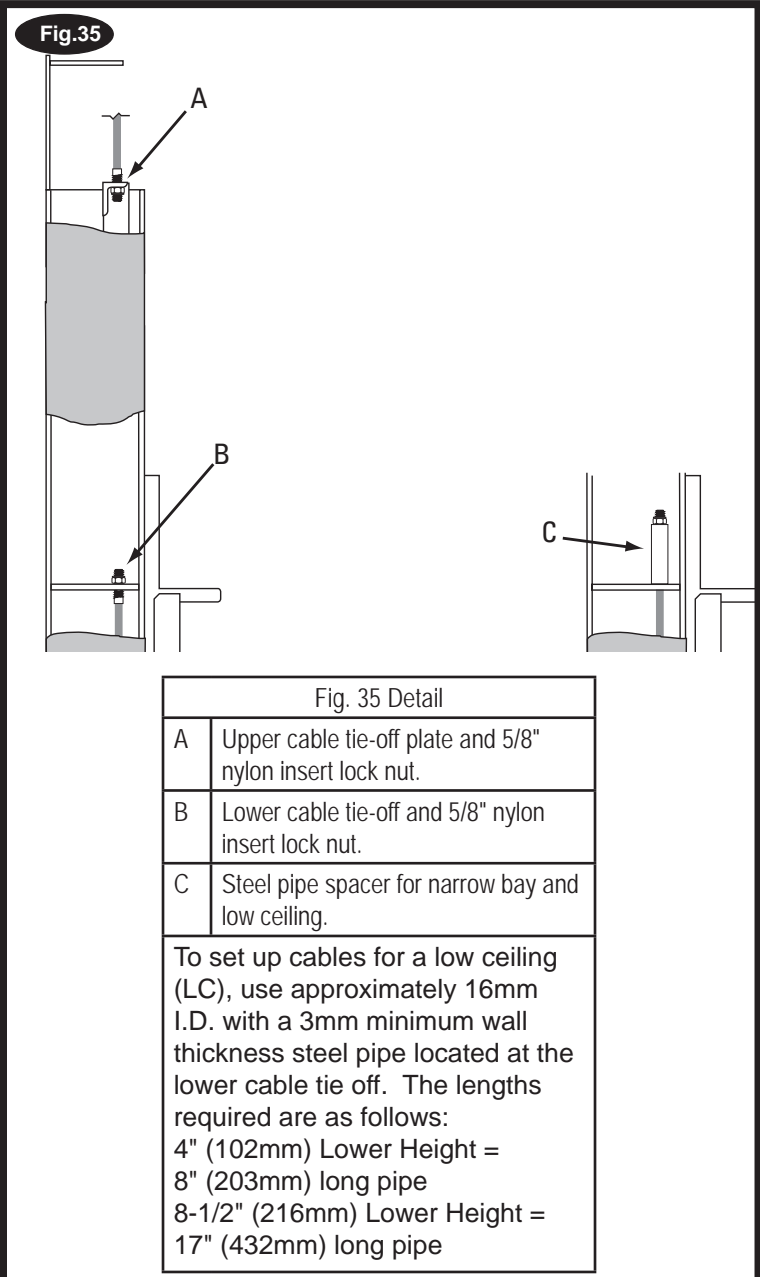
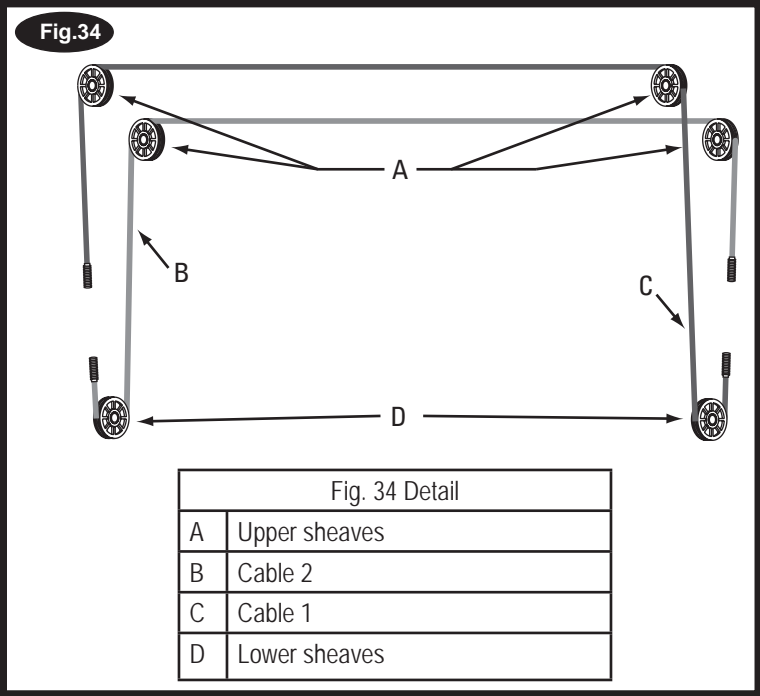
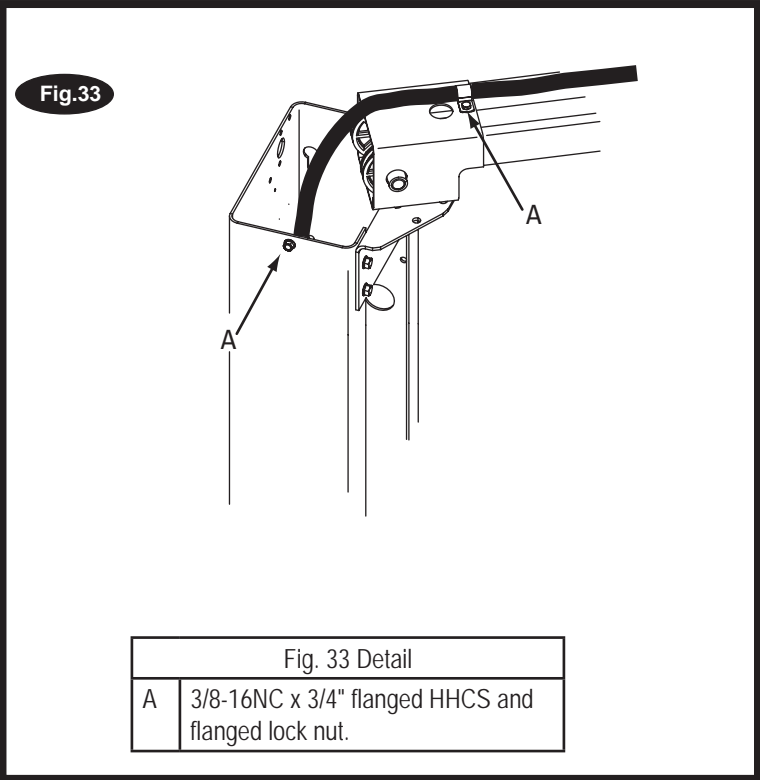
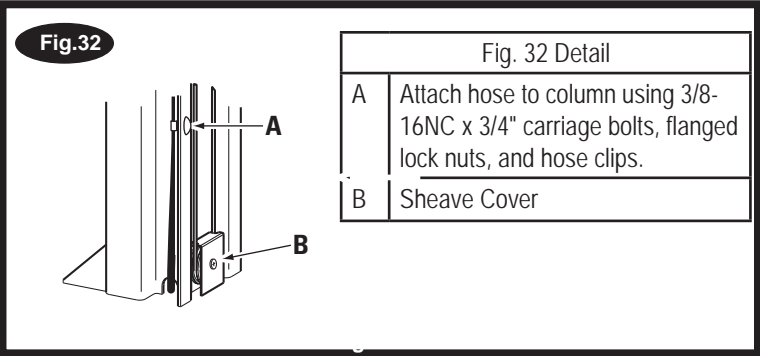


Fig. 31 Detail
Hose Routing For E&M Series Lifts

Item	Quantity	Description
1	2	Hydraulic Cylinder
2	1	Power Unit Hose
3	1	Overhead Hose
4	1	Branch Tee
5	6	Hose Clips
	6	3/8-16NC x 3/4" Carriage Bolts
	6	3/8-16NC Flanged Lock Nuts
6	4	Hose Clips
	4	3/8-16NC x 3/4" HHCS
	4	3/8-16NC Flanged Lock Nuts
7		Fill Breather Cap
8		Hose runs down approach side to cylinder on left column.
9		Cylinder bleeder.

11.8 Assemble the equalizing cables.

- 1. Remove sheave cover, Fig. 32.
- 2. Refer to Fig. 34 for the general cable arrangement. First, run a cable end up through the small hole in the lower tie-off plate, Fig. 35.
- 3. Push the cable up until the stud is out of the carriage top opening.
- 4. Run a nylon insert lock nut onto the cable stud so 13mm of the stud extends out of the lock nut.
- 5. Pull the cable back down, Fig. 35.
- 6. Run cable around the lower sheave, then up and around overhead sheave and across and down to the opposite carriage, Fig. 34. Install sheave cover, Fig. 32.
- 7. Fasten the cable end to the carriage upper tie-off bracket. Tighten the lock nut enough to apply light tension to the cable.
- 8. Repeat procedure for the second cable. Adjust the tension of both cables during the final adjustments in Chapter 12 commissioning.



11.9 Assemble the locking latch cables for M version.

1. Install latch cable sheave, sheave covers, and retaining rings in upper slot of power unit column as shown, Fig. 36.
2. Slip loop end of cable over end of shoulder screw on right side latch control plate, Fig. 37.
3. Feed the other end of the cable through the latch cable sheave slot making sure that the cable is running between the bottom side of the latch cable sheave and sheave cover then inside the right column, Fig. 37.

Fig. 36

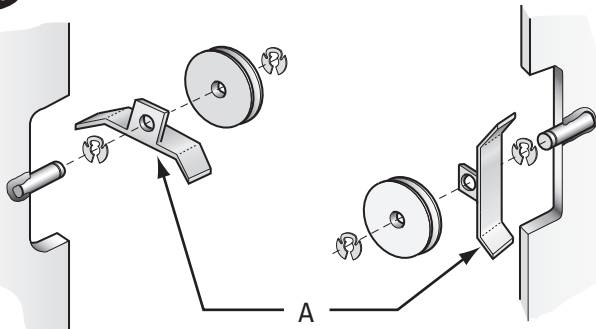


Fig. 36 Detail

A	Sheave Covers
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Fig. 37

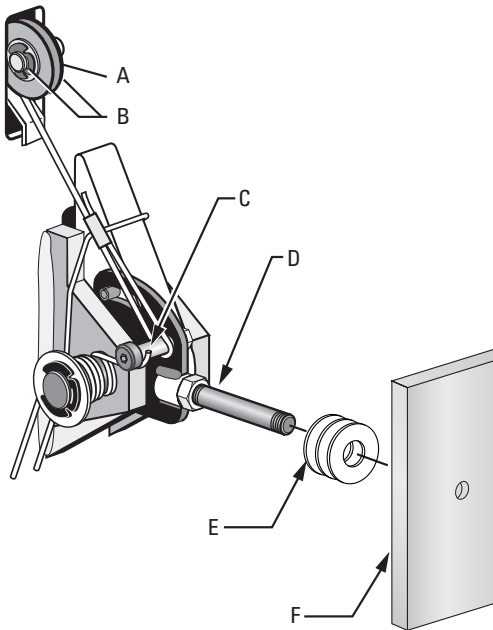


Fig. 37 Detail

A	Latch Cable Sheave
B	((2) 3/8" Retaining Rings
C	Shoulder Bolt
D	Install latch handle using a 3/8" hex jam nut to lock in place. Then install spacer nut and slot cover.
E	1/2"=13NC Jam Nut
F	Slot Cover

4. Attach latch cable conduit guide brackets to overhead as shown, Fig. 38 & Fig. 39. Always use the holes on the approach side of the lift. HHCS should be in hole nearest the center of the overhead, Fig. 39.
5. Route cable up inside column and through the latch cable guide, Fig. 38 & Fig. 39.
6. Continue routing cable to the left column latch cable guide, Fig. 38 & Fig. 39, routing the cable through the left column latch cable guide, Fig. 39.

IMPORTANT

Using wire ties provided, tie off cable guide to column extension as shown, Fig. 39. Guide must be attached in hole closest to the outside edge of the column on the NON-APPROACH side.

7. Bring the cable down inside the left column and feed the end of the cable through the lower latch cable sheave slot so that the cable is now back outside the column, Fig. 40.
8. Install latch cable sheave and retaining rings in lower slot of non-power unit column as shown, Fig. 40.

Fig. 38

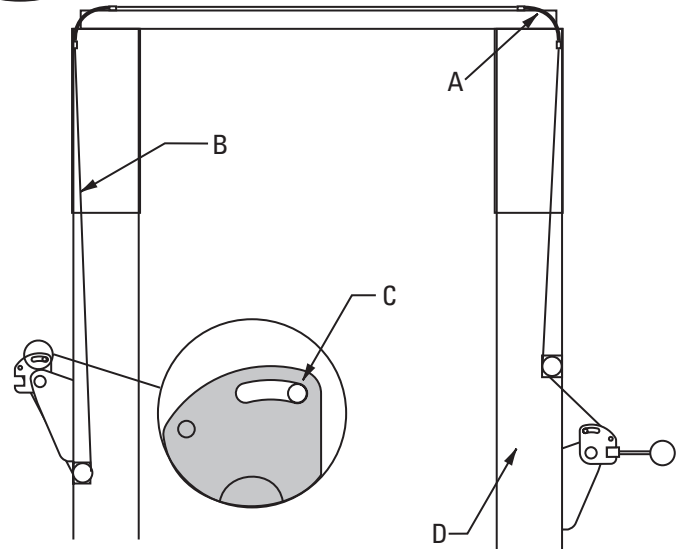
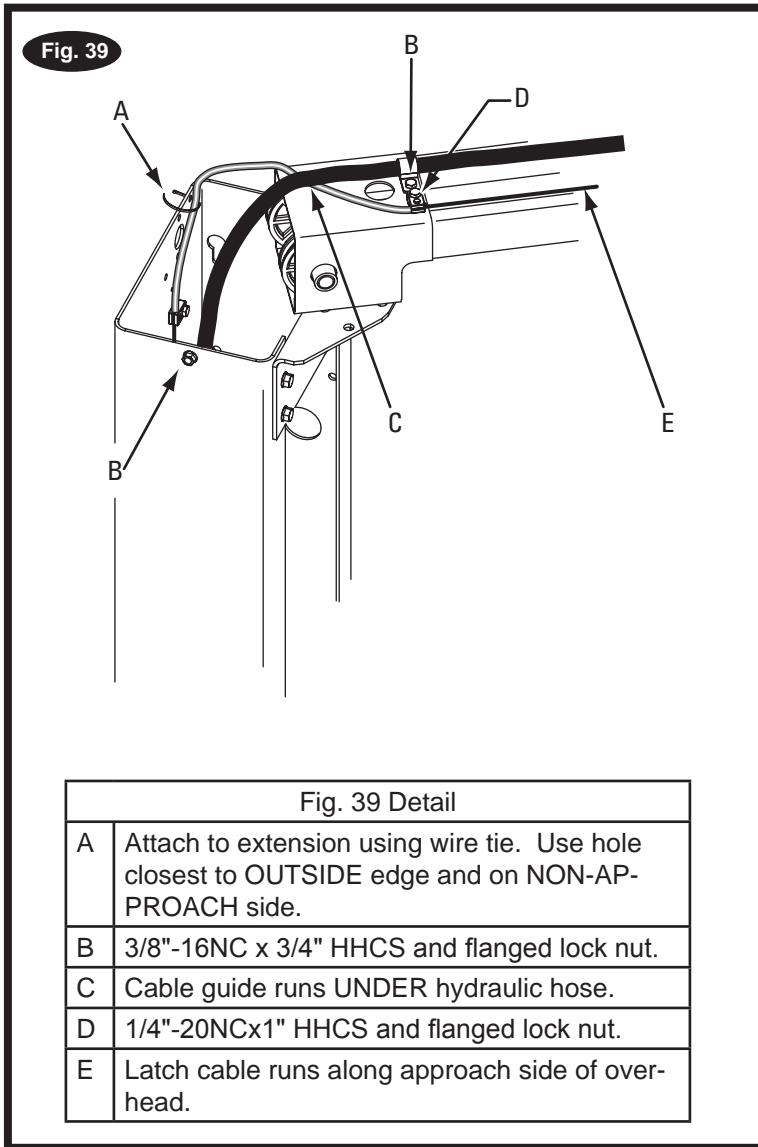


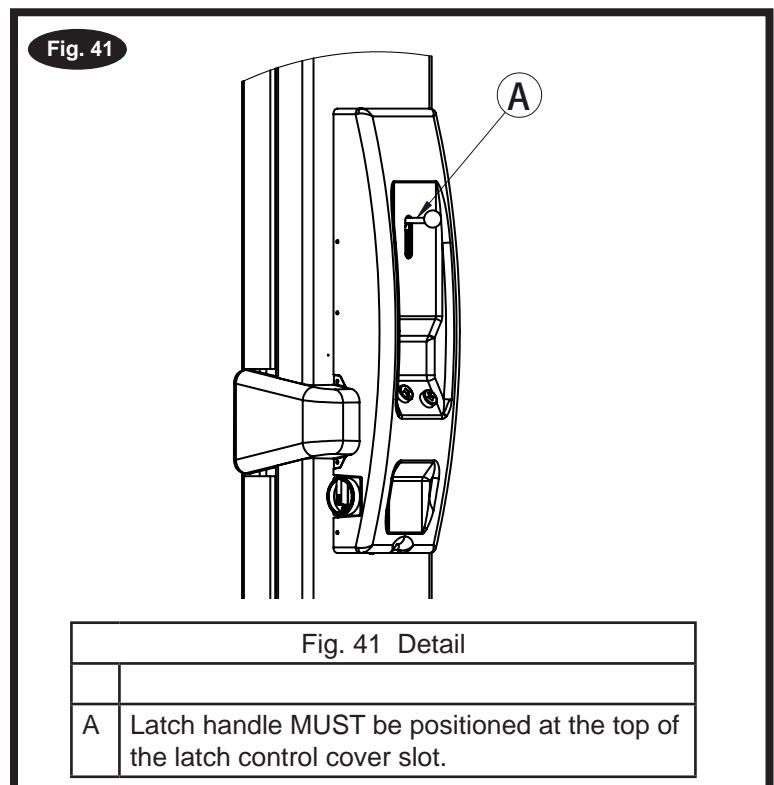
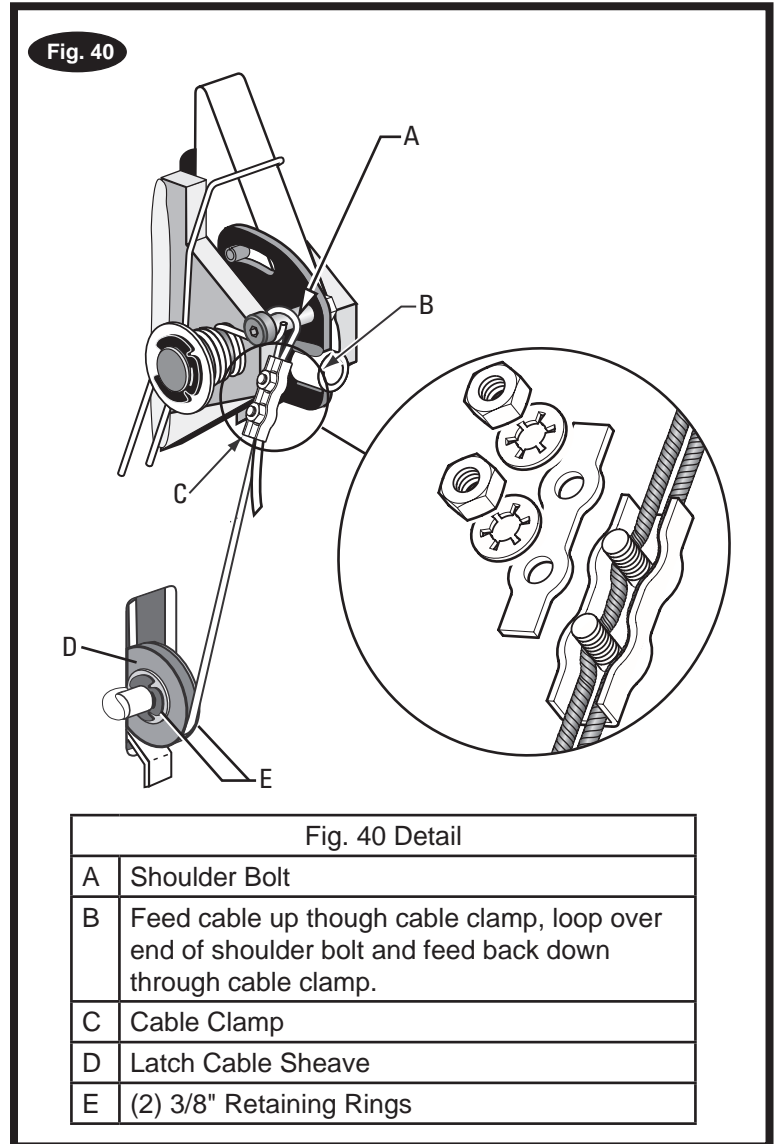
Fig. 38 Detail

A	Latch Cable Conduit Guide
B	Latch Cable
C	Notice the clearance removed between the control plate slot and the latch dog pin.
D	Right Column

9. Route cable under the bottom side of the latch cable sheave, Fig. 40.
10. At this point you **MUST** install the latch handle, jam nut, and right column latch cover Fig. 41. Install latch handle ball, Fig. 41.



11. Insert cable in cable clamp along one side, loop around shoulder screw and back down, inserting cable along other side of cable clamp, Fig. 40. Place top back on clamp, barely tightening.
12. Next, pull the control plate down, Fig. 38 & Fig. 40, to eliminate any clearance between the control plate slot and the latch dog pin, Fig. 38.
13. Using Pliers, pull cable tight and secure the clamp close to the shoulder screw. Tighten clamp.



11.10 Assemble the electrical connections



DANGER

Risk of electrocution. Faulty electrical work may lead to critical injury and also to damage to property.

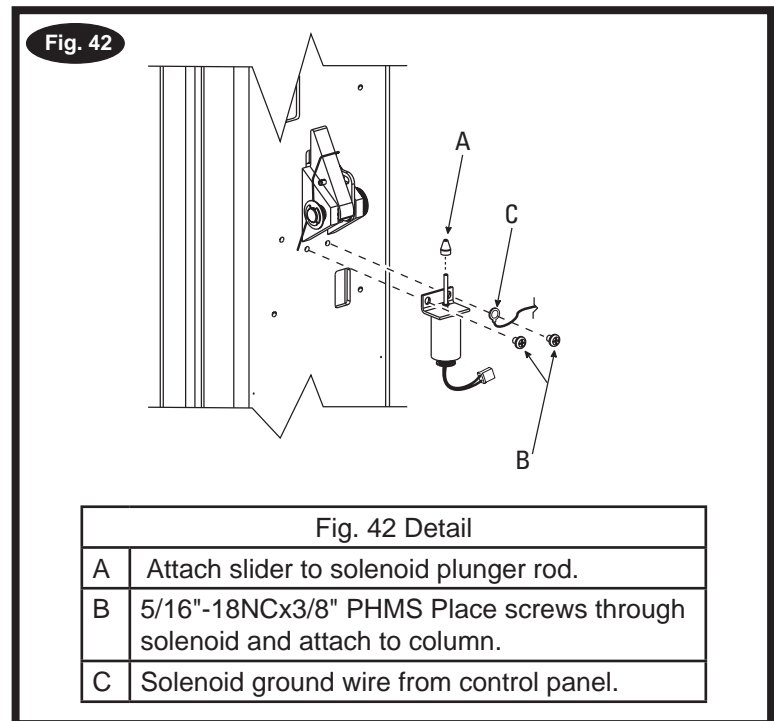
- ➔ Always follow the instructions below. Proper installation and commissioning must be documented in the inspection logbook.
- ➔ Use the form "Initial safety inspection before installation"

1 Safety instructions for connecting power cables

- Electrical connection work may only be carried out by qualified electricians.
- Before commissioning, check the mains voltage of the building wiring. This must match the specified post lift voltage (→ see Annex).
- The connection to the mains supply must be hard-wired!
The mains supply cable from the fuse box to the control box of the post lift must be hard-wired according to the wiring diagram. No plug outlets must be used.
- The motor is designed for clockwise phase rotation. The direction of rotation must be checked during connection (if necessary, reverse the polarity!).
- A motor protection switch designed for rated current and rated voltage must be fitted as overload protection. This must be provided by the lift user (not supplied).
- All leads/cables/hoses must be routed in cable conduits. Trip hazards must be avoided in the traffic and work zone.
- As with all electronic equipment, the inbay control modules can be affected by voltage irregularities. It is the lift owner's responsibility to ensure that adequately protected power sources are available for connecting this equipment.
- Use separate circuit for each power supply. Protect each circuit with time delay fuse or circuit breaker by lift owner.

1 Assemble the solenoids (for E version)

- Attach solenoids under locking latches of both columns, Fig. 42. Place sliders onto solenoid plunger rods. Place solenoids onto columns and tighten, Fig. 42.



2. Installing Control Panel & Tool Holder

- Fasten the control base plate using 5 pcs 5/16"-18NC*3/8" PHMS ,Fig 43&44 . for M version only master side.
- Fasten the air tool holder by 2 pcs 5/16"-18NC*3/8" PHMS ,Only for Everiosn lift.
- Install the plug for solenoids (E version), control panel,
- Routing the Motor cable ,power harness cable and control connection cable from control to the top of column and round to crossbeam. (for M version , no cable round over crossbeam),Fig43 & Fig 44.

Fig. 43

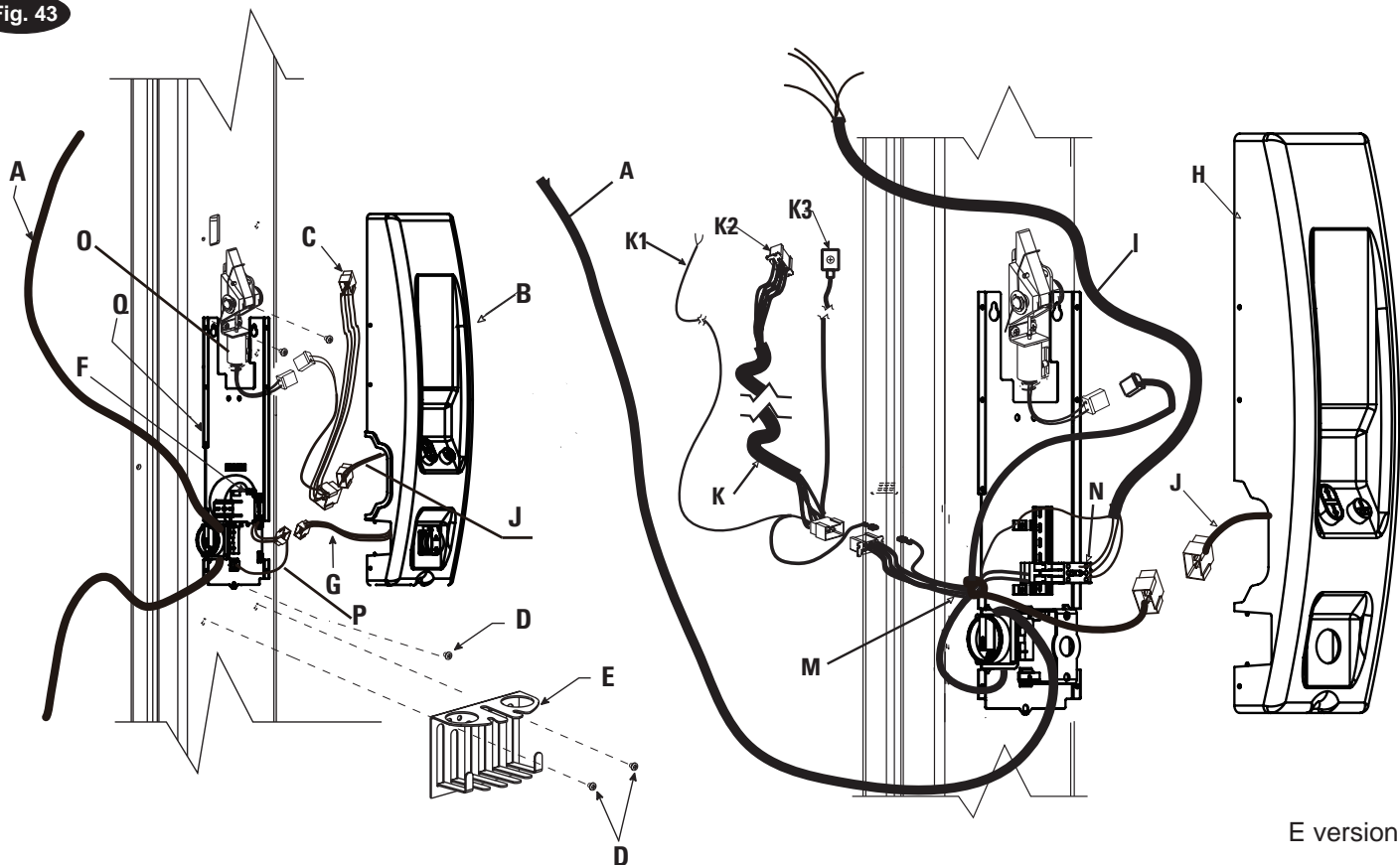


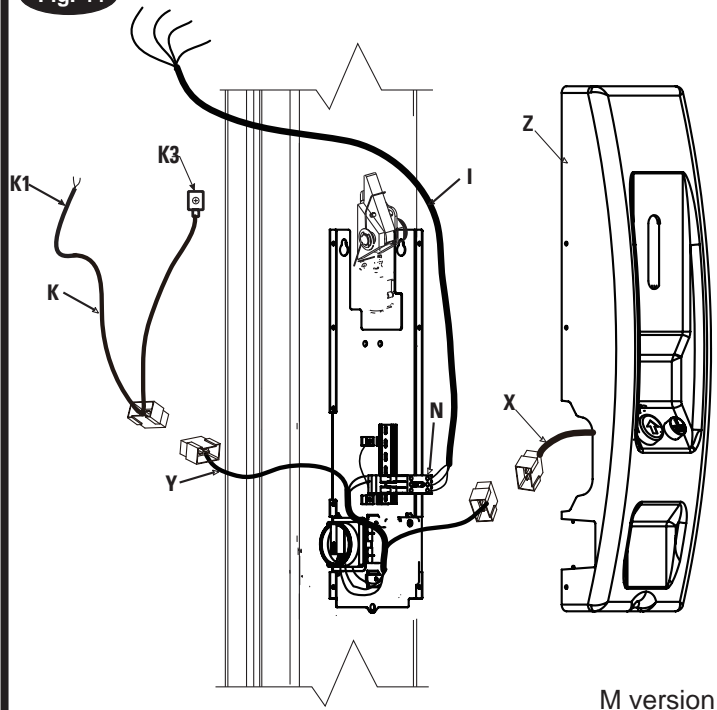
Fig. 43 Detail

A	Power Harness Cable,SPO55E-N-DQSL3-2
B	Slave side control cover, SPOA-PC7
C	Control Harness Cable,SPO55E-N-DQSL3-1
D	5/16"-18NCx3/8" PHMS
E	Tool Holder
F	Leakage Protection on slave side,PLD10-16/1N/C/003
G	Socket Harness Cable,SPO55E-N-DQSL2-4
H	Master side control cover, SPOA-PC8
I	Motor Cable,SPO55E-N-DQSL1-5
J	Swicth Harness cable,SPO55E-N-DQSL1-1

Fig. 43 Detail

K	Control connection harness cable,SPO55E-N-DQSL1-4
K1	: to overhead switch
K2	: To Slave side "C" cable
K3	:Lowering Valve cable
M	Master side control cable,SPO55E-N-DQSL1-2
N	Contactor XTCG018C00DT
O	Solenoid
P	Connection Cable SPO55E-N-DQSL2-3
Q	Control base plate

Fig. 44



M version

Fig. 44 Detail

K	Control connection harness cable,Control-SPOA40M-DQ2-1
	K1 : to overhead switch
	K3:Lowering Valve cable
N	Contactor XTCG018C00DT
I	Motor Cable,SPO55E-N-DQSL1-5
X	Switch Harness cable,Control-SPOA40M-DQ2-2
Y	Control Harness cable,Control-SPOA40M-DQ2-5
Z	Control cover,SPOA-PC5

Fig. 45

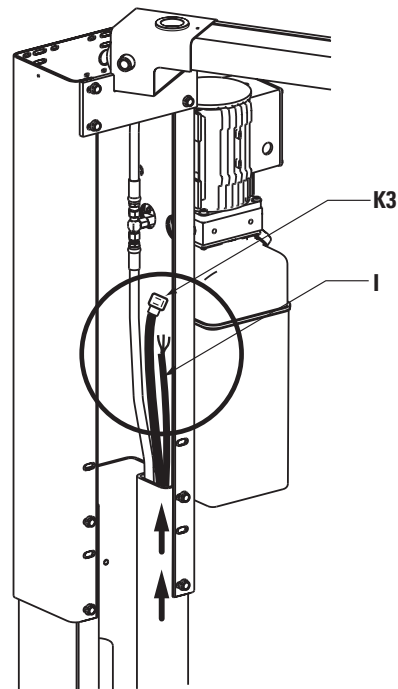
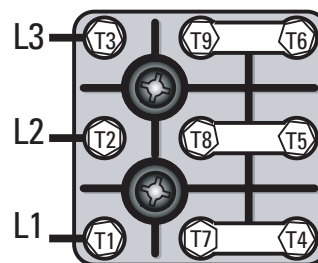


Fig. 45 Detail

	Master control wire routing follows hydraulic hose routing
I	Motor Cable
K3	Lowering Valve cable

Fig. 46



High Voltage
400V, 50Hz

3.Routing Motor cable and overhead cable

- From the master control panel route cables up through column along the hose routing, Fig. 44.
- Locate the overhead switch cable at the master cable connector. Feed the overhead switch cable through the strain relief and into the overhead switch box, Fig. 47.
- Attach lowering valve cable to lowering valve and tighten screw on top, Fig. 47.
- Run the motor cable through strain relief in the motor junction box. Motor wiring and wire diagrams are detailed in, Fig. 46.

Fig. 47

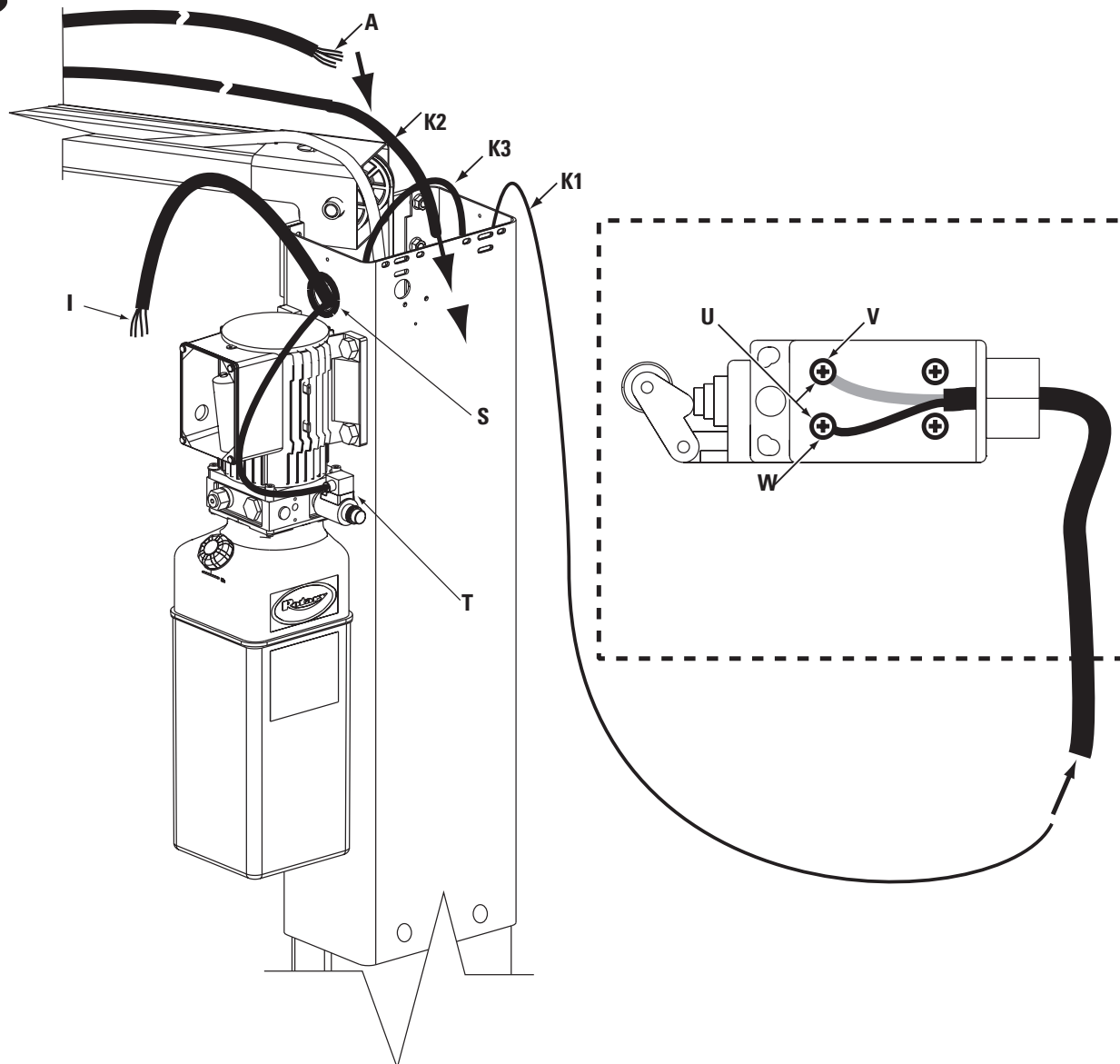
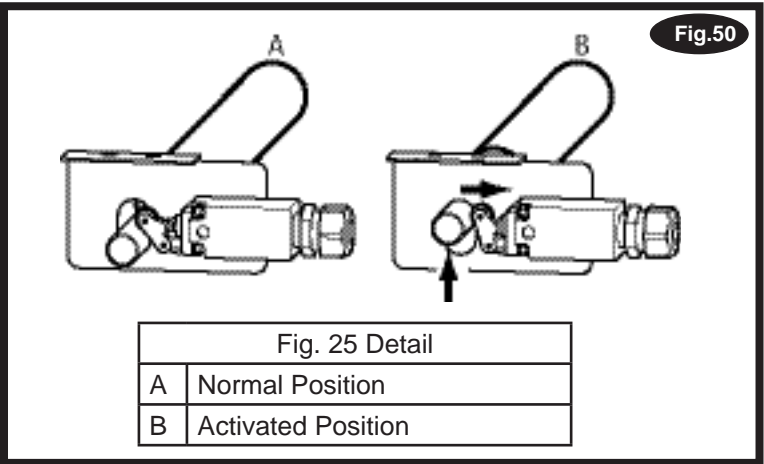
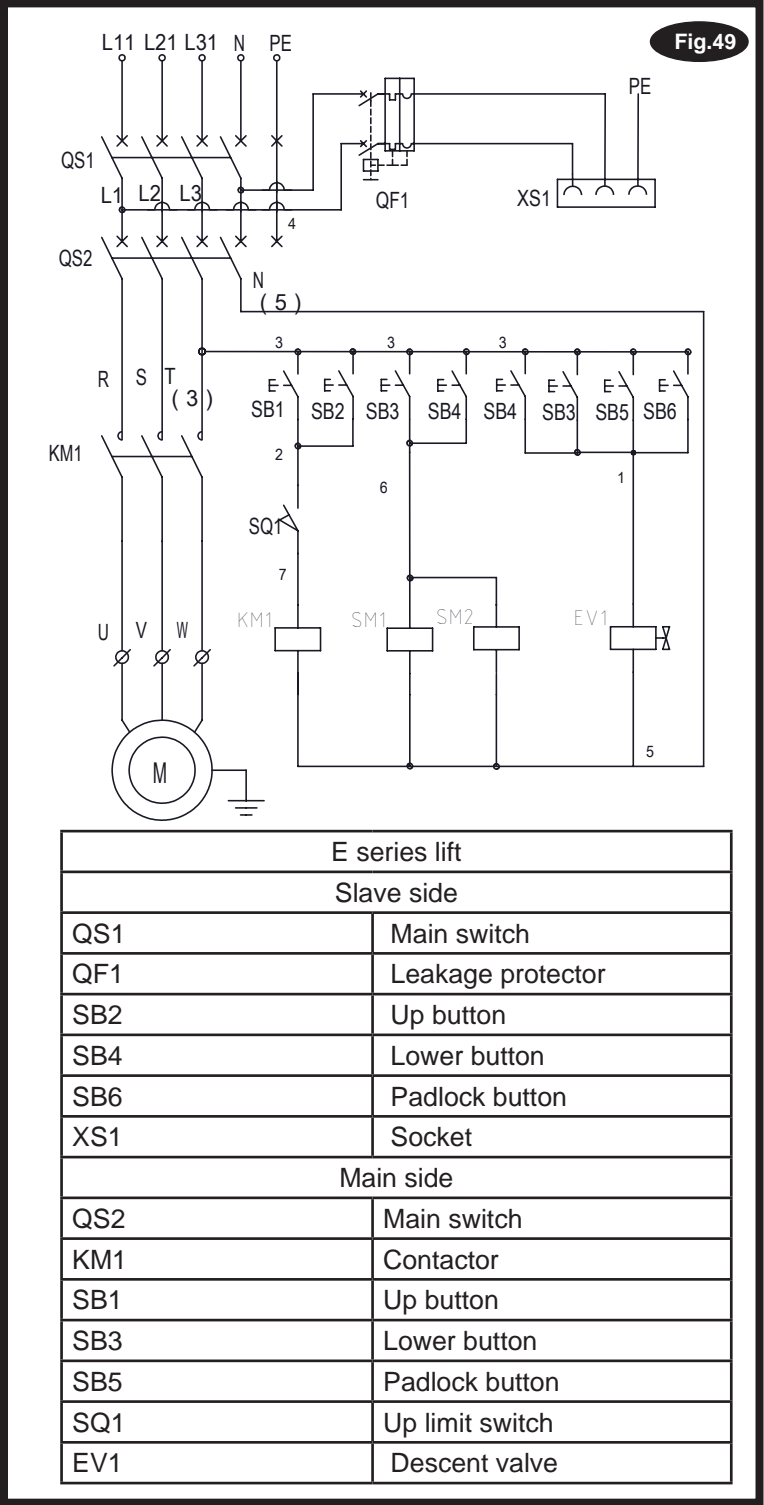
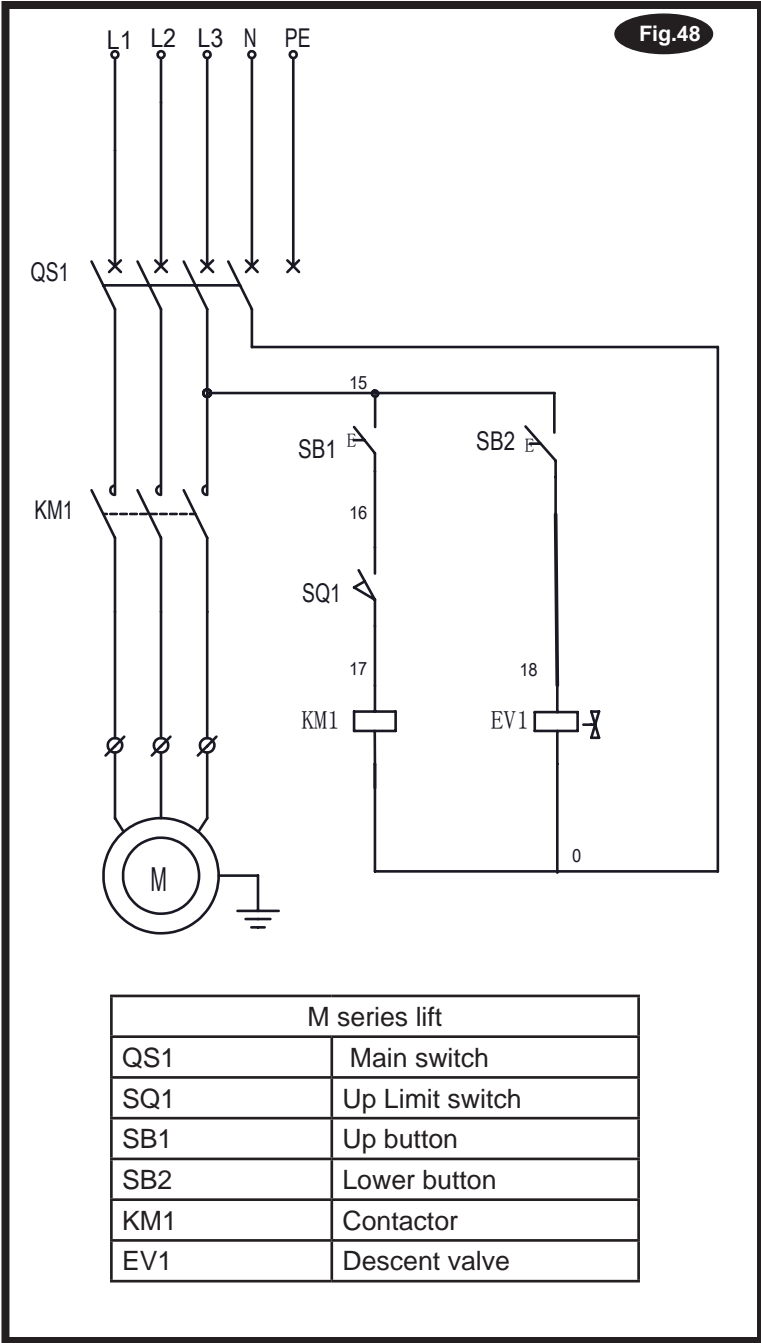


Fig. 47 Detail		Remark
A	5 wire power connection from slave control panel.	E version
I	4 wire from master control panel goes through strain relief into junction box on powerunit motor.	E&M Version
K1	Connection Cable from Master side to overhead switch	E&M Version
K2	Connection Cable from Master side to Slave side	E version
K3	Connection Cable for lowering valve on the PU	E&M Version
S	Grommet Note: Secure all cables coming up from master control panel to grommet hole with a wire tie when hook-up is complete.	E&M Version
T	Plug in lowering valve cord and tighten screw on top to lock in place.	E & M Version
	Overhead Limit Switch	E&M Version
U	N.O. Contacts	
V	White Wire	
W	Black Wire	

4.Assemble the overhead switch

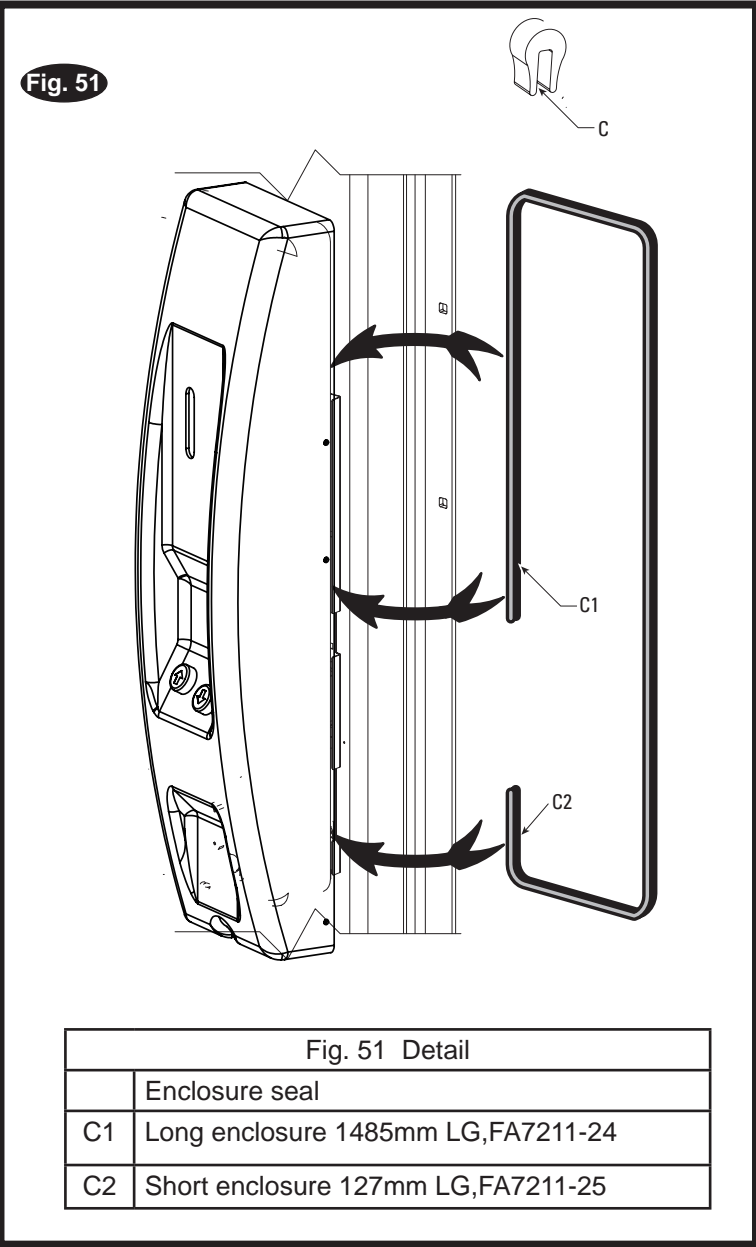
- Check overhead switch assembly to assure that switch bar activates the switch when raised. Switch is wired normally closed and will cut off motor when activated, see Fig. 48, 49, and Fig. 50.



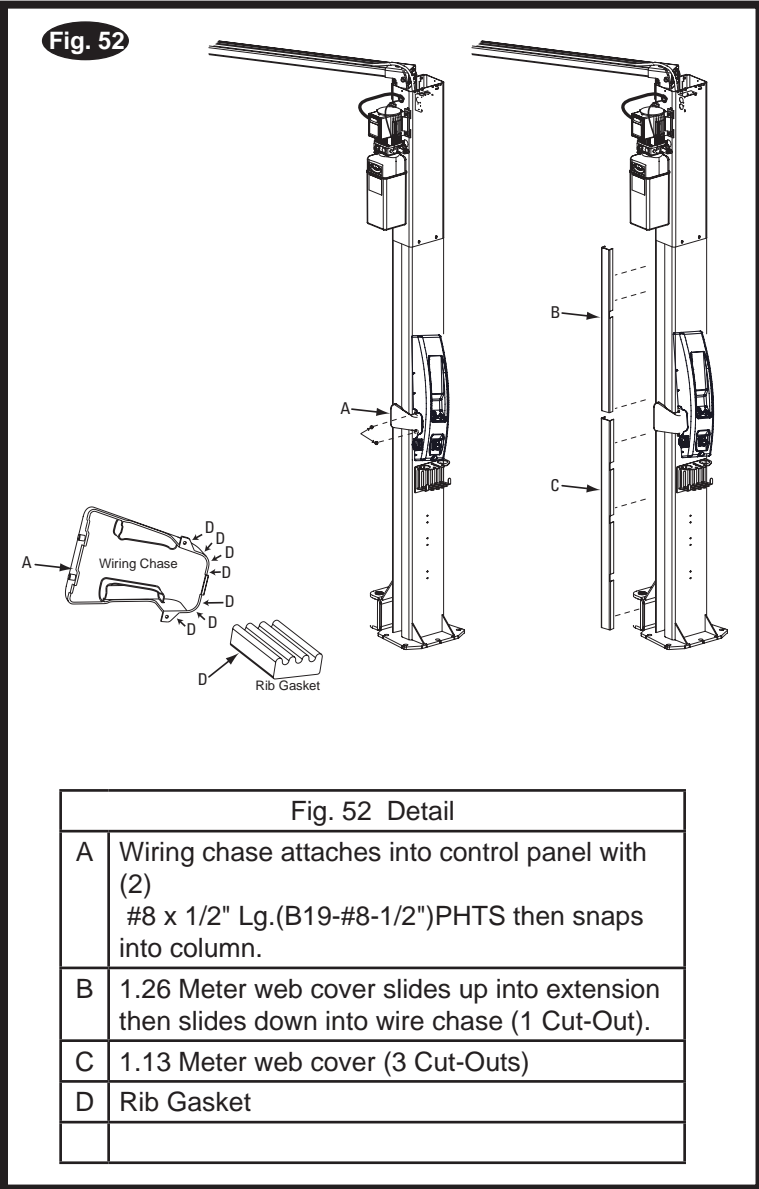
11.11 Installing Gaskets , web cover and wire chase

i These gaskets must be installed to maintain CE certification.

- Route the plastic gaskets around edge of control cover by 4 turns. Close the cover to base plate on the column,Push tighten by hand ,then use screw to attached panel to the back plate.Fig 51.



- Start by wire tying all the wires and hoses neatly and out of the way of the cables. Place edge and rib gaskets around wire chases. Take one of the wire chases and attach it to one of the control panels with two #8- x 1/2" Lg. PHTS. It may be necessary to remove the cover of the control assembly to install the wiring chase and maintain seal position. Snap the front of the wire chase into the column. Next slide the 1 meter cover up into the column extension and then down into the wire chase. Repeat for other column. Adjust covers accordingly to make sure hoses and wires are covered. Fig. 52.



11.12 Installing the arms & restraints

- Before installing arms, raise carriages to a convenient height. Grease swivel arm pins and holes with Lithium grease. Slide arm into yoke, Fig. 53. Install 1-3/4" diameter arm pin(s), Fig. 53.
- After installing arms and pins, install arm Restraint Gears as follows: Install Restraint Gear onto arm clevis, as shown, Fig. 54. Ensure side of gear marked TOP is facing upward, Fig. 54.

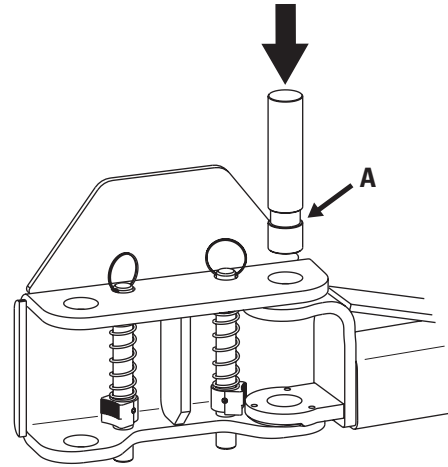


TOP is stamped on top side of gear. You may need to pull up on the pin-ring to allow enough room to install Restraint Gear.

- Then, install the (3) 3/8"-16NC x 1-1/2" grade 8 HHCS (12 total for all 4 arms) and 3/8" Spring Lock washers into the gear and arm, but do not tighten. Reference Fig. 55, Fig. 56, and Fig. 57.

Torque the Restraint Gear bolts to 30-34 ft.-lbs.

! CAUTION



A **IMPORTANT** Installation Pinch Point Keep Hands Above Groove

Fig. 53

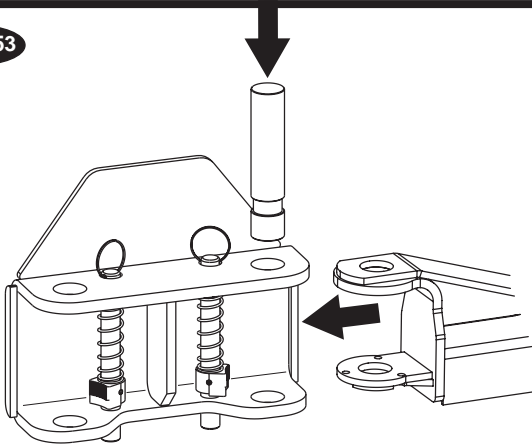


Fig. 55 .

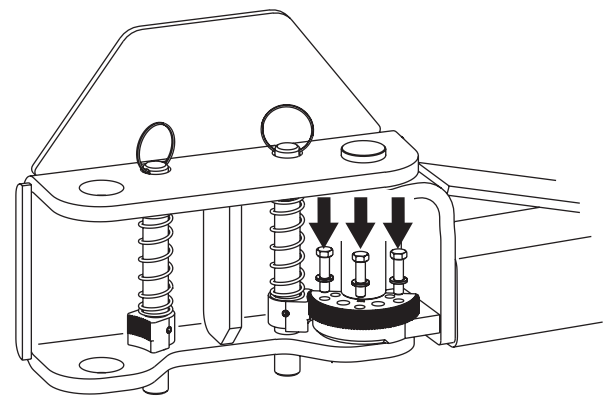


Fig. 54

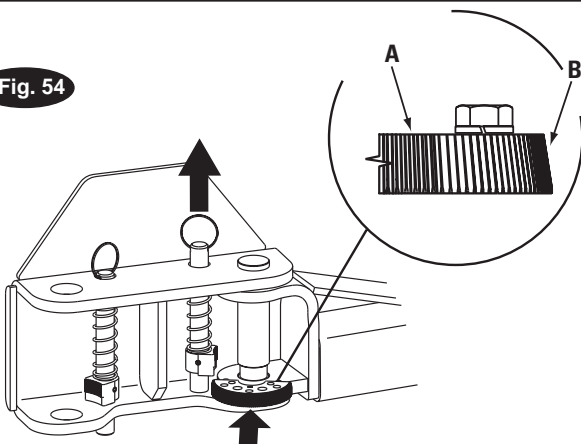


Fig. 54 Detail

A	TOP will be marked on top side of restraint gear.
B	NOTE beveled gear orientation



To check operation of arm restraints, raise carriage 25 min. from full down position. Pull up on pin-ring and adjust arms to desired position. To engage restraint, let pin-ring down allowing gear teeth to mesh together. It may be necessary to rotate arm slightly to engage gear teeth.



Pin & Ring, Spring, & Gear Block are all pre assembled.



CAUTION Once arm is installed in yoke, pull up actuator pin and swing arm fully around, being sure that the Restraint Gear and Gear Block always stay aligned. If they do not stay aligned, remove restraint gear and install in the opposite position.

Fig. 56

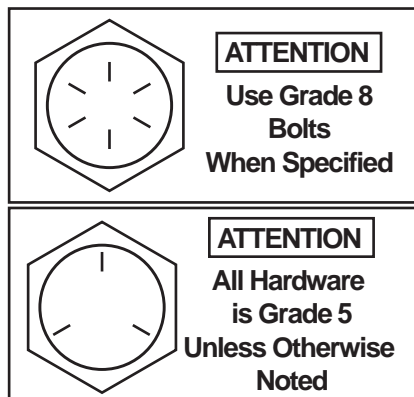


Fig. 57

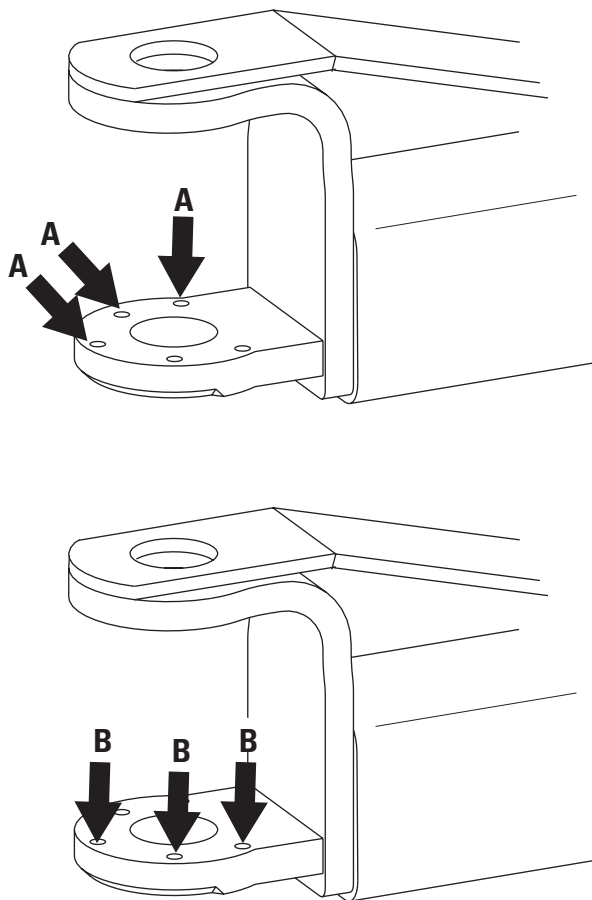


Fig. 57 Detail

A	Use holes marked with arrow for Right Front and Left Rear.
B	Use holes marked with arrow for Left Front and Right Rear.

11.13 Installing others

- Arm Guard Installation: Install arm guards, Fig. 58.

Fig. 58

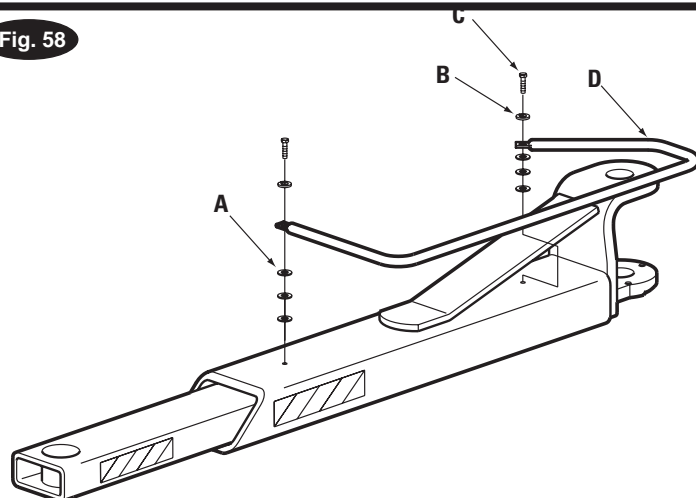


Fig. 58 Detail

A	(6) 5/16" Flat Washers
B	(2) 5/16" Spring Lock Washers
C	(2) 5/16"-18NC HHCS (per arm)
D	Arm Guard (For SPO40M the different arm guard goes on the right front arm, see Fig. 2b)

- Arm Rotate stop: Install hex bolt M8*25 Fig. 59.

Fig. 59

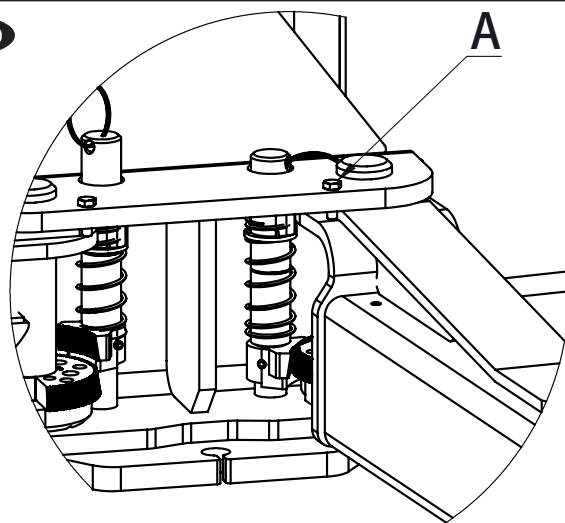


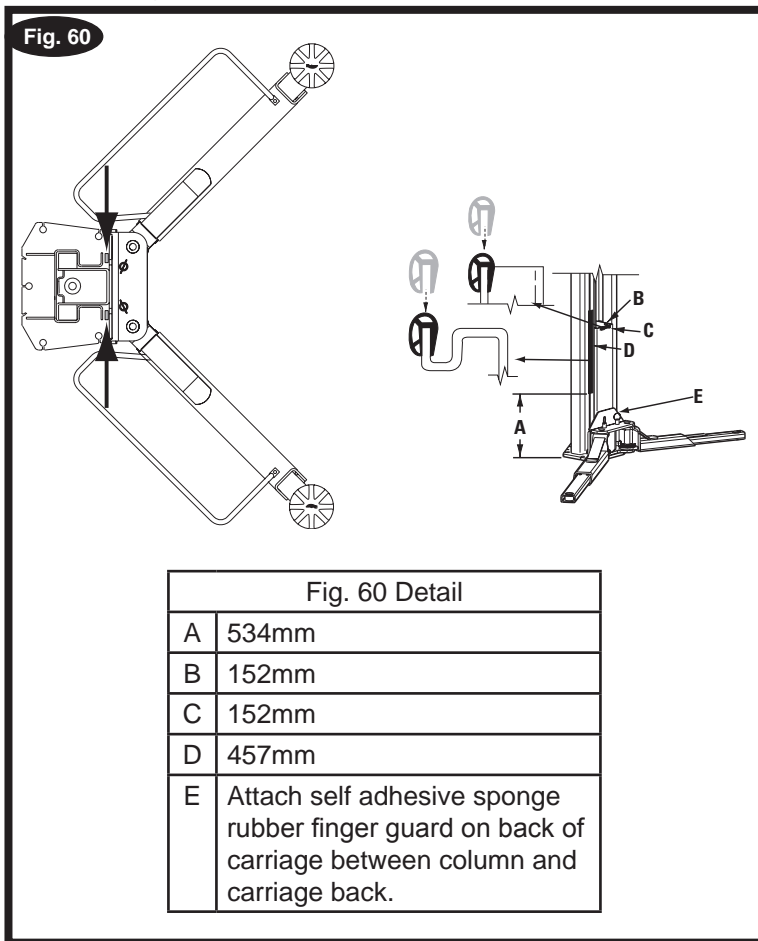
Fig. 59 Detail

A	Hex bolt M8*25,B10-8*25
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For avoidance unfavourable centre of gravity positions of the to be lifted vehicles, the 4 screws as stop for each arm as shown to mount on the upper support plate of the carriages.

- Door Bumper Installation Fig. 60.
 1. Press 457mm bumper on column edge,
 2. Press 152mm bumper on top front edge and top side of carriage tube.
 3. Press bumper back side of carriage between carriage and column as shown.



- Latch Release Decal For M Series Lifts: Install latch release decal on cover above latch release handle, Fig. 61.

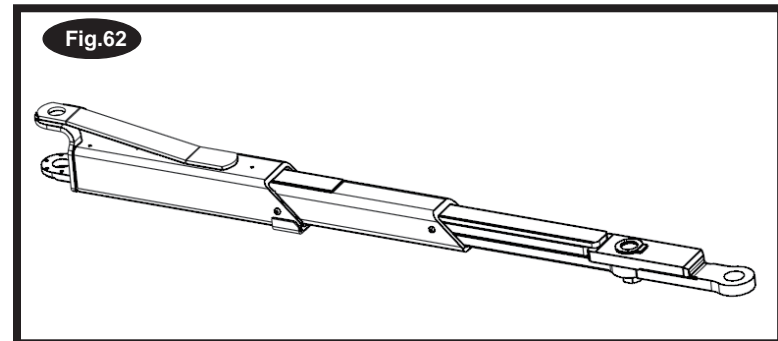


11.14 Installing arm extension



Arm extension as accessory ,if need ,please contact sale .

- Use the extension only as shown on the Fig.62. After positioning the pin in the extension and lifting arm hole ,fix the shim and nut by hand on the opposite side.



- Use only one extension per lifting arm and only in the position shown Fig.62.
- The extension must be fixed under the flat steel on the top of the lifting arm.
- The extension must be in line with the lifting arm-- it is very important to follow this rule.
- The lifting arm with the extension has a maxim capacity of 1670kg(SPO54) and 1875kg(SPO55). it is very dangerous to overload.



We can not be held responsible for damage or accidents caused by failure to follow these instructions.

12. Commissioning

12.1 Check Operation

Operate lift and assure that push button raises lift when pushed and stops lift when released. Check disconnect switches for cutting power to push-buttons. Also check that overhead switch stops lift from raising when actuated and that lift regains power when deactivated.



Lubricate the surface of slide between columns and slider before commissioning. It can be applied by brushing. This can significantly increase the service life of the lift.

12.2 Test the hydraulic system

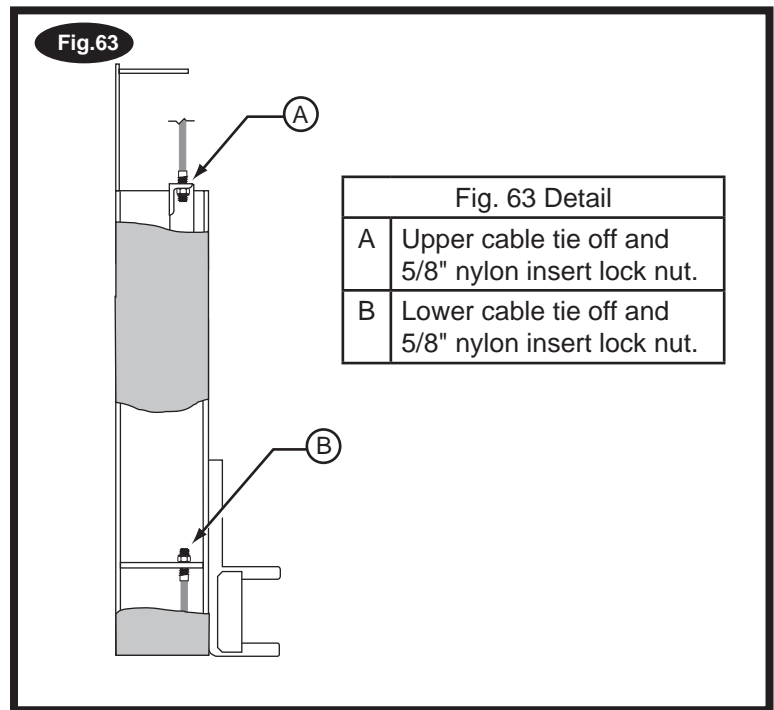
1. Set the main switch to ON.
2. Move the unloaded lift to full rise and the bottom position several times using the Up and Down buttons. This will completely remove any air pockets in the hydraulic system.
3. Press up button to raise lift to full rise and keep motor running for 5 seconds. Stop and check all hose connections. Tighten or reseal if required.
4. Carry out a visual inspection of the hydraulic and pneumatic system. In doing so, check all lines, especially the couplings. No leaks must be found.
5. Lower the lift completely and check the hydraulic oil level. This must also correspond to the maximum level.
6. Finally check that the hydraulic components are fitted securely.

12.3 oil bleeding

Press Up button to raise lift about 600mm Open cylinder bleeders approximately. 2 turns, Fig. 31. Close bleeders when fluid streams. Press on the down button to fully lower lift. Fill tank until it reaches the MIN _____ mark on the tank. Replace fill-breather cap.

12.4 Checking and Adjusting Equalizer Cables

Raise lift to check equalizer cable tension. Below carriage, grasp adjacent cables between thumb and forefinger, with about 67N effort you should just pull cables together. Adjust at upper tie-offs (Fig. 63).



12.5 Checking and Adjusting Latch cable for M series

1. Raise carriages past the first latch position and then lower onto latches.
2. Check that the latches have fully engaged when the latch handle is released. Be sure carriage is resting on latch dog.
3. Raise carriages fully off latches, actuate latch handle and check that the latches have fully disengaged.
4. Make necessary adjustments if required, see Fig. 66, recheck latch function. Latch handle must be positioned at the top of the latch control slot, Fig. 65.
5. Pull Control Plate down, making sure the Latch Dog itself does not move, to eliminate clearance between Control Plate slot and Latch Dog pin (Fig. 64). Loosen clamp and remove slack in the cable. Tighten the clamp.

Fig. 64

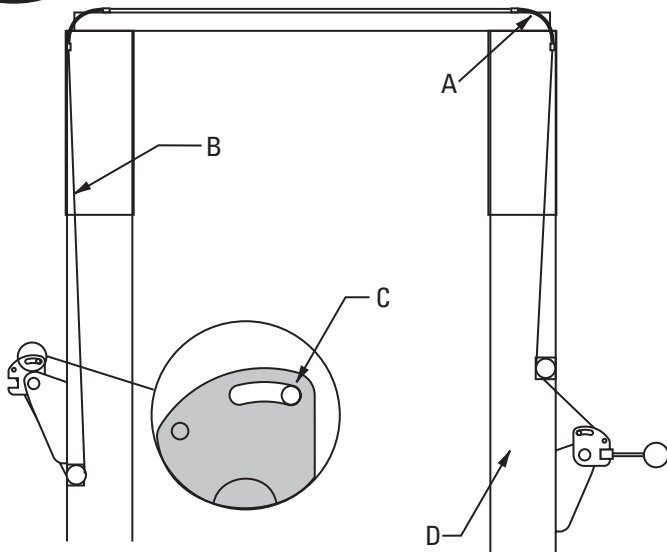


Fig. 64 Detail

A	Latch Cable Conduit Guide
B	Latch Cable
C	Notice the clearance removed between the control plate slot and the latch dog pin.
D	Right Column

Fig. 66

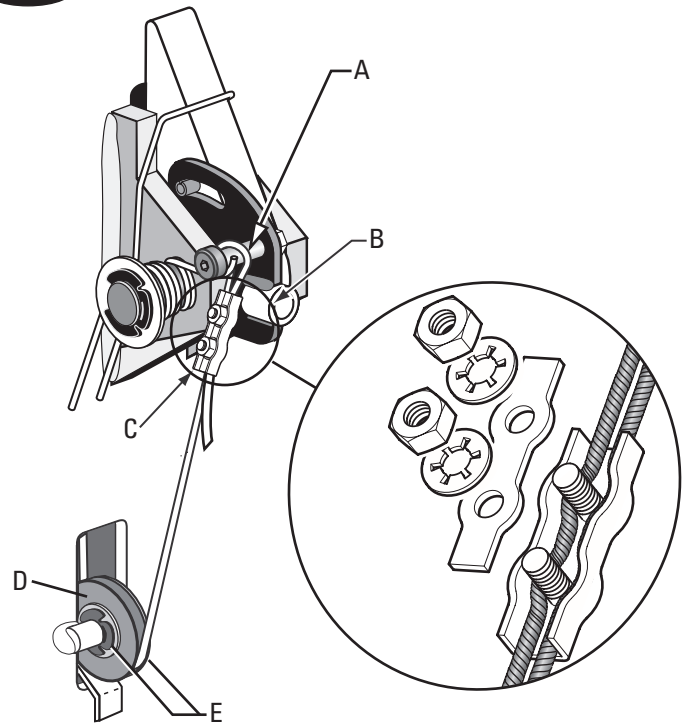


Fig. 40 Detail

A	Shoulder Bolt
B	Feed cable up through cable clamp, loop over end of shoulder bolt and feed back down through cable clamp.
C	Cable Clamp
D	Latch Cable Sheave
E	(2) 3/8" Retaining Rings

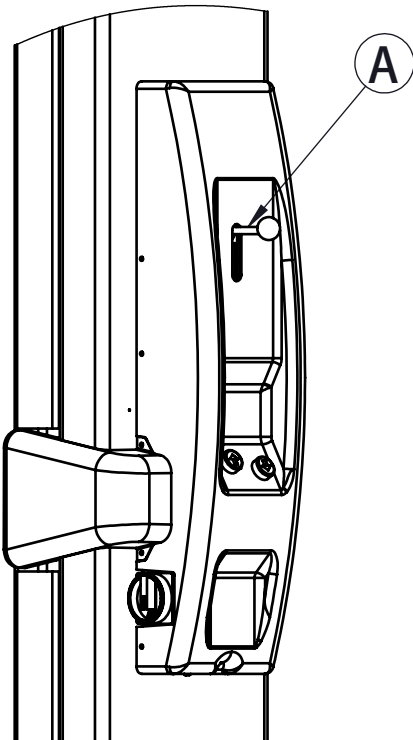


Fig. 65 Detail

A	Latch handle MUST be positioned at the top of the latch control cover slot.
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13. Disassembly

- Disassembly work may only be carried out by authorized qualified staff.
- Only qualified electricians may work on the electrics.
- Only trained persons with specialist knowledge of hydraulics/pneumatics may work on the hydraulic or pneumatic equipment.

1. To carry out disassembly work, switch off the equipment at the main switch (position OFF).
2. Attach a warning sign to prevent reconnection.
3. Disconnect the electricity supply.
4. Disconnect the electricity supply.



Risk of fatal injury through incorrect disassembly of hydraulic components. These are pressurized (up to 200 bar).

- Never disassemble hydraulic components (lift cylinders). These should always be detached as a single component.
- The lift cylinder should only be properly disposed of by a certified company.

5. Empty the hydraulic oil tank, drain the hydraulic oil from the hydraulic hoses. Dispose of the hydraulic oil as described in Chapter 14.
6. Remove grease and other chemical substances. Dispose of as described in Chapter 14.
7. Disassemble lift columns, cross beams and arms .

14. Disposal

14.1 Environmental procedures for disposal

- Prevent environmental hazards.
- Avoid contact with or inhalation of toxic substances such as hydraulic fluid.

- Oils and lubricants are water pollutants under the terms of the Water Management Act WGH. Always dispose of these in an environmentally friendly manner in compliance with the regulations which apply in your country.
- Hydraulic oil-based on mineral oil is a water pollutant and is combustible. Refer to the relevant safety data sheet for disposal.
- Provide suitable oil drain pans and oil absorbents to drain the oil.
- Ensure that no hydraulic oil, lubricants, or cleaning materials contaminate the soil or wash away into the drainage system.

14.2 Packaging

Do not dispose of with domestic waste! The packaging contains some recyclable material which must not be disposed of with domestic waste.

1. Dispose of packaging materials in compliance with local regulations.

14.3 Oils, grease, and other chemical substances

1. When working with oil, grease and other chemical substances, comply with the environmental regulations which apply to the relevant product.
2. Dispose of oil, grease and other chemical substances in compliance with the environmental regulations which apply in your country.

14.4 Metals / Electronic waste

This must always be properly disposed of by a certified company.



Dispose of used electrical and electronic devices, including cables, accessories and batteries, separately from household waste.

NOTES

Installer: Please return this booklet to literature package, and give to lift owner/operator.

Thank You

Trained Operators and Regular Maintenance Ensures Satisfactory Performance of Your Rotary Lift.

Contact Your Nearest Authorized Rotary Parts Distributor for Genuine Rotary Replacement Parts. See Literature Package for Parts Breakdown.

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